Global Academy of Technology
Autonomous Institution Affiliated to Visveswaraya Technological University
Approved by UGC, AICTE and Govt of Karnataka

Proceedings of

BOARD of STUDIES

Program

Artificial Intelligence & Data Science

A.Y. 2025-2026

8TH April 2026

Bos Convenor Bos Chairman Associate Dean Academics Principal

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1. INTRODUCTION & OBJECTIVES

Purpose of the Meeting:

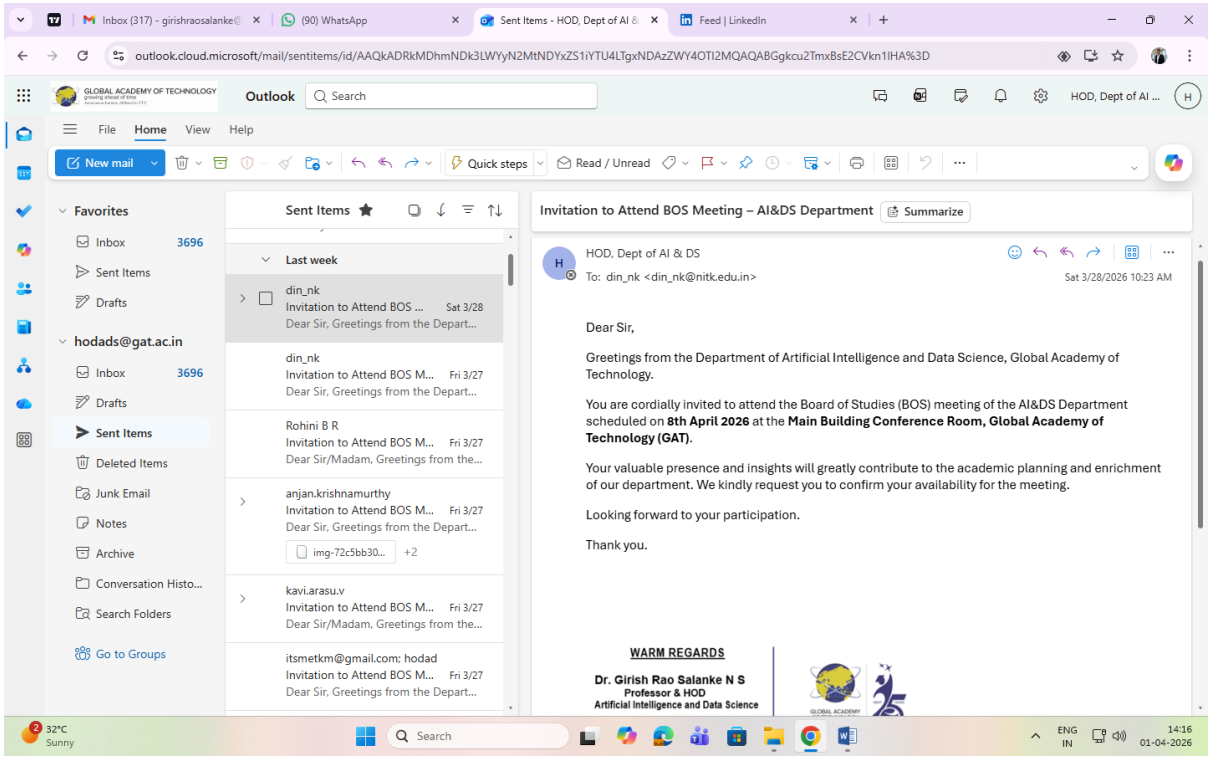
- Review academic performance and curriculum effectiveness
- Align curriculum with PO, PSO, SDGs, Washington Accord WK profiles
- Ensure NEP 2020 and NCrF compliance
- Strengthen skill-based, experiential, and industry-integrated learning
- Ensure alignment with Outcome-Based Education (OBE) practices
- Achieve placement conversion from internships.
- Ensure continuous improvement

2. CONSTITUTION OF BoS

Sl. No	Designation	Name	Affiliation	E-Mail ID & Contact No.
1.	Chairman	Dr. Girish Rao Salanke N S	Professor and Head	hodads@gat.ac.in +91 9845458667
2.	VTU Nominee	Dr. Dinesh Naik	Associate Professor NITK ,Surathkal	din_nk@nitk.edu.in +91 9480401300
3.	Subject Expert 2 (Deep Learning)	Dr. Ashok Kumar A R	Professor, Dept of CSE RVCE, Bengaluru	ashokkumarar@rvce.edu.in +91 8497042779
4.	Subject Expert 1 (Big Data)	Dr. Manjunath T K	Professor & Head, Dept of AI&DS KSSEM, Bengaluru	hod.ad@kssem.edu.in +91 9980733337
5.	Industry Expert	Mr. Kavi Arasu V	Deputy General Manager,Continental Pvt. Ltd	kavi.arasu.v@continental-corporation.com +91 9880087295
6.	Alumni	Mr. Bharath M	AI Security Engineer SISA Pvt Ltd	bharath2003js@gmail.com +918971749220
7.	Members (Internal)	Dr. Rohini B R	Associate Professor	rohini.br@gat.ac.in +919886136322
8.		Dr. Vishruth B G	Associate Professor	Vishruth.bg@gat.ac.in +918660248854
9.		Dr. Ugranada Channabasava	Associate Professor	uchannabasava@gat.ac.in +91 8095913556
10.		Mr. Harish L	Assistant Professor	harsishl@gat.ac.in +91 9449420341
11	Final Year Students	Deekshith S	Student	9480947918
12		Charushila	Student	8660341698

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Proof of invitation sent and response received



DN

Dinesh Naik<din_nk@nitk.edu.in>

To: HOD, Dept of AI & DS

Sat 3/28/2026 10:36 AM

Esteemed Professor, HOD

Greetings of the day from the Department of Information Technology at NITK Surathkal.

I would be delighted to attend the Board of Studies (BOS) meeting of the AI & DS Department, which is scheduled to take place on April 8, 2026, in the Main Building Conference Room at the Global Academy of Technology (GAT). I will be participating exclusively through the online mode due to my other essential commitments at NITK later in the evening. I would appreciate it if you could excuse me from participating offline. I would be delighted to provide my perspectives on the academic planning and enrichment of your department via online.

Sincerely yours

Dr. Dinesh Naik
NITK Surathkal

Reply Forward

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Ashok Kumar<arashokbiet@gmail.com>
To: HOD, Dept of AI & DS
Wed 4/1/2026 1:12 PM

Noted, sir. I will attend. I am pleased to be part of the curriculum design process of our organization.

Reply Forward

kavi.arasu.v@aumovio.com
To: HOD, Dept of AI & DS
Wed 4/1/2026 12:32 PM

Hello Sir,

Thank you for the invitation. I will attend the meeting on 8-Apr-26.
Looking forward to the meeting.

Regards
Kavi Arasu V
Deputy General Manager | Asia Regional Lead for Engineering Academy
Aumovio SE (India) Pvt. Ltd (Continental)
Electronic City, Phase-2, Bangalore 100

Internal

SISA Anjan Krishnamurthy<anjan.krishnamurthy@sisainfosec.com>
To: HOD, Dept of AI & DS
Fri 3/27/2026 9:36 PM

Dear Sir,

Thank you for the invitation. Due to prior business commitments and scheduled meetings, I will be traveling outside India until 10th April 2026.

Please consider my absence for the meeting. However, I would be happy to share my suggestions in advance and contribute ahead of time.

With Regards,

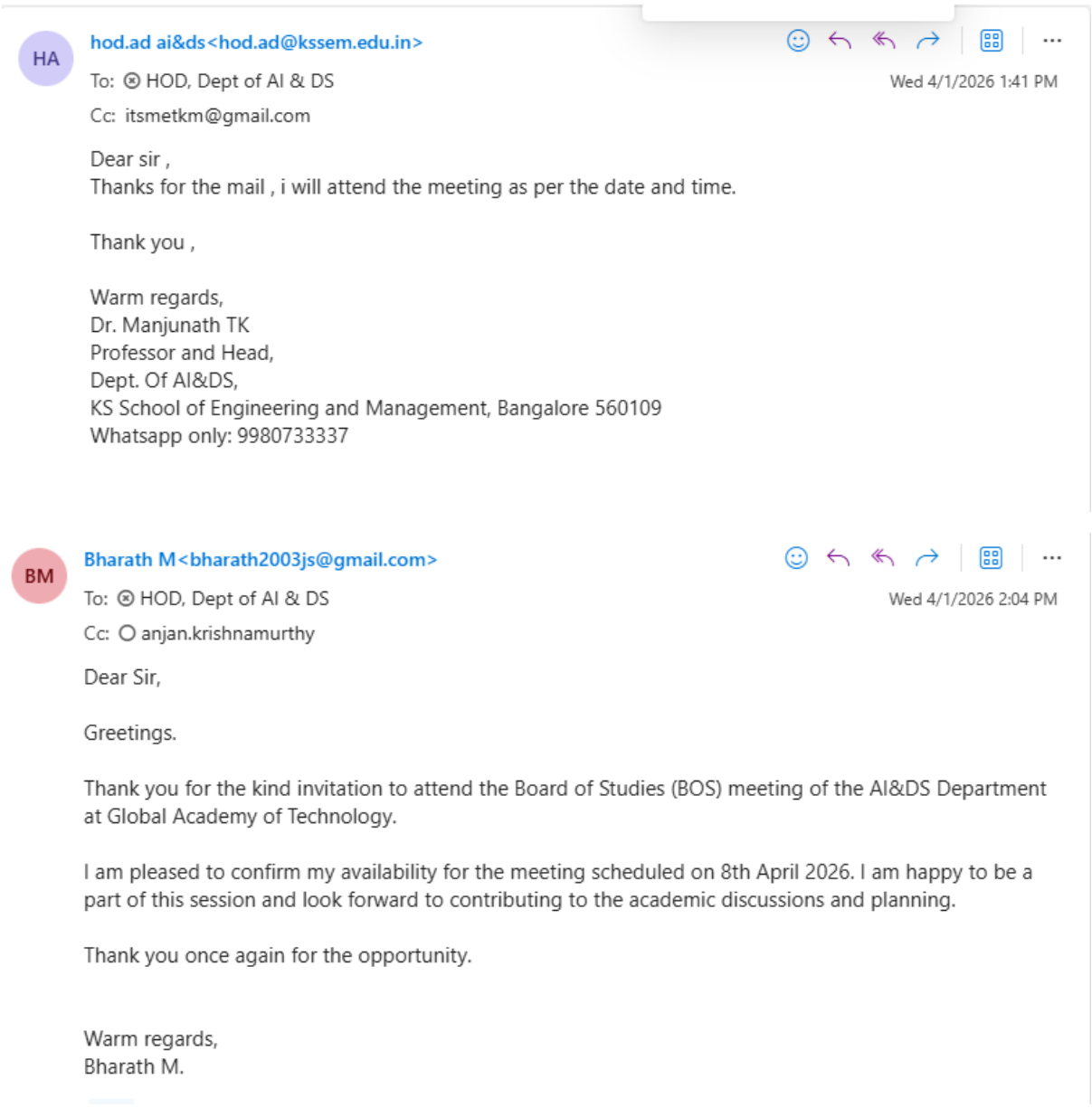


DR. Anjan Krishnamurthy
Associate Director & Head - AIPRISM, LTS

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HA **hod.ad ai&ds<hod.ad@kssem.edu.in>**

To: HOD, Dept of AI & DS — Wed 4/1/2026 1:41 PM

Cc: itsmetkm@gmail.com

Dear sir ,
Thanks for the mail , i will attend the meeting as per the date and time.

Thank you ,

Warm regards,
Dr. Manjunath TK
Professor and Head,
Dept. Of AI&DS,
KS School of Engineering and Management, Bangalore 560109
Whatsapp only: 9980733337

BM **Bharath M<bharath2003js@gmail.com>**

To: HOD, Dept of AI & DS — Wed 4/1/2026 2:04 PM

Cc: anjan.krishnamurthy

Dear Sir,

Greetings.

Thank you for the kind invitation to attend the Board of Studies (BOS) meeting of the AI&DS Department at Global Academy of Technology.

I am pleased to confirm my availability for the meeting scheduled on 8th April 2026. I am happy to be a part of this session and look forward to contributing to the academic discussions and planning.

Thank you once again for the opportunity.

Warm regards,
Bharath M.

3. CONFIRMATION OF PREVIOUS MINUTES

Statement:

"The Minutes of the previous BoS meeting held on 21/05/25 were circulated and confirmed."

4. ACTION TAKEN REPORT (ATR)

Sl No	Previous Discussion	Status (Completed/ Partial/Pending)	Remarks
1.	Renaming the course tittle from "python for data science to "Data science with python"	Completed	Implemented successfully in the revised syllabus
2.	To replace the AEC course MERN in 3rd sem with "Basics of Java"	Completed	Incorporated as per BoS recommendations
3.	Inclusion of "Full Stack Development"	Completed	Incorporated as per BoS recommendations
4.	Inclusion of "Cloud Computing" as core subject with practical oriented approach.	Partially incorporated	Added as a professional elective course
5.	Inclusion of UI/UX, Devops and MLOps in higher semester	Partially incorporated	Added as a professional elective /skill-based course

5. STAKEHOLDER FEEDBACK ANALYSIS

5.1. Feedback

Sources	Remark
Students	• Introduce hands-on programming practice in every semester (Python, SQL, ML libraries) to strengthen implementation skills. • Provide structured training on competitive coding and aptitude preparation from early semesters. • Encourage participation in hackathons, Kaggle competitions, and technical clubs
Alumni	• Strengthen curriculum coverage of software engineering practices for AI deployment (Git, APIs, model deployment pipelines). • Increase emphasis on internship-based experiential learning before final year • Include training on technical communication and interview readiness
Industry	• Increase credits for industry internships / live projects. • Include modules on data ethics, privacy, and responsible AI practices • Incorporate domain-oriented AI applications
Faculty	• Improve balance between theoretical foundations and application-oriented learning. • Include structured research methodology exposure in early semesters. • Encourage integration of project-based learning across multiple courses
Parents	• Increase focus on placement-oriented skill development activities. • Provide structured guidance for higher education. • Strengthen opportunities for industry interaction through guest lectures and workshops. • Encourage mentoring support through faculty

5.2. Need Analysis

Level	Remark
Local (Bangalore)	Addresses the needs of Bangalore's strong AI, analytics, and digital innovation ecosystem by incorporating skill-based courses in Artificial Intelligence, Machine Learning, Data Science, and Cloud technologies aligned with industry requirements of leading IT companies, startups, and research organizations in the region.
Regional (Karnataka)	Supports Karnataka's expanding technology, manufacturing automation, and smart infrastructure sectors by strengthening competencies in data analytics, intelligent systems, interdisciplinary applications, and industry-integrated learning relevant to the state's emerging industrial and innovation corridors.
National (India)	Aligns with national initiatives such as Digital India, Skill India, and Atmanirbhar Bharat by integrating AI-driven solutions, data analytics capabilities, innovation practices, and entrepreneurship-oriented learning into the curriculum to support India's digital transformation goals.
Global	Prepares students for global careers and higher education opportunities by incorporating advanced AI technologies, research-oriented learning, ethical AI practices, interdisciplinary exposure, and adaptability to international standards in intelligent systems development and data-driven decision-making.

5.3. Summary Table

Agenda	Key Suggestions	Proposed Action
2024 scheme 5th to 8th Syllabus	Review and update syllabus based on industry trends and emerging technologies	Revise curriculum, incorporate latest tools, and finalize subject structure
2026 scheme discussion	Introduce cutting-edge technologies, interdisciplinary courses, and outcome-based education	Design new scheme, align with NEP guidelines, and implement after approval
Approval of CIE and SEE Question paper pattern	Approved	Approved

6. VISION, MISSION, PEO & PSO REVIEW

Vision of the Institute

Become a premier institution imparting quality education in technology and management to meet the changing needs of people, planet and industry.

Mission of the Institute

- Create environment conducive for continuous learning through quality teaching and learning processes supported by modern infrastructure.

- Promote Research and Innovation through collaboration with industry.
- Inculcate ethical values and environmental consciousness through holistic education programs.

VISION of the Department

To achieve high levels of quality education by utilizing cutting-edge technology, cultivating a collaborative culture, and propagating customer-focused innovations in order to benefit society as a whole.

MISSION of the Department

- To strengthen the theoretical and practical aspects of the learning process by strong research culture in collaboration with communities to build healthy and sustainable world.
- To Contribute towards greater association between academia and businesses to establish entrepreneurship among young minds.
- Concentrate efforts towards application areas in health care, agriculture, transport and environment.

Alignment with institutional vision

The Department of Artificial Intelligence and Data Science vision aligns with the institute's vision by promoting quality technology-driven education, adoption of cutting-edge innovations, and development of solutions addressing the needs of people, industry, and society, thereby supporting sustainable and industry-relevant academic excellence.

Alignment with industry trends

The department vision aligns with current industry trends by emphasizing cutting-edge technologies, collaborative learning, and customer-focused innovation, which are essential for developing professionals skilled in AI-driven solutions, data-centric decision-making, and real-world problem solving required by modern technology industries

Career progression tracking

- **Placement statistics**
- Indicators:
    - Placement percentage
    - Average/median salary
    - Core vs non-core job roles
    - Career growth trends

Year	Total placed	Total students	Average pay	Highest to lowest	core	Non core
2021-25	47	69	4.53	36 -1.8	45	2
2022-26	34(Ongoing)	69	4.00	-	-	-

- Higher Studies **statistics**

Year	Higher Studies	Total students
2021-25	03	69
2022-26	NA	69

7. CO–PO ATTAINMENT REVIEW

7.1 Outgoing Batch Analysis

PO/PSO	Target	Achieved	GAP	Action Plan
PO1	100	62.59	37.41	Strengthen mathematical and algorithmic foundations through additional problem-solving sessions, ML-based numerical labs, and tutorial hours in core AI courses.
PO2	100	51.00	49	Increase dataset-driven problem analysis assignments and literature review components in Machine Learning, NLP, and Big Data Analytics courses.
PO3	100	61.86	38.14	Introduce more design-oriented mini-projects and domain-based AI solution development tasks aligned with real-world applications.
PO4	100	53.03	46.97	Enhance experimentation through structured lab exercises, model comparison studies, and guided research components in projects and internships.
PO5	100	55.60	44.4	Increase exposure to modern tools such as TensorFlow, PyTorch, Tableau, and cloud platforms through tool-based lab evaluations.
PO6	100	55.32	44.68	Integrate SDG-oriented case studies and sustainability-focused analytics problems in AI and data science courses.
PO7	100	60.45	39.55	Strengthen coverage of ethical AI, data privacy, and cybersecurity practices through Ethics & Public Policy for AI and Digital Forensics modules.
PO8	100	44.40	55.6	Promote collaborative learning through team-based mini projects, hackathons, and interdisciplinary project execution.
PO9	100	51.1	48.9	Improve technical communication through structured presentations, project documentation reviews, and seminar-based evaluations.

PO10	100	51.6	48.4	Introduce Agile-based project execution practices and industry-style workflow exposure in software engineering and capstone projects.
PO11	100	56.33	43.67	Encourage participation in MOOCs, certification programs, and emerging technology electives such as Generative AI and LLMs.
PO12	100	53.87	46.13	Strengthen lifelong learning orientation through research exposure, internship engagement, and advanced elective course pathways.
PSO1	100	59.33	40.67	Enhance application development competency through increased hands-on exposure in DBMS, Full Stack Development, Cloud Computing, and deployment-oriented projects.
PSO2	100	45.82	54.18	Improve intelligent solution development skills through real-world dataset projects in Machine Learning, Big Data Analytics, NLP, and Generative AI domains.

Key Strength of 2024 Scheme

1. Strong Alignment with Emerging AI Technologies
2. Balanced Foundation–Application Curriculum Structure
3. Strong Experiential Learning Components
4. Flexible Elective Structure Supporting Specialization
5. Industry-Relevant Tool Exposure
6. Early Integration of Research Orientation

Pedagogy modification

Pedagogy Modification (What is changed in teaching–learning)
Shift from theory-centric delivery to lab-integrated learning in courses like Data Visualization using Tableau, Database Management Systems, and Machine Learning Lab through tool-based assignments.
Introduce Project-Based Learning (PBL) in core AI courses such as Machine Learning–II, Neural Networks & Deep Learning, and Big Data Analytics using real-world datasets and domain-driven problem statements.
Adopt activity-based learning approaches such as technical presentations and seminar-based evaluations

Faculty training need

Faculty Training Requirement
Hands-on Engineering tools
Industry oriented training
FDPs on emerging technologies.

Value Added Program Planned

A value added program on cloud computing is planned for 6th sem students to enrich their conceptual understanding with hands on session over AWS Platform.

8. CURRICULUM DESIGN & COMPREHENSIVE MAPPING

COURSE COMPONENT	CREDITS	% OF CREDITS
BASIC SCIENCE (BS)	19	12%
Engineering Courses	100	62%
Professional Elective/Open Elective	19	12%
Humanities and Social Science Courses	7	4%
Seminar/Internship/Project Work	11	7%
Mandatory Non Credit Courses	4	3%
TOTAL	160	100%

8.1. Credit Structure

1 credit = 30 hours

Total Program Credits – 160

Curriculum Progression (NCRF View)

Year	Learning Type	NCRF Level
2nd Year	Fundamental knowledge of computer science and AI	Level 5
3rd Year	Foundation to domain knowledge	Level 5.5
4th Year	Advanced specialization & industry readiness	Level 6

8.2 Mapping Framework

8.2.1. PO/PSO Mapping Table (2024 Syllabus)

POs	Courses
PO1	Machine Learning-II, Neural Networks & Deep Learning, Big Data Analytics, Natural Language Processing, Generative AI
PO2	Machine Learning-II, Big Data Analytics, Reinforcement Learning, Social Network Analysis, Research Methodology & IPR

PO3	Mini Project, Project Phase-I, Major Project Phase-II, Full Stack Development, Cloud Computing
PO4	Research Methodology & IPR, Machine Learning Lab, Data Visualization Lab, Internship
PO5	Data Visualization using Tableau, MLOps, Cloud Computing, Database Management Systems
PO6	Environmental Studies, Ethics & Public Policy for AI, Indian Knowledge System, NSS
PO7	Ethics & Public Policy for AI, Digital Forensics, Cybersecurity Elective
PO8	Mini Project, Project Phase-I, Major Project Phase-II, Internship
PO9	Research Methodology & IPR, Mini Project Presentations, Major Project Documentation
PO10	Software Engineering with Agile Methodologies, Internship, Major Project Phase-II
PO11	Online Professional Electives, Generative AI, Prompt Engineering, LLMs
PSO1	DBMS, Full Stack Development, Cloud Computing, Machine Learning Lab, Major Project
PSO2	Machine Learning-II, Big Data Analytics, NLP, Generative AI, Data Visualization using Tableau

8.2.2. SDG Mapping Table

SDGs	**Courses**
SDG 3 – Good Health & Well-being	Machine Learning-II, Neural Networks & Deep Learning, NLP (healthcare analytics applications)
SDG 4 – Quality Education	Research Methodology & IPR, Online Professional Electives, Mini Project
SDG 9 – Industry, Innovation & Infrastructure	Cloud Computing, Big Data Analytics, MLOps, Full Stack Development
SDG 11 – Sustainable Cities & Communities	Data Visualization using Tableau, Social Network Analysis
SDG 13 – Climate Action	Environmental Studies, Green IT & Sustainability
SDG 16 – Peace, Justice & Strong Institutions	Digital Forensics, Cybersecurity, Ethics & Public Policy for AI

8.2.3. WK Mapping Table

WKs	Courses
WK3 – Engineering Fundamentals	Database Management Systems, Software Engineering with Agile
WK4 – Engineering Specialization	NLP, Generative AI, Prompt Engineering, LLMs
WK5 – Engineering Design	Mini Project, Project Phase-I, Major Project Phase-II

8.3 Percentage-Based Reporting

% of courses revised	20%
% skill-based courses	55%
% courses with apprenticeship/fieldwork	NA
% online credited courses (SWAYAM, NPTEL)	15%
% project-based courses	10%

9. NEW COURSE PROPOSALS

Parameters	Details
Course Title and code	Problem Solving using Python (BAD24556A)
Rationale	Python is a foundational programming language for Data Science and AI. This course strengthens problem-solving, algorithmic thinking, and coding proficiency, which are essential for higher-level courses like ML and Data Analytics.
Course Objectives	• To develop strong algorithmic thinking and problem-solving skills using Python programming. • To enable students to apply data structures and algorithmic techniques such as hashing, recursion, sliding window, greedy, and dynamic programming. • To prepare students for competitive programming and coding interviews through solving real-world problems from standard coding platforms.
Course Outcomes	• Apply Python programming concepts to solve basic algorithmic problems involving arrays, strings, and hashing. • Implement searching, sorting, stack, linked list, and two-pointer techniques to solve computational problems. • Develop solutions using algorithmic paradigms such as recursion, sliding window, and greedy methods. • Design optimized solutions using advanced techniques like dynamic programming and graph traversal for complex problem-solving tasks.
Skill Alignment (NCrF Level)	Foundation to intermediate programming skills

Assessment Scheme	As per the 2024 Scheme of evaluation
Industry Relevance	• Core skill for Software Development, Data Science, AI roles • Widely used in automation, analytics, and application development
SDG Mapping	4,8

Parameters	Details
Course Title and code	Agentic AI Systems and Applications (BAD24657A)
Rationale	With the rapid evolution of Artificial Intelligence, there is a shift from traditional ML models to autonomous, goal-driven AI systems (Agentic AI). This course equips students with the ability to design intelligent agents capable of reasoning, planning, and decision-making, which is currently not covered in conventional AI curricula.
Course Objectives	• Understand the fundamentals of intelligent agents and agent architectures • Explore decision-making, planning, and reasoning in AI systems • Design and implement autonomous AI agents • Analyze real-world applications of agent-based systems
Skill Alignment (NCrF Level)	Advanced conceptual understanding and application of emerging AI technologies
Assessment Scheme	As per the 2024 Scheme of evaluation
Industry Relevance	• Used in autonomous systems, robotics, AI copilots, and automation • High demand in AI-driven companies (product & research roles)
SDG Mapping	4,9

Parameters	Details
Course Title and code	MLOps: Deployment and Management of ML Systems (BAD24657B)
Rationale	While Machine Learning focuses on model development, there is a critical gap in deployment, monitoring, and lifecycle management. This course bridges academia and industry by introducing MLOps practices for scalable and reliable ML systems.
Course Objectives	• Understand the MLOps lifecycle and its components • Develop ML pipelines using CI/CD tools • Deploy ML models using containerization tools • Monitor and maintain ML systems in production
Skill Alignment (NCrF Level)	Advanced industry-oriented implementation skills

Assessment Scheme	As per the 2024 Scheme of evaluation
Industry Relevance	• Essential for roles like ML Engineer, Data Engineer • Widely used in companies deploying AI products at scale
SDG Mapping	9,8

The above new courses have been discussed and approved by BoS members

10. SKILL, MOOC & VALUE-ADDED REVIEW

- NPTEL/ SWAYAM integration
- NCMC
- Placement course (Sem 3–6) – Not applicable for 2024 Scheme

2024 Scheme

SL. No.	Semester	Course Code	Course Title	L: T: P	Course Type
1	VIII	BAD24801A	Exploratory Data Analysis for Data Science with R Software	3:0:0	NPTEL
2	VIII	BAD24801B	Business Intelligence & Analytics	3:0:0	NPTEL
3	VIII	BAD24801C	Time Series Modelling and Forecasting with Applications in R	3:0:0	NPTEL
4	VIII	BAD24801D	Reinforcement Learning	3:0:0	NPTEL
5	VIII	BAD24802A	Blockchain and its Applications	3:0:0	NPTEL
6	VIII	BAD24802B	Introduction to Large Language Models (LLMs)	3:0:0	NPTEL
7	VIII	BAD24802C	Social Networks	3:0:0	NPTEL
8	VIII	BAD24802D	Digital Forensics	3:0:0	NPTEL

2026 Scheme

SL. No.	Semester	Course Code	Course Title	L: T: P	Course Type
1	VII	BAD26801A	Exploratory Data Analysis for Data Science with R Software	3:0:0	NPTEL
2	VII	BAD26801B	Business Intelligence & Analytics	3:0:0	NPTEL
3	VII	BAD26801C	Time Series Modelling and Forecasting with Applications in R	3:0:0	NPTEL
4	VII	BAD26801D	Reinforcement Learning	3:0:0	NPTEL
5	VIII	BAD26802A	Data Science for Engineers	3:0:0	NPTEL
6	VIII	BAD26802B	Computer Vision	3:0:0	NPTEL
7	VIII	BAD26802C	Big Data Computing	3:0:0	NPTEL
8	VIII	BAD26802D	Introduction to Large Language Models (LLMs)	3:0:0	NPTEL

NCMC course (Sem 3–6)

2024 Scheme

SL. No.	Semester	Course Code	Course Title	L: T: P	Course Type
1	III	BNSK24359	National Service Scheme (NSS)	0:0:2:0	MC
2		BPEK24359	Physical Education (Sports & Ath Letics) – I	0:0:2:0	MC
3		BYOK24359	Yoga	0:0:2:0	MC
4		BLAK24359	Liberal Arts	0:0:2:0	MC
5	IV	BNSK24459	National Service Scheme (NSS)	0:0:2:0	MC
6		BPEK24459	Physical Education (Sports & Ath Letics)	0:0:2:0	MC
7		BYOK24459	Yoga	0:0:2:0	MC
8		BLAK24459	Liberal Arts	0:0:2:0	MC
9	V	BNSK24559	National Service Scheme (NSS)	0:0:2:0	MC
10		BPEK24559	Physical Education (PE) (Sports and Athletics)	0:0:2:0	MC
11		BYOK24559	Yoga	0:0:2:0	MC
12		BLAK24559	Liberal Arts	0:0:2:0	MC
13		BESK24508	Environmental Studies	1:0:0:0	MC
14	VI	BIKS24608	Indian Knowledge System	1:0:0:0	MC
15		BNSK24659	National Service Scheme (NSS)	0:0:2:0	MC
16		BPEK24659	Physical Education (PE) (Sports and Athletics)	0:0:2:0	MC
17		BYOK24659	Yoga	0:0:2:0	MC
18		BLAK24659	Liberal Arts	0:0:2:0	MC

NCMC Placement Courses 2026 scheme

NCMC Placement Courses

SL. No.	Semester	Course Code	Course Title	L: T: P	Course Type
1	III	BPAT26311	Placement and Training	0:0:2	NCMC
2	IV	BPAT26411	Placement and Training	0:0:2	NCMC
3	V	BPAT26509	Placement and Training	0:0:2	NCMC
4	VI	BPAT26610	Placement and Training	0:0:2	NCMC

NCMC Courses

SL. No.	Semester	Course Code	Course Title	L: T: P	Course Type
1	III	BNSK26309	National Service Scheme (NSS)	0:0:2	NCMC
2		BPE26309	Physical Education (PE) (Sports and Athletics)	0:0:2	NCMC
3		BYOG26309	Yoga	0:0:2	NCMC
4		BMUS26309	Music	0:0:2	NCMC
5		BMATD26310	Mathematics course for Lateral Entry Students	3:0:0	NCMC
6	IV	BNSK26409	National Service Scheme (NSS)	0:0:2	NCMC
7		BPEK26409	Physical Education (PE) (Sports and thletics)	0:0:2	NCMC

8		BYOK26409	Yoga	0:0:2	NCMC
9		BMUS26409	Music	0:0:2	NCMC
10		BMATD26410	Mathematics course for Lateral Entry Students	3:0:0	NCMC
11	V	BIKS26510	Indian Knowledge System	1:0:0	NCMC
12	VI	BUHV26609	Universal Human Value	1:0:0	NCMC

BoS members have approved the above NPTEL/SWAYAM integration, NCMC course, NCMC Placement courses and skill development Programs.

11. INTERNSHIP & INDUSTRY INTEGRATION

- % students completing internships: **100% students in final year are pursuing the internship in 2022 batch**
- Semester-long apprenticeship**: Internship as prescribed in the Scheme**.
- **Hackathon-based credits**

Semester	Course Code	Course Name	Credits
V	BAD26508	Hackathon-Based Project	2

The BoS members appreciated the inclusion of the Hackathon based project. The above points were discussed and approved by BoS members and forwarded to Academic Council.

12. RESEARCH & CAPSTONE

Mandatory research publication/patent

- The final year students should publish their final year project work in Scopus Indexed conferences / Journals as part of their project work to promote research orientation and enhance academic quality.

MAJOR PROJECT RUBRICS

Review: 1st Review

Criterion	Excellent (Full Marks)	Good (75–99%)	Satisfactory (50–74%)	Needs Improvement (<50%)
Recent Literature Review + Work Progress	Comprehensive, critical review of 10+ recent sources; significant work progress with clear milestones achieved; insightful synthesis linking literature to project goals.	Good review of 7–9 relevant sources; steady work progress; adequate synthesis with minor gaps in linking literature to project.	Basic review of 4–6 sources; limited progress; superficial synthesis; literature not well connected to the project.	Fewer than 4 sources; little or no work progress; minimal or no synthesis; literature review is missing or irrelevant.

Regularity / Consistency (Max: 5)	Attended all scheduled sessions; consistently met deadlines; proactive communication with supervisor; well-maintained work log.	Attended most sessions (80%+); met most deadlines; communicates regularly; work log adequately maintained.	Attended some sessions (60–79%); occasional deadline misses; irregular communication; incomplete work log.	Frequent absences (<60%); repeatedly missed deadlines; poor communication; work log missing or negligible.
Presentation Skill (Max: 5)	Exceptionally clear, well-structured presentation; confident delivery; professional slides; engages audience effectively.	Clear and organised presentation; good delivery with minor hesitations; slides are neat and relevant.	Some structure evident but delivery lacks confidence; slides adequate but crowded or inconsistent in style.	Poorly organised; delivery is unclear or hard to follow; slides are incomplete, unformatted, or missing.
Viva – Voce (Max: 5)	Demonstrates deep understanding; answers all questions precisely and confidently; defends choices with strong justification.	Demonstrates good understanding; answers most questions correctly with minor hesitations.	Demonstrates basic understanding; some questions answered partially; struggles with justification.	Limited understanding; unable to answer most questions; justification weak or absent.

Review: 2nd Review

Criterion	Excellent (Full Marks)	Good (75–99%)	Satisfactory (50–74%)	Needs Improvement (<50%)
Recent Literature Review + Work Progress (Max: 5)	Updated, thorough literature review with critical analysis; substantial implementation progress aligned with objectives.	Updated review with good progress; most objectives addressed with minor gaps.	Partially updated review; moderate progress; some objectives not yet addressed.	Outdated or missing review; minimal progress; objectives largely unmet.
Problem Statement Formulation (Max: 5)	Problem statement is precise, well-scoped, novel, and clearly motivated by literature; research gap explicitly identified.	Problem statement is clear and relevant; research gap mostly identified with minor ambiguity.	Problem statement is present but broad or vague; research gap weakly identified.	Problem statement is absent, unclear, or poorly defined; no research gap mentioned.
Proposed Methodology (Max: 5)	Methodology is detailed, justified, and appropriate; tools/techniques well chosen; reproducible steps clearly described.	Methodology is sound and mostly justified; tools appropriate; steps described with minor omissions.	Methodology is described but lacks full justification; tools partly appropriate; some steps unclear.	Methodology is vague, inappropriate, or missing; tools not justified; steps not described.
Presentation Skill & Depth of Presentation	Exceptional depth; covers all aspects with	Good depth; most aspects	Some depth but key aspects are	Little depth; major aspects missing or

(Max: 5)	technical detail; professional visual aids; complex concepts communicated clearly.	covered adequately; visual aids support the content well.	surface level; visual aids partially effective.	superficial; visual aids poor or absent.
Viva – Voce (Max: 5)	Thorough mastery of the project; handles cross-questions confidently; links methodology to outcomes convincingly.	Good grasp of the project; answers most cross-questions; links mostly clear.	Basic grasp; answers some questions; struggles with unexpected cross-questions.	Weak grasp; unable to defend the project; cross-questions largely unanswered.
Review: Final Report + Dairy				
Report + Dairy (40+10) (Max: 50)	Report is complete, well-structured, and professionally written; meets all formatting guidelines; diary meticulously maintained with detailed records of all activities.	Report is mostly complete with good structure; minor formatting issues; diary maintained with adequate records.	Report is partially complete; structure or formatting inconsistent; diary has gaps or incomplete records.	Report is incomplete, poorly structured, or poorly written; diary is missing, incomplete, or not maintained.

The BoS members have approved and forwarded to Academic Council.

13. BoS APPROVALS

Internal Quality Committee ratification

The Board of Studies (BoS) and Program Assessment Committee (PAC) meetings were conducted on 08/04/2026 and 30/03/2006, respectively. The minutes of the meetings are attached herewith for your kind reference.

Question paper moderation norms

The SEE Question paper pattern for the 2026 Scheme is as follows:

- Part A (20 Marks): 10 questions of two marks each (all compulsory)
- Part B (80 Marks): There will be two full questions (with a maximum of three sub questions) from each module carrying 16 marks each. Students are required to answer any five full questions choosing at least one full question from each module.

The sample Question paper was presented by the BoS Chairman, and it has been approved by BoS members and forwarded to Academic Council.

Laboratory courses

a) Continuous Internal Evaluation (CIE)	
1	**Observation + Record (Max. Marks 30) - (A)** Observation: Writeup + Execution + Viva Voce = 5+15+5 = 20 M Record: 10 M
2	**Internal Assessment (Max. Marks 20) - (B)** Writeup + Execution + Viva Voce = 20+60+20 = 100 (scaled down to 20) Total Marks = A + B = 50 Marks
b) Semester End Examination (SEE):	
1	Writeup + Execution + Viva Voce = 20+60+20= 100 Marks (scaled down to 50) Total Marks = 50 Marks

The above rubrics were discussed and approved by BoS, Rubrics of laboratory courses are subjected to change based on the nature of course.

14. CONCLUDING REMARKS

"The Board of Studies approved the proposed curriculum changes, assessment reforms, and implementation plan effective from Academic Year 2026–27. Further, the proceedings is sent across to Academic Council for approval".

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

The following members attended the **5th BoS meeting** of Artificial Intelligence and Data Science department on **8th April 2026** at Main building Conference Hall, Global Academy of Technology

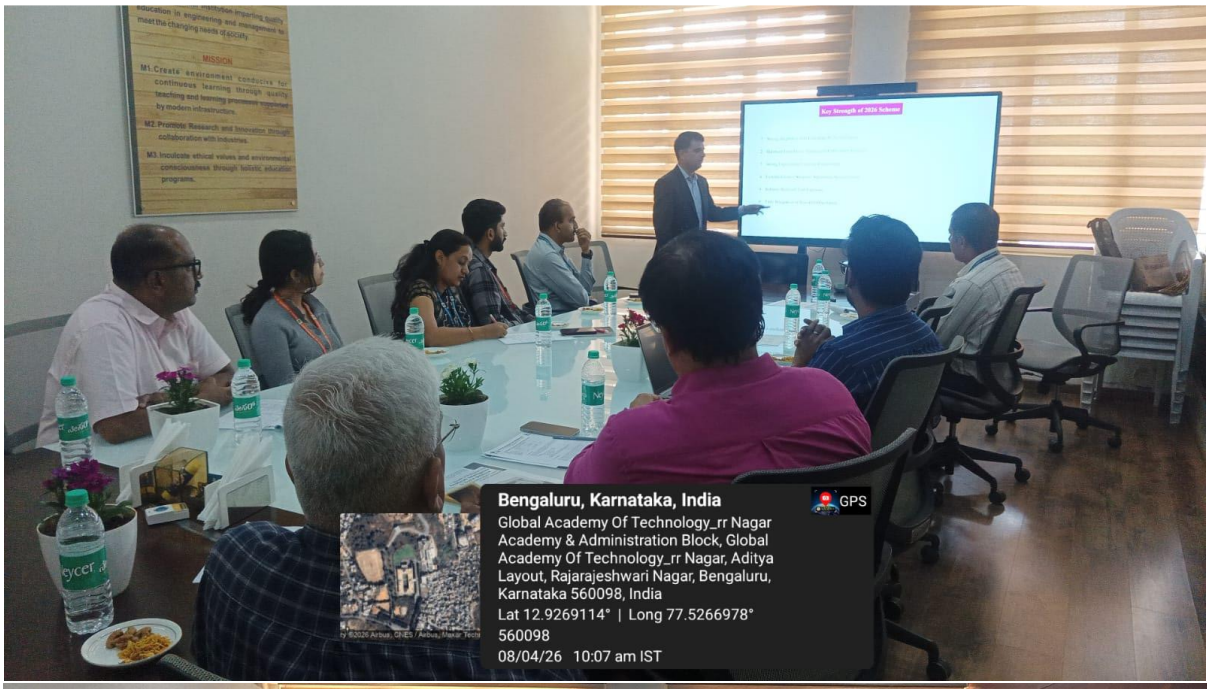
Sl. No	Designation	Name	Affiliation	Signature
1.	Chairman	Dr. Girish Rao Salanke N S	Professor and Head	
2.	VTU Nominee	Dr. Dinesh Naik	Associate Professor NITK ,Surathkal	
3.	Subject Expert 2 (Deep Learning)	Dr. Ashok Kumar A R	Professor, National College of Engineering, Bengaluru	
4.	Subject Expert 1 (Big Data)	Dr. Manjunath T K	Professor & Head, Dept of AI&DS KSSEM, Bengaluru	
5.	Industry Representatives	Mr. Kavi Arasu V	Deputy General Manager,Continental Pvt. Ltd	
6.	Alumni	Mr. Bharath M	AI Security Engineer SISA Pvt Ltd	
7.	Student representative	Ms. Charushila	Final Year AI&DS	
8.		Mr. Deekshith		
9.	Members (Internal)	Dr. Rohini B R	Associate Professor	
10.		Dr. Vishruth B G	Associate Professor	
11.		Dr. Ugranada Channabasava	Associate Professor	
12.		Mr. Harish L	Assistant Professor	
13.	Invited members	Dr. H B Balakrishna	Principal,GAT	
14.		DR. Vijay Tambrallimath	Associate Dean Academics	

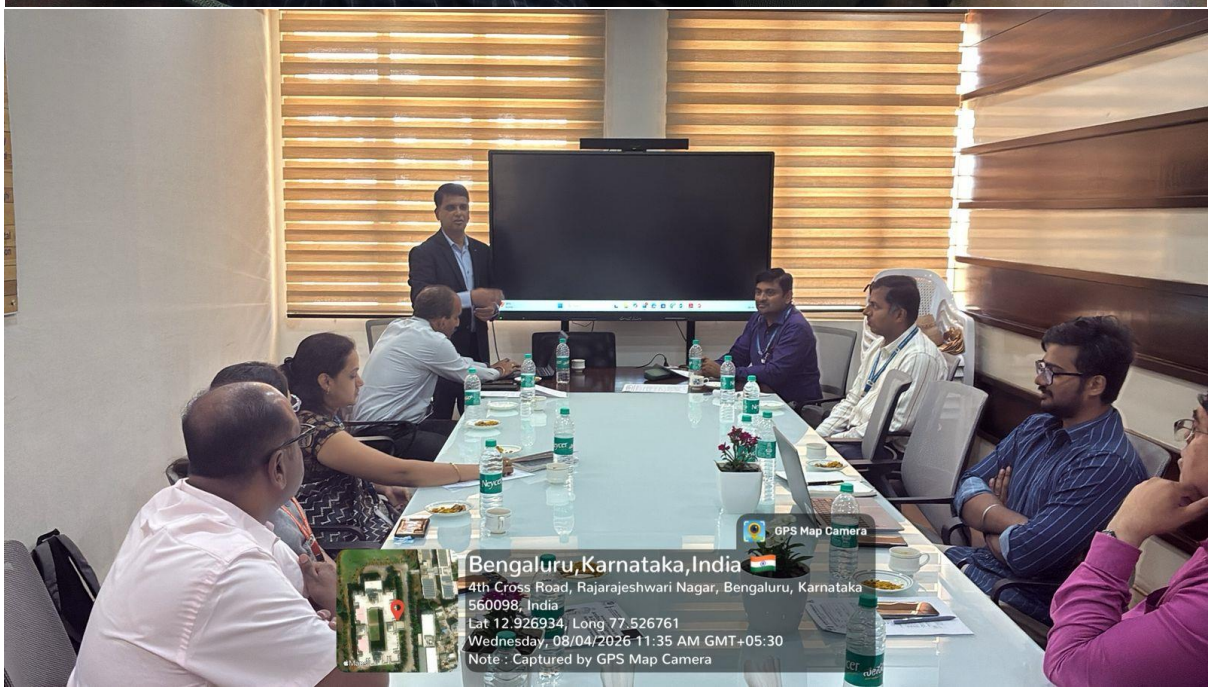
Head of the Department
Department of Artificial Intelligence & Data Science
Global Academy of Technology
Bengaluru - 560 098.

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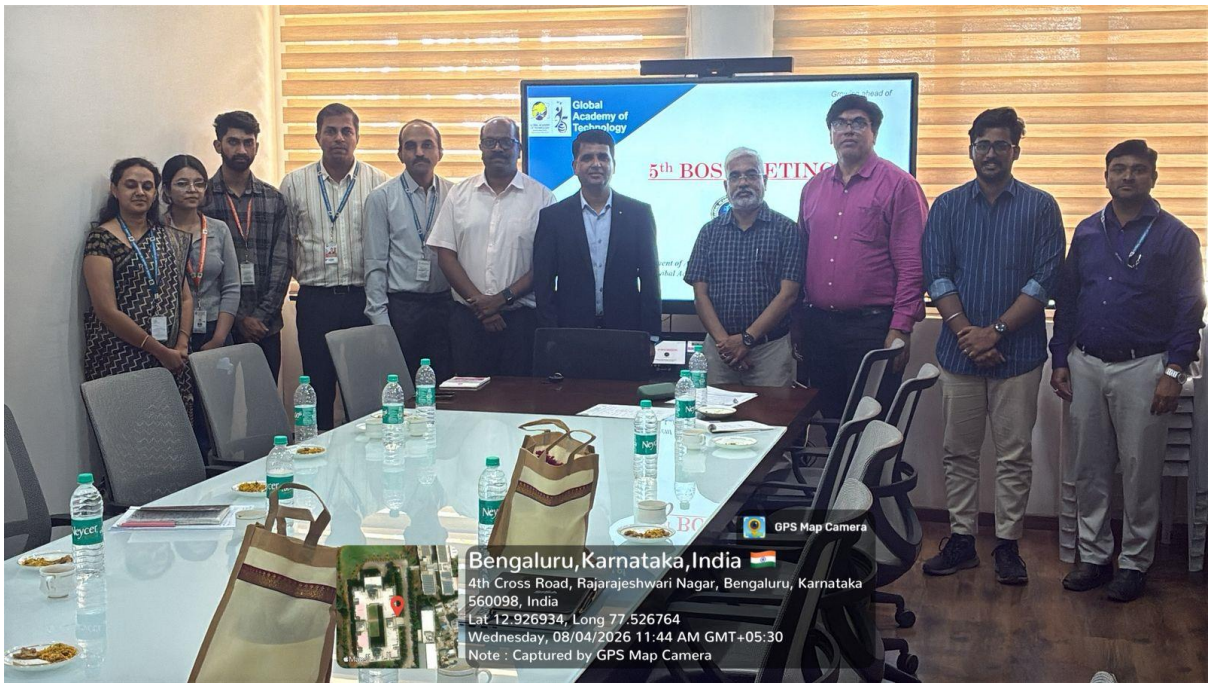
Normal/Geo Tagged Photos





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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

PROGRAM ADVISORY COMMITTEE MEETING MINUTES

Date: 30th March 2026

Venue: AI & DS Department, HoD Cabin

MEMBERS PRESENT:

- Dr. Girish Rao Salanke N S, Professor and Head
- Dr. U. Channabasava, Associate Professor
- Dr. Sandeep H, Associate Professor
- Dr. Vishruth B G, Associate Professor
- Dr. Rohini B R, Associate Professor
- Prof. Harish L, Assistant Professor
- Prof. Anand Panduranga, Assistant Professor

Agenda Discussed:

A. Review of 2024 Scheme Syllabus for 5th, 6th, 7th, and 8th semesters

B. Discussion on 2026 Scheme Structure

A. 2024 Scheme Syllabus Review

1. All courses under the 2024 scheme were reviewed. COs and Knowledge Profiles (WK) were verified along with CO–PO mappings.
2. Program-specific mappings were revised and corrected.
3. 5th Semester Skill Enhancement Courses added: Data Analytics for IoT, Ethics and Public Policy for AI.
4. Cloud Computing added as a Professional Elective in 6th Semester.
5. 6th Semester Skill Enhancement Courses: Agentic AI Systems and Applications, MLOps: Deployment and Management of ML Systems (to be delivered by industry experts).
6. 7th Semester courses added: Prompt Engineering, Generative AI.
7. 8th Semester Professional Elective–IV (NPTEL): Exploratory Data Analysis using R, Business Intelligence and Analytics, Time Series Modelling, Reinforcement Learning.
8. 8th Semester Professional Elective–V (NPTEL): Blockchain and Its Applications, Introduction to LLMs, Digital Forensics and Social Network Analysis.

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B. 2026 Scheme Structure

1. The structure of the 2026 scheme was discussed with emphasis on **emerging technologies, interdisciplinary learning, and industry alignment**.
2. Further deliberations and approvals will be carried out in upcoming meetings.

Signatures

Name	Signature
Dr. Girish Rao Salanke N S	
Dr. U. Channabasava	
Dr. Sandeep H	
Dr. Vishruth B G	
Dr. Rohini B R	
Prof. Harish L	
Prof. Anand Panduranga	



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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

CONSOLIATED PROCEEDINGS OF BoS

Held on

8th April 2026 at 09:30 am in Board Room

Members present:

Faculty members from Global Academy of Technology:

1. Dr. Girish Rao Salanke N S, Professor & Head, Department of Artificial Intelligence and Data Science.
2. Dr. Ugranada Channabasava, Assoc. Professor, Department of Artificial Intelligence and Data Science.
3. Dr. Rohini B R, Assoc. Professor, Department of Artificial Intelligence and Data Science.
4. Dr. Vishruth B G, Assoc. Professor, Department of Artificial Intelligence and Data Science.
5. Prof. Harish L, Assistant Professor, Department of Artificial Intelligence and Data Science.

Subject Expert & VTU Nominee:

1. Dr. Dinesh Naik, Associate Professor NITK, Surathkal.

Subject Experts from outside the college nominated by Academic council:

1. Dr. Ashok Kumar A R, Professor, Department of CSE, National College of Engineering, Bangalore.
2. Dr. Manjunath T K, Professor & Head, Department of AI&DS, KSSEM, Bangalore.

Industry Expert:

1. Mr. Kavi Arasu, Deputy General Manager, Continental Pvt. Ltd

Special Invites:

1. Dr H.B Balakrishna, Principal, Global Academy of Technology, Bangalore.
2. Dr. Dr. Vijay Tambrallimath, Associate Dean Academics, Global Academy of Technology, Bangalore.

Alumni:

Mr. Bharath M, AI Security Engineer, SISA Pvt Ltd

Final Year Students:

Deekshith S

Charushila

Leave of Absence:

The following members were granted leave of absence owing to their prior commitments and other unavoidable professional engagements.

1. Dr. Anjan Krishnamurthy, Assoc. Director, SISA Pvt. Ltd.

Welcome Address & Opening Remarks

- The HOD welcomed all BoS members to the 5th Board of Studies meeting.
- The Principal delivered the address, emphasizing transformational learning and the shift to Activity-Based CIE.
- The new 2026 scheme focuses on 160 credits with VAP (Value Added Programs) and Self-Learning Components.
- The HOD presented highlights of the institution including Vision/Mission statements (approval pending from Academic Council), PEOs, PSOs, and Course Curriculum Weightage.

Agenda for the BoS meeting:

1. Approval of the 2024 Syllabus from 5th to 8th Semesters.
2. Approval of the 2026 Scheme from 3rd to 8th Semesters.
3. Approval of CIE and SEE structure for 2026 scheme.

Minutes of the Meeting in BoS:

Approved the 2026 Scheme (3rd to 8th Semesters) and 2024 Syllabus (5th – 8th semesters).

Semester-wise Curriculum Discussion:

I Semester:

- All BoS members unanimously recommended having a Python Lab in the first year.
- Dr. Kavi Arasu suggested a separate Python Lab for 3rd/4th semester as well.

III Semester

- Computer Organization was recommended to be offered as a Value-Added Program (VAP).
- For Data Science with Python, it was recommended that basic knowledge of Statistics be considered as a prerequisite.by Mr. Kavi Arasu
- Dr. Manjunath T.K suggested the inclusion of Hardware-related content under the AEC component in the 3rd Semester.
- The course Biology for Engineers was recommended to be under the Humanities and Social Sciences (HSS) department.
- Computer Networks was proposed to be shifted to the 4th Semester by Dr. Ashok Kumar.

- The BoS members recommended restructuring the 3rd Semester scheme, as students may find it challenging to effectively manage and learn multiple core subjects.
- The course Human Intelligence was suggested to be included in the 3rd Semester

IV Semester

- The inclusion of Artificial Intelligence (AI) with a laboratory component in the 4th Semester was recommended.
- Dr. Ashok Kumar suggested aligning the AI course in the 4th Semester with the VTU syllabus.
- It was recommended to include Agentic AI, as suggested by Dr. Ashok Kumar.
- Dr. Manjunath recommended the introduction of dedicated AI Laboratory courses.
- The course Programme-Specific Biology was recommended to be assigned to the Humanities and Social Sciences (HSS) department.
- Mr. Bharath observed that the 3rd and 4th Semesters largely consist of core CSE subjects, and recommended to have more value-added program, workshop with Industry-oriented content.

V & VI Semester

- It was recommended to introduce Responsible AI in the 6th Semester.
- The inclusion of Skill Development (SKD) / AEC courses in collaboration with companies and industry was proposed by Dr. Manjunath T K
- It was suggested to incorporate courses such as Adversarial AI and Data Poisoning into the curriculum.
- The introduction of Generative AI in the 6th Semester, prior to Prompt Engineering with Lab, was recommended.
- It was suggested to remove the duplicate Cloud Computing course, as it is repeated twice in the curriculum. Replace with Responsible AI.
- The inclusion of AI Ethics as a core subject in the curriculum was strongly recommended.
- Dr. Kavi Arasu further emphasized that AI Ethics should be introduced prior to Deep Learning and treated as a core subject.
- Dr. Dinesh provided inputs regarding the evaluation processes for coding-related components and suggested at add the course Robotic Process Automation.

VII Semester

- Dr. Kavi Arasu recommended integrating Generative AI and Prompt Engineering into a unified course.
- Mr. Kavi Arasu and Dr. Ashok Kumar recommended the inclusion of advanced courses such as Information Retrieval, Recommendation Systems, and Data Cleaning and Preprocessing to strengthen the data-centric and application-oriented aspects of the curriculum. Professional

Elective course Parallel Programming is replaced with Information retrieval with Recommendation Systems.

- The Applications of Large Language Models (LLMs) was suggested to be offered as an AEC (Ability Enhancement Course) in collaboration with industry experts, ensuring practical exposure to real-world AI applications.
- The inclusion of Edge AI and IoT integrated with Machine Learning was recommended as a core subject.
- It was proposed to strengthen experiential learning through project-based assessment, with a focus on evaluating students' coding competencies.

Mr. Kavi Arasu recommended the inclusion of Spring Boot framework content in the Advanced Java course for the 2024 scheme syllabus to enhance industry relevance and application-oriented learning

All BOS members unanimously approved the syllabus for the 5th to 8th semesters under the 2024 scheme, as well as the complete 1st to 8th semester scheme for 2026. The revised CIE and SEE question paper pattern was also approved by all members.

The meeting concluded with the Chairman thanking the members for their valuable inputs and suggestions. Special thanks to the VTU Nominee Dr. Dinesh Naik, External Subject Experts Dr. Ashok Kumar A R and Dr. Manjunath T.K., and Industry experts Mr. Kavi Arasu and Alumni Mr. Bharath. A special thanks to final year students Ms. Charushila and Mr. Deekshith. Thanks to all internal faculty members for their time and constructive inputs towards strengthening the AI & DS curriculum under the 2026 Scheme.

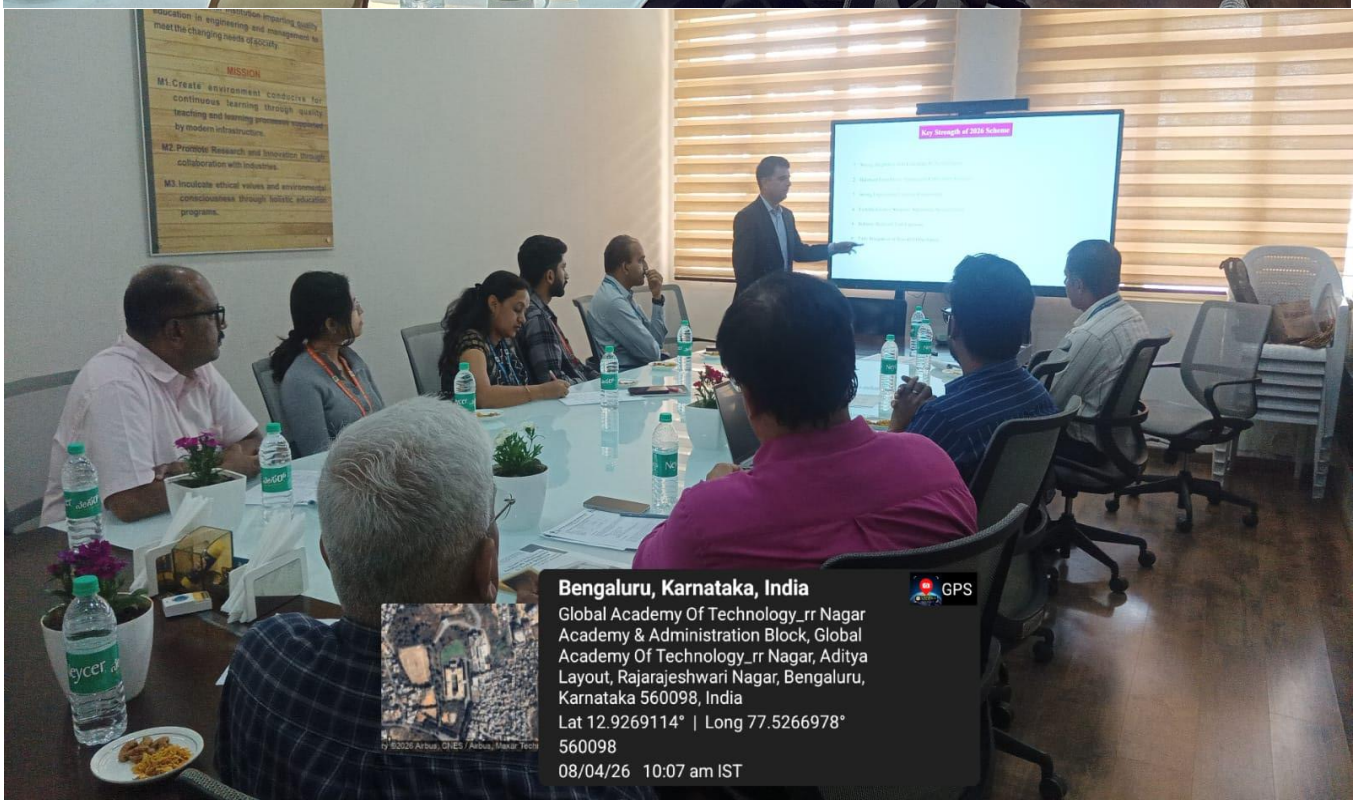
Dr Girish Rao Salanke N S
Chairman - Board of Studies
Professor &Head AI&DS Department

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE





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Proceedings of

BOARD of STUDIES

Program

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

A.Y. 2025-2026

28 March 2026

Global Academy of Technology

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Bos Chairman | Associate Dean Academics | Principal

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1. INTRODUCTION & OBJECTIVES

Purpose of the Meeting:

- Confirmation of the minutes of the previous BOS meeting.
- Review of action taken on the resolutions passed in the previous BOS meeting.
- Discussion and approval of the scheme and syllabus for the academic year 2026–27 (if applicable).
- Discussion and approval of new courses / elective courses in emerging areas such as Artificial Intelligence, Machine Learning, Data Science, Generative AI, etc.
- Approval of course outcomes (COs) and mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs).
- Discussion on NCrF compliance and credit structure modifications as per NEP guidelines.
- Approval of laboratory courses, project guidelines, and internship structure.
- Discussion on value-added courses, certification programs, and industry collaborations.
- Discussion on assessment methods and evaluation schemes (CIE, SEE, rubrics, etc.).
- Approval of question paper patterns and examination guidelines.
- Discussion on research initiatives, innovation activities, and student project domains.
- Discussion on faculty development programs, workshops, and expert lectures.
- Any other matter with the permission of the Chair.

2. CONSTITUTION OF BoS

Table of participants

Sl. No	Designation	Name	Affiliation	E-Mail ID & Contact No.
1.	Chairman	Dr. Roopa B S	Professor & Head. AI&ML Dept., GAT	hodaiml@gat.ac.in/ roopabs@gat.ac.in +91 9980414396
2.	Subject Expert	Dr. S. Seema	Professor, CSE Dept., MSRIT, Bengaluru	seemas@msrit.edu +91 9900821964
3.	VTU Nominee	Dr. M Dakshayini	Professor & Head of AI&ML Department BMSCE, Bengaluru	dakshayini.ise@bmsce.ac.in +91 9880676988
4.	Industry Representatives	Mr. Rithesh Sreenivasan	Senior AI Consultant, Ex-Senior Scientist, Philips	rstechcreations2020@gmail.com +91 9972960475
5.	Industry Representatives	Dr. Sowmya Rasipuram	Senior AI/ML Lead, OPTUM Global Solutions	Sowmya.rasipuram@gmail.com +91-9972693693
6.	Alumni	Harshitha K Shiggavkar	Software Engineer, Factors.ai	harshithakshiggavkar@gmail.com +91 8073204311
7.	Members	Dr.B.K.S.V.L. Varaprasad	Professor, AI&ML Dept., GAT	Varaprasad.bksvl@gat.ac.in +91 9449030070

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8.	BoS Convener	Dr. Ramya C	Associate Professor, AI&ML Dept., GAT	ramya.c@gat.ac.in +91 9686737360
9.	Members	Prof. Vasugi I	Assistant Professor, AI&ML Dept., GAT	vasugi@gat.ac.in +91 9739322705
10.	Members	Prof. Christlin Shanuja C	Assistant Professor, AI&ML Dept., GAT	christlin@gat.ac.in +91 8217571383
11.	Invited Members	Dr. H B Balakrishna	Principal, GAT	principal@gat.ac.in +91 9845395535
12.	Invited member	Dr. Vijay T	Dean Academics, GAT	vijayt@gat.ac.in/ dean@gat.ac.in +91 9942436354

Proof of invitation sent and response received

3/26/26, 12:28 PM Mail - Christlin Shanuja - Outlook

Outlook

Invitation to Board of Studies (BOS) Meeting – 28 March 2026

From Department of AIML <hodaiml@gat.ac.in>
Date Wed 3/25/2026 12:16 PM
To Dakshayani M <dakshayini.ise@bmsce.ac.in>; seemas@msrit.edu <seemas@msrit.edu>; R S <rstechcreations2020@gmail.com>; sowmya.rasipuram@gmail.com <sowmya.rasipuram@gmail.com>; sowmya.r@iiitb.org <sowmya.r@iiitb.org>; Harshitha K Shiggavkar <harshithakshiggavkar@gmail.com>; Varaprasad <Varaprasad.bksvl@gat.ac.in>; Dr. Roopa B S <roopabs@gat.ac.in>; Ramya C <ramya.c@gat.ac.in>; Vasugi I <vasugi@gat.ac.in>; Christlin Shanuja <christlin@gat.ac.in>
Cc Dean, Global Academy of Technology <dean@gat.ac.in>; Principal GAT <principal@gat.ac.in>

Dear Sir/Madam,

Greetings from the Department of Artificial Intelligence and Machine Learning.

You are cordially invited to attend the **Board of Studies (BOS) meeting** scheduled as per the details below:

Date: 28 March 2026
Time: 11:00 AM
Venue: AIB LAB1

The purpose of the meeting is to deliberate and seek recommendations for the **approval of the 2024 Scheme syllabus (5th to 8th Semester)** and to discuss the **proposed 2026 Scheme curriculum for 3rd to 8th Semester**.

Your valuable insights and suggestions will greatly contribute to strengthening the academic structure and ensuring that the curriculum aligns with current technological advancements and industry requirements.

We kindly request you to make it convenient to attend the meeting. The detailed agenda and relevant documents have been shared in the previous mail.

Looking forward to your esteemed presence and valuable guidance.

Warm Regards

Dr. Roopa B S
Professor & Head
Artificial Intelligence & Machine Learning

Contact:9180286603157/58-810
E-mail: hodaiml@gat.ac.in/ roopabs@gat.ac.in

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Rajarajeshwari Nagar
Bengaluru - 560098
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3. CONFIRMATION OF PREVIOUS MINUTES

Statement:

"The Minutes of the previous BoS meeting held on 25/05/2025 were circulated and confirmed."

Resolution No.: GAT/AIML/BOS/2024-25/02

4. ACTION TAKEN REPORT (ATR)

Sl No	Previous Discussion	Status (Completed/ Partial/Pending)	Remarks
1	Curriculum revisions	Completed	• Ethical writing practices is implemented in Major & Mini-project report writing and verified through authentic plagiarism tools. • Hands on sessions of DSA was planned and executed as a part of Value-Added Programs. • Project based learning associated with every course that allows students to end up with mini-projects within the scope of course syllabus
2	Course additions	Completed	• LLM • Explainable AI • Generative AI • Business Intelligence using PowerBI • Mobile APP Development, Data Visualization using Tableau
3	Internship policy updates	Completed	As per VTU norms.
4	Any points discussed	Completed	Reference: Resolution No-GAT/AIML/BOS/2024-25/02

5. STAKEHOLDER FEEDBACK ANALYSIS

5.1. Feedback

Sources	**Remark**
Students	Need more hands-on AI/ML labs and industry tools
Alumni	Suggested inclusion of MLOps and deployment
Industry	Need exposure to real datasets and cloud platforms
Faculty	Need updated syllabus aligned with AI advancements

5.2. Need Analysis

Level	**Remark**
Local	Demand for AI engineers in IT companies
Regional	Growing AI startups and automation sectors
National	AI adoption in healthcare, fintech and robotics
Global	Requirement for AI research and innovation skills

6. VISION, MISSION, PEO & PSO REVIEW

Checklist:

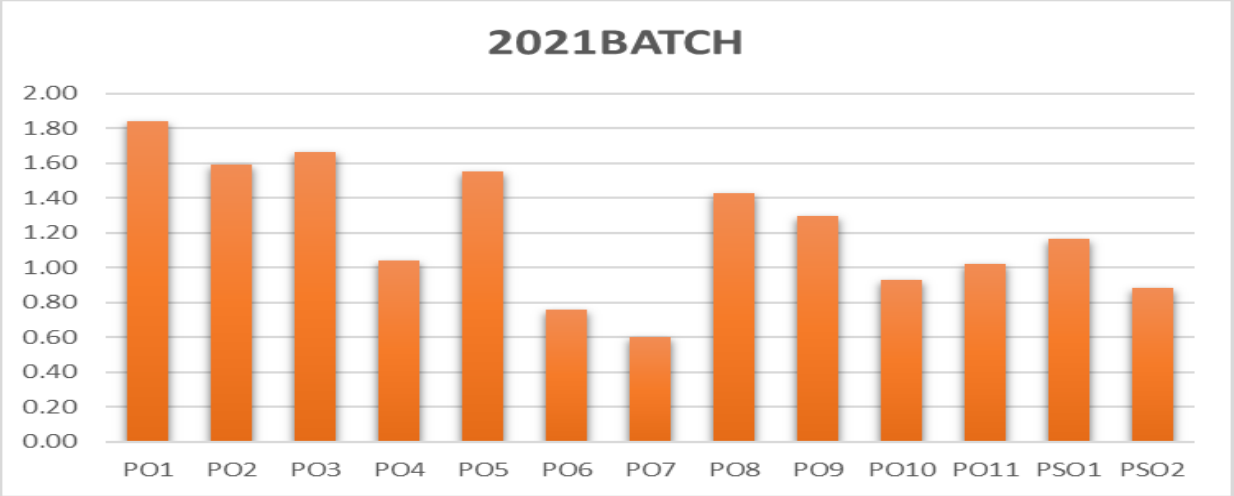
- Alignment with institutional vision — Verified
- Alignment with emerging AI technologies — Verified
- PEO attainment evaluation — Reviewed
- Alumni career progression tracking — Reviewed

Resolution: The Vision, Mission, PEO and PSOs were reviewed by the Board.

7. CO–PO ATTAINMENT REVIEW

7.1 Outgoing Batch Analysis

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
2021-25	1.84	1.59	1.67	1.04	1.55	0.76	0.60	1.43	1.30	0.93	1.02	1.17	0.88



CONTINOUS QUALITY IMPROVEMENT

This table presents the Program Outcome (PO) attainment analysis for the engineering program as per the National Board of Accreditation (NBA) Outcome-Based Education (OBE) framework. The attainment values are computed on a 3-point scale using the combined direct and indirect assessment methods.

The target for PO attainment has been set at 1.80 out of 3.0, which corresponds to 60% of the maximum attainment scale. This is in alignment with NBA guidelines and represents the minimum acceptable level of learning achievement for each Program Outcome.

Status	Attainment Range	CQI Action
Target Met	>= 1.80	Maintain & raise target next cycle
Partially Met	1.50 - 1.79	Medium priority — strengthen COs & pedagogy
Gap Area	< 1.50	High priority — Redefine TLP, add activities

PO-Wise Attainment Summary

The table below presents the attainment values for all 11 Program Outcomes, compared against the target of 1.80, along with identified gaps and CQI priority levels.

PO	Description	Value	Target	Gap	Status	CQI Priority
PO1	Engineering knowledge	1.84	1.80	-	Target Met	Maintain
PO2	Problem analysis	1.59	1.80	0.21	Partially Met	Medium
PO3	Design and development	1.67	1.80	0.13	Partially Met	Medium
PO4	Conduct investigations	1.04	1.80	0.76	Gap Area	High Priority
PO5	Modern tool usage	1.55	1.80	0.25	Partially Met	Medium
PO6	Engineer and society	0.76	1.80	1.04	Gap Area	High Priority
PO7	Sustainability	0.60	1.80	1.20	Gap Area	High Priority
PO8	Ethics	1.43	1.80	0.37	Gap Area	High Priority
PO9	Individual and team work	1.30	1.80	0.50	Gap Area	High Priority
PO10	Communication	0.93	1.80	0.87	Gap Area	High Priority
PO11	Project mgmt. & lifelong learning	1.02	1.80	0.78	Gap Area	High Priority

8. CURRICULUM DESIGN & COMPREHENSIVE MAPPING

8.1. Credit Structure

1 credit = 30 hours

Total Program Credits – 160

Credits Distribution for 2024 batch among Curricular Components (160 Credits)

Curricular Component/ Semester	I	II	III	IV	V	VI	VII	VIII	Total
Basic Science Course (BS)	6	6	3	3					18
Engineering Science Course (ES)	14	14							28
Professional Core Course (PC) & IPCC			12	11	8	11	11	0	53
Professional Elective Course (PE)					3	3	3	6	15
Open Elective Course (OE)						3	3		6
Project/ Mini-Project (PW)					2	2	7		11
Seminar on Internship (SR)								10	10
Humanities and Social Sciences, Management Course (HS)			1	2	3				6
Ability Enhancement Course / Mandatory Course (AEC)			1	1	4	1			7
Emerging Technology Course/Programming Language Course (ETC/PLC)			3	3					6
Non-Credit Mandatory Course (NCMC)									0
Total Credits	**20**	**20**	**20**	**20**	**20**	**20**	**24**	**16**	**160**

Credits Distribution for 2026 among Curricular Components (160 Credits)

Curricular Component/ Semester	I	II	III	IV	V	VI	VII	VIII	Total
Basic Science Course (BS)	8	8	4	4					24
Engineering Science Course (ES)	11	11							22
Professional Core Course (PC)			15	13	13	14	4		59
Professional Elective Course (PE)					3	3	6	3	15
Open Elective Course (OE)							3	3	6
Project/ Mini-Project (PW)			1	1	2	3	7		14
Seminar on Internship (SR)								12	12
Humanities and Social Sciences, Management Course (HS)	1	1			3				5
Ability Enhancement Course / Mandatory Course (AEC)			1	1		1			3
Non-Credit Mandatory Course (NCMC)									
Total Credits	**20**	**20**	**21**	**19**	**21**	**21**	**20**	**18**	**160**

8.2 Mapping Framework

8.2.1. PO/PSO Mapping Table

The Program Articulation Matrix is important — it is **foundational** to the NBA accreditation process. It serves as the evidence that your curriculum is intentionally designed to achieve the stated Program Outcomes, and without it, institutions cannot demonstrate OBE compliance. Preparing this matrix *before* implementing the curriculum allows you to proactively identify and fix gaps rather than discovering them during the accreditation audit.

PROGRAM ARTICULATION MATRIX of 2026 Scheme Proposed

CODE	COURSE NAME	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
BMAT26301	Programme Specific Mathematics	3	3	2	2							
BAI26302	Operating System and Computer Organization	3	2	2		2				1		
BAI26303	Machine Learning Foundation & Techniques	3	3	2	2	3						
BAD26304	Data Structure and Applications	3	3	3		2						
BAI26305	Computer Networks	3	2	1		2	1					
BADL26306	Data Structures Lab	2	3	3		3				2	1	
BAIL26307A	Unix Shell Programming	2		2		3				1		
BAIL26307B	Responsible AI						3	2	3		2	
BAIL26307C	Project Management with GIT					3				2	2	3
BAIL26307D	Data Analytics with R	2	3		3	3					2	
BCP26308	Community Project (PBL)			2			3	2	2	3	3	2
BNSS26309	NSS						2	2	2	3	2	
BPE26309	Physical Education							2	1	3	1	
BYOG26309	Yoga							1	2	1		
BMUS26309	Music							1	1	2	2	
BMATD26310	Mathematics Course for Lateral Entry Students	3	3	2								
BPAT26311	Placement and Training									2	3	2
BMAT26401	Programme Specific mathematics	3	3	2	2							
BCS26402	Object Oriented Programming with Java	3	3	3		2				1		

BCS26403	Database Management Systems	3	2	2	1	2						
BIS26404	Design and Analysis of Algorithms	3	3	3	2							
BISL26405	DAA Laboratory	2	3	3		3				2		
BAIL26406A	AI Tools, Frameworks and its application - I	2	2	2		3				1		
BAIL26406B	Programming with SCALA	2	2	3		2						
BAIL26406C	PHP Programming	2		3		2						
BAIL26406D	Full Stack Development using MERN	2		3		3				2		1
BAI26407	Programme Specific Biology	2			2		2	2				
BEP26408	Environmental Science Project				2		3	3	2	2	2	
BNSK26409	NSS						2	2	2	3	2	
BPEK26409	Physical Education							1	1	3	1	
BYOK26409	Yoga							1	2	1		
BMUS26409	Music								1	2	2	
BMATD26410	Mathematics Lateral Entry	3	3	2								
BPAT26411	Placement and Training									2	3	2
BIS26501	Software Engineering and Project Management	2	2	3						3	3	3
BAI26502	Machine Learning Practices	2	3	3	3	3				2		
BAI26503	Big Data Analytics	3	3	2	2	3						
BAI26504	Deep Learning Principles and Practices	3	3	3	2	3						
BAI26505A	Cloud Computing	2		2		3	1					2
BAI26505B	Cyber Security Fundamentals	3	2			2	2		2			
BAI26505C	Time Series Analysis	3	3		3	2						
BAI26505D	Sensors and Systems	3	2	2	2	2						
BRM26506	Research Methodology and IPR				3				3		3	2
BRM26506	Big Data Analytics Lab	2	2	1	2	3					1	
BAI26508	Hackathon-Based Project	2	2	3	2	3	1		1	3	2	2
BPAT26509	Placement and Training					1			1	2	3	2

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BIKS26510	Indian Knowledge System (NPTEL/ VTU online Course)	1					2	2	3	1	1	
BAI26601	Natural Language Processing	3	3	3	2	3						
BAI26602	Image Analytics with Computer Vision	3	3	3	2	3						
BAI26603	Foundation of Data Science	3	3		3	2					2	
BAI26604	AI and its Applications	3	2	3		3	2		1			
BAI26605A	Parallel and Distributed Computing	3	2	2		3						
BAI26605B	Cryptography	3	2			2	2		3			
BAI26605C	Reinforcement Learning	3	3	3	2	3						
BAI26605D	Augmented Reality and Virtual Reality	2		3		3	2					
BAIL26606	Image Analytics with CV Lab	2	3	3	2	3				2		
BAIL26607A	AI Tools, Frameworks and its application - II		2	3		3				2		
BAIL26607B	Explainable AI		3		3	2	2		2			
BAIL26607C	Business Intelligence		3		2	3					2	3
BAIL26607D	Generative AI	2		3		3	2		2			
BAI26608	Capstone Project - Phase I	2	3	3	2	3				3	3	3
BAI26609	Universal Human Value (NPTEL/VTU ONLINE)						3	2	3		2	
BPAT26611	Placement and Training									2	3	2
BAI26701	Quantum Computing	3	3	2	2	2						
BAI26702A	Data Mining and Data Warehousing	3	3	2	3	2						
BAI26702B	Data Security & Privacy	2	2			2	3		3			
BAI26702C	Agentic AI & Large Language Model	3	3	3		3	2					
BAI26702D	Robotics	3	2	3	2	3						
BAI26703A	High Performance Computing	3	2	2		3						
BAI26703B	AI in Block Chain	2	2	2		3	2		2			
BAI26703C	Edge AI & MLOps	2		3		3				2		2
BAI26703D	Cyber Physical Systems	3	2	2		3	2					
BAI26704x	Open Elective Course-I (NPTEL)	2	2			2				1	2	

BAI26705	Capstone Project - Phase-II	2	3	3	3	3				3	3	3
BAI26801x	Professional Elective-V (NPTEL)	2	2			2				2	2	
BAI26802x	Open Elective-II (NPTEL)	1				2				1	2	
BAI26803x	Internship (15 weeks/90 working days)		2	3		3	2		2	3	3	3
No. of Courses Mapped	(Out of 73)	55	49	47	28	53	22	13	24	35	30	16
Coverage %	(Courses addressing PO) %	71	64	61	36	69	29	17	31	45	39	21
Effectiveness Rating	(H/M/L)	**H**	**H**	**H**	**M**	**H**	**M**	**M**	**M**	**M**	**M**	**M**

8.2.2. SDG Mapping Table

Mapping of courses to Sustainable Development Goals (SDGs) addressed in the programme.

SDGs	Courses
SDG 3 – Good Health & Well-Being	BAI26407 – Programme Specific Biology
	BAI26609 – Universal Human Values (NPTEL/VTU Online)
	BYOG26309 / BYOK26409 – Yoga
	BPE26309 / BPEK26409 – Physical Education (Sports & Athletics)
	BAI26604 – AI and its Applications (AI in healthcare diagnostics)
SDG 4 – Quality Education	BMAT26301 / BMAT26401 – Program Specific Mathematics
	BMAT26310 / BMAT26410 – Mathematics for Lateral Entry Students
	BIS26501 – Software Engineering & Project Management
	BRM26506 – Research Methodology and IPR
	BIKS26510 / BIKS26706 – Indian Knowledge System (NPTEL/VTU Online)
	BAI26609 – Universal Human Values (NPTEL/VTU Online)
	BPAT26311/411/509/611 – Placement & Training (NCMC, Sems 3–6)
SDG 5 – Gender Equality	BAI26609 – Universal Human Values (NPTEL/VTU Online)
	BAIL26307B – Ethics & Public Policy of AI (AEC Lab, Sem 3)
	BCP26308 – Community Project (Project-Based Learning)
SDG 9 – Industry, Innovation & Infrastructure	BAI26502 – Machine Learning Practices
	BAI26504 – Deep Learning Principles and Practices
	BAI26503 – Big Data Analytics / BAIL26507 – Big Data Analytics Lab
	BAI26701 – Quantum Computing
	BAI26508 – Hackathon-Based Project

SDGs	Courses
	BAIL26607D – Generative AI
SDG 11 – Sustainable Cities & Communities	BEP26408 – Environmental Science Project (Sem 4)
SDG 13 – Climate Action	BEP26408 – Environmental Science Project
	BAI26604 – AI and its Applications (climate/environment modeling)
SDG 17 – Partnerships for the Goals	BCP26308 – Community Project (Project-Based Learning)
	BAI26508 – Hackathon-Based Project
	BAI26608 / BAI26705 – Capstone Project Phase I & II
	BPAT26311/411/509/611 – Placement & Training (Industry linkage)
	BAI26704A/B/C/D – Open Elective (NPTEL) – Global MOOC collaboration

8.2.3. WK Mapping Table

Mapping of courses to World Knowledge (WK) categories.

Knowledge Profile (WK) Coverage Summary			
WK Profile	**Description**	**No. of Courses**	**Courses**
WK1	Natural & Social Sciences	**6**	BMAT26301 – Programme Specific Mathematics; BMATD26310 – Mathematics Course for Lateral Entry Students; BMAT26401 – Programme Specific Mathematics; BAI26407 – Programme Specific Biology; BEP26408 – Environmental Science Project; BMATD26410 – Mathematics Lateral Entry
WK2	Mathematics, Data Analysis & Computing	**15**	BMAT26301 – Programme Specific Mathematics; BAI26303 – Machine Learning Foundation & Techniques; BAD26304 – Data Structure and Applications; BAIL26307D – Data Analytics with R; BMATD26310 – Mathematics Course for Lateral Entry Students; BMAT26401 – Programme Specific Mathematics; BIS26404 – Design and Analysis of Algorithms; BMATD26410 – Mathematics Lateral Entry; BAI26502 – Machine Learning Practices; BAI26503 – Big Data Analytics; BAI26504 – Deep Learning Principles and Practices; BAI26505C – Time Series Analysis; BAI26603 – Foundation of Data Science; BAI26701 – Quantum Computing; BAI26702A – Data Mining and Data Warehousing

WK3	Engineering Fundamentals	**9**	BAI26302 – Operating System and Computer Organization; BAD26304 – Data Structure and Applications; BAI26305 – Computer Networks; BCS26402 – Object Oriented Programming with Java; BCS26403 – Database Management Systems; BIS26404 – Design and Analysis of Algorithms; BIS26501 – Software Engineering and Project Management; BAI26505A – Cloud Computing; BAI26505B – Cyber Security Fundamentals
WK4	Specialist / Frontier Knowledge	**18**	BAI26303 – Machine Learning Foundation & Techniques; BAIL26406A – AI Tools, Frameworks and its Application - I; BAI26502 – Machine Learning Practices; BAI26504 – Deep Learning Principles and Practices; BAI26505D – Sensors and Systems; BAI26601 – Natural Language Processing; BAI26602 – Image Analytics with Computer Vision; BAI26604 – AI and its Applications; BAI26605C – Reinforcement Learning; BAI26605D – Augmented Reality and Virtual Reality; BAIL26607A – AI Tools, Frameworks and its Application - II; BAIL26607D – Generative AI; BAI26701 – Quantum Computing; BAI26702C – Agentic AI & Large Language Model; BAI26702D – Robotics; BAI26703A – High Performance Computing; BAI26703C – Edge AI & MLOps; BAI26703D – Cyber Physical Systems
WK5	Sustainability & Design	**5**	BCP26308 – Community Project (PBL); BEP26408 – Environmental Science Project; BAI26505A – Cloud Computing; BAI26703A – High Performance Computing; BAI26703C – Edge AI & MLOps
WK6	Engineering Practice & Technology	**20**	BADL26306 – Data Structures Lab; BAIL26307A – Unix Shell Programming; BAIL26307C – Project Management with GIT; BAIL26307D – Data Analytics with R; BISL26405 – DAA Laboratory; BAIL26406A – AI Tools, Frameworks and its Application - I; BAIL26406B – Programming with SCALA; BAIL26406C – PHP Programming; BAIL26406D – Full Stack Development using MERN; BIS26501 – Software Engineering and Project Management; BRM26506L – Big Data Analytics Lab; BAI26508 – Hackathon-Based Project; BAI26605A – Parallel and Distributed Computing; BAI26605B – Cryptography; BAIL26606 – Image Analytics with CV Lab; BAIL26607A – AI Tools, Frameworks and its Application - II; BAIL26607B – Explainable AI; BAIL26607C – Business Intelligence; BAI26702B – Data Security & Privacy;

			BAI26703B – AI in Blockchain
WK7	Society, Safety & Professional Role	7	BAIL26307B – Responsible AI; BCP26308 – Community Project (PBL); BEP26408 – Environmental Science Project; BRM26506 – Research Methodology and IPR; BAI26604 – AI and its Applications; BAI26609 – Universal Human Value (NPTEL/VTU); BAI26702B – Data Security & Privacy
WK8	Research & Critical Thinking	10	BAI26503 – Big Data Analytics; BRM26506 – Research Methodology and IPR; BAI26508 – Hackathon-Based Project; BIKS26510 – Indian Knowledge System (NPTEL/VTU); BAI26605D – Augmented Reality and Virtual Reality; BAI26608 – Capstone Project - Phase I; BAI26702C – Agentic AI & Large Language Model; BAI26705 – Capstone Project - Phase II; BAI26801x – Professional Elective-V (NPTEL); BAI26803x – Internship (15 weeks/90 working days)
WK9	Ethics & Inclusive Behaviour	7	BAIL26307B – Responsible AI; BCP26308 – Community Project (PBL); BRM26506 – Research Methodology and IPR; BIKS26510 – Indian Knowledge System (NPTEL/VTU); BAI26604 – AI and its Applications; BAIL26607B – Explainable AI; BAI26609 – Universal Human Value (NPTEL/VTU)

8.3 Percentage-Based Reporting

% of courses revised	23.53%
% skill-based courses	23.53%
% courses with apprenticeship/fieldwork	19.12%
% online credited courses (SWAYAM, NPTEL)	20.59%
% project-based courses	7.35%

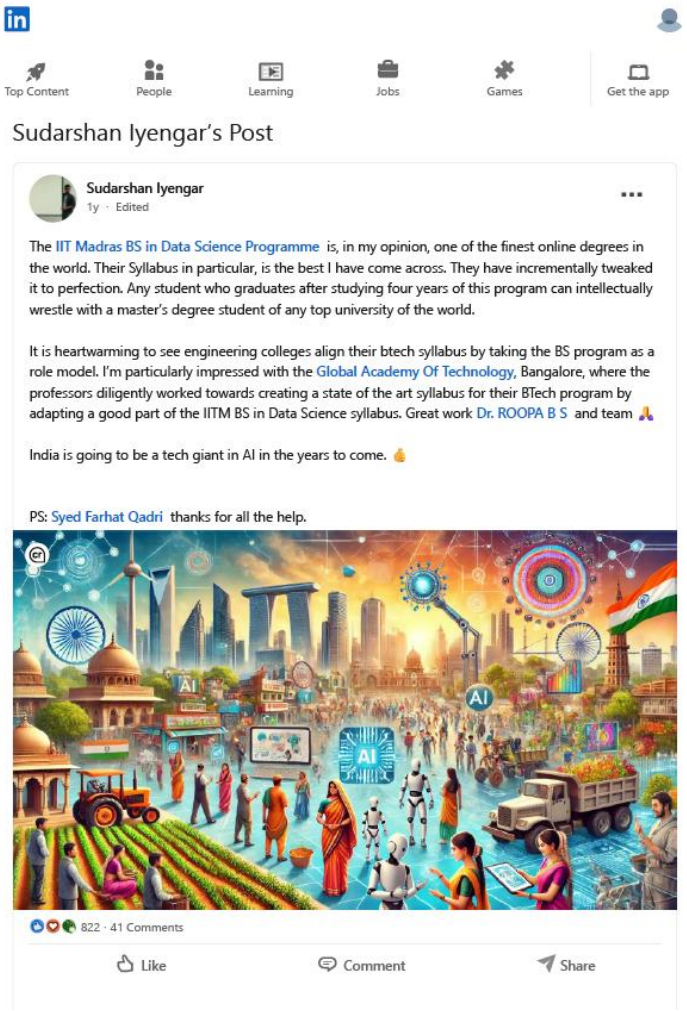
9. NEW COURSE PROPOSALS

*Concluding statement of **approval by BoS***

Course Code & Title	Rationale	Course Objectives	COs (Summary)	Skill Alignment (NCrF)	Assessment Scheme	Industry Relevance	SDG Mapping
BAI26303 Machine Learning Foundation &	Designed using IIT Madras benchmark to provide	Develop a strong foundation in machine learning by	Understand ML concepts and types Apply	Level 5–6: • Analytical Thinking • Mathemati	CIE 50 + SEE 50	• Data Analyst • ML Engineer (Entry-	• SDG 4: Quality Education • SDG 9: Industry,

Techniques (MLF&T)	strong theoretical grounding in ML concepts, mathematical foundations, and algorithmic understanding essential for AIML students.	understanding core paradigms, applying supervised and unsupervised techniques, analyzing model performance and optimization, and building effective problem-solving skills.	regression and classification algorithms Analyze clustering and dimensionality reduction Evaluate model performance metrics	cal Modeling • Problem Solving • Algorithmic Reasoning		level) • AI Research Intern • Foundation for roles in companies like Google, Amazon	Innovation & Infrastructure
BAI26502 Machine Learning Practices MLP	Complements MLF&T by focusing on hands-on implementation using real-world datasets, bridging theory with practice, and enabling deployment-oriented learning	Implement ML algorithms, preprocess data, build and evaluate models, and develop end-to-end ML pipelines.	Apply ML models, perform data processing, build pipelines using tools, and solve real-world problems.	Level 5–6: • Programming Skills • Data Handling • Tool Usage (Python, sklearn) • Practical Problem Solving	• CIE (50%): Lab exercises, mini-projects, continuous evaluation • SEE (50%): Practical exam / project demo	• ML Engineer • Data Scientist • AI Developer • Industry tools aligned (Python, sklearn, Jupyter)	• SDG 4: Quality Education • SDG 8: Decent Work & Economic Growth • SDG 9: Industry, Innovation & Infrastructure
BAI26703C Edge AI & MLOps	Deploy AI in real-world systems	Implement edge AI & pipelines	Architecture, deployment, MLOps, evaluation	Level 6–7	CIE 50 + SEE 50	IoT, AI deployment	SDG 9, 11
BAI26703D Cyber Physical Systems	Integrate physical + digital systems	Design smart systems	CPS concepts, modeling, design, analysis	Level 6–7	CIE 50 + SEE 50	Robotics, smart systems	SDG 7, 9, 11

Proof of Benchmarking -



10. SKILL, MOOC & VALUE-ADDED REVIEW

SKILL	MOOC	VAP
Git & GitHub	Python for Data Science	Mobile App Development
TinyML	Operating System	OOPs and DSA in JAVA
Data Visualization using PowerBI/Tableau	Introduction to Machine Learning	Full Stack Development
MATLAB tools and Applications	Computer Networks	Competitive coding using JAVA/Python

11. INTERNSHIP & INDUSTRY INTEGRATION

Parameter	Scheme Provision
% Students completing internships	Implicitly 100% (mandatory for degree)
Semester-long apprenticeship	15-week (Scheme A) and 30-week (Scheme B) both well-structured
Industry co-teaching model	Implicit in evaluation (hackathon SEE, capstone SEE, internship CIE)
Hackathon-based credits	Well-designed — semester-long, industry-evaluated, prototype deliverable

12. RESEARCH & CAPSTONE

Mandatory research publication/patent

GLOBAL ACADEMY OF TECHNOLOGY

(An Autonomous Institution, affiliated to VTU, Belagavi, recognized by Karnataka and Approved by AICTE, New Delhi)

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

LAYERED SCHEDULE FOR PROJECT PRESENTATION (AY 2025-26)

For 6th SEMESTER STUDENTS (EVEN SEM 2025-26)

Review	Date	Particulars
Review 0	19/02/2026	Synopsis Presentation
Review 1	16/03/2026	Literature Survey-**Min 36 Papers** (The papers selected should be from renowned journal publications like IEEE Transaction, IEEE Access, Elsevier, Springer, PLOS ONE....) Project Completion up to 50% + Survey Paper Publication Status.
Review 2	11/05/2026	Project Completion up to 75% + Survey Paper Publication Status. (With report Draft Copy)

Instructions:

- *Title of the Project should be approved by the Respective Guide.*
- *The project should be based on the base paper which is approved by Guide.*
- *By April 30th 2026, the status of the paper publication should be submitted/ accepted and the draft copy of the report should be submitted to your respective guides.*
- *Students must maintain a log book documenting their work, which should be regularly signed by both the project guide and the Head of the Department (HoD). The completed and signed log book must be submitted on the day of the presentation.*

Note:

Your project should be based on a domain mapped to Sustainable Development Goal **(SDG) 9 – Industry, Innovation, and Infrastructure.**
Further, the selected project must be derived from a reputed and well-renowned base research paper (published in a recognized journal or conference). The chosen base paper and domain should clearly justify relevance to SDG 9. are informed to submit the domain and base paper details for approval from the Project Coordinator.

Domain selection and approval from there Project Coordinator are mandatory before the Zeroth Review. Projects without prior approval will not be considered for review.

The proposed AI-based project should contribute to SDG 9 (Industry, Innovation, and Infrastructure) by leveraging artificial intelligence to enhance industrial efficiency, innovation, and infrastructure resilience.

Please ensure timely submission and adherence to the above guidelines.

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Capstone Evaluation Rubric

Review 0: Project Phase I (Project Synopsis/ Proposal Evaluation)

Total: 20 Marks

			Level of Achievement		
		Marks	**Good**	**Average**	**Poor**
A	**Identification of problem domain & Detailed Analysis**	7	Clearly identifies a relevant SDG-9 problem and conducts **detailed technical and contextual analysis**	Identifies the problem but **analysis is superficial or incomplete**	Problem not clearly identified or only **partial / weak analysis**
			(7–6)	**(5–3)**	**(2–0)**
B	**Defining problem statement & objective (Cognitive)**	7	Clearly defines problem statement and formulates **measurable, achievable and SDG-9–aligned objectives**	Problem defined but **objectives are vague or not deliverable**	Problem definition unclear and **objectives missing or irrelevant**
			(7–6)	**(5–3)**	**(2–0)**
C	**Presentation (Q&A) (Psychomotor & Affective)**	6	Communicates ideas **clearly and confidently**, answers **all Q&A effectively**	Communicates ideas clearly but **unable to answer most Q&A**	Poor communication and **unable to answer Q&A**
			(6–5)	**(4–2)**	**(1–0)**

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Phase-I Review-I

Total: 30 Marks

Criterion	Marks	Good	Average	Poor
	Marks Range	**15–12**	**11–6**	**5–0**
A. Problem Analysis, Methodology & Literature Survey *(Cognitive, Psychomotor)*	**15**	• Clearly defines problem aligned to **SDG-9.** • Well-designed methodology/algorithm using modern tools or hardware. • **Literature survey includes minimum 36 papers** from reputed journals (IEEE Transactions, IEEE Access, Elsevier, Springer, PLOS ONE, etc.) • Strong comparison of methods and **clear research gap identified.**	• Problem statement is defined but SDG-9 alignment is partial. • Methodology is basic or partially justified. • Literature survey includes **minimum 20 papers**, some may not be from top-tier journals. • Limited comparison and **unclear research gap.**	• Problem statement unclear or not mapped to SDG-9. • Methodology/design not clearly explained. • Very few papers (less than 15) referred or **non-reputed sources used.** • No clear gap identification.
	Marks Range	**10–8**	**7–4**	**3–0**
B. Implementation Progress & Results *(Cognitive, Psychomotor)*	**10**	• Clear objectives defined • At least one objective fully implemented. • Demonstrates meaningful partial results with justification. • Results are relevant to problem and methodology.	• Objectives defined but implementation is partial • Initial or incomplete results shown • Results lack proper validation or explanation	• Objectives unclear or not measurable • Implementation not started or very minimal • No meaningful results demonstrated
	Marks Range	**5–4**	**3–2**	**1–0**
C. Presentation & Technical Documentation *(Cognitive, Affective)*	**5**	• Clear and confident PPT presentation • Demonstrates at least two objectives • Answers most questions during Q&A • Submits minimum two chapters of report (Introduction & Literature Survey)	• Presentation is understandable but lacks clarity • Demonstrates at least one objective • Answers only a few questions • Submits only one chapter of report	• Poor communication and slide organization • Unable to explain work or answer questions • Report not submitted or incomplete

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Phase-I Review-II

Total: 50 Marks

Level of Achievement					
Criteria		**Marks**	**Good**	**Average**	**Poor**
A	**Completion of at least 2 objectives with experimental results.** ***(Cognitive and Psychomotor)*** **Presentation and communication skills** ***(Affective and Psychomotor)***	**20**	• Students complete at least 2 objectives with experimental results demonstrated. • Demonstrated good presentation and communication skills	• Students complete at least one objective. • Demonstrated average presentation and communication skills	• Extra time required for completion at least one objective. • Requires more efforts in presentation and communication skills
			(20-13)	**(12-7)**	**(6-1)**
B	**Technical report with plagiarism report.** ***(Cognitive and Affective)***	**10**	Technical report with less than 10% of plagiarism	Technical report with less than 15% of plagiarism	Technical report with less than 20% of plagiarism
			(10-7)	**(6-3)**	**(2-1)**
C	**Paper Publication Status/ Patent Status**	**20**	Published / Accepted in reputed journal.	Paper/Patent accepted but awaiting publication	Paper/Patent submitted and under consideration
			(10-7)	**(6-3)**	**(2-1)**

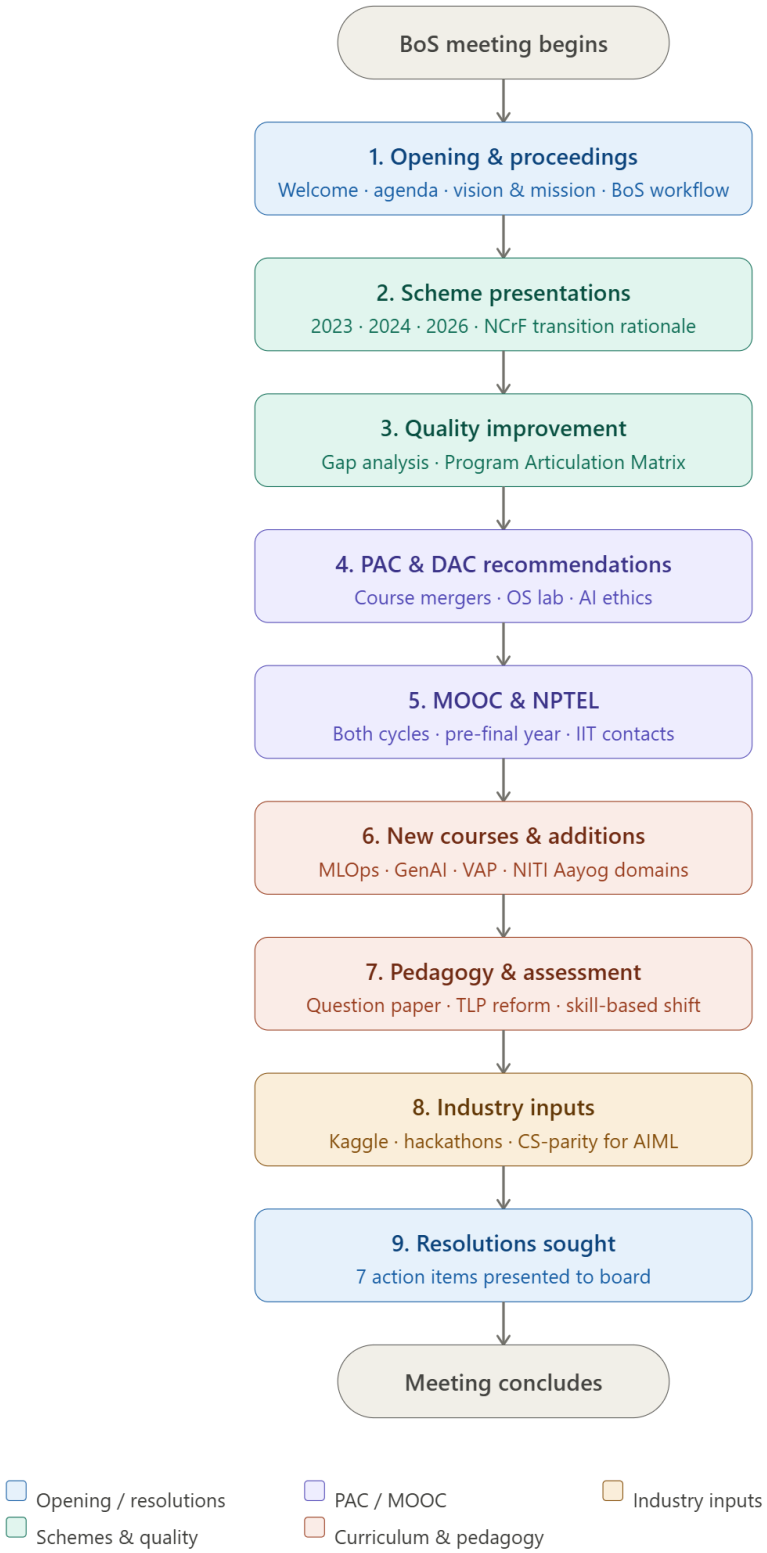
RUBRICS for PROJECT Phase II: Review – I (2023 Batch AY 2026-27)						
No.	**Parameters**	**Marks**	**Outstanding**	**Very Good**	**Fair**	**Poor**
A	**Implementation & Execution**	**10**	Project is fully functional, well-implemented, and meets objectives.	Project is mostly functional with minor issues.	Project has major issues but shows effort.	Project is incomplete or non-functional.
			(10 Marks)	**(9-7 Marks)**	**(6-4 Marks)**	**(3-0 Marks)**
B	**Innovation & Creativity**	**5**	Highly innovative with a novel approach.	Some elements of innovation but mostly conventional.	Basic implementation with minimal innovation.	No innovation, standard implementation.
			(5 Marks)	**(4 Marks)**	**(3-2 Marks)**	**(1-0 Marks)**

C	**Results & alysis**	**5**	Clear, well-explained results with in-depth analysis. **(5 Marks)**	Results are presented but analysis lacks depth. **(4 Marks)**	Results are present but with weak analysis. **(3-2 Marks)**	Poor or missing results and analysis. **(1-0 Marks)**
D	**Paper Publication Status**	**10**	Published and available online **(10 Marks)**	Accepted but awaiting publication **(9-7 Marks)**	Submitted and under consideration **(6-4 Marks)**	No attempt made **(3-0 Marks)**
E	**Guide Progress Evaluation**	**10**	Meets the guide consistently as per the agreed schedule, always prepared, punctual, and actively engages in discussions. Communicates progress and implements feedback effectively. **(10 Marks)**	Meets the guide regularly with occasional minor delays. Comes prepared most of the time and follows up on feedback with some lapses. **(9-7 Marks)**	Meetings are inconsistent, with some long gaps. Sometimes unprepared and slow in implementing feedback. **(6-4 Marks)**	Does not meet the guide at all or fails to communicate and make progress. **(3-0 Marks)**

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RUBRICS for PROJECT Phase II: Review – II (2023 Batch AY 2026-27)						
No.	**Parameters**	**Marks**	**Outstanding**	**Very Good**	**Fair**	**Poor**
A	**Implementation & Execution**	**10**	Project is fully functional, well-implemented, and meets objectives.	Project is mostly functional with minor issues.	Project has major issues but shows effort.	Project is incomplete or non-functional.
			(10 Marks)	**(9-7 Marks)**	**(6-4 Marks)**	**(3-0 Marks)**
B	**Quality of results / conclusions / solutions.**	**10**	The defined objective stated are met. Extensive studies are done and inferences drawn. Clear and valid suggestions made for further work.	Many of the expected objectives are achieved. Many observations and inferences are made and attempts to identify the issues are made. Some suggestions have been made for further work.	Only a few of the expected objectives are achieved. A few inferences are made on the observed failures/issues. No further work suggested.	None of the expected objectives are achieved. The team is unable to derive any inferences on the failures/issues observed. Any kind of observation or studies is not made.
			(10 Marks)	**(9-7 Marks)**	**(6-4 Marks)**	**(3-0 Marks)**
C	**Report**	**30**	The report is as per the prescribed format and having less than 15% plagiarism.	The report is as per the format prescribed and having plagiarism between 15% to 20%.	The report is as per the format prescribed and having plagiarism between 20% to 25%.	The report is as per the format prescribed and having plagiarism greater than 25%.
			(30 Marks)	**(29-19 Marks)**	**(18 - 12 Marks)**	**(11-0 Marks)**
D	**Paper Publication Status/ Patent Status**	**10**	Published and available online in reputed journal.	Paper/Patent accepted but awaiting publication	Paper/Patent submitted and under consideration	No such attempt made
			(10 Marks)	**(9-7 Marks)**	**(6-4 Marks)**	**(3-0 Marks)**

13. BoS APPROVALS



BOARD OF STUDIES

Minutes of Meeting

1. Opening & Proceedings

- Welcome note delivered; absentee members were formally introduced to the board.
- Agenda of the meeting was presented and confirmed by the chairperson.
- Vision and Mission of the program were reiterated to all members.
- Curriculum design process was elaborated, covering the entire end-to-end BoS workflow.

2. Scheme Presentations & Comparisons

- 2023 scheme was presented — the one-sheet format was noted and appreciated.
- 2024 and 2026 schemes presented; course additions and content changes discussed in detail.
- Rationale for transition from 2024 to 2026 scheme elaborated — driven by NCrF (National Credit Framework) alignment.
- Comparative analysis of all three schemes (2023, 2024, 2026) presented to the board.

3. Quality Improvement & Program Matrices

- Gap Analysis for the 2021 batch was presented; continuous quality improvement discussed.
  - Action item: Document findings and set measurable improvement targets.
- Program Articulation Matrix for 2026 was presented to the board.
  - Gap analysis need not be included in formal BoS documentation going forward.
  - PO6 and PO7 are showing low values — rationale to be reviewed and adequately addressed.

4. PAC & DAC Recommendations

- Inclusion of select recommended courses approved in principle.
- Computer Organization (CO) course was inadvertently omitted from the scheme.
  - Proposed to be merged with the Operating Systems (OS) course.
- OS Lab: Replace Windows-based labs with Linux as the primary operating environment.
- Ethical AI and Responsible AI courses to be merged into a single unified offering.

5. MOOC & NPTEL Courses

- NPTEL MOOCs to be kept open for both odd and even cycles.
- Concerned IITs to be contacted for MOOC course coordination and scheduling.
- NPTEL MOOCs recommended to be positioned in the pre-final year.
- Research Methodology (RM) and Environmental Studies (EVS) recommended as suitable NPTEL MOOC offerings.

6. New Courses & Curriculum Additions

Proposed New Courses

- The courses Machine Learning Foundations and Techniques (MLF&T) and Machine Learning Practices (MLP) have been systematically designed using the IIT Madras curriculum as a benchmark, ensuring comprehensive depth and rigor in machine learning education, in alignment with the academic and professional objectives of the AIML department.
- MLOps — Industry experts or external faculty to be identified for delivery.
- GenAI — Focus on Natural Language Generation and Explainable AI (NLP-centric).

Ability Enhancement Courses (NITI Aayog — India's AI Leadership)

- Courses aligned to India's AI agenda across four strategic domains:
  - Healthcare
  - Education
  - Smart / Digital Cities
  - Agriculture
- Industry expert suggested to source problem statements from the india.ai portal.

7. Pedagogy, Assessment & Evaluation

- Principal: Question paper pattern will be revised from the current academic year.
- Assessment methods and evaluation scheme were presented and discussed.
- Associate Dean (NAAC) — Teaching-Learning Process (TLP) changes discussed:
  - Incorporate skill components into student assessments.
  - Shift classroom methodology from lecture-based to skill-based delivery.
  - Curriculum should reflect institutional differentiation.
  - Faculty inputs solicited on student-centric learning requirements.
  - Industry collaboration opportunities to be pursued — department is open to partnerships.
  - Drastic curriculum overhaul expected and endorsed for the 2026 scheme.
- Each course to conclude with a small integrative project spanning multiple course outcomes.

8. Industry Inputs & Competitive Positioning

- Industry Expert: Students should be encouraged to participate in Kaggle competitions and Hugging Face leaderboards.
- AIML program to cover core CS fundamentals so graduates are competitive with CS/IS counterparts in the industry.
- Hackathon-based projects (intra- or inter-college) to be discussed with other departments for collaborative execution.
- Community-based learning initiatives to be explored.

9. Resolutions Sought from the Board

Resolution No.	Resolution
GAT/AIML/BOS/2025-26/01-1	The Board approves the transition from the 2023 Scheme to the 2024 Scheme as documented, acknowledging the regulatory compliance, pedagogical, value-added programs, skill-based courses and industry-alignment improvements achieved.
GAT/AIML/BOS/2025-26/01-2	The Board reviewed the proposed 2026 Scheme and noted that it incorporates significant improvements over the existing 2024 Scheme, including updated course structures, strengthened electives, and enhanced capstone components aligned with emerging technologies and industry requirements. The Board recommended the 2026 Scheme for approval and implementation from the Academic Year 2026–27, subject to the approval of the Academic Council.
GAT/AIML/BOS/2025-26/01-3	The Board endorses Ethical AI as a mandatory Programme Core Course (PCC) in VI semester with 3:0:0 credit weightage, effective from A.Y. 2026–27.
GAT/AIML/BOS/2025-26/01-4	The Board endorses the two-phase Capstone Project (Phase I: VI sem, 6 credits; Phase II: VII sem, 14 credits) replacing the current fragmented project structure.
GAT/AIML/BOS/2025-26/01-5	The Board endorses Programme Specific Mathematics as the mandatory mathematics course for III and IV semesters, replacing the current generic Discrete Mathematics and Statistics courses.
GAT/AIML/BOS/2025-26/01-6	The Board reviewed and endorsed the proposed assessment methods and evaluation schemes, including the Continuous Internal Evaluation (CIE), Semester End Examination (SEE), and the use of structured rubrics, to ensure a comprehensive and transparent evaluation of student performance.
GAT/AIML/BOS/2025-26/01-7	The Board discussed the implementation of Open Book Examination (OBE) as part of the Continuous Internal Evaluation (CIE-2) to promote analytical thinking and application-oriented learning. It was suggested to introduce Open Book Examination for one course per semester. Accordingly, for the current academic cycle, Database Management Systems (DBMS) in the IV Semester and Natural Language Processing (NLP) in the VI Semester are identified for conducting the CIE-2 evaluation through the Open Book Examination format.

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14. CONCLUDING REMARKS

"The Board of Studies approved the proposed curriculum changes, assessment reforms, and implementation plan effective from Academic Year 2026–27. Further, the proceedings are sent across to Academic Council for approval."

BoS Meeting Attendance Sheet

Department: Artificial Intelligence & Machine Learning
Meeting: Board of Studies Meeting
Date: 28-3-2026
Time: 11AM to 1PM
Venue: Conference Room Main Building

Sl. No	Designation	Name and Affiliation	Signature
1.	Chairman	Dr. Roopa B S Professor & Head. AI&ML Dept., GAT	28/3/26
2.	Subject Expert	Dr. S. Seema Professor, CSE Dept., MSRIT, Bengaluru	AB (mail correspondence)
3.	VTU Nominee	Dr. M Dakshayini Professor & Head of AI&ML Department BMSCE, Bengaluru	28/3/26
4.	Industry Representatives	Mr. Rithesh Sreenivasan Senior AI Consultant, Ex-Senior Scientist, Philips	AB (mail correspondence)
5.	Industry Representatives	Dr. Sowmya Rasipuram Senior AI/ML Lead, OPTUM Global Solutions	Sowmya R
6.	Alumni	Ms. Harshitha K Shiggavkar Software Engineer, Factors.ai	AB (mail correspondence)
7.	Members	Dr.B.K.S.V.L. Varaprasad Professor, AI&ML Dept., GAT	
8.	BoS Convener	Dr. Ramya C Associate Professor, AI&ML Dept., GAT	28/3/26
9.	Members	Prof. Vasugi I Assistant Professor, AI&ML Dept., GAT	28/3/26
10.	Members	Prof. Christlin Shanuja C Assistant Professor, AI&ML Dept., GAT	28/3/26
11.	Invited Member	Dr. H B Balakrishna Principal, GAT	
12.	Invited member	Dr. Vijay T Dean Academics, GAT	28/3/26

29/5/26
Dr. Ramya C
BOS Convener

28/3/26
Dr. Roopa B S
BOS-Chair, HoD-AIML

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Proceedings of

BOARD of STUDIES

Program

CIVIL ENGINEERING

AY 2025 - 26

1st April 2026

BoS Chairman

CHAIRMAN
BOARD OF STUDIES
Dept. of Civil Engineering
Global Academy of Technology
Rajarajeshwarinagar, Bengalure-98

Associate Dean Academics

Professor & Associate Dean Academics
Global Academy of Technology
Bengaluru - 560098.

04.05.2026

Principal

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1. INTRODUCTION & OBJECTIVES

The 8th Board of Studies (BoS) meeting of the Department of Civil Engineering, Global Academy of Technology, Bengaluru, was held on **1st April 2026** under the chairmanship of **Dr. Kiran B**.

The purpose of the meeting was to:

- Review academic performance and curriculum effectiveness
- Align curriculum with **Program Outcomes (POs), Program Specific Outcomes (PSOs), Sustainable Development Goals (SDGs), and Washington Accord WK profiles**
- Ensure compliance with **NEP 2020 and National Credit Framework (NCrF)**
- Strengthen **skill-based, experiential, and industry-integrated learning**
- Improve **CO–PO attainment and placement conversion**
- Ensure **continuous improvement through stakeholder feedback and outcome-based education (OBE)**
- The meeting also focused on curriculum enhancement aligned with **industry requirements, emerging technologies, and academic standards**

2. CONSTITUTION OF BoS

Sl.no	Name & Designation	Role
1	**Dr. Kiran B**, Professor & Head	Chairman
2	**Dr. Dodagoudar G R**, Professor, Department of Civil Engineering, IIT Madras.	VTU Nominee
3	**Dr. L Govindaraju**, Professor, Department of Civil Engineering, UVCE, Bangalore University.	Subject expert
4	**Dr Sanatkumar P Rajamane**, Ph.D. (Struct, IIT Madras), Sannidhi Technologies Inc,	Industry representative
5	**Mr. A C Shivakumar**, Consultant for Bridges.	Invited Industry representative
6	**Mr. Vishal Gowda N S**, Engineer, (Structures) Transys Consulting Pvt. Ltd.	Distinguished Alumnus
7	**Dr. Manu D S**, Associate Professor, Department of Civil Engineering, GAT.	Member
8	**Dr. Ravindra P M,** Professor, Department of Civil Engineering, GAT.	Member
9	**Dr. Allamaprabhu Kamatagi**, Associate Professor, Department of Civil Engineering, GAT.	Member
10	**Dr. Preethi R K**, Associate Professor, Department of Civil Engineering, GAT.	Member
11	**Mrs. Dhavala S**, Assistant Professor, Department of Civil Engineering, GAT.	Member
12	**Dr. H.B. Balakrishna,** Principal, GAT	Invited member
13	**Dr. Vijay Tambrallimath**, Associate Dean Academics, GAT.	Invited member

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Outlook

Invitation to 8th Board of Studies Meeting- Civil Engineering-AY 2026-27

From HOD , Civil Engg Dept GAT <hodcivil@gat.ac.in>
Date Tue 3/24/2026 6:47 PM
To Board of Studies - Civil Engineering <bos-civilengineering@gat.ac.in>
Cc Dean, Global Academy of Technology <dean@gat.ac.in>; Principal GAT <principal@gat.ac.in>

5 attachments (8 MB)
2024 Scheme & Syllabus.pdf; 2026 Scheme UG 1st Year Syllabus.pdf; 2026 -UG Scheme -2026-27 (3rd to 8th Semester).pdf; 2026 -M.Tech Scheme-2026-27.pdf; 2026 -M.Tech Syllabus 2026-27.pdf;

Dear Sir/Madam,

Greetings from the Department of Civil Engineering, Global Academy of Technology, Bangalore.

We are pleased to invite you to the **8th Board of Studies (BoS) Meeting** for the Academic Year 2026–27.

Meeting Details:

- **Date:** 1st April 2026 (Wednesday)
- **Time:** 10:00 AM to 4:00 PM
- **Venue:** Placement Board Room
- **Mode:** Ofline

Agenda of the Meeting:

- 8.1 Review of previous BoS meeting minutes and Action Taken Report
- 8.2 Review of 2024 revised UG scheme (3rd to 8th semester)
- 8.3 Proposal of 2024 scheme syllabus (5th to 8th semester)
- 8.4 Proposal of 2026 syllabus (1st and 2nd semester – Civil Engineering)
- 8.5 Proposal of 2026 scheme (3rd to 8th semester)
- 8.6 Proposal of 2026 PG scheme and syllabus (1st to 4th semester)
- 8.7 Any other items with the permission of the Chair

You are kindly requested to make it convenient to attend the meeting and provide your valuable suggestions towards the enhancement of the curriculum.

Note: Relevant documents and detailed agenda are attached herewith for your reference.

Kindly confirm your availability.

Proof of BoS Invitation sent to all members

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5/4/26, 4:27 PM Inbox - HOD , Civil Engg Dept GAT - Outlook

Outlook

Re: Fw: Invitation to 8th Board of Studies Meeting- Civil Engineering-AY 2026-27

From Dodagoudar G R <goudar@iitm.ac.in>
Date Fri 3/27/2026 9:35 PM
To HOD , Civil Engg Dept GAT <hodcivil@gat.ac.in>

Sir,
I have received all the documents.I am coming physically to the meeting.
Thanks and rgds
G R Dodagoudar

From: Civil <hodcivil@gat.ac.in>
To: rajulgovinda <rajulgovinda@gmail.com>; acshivakumar86 <acshivakumar86@gmail.com>; drspr <drspr@sannidhitechnologiesinc.com>; goudar <goudar@iitm.ac.in>; shipavi <shipavi.6976@gmail.com>
Cc: Civil <hodcivil@gat.ac.in>; Kiran <b.kiran@gat.ac.in>
Date: Friday, 27 March 2026 4:00 PM IST
Subject: Fw: Invitation to 8th Board of Studies Meeting- Civil Engineering-AY 2026-27

Dear Sir/Madam,

Greetings from the Department of Civil Engineering, Global Academy of Technology.

Sharing once again the invitation for the upcoming **BoS meeting** for your kind reference. Kindly acknowledge the email at your convenience.

Looking forward to your confirmation.

Thank you.

WARM REGARDS

Dr. Kiran. B
Professor & Head
Department of Civil Engineering

Phone: 9743372590
E-mail: hodcivil@gat.ac.in

GLOBAL ACADEMY OF TECHNOLOGY

Ideal Homes Township, Rajarajeshwari Nagar,
Bengaluru - 560098

www.gat.ac.in

From: HOD , Civil Engg Dept GAT <hodcivil@gat.ac.in>
Sent: Tuesday, March 24, 2026 6:47 PM
To: Board of Studies - Civil Engineering <bos-civilengineering@gat.ac.in>

https://outlook.cloud.microsoft/mail/id/AAQkADhkZjc3NTczLTViY2QtNGNlMS04OTE5LTE0ODU4MWEzNGIzOAAQAGLrC6saxNBLqXcVbVIO4A… 1/2

Proof of response received from BoS members

3. CONFIRMATION OF PREVIOUS MINUTES

The Minutes of the previous BoS meeting held on 27/05/2025 were circulated and confirmed." Resolution No. (or) dated on 24/06/2025

4. ACTION TAKEN REPORT (ATR)

Sl No	Previous Discussion	Status	Remarks
1	Curriculum revisions	Completed	Updated syllabus, textbooks, CO mapping
2	Course additions	Completed	New electives and skill courses introduced
3	Internship policy updates	Partially Completed	Industry Practice (IP) introduced
4	Stakeholder feedback implementation	Completed	6/7 actions implemented
5	Industry integration	Completed	BIM CoE and software tools introduced
6	Survey camp issue	Completed	Replaced with Industry Practice

5. STAKEHOLDER FEEDBACK ANALYSIS

5.1. Feedback

Sources	Remark
Students	Need for practical exposure, software skills, and industry readiness
Alumni	Suggested inclusion of advanced tools and real-world projects
Industry	Demand for BIM, project management, and field-based learning
Faculty	Need for updated textbooks, CO mapping refinement
Affiliated Colleges	Emphasis on standardization and curriculum uniformity

5.2. Need Analysis

Level	Remark
Local	Demand for site engineers, QC engineers, construction managers
Regional	Growth in infrastructure (metro, roads, smart cities in Karnataka)
National	Alignment with GATE, PSU jobs, Digital India, Smart Cities
Global	Need for AI, BIM, GIS, sustainability, global employability

5.3. Summary Table

Agenda	Key Suggestions	Proposed Action
Curriculum revision	Include emerging technologies	Add BIM, AI, software tools
Skill development	Enhance practical learning	Introduce Industry Practice
Industry collaboration	Strengthen MoUs	Industry-linked projects
Employability	Focus on soft & technical skills	Add certification programs

6. VISION, MISSION, PEO & PSO REVIEW

The Board of Studies reviewed the Vision, Mission, Program Educational Objectives (PEOs), and Program Specific Outcomes (PSOs) of the Department. After detailed deliberation, it was observed that the existing statements are **well-aligned with institutional goals, industry requirements, and current academic standards**. Hence, no modifications were proposed.

The Vision, Mission, PEOs and PSOs were reviewed and retained without any changes, as they continue to be relevant and aligned with institutional objectives and industry expectations.

7. CO–PO ATTAINMENT REVIEW

7.1 Outgoing Batch Analysis

PO	Target	Achieved	Gap	Action Plan
PO1	**2.08**	**1.83**	**0.25**	Strengthen fundamental concepts through remedial classes, tutorial sessions, in core subjects
PO2	**1.68**	**1.60**	**0.08**	Introduce more analytical case studies and real-world problem-solving exercises in core courses.
PO3	**1.40**	**1.45**	**-0.05**	Attainment satisfactory
PO4	**1.54**	**1.57**	**-0.04**	Attainment satisfactory
PO5	**1.85**	**1.81**	**0.03**	Enhance use of modern tools (SAP2000, ETABS, STAAD) through lab sessions and certifications.
PO6	**1.42**	**1.50**	**-0.08**	Attainment satisfactory
PO7	**1.36**	**1.45**	**-0.10**	Attainment satisfactory
PO8	**1.21**	**1.36**	**-0.14**	Attainment satisfactory
PO9	**1.35**	**1.60**	**-0.25**	Attainment satisfactory
PO10	**1.26**	**1.52**	**-0.26**	Attainment satisfactory
PO11	**1.81**	**1.77**	**0.04**	Introduce more project management tools (MSP, Primavera) and industry case studies.
PO12	**1.35**	**1.43**	**-0.08**	Attainment satisfactory

Note: PO targets are fixed based on the consolidation of individual course PO targets. From AY 2025–26 onwards, the PO target will be considered as **60% of 3, i.e., 1.8**.

8. CURRICULUM DESIGN & COMPREHENSIVE MAPPING

8.1. Credit Structure

1 credit = 30 hours

Total Program Credits – 160

Category	Credits	% of Total	Remarks
Basic Sciences	9	5.6%	Advanced mathematics / applied sciences supporting core engineering
Basic Engineering	31	19.4%	Engineering fundamentals (mechanics, materials, etc.)
Humanities & Social Sciences	07	4.4%	Communication skills, management, economics, professional ethics
Program Core	60	37.5%	Major Civil Engineering subjects (Structures, Geotech, Water, Transportation, Environmental)
Program Electives	15	9.5%	Specialized domain courses (Structural, Environmental, Geotech, etc.)
Open Electives	6	3.8%	Interdisciplinary learning (AI, sustainability, etc.)
Projects (Mini + Major)	11	6.8%	Design projects, capstone project
Internship / Industry Practice (IP)	10	6.2%	Field exposure, industrial training
Skill Courses (NCrF aligned)	11	6.8%	Software tools, certifications, practical skills

8.2 Mapping Framework

8.2.1. PO/PSO Mapping Table

POs	Courses (3rd to 8th Semester 2024 Scheme)
PO1	BCV24301, BCV24302, BCV24303, BCV24304, BCVL24305, BCV24401, BCV24402, BCV24403, BCV24404, BCVL24405, BBOK24407, BCV24501, BCV24502, BCV24503, BCVL24504, BCVP24507, BESK24508, BCV24601, BCV24602, BCV24603, BCVL24607, BCV24701, BCV24702, BCV24703
PO2	BCV24301, BCV24302, BCV24303, BCV24304, BCVL24305, BCV24401, BCV24402, BCV24403, BCV24404, BBOK24407, BCV24501, BCV24502, BCV24503, BCVL24504, BCVP24507, BESK24508, BCV24601, BCV24602, BCV24603, BCVL24607, BCV24701, BCV24702, BCV24703
PO3	BCV24301, BCV24302, BCV24303, BCV24304, BCVL24305, BCV24402, BCV24403, BCV24502, BCV24503, BCVL24504, BCVP24507, BCV24601 BCV24602, BCV24603, BCVL24607, BCV24703
PO4	BCV24301, BCV24302, BCV24303, BCV24304, BCV24401, BCV24402, BCVL24405, BCV24502, BCVL24504, BCVP24507, BESK24508, BCV24602, BCV24603, BCVL24607, BCV24701, BCV24702, BCV24703

PO5	BCV24302, BCV24304, BCVL24305, BCV24402, BCV24501, BCV24503, BCVL24504, BCVP24507, BCV24601 BCV24602, BCV24603, BCVL24607, BCV24701, BCV24702, BCV24703
PO6	BCV24302, BCV24303, BCV24304, BCVL24305, BCV24402, BCV24403, BCV24502, BCVL24504, BCVP24507, BESK24508, BCV24601, BCV24602, BCVL24607, BCV24702, BCV24703
PO7	BCV24303, BCV24402, BCV24403, BBOK24407, BCVL24504, BCVP24507, BESK24508, BCV24602, BCVL24607, BCV24703
PO8	BCV24302, BCVL24504, BCVP24507, BESK24508, BCV24602, BCVL24607, BCV24703
PO9	BCV24302, BCV24402, BCVL24504, BCVP24507, BRMK24557, BESK24508 BCV24601 BCV24602, BCV24603, BCVL24607
PO10	BCV24403, BCV24501, BCVL24504, BCVP24507, BCVL24607
PO11	BCV24301, BCV24303, BCV24304, BCVL24305, BCV24402, BCV24403, BCVL24405, BCVP24507, BCV24602, BCVL24607, BCV24702
PSO1	BCV24301, BCV24302, BCV24303, BCV24304, BCVL24305, BCV24401, BBOK24407, BCV24501, BCV24502, BCV24503, BCVL24504, BCVP24507, BESK24508 BCV24601 BCV24602, BCV24603, BCVL24607, BCV24702, BCV24703
PSO2	BCV24303, BCV24304, BCVL24305, BCV24403, BCVL24405, BBOK24407, BCV24501, BCV24502, BCV24503, BCVL24504, BCVP24507, BESK24508 BCV24601 BCV24602, BCV24603, BCVL24607, BCV24701, BCV24702, BCV24703
PSO3	BCV24303, BCV24304, BCV24501, BCVP24507, BESK24508, BCV24601, BCV24602, BCVL24607

POs	Courses (1st and 2nd Semester 2026 Scheme)
PO1	BESC26104A/204A, BCIV26105/205, BCEDC26103, BMEML26107
PO2	BESC26104A/204A, BCIV26105/205, BCEDC26103, BMEML26107
PO3	BCIV26105/205, BCEDC26103
PO4	
PO5	BCIV26105/205, BCEDC26103, BMEML26107
PO6	BESC26104A/204A
PO7	BESC26104A/204A
PO8	BESC26104A/204A
PO9	-
PO10	-
PO11	-
PSO1	BESC26104A/204A, BCEDC26103
PSO2	BESC26104A/204A, BCEDC26103, BMEML26107
PSO3	BESC26104A/204A

8.2.2. SDG Mapping Table

SDG	SDG Description	Course Code & Course Title
SDG 6	Clean Water and Sanitation	**BCV24605E** – Groundwater Engineering, **BCV24505C** – Design of Hydraulic Structures, Hydrology (UG core)
SDG 7	Affordable and Clean Energy	**BCV24556D** – Green Building Technologies, **BCV24802C** – Sustainable Construction Engineering
SDG 9	Industry, Innovation and Infrastructure	**BCV24601** – Design & Drawing of Steel Structures, **BCV24701** – Design & Drawing of RC & Steel Structures, **BCV24703** – Prestressed Concrete, **BCV24801A** – Design of Bridges, **BCV24556C** – Automation in Construction, Industry Practice (IP)
SDG 11	Sustainable Cities and Communities	**BCV24704C** – Intelligent Transportation Systems, **BCV24704D** – Solid Waste Management, **BCV24802A** – Environmental Geo-techniques
SDG 12	Responsible Consumption and Production	**BCV24501** – Construction Management, **BCV24702** – Construction Contracts, Estimation and Management
SDG 13	Climate Action	**BCV24704A** – Structural Dynamics & Earthquake Engineering, Hydrology, Disaster-related modules
SDG 15	Life on Land	Geotechnical Engineering (Core), **BCV24802A** – Environmental Geo-techniques
SDG 4	Quality Education	**BCV24607** – Software Application Lab, MOOCs (NPTEL/SWAYAM), Capstone Project
SDG 8	Decent Work and Economic Growth	Industry Practice (IP), Internship, **BCV24702** – Construction Contracts & Management

8.2.3. WK Mapping Table

WKs	Courses
WK1	BCV24302, BCV24303, BCV24304, BCVL24305, BCV24402, BCV24403, BCV24404, BCVL24405, BBOK24407, BCV24501, BCVL24504, BESK24508, BCV24601, BCV24602, BCV24603, BCVL24607, BCV24703
WK2	BCV24303, BCV24304, BCV24401, BCV24402, BCV24403, BCV24404, BCVL24405, BCV24501, BCV24502, BCV24503, BCVL24504, BCVP24507, BESK24508, BCV24601, BCV24602, BCV24603, BCVL24607, BCV24702, BCV24703
WK3	BCV24301, BCV24302, BCV24303, BCV24304, BCV24401, BCV24402, BCV24403, BCV24404, BCVL24405, BBOK24407, BCV24502, BCV24503, BCVL24504, BCVP24507, BESK24508, BCV24601, BCV24602, BCV24603, BCVL24607, BCV24701, BCV24702, BCV24703
WK4	BCV24301, BCV24303, BCVL24305, BCV24402, BCV24403, BCV24404, BCVL24405, BCV24501, BCV24502, BCV24503, BCVL24504, BCVP24507, BCV24601, BCV24602, BCV24603, BCVL24607, BCV24702, BCV24703
WK5	BCV24302, BCV24303, BCV24304, BCVL24305, BCV24403, BCVL24405, BCV24501, BCV24502, BCV24503, BCVL24504, BCVP24507, BCV24601, BCV24603, BCVL24607, BCV24703

WK6	BCV24302, BCVL24305, BCV24402, BCV24403, BCVL24405, BCV24501, BCV24502, BCVL24504, BCVP24507, BCV24603, BCVL24607, BCV24703
WK7	BCV24302, BCVL24305, BCV24402, BCV24404, BCV24501, BCVL24504, BCV24703
WK8	BCVL24305, BCV24403, BCVL24405, CVL24504, BCV24703
WK9	BCVL24305, BCVP24507

8.3 Percentage-Based Reporting

% of courses revised	30 - 40%
% skill-based courses	10 - 20%
% courses with apprenticeship/fieldwork	10 - 20%
% online credited courses (SWAYAM, NPTEL)	10 - 15%
% project-based courses	20 - 30%

Note: A detailed comparative evaluation of the 2024 and 2026 schemes indicates that approximately 30 - 40% of the curriculum has undergone transformation, including 22–25% newly introduced courses. The revised curriculum demonstrates a significant shift towards industry-integrated, skill-oriented, and outcome-based education, with enhanced emphasis on experiential learning, digital tools, and professional readiness.

9. NEW COURSE PROPOSALS

The Board of Studies carried out a comprehensive curriculum revision by effectively utilizing institutional autonomy.

A semester-wise analysis indicates the introduction of several new courses and restructuring of existing ones across all semesters.

These changes collectively contribute to approximately 22–25% new courses and over 40% curriculum transformation.

9.1 Advanced Strength of Materials

Rationale:

The course is introduced to extend the fundamentals of Strength of Materials into advanced analytical domains such as energy methods, indeterminate structures, column stability, and three-dimensional stress analysis. This progression is essential to prepare students for higher-level subjects like Structural Analysis and Design.

Course Objectives:

- To introduce energy methods for deformation analysis of structures
- To enable analysis of statically indeterminate beams
- To study stability and load-carrying capacity of columns
- To understand three-dimensional stress systems and failure theories

- To develop knowledge of advanced bending concepts such as unsymmetrical and curved beams

Course Outcomes:

On completion of this course, the student is expected to be able to:

- **CO1** Apply the concepts of energy principle for determining deflection of beams, frames, and trusses
- **CO2** Analyze indeterminate beams using theorem of three moment equations
- **CO3** Assess the load carrying capacity of long columns and stresses in short columns
- **CO4** Determine the principal stresses in three-dimensional state of stress, analyze the stresses in thick cylinders and apply various theories of failures
- **CO5** Gain knowledge in the concept of shear centre, unsymmetrical bending and curved beams

Skill Alignment (NCrF Level):

Level 6–7 – Analytical and problem-solving competency involving advanced structural behavior and engineering mechanics

Assessment Scheme:

- Continuous Internal Evaluation (CIE) – Assignments, quizzes, and problem-solving tests
- Semester End Examination (SEE) – Analytical and numerical problem-based evaluation
- Emphasis on application-oriented and design-based questions

Industry Relevance:

The course provides essential analytical skills required for structural engineering practice, including design, analysis, and evaluation of structural elements. It forms the foundation for professional roles in structural design, consultancy, and infrastructure development.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities

Conclusion: The Board of Studies reviewed and approved the introduction of Advanced Strength of Materials as a core course, recognizing its importance in strengthening analytical competencies and preparing students for advanced structural engineering subjects.

9.2 Construction Materials, Techniques and Practices

Rationale:

The course is introduced to provide a comprehensive understanding of construction materials along with practical construction techniques and site practices. It integrates material science with field application, enabling students to make informed decisions in material selection, construction methods, and serviceability requirements.

Course Objectives:

- To introduce properties, manufacturing, and testing of construction materials
- To understand behavior and performance of concrete and its constituents
- To familiarize students with timber, steel, and modern composite materials
- To provide knowledge of construction techniques and site practices
- To develop awareness of building service requirements such as insulation, ventilation, and fire protection

Course Outcomes (COs):

- **CO1:** Identify the good quality of brick for construction
- **CO2:** Design the concrete mixes for different exposure conditions
- **CO3:** Understand material properties of cement and aggregates
- **CO4:** Study the market forms of timber and steel
- **CO5:** Recognize the good practices of thermal insulations and air conditioning of building

Skill Alignment (NCrF Level):

Level 6 – Application-oriented competency involving material selection, testing, and construction practices

Assessment Scheme:

- Continuous Internal Evaluation (CIE): Assignments, quizzes, and case studies on materials and construction practices
- Semester End Examination (SEE): Theory and application-based questions
- Emphasis on practical understanding and problem-solving

Industry Relevance:

The course provides essential knowledge required for construction site execution, material testing, and quality control. It equips students with skills relevant to roles in construction management, site engineering, and materials engineering.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities
- **SDG 12:** Responsible Consumption and Production

Conclusion: The Board of Studies reviewed and approved the introduction of Construction Materials, Techniques and Practices as a core course, recognizing its importance in strengthening foundational knowledge and practical competencies in construction engineering.

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9.3 Building Information Modelling (BIM) Laboratory

Rationale:

The course is introduced to equip students with digital modelling and detailing skills aligned with modern construction practices. By integrating BIM with RCC design taught in the same semester, the course enables students to translate theoretical design concepts into practical digital models and reinforcement detailing, thereby bridging the gap between design and execution.

Course Objectives:

- To introduce BIM concepts and workflows in civil engineering
- To develop skills in modelling RCC structural elements using BIM tools
- To enable reinforcement detailing and preparation of bar bending schedules
- To generate structural drawings and documentation using BIM platforms
- To provide exposure to BIM-based coordination and quantity estimation

Course Outcomes (COs):

- **CO1:** Develop basic BIM models for structural components
- **CO2:** Model RCC elements such as beams, columns, slabs, and footings
- **CO3:** Perform reinforcement detailing and generate bar bending schedules (BBS)
- **CO4:** Prepare structural drawings and documentation using BIM tools
- **CO5:** Understand BIM applications in coordination, quantity take-off, and construction planning

Skill Alignment (NCrF Level):

Level 6 – Application-oriented competency involving digital modelling, structural detailing, and construction workflow integration

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
  - Modelling assignments and lab exercises
  - Reinforcement detailing tasks
  - Drawing and documentation submissions
- Viva-voce based on modelling and BIM concepts
- Evaluation based on accuracy, completeness, and practical application

Industry Relevance:

The course aligns with current industry trends in digital construction, where BIM is widely used for design coordination, clash detection, and project management. It enhances employability in roles such as BIM engineer, structural modeller, and construction planner.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure

- **SDG 11:** Sustainable Cities and Communities

Conclusion:

The Board of Studies reviewed and approved the introduction of **Building Information Modelling (BIM) Laboratory**, recognizing its significance in advancing digital competencies and aligning the curriculum with modern construction industry practices.

9.4 Structural Detailing Laboratory

Rationale:

The course is introduced to develop advanced digital detailing skills for steel structures using BIM-based tools such as Tekla Structures. In alignment with the Steel Structures course, it enables students to convert design concepts into detailed 3D models, connection detailing, and fabrication drawings, thereby bridging the gap between design, detailing, and construction execution.

Course Objectives:

- To develop skills in 3D modelling of steel structural systems using BIM tools
- To perform detailing of steel members and connections (bolted and welded)
- To generate fabrication and erection drawings from digital models
- To introduce students to industry-standard structural detailing workflows
- To enhance understanding of constructability and execution practices

Course Outcomes (COs):

- CO1: Develop 3D BIM models of steel structures including beams, columns, and trusses
- CO2: Perform detailing of steel connections using digital tools
- CO3: Generate fabrication and erection drawings from BIM models
- CO4: Apply relevant IS codes and detailing standards in steel structures
- CO5: Understand constructability, sequencing, and practical aspects of steel construction

Skill Alignment (NCrF Level):

Level 6–7 – Advanced application involving digital modelling, detailing, and construction-oriented problem-solving.

Assessment Scheme:
Continuous Internal Evaluation (CIE)
BIM modelling assignments (steel structures)
Connection detailing exercises
Fabrication drawing submissions
Viva-voce based on modelling, detailing, and software application
Evaluation based on accuracy, completeness, and practical applicability

Industry Relevance:

The course aligns with modern structural engineering practices where BIM-based detailing tools such as Tekla Structures are extensively used. It prepares students for roles in structural detailing firms, fabrication industries, and construction companies, significantly enhancing employability in steel design and detailing domains.

SDG Mapping:
SDG 9: Industry, Innovation and Infrastructure
SDG 11: Sustainable Cities and Communities

Conclusion:

The Board of Studies reviewed and approved the introduction of Structural Detailing Laboratory, recognizing it as a key course for developing advanced digital detailing competencies aligned with modern steel construction practices.

9.5 Industry Practice (IP)

Rationale:

The course is introduced to bridge the gap between academic learning and real-world engineering practice through direct engagement with industry experts. By integrating practicing engineers into the teaching process, the course exposes students to current industry workflows, standards, and practical challenges, particularly in structural design and detailing.

Course Objectives:

- To provide direct interaction with industry professionals and practicing engineers
- To expose students to real-world practices in structural design and detailing
- To enhance understanding of project execution, standards, and professional workflows
- To develop industry-relevant skills beyond conventional classroom learning
- To improve employability and professional readiness

Course Outcomes (COs):

- **CO1:** Understand real-world engineering practices in structural design and construction
- **CO2:** Interpret practical aspects of structural detailing and project execution
- **CO3:** Apply theoretical knowledge to industry-oriented case studies
- **CO4:** Develop professional communication and reporting skills
- **CO5:** Demonstrate awareness of industry standards, tools, and workflows

Skill Alignment (NCrF Level):

Level 6 – Application-oriented competency with strong industry integration and experiential learning

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
  - Attendance and participation in industry sessions
  - Assignments based on expert lectures and case studies
  - Report submission and presentations
- Evaluation may include feedback from industry experts
- No conventional SEE (or as per institutional norms)

Industry Relevance:

This course directly integrates industry into the curriculum by involving practicing engineers for weekly sessions (2 hours per week). It provides exposure to real-time project practices, structural detailing workflows, and design considerations, significantly enhancing job readiness and bridging the academia–industry gap.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 8:** Decent Work and Economic Growth

Conclusion:

The Board of Studies reviewed and strongly endorsed the introduction of **Industry Practice (IP)** as a flagship course, recognizing it as a significant step toward strengthening industry integration and enhancing employability of students.

9.6 Advanced Structural Analysis

Rationale:

The course is introduced to extend structural analysis concepts to advanced topics such as influence lines for indeterminate structures, arch analysis, suspension systems, and plastic analysis. It equips students with the ability to analyze complex structural systems subjected to moving loads and advanced loading conditions, which are essential for bridge engineering and structural design applications.

Course Objectives:

- To develop understanding of influence lines for determinate and indeterminate structures
- To analyze arches and suspension bridge systems under various loading conditions
- To introduce Muller-Breslau's principle for influence line construction
- To understand behavior of structures under moving loads
- To introduce plastic analysis concepts for structural design

Course Outcomes (COs):

- **CO1:** Draw influence lines for various stress functions for determinate beams and plane trusses
- **CO2:** Gain knowledge in drawing influence lines for determinate beams

- **CO3:** Analyze three-hinged, two-hinged and fixed arches
- **CO4:** Explain the load transfer mechanism in suspension cables and the purpose of stiffening girders
- **CO5:** Explore the basis of plastic analysis and design of structures

Skill Alignment (NCrF Level):

Level 7 – Advanced analytical and design competency involving complex structural systems and problem-solving

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
  - Analytical problem-solving assignments
  - Tutorials on influence lines and plastic analysis
  - Mid-term tests
- Semester End Examination (SEE):
  - Numerical and analytical problem-based evaluation
- Emphasis on conceptual understanding and application to real-world structural systems

Industry Relevance:

The course is highly relevant for structural and bridge engineering applications, including analysis of structures subjected to moving loads, arch bridges, and suspension systems. It provides essential knowledge for careers in structural design, consultancy, and infrastructure development.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities

Conclusion:

The Board of Studies reviewed and approved the introduction of **Advanced Structural Analysis**, recognizing its importance in strengthening analytical capabilities and preparing students for complex structural engineering challenges.

9.7 Transportation Geomatics

Rationale:

The course is introduced to integrate geospatial technologies such as Remote Sensing and Geographic Information Systems (GIS) with transportation engineering. It enables students to analyze, plan, and manage transportation systems using modern digital tools, supporting data-driven decision-making in infrastructure development and urban mobility.

Course Objectives:

- To introduce principles of transportation surveys and geometric design
- To understand urban transportation systems and planning processes

- To apply remote sensing techniques in transportation analysis
- To utilize GIS tools for network analysis and route optimization
- To explore integrated transport models and intelligent transportation systems (ITS)

Course Outcomes (COs):

- **CO1:** Understand various highway geometric elements and surveys carried out for highway alignment
- **CO2:** Understand the factors involved in urban transportation planning
- **CO3:** Apply remote sensing techniques for transportation problems
- **CO4:** Apply GIS for transportation analysis
- **CO5:** Gain knowledge on latest developments in transportation planning

Skill Alignment (NCrF Level):

Level 6–7 – Application and analytical competency involving geospatial tools, transportation modelling, and data-driven decision-making

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
  - Assignments on GIS and remote sensing applications
  - Case studies on transportation planning and ITS
  - Mid-term tests
- Semester End Examination (SEE):
  - Theory and application-based questions
- Emphasis on analytical thinking and practical applications

Industry Relevance:

The course is highly relevant in modern transportation engineering, where GIS, remote sensing, and ITS are widely used for planning, traffic management, and infrastructure development. It prepares students for roles in transportation planning, smart city projects, GIS-based consultancy, and infrastructure analytics.

SDG Mapping:

SDG 9: Industry, Innovation and Infrastructure
SDG 11: Sustainable Cities and Communities
SDG 13: Climate Action

Conclusion:

The Board of Studies reviewed and approved the introduction of **Transportation Geomatics**, recognizing its importance in integrating modern geospatial technologies with transportation engineering for sustainable and intelligent infrastructure development.

9.8 Advanced Construction Techniques

Rationale:

The course is introduced to expose students to modern and advanced construction techniques used in complex infrastructure projects. It covers specialized methods in substructure and superstructure construction, rehabilitation, and demolition, enabling students to understand contemporary practices beyond conventional construction methods.

Course Objectives:

- To introduce advanced techniques in substructure and underground construction
- To understand modern construction methods for high-rise and large-span structures
- To study construction methodologies for special structures such as bridges, towers, and offshore systems
- To familiarize students with rehabilitation and strengthening techniques
- To understand safe and efficient demolition practices

Course Outcomes (COs):

- **CO1:** Understand the modern construction techniques used in the sub structure construction
- **CO2:** Demonstrate knowledge and understanding of the principles and concepts relevant to super structure construction for buildings
- **CO3:** Understand the concepts used in the construction of special structures
- **CO4:** Knowledge on various strengthening and repair methods for different cases
- **CO5:** Identify the suitable demolition technique for demolishing a building

Skill Alignment (NCrF Level):

Level 6 – Application-oriented competency involving modern construction methods, execution strategies, and problem-solving in complex projects

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
  - Assignments and case studies on advanced construction methods
  - Analysis of real-life construction projects
  - Mid-term tests
- Semester End Examination (SEE):
  - Theory and application-based questions
- Emphasis on practical understanding and case-based learning

Industry Relevance:

The course is highly relevant for modern construction practices involving high-rise buildings, infrastructure projects, tunneling, and rehabilitation works. It prepares students for roles in construction companies, infrastructure development firms, and project management organizations where advanced construction technologies are widely used.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities
- **SDG 12:** Responsible Consumption and Production

Conclusion:

The Board of Studies reviewed and approved the introduction of **Advanced Construction Techniques**, recognizing its importance in equipping students with knowledge of modern construction methodologies and preparing them for complex engineering projects.

9.9 Rainwater Harvesting

Rationale:

The course is introduced to address the growing need for water conservation and sustainable water management. It provides students with knowledge of hydrology, groundwater systems, and practical techniques for rainwater harvesting, enabling them to design and implement solutions for water scarcity in urban and rural environments.

Course Objectives:

- To understand the importance of water conservation and rainwater harvesting
- To study hydrological processes and groundwater behavior
- To learn various rainwater harvesting methods and techniques
- To design rainwater harvesting and groundwater recharge structures
- To evaluate and maintain rainwater harvesting systems

Course Outcomes (COs):

- **CO1:** Understand the need and importance of water conservation through global and Indian practices of rainwater harvesting
- **CO2:** Understand and apply the concepts of hydrology and groundwater in the estimation of runoff and recharge potentials
- **CO3:** Understand the various types of rainwater harvesting methods and apply it on the field
- **CO4:** Design the various RWH structures to harvest the rainwater in surface and subsurface
- **CO5:** Explain the difficulties of RWH, evaluation methods and maintenance through various case studies

Skill Alignment (NCrF Level):

Level 6 – Application-oriented competency involving water resource assessment, design of RWH systems, and sustainable engineering practices

Assessment Scheme:

- Continuous Internal Evaluation (CIE):

  - Assignments and case studies on RWH systems
  - Design exercises for recharge and storage structures
  - Mid-term tests
- Semester End Examination (SEE):
  - Theory and application-based questions
- Emphasis on design, field application, and case-based learning

Industry Relevance:

The course is highly relevant in urban planning, environmental engineering, and sustainable infrastructure development. It prepares students for roles in water resource management, consultancy, government projects, and sustainable construction practices.

SDG Mapping:

- **SDG 6:** Clean Water and Sanitation
- **SDG 11:** Sustainable Cities and Communities
- **SDG 13:** Climate Action

Conclusion:

The Board of Studies reviewed and approved the introduction of **Rainwater Harvesting**, recognizing its importance in promoting sustainable water management and addressing water scarcity challenges.

9.10 Soil Dynamics and Machine Foundations

Rationale:

The course is introduced to provide an understanding of soil behavior under dynamic loading conditions and its interaction with machine foundations. It equips students with the knowledge required to analyze vibrations, wave propagation, and design of foundations for machinery, which are critical in industrial and infrastructure applications.

Course Objectives:

- To understand the fundamentals of vibration and dynamic loading
- To study wave propagation in soils and elastic media
- To evaluate dynamic properties of soils through laboratory and field methods
- To analyze and design machine foundations subjected to dynamic loads
- To assess vibration effects and implement suitable mitigation techniques

Course Outcomes (COs):

- **CO1:** Understand the basic knowledge about the theory of vibration
- **CO2:** Understand the different types of waves and its behaviour
- **CO3:** Acquire knowledge about various laboratory and field tests to determine the dynamic soil properties and its interpretation
- **CO4:** Understand the types of machines and foundation and simple design of machine foundation

- **CO5:** Assess the influence of vibrations and selection of remediation methods based on the nature of vibration, properties and behaviour of soil

Skill Alignment (NCrF Level):

Level 6 – Application-oriented competency involving dynamic soil behavior analysis, vibration assessment, and foundation design

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
  - Analytical assignments on vibration and wave propagation
  - Problem-solving exercises on machine foundation design
  - Mid-term tests
- Semester End Examination (SEE):
  - Numerical and analytical problem-based questions
- Emphasis on interpretation of soil behavior and engineering applications

Industry Relevance:

The course is highly relevant for geotechnical and structural engineers involved in the design of machine foundations, industrial facilities, and vibration-sensitive structures. It is particularly useful in power plants, heavy machinery installations, and infrastructure projects requiring dynamic analysis.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities

Conclusion:

The Board of Studies reviewed and approved the introduction of **Soil Dynamics and Machine Foundations**, recognizing its importance in addressing dynamic soil-structure interaction and enhancing competencies in foundation design under vibration conditions.

9.11 Offshore Technology

Rationale:

The course is introduced to provide knowledge of offshore environments and structural systems used in marine and energy infrastructure. It enables students to understand environmental forces, design considerations, and construction practices associated with offshore structures, which are critical in oil, gas, and coastal engineering applications.

Course Objectives:

- To understand offshore environmental conditions including waves, winds, and currents
- To study types and components of offshore structures
- To analyze forces acting on offshore structures

- To understand design aspects of submarine pipelines and risers
- To study properties and behavior of marine sediments

Course Outcomes (COs):

- **CO1:** Understand the offshore environment and technical terms associated with it
- **CO2:** Explain the types and choose suitable offshore structures according to environmental conditions
- **CO3:** Investigate various types of forces acting on the offshore structures
- **CO4:** Adapt appropriate codes to design the submarine pipelines
- **CO5:** Discuss about the properties of marine sediments

Skill Alignment (NCrF Level):

Level 6 – Application-oriented competency involving offshore structural analysis, environmental loading, and design considerations

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
  - Assignments on offshore environmental conditions and forces
  - Case studies on offshore structures and pipelines
  - Mid-term tests
- Semester End Examination (SEE):
  - Theory and application-based questions
- Emphasis on understanding environmental loading and engineering applications

Industry Relevance:

The course is highly relevant for careers in offshore engineering, oil and gas industries, coastal infrastructure, and marine construction. It prepares students for roles in offshore structural design, pipeline engineering, and marine geotechnics.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 7:** Affordable and Clean Energy
- **SDG 14:** Life Below Water

Conclusion:

The Board of Studies reviewed and approved the introduction of **Offshore Technology**, recognizing its importance in expanding the curriculum towards marine and offshore engineering applications.

M.Tech in Structural Engineering

1. Design of Steel–Concrete Composite Structures

Rationale:

The course is introduced to address modern construction practices involving steel–concrete composite systems widely used in high-rise buildings, bridges, and infrastructure projects. It equips students with the knowledge to analyze and design composite structural elements, ensuring efficiency, economy, and enhanced structural performance.

Course Objectives:

- To understand the behavior and advantages of steel–concrete composite systems
- To study design principles of composite beams, slabs, and columns
- To design shear connectors and understand load transfer mechanisms
- To analyze composite structural elements under various loading conditions
- To design connections and joints in composite structures

Course Outcome:

- **CO1:** Explain properties and behaviour of steel-concrete composites
- CO2: Design shear connectors
- CO3: Design composite beams and slab for strength and serviceability
- **CO4:** Design encased and concrete-filled composite columns for axial loads and moments
- CO5: Design connections in composite structures

Skill Alignment (NCrF Level):

Level 7 – Advanced design competency involving composite structural systems, interaction behavior, and modern construction techniques

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
- Design-based assignments
- Problem-solving and case studies
- Mid-term tests
- Semester End Examination (SEE):
- Design-oriented and analytical questions
- Emphasis on practical design and code-based applications

Industry Relevance:

The course is highly relevant in modern infrastructure projects where composite construction is widely adopted for high-rise buildings, bridges, and industrial structures. It prepares students for roles in structural design consultancy, construction firms, and infrastructure development.

SDG Mapping:

SDG 9: Industry, Innovation and Infrastructure
SDG 11: Sustainable Cities and Communities

Conclusion:

The Board of Studies reviewed and approved the course **Design of Steel–Concrete Composite Structures**, recognizing its importance in equipping students with advanced design capabilities aligned with modern construction practices.

2. Structural Design Studio

Rationale:

The course is introduced to bridge the gap between theoretical knowledge and professional structural design practice by providing a studio-based, project-oriented learning environment. It enables students to integrate analysis, design, detailing, and documentation using industry-standard software tools and codal provisions, thereby simulating real-world structural engineering workflows.

Course Objectives:

- To develop the ability to perform complete structural analysis and design using software tools
- To integrate design concepts with codal provisions for concrete and steel structures
- To prepare detailed structural drawings and design documentation
- To execute real-world structural design projects independently
- To enhance professional presentation and reporting skills

Course Outcomes (COs):

- **CO1:** Develop analytical models and perform structural analysis using software tools such as ETABS/STAAD
- **CO2:** Apply relevant design codes for analysis and design of structural components
- **CO3:** Design structural elements including slabs, beams, columns, and foundations
- **CO4:** Prepare detailed structural drawings and design documentation
- **CO5:** Present and justify design decisions through professional reports and presentations

Skill Alignment (NCrF Level):

Level 7 – Advanced design and professional competency involving software-based structural analysis, detailing, and project execution

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
- Design project work (progressive evaluation)
- Software-based modeling and analysis
- Drawings and documentation

- Final presentation and viva
- No conventional SEE; evaluation based on project execution and outcomes

Industry Relevance:

The course directly simulates structural consultancy practice by incorporating industry tools such as ETABS, STAAD, and STRAP. It prepares students for professional roles in structural design firms, infrastructure projects, and consultancy services, enhancing employability and practical competence.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities

Conclusion:

The Board of Studies reviewed and approved the course **Structural Design Studio**, recognizing it as a key component in strengthening industry readiness, practical design capability, and professional competence in structural engineering.

3. Non-Linear Analysis of Structures

Rationale:

The course is introduced to address the limitations of linear analysis by incorporating material and geometric nonlinearity in structural behavior. It enables students to analyze real-world structural systems more accurately under large deformations, inelastic behavior, and complex loading conditions, which are essential for advanced design and research applications.

Course Objectives:

- To understand the fundamentals of material and geometric nonlinearity
- To analyze structural elements under inelastic and large deformation conditions
- To study nonlinear behavior of flexural members and plates
- To understand nonlinear vibration and instability phenomena
- To develop analytical skills for advanced structural modeling

Course Outcomes (COs):

- **CO1:** Understand and differentiate between linear and nonlinear structural behavior
- **CO2:** Analyze structural members considering material and geometric nonlinearity
- **CO3:** Evaluate inelastic behavior of flexural members under different loading conditions
- **CO4:** Analyze plates and structural elements under nonlinear conditions
- **CO5:** Assess nonlinear vibration and instability of structural systems

Skill Alignment (NCrF Level):

Level 7 – Advanced analytical competency involving nonlinear structural behavior, instability analysis, and complex system modelling

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
- Analytical assignments and case studies
- Problem-solving on nonlinear behavior
- Mid-term tests
- Semester End Examination (SEE):
- Advanced analytical and conceptual questions
- Emphasis on conceptual understanding and modelling

Industry Relevance:

The course is highly relevant for advanced structural analysis, performance-based design, and failure assessment in structures subjected to extreme loading conditions such as earthquakes, wind, and large deformations. It is essential for structural consultants, research engineers, and advanced design professionals.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure

Conclusion:

The Board of Studies reviewed and approved the course **Non-Linear Analysis of Structures**, recognizing its importance in developing advanced analytical capabilities for realistic structural behaviour and research applications.

4. Wind and Cyclone Effects on Structures

Rationale:

The course is introduced to address the increasing importance of wind and cyclone-induced loads in the design of modern structures, particularly tall buildings and industrial systems. It equips students with the knowledge to analyze aerodynamic effects, dynamic response, and codal provisions for safe and efficient structural design under wind and extreme weather conditions.

Course Objectives:

- To understand the characteristics and behavior of wind and cyclone loads
- To study aerodynamic and aeroelastic effects on structures
- To analyze structural response under static and dynamic wind loading
- To design structures and components as per relevant codal provisions
- To understand wind tunnel testing and its application in structural design

Course Outcomes (COs):

- **CO1:** Understand wind characteristics and their effect on structures
- **CO2:** Analyze aerodynamic and dynamic response of structures under wind loading
- **CO3:** Design structures such as tall buildings, chimneys, and industrial sheds for wind loads
- **CO4:** Evaluate cyclone effects on structural components including cladding systems
- **CO5:** Interpret wind tunnel data and apply it in structural design

Skill Alignment (NCrF Level):

Level 7 – Advanced competency involving dynamic analysis, wind load assessment, and code-based structural design

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
- Assignments on wind load calculations and case studies
- Analytical problems on dynamic response
- Mid-term tests
- Semester End Examination (SEE):
- Theory and design-oriented questions
- Emphasis on code application and real-world problem solving

Industry Relevance:

The course is highly relevant for the design of tall buildings, industrial structures, transmission towers, and coastal infrastructure exposed to extreme wind and cyclone conditions. It prepares students for structural consultancy, infrastructure projects, and disaster-resilient design.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities
- **SDG 13:** Climate Action

Conclusion:

The Board of Studies reviewed and approved the course **Wind and Cyclone Effects on Structures**, recognizing its importance in enhancing structural safety, resilience, and performance under extreme environmental loading conditions.

5. Prefabricated Structures

Rationale:
The course is introduced to address the growing adoption of prefabrication and industrialized construction in modern infrastructure. It enables students to understand design principles, analysis, production, and erection of prefabricated structural systems, ensuring efficiency, quality control, and rapid construction.

Course Objectives:

- To understand principles of prefabrication and modular coordination
- To analyze and design prefabricated structural elements and systems
- To study connection design and load transfer mechanisms
- To understand construction, transportation, and erection processes
- To evaluate structural performance of prefabricated buildings under various loads

Course Outcomes (COs):

- **CO1:** Understand the principles of prefabrication, modular coordination, and standardization
- **CO2:** Analyze prefabricated structural systems including slabs, walls, and framed structures
- **CO3:** Design prefabricated elements and their connections
- **CO4:** Evaluate structural behavior during production, handling, and erection stages
- **CO5:** Design prefabricated systems for industrial buildings and specialized structures

Skill Alignment (NCrF Level):

Level 7 – Advanced competency involving design, detailing, and implementation of prefabricated structural systems

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
- Assignments on prefabrication systems and modular design
- Design problems on elements and connections
- Case studies on industrial construction
- Semester End Examination (SEE):
- Theory and design-oriented questions
- Emphasis on design, detailing, and practical application

Industry Relevance:

The course is highly relevant in modern construction practices where prefabrication and precast systems are widely used for rapid construction, cost efficiency, and quality assurance. It prepares students for roles in precast industries, infrastructure projects, and industrial building design.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities
- **SDG 12:** Responsible Consumption and Production

Conclusion:

The Board of Studies reviewed and approved the course **Prefabricated Structures**, recognizing its importance in promoting modern construction technologies and industrialized building systems.

6. Fiber Reinforced Polymer (FRP) Composite Materials

Rationale:
The course is introduced to familiarize students with advanced composite materials, particularly Fiber Reinforced Polymer (FRP), which are increasingly used in modern structural engineering for strengthening, retrofitting, and high-performance applications. It provides a comprehensive understanding of material behavior, analysis, and design principles of composite systems.

Course Objectives:

- To understand the fundamentals and classification of composite materials
- To study the mechanical behavior of FRP composites at micro and macro levels
- To analyze laminated composite structures using classical theories
- To understand failure mechanisms and strength criteria of composites
- To apply FRP materials in structural design and retrofitting

Course Outcomes (COs):

- **CO1:** Understand the properties and classification of composite materials and FRP systems
- **CO2:** Analyze stress-strain behavior of anisotropic and orthotropic composite materials
- **CO3:** Evaluate strength and stiffness of lamina and laminated composites
- **CO4:** Apply classical lamination theory for analysis of composite structures
- **CO5:** Design and apply FRP materials in structural engineering applications including retrofitting

Skill Alignment (NCrF Level):
Level 7 – Advanced competency involving material modelling, composite analysis, and application in structural systems

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
- Assignments on composite material behavior and analysis
- Case studies on FRP applications and retrofitting
- Field visit report (FRP construction/retrofit site)
- Semester End Examination (SEE):
- Analytical and application-based questions
- Emphasis on material behavior and engineering application

Industry Relevance:
The course is highly relevant in modern structural engineering applications involving strengthening and retrofitting of existing structures, lightweight construction, and high-performance materials. It prepares students for roles in advanced material design, infrastructure rehabilitation, and research.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities
- **SDG 12:** Responsible Consumption and Production

Conclusion:

The Board of Studies reviewed and approved the course **Fiber Reinforced Polymer Composite Materials**, recognizing its importance in introducing advanced materials and innovative solutions for modern structural engineering applications.

7. Advanced Design of Foundation Structures

Rationale:

The course is introduced to provide advanced knowledge in the analysis and design of foundation systems based on soil conditions and structural requirements. It equips students with the ability to interpret geotechnical data, select appropriate foundation types, and design shallow, deep, and special foundations for complex engineering applications.

Course Objectives:

- To understand site investigation techniques and interpretation of geotechnical data
- To design shallow foundations considering bearing capacity and settlement
- To analyze and design deep foundations including piles and well foundations
- To design machine foundations considering dynamic loading
- To understand special foundation systems for complex structures

Course Outcomes (COs):

- **CO1:** Interpret soil investigation data and select appropriate foundation systems
- **CO2:** Design shallow foundations based on bearing capacity and settlement criteria
- **CO3:** Analyze and design deep foundations including piles and well foundations
- **CO4:** Design machine foundations considering dynamic soil-structure interaction
- **CO5:** Apply design principles for special foundations such as towers, chimneys, and reinforced earth systems

Skill Alignment (NCrF Level):

Level 7 – Advanced competency involving geotechnical analysis, foundation design, and soil-structure interaction

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
- Design assignments on shallow and deep foundations
- Case studies on foundation failures and solutions
- Mid-term tests
- Semester End Examination (SEE):
- Analytical and design-oriented questions
- Emphasis on practical design and interpretation of field data

Industry Relevance:

The course is highly relevant for geotechnical and structural engineers involved in infrastructure projects such as buildings, bridges, towers, and industrial facilities. It prepares students for roles in foundation design, geotechnical consultancy, and construction engineering.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities

Conclusion:

The Board of Studies reviewed and approved the course **Advanced Design of Foundation Structures**, recognizing its importance in developing advanced competencies in foundation engineering and soil-structure interaction.

8. Design of Offshore Structures

Rationale:

The course is introduced to provide knowledge of offshore structural systems subjected to complex environmental loads such as waves, currents, wind, and ice. It equips students with the ability to analyze and design offshore platforms and foundations used in marine and energy infrastructure projects.

Course Objectives:

- To understand offshore environmental conditions and wave theories
- To study different types and components of offshore structures
- To analyze environmental and operational loads acting on offshore systems
- To design jacket platforms and concrete gravity structures
- To understand codal provisions (API, DNV) for offshore structural design

Course Outcomes (COs):

- **CO1:** Understand offshore environmental conditions and wave behavior
- **CO2:** Identify different types of offshore structures and their components
- **CO3:** Analyze loads acting on offshore structures including wave, current, and wind forces
- **CO4:** Design jacket platforms and associated structural components
- **CO5:** Analyze and design concrete gravity offshore platforms and foundations

Skill Alignment (NCrF Level):

Level 7 – Advanced competency involving offshore structural analysis, environmental loading, and specialized design practices

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
- Assignments on offshore loading and structural systems
- Case studies on offshore platforms

- Mid-term tests
- Semester End Examination (SEE):
- Analytical and design-oriented questions
- Emphasis on environmental loading and structural response

Industry Relevance:
The course is highly relevant for offshore engineering, oil and gas industries, coastal infrastructure, and marine construction. It prepares students for roles in offshore structural design, marine engineering consultancy, and energy sector projects.

SDG Mapping:
- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 7:** Affordable and Clean Energy
- **SDG 14:** Life Below Water

Conclusion:
The Board of Studies reviewed and approved the course **Design of Offshore Structures**, recognizing its importance in expanding the curriculum towards marine and offshore engineering applications.

9. Performance of Structures with Soil–Structure Interaction

Rationale:
The course is introduced to provide a realistic understanding of the interaction between soil and structural systems, which significantly influences structural response and performance. It enables students to move beyond conventional fixed-base assumptions and analyze structures considering foundation flexibility and soil behavior under static and dynamic loading conditions.

Course Objectives:
- To understand the fundamentals of soil–structure interaction and soil behavior
- To analyze beams and plates on elastic and elasto-plastic foundations
- To study interaction effects in pile foundations and pile groups
- To evaluate soil–structure interaction under seismic and dynamic conditions
- To apply numerical and computational methods for SSI analysis

Course Outcomes (COs):
- **CO1:** Understand the behavior of soil, foundation, and interaction mechanisms
- **CO2:** Analyze beams and structural elements on elastic and continuum foundations
- **CO3:** Evaluate interaction effects in raft and pile foundations
- **CO4:** Analyze soil–structure interaction in dynamic and seismic conditions
- **CO5:** Apply computational methods for solving soil–structure interaction problems

Skill Alignment (NCrF Level):
Level 7 – Advanced competency involving soil–structure interaction analysis, numerical modelling, and dynamic response evaluation

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
- Analytical assignments on SSI models
- Case studies on foundation–structure interaction
- Numerical problem-solving and modelling
- Semester End Examination (SEE):
- Analytical and conceptual questions
- Emphasis on realistic modelling and interpretation

Industry Relevance:
The course is highly relevant for structural and geotechnical engineers involved in the design of foundations for buildings, bridges, and infrastructure systems where soil interaction significantly affects performance. It is especially important in seismic design, high-rise structures, and complex foundation systems.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities

Conclusion:
The Board of Studies reviewed and approved the course **Performance of Structures with Soil–Structure Interaction**, recognizing its importance in enabling realistic and advanced analysis of structural systems interacting with foundation soils.

10. Design of Shell and Spatial Structures

Rationale:
The course is introduced to provide advanced knowledge of shell and spatial structural systems used in long-span and architecturally significant structures. It enables students to understand complex load transfer mechanisms, structural behavior, and design methodologies for shells, folded plates, and space frames, supported by computational tools.

Course Objectives:

- To understand behavior and classification of shell and spatial structures
- To design shell structures such as domes, cylindrical shells, and conical roofs
- To analyze and design folded plate structures
- To study configuration and behavior of space frame systems
- To apply computational tools such as FORMIAN for structural modelling

Course Outcomes (COs):

- **CO1:** Understand structural behavior and classification of shell and spatial structures
- **CO2:** Design shell structures such as domes and cylindrical shells
- **CO3:** Analyze and design folded plate structures
- **CO4:** Develop configurations and analyze space frame systems

- **CO5:** Apply computational tools such as FORMIAN for modelling spatial structures

Skill Alignment (NCrF Level):
Level 7 – Advanced competency involving analysis, design, and computational modelling of complex structural systems

Assessment Scheme:
- Continuous Internal Evaluation (CIE):
- Assignments on shell and folded plate design
- Modelling exercises using FORMIAN
- Case studies on space structures
- Semester End Examination (SEE):
- Analytical and design-oriented questions
- Emphasis on structural behavior and computational modelling

Industry Relevance:
The course is relevant for the design of long-span structures such as stadiums, auditoriums, industrial roofs, and architecturally complex buildings. It prepares students for roles in structural design consultancy, specialized structural systems, and advanced engineering projects.
SDG Mapping:
- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities

Conclusion:
The Board of Studies reviewed and approved the course **Design of Shell and Spatial Structures**, recognizing its importance in developing advanced competencies in long-span and architecturally complex structural systems.

11. Emerging Trends in Structural Engineering

Rationale:
The course is introduced to expose students to emerging technologies and future developments in structural engineering, including Artificial Intelligence, Machine Learning, and Smart Materials. It enables students to understand and leverage advanced tools for design optimization, structural health monitoring, and smart infrastructure development.

Course Objectives:
- To understand fundamentals of AI, Machine Learning, and their engineering applications
- To study implementation of AI in structural analysis, design, and maintenance
- To explore applications of AI in structural health monitoring and digital twins
- To understand behavior and applications of smart materials and systems
- To develop awareness of future trends and technological advancements in structural engineering

Course Outcomes (COs):

- **CO1:** Understand fundamentals of AI, Machine Learning, and their applications in engineering
- **CO2:** Apply AI techniques in structural analysis, optimization, and monitoring
- **CO3:** Evaluate case studies involving AI-based structural engineering applications
- **CO4:** Understand properties and applications of smart materials in structural systems
- **CO5:** Apply concepts of smart materials for structural health monitoring and intelligent systems

Skill Alignment (NCrF Level):
Level 7 – Advanced competency involving integration of digital technologies, intelligent systems, and smart materials in structural engineering

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
- Assignments on AI applications and smart materials
- Case study analysis (AI in structural engineering)
- Mini-project or presentation on emerging technologies
- Semester End Examination (SEE):
- Conceptual and application-based questions
- Emphasis on innovation and interdisciplinary understanding

Industry Relevance:
The course is highly relevant for modern structural engineering practices involving digital transformation, smart infrastructure, and data-driven decision-making. It prepares students for emerging roles in AI-based design, structural health monitoring, and intelligent construction systems.

SDG Mapping:

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities
- **SDG 13:** Climate Action

Conclusion:
The Board of Studies reviewed and approved the course **Emerging Trends in Structural Engineering**, recognizing its importance in preparing students for future technologies and next-generation engineering practices.

12. Strategies for Sustainable Design

Rationale:
The course is introduced to address the growing need for sustainable and energy-efficient design in the built environment. It equips students with the knowledge of green building concepts, energy optimization, sustainable materials, and environmental impact assessment, enabling responsible and future-ready engineering practices.

Course Objectives:

- To understand principles of sustainability and green building design
- To study climatic effects and energy transfer mechanisms in buildings
- To evaluate sustainable materials and their environmental impact
- To analyze energy efficiency, water management, and waste management systems
- To understand green building rating systems and certification frameworks

Course Outcomes (COs):

- **CO1:** Understand principles of sustainability, climatology, and building physics
- **CO2:** Evaluate sustainable materials and strategies for reducing carbon emissions
- **CO3:** Analyze energy efficiency and resource management in buildings
- **CO4:** Apply green building rating systems such as LEED, IGBC, and GRIHA
- **CO5:** Assess sustainable building practices through case studies and real-world applications

Skill Alignment (NCrF Level):
Level 7 – Advanced competency involving sustainable design, energy efficiency analysis, and environmental impact assessment

Assessment Scheme:

- Continuous Internal Evaluation (CIE):
- Assignments on energy-efficient design and sustainability strategies
- Case studies on green buildings and smart systems
- Mini-project on sustainable building design
- Semester End Examination (SEE):
- Conceptual and application-based questions
- Emphasis on practical sustainability solutions

Industry Relevance:
The course is highly relevant for modern construction practices focused on sustainability, green certifications, and energy-efficient infrastructure. It prepares students for roles in green building consultancy, sustainable design, environmental engineering, and policy-driven infrastructure development.

SDG Mapping:

- **SDG 7:** Affordable and Clean Energy
- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 11:** Sustainable Cities and Communities
- **SDG 12:** Responsible Consumption and Production
- **SDG 13:** Climate Action

Conclusion:
The Board of Studies reviewed and approved the course **Strategies for Sustainable Design**, recognizing its importance in promoting sustainable, energy-efficient, and environmentally responsible engineering practices.

10. SKILL, MOOC & VALUE-ADDED REVIEW

- Integration of **NPTEL/SWAYAM courses with credit transfer**
- Introduction of **skill-based certification programs**
- Value-added courses:
  - 3Ds Max
  - Advanced Surveying
  - Aptitude training

"The Board approved the integration of MOOCs, skill courses, and value-added programs to enhance employability.

11. INTERNSHIP & INDUSTRY INTEGRATION

- High emphasis on **Industry Practice (IP)**
- Expansion of **MoUs with industries**
- Industry co-teaching and expert sessions
- Internship and project-based learning

"The Board approved strengthened industry integration including internships, apprenticeships, and co-teaching models."

12. RESEARCH & CAPSTONE

- Encouragement for **research publications and patents**
- Structured **capstone evaluation rubrics**
- Introduction of **research-oriented courses**

"The Board approved the research and capstone framework for enhancing innovation and academic rigor."

13. BoS APPROVALS

The Board recommended to approve the following:

- B. E. in Civil Engineering, UG Scheme & Syllabus (2024–25)
- B. E. in Civil Engineering, UG Scheme (2026–27)
- B. E. in Civil Engineering, First Year Syllabus (2026–27)
- M.Tech in Structural Engineering, PG Scheme & Syllabus (2026–27)
- Scheme of Examination and Evaluation for both the 2024 Scheme and 2026 Scheme were reviewed, ratified, and approved by the Board of Studies.
- The Board appreciated the efforts of the Department in aligning the curriculum with industry requirements and emerging trends

14. CONCLUDING REMARKS

The Board of Studies approved the proposed curriculum changes, assessment reforms, and implementation plan effective from Academic Year 2026–27. Further, the proceedings is sent across to Academic Council for approval"

Global Academy of Technology

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Approved by UGC, AICTE and Govt of Karnataka

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DEPARTMENT OF CIVIL ENGINEERING

Board of Studies (AY-2026-27)

Signatures of the BoS members present

Sl.no	Category	Name & Designation	Signature
1	Chairman	**Dr. Kiran B**, Professor & Head, Department of Civil Engineering, GAT, Bengaluru, 9743372590, b.kiran@gat.ac.in	
2	VTU Nominee	**Dr. Dodagoudar G R**, Professor, Department of Civil Engineering, IIT Madras., 9840328754., goudar@iitm.ac.in	
3	Subject expert	**Dr. L Govindaraju**, Professor, Department of Civil Engineering, UVCE, Bangalore University, 9731336546, rajulgovinda@gmail.com	
4	Industry representative	**Dr Sanatkumar P Rajamane**, Ph.D. (Struct, IIT Madras), Sannidhi Technologies Inc, Professor of practice and Advisor, IIT-Dharwad., Member of Board of studies VTU-Gov of Karnataka., 9880713648, drspr@sannidhitechnologiesinc.com	
5	Invited Industry representative	**Mr. A C Shivakumar**, Consultant for Bridges, rigid pavements, deep excavations & irrigation structures, Design Academy Consulting Civil Engineers., 9110250187, acshivakumar86@gmail.com	
6	Distinguished Alumnus	**Mr. Vishal Gowda N S**, Engineer, (Structures) Transys Consulting Pvt. Ltd, 7349713035, shipavi.6976@gmail.com	
7	Convenor	**Dr. Manu D S**, Associate Professor, Department of Civil Engineering, GAT, 9538769824, drmanu.ds@gat.ac.in	
8	Member	**Dr. Ravindra P M**, Professor, Department of Civil Engineering, GAT, 9964639538, drravindrapm@gat.ac.in	
9	Member	**Dr. Allamaprabhu Kamatagi**, Associate Professor, Department of Civil Engineering, GAT, Bengaluru, 9844243511, prabhukamatagi@gat.ac.in	
10	Member	**Dr. Preethi R K**, Associate Professor, Department of Civil Engineering, GAT, 7022578411, drpreethirk@gat.ac.in	
11	Member	**Mrs. Dhavala S**, Assistant Professor, Department of Civil Engineering, GAT, 9739872169, d.padiwal@gat.ac.in	
12	Invited member	**Dr. H.B. Balakrishna**, Principal, GAT, Bengaluru, 9845395535, principal@gat.ac.in	
13	Invited member	**Dr. Vijay Tambrallimath**, Associate Dean Academics, GAT, Bengaluru, 9480324605, dean@gat.ac.in	1/4/26

BoS Chairman | **Dean Academics** 1/4/26 | **Principal**

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DEPARTMENT OF CIVIL ENGINEERING

8th Board of Studies (BoS) – Minutes of Meeting

The 8th **Board of Studies (BoS)** meeting of the **Department of Civil Engineering** was held on **1st April 2026** in the Department of Civil Engineering, Global Academy of Technology, Bengaluru, under the chairmanship of **Dr. Kiran B**, Professor and Head of the Department.

The meeting was convened to review and deliberate upon the existing and proposed schemes and syllabi of the Undergraduate and Postgraduate programs, along with curriculum enhancements aligned to industry requirements, emerging technologies, and academic standards.

The Chairman welcomed all the members and appreciated their valuable presence and continued support in strengthening the academic framework of the department.

1. MEMBERS PRESENT

- Dr. Kiran. B – Chairman BoS
- Dr. G. R. Dodagoudar – VTU Nominee
- Dr. L. Govindaraju – Subject Expert
- Dr. Sanatkumar P. Rajamane – Industry Representative
- Mr. A. C. Shivakumar – Invited Industry Representative
- Mr. Vishal Gowda N S – Alumnus
- Dr. H. B. Balakrishna – Principal, Invited Member
- Dr. Vijay Tambrallimath – Associate Dean (Academics), Invited Member
- Internal Members – Dr. Ravindra P M, Dr. Allamaprabhu K, Dr. Manu D S, Dr. Preethi R K, Prof. Dhavala S

2. AGENDA

1. Review of previous BoS minutes and Action Taken Report
2. Review of UG Scheme & Syllabus (2024)
3. Review of UG Scheme (2026)
4. Review of First Year UG Syllabus (2026)
5. Review of PG Scheme & Syllabus (2026)
6. Any other matter

3. STRATEGIC RESOLUTIONS

The Board resolved the following key strategic initiatives:

- Establishment of **BIM Center of Excellence (CoE)** to promote digital construction and industry collaboration.
- Introduction of **Industry Practice (IP)** in the curriculum for enhanced industry exposure.
- Alignment of **70–80% M.Tech students to Design Track – 2026 Scheme** for improved industry readiness.
- Integration of software tools such as **SAP2000, ETABS, and STAAD**.

4. UG SCHEME & SYLLABUS (2024)

The Board reviewed the UG Program, B. E. in Civil Engineering, Scheme & Syllabus (2024) and recommended updates to textbooks, Course Outcome (CO) mapping, and inclusion of practical components. The Board was informed that the Survey Camp component prescribed in the 2024 UG Scheme is yet to be conducted for the current batch of students. In view of the introduction of Industry Practice (IP) in the UG curriculum to enhance practical exposure and industry readiness, the Board approved the implementation of Industry Practice (IP) in lieu of the pending survey camp for the ongoing 2024 scheme students.

5. UG SCHEME (2026)

The Board reviewed the proposed UG Program, B. E. in Civil Engineering, Scheme (2026) and recommended suitable modifications to course structure, nomenclature, and academic framework in alignment with current industry requirements.

6. PG SCHEME & SYLLABUS (2026)

The Board reviewed the PG Program, M.Tech in Structural Engineering, Scheme & Syllabus (2026) and recommended inclusion of advanced topics, updated textbooks, and enhanced integration of software tools in line with current industry practices.

7. FINAL APPROVALS

The Board recommended to approve the following:

- B. E. in Civil Engineering, UG Scheme & Syllabus (2024–25)

- B. E. in Civil Engineering, UG Scheme (2026–27)
- B. E. in Civil Engineering, First Year Syllabus (2026–27)
- M.Tech in Structural Engineering, PG Scheme & Syllabus (2026–27)

The Board appreciated the efforts of the Department in aligning the curriculum with industry requirements and emerging trends.

8. Detailed course-wise modifications and recommendations are as follows:

8.1 Review of 2024 scheme syllabus (5th to 8th semesters)

• BCV24501: Construction Management each module cannot be mapped with one COs to be relooked

• BCV24503: Reinforced concrete design, Textbook Unnikrishnan - 4th edition to be updated, S N Sinha updated with new edition and separate textbooks and reference books

• BCV24505: Railways, airport and harbours, separate the textbooks accordingly.

• BCV24505C: Design of hydraulic structures: Module 5 title to be changed from Canel regulation work to Canal Regulatory works.

• BCV24556A: SHM- Trained the faculty and bring live examples of SHM techniques

• BCV24556C: Rename the course title from Robotics in Construction to Automation in Construction

• BCV24556D: Rename the course title from Eco-friendly Construction and Green Building Technologies to Green Building Technologies (Remove eco-friendly). Add textbook Autor name: Kothari and Change exam duration hours.

• RMIK24557: IPR- Textbooks rearrange, 5-1, 4-2, 3-4 and shift textbook 1 and 2 to Reference section.

• BCV24601: Renamed course title: Design and Drawing of Steel Structures Remove elements. Add textbook R Krishnamurthy → Structural Design and Drawing Vol I, II, III, Plastic analysis – Beedle and Rajgopal.

• BCV24602: Foundation Engineering, rename the course title to Advanced Foundation Engineering and add textbook Analysis and Design of Substructures: Limit State Design, Swami Saran (latest edition)

• BCV24603: Concrete Technology, add textbook Advanced Concrete Technology by Zongjin Li 2E textbook

• BCV24604A: Theory of elasticity: add textbook Theory of Elasticity Springer Publication Singapore by L Govindaraju and Continue Mechanics - S Valliappan

• BCV24605D: Rename the title from SDG to Strategies for Sustainable Development

• BCV24605E: Ground water should be one word, rearrange the module content from M5 to M3, M3 to M4, M4 to M5

• BCV24605F: Integrated Building Services, Faculty should train and arrange 1 Week course or Event. Check for online books.

• BCV24607: Software Application Lab: Prerequisites will be RCC & Steel, SAPNL (Free Software) to be used. Remove contents 5 and 7. Include MSP into Lab components and footings. Add Reference books- RCC & steel books, R Krishnamurthy, Vol I,II, III

• BCV24657B: Include AI in Civil Engineering, contact Dr. N. Venkata Ramana, Associate Professor, UBDT College, Davanagere.

• BCV24701: Rename course title from Design & Drawing of RCC & Steel Structures to Design & Drawing of RC and Steel Structures. Add Overhead / Elevated water tanks design. Consider Mantri construction Hand book and add Illustrated Design of Buildings by Shah & Karve.

• BCV24702: Estimation and Contract management revise the title Construction Contracts, Estimation and Management.

• BCV24703: In Prestressed Concrete, Module 2 & 3 repeated check and revise. Add textbook P Dayaratnam, Rajagopalan, N Krishnaraju, Praveen Nagarajan, Fundamentals of Pre-Stressed Concrete by N C Sinha and Sujit Kumar Roy. Include End block anchorage topics. Module 1 Introduction to PSC, 2 Losses, 3: Design for flexure and shear, 4: Deflection & design for Anchorage, 5: Composite & Continuous beams.

• BCV24704A: Structural Dynamics & Earthquake Resistance Structures rename to Structural Dynamics & Earthquake Engineering. Add MDOF, Add textbook Mario Paz, CBS Publishers textbook

• BCV24704C: Rename from Urban Transport and Intelligent System to Intelligent transportation Systems.

• BCV24704D: SWM, Correct to PEC

• BCV24705D: In title Management “Capital M”

• BCV24801A: Design of Bridges: Include PSC bridges and Remove “No design” word from M5

• BCV24801B: Advanced Geotechnical Engineering, add Machine foundation by S Prakash & Puri, Advanced Soil Dynamics & Earthquake Engineering, Bharath Bhushan Prasad

• BCV24801D: Add theory of elasticity as prerequisite course.

• BCV24802A: Change the title to “Environmental Geotechniques”, Add textbook Fundamentals of Geoenvironmental Engineering by Fang.

• BCV24802C: Change the title to “Sustainable construction Engineering”.

8.2 Review of 2026 UG syllabus (First Year – Civil Engineering)

The Board of Studies members reviewed the proposed first year UG Civil Engineering curriculum under the 2026 Scheme in detail and expressed their satisfaction with the overall structure, content, and academic rigor. The syllabus was unanimously recommended for approval for implementation.

8.3 Review of 2026 UG scheme (3rd to 8th semester)

The scheme was presented and discussed. The following suggestion are made

• Strength of Materials-1 and Strength of Materials-2, title to be changed as Strength of Materials and Advanced Strength of Materials in and 3rd and 4th semester respectively

• Fluid Mechanics in 3rd semester to renamed as Fluid Mechanics and Hydraulics

• Structural Anaysis-1 in 5th semester to be renamed as Basic Structural Analysis.

• Structural Anaysis-2 in 6th semester to be renamed as Advanced Structural Analysis

• Have proper weightage for NPTEL scores for evaluation

8.4 Review of 2026 M.Tech in Structural Engineering scheme and syllabus (1st to 4th semesters)

The PG scheme and syllabus were reviewed the following suggestion and recommendations were made:

• MST26103: Change title from Advanced Concrete Structures to Advanced Reinforced Concrete Structures.

• MST26202: Change title Finite element analysis of Structures to Finite Element Analysis.

• Change title from Detailed Design Project Phase- I to Design Project Phase- I & Detailed Design Project Phase-II to Design Project Phase-II

• Change title from Research Project Work Phase- I to Research Project Phase- I & Research Project Work Phase-II to Research Project Phase-II

• MST26912: Change course title Advanced Design of Foundation Structures to Analysis and Design of Foundation Systems.

• MST26912: Change course title Optimization of Structures to Structural Optimization.

• MST26201: Add textbook Author L Govindaraju and Pillai & Devdas Menon McGraw Hill 2024

• MST26104: Add topic in the course “Seismic safety assessment of heritage structures”

• MST26202: Introduction to Continua Elements change to Continuum Elements, Add textbooks Abel and Desai, Chandrupatla (4th edition), Robert Cook and C S Krishnamoorthi - FEM

• MST26204: Add textbook Author Nilson A H, Design of Prestressed Concrete - 2nd Edition

• MSTL26207: Use SAP 2000NL

• Introduction to research: Add textbooks from the author Michael Alley: The craft of scientific writing, The Craft of Scientific Presentations, The Craft of Editing and Environmental researcher.

• Make sure only 20 to 30% as to take research track and remaining Design Track.

• MSTL26901: Non- Linear remove hyphen

• MSTL26903: Change the course title from Wind and Cyclone effects on Structures to Wind Loading on Structures, and add John D Holmes, Wind Loading of Structures, Wiley textbook

• MSTL26905: Add Textbook Author “Zongjin Li and Concrete Technology by Neville & Brooks

MSTL26906: Add textbook Probability Random Variables, and Stochastic Processes, by Athanasios Papoulis & S. Unnikrishnan Pillai

• MSTL26909: Add textbook Author Gibson- Principles of Composite Material Mechanics

• MSTL26912: Change the title from Advanced Design of Foundation Structures to Design of Foundation Structures

• MSTL26912: Add textbook author “J S Arora: Introduction to optimum design (3rd Edition)

• MSTL26914: Add textbook author “Harry G. Poulos - Tall Building Foundation Design”

• MSTL26916: Change title to “Soil Structure Interaction” Module 1: Introduction to course

• MSTL26918: Add textbook author “Timoshenko/Kreiger: Theory of Plates”

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DEPARTMENT OF CIVIL ENGINEERING

9. VOTE OF THANKS

The Chairman expressed his sincere gratitude to all the Board of Studies members for their valuable time, insightful suggestions, and continued support in enhancing the quality of the academic programs.





Chairman, Board of Studies – Civil Engineering

Dr. Kiran B
Professor & Head
Department of Civil Engineering
Global Academy of Technology
Bangalore

CHAIRMAN
BOARD OF STUDIES
Dept. of Civil Engineering
Global Academy of Technology
Rajarajeshwarinagar, Bengaluru

DEPARTMENT OF CIVIL ENGINEERING

Board of Studies Members (AY-2026-27)

Sl.no	Category	Name & Designation
1.	Chairman	Dr. Kiran B, Professor & Head, Department of Civil Engineering, GAT, Bengaluru, 9743372590, b.kiran@gat.ac.in
2.	VTU Nominee	Dr. Dodagoudar G R, Professor, Geotechnical Engineering, IIT Madras., 9840328754., goudar@iitm.ac.in
3.	Subject expert	Dr. L Govindaraju, Professor, UVCE, Bengaluru University, 9731336546, rajulgovinda@gmail.com
4.	Industry representative	Dr Sanatkumar P Rajamane, Ph.D. (Struct, IIT Madras), Sannidhi Technologies Inc, Professor of practice and Advisor, IIT-Dharwad., Member of Board of studies VTU-Gov of Karnataka., 9880713648, drspr@sannidhitechnologiesinc.com
5.	Invited Industry representative	A C Shivakumar, Consultant for Bridges, rigid pavements, deep excavations & irrigation structures, Design Academy Consulting Civil Engineers., 9110250187, acshivakumar86@gmail.com
6.	A distinguished Alumnus	Mr. Vishal Gowda N S, Engineer, (Structures) Transys Consulting Pvt. Ltd, 7349713035, shipavi.6976@gmail.com
7.	Convenor	Dr. Manu D S, Associate Professor, Department of Civil Engineering, GAT, 9538769824, drmanu.ds@gat.ac.in
8.	Member	Dr. Ravindra P M, Professor, Department of Civil Engineering, GAT, 9964639538, drravindrapm@gat.ac.in
9.	Member	Dr. Allamaprabhu Kamatagi, Associate Professor, Department of Civil Engineering, GAT, Bengaluru, 9844243511, prabhukamatagi@gat.ac.in
10	Member	Dr. Preethi R K, Associate Professor, Department of Civil Engineering, GAT, 7022578411, drpreethirk@gat.ac.in
11	Member	Mrs Dhavala S, Assistant Professor, Department of Civil Engineering, GAT, 9739872169, d.padiwal@gat.ac.in
12	Invited member	Dr. H.B. Balakrishna, Principal, GAT, Bengaluru, 9845395535, principal@gat.ac.in
13	Invited member	Dr. Vijay Tambrallimath, Associate Dean Academics, GAT, Bengaluru, 9480324605, dean@gat.ac.in

BoS Chairman
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Ideal Homes Township,
Rajarajeshwari Nagar, Bangalore-560 098

DEPARTMENT OF CIVIL ENGINEERING

Board of Studies (AY-2026-27)

Signatures of the BoS members present

Sl.no	Category	Name & Designation	Signature
1	Chairman	**Dr. Kiran B**, Professor & Head, Department of Civil Engineering, GAT, Bengaluru, 9743372590, b.kiran@gat.ac.in	
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BoS Chairman | **Dean Academics** (1/4/26) | **Principal**

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Proceedings of

BOARD OF STUDIES

Program

COMPUTER SCIENCE AND ENGINEERING

A.Y. 2025-2026

28th March 2026

BoS Chairman | Associate Dean Academics | Principal

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1. INTRODUCTION & OBJECTIVES

Purpose of the Meeting:

- Review academic performance and curriculum effectiveness
- Align curriculum with PO, PSO, SDGs, Washington Accord WK profiles
- Ensure NEP 2020 and NCrF compliance
- Strengthen skill-based, experiential, and industry-integrated learning
- Improve CO–PO attainment and placement conversion
- Ensure continuous improvement

Agenda:

1. Welcome address and Introduction of members
2. Vision, Mission, PSOs, PEOs of the Department
3. Review of minutes from previous BOS meeting, DAC/DAB meeting
4. Discussion on the Scheme and Syllabus
    - UG - 2024 Scheme: V - VIII Semester Syllabus
    - UG - 2026 Scheme: I - VIII Semester Scheme
    - UG - 2026 Scheme: I Year Syllabus
    - PG - 2026 Scheme: I - IV Semester Scheme and Syllabus
5. Change in evaluation methodology of CIE (from 3 IA to 2 IA and Marks 40 to 50 and AAT)
6. Change in Question paper Pattern with question Bank for 2026 Scheme (NEW) and for existing Schemes of 2024 and 2023
7. Corrigendum – 2024 Scheme, 2023 Scheme subjects
8. Value Added Programs, Skill Programs, AICTE Activities and Internship
9. Discussion on methodologies for Innovative Teaching, Learning and evaluation techniques
10. Vote of Thanks

2. CONSTITUTION OF BOS

Details of Board of Studies

Sl. No.	Name	Designation with Affiliation	Role
1	**Dr. R Rajkumar**	Professor and Head, CSE, GAT	**Chairman**
2	**Dr. H S Guruprasad**	Professor BMSCE, Bengaluru	**VTU Nominee**
3	**Dr. Naveen N C**	Professor, CSE, MSRIT, Bengaluru	**Nominated by Academic Council**
4	**Mr. Rakesh Annappashetty**	Software Senior Principal Engineering, Dell Technologies, Bengaluru, Karnataka	**Industry Expert**
5	**Mr. Abhijth S**	Technical Lead, Skyhigh Security, Bengaluru – 560071	**Alumni**
6	**Dr. Kumaraswamy S**	Professor, CSE, GAT	**Member – Coordinator**
7	**Dr. R Kanagavalli**	Professor, CSE, GAT	**Member – UG Convener**
8	**Dr. Jyothi S**	Associate Professor, CSE, GAT	**Member – UG**
9	**Dr. Shruthi G**	Associate Professor, CSE, GAT	**Member – UG**
10	**Prof. Vanishree M L**	Assistant Professor, CSE, GAT	**Member – UG**
11	**Prof. Yashaswini K**	Assistant Professor, CSE, GAT	**Member – UG**
12	**Dr. Jyothi R**	Professor, CSE, GAT	**Member – PG Convener**
13	**Prof. Aparna K S**	Assistant Professor, CSE, GAT	**Member – PG**
14	**Dr. Vijay T**	Associate Dean(Academics) GAT	**Invited Member**
15	**Dr.H B Balakrishna**	Principal,GAT	**Invited Member**

3. CONFIRMATION OF PREVIOUS MINUTES

Statement:

"The Minutes of the previous BoS meeting held on 14th May 2025 were circulated and confirmed."

Resolution Number: 07

4. ACTION TAKEN REPORT (ATR)

Curriculum Revision and Modernization		
Recommendation	**Action Taken**	**Status**
Replace .NET Framework with .NET Core	Syllabus updated to include .NET Core concepts with practical components	Implemented
Introduce Full Stack Development	New course on Full Stack Development (Frontend + Backend) introduced in V/VI semester	Implemented
Introduce Parallel Processing & GPU	Elective on Parallel Computing and GPU Programming proposed	In Progress
Replace iOS/Mac with Flutter	Mobile App Development updated to include Flutter framework	Implemented

Course Structure and Sequencing		
Recommendation	**Action Taken**	**Status**
Introduce Computer Networks earlier	Computer Networks moved to IV Semester	Implemented
Split TOC and Compiler Design	Subjects separated into two independent courses	Implemented
Introduce Design Patterns before project	Design Patterns moved to VI Semester	Implemented

Skill-Oriented Learning		
Recommendation	**Action Taken**	**Status**
Focus on logic-based evaluation	Question papers redesigned with problem-solving and application-based questions	Implemented
Improve coding skills	Introduced coding-focused lab components and assignments	Implemented
Strengthen practical exposure	Increased lab hours and mini-projects in core subjects	Implemented
Focus on logic-based evaluation	Question papers redesigned with problem-solving and application-based questions	Implemented

New Courses and Content Validation		
Recommendation	**Action Taken**	**Status**
Evaluate Julia programming	Conducted feasibility review; introduced as optional/elective module	In Progress
Review Biology for Engineering	Syllabus refined to include engineering-relevant applications	Implemented

CO–PO Alignment		
Recommendation	**Action Taken**	**Status**
Reframe Course Outcomes	COs revised using Bloom's Taxonomy action verbs	Implemented
Improve CO–PO mapping	Mapping reviewed and validated as per NBA guidelines	Implemented

Industry Alignment		
Recommendation	**Action Taken**	**Status**
Update curriculum as per industry needs	Industry inputs incorporated in syllabus revision and electives	Implemented
Enhance employability skills	Added skill-based and certification-oriented content	Implemented

Value-Added Courses		
Recommendation	**Action Taken**	**Status**
Continue existing value-added courses	Existing courses continued with minor content updates	Implemented
Introduce new certification areas	Proposal initiated for AI, Cloud, and Cybersecurity certifications	In Progress

Infrastructure and Skill Development		
Recommendation	**Action Taken**	**Status**
Improve lab infrastructure	Upgraded labs with modern tools and software platforms	In Progress
Focus on hands-on training	Introduced mini-projects, hackathons, and lab-intensive sessions	Implemented

5. STAKEHOLDER FEEDBACK ANALYSIS

5.1. Feedback

Sources	Remark
Students	The feedback analysis indicates that the curriculum is well-structured, relevant, and effective in supporting students' academic and career development. A majority of respondents have rated the curriculum as Very Good or Excellent, reflecting a high level of satisfaction. Overall, the curriculum is robust and aligned with current educational and industry requirements, with minor enhancements needed for holistic student development.
Alumni	The feedback received from alumni highlights the need for enhancing practical exposure, skill development, and industry readiness among students. Alumni have emphasized the importance of strengthening soft skills, hands-on learning, internships, and industry interaction to bridge the gap between academic learning and real-world requirements.
Faculty	The feedback reflects that the curriculum is highly effective, well-aligned, and up-to-date, with a majority of responses rated as Excellent and Very Good across all parameters. The curriculum strongly aligns with Program Outcomes (POs), Program Educational Objectives (PEOs), and institutional vision, ensuring relevance and quality in education. Overall, the curriculum is robust, industry-relevant, and comprehensive, effectively supporting students' academic growth, employability, and higher education aspirations.
Parents	The feedback indicates that the curriculum is well-structured, relevant, and effective in supporting students' academic and career development, with most responses rated as Very Good and Excellent. It successfully promotes practical learning, industry alignment, and career preparedness. However, some improvements are suggested in areas such as academic schedule balance, soft skills development, and communication with parents. Overall, the curriculum is strong and satisfactory, with scope for minor enhancements to support holistic development.

5.2. Need Analysis

Based on the feedback analysis presented above, a need analysis based on the expectations at the local, Regional, National and Global Level from the CSE graduates is carried and the summary is as follows. This need analysis identifies skill gaps, industry expectations, and emerging trends to guide curriculum development for producing competent and industry-ready professionals.

Local Needs

Our institution is in Bangalore, the IT Capital of India and with increasing presence of IT companies, startups, and service-based industries, there is

- Demand for software developers and IT professionals in nearby industries
- Need for practical programming and problem-solving skills
- Requirement of internships and industry exposure
- Inclusion of community-based projects

Regional Needs

Our state Karnataka, especially Bengaluru, is a major IT hub with global companies and startups and there is a constant

- Growth of IT sector and startup ecosystem
- Demand for AI, ML, Data Science, and Cloud Computing skills
- Need for industry collaboration and innovation

National Needs (India)

As India is moving towards Viksit Bharath 2047, there must be

- Alignment with the National Education Policy (NEP 2020)
- Focus on skill-based, multidisciplinary education
- Support for initiatives like Digital India and Skill India
- Need for cybersecurity and emerging technologies

Global Needs

As India is growing as one of the major technology leaders in the world, there must be

- Adoption of AI, Big Data, IoT, and Blockchain technologies
- Need for global competencies and adaptability
- Emphasis on ethical and sustainable computing
- Requirement for lifelong learning skills

Gaps Identified

Sl. No.	Area	Gap Identified
1	Practical Skills	Insufficient hands-on training
2	Emerging Technologies	Limited coverage of AI, ML, Data Science
3	Industry Exposure	Lack of structured internships
4	Soft Skills	Limited focus on communication & teamwork
5	Research	Low emphasis on innovation and publications

5.3. Summary Table

Agenda	Key Suggestions	Proposed Action
Practical Skills and Soft Skills	• Coding practice sessions and hackathons • Certification programs • Soft skills and aptitude training • Adoption of project-based learning • Inclusion of case studies and real-world applications • Conduct of workshops and expert lectures	• Skill development programs • Value Added certification courses
Emerging Technologies	Curriculum revision to include courses covering advanced topics on Artificial Intelligence ,Machine Learning, Data Science, Cybersecurity and Edge Computing	Courses on Deep Learning, Generative AI, tools for cyber security, Fog Computing to be introduced.
Industry Exposure	• Establish MoUs with industries • Provide internship opportunities • Develop industry-sponsored labs	• Internship to be made mandatory for all students • To incubate students to industry driven projects through IIC Cell.
Research	• Encourage student research projects • Promote startup and incubation activities • Facilitate publication and patent filing	• Paper Publication to be made mandatory for all project works • Suitable projects to be nominated for Patents through IPR Cell. • Student Project Grants through R & D Cell.

GAT CSE 2024 Scheme

Subjects Grouped by Local, National, and Global Needs

1. Local / Regional Needs

Subjects addressing Karnataka's language, civic duties, community welfare, and immediate societal and environmental development.

Course Code	Subject Name	Semester	Type
BCSL24504	DBMS Lab with Mini Project	V	PCCL
BCS24556x	Ability Enhancement / Skill Enhancement Course V	V	AEC/SEC
BCSP24507	Mini Project	V	PROJ
BCSL24607	Mobile App Development using Flutter	VI	PCCL
BCS24657x	Ability Enhancement / Skill Dev Course VI	VI	AEC/SDC
BCS24605A	MongoDB for Developers (Open Elective)	VI	OEC

2. National Needs

Core CSE curriculum aligned with India's Digital India mission, AICTE/VTU policies, NPTEL platforms, national IT sector workforce demands, and engineering education reform.

Course Code	Subject Name	Semester	Type
BCS24501	Engineering Economics, Management & Entrepreneurship	V	HSMC
BCS24503	Database Management Systems	V	PCC
BRMK24557	Research Methodology and IPR	V	AEC
BESK24508	Environmental Studies	V	MC
BNSK24559	National Service Scheme (NSS)	V	MC
BCS24601	Machine Learning	VI	IPCC
BCS24602	Cloud Computing and Big Data Analytics	VI	PCC
BCS24603	Theory of Computation and Compiler Design	VI	PCC
BIKS24608	Indian Knowledge System	VI	IKS
BDMP24609	Disaster Management and Preparedness	VI	MC
BCS24702	Cryptography and Network Security	VII	IPCC
BCS24703	Cryptocurrency and Blockchain Technology	VII	PCC
BCS24803	Internship (Industry/Research)	VIII	INT

3. Global Needs

Frontier technology courses, internationally competitive electives, and professional skills addressing worldwide technology trends, sustainability, and the global knowledge economy.

Course Code	Subject Name	Semester	Type
BCS24502	Computer Networks	V	IPCC
BCS24505x	Professional Elective I (NLP / Microcontrollers / Design Patterns / Agile)	V	PEC
BCS24604x	Professional Elective II (Computer Vision / Adv. Java / Adhoc Wireless / Enterprise Architecture)	VI	PEC
BCSP24606	Project Phase – I	VI	PROJ
BCS24701	Deep Learning and Generative AI	VII	IPCC
BCS24704x	Professional Elective III (Soft Computing / NoSQL / Quantum / Cloud Data Platforms)	VII	PEC
BCS24705x	Open Elective II (Data Science / Tableau & Power BI / Cyber Ethics / Full Stack Backend)	VII	OEC
BCSP24706	Major Project Phase – II	VII	PROJ
BCS24801x	Professional Elective IV (NPTEL/VTU Online)	VIII	PEC
BCS24802x	Professional Elective V (NPTEL/VTU Online)	VIII	PEC

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GAT CSE 2024 Scheme
Grouping of Subjects based on Employability, Skill Development, and Entrepreneurship

1. Employability-Oriented Subjects

Sl. No	Course Code	Course Title
1	BCS24502	Computer Networks
2	BCS24503	Database Management Systems
3	BCS24601	Machine Learning
4	BCS24602	Cloud Computing and Big Data Analytics
5	BCS24603	Theory of Computation and Compiler Design
6	BCS24701	Deep Learning and Generative AI
7	BCS24702	Cryptography and Network Security
8	BCS24803	Internship (Industry/Research)

2. Skill Development-Oriented Subjects

Sl. No	Course Code	Course Title
1	BCSL24504	DBMS Lab with Mini Project
2	BCSP24507	Mini Project
3	BCS24556x	Ability/Skill Enhancement Course – V
4	BCSL24607	Mobile App Development using Flutter
5	BCSP24606	Project Phase – I
6	BCS24657x	Skill Development Course – VI
7	BCSP24706	Major Project Phase – II

3. Entrepreneurship-Oriented Subjects

Sl. No	Course Code	Course Title
1	BCS24501	Engineering Economics, Management and Entrepreneurship
2	BCS24703	Cryptocurrency and Blockchain Technology

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GAT CSE 2026 Scheme

Subjects Grouped by Local, National, and Global Needs

1. Local / Regional Needs

Subjects addressing Karnataka's language, civic duties, community welfare, and immediate societal and environmental development.

Course Code	Subject Name	Semester	Type
BKSK/BKBK	Samskrutika Kannada / Balake Kannada	I / II	HSMC
BICO26207	Indian Constitution & Engineering Ethics	I / II	NCMC
BCP26308	Community Project	III	SDC
BNSS26309	NSS / Physical Education / Yoga	III–IV	NCMC
BEP26408	Environmental Science Project	IV	SDC
BRM26506	Research Methodology and IPR	V	BSC
BDMP26611	Disaster Management and Preparedness	VI	NCMC
BCS26803D	Societal Internship	VIII	SDC

2. National Needs

Core CSE curriculum aligned with India's Digital India mission, AICTE/VTU policies, NPTEL platforms, national IT sector workforce demands, and engineering education reform.

Course Code	Subject Name	Semester	Type
BAIA26203	Introduction to AI and Applications	I / II	ETC
BPLC26205	Python Programming / C Programming	I / II	PLC
BMAT26301	Discrete Mathematics	III	ASC/PCC
BCI26302	Operating Systems	III	IPCC
BCS26303	Digital Design and Computer Organization	III	PCC
BAD26304	Data Structures and Applications	III	PCC
BAI26305	Computer Networks	III	PCC
BMAT26401	Programme Specific Mathematics	IV	ASC/PCC
BCS26402	Object Oriented Programming with Java	IV	IPCC
BCS26403	Database Management Systems	IV	PCC
BIS26404	Design and Analysis of Algorithms	IV	PCC
BCS26407	Biology for IT Engineers	IV	BSC
BIS26501	Sustainable Software Engineering & Project Management	V	HSMC
BCS26502	Full Stack Development	V	IPCC
BCS26503	Machine Learning	V	PCC
BCS26504	Cryptography and Cyber Security	V	PCC
BCS26508	Hackathon-Based Project	V	SDC
BIKS26510	Indian Knowledge System (NPTEL)	V	NCMC

Course Code	Subject Name	Semester	Type
BCS26603	Theory of Computation / Blockchain Technologies	VI	PCC
BCS26608	Capstone Project – Phase I	VI	SDC
BCS26705	Capstone Project – Phase II	VII	SDC
BPAT	Placement and Training	III–VI	NCMC
BCS26803A/C	Industry / Post-Placement Internship	VIII	SDC
BMATD	Bridge Mathematics (Lateral Entry)	III–IV	NCMC

3. Global Needs

Frontier technology courses, internationally competitive electives, and professional skills addressing worldwide technology trends, sustainability, and the global knowledge economy.

Course Code	Subject Name	Semester	Type
BMATS26101/201	Applied Mathematics I & II (CSE stream)	I / II	ASC
BPHYS26202	Quantum Physics and Applications	I / II	ASC
BCHES26202	Applied Chemistry for Smart Systems	I / II	ASC
BIDTL26158	Innovation and Design Thinking Lab	I	AEC/SDC
BENG26206	Communication Skills	I / II	AEC
BPRJ26258	Interdisciplinary Project-Based Learning	II	AEC/SDC
BCS26505x	Professional Elective I (Computational DS / Ethical Hacking / Optimization)	V	PEC
BCS26601	Cloud Computing and Big Data	VI	IPCC
BCS26602	Deep Learning	VI	PCC
BCS26604	Computer Vision / Internet of Things	VI	PCC
BCS26605x	Professional Elective II (Data Mining / Blockchain / IoT / Agile)	VI	PEC
BCS26607x	AEC Lab (DevOps / Cyber Forensics / Competitive Programming)	VI	AEC
BCS26609	Universal Human Values (NPTEL)	VI	NCMC
BCS26701	Generative AI and Prompt Engineering	VII	IPCC
BCS26702x	Professional Elective III (NLP / AR-VR / Fog & Edge / Design Patterns)	VII	PEC
BCS26703x	Professional Elective IV (Soft Computing / Quantum Computing / Multi-Core / Enterprise Arch)	VII	PEC
BCS26704x	Open Elective I (NPTEL)	VII	OEC
BCS26801x	Professional Elective V (NPTEL)	VIII	PEC
BCS26802x	Open Elective II (NPTEL)	VIII	OEC
BCS26803B/E/F	Research / Online / Skill Enhancement Internship	VIII	SDC

Abbreviations

Code	Full Form
AEC	Ability Enhancement Course
ASC	Applied Science Course
BSC	Basic Science Course
ETC	Emerging Technology Course
HSMC	Humanities, Social Science and Management Course
IPCC	Integrated Professional Core Course
NCMC	Non-Credit Mandatory Course
OEC	Open Elective (Interdisciplinary) Course
PCC	Professional Core Course
PEC	Professional Elective Course
PLC	Programming Language Course
SDC	Skill Development Course

GAT CSE 2026 Scheme
Grouping of Subjects based on Employability, Skill Development, and Entrepreneurship

1. Employability-Oriented Subjects

Sl. No	Course Code	Course Title
1	BCI26302	Operating Systems
2	BCS26403	Database Management Systems
3	BAI26305	Computer Networks
4	BCS26601	Cloud Computing and Big Data
5	BCS26502	Full Stack Development
6	BCS26402	Object Oriented Programming with Java
7	BIS26404	Design and Analysis of Algorithms
8	BAD26304	Data Structures and Applications
9	BCS26503	Machine Learning
10	BCS26602	Deep Learning
11	BCS26604	Computer Vision
12	BCS26701	Generative AI and Prompt Engineering
13	BCS26603	Blockchain Technologies
14	BCSL26607A	DevOps / Automation Testing
15	BPAT26311	Placement and Training
16	BCS26505x	Professional Electives
17	BCS26608	Capstone Project Phase I

2. Skill Development-Oriented Subjects

Sl. No	Course Code	Course Title
1	BADL26306	Data Structures Lab
2	BISL26405	Algorithms Lab
3	BCSL26507	Machine Learning Lab
4	BCSL26507	Full Stack Development Lab
5	BCSL26606	Deep Learning and Computer Vision Lab
6	BCSL26307x	Ability Enhancement Course Labs
7	BCSL26307C	Technical Writing using LaTeX
8	BCSL26307A	Project Management with Git
9	BCP26308	Community Project
10	BEP26408	Environmental Science Project
11	BCS26508	Hackathon-Based Project
12	BCS26608	Capstone Project
13	BCS26407	Biology for IT Engineers
14	BRM26506	Research Methodology and IPR

3. Entrepreneurship-Oriented Subjects

Sl. No	Course Code	Course Title
1	BIS26501	Sustainable Software Engineering and Project Management
2	BCS26502	Full Stack Development
3	BCS26503	Machine Learning / NLP
4	BCS26601	Cloud Computing
5	BCS26603	Blockchain Technologies
6	BCS26701	Generative AI
7	BRM26506	Research Methodology and IPR
8	BCS26508	Hackathon-Based Project
9	BCS26608	Capstone Project
10	BCS26505x	Professional Electives
11	BCSL26307x	Innovation and Design Thinking Lab

6. VISION, MISSION, PEO & PSO REVIEW

6.1 Alignment of Department Vision and Mission with Institute Vision and Mission

INSTITUTE VISION

Become a *premier institution* imparting *quality education* in engineering and management to meet the changing *needs of society*.

INSTITUTE MISSION

M1: Create environment conducive for continuous learning through *quality teaching learning process* supported by *modern infrastructure*.

M2: Promote *research and innovation* through *collaboration with industries*.

M3: Inculcate *ethical values and environmental consciousness* through holistic education program.

DEPARTMENT VISION

To achieve *academic excellence* and *strengthen the skills* to meet *emerging challenges of Computer Science and Engineering*

DEPARTMENT MISSION

M1: To impart *strong theoretical foundation* in the field of Computer Science and Engineering accompanied with *extensive practical skills*.

M2: To inculcate *research and innovation* spirit through *interaction with industry* and *carry out projects* that address societal needs.

M3: Instil *professional ethics* and values with *concern for environment*.

Vision Components Comparison

Institute Vision Components	Department Vision Components
Premier Institute	Academic excellence
Quality Education	Strengthen the skills
Needs of Society	Emerging challenges of Computer Science and Engineering

Mission Components Comparison

Institute Mission Components	Department Mission Components
Quality teaching and learning process	Strong theoretical foundation
Modern Infrastructure	Extensive practical skills
Research and Innovation	Research and Innovation
Collaboration with Industries	Interaction with industry to carry out projects
Ethical values and environmental consciousness	Professional ethics
	Concern for Environment

6.2 PEO Attainment Evidence

Program Educational Objectives (PEOs) - UG

After 3 to 5 years of Graduation, the Graduates will have the ability to:

PEO1: Succeed in Engineering/Management positions with professional ethics.

PEO2: Engage in improving professional knowledge through certificate/ postgraduate Programs in Engineering or Management.

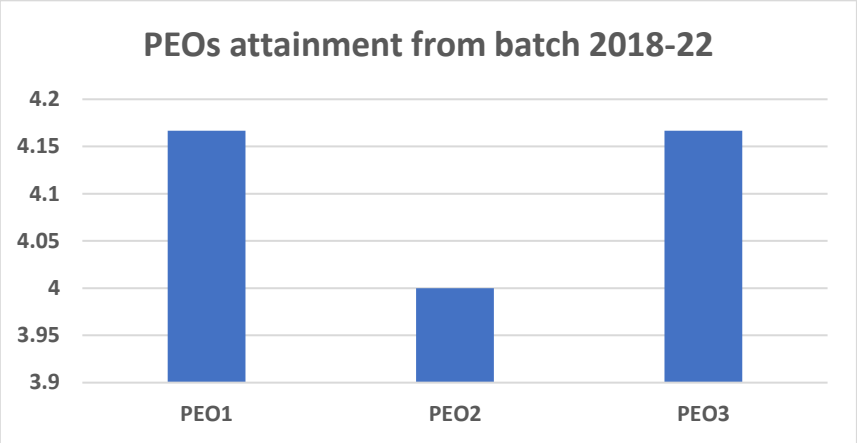
PEO3: Establish themselves as entrepreneurs and contribute to the Society.

Program Specific Outcomes (PSOs) - UG

CSE Graduates will have the ability to:

PSO1: Design, implement and test System Software and Application Software to meet the desired needs.

PSO2: Develop solutions in the area of Communication Networks, Database Systems and Computing Systems.



The PEOs attainment analysis was carried out by conducting a survey among the alumni of 2018-22 batch as the batch has completed the graduation 3 years ago.

Program Educational Objectives (PEOs) - PG

After 3 to 5 years of Post Graduation, the Graduates will have the ability to:

PEO1: Excel in globally competitive professional environments, solving complex real-world industry problems.

PEO2: Contribute to cutting-edge research or establish technology-driven ventures addressing real-world computing challenges.

PEO3: Lead with integrity, continuously adapting to evolving technologies while contributing to global computing advancements.

Program Specific Outcomes (PSOs) - PG

CSE Postgraduates will have the ability to:

PSO1: Apply advanced algorithms and technologies to build efficient, scalable real-world solutions.

PSO2: Conduct research that integrates emerging technologies to develop secure, efficient, and sustainable computing systems.

Concluding Remarks:

The Vision, Mission, PEO and PSO statements were reviewed and forwarded for Approval in the Academic council.

7. CO–PO ATTAINMENT REVIEW

7.1 Outgoing Batch Analysis

PO - PSO Attainment Gap Analysis

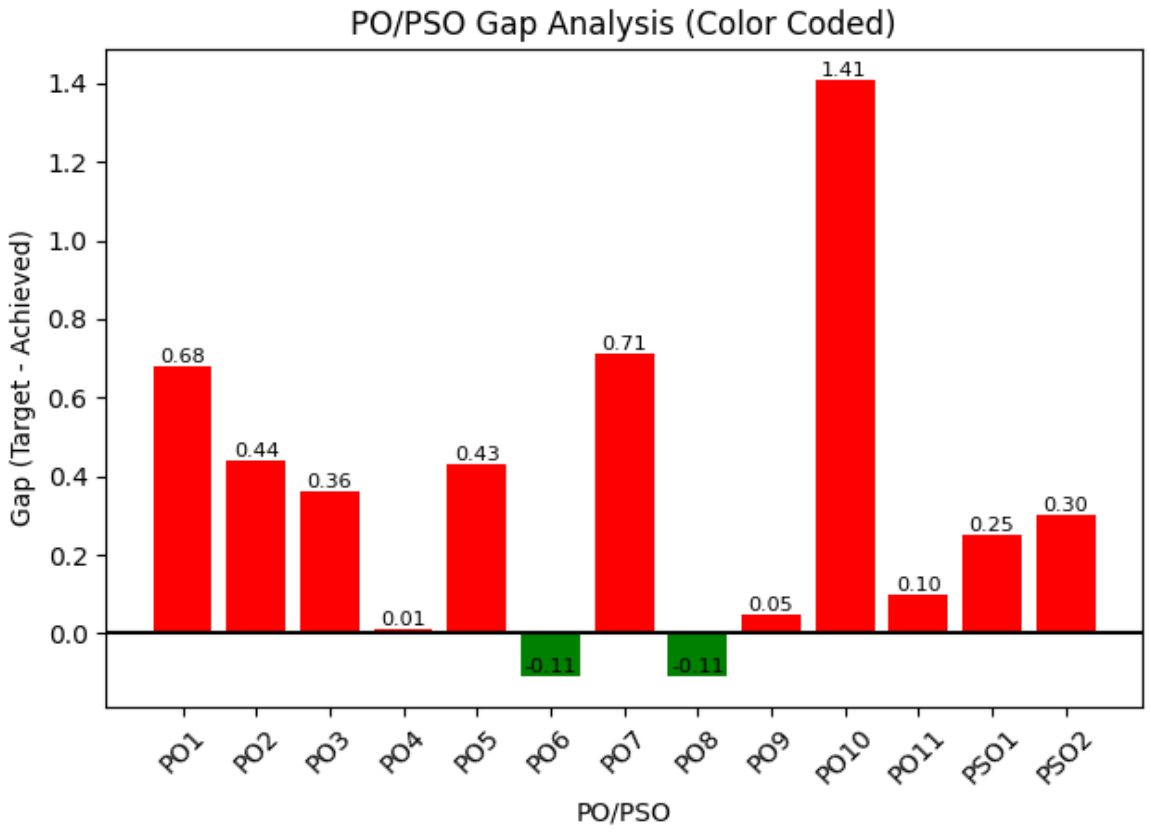
Outgoing Batch Analysis: 2021-25

PO/ PSO	Target	Achieved	GAP	Action Plan
PO1	2.84	2.16	0.68	Improve fundamentals through remedial classes, bridge courses, and concept-based teaching. Introduce higher-order questions and additional learning resources.
PO2	2.50	2.06	0.44	Strengthen analytical skills through case studies, real-world problem-solving, and project-based learning approaches.
PO3	2.22	1.86	0.36	Enhance design skills via open-ended laboratory experiments, mini/major projects, and participation in design competitions.
PO4	1.60	1.59	0.01	A slight gap is observed and encouraging to continue research-oriented assignments, literature reviews, and introduction of research methodology sessions is to be practiced.
PO5	2.50	2.07	0.43	A gap in Industry and modern tools need to introduce specialised electives such as Cloud Computing & Virtualisation (AWS/Azure/GC), advanced Python DevOps, Data Visualisation. With increased usage of modern tools in laboratory and hands-on training sessions and value-added programs as per industry requirements.
PO6	1.50	1.61	-0.11	Target achieved. Sustain performance through societal-based projects and continuous engagement activities.
PO7	2.20	1.49	0.71	Improve awareness of ethics, sustainability, and societal responsibility through guest lectures, SDG-based projects, and professional ethics courses.
PO8	1.83	1.94	-0.11	Target achieved. Continue ethical practices, case studies, and professional responsibility sessions.
PO9	1.66	1.61	0.05	Enhance teamwork and communication through group projects, peer learning, and presentation-based assessments.

PO10	2.66	1.25	1.41	Improve project management skills via workshops on engineering economics, costing, planning, and introduction to Agile/Scrum methodologies.
PO11	2.31	2.21	0.10	Encourage lifelong learning through MOOCs (SWAYAM/NPTEL, Coursera), certifications, and self-learning assignments.
PSO1	2.20	1.95	0.25	Strengthen domain knowledge through advanced labs, coding practice, and industry-relevant mini/major projects.
PSO2	2.10	1.80	0.30	Improve application based skills using real-time datasets, internships, and industry collaborations. Introduce hands-on training in emerging technologies.

Summary:

- **Critical Gaps:** PO10, PO7, PO1
- **Moderate Gaps:** PO2, PO3, PO5, PSO2, PSO1
- **Targets Achieved / Sustained:** PO4, PO6, PO8



Course revision required

- ✓ Strengthen fundamental concepts in core subjects (PO1)
- ✓ Introduce more analytical and case study-based content (PO2)
- ✓ Include design-oriented and open-ended problems/lab experiments (PO3)
- ✓ Add industry-relevant tools and software components in curriculum (PO5)
- ✓ Incorporate project planning, costing, and management topics (PO10)
- ✓ Enhance content related to ethics, sustainability, and societal impact (PO7)
- ✓ Integrate research methodology and innovation-based components (PO4)

Pedagogy modification

- ✓ Adopt activity-based and experiential learning methods
- ✓ Use case studies, real-world problem solving, and mini-projects (PO2, PO3)
- ✓ Conduct remedial classes for strengthening fundamentals (PO1)
- ✓ Implement project-based learning and interdisciplinary tasks
- ✓ Include hands-on sessions with industry tools/software (PO5)
- ✓ Organize technical presentations, group discussions, and report writing sessions (PO9)
- ✓ Introduce research-oriented assignments and literature review tasks (PO4)
- ✓ Encourage self-learning and certification courses (PO11)

Faculty training need

- ✓ Training on modern teaching pedagogies (active learning, flipped classroom)
- ✓ Workshops on case study development and project-based learning methods
- ✓ Skill enhancement in latest industry tools/software
- ✓ Training in research guidance and innovation mentoring
- ✓ Exposure to engineering economics and project management concepts (PO10)
- ✓ Development programs on Outcome-Based Education (OBE) and attainment analysis
- ✓ Training to integrate ethics, sustainability, and interdisciplinary approaches into teaching

8. CURRICULUM DESIGN & COMPREHENSIVE MAPPING

8.1. Credit Structure

2024 scheme

Undergraduate

1 credit = 30 hours

Total Program Credits – 160

Category	Credits	% of Total
Basic Sciences	22	13.75
Basic Engineering	18	11.25
Humanities & Social Sciences	15	9.39
Program Core	59	36.87
Program Electives	15	9.37
Open Electives	6	3.75
Projects	11	6.87
Internship	10	6.25

Scheme attached as Annexure A

2026 scheme

1 credit = 30 hours

Total Program Credits – 160

Category	Credits	% of Total
Basic Sciences	23	14.37
Basic Engineering	16	10
Humanities & Social Sciences	12	7.51
Program Core	56	35
Program Electives	15	9.37
Open Electives	06	3.75
Projects	16	10
Internship	12	7.5

Scheme attached as Annexure B

Postgraduate

Total Credits =80

Course Type	Credits	% of Credits
Program Core	33	41.25
PEC	15	18.75
AEC	1	1.25
Project	16	20.00
Internship	15	18.75

Scheme attached as Annexure C

8.2 Mapping Framework

8.2.1. PO/PSO Mapping Table

Undergraduate Courses

PO	Courses
PO1: Engineering Knowledge	BCS24501, BCS24502, BCS24503, BCSL24504, BCS24505A, BCS24505B, BCS24505C, BCS24505D, BCS24556A, BCS24556B, BCS24556C, BCS24556D, BCSP24507, BRMK24557, BCS24601, BCS24602, BCS24605, BCS24701, BCS24702, BCS24703, BCS24704B, BCS24704C, BCS24704D, BCS24705A, BCS24705B, BCS24705C, BCS24705D
PO2: Problem Analysis	BCS24501, BCS24502, BCS24503, BCSL24504, BCS24505A, BCS24505B, BCS24505C, BCS24505D, BCS24556A, BCS24556B, BCS24556C, BCS24556D, BCSP24507, BCS24601, BCS24603, BCS24604, BCS24701, BCS24702, BCS24703, BCS24704C, BCS24704D, BCS24705A, BCS24705B, BCS24705C, BCS24705D
PO3: Design / Development of Solutions	BCS24501, BCS24502, BCS24503, BCSL24504, BCS24505C, BCS24556A, BCS24556B, BCS24556C, BCS24556D, BCSP24507, BCS24601, BCS24602, BCS24603, BCS24604, BCS24701, BCS24702, BCS24703, BCS24704B, BCS24704C, BCS24704D, BCS24705A, BCS24705B, BCS24705D
PO4: Investigation	BCS24501, BCS24505A, BCS24505C, BCS24505D, BCS24556A, BCS24556C, BCS24556D, BRMK24557, BCS24601, BCS24603, BCS24605, BCS24701, BCS24703, BCS24704C, BCS24704D, BCS24705A, BCS24705D
PO5: Modern Tool Usage	BCS24502, BCS24503, BCSL24504, BCS24505A, BCS24505C, BCS24505D, BCS24556A, BCS24556B, BCS24556C, BCS24556D, BCSP24507, BCS24601, BCS24602, BCS24604, BCS24701, BCS24702, BCS24703, BCS24704C, BCS24704D, BCS24705A, BCS24705B, BCS24705C
PO6: The Engineer and the World (Includes Sustainability)	BCS24501, BCS24505C, BCS24505D, BCS24702, BCS24705C, BCS24705D
PO7: Ethics	BCS24501, BCS24505C, BCS24556B, BCS24556C, BCS24705D

PO8: Individual and Collaborative Teamwork	BCS24503, BCS24505B, BCS24505C, BCS24505D, BCS24556B, BCS24556C, BRMK24557, BCS24704B, BCS24705D
PO9: Communication	BCS24501, BCSL24504, BCS24505C, BCS24505D, BCS24556B, BCS24556C, BCSP24507, BRMK24557, BCS24701, BCS24704B, BCS24705D
PO10: Project Management and Finance	BCS24501, BCS24503, BCSL24504, BCS24505C, BCS24505D, BCS24556A, BCS24556C, BCSP24507, BCS24701, BCS24704B, BCS24705D
PO11: Life-Long Learning	BCS24501, BCS24502, BCSL24504, BCS24505B, BCS24505C, BCS24505D, BCS24556B, BCS24556C, BCSP24507, BRMK24557, BCS24701, BCS24702, BCS24703, BCS24704B, BCS24704C, BCS24705B, BCS24705C, BCS24705D
PSO1: Design, implement and test System Software and Application Software to meet the desired needs	BCS24501, BCS24505A, BCS24505C, BCS24556A, BCS24556B, BCS24556C, BCS24556D, BCSP24507, BCS24601, BCS24603, BCS24605, BCS24701, BCS24703, BCS24704C, BCS24704D, BCS24705A, BCS24705B, BCS24705D
PSO2: Develop solutions in the area of Communication Networks, Database Systems and Computing Systems	BCS24501, BCS24502, BCS24503, BCSL24504, BCS24505B, BCS24505D, BCS24556C, BCSP24507, BCS24601, BCS24602, BCS24603, BCS24604, BCS24605, BCS24701, BCS24702, BCS24703, BCS24704B, BCS24704C, BCS24704D, BCS24705A, BCS24705C

Postgraduate Courses

PO	Courses
PO1: Independently carry out research/investigation and development work to solve practical problems.	MCS26101,MCS26102,MCS26103,MCS26104,MCS26105, MCSL26106,MCS26201,MCS26202,MCS26203A, MCS26203B,MCS26203C,MCS26203D,MCS26204A, MCS26204C,MCS26204D,MCS26205,MCS26206, MCSL26207, AEC26208
PO2: Write and present a substantial technical report / document	MCS26101,MCS26102,MCS26103,MCS26104,MCS26105, MCSL26106,MCS26201,MCS26202,MCS26203A, MCS26203B,MCS26203C,MCS26203D,MCS26204A MCS26204, MCS26204D , MCS26205 , MCS26206 , AEC26208

PO3: Demonstrate a degree of mastery over Computer Science and Engineering	MCS26101,MCS26102,MCS26103,MCS26104,MCSL26106, MCS26201, MCS26202,MCS26203A,MCS26203B, MCS26203C, MCS26203D, MCS26204A ,MCS26204B,MCS26204C, MCS26204D , MCS26205 , MCSL26207 , AEC26208
PO4: Acquire a sense of ethical and moral integrity in Applications of Computer Science and Engineering with concern to Environment and sustainability	MCS26101,MCS26102,MCS26103,MCS26105,MCSL26106, MCS26201,MCS26202,MCS26203A,MCS26203B, MCS26203C,MCS26203D,MCS26204A,MCS26204B, MCS26204C, MCS26205 , MCS26206 , MCSL26207
PO5: Inculcate a personality trait to be open to learn, unlearn and relearn concepts and skills for the lifetime.	MCS26101,MCS26102,MCS26103,MCS26104,MCS26105, MCSL26106,MCS26201, MCS26202 , MCS26203A , MCS26203B, MCS26203C,MCS26203D,MCS26204A,MCS26204B, MCS26204C,MCS26204D, MCS26205 , MCS26206 , MCSL26207 , AEC26208
PSO1: Apply advanced algorithms and technologies to build efficient, scalable real-world solutions.	MCS26102,MCS26103,MCS26104,MCS26105, MCSL26106MCS26202,MCS26203A,MCS26203C,MCS26204A,MCS26204B,MCS26204C, MCS26205,MCSL26207 , AEC26208
PSO2: Conduct research that integrates emerging technologies to develop secure, efficient, and sustainable computing systems.	MCS26101,MCS26102,MCS26103,MCS26105,MCSL26106, MCS26201, MCS26202,MCS26203A,MCS26203B, MCS26203C , MCS26203D , MCS26204D, MCS26205,MCS26206, AEC26208.

8.2.2. SDG Mapping Table

Undergraduate Courses

SDG	Focus Area	Courses
SDG 4: Quality Education	Skills Development, Learning Technologies, and Educational Innovation	• Natural Language Processing • Competitive Programming • Theory of Computation and Compiler Design • Front-End Development • Full Stack Framework – Backend Tools • Advanced Java Programming • Project Management with Jira • Design Patterns • Enterprise Architecture • MongoDB for Full Stack • Mobile App Development using Flutter • Software Design using Plant UML • Mini Project • Project Work – Phase I • Project Work – Phase II
SDG 9: Industry, Innovation and Infrastructure	Technological Innovation, Digital Infrastructure, and Industrial Development	• Machine Learning • Computer Vision • Deep Learning • Computational Data Science • Database Management Systems (DBMS) • DBMS Lab • Data Analytics • Internet of Things (IoT) • Soft Computing • Computer Networks • Microcontrollers and Embedded Systems • Agile Technology • Full Stack Framework – Backend • Cloud Computing and Big Data • Ad hoc Wireless Networks • Cloud Infrastructure and Services • DevOps Practices

		• Quantum Computing • Multicore Architecture • Business Intelligence and Data Warehousing
SDG 16: Peace, Justice and Strong Institutions	Digital Security, Governance, and Ethical Technology	• Automated Software Testing with TOSCA • Selenium Testing • Cryptography and Network Security • Blockchain Technology • Web Application Security • Cybersecurity and Ethical Hacking

Postgraduate Courses

SDG	Focus Area	Courses
SDG 4: Quality Education	Educational Innovation, Learning Technologies, and Skill Development	• Natural Language Processing • Prompt Engineering • Augmented and Virtual Reality • Deep Learning • Generative AI • Interactive System Design • Data Analytics using Tableau Laboratory • Full Stack Development • Research / Industry Internship • Project Work Phase I • Project Work Phase II
SDG 9: Industry, Innovation and Infrastructure	Technological Innovation, Digital Infrastructure, and Advanced Computing	• Cloud Computing and Big Data Analytics • Cloud Computing and Big Data Analytics Lab • Computational Algorithms • Data Science for Business Intelligence • Wireless Networks and Mobile Computing • Quantum Computing • Computer Vision • Software Defined Networking • Edge and Fog Computing

SDG 16: Peace, Justice and Strong Institutions	Digital Security, Cybersecurity, and Trusted Systems	• Applied Cryptography •Blockchain Technology and D-Apps • Cyber Security and Digital Forensics

8.2.3. WK Mapping Table

Undergraduate

WK	Courses
WK1 (Natural Sciences): Theory-based understanding of physics, chemistry, and relevant social sciences.	Engineering Mathematics, Engineering Physics, Basic Electrical Engineering, Digital Logic Design, Discrete Mathematics, Computer Organization, Theory of Computation, Computer Networks
WK2 (Mathematics): Application of math, numerical analysis, statistics, and computer science for modeling.	Programming in C, Data Structures, OOP, Digital Logic, Computer Organization, Operating Systems, Algorithms, DBMS, Compiler Design, Cyber Security, lab oriented courses, Projects,
WK3 (Engineering Fundamentals): Theory-based formulation of core engineering concepts.	Programming in C, Data Structures, OOP, Software Engineering, DBMS, Design Patterns, Web Technologies
WK4 (Specialist Knowledge): Theoretical frameworks for accepted practice areas, often at the forefront.	Engineering Physics, Operating Systems, Algorithms, Computer Networks, Design Patterns, NLP, Machine Learning, Compiler Design, Artificial Intelligence
WK5 (Design & Operation): Knowledge supporting design/operation, including sustainability, cost, and resource efficiency.	Machine Learning, NLP, Web Technologies, Cloud Computing, lab oriented courses, Projects, Mini- Projects, internship
WK6 (Engineering Practice): Knowledge of specific technology used in the discipline.	Software Engineering, NLP, Agile Technology, Internship, Major Project

WK7 (Society & Sustainability): Understanding engineering's role, public Safety, and sustainable development.	Environmental Studies
WK8 (Research Literature): Engagement with current research and critical evaluation of emerging issues.	Software Engineering, NLP, Agile Technology, Cyber Security, Internships
WK9 (Ethics & Professionalism): Knowledge of professional ethics, responsibilities, and inclusive conduct.	Communication Skills, Agile Technology, Projects, Internships ,Seminar, Lab oriented courses

Postgraduate

WK	Courses
WK1 (Natural Sciences): Theory-based understanding of physics, chemistry, and relevant social sciences.	Applied Cryptography, Deep Learning, Cloud Computing & Big Data Analytics, Data Science for Business Intelligence, Natural Language Processing
WK2 (Mathematics): Application of math, numerical analysis, statistics, and computer science for modeling.	Applied Cryptography, Deep Learning, Cloud Computing & Big Data Analytics, Computational Algorithms, Data Science for Business Intelligence, Blockchain & D-Apps, Natural Language Processing, Project, Internship
WK3 (Engineering Fundamentals): Theory-based formulation of core engineering concepts.	Applied Cryptography, Deep Learning, Cloud Computing & Big Data Analytics, Data Science for Business Intelligence, CC & Big Data Lab, Blockchain & D-Apps, Natural Language Processing, Project, Internship
WK4 (Specialist Knowledge): Theoretical frameworks for accepted practice areas, often at the forefront.	Deep Learning, Cloud Computing & Big Data Analytics, Computational Algorithms, Data Science for Business Intelligence, CC & Big Data Lab, Blockchain & D-Apps, Natural Language Processing, Project
WK5 (Design & Operation): Knowledge supporting design/operation, including sustainability, cost, and resource efficiency.	Applied Cryptography, Deep Learning, CC & Big Data Lab, Natural Language Processing, Project, Internship

WK6 (Engineering Practice): Knowledge of specific technology used in the discipline.	Applied Cryptography, Deep Learning, Cloud Computing & Big Data Analytics, CC & Big Data Lab, Blockchain & D-Apps, Project, Internship
WK7 (Society & Sustainability): Understanding engineering's role, public Safety, and sustainable development.	Applied Cryptography, CC & Big Data Lab, Blockchain & D-Apps, Internship
WK8 (Research Literature): Engagement with current research and critical evaluation of emerging issues.	Deep Learning, Cloud Computing & Big Data Analytics, Data Science for Business Intelligence, Blockchain & D-Apps, Project, Internship
WK9 (Ethics & Professionalism): Knowledge of professional ethics, responsibilities, and inclusive conduct.	Data Science for Business Intelligence, Project

8.3 Percentage-Based Reporting

% of courses revised	23.80%
% skill-based courses	35.71%
% courses with apprenticeship/fieldwork	5%
% online credited courses (SWAYAM, NPTEL)	10%
% project-based courses	7.14%

9. NEW COURSE PROPOSALS

2026 scheme

Semester	Course Code	Course Title
III	BMAT26301	Program Specific Mathematics (Discrete Mathematics)
III	BCI26302	Operating Systems (IPCC)
III	BCS26303	Digital Design and Computer Organization
III	BAD26304	Data Structures and Applications
III	BAI26305	Computer Networks
III	BCP26308	Community Project (Project-Based Learning)
III	BPAT26311	Placement and Training
IV	BCS26402	OOP with Java / Machine Learning (IPCC)
IV	BCS26403	Database Management Systems
IV	BIS26404	Design and Analysis of Algorithms
IV	BCS26407	Biology for IT Engineers
IV	BEP26408	Environmental Science Project
V	BIS26501	Software Engineering and Project Management
V	BCS26502	Full Stack Development / Cryptography and Cyber Security
V	BCS26503	Machine Learning / Natural Language Processing
V	BCS26504	Cryptography and Cyber Security Theory of Computation
V	BRM26506	Research Methodology and IPR
V	BCS26508	Hackathon-Based Project
V	BIKS26510	Indian Knowledge System (NPTEL/VTU Online)
VI	BCS26601	Cloud Computing and Big Data (IPCC)
VI	BCS26602	Deep Learning
VI	BCS26603	Theory of Computation Blockchain Technologies
VI	BCS26604	Computer Vision / Internet of Things
VI	BCS26609	Universal Human Values (NPTEL/VTU Online)
VII	BCS26701	Generative AI and Prompt Engineering (IPCC)
VIII	BCS26803x	Internship (Industry / Research / Post-Placement / Societal / Online / Skill Enhancement)

Concluding Remarks:

The proposed courses were reviewed and forwarded for Approval in the Academic council.

10. SKILL, MOOC & VALUE-ADDED REVIEW

NPTEL/ SWAYAM integration

- **2024 Scheme – Not Applicable**
- **2026 Scheme**

Sl. No	Semester	Subject Code	Subject Name
1	V	BIKS26510	Indian Knowledge System (NPTEL/ VTU online Course)
2	VI	BCS26609	Universal Human Values(NPTEL/ VTU online Course)
	VII	BCS26704A	Open Elective Course-I
		BCS26704B	
		BCS26704C	
		BCS26704D	
3	VIII	BCS26801A	Professional Elective Course (Online courses)-V
		BCS26801B	
		BCS26801C	
		BCS26801D	
4	VIII	BCS26802A	Open Elective Courses -II (Online Courses)
		BCS26802B	
		BCS26802C	
		BCS26802D	

Non Credit Mandatory Courses / Placement Training Course (Sem 3–6)

- **2024 Scheme: Not Applicable**
- **2026 Scheme:**

Sl. No	Semester	Subject Code	Subject Name
1	III	BNSS26309	National Service Scheme (NSS)
		BPE26309	Physical Education(PE)(Sports and Athletics)
		BYOG26309	Yoga
		BMUS26309	Music
2	III	BMATD26310	Mathematics course for Lateral Entry Students
3	III	BPAT26311	Placement and Training

4	IV	BNSK26409	National Service Scheme(NSS)
		BPEK26409	Physical Education(PE) (Sports and Athletics)
		BYOK26409	Yoga
		BMUS26409	Music
5	IV	BMATD26410	Mathematics course for Lateral Entry Students
	IV	BPAT26411	Placement and Training
6	V	BPAT26509	Placement and Training
7	V	BIKS26510	Indian Knowledge System (NPTEL/ VTU online Course)
8	VI	BCS26609	Universal Human Values(NPTEL/ VTU online Course)
9	VI	BPAT26411	Placement and Training

Embedded Internship 2024 Scheme:

Sl. No	Semester	Subject code	Subject Name
1	VIII	BCS24803	Internship (Industry/Research) (14 - 20 weeks)

Embedded Internship 2026 Scheme:

Sl. No	Semester	Subject code	Subject Name
1	VII	BCS26803A	Industry Internship
2	VII	BCS26803B	Research Internship
3	VII	BCS26803C	Post-Placement Internship
4	VII	BCS26803D	Societal Internship
5	VII	BCS26803E	Online Internship
6	VII	BCS26803F	Skill Enhancement Courses(SEC)

Concluding Remarks:

The proposed courses were reviewed and forwarded for Approval in the Academic council.

11. INTERNSHIP & INDUSTRY INTEGRATION

- 100 % students are completing internships during the course of degree.

- Semester-long apprenticeship is proposed in the Final Year as part of the Curriculum.
- Industry co-teaching model
  - The Teaching Learning Process for the subjects like Software Engineering Practices, Machine Learning, Deep Learning in the proposed 2026 scheme are considered for this model .
  - **Mr. Abhiroop Matilal -** Associate Vice President, Head of Automotive BD, Engineering Services, Tech Mahindra Limited, Bengaluru has been inducted into the CSE Department as Professor of Practice .
- Hackathon based projects are introduced as part of curriculum for 2 Credits and the evaluation of the same will be carried out by Industry Experts.

Concluding Remarks:

- The BOS members reviewed the proposals and forwarded the same for Approval in the Academic council.

12. RESEARCH & CAPSTONE

- For Faculty Members two publications for each faculty per year and one patent per year has been made mandatory to promote research activities.
- The student capstone projects are encouraged to be converted into publications / patents with support from institution.
- Capstone evaluation rubric

A. Presentation & Demonstration:

Assessment Criteria	Marks	Excellent (10-8)	Good (7-5)	Average (4-2)	Poor (1)
Presentation Skills: Technical Understanding & Project Knowledge	10	Clear communication confident delivery, logical flow, effective visuals and time management	Good presentation with minor issues	Basic explanation; lacks clarity or confidence	Poor communication and organization
Demonstration : Response to Questions & Communication	10	Working demo clearly showing project progress, features, and technical understanding	Demo works with minor issues	Partial or limited demonstration	No meaningful demo or unclear explanation
Question and Answer Session	10	Answers questions clearly with strong technical understanding and confidence	Answers mostly correct with minor hesitation	Basic answers with limited clarity	Unable to answer effectively

B. Weekly Interaction:

Assessment Criteria	Marks	Excellent (20-16)	Good (15-10)	Average (9-6)	Poor (5-1)
Weekly Interaction	20	Regular interaction, consistent progress updates, proactive discussion with guide	Good interaction with minor irregularity	Occasional interaction; limited involvement	Rare interaction or poor participation

C. Final Report – Contents using LaTeX:

Assessment Criteria	Marks	Excellent (5)	Good (4-3)	Average (2)	Poor (1)
Introduction	5	Problem, objectives, scope, and motivation clearly presented	Mostly clear with minor gaps	Basic introduction with limited clarity	Incomplete or unclear introduction
Assessment Criteria	**Marks**	**Excellent (10-8)**	**Good (7-5)**	**Average (4-2)**	**Poor (1)**
Literature Survey	10	Comprehensive review with strong analysis and comparison of existing work	Adequate review with minor analysis gaps	Limited review; lacks depth	Minimal or missing literature survey
Assessment Criteria	**Marks**	**Excellent (10-8)**	**Good (7-5)**	**Average (4-2)**	**Poor (1)**
Methodology / Implementation	10	Clear methodology, architecture/UML, algorithms and implementation details well explained	Good explanation with minor gaps	Partial methodology or incomplete implementation	Unclear or missing methodology
Assessment Criteria	**Marks**	**Excellent (10-8)**	**Good (7-5)**	**Average (4-2)**	**Poor (1)**
Results and Discussions	10	Results clearly presented with meaningful analysis and discussion	Results presented with limited analysis	Basic results with minimal discussion	Results missing or unclear
Assessment Criteria	**Marks**	**Excellent (5)**	**Good (4-3)**	**Average (2)**	**Poor (1)**
Conclusion and Future Enhancement	5	Conclusions clearly summarize work and future scope	Good summary with minor gaps	Basic conclusion only	Weak or missing conclusion

Assessment Criteria	Marks	Excellent (10–8)	Good (7–5)	Average (4–2)	Poor (1)
Paper Publication in IEEE Conferences	10	Paper is **accepted and published** in a reputed IEEE International Conference (indexed in IEEE Xplore).	Paper is **accepted** in an IEEE Conference, but presentation/publication process is pending OR presented in a national-level IEEE conference.	Paper is **submitted** to an IEEE Conference with proper formatting but not yet accepted OR requires major revisions.	No submission to IEEE conference OR paper does not meet IEEE standards/format.

Concluding Remarks:

- The BOS members reviewed the proposals and forwarded the same for Approval in the Academic council.

13. BoS APPROVALS

- Department Advisory Board Approval
  - The minutes of the Department Advisory Board meeting held on 07.03.2026 attached as Annexure D were discussed.
- Question Bank Moderation Norms
  - The changes brought in the CIE evaluation pattern attached as Annexure E, amendments in SEE conduction attached as Annexure F were discussed.
- Rubric approval
  - The evaluation rubrics for capstone projects, mini projects, Internships and Alternate Assessment tools attached as Annexure G were discussed.

Concluding Remarks:

- The BOS members reviewed the proposals and forwarded the same for Approval in the Academic council.

14. CONCLUDING REMARKS

"The Board of Studies approved the proposed curriculum changes, assessment reforms, and implementation plan effective from Academic Year 2026–27. Further, the proceedings is sent across to Academic Council for approval"

Sl. No.	Name	Designation with Affiliation	Role	Signature with Date
1	**Dr. R Rajkumar**	Professor and Head, CSE, GAT	**Chairman**	28/3/26
2	**Dr. H S Guruprasad**	Professor BMSCE, Bengaluru	**VTU Nominee**	Online
3	**Dr. Naveen N C**	Professor, CSE, MSRIT, Bengaluru	**Nominated by Academic Council**	28/3/26
4	**Mr. Rakesh Annappashetty**	Software Senior Principal Engineering, Dell Technologies, Bengaluru, Karnataka	**Industry Expert**	28/03/26
5	**Mr. Abhijth S**	Technical Lead, Skyhigh Security, Bengaluru – 560071	**Alumni**	28/03/26
6	**Dr. Kumaraswamy S**	Professor, CSE, GAT	**Member – Coordinator**	28/3/26
7	**Dr. R Kanagavalli**	Professor, CSE, GAT	**Member – UG Convener**	28/3/26
8	**Dr. Jyothi S**	Associate Professor, CSE, GAT	**Member – UG**	28/3/26
9	**Dr Shruthi G**	Associate Professor, CSE, GAT	**Member – UG**	28/3/26
10	**Prof. Vanishree M L**	Assistant Professor, CSE, GAT	**Member – UG**	28/3/26
11	**Prof. Yashaswini K**	Assistant Professor, CSE, GAT	**Member – UG**	28/3/26
12	**Dr. Jyothi R**	Professor, CSE, GAT	**Member – PG Convener**	28/3/26
13	**Prof. Aparna K S**	Assistant Professor, CSE, GAT	**Member – PG**	28/3/26
14	CHANDRIKA S	DELL TECH Software Engineer	**Invited Member**	Chandrika. S
15	Dr. SEEMA B HEGDE	Professor, Dept. of CSE, GAT	**Invited Member**	Seema. B. Hegde
16	**Dr. Vijay T**	Associate Dean-Academics, GAT	**Invited Member**	28/03/26
17	**Dr. H B Balakrishna**	Principal ,GAT	**Invited Member**	

Photos


GLOBAL ACADEMY OF TECHNOLOGY
Department of Computer Science and Engineering
GPS Map Camera
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Saturday, 28/03/2026 09:45 AM GMT +05:30
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Review of minutes from previous BOS meeting, DAC/DAB meeting
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Global Academy of Technology
Autonomous Institution Affiliated to Visveswaraya Technological University
Approved by UGC, AICTE and Govt of Karnataka

Proceedings of

BOARD of STUDIES

Program

COMPUTER SCIENCE AND ENGINEERING (AI & ML)

AY 2025 - 26

28 March 2026

Bos Chairman

HEAD OF THE DEPARTMENT
Dept. of Computer Science & Engineering (AI &ML)
Global Academy of Technology
Bangalore- 560 098

Associate Dean Academics

Professor & Associate Dean Academics
Global Academy of Technology
Bengaluru - 560098.

Principal

PRINCIPAL
Global Academy of Technology
Ideal Homes Township,
Rajarajeshwari Nagar, Bangalore-560 098

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1. INTRODUCTION & OBJECTIVES

Purpose of the Meeting:

- Review academic performance and curriculum effectiveness
- Align curriculum with PO, PSO, SDGs, Washington Accord WK profiles
- Ensure NEP 2020 and NCrF compliance
- Strengthen skill-based, experiential, and industry-integrated learning
- Improve CO–PO attainment and placement conversion
- Ensure continuous improvement

2. CONSTITUTION OF BoS

Table of participants

Sl. No.	Designation	Name	Affiliation	Email-id Contact no
1.	Chairman	Dr. Chandramma R	Professor & HOD Dept. of CSE(AI&ML), GAT, Bengaluru.	hodcseaiml@gat.ac.in 9901922114
2.	VTU Nominee	Dr. B. M Sagar	Professor & Dean (Student affairs) Dept. of ISE, RV College of Engineering, Bengaluru-560059	sagarbm@rvce.edu.in 9886332226
3.	Academic Subject Expert	Dr. Indiramma	Professor, Dept. of CSE, BMS College of Engineering, Bengaluru	indira.cse@bmsce.ac.in 9663376002
4.	Academic Subject Expert	Dr.V.Vinoth Kumar	Associate Professor School of Computer Science and Information Systems (SCORE), Vellore Institute of Technology, Vellore, India.	vinothkumar.v@vit.ac.in Ph: 9025996137

5.	Academic Subject Expert	Dr. Sachin Prabhu	Research Software Engineer University of Leeds, United Kingdom	sachinprabhuhr@gmail.com 9632789196
6.	Industry Representative	Mr. Vijay Muniraj	Assistant Director/ Product Engineering Lead, EY(Earnest and Young) Bengaluru.	vjai29@gmail.com 9902930311
7.	Industry Representative	Mr. Nataraja K M	Technical Architect, LG soft India, Bengaluru.	natraja.km@lge.com 9342577832
8.	Member	Dr. Lokanna Kadakolmath	Associate Professor, Dept. of CSE(AI&ML), GAT, Bengaluru.	lokanna@gat.ac.in 9902002801
9.	Member	Dr. Shruti B V	Associate Professor, Dept. of CSE(AI&ML), GAT, Bengaluru.	Shruti.bv@gat.ac.in 9880273399
10	Member	Mrs. Saranya Babu	Assistant Professor, Dept. of CSE(AI&ML), GAT, Bengaluru.	saranyababu@gat.ac.in 9900409223
11	Member	Dr. Shruthishree S H	Associate Professor, Dept. of CSE(AI&ML), GAT, Bengaluru.	sh.shruthishree@gat.ac.in 9742354511
12	Invited Member	Dr. H.B. Balakrishna	Principal, GAT, Bengaluru	principal@gat.ac.in 9845395535
13	Invited Member	Dr. Vijay Tambrallimath	Associate Dean Academics, GAT, Bengaluru	dean@gat.ac.in 9480324605

Proof of invitation sent and response received

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Outlook

BOS Meeting on 28.03.2026 at 10:30am

From Head of the department CSE-AIML <hodcseaiml@gat.ac.in>
Date Sun 22-03-2026 23:02
To Dean, Global Academy of Technology <dean@gat.ac.in>; Dr Indiramma <indira.cse@bmsce.ac.in>; Dr. B. M Sagar <sagarbm@rvce.edu.in>; Dr. Lokanna Kadakolmath <lokanna@gat.ac.in>; Dr. Sachin Prabhu <sachinprabhuhr@gmail.com>; Dr. Shruti B V <shruti.bv@gat.ac.in>; Head of the department CSE-AIML <hodcseaiml@gat.ac.in>; Mr. Nataraja K M <natraja.km@lge.com>; Mr. Vijay Muniraj <vjai29@gmail.com>; Principal GAT <principal@gat.ac.in>; Saranya Babu <saranyababu@gat.ac.in>; Vinothkumar <vinothkumar.v@vit.ac.in>; Nataraja K M <nataraja.km@gmail.com>; Dr. Shruthishree S H <sh.shruthishree@gat.ac.in>

Dear sir/Madam

I hope this email finds you well.

With respect to the mail sent on March 10th 2026 ,I am pleased to confirm and invite you to the upcoming Fourth meeting of Board of Studies(BOS), CSE(AIML) Department, at Global Academy of Technology. Your expertise and perspective as an Academic subject expert are highly valued and your participation in this meeting is crucial for the effective functioning of the board.

Here are the details of the meeting
Date: 28.03. 2026 Time: 10:30am – 1:00pm Venue: Conference Hall, Main Building

Agenda :

1. Welcome address and Introduction of members
2. Discussion on vision, Mission, PSO's, PEO's of the Department
3. Review of minutes from previous BOS meeting, DAC meeting.
4. Discussion and Approval on the syllabus of 8th semester B.E, CSE(AIML) 2022 Batch
5. Discussion and Approval on the scheme & syllabus of 5th - 8th semester B.E, CSE(AIML) 2024 Batch.
6. Discussion and Approval on the scheme 3rd - 8th semester B.E, CSE(AIML) 2026 Batch.
7. Change in Evaluation methodology of CIE
8. Approval of Question paper Pattern with question Bank.
9. Value Added Programs, Skill Programs, AICTE Activities and Internship
10. Discussion on methodologies for innovative teaching, Learning and evaluation techniques.
11. Vote of Thanks

Outlook

Re: BOS Meeting on 28.03.2026 at 10:30am

From Vinothkumar V <vinothkumar.v@vit.ac.in>
Date Mon 23-03-2026 22:09
To Head of the department CSE-AIML <hodcseaiml@gat.ac.in>

Dear Madam,

Thank you for the invitation. I am pleased to confirm my attendance.

Warm Regards

Dr. V.Vinoth Kumar, Ph.D

Associate Professor Grade 2

School of Computer Science Engineering & Information Systems(SCORE)

Vellore Institute of Technology (VIT)

Vellore - 632014.

Vellore Institute of Technology (VIT), India -

- Engineering and Technology: 142nd in the World and 9th in India(QS World University Rankings by Subject 2025)
- Four subjects (CS&IT, data science & AI, EEE and material science) were ranked among the top 200 in the world (QS World University Rankings by Subject 2025)
- 10th best University, 13th best research institution and 11th best engineering institution in India (NIRF Ranking, Govt. of India 2024)
- 2nd in India and 501- 600 in the world (Shanghai ARWU ranking 2024)
- NAAC Accreditation with A++ grade (3.66 out of 4)
- 396th in the world and 8th in India ((QS World University Rankings : Sustainability 2025)

On Mon, Mar 23, 2026 at 10:32 AM Head of the department CSE-AIML <hodcseaiml@gat.ac.in> wrote:

> Dear sir/Madam
>
> I hope this email finds you well.
>
> With respect to the mail sent on March 10th 2026 ,I am pleased to confirm and invite you to the upcoming Fourth meeting of Board of Studies(BOS), CSE(AIML) Department, at Global Academy of

3. CONFIRMATION OF PREVIOUS MINUTES

Statement:

"The Minutes of the previous BoS meeting held on 31st May 2025 were circulated and confirmed."

4. ACTION TAKEN REPORT (ATR)

Sl No	Previous Discussion	Status (Completed/ Partial/Pending)	Remarks
1	Curriculum revisions	Completed	Necessary curriculum revisions have been incorporated.
2	Course additions	Completed	Haskell Programming course was introduced
3	Internship policy updates	Completed	According to the Institution Norms and VTU Policy
4	BCI24303 Digital Logic Design and Computer Organization – Lab program execution using simulation tool to be considered.	Completed	Lab program execution using simulation tool has been incorporated.
5	BCI24304 Data Structures – Course title to be revised.	Completed	Title has been reframed as Data Structures and its Applications.
6	BCI24404 Software Engineering & Agile – Title revision and inclusion of case study on project management tool.	Completed	Title has been reframed as Software Engineering and case study on project management tool is already included in the syllabus.
7	BCI24457C MERN – Course title to be revised.	Completed	Title has been reframed as MERN Stack Development.
8	BCI24457B Programming in Julia – Course restructuring suggested.	Completed	The course has been shifted to 5th semester and Haskell Programming (BCI24457B) has been introduced instead.
9	BCI24556B MLOps – Course restructuring suggested.	Completed	The course has been shifted to 6th semester and Programming in Julia (BCI24556B) has been introduced.
10	BCI24556D DevOps – Course title to be revised.	Completed	Title has been reframed as DevOps Workflow Essentials.
11	BCI24605C Introduction to Machine Learning – Course title to be revised.	Completed	Title has been reframed as Machine Learning.

12	Applied MLOps Techniques – New course introduction in 6th semester.	Completed	Applied MLOps Techniques course has been introduced in 6th semester by reframing the title MLOps.

5. STAKEHOLDER FEEDBACK ANALYSIS

5.1. Feedback

Sources	Remark
Students	The average feedback on curriculum from students is 4.0. The student feedback indicates that the curriculum is well-structured, relevant, and aligned with academic and industry requirements. However, slight improvements can be made in promoting critical thinking, elective diversity, and strengthening practical integration.
Industry	The average feedback on curriculum from students is 4.32. Feedback confirms that the curriculum is industry relevant, with strengths in technical competence, practical exposure, electives, and internship opportunities.
Faculty	The average feedback on curriculum from students is 4.62. Feedback indicates a very high level of satisfaction with curriculum design, alignment with outcomes, practical learning, assessment, electives, and academic relevance.
Affiliated Colleges	The average feedback on curriculum from students is 4.40. Feedback from affiliated colleges indicates that curriculum is well-structured and industry-relevant, maintaining a good balance between theory and practical components. It effectively supports skill development, innovation, and adaptability to emerging technologies, preparing students for both industry and higher studies.

5.2. Need Analysis

Level	Remark
Local	Addresses the needs of the Bangalore technology hub by providing strong foundations in programming, software engineering, and application-oriented areas such as Artificial Intelligence, Machine Learning, and Data Science. The curriculum emphasizes practical exposure through labs and projects aligned with tools and technologies widely used in local IT companies, startups, and product-based firms, thereby enhancing employability within the Bangalore ecosystem.
Regional	Supports the IT and innovation ecosystem across Karnataka by incorporating core computing subjects such as Data Structures, Database Management Systems, Operating Systems, and Cloud Computing along with electives in emerging domains like AI, IoT, and Cybersecurity. The program equips students with industry-relevant technical and problem-solving skills required to meet workforce demands across regional technology hubs.

National	Aligns with national priorities in AI, digital transformation, and skill development, preparing students for diverse roles in the IT sector.
Global	Incorporates global trends such as Artificial Intelligence, Data Science, IoT, and Cybersecurity, enabling graduates to compete in the international workforce. It also provides a strong foundation for pursuing higher studies and research in advanced areas of computing and emerging technologies at reputed international institutions.

5.3. Summary Table

Agenda	Key Suggestions	Proposed Action
Curriculum Feedback Review	Curriculum is well-structured, relevant, and aligned with academic and industry requirements.	Continue with the existing curriculum structure with periodic review.
Enhancement of Critical Thinking	Need to improve critical thinking and analytical skills among students.	Introduce more problem-based learning, case studies, and project-based components.
Practical Learning & Industry Exposure	Strengthen practical integration, internships, and real-world exposure.	Increase hands-on sessions, industry collaborations, and internship opportunities.
Stakeholder Satisfaction	High satisfaction from faculty, industry, and affiliated colleges.	Sustain current practices and incorporate continuous feedback mechanisms.
Global & Industry Alignment	Curriculum aligns with global trends and national priorities.	Regularly update syllabus to include latest tools, technologies, and global best practices.

6. VISION, MISSION, PEO & PSO REVIEW

Vision

To Become a leading hub of excellence in education, research in the field of Computer Science and Engineering providing AI-driven solutions with holistic development for the needs of the Society.

Mission:

- To Provide aspiring engineers for industry and academia by offering excellent education in emerging AI techniques.
- To equip value-added technical and research-oriented education by satisfying societal needs
- To educate with professional integrity values and ethics for the environment awareness.

Program Specific Outcome (PSO)

PSO1: To Produce graduates with industry-ready skills with the knowledge of Computer Science & Machine Learning technology based to solve real world problems.

PSO2: Ability to develop many successful applications and designing efficient algorithms for intelligent systems within the realm of artificial intelligence incorporating in data analytics, Natural language processing and Internet of Things.

Program Educational Objectives (PEO)

- **PEO1:** Design and Develop innovative intelligent systems for the welfare of the Society.
- **PEO2:** Engage in lifelong learning process through higher education and to inculcate innovative ideas in research field.
- **PEO3:** Lead the IT Industry with management and Entrepreneurship skills.

- **Alignment with institutional vision**

The vision of the Computer Science and Engineering (AI&ML) department aligns closely with the institutional vision by serving as a focused extension of its broader goals. While the institution emphasizes quality education in technology and management to meet the evolving needs of people, planet, and industry, the CSE (AI&ML) department contributes through excellence in education and research, particularly in AI-driven solutions. This focus supports industry demands, addresses societal challenges, and promotes innovation. Additionally, the department's emphasis on holistic development ensures that graduates possess not only technical expertise but also ethical and social responsibility, thereby effectively fulfilling and reinforcing the institution's vision.

- **Alignment with industry trends**

The department vision aligns with industry trends by focusing on excellence in Computer Science and Engineering, particularly in AI-driven solutions, which are central to modern technological advancements. By emphasizing emerging areas like AI, data analytics, and automation, it prepares students with industry-relevant skills. Additionally, the focus on research and holistic development ensures graduates are innovative, adaptable, and

equipped with both technical and professional skills required in dynamic industry environments.

- **Career progression tracking**

The department vision supports career progression tracking by providing a clear framework of expected competencies in areas such as AI, research, and holistic development. It helps define measurable outcomes like technical skills, innovation ability, and professional growth, which can be monitored through academic performance, projects, internships, certifications, and placements. By aligning student development with industry-relevant skills and emerging technologies, the department can track progress at different stages and guide students toward suitable career paths, higher education, or research opportunities, ensuring continuous improvement and employability.

"The Vision, Mission, PEO and PSOs statements were reviewed and forwarded for Academic Council (AC) approval."

7. CO–PO ATTAINMENT REVIEW

7.1 Outgoing Batch Analysis

Not Applicable, as the first batch is in final Year.

8. CURRICULUM DESIGN & COMPREHENSIVE MAPPING

8.1. Credit Structure 2026 Scheme

1 credit = 30 hours

Total Program Credits = 160

Category	Credits	% of Total
Basic Sciences	4	2.50%
Basic Engineering	32	20.00%
Humanities & Social Sciences	4	2.50%
Program Core	67	41.87%
Program Electives	15	9.38%
Open Electives	6	3.75%
Projects	14	8.75%
Internship	12	7.50%
Skill Courses (NCrF aligned)	6	3.75%

8.2 Mapping Framework

8.2.1. PO/PSO Mapping Table 2024 scheme

PO/PSO	Courses
PO1	BMATS301, BCI24302, BCI24303, BCI24304, BCIL24305, BCI24306A, BCI24306B, BCI24306C, BCI24306D, BCI24358A, BCI24358B, BCI24358C, BCI24358D, BCI24401, BCI24402, BCI24403, BCI24404, BCIL24405, BCI24406A, BCI24406B, BCI24406C, BCI24406D, BCI24457A, BCI24457B, BCI24457C, BCI24457D, BBOK24407, BCI24501, BCI24502, BCI24503, BCIL24504, BCI24505A, BCI24505B, BCI24505C, BCI24505D, BCI24556A, BCI24556B, BCI24556C, BCI24556D, BCI24601, BCI24602, BCI24603, BCI24604A, BCI24604B, BCI24604C, BCI24604D, BCI24605A, BCI24605B, BCI24605C, BCI24605D, BCIL24607, BCI24657A, BC24I657B, BCI24657C, BCI24657D, BCI24701, BCI24702, BCI24703, BCI24704A, BCI24704B, BCI24704C, BCI24704D, BCI24705A, BCI24705B, BCI24705C, BCI24705D
PO2	BMATS301, BCI24302, BCI24303, BCI24304, BCIL24305, BCI24306A, BCI24306B, BCI24306C, BCI24306D, BCI24358A, BCI24401, BCI24402, BCI24403, BCI24404, BCIL24405, BCI24406A, BCI24406B, BCI24406C, BCI24406D, BCI24457A, BCI24457B, BCI24457C, BCI24457D, BBOK24407, BCI24501, BCI24502, BCI24503, BCIL24504, BCI24505A, BCI24505B, BCI24505C, BCI24505D, BCI24556A, BCI24556B, BCI24556C, BCI24556D, BCI24601, BCI24602, BCI24603, BCI24604A, BCI24604B, BCI24604C, BCI24604D, BCI24605A, BCI24605B, BCI24605C, BCI24605D, BCIL24607, BCI24657A, BC24I657B, BCI24657C, BCI24657D, BCI24701, BCI24702, BCI24703, BCI24704A, BCI24704B, BCI24704C, BCI24704D, BCI24705A, BCI24705B, BCI24705C, BCI24705D
PO3	BCI24302, BCI24303, BCI24304, BCIL24305, BCI24306A, BCI24306B, BCI24306C, BCI24306D, BCI24358A, BCI24358B, BCI24358D, BCI24402, BCI24403, BCI24404, BCIL24405, BCI24406A, BCI24406B, BCI24406C, BCI24406D, BCI24457A, BCI24457B, BCI24457C, BCI24457D, BCI24501, BCI24502, BCI24503, BCIL24504, BCI24505A, BCI24505B, BCI24505C, BCI24505D, BCI24556A, BCI24556B, BCI24556C, BCI24556D, BCI24601, BCI24602, BCI24603, BCI24604A, BCI24604B, BCI24604C, BCI24604D, BCI24605B, BCI24605C, BCI24605D, BCIL24607, BCI24657A, BC24I657B, BCI24657C, BCI24657D, BCI24701, BCI24702, BCI24703, BCI24704A, BCI24704B, BCI24704C, BCI24704D, BCI24705A, BCI24705B, BCI24705C, BCI24705D
PO4	BCI24303, BCI24304, BCI24306A, BCI24306B, BCI24306C, BCI24306D, BCI24403, BCI24404, BCIL24405, BCI24406A, BCI24406B, BCI24406C, BCI24457A, BCI24501, BCI24502, BCI24503, BCIL24504, BCI24505B, BCI24505C, BCI24505D, BCI24556A, BCI24556B, BCI24556C, BCI24556D, BCI24602, BCI24604A, BCI24604B, BCI24604C, BCI24604D, BCI24605A, BCI24605B, BCI24605C, BCI24605D, BCIL24607, BCI24657A, BC24I657B, BCI24657C, BCI24701, BCI24702, BCI24703, BCI24704A, BCI24704B, BCI24704C, BCI24704D, BCI24705A, BCI24705C, BCI24705D
PO5	BMATS301, BCI24302, BCI24303, BCI24304, BCIL24305, BCI24306A, BCI24358A, BCI24358B, BCI24358D, BCI24401, BCI24402, BCI24403, BCI24404, BCIL24405, BCI24406A, BCI24406B, BCI24406C, BCI24406D, BCI24457A, BCI24457B, BCI24457C, BCI24457D, BCI24501, BCI24502, BCI24503, BCIL24504, BCI24505A,

	BCI24505B, BCI24505C, BCI24505D, BCI24556A, BCI24556B, BCI24556C, BCI24556D, BCI24601, BCI24602, BCI24603, BCI24604A, BCI24604B, BCI24604C, BCI24604D, BCI24605A, BCI24605B, BCI24605C, BCI24605D, BCIL24607, BCI24657A, BC24I657B, BCI24657C, BCI24657D, BCI24701, BCI24702, BCI24703, BCI24704A, BCI24704B, BCI24704C, BCI24704D, BCI24705A, BCI24705B, BCI24705C, BCI24705D
PO6	BCI24404, BCIL24405, BCI24406A, BCI24501, BCI24505B, BCI24505C, BCI24505D, BCI24556D, BCI24601, BCI24603, BCI24604B, BCI24657A, BCI24657D, BCI24702, BCI24704B, BCI24705C, BCI24705D
PO7	BCI24358C, BCI24404, BBOK24407, BCI24505C, BCI24657A, BCI24702
PO8	BCIL24305, BCI24402, BCI24404, BCI24505B, BCI24505C, BCI24505D, BCI24604B, BCI24657A, BCI24701, BCI24704B, BCI24705C
PO9	BCI24303, BCI24402, BCI24403, BCI24404, BCIL24405, BCI24457A, BCI24501, BCI24505A, BCI24505B, BCI24505C, BCI24556D, BCI24601, BCI24604A, BCI24605D, BCI24657A, BCI24657C, BCI24703, BCI24704A, BCI24704B
PO10	BCIL24305, BCI24403, BCI24404, BCIL24405, BCI24406A, BCI24501, BCI24505B, BCI24556D, BCI24657A, BCI24704B
PO11	BCI24302, BCI24304, BCI24358C, BCI24358D, BCI24404, BCI24457A, BCI24457B, BCI24457C, BCI24501, BCI24503, BCIL24504, BCI24505A, BCI24505D, BCI24556B, BCI24556C, BCI24556D, BCI24602, BCI24604C, BCI24605A, BCI24605C, BCIL24607, BCI24657A, BCI24701, BCI24704B, BCI24704C, BCI24705B, BCI24705C
PSO1	BCI24302, BCI24303, BCI24304, BCIL24305, BCI24306A, BCI24306C, BCI24306D, BCI24358A, BCI24358B, BCI24358C, BCI24358D, BCI24402, BCI24403, BCI24404, BCIL24405, BCI24406A, BCI24406B, BCI24406C, BCI24406D, BCI24457A, BCI24457B, BCI24457D, BBOK24407, BCI24501, BCI24502, BCI24505A, BCI24505B, BCI24505C, BCI24505D, BCI24556A, BCI24556B, BCI24556C, BCI24556D, BCI24601, BCI24602, BCI24603, BCI24604A, BCI24604B, BCI24604C, BCI24604D, BCI24605B, BCI24605C, BCI24605D, BCI24657A, BC24I657B, BCI24657C, BCI24701, BCI24702, BCI24704A, BCI24704B, BCI24704C, BCI24704D, BCI24705A, BCI24705B, BCI24705C
PSO2	BCI24302, BCI24403, BCI24404, BCIL24405, BCI24406A, BCI24406B, BCI24406C, BCI24406D, BBOK24407, BCI24501, BCI24503, BCIL24504, BCI24505A, BCI24505B, BCI24505C, BCI24505D, BCI24556A, BCI24556B, BCI24556C, BCI24556D, BCI24602, BCI24603, BCI24604A, BCI24604B, BCI24604C, BCI24604D, BCI24605B, BCI24605C, BCI24605D, BCIL24607, BCI24657A, BC24I657B, BCI24657C, BCI24657D, BCI24701, BCI24702, BCI24703, BCI24704A, BCI24704B, BCI24704C, BCI24704D, BCI24705A, BCI24705C, BCI24705D

8.2.2. SDG Mapping Table

2024 scheme

SDGs	Courses
SDG3 - Good Health and Well-being	BCI24702 – Deep Learning; BCI24703 – Computer Vision and Image Processing
SDG4 - Quality Education	BCI24503 – Fundamentals of Machine Learning; BCIL24504 – Fundamentals of Machine Learning Lab; BCI24602 – Advanced Machine Learning; BCI24603 – Compiler Design; BRMK24557 – Research Methodology and IPR; BCI24604D – Data Science; BIKS24608 – Indian Knowledge System
SDG6 - Clean Water and Sanitation	BESK24508 – Environmental Studies
SDG7 - Affordable and Clean Energy	BESK24508 – Environmental Studies
SDG8 - Decent Work and Economic Growth	BCI24501 – Management, Finance and Economics for IT Engineers; BCI24704D – Business Intelligence & Analytics
SDG9 - Industry, Innovation and Infrastructure	BCI24502 – Computer Networks; BCI24505C – Fundamentals of IoT; BCI24601 – Cloud Computing; BCI24704C – Industrial IoT
SDG10 - Reduced Inequalities	BCI24802D – Social Network Analysis, BCI24704D – Business Intelligence & Analytics
SDG11 - Sustainable Cities and Communities	BCI24502 – Computer Networks; BCI24505C – Fundamentals of IoT; BCI24704C – Industrial IoT;
SDG12 - Responsible Consumption and Production	BESK24508 – Environmental Studies; BCI24505C – Fundamentals of IoT; BCI24601 – Cloud Computing;
SDG13 - Climate Action	BESK24508 – Environmental Studies
SDG15 - Life on Land	BESK24508 – Environmental Studies
SDG16 -Peace, Justice and Strong Institutions	BCI24604B – Cyber Security; BCI24704B – Ethical Hacking; BCI24801B – Blockchain Technology; BCI24802A – Privacy and Security in Online Social Media; BRMK24557 – Research Methodology & IPR;
SDG17 - Partnerships for the Goals	BCIP24507 – Mini Project; BCIP24606 – Major Project Phase I; BCIP24706 – Major Project Phase-II

Justification

The mapping of courses to Sustainable Development Goals (SDGs) demonstrates how the curriculum contributes to global societal, environmental, and technological needs. Advanced AI courses like BCI24702 Deep Learning and BCI24703 Computer Vision and Image

Processing support healthcare applications such as diagnosis and prediction, aligning with health and well-being goals.

Core learning subjects including BCI24503 Fundamentals of Machine Learning, BCI24604D Data Science, and BRMK24557 Research Methodology and IPR, along with foundational theory courses like BCI24603 Compiler Design, contribute to skill development, critical thinking, and quality education. BESK24508 Environmental Studies directly addresses sustainability issues such as water management, clean energy, climate action, and biodiversity conservation.

Courses related to management and analytics such as BCI24501 Management, Finance and Economics for IT Engineers and BCI24704D Business Intelligence & Analytics enhance employability, economic understanding, and data-driven decision-making, supporting economic growth. Technical subjects like BCI24502 Computer Networks, BCI24505C Fundamentals of IoT, BCI24601 Cloud Computing, and BCI24704C Industrial IoT enable innovation, infrastructure development, and smart city solutions, contributing to industrial advancement and sustainable communities. BCI24802D Social Network Analysis and analytics courses help identify disparities and support inclusive solutions, addressing inequality.

Security-focused courses such as BCI24604B Cyber Security, BCI24704B Ethical Hacking, BCI24801B Blockchain Technology, and BCI24802A Privacy and Security in Online Social Media emphasize ethical practices, transparency, and protection of digital systems, which are essential for strong institutions. Finally, project-based courses like BCIP24507 Mini Project and BCIP24606 & BCIP24706 Major Project Phase I & II promote collaboration, teamwork, and practical problem-solving, reflecting the importance of partnerships in achieving sustainable development goals.

8.2.3. WK Mapping Table

2024 Scheme

WK	Course Codes
WK1	BCI24302, BCI24304, BCI24406D, BCI24457B, BCI24501, BCI24505D, BCI24603, BCI24657A, BCI24701, BCI24704D
WK2	BCI24302, BCI24303, BCI24304, BCI24402, BCI24403, BCI24406A, BCI24406B, BCI24406D, BCI24457A, BCI24457B, BCI24457D, BCI24501, BCI24502, BCI24503, BCI24505B, BCI24505C, BCI24505D, BCI24556A, BCI24601, BCI24602, BCI24603, BCI24604D, BCI24605B, BCI24605C, BCI24605D, BCI24657A, BCI24657B, BCI24657C, BCI24657D, BCI24701, BCI24704A, BCI24704D, BCI24705C, BCI24705D, BCIL24305, BCIL24405
WK3	BCI24306B, BCI24358A, BCI24406C, BCI24457B, BCI24501, BCI24502, BCI24503, BCI24505A, BCI24505B, BCI24505C, BCI24505D, BCI24556A, BCI24556B,

	BCI24556C, BCI24556D, BCI24602, BCI24603, BCI24604A, BCI24604B, BCI24604C, BCI24604D, BCI24605A, BCI24605B, BCI24605C, BCI24605D, BCI24657A, BCI24657B, BCI24657C, BCI24657D, BCI24701, BCI24702, BCI24703, BCI24704A, BCI24704B, BCI24704C, BCI24704D, BCI24705A, BCI24705B, BCI24705C, BCI24705D, BCIL24504
WK4	BCI24303, BCI24304, BCI24306B, BCI24306C, BCI24306D, BCI24358A, BCI24358B, BCI24358D, BCI24402, BCI24403, BCI24404, BCI24406A, BCI24406B, BCI24406C, BCI24406D, BCI24457B, BCI24457C, BCI24502, BCI24503, BCI24505A, BCI24505B, BCI24505C, BCI24505D, BCI24556A, BCI24556B, BCI24556C, BCI24556D, BCI24601, BCI24602, BCI24604A, BCI24604B, BCI24604C, BCI24604D, BCI24605A, BCI24605B, BCI24605C, BCI24605D, BCI24657A, BCI24657B, BCI24657C, BCI24657D, BCI24701, BCI24702, BCI24703, BCI24704A, BCI24704B, BCI24704C, BCI24705A, BCI24705B, BCI24705C, BCIL24504, BCIL24607
WK5	BCI24306C, BCI24306D, BCI24358C, BCI24406D, BCI24457B, BCI24457C, BCI24505C, BCI24505D, BCI24605C, BCI24657C, BCI24701
WK6	BCI24302, BCI24306A, BCI24358B, BCI24358D, BCI24404, BCI24406A, BCI24406B, BCI24406C, BCI24406D, BCI24457A, BCI24457B, BCI24457C, BCI24457D, BCI24502, BCI24503, BCI24505B, BCI24505C, BCI24505D, BCI24556A, BCI24556B, BCI24556C, BCI24556D, BCI24601, BCI24602, BCI24604B, BCI24604C, BCI24604D, BCI24605A, BCI24605B, BCI24605D, BCI24657A, BCI24657B, BCI24657C, BCI24657D, BCI24702, BCI24703, BCI24704B, BCI24704C, BCI24705A, BCI24705B, BCI24705C, BCIL24305, BCIL24405, BCIL24504, BCIL24607
WK7	BCI24358C, BCI24501, BCI24505B, BCI24701
WK8	BCI24306A, BCI24306B, BCI24358B, BCI24358C, BCI24406B, BCI24457A, BCI24457B, BCI24457D, BCI24503, BCI24505B, BCI24505D, BCI24602, BCI24604B, BCI24604C, BCI24604D, BCI24605A, BCI24605B, BCI24657C, BCI24704B, BCI24704C, BCI24705C
WK9	BCI24604B, BCI24704B

8.3 Percentage-Based Reporting

% of courses revised	13.51%
% skill-based courses	3.75%
% courses with apprenticeship/fieldwork	7.50%
% online credited courses (SWAYAM, NPTEL)	10 %
% project-based courses	8.75%

9. NEW COURSE PROPOSALS

1. Edge AI & Tiny ML(BCI26505A)

Parameter	Details
Course Title & Code	Edge AI & TinyML (BCI26505A)
Rationale	Edge AI and TinyML enable real-time, low-power, secure, and cost-effective AI processing directly on devices. The course focuses on machine learning techniques optimized for deployment on resource-constrained edge devices, reducing latency, bandwidth usage, and dependence on cloud infrastructure. It is highly relevant for IoT, smart systems, and intelligent applications.
Course Objectives	• Understand the fundamentals of Edge AI and TinyML • Analyze the differences between cloud-based AI and edge computing • Explore the architecture of edge devices as deployment platforms• • Implement lightweight ML models using tools such as TensorFlow Lite and Edge Impulse
Skill Alignment (NCrF Level)	Machine learning, model optimization, IoT, and deployment of ML models on edge devices using tools like TensorFlow Lite and Edge Impulse
Assessment Scheme	As per the 2026 Scheme of evaluation
Industry Relevance	Highly relevant in domains such as smart devices, healthcare, automation, and IoT, enabling real-time decision-making, energy-efficient AI, enhanced privacy, and scalable deployment
SDG Mapping	3, 7, 9

2. Cognitive Computing (BCI26605A)

Parameter	Details
Course Title & Code	Cognitive Computing (BCI26605A)
Rationale	Cognitive computing focuses on how knowledge is processed, stored, and applied by simulating human cognitive processes. In the context of Artificial Intelligence and Machine Learning, it emphasizes thinking, reasoning, memory, and decision-making in intelligent systems. The

	course enables students to design systems that mimic human cognition to solve complex real-world problems.
Course Objectives	• Understand the fundamentals of cognitive computing and human cognition • Analyze how information is processed, stored, and retrieved in humans and intelligent systems • Explore cognitive theories and their relevance to AI/ML models • Apply cognitive principles in designing intelligent systems and problem-solving • Evaluate AI/ML approaches that simulate reasoning, learning, and decision-making
Skill Alignment (NCrF Level)	Development of skills in analytical thinking, reasoning, memory modeling, problem-solving, and decision-making using AI/ML approaches
Assessment Scheme	As per the 2026 Scheme of evaluation
Industry Relevance	Highly relevant in areas such as AI systems, intelligent assistants, human-computer interaction, decision-support systems, and data-driven applications, where cognitive modeling and reasoning enhance system intelligence and user experience
SDG Mapping	4, 9, 16

3. Go Programming (BCIL26607C)

Parameter	Details
Course Title & Code	Go Programming Lab BCIL26607C
Rationale	The course provides hands-on experience in Go (Golang), a modern programming language widely used for system-level programming, cloud computing, and distributed systems. It emphasizes building efficient, scalable, and concurrent applications through practical exercises.
Course Objectives	• Understand the basic syntax and constructs of Go programming • Develop programs using functions, arrays, slices, maps, and structures • Build simple applications and utilities using Go • Apply Go for real-world problem solving and system-level tasks
Skill Alignment (NCrF Level)	Development of skills in programming, problem-solving, and system-level application development using Go
Assessment Scheme	As per the 2026 Scheme of evaluation
Industry Relevance	Highly relevant in cloud computing, backend development, DevOps, and distributed systems, as Go is widely used by companies for building

	scalable and high-performance applications
SDG Mapping	4, 8, 9

4. Security and Privacy in IoT (BCI26703C)

Parameter	**Details**
Course Title & Code	Security and Privacy in IoT (BCI26703C)
Rationale	The course focuses on ensuring security and privacy in IoT systems by safeguarding data, maintaining system integrity, and preventing cyber threats. With the rapid growth of IoT, integrating robust security and privacy mechanisms is essential for safe, reliable, and large-scale deployment of connected systems.
Course Objectives	• Understand the architecture of IoT systems and associated security challenges • Identify threats, vulnerabilities, and attack surfaces in IoT environments • Apply security principles such as confidentiality, integrity, and availability (CIA) • Analyze security protocols and mechanisms for IoT systems • Evaluate privacy-preserving techniques in IoT applications
Skill Alignment (NCrF Level)	Development of skills in cybersecurity, IoT system design, secure communication, and smart system development
Assessment Scheme	As per the 2026 Scheme of evaluation
Industry Relevance	Highly relevant across domains such as smart cities, healthcare, industrial IoT, and connected devices, where ensuring data security, privacy, and system reliability is critical. Increasing demand for professionals skilled in IoT security and cybersecurity practices
SDG Mapping	9, 11, 16

The above new courses have been discussed and approved by BoS members.

10. SKILL, MOOC & VALUE-ADDED REVIEW

NPTEL/ SWAYAM integration

2024 Scheme

SL. No.	Semester	Course Code	Course Title	L:T:P	Course Type
1	VIII	BCI24801A	Quantum Computing	3:0:0	MOOC Courses
2	VIII	BCI24801B	Block Chain Technology	3:0:0	MOOC Courses
3	VIII	BCI24801C	Large Language Models	3:0:0	MOOC Courses
4	VIII	BCI24801D	Virtual Reality	3:0:0	MOOC Courses
5	VIII	BCI24802A	Privacy and Security in Online Social Media	3:0:0	MOOC Courses
6	VIII	BCI24802B	Statistical Learning for Reliability Analysis	3:0:0	MOOC Courses
7	VIII	BCI24802C	Parametrized Algorithm	3:0:0	MOOC Courses
8	VIII	BCI24802D	Social Network Analysis	3:0:0	MOOC Courses

2026 Scheme

SL. No.	Semester	Course Code	Course Title	L:T:P	Course Type
1	VII	BCI26704A	Open Elective -I NPTEL	3:0:0	NPTEL
2	VII	BCI26704B	Open Elective -I NPTEL	3:0:0	NPTEL
3	VII	BCI26704C	Open Elective -I NPTEL	3:0:0	NPTEL
4	VII	BCI26704D	Open Elective -I NPTEL	3:0:0	NPTEL
5	VIII	BCI26801A	Professional Elective-V	3:0:0	NPTEL
6	VIII	BCI26801B	Professional Elective-V	3:0:0	NPTEL
7	VIII	BCI26801C	Professional Elective-V	3:0:0	NPTEL
8	VIII	BCI26801D	Professional Elective-V	3:0:0	NPTEL
9	VIII	BCI26802A	Open Elective-II	3:0:0	NPTEL

10	VIII	BCI26802B	Open Elective-II	3:0:0	NPTEL
11	VIII	BCI26802C	Open Elective-II	3:0:0	NPTEL
12	VIII	BCI26802D	Open Elective-II	3:0:0	NPTEL

NCMC course (Sem 3–6)

2024 Scheme

SL. No.	Semester	Course Code	Course Title	L:T:P	Course Type
1	III	BNSK24359	National Service Scheme (NSS)	0:0:2:0	NCMC
2		BPEK24359	Physical Education (Sports & Ath Letics) – I	0:0:2:0	NCMC
3		BYOK24359	Yoga	0:0:2:0	NCMC
4		BLAK24359	Liberal Arts	0:0:2:0	NCMC
5	IV	BNSK24459	National Service Scheme (NSS)	0:0:2:0	NCMC
6		BPEK24459	Physical Education (Sports & Ath Letics)	0:0:2:0	NCMC
7		BYOK24459	Yoga	0:0:2:0	NCMC
8		BLAK24459	Liberal Arts	0:0:2:0	NCMC
9	V	BNSK24559	National Service Scheme (NSS)	0:0:2:0	NCMC
10		BPEK24559	Physical Education (PE) (Sports and Athletics)	0:0:2:0	NCMC
11		BYOK24559	Yoga	0:0:2:0	NCMC
12		BLAK24559	Liberal Arts	0:0:2:0	NCMC
13		BESK24508	Environmental Studies	1:0:0:0	NCMC
14	VI	BIKS24608	Indian Knowledge System	1:0:0:0	NCMC
15		BNSK24659	National Service Scheme (NSS)	0:0:2:0	NCMC
16		BPEK24659	Physical Education (PE) (Sports and Athletics)	0:0:2:0	NCMC
17		BYOK24659	Yoga	0:0:2:0	NCMC

18		BLAK24659	Liberal Arts	0:0:2:0	NCMC
19		BDMP24609	Disaster Management and Preparedness	2:0:0:0	NCMC

NCMC Placement Courses 2026 scheme

NCMC Placement Courses

SL. No.	Semester	Course Code	Course Title	L:T:P	Course Type
1	III	BPAT26311	Placement and Training	0:0:2	NCMC
2	IV	BPAT26411	Placement and Training	0:0:2	NCMC
3	V	BPAT26509	Placement and Training	0:0:2	NCMC
4	VI	BPAT26610	Placement and Training	0:0:2	NCMC

NCMC Courses

SL. No.	Semester	Course Code	Course Title	L:T:P	Course Type
1	III	BNSK26309	National Service Scheme (NSS)	0:0:2	NCMC
2		BPE26309	Physical Education (PE) (Sports and Athletics)	0:0:2	NCMC
3		BYOG26309	Yoga	0:0:2	NCMC
4		BMUS26309	Music	0:0:2	NCMC
5		BMATD26310	Mathematics course for Lateral Entry Students	3:0:0	NCMC
6	IV	BNSK26409	National Service Scheme (NSS)	0:0:2	NCMC
7		BPEK26409	Physical Education (PE) (Sports and Athletics)	0:0:2	NCMC
8		BYOK26409	Yoga	0:0:2	NCMC
9		BMUS26409	Music	0:0:2	NCMC
10		BMATD26410	Mathematics course for Lateral Entry Students	3:0:0	NCMC
11	V	BIKS26510	Indian Knowledge System	1:0:0	NCMC
12	VI	BUHV26609	Universal Human Value	1:0:0	NCMC
13		BDMP26611	Disaster Management and Preparedness	2:0:0	NCMC

Value Added Programs & Skill Development Programs

Value Added Programs and Skill Programs were proposed for the AY 2026-27 as follows:-

<u>Value Added Programs</u>

2025 batch

- 3rd semester-Mobile App Development
- 4th semester- Full Stack with Java

2024 batch

- 5th semester – Devops
- 6th semester- Gen AI / Large Language Models

2023 batch

- 7TH semester- Problem solving Techniques

Skill Development Programs-

2025 BATCH

- 3rd semester –Advanced Python
- 4th semester – Internet of Things

2024 BATCH

- 5th Semester- Full Stack Development
- 6th semester - Competitive Coding (Problem solving, DS, Algorithms using Java and Python Programming)

BoS members have approved the above NPTEL/SWAYAM integration, NCMC course, NCMC Placement courses and the Value-Added programs and skill development Programs.

11. INTERNSHIP & INDUSTRY INTEGRATION

- % students completing internships: **100% students in final year are pursuing the internship in 2022 batch**
- Semester-long apprenticeship**: Internship as prescribed in the Scheme**.
- **Hackathon-based credits**

Semester	Course Code	Course Name	Credits
V	BCI26508	Hackathon-Based Project	2

The BoS members appreciated the inclusion of the Hackathon based project. **The above points were discussed and approved by BoS members and forwarded to Academic Council.**

12. RESEARCH & CAPSTONE

Mandatory research publication/patent

The final year students should publish their final year project work in Scopus Indexed conferences / Journals as part of their project work to promote research orientation and enhance academic quality.

The BoS members have approved and forwarded to Academic Council.

Capstone evaluation rubric

MAJOR PROJECT RUBRICS

MAJOR PROJECT PHASE_1

	SL.NO	PHASE_1 DEATILS	MARKS
CIE	1	PHASE-I: REVIEW_0	20MARKS
	2	PHASE-I: REVIEW_1	30MARKS
	3	PHASE-I: REVIEW_2	50MARKS
	TOTAL		**100 MARKS**
SEE			**--**

PHASE-I: REVIEW_0 (20M)

			Level of Achievement		
		Marks	**Good**	**Average**	**Poor**
A	**Identification of problem domain & Detailed Analysis**	**7**	Clearly identifies a relevant SDG Problem and conducts detailed technical and contextual analysis	Identifies the problem but analysis is superficial or incomplete	Problem not clearly identified or only partial/weak analysis
			(7-6)	**(5-3)**	**(2-0)**
B	**Defining problem statement & objective (Cognitive)**	**7**	Clearly identifies a Problem a statements and formulates measurable, Achievable and	Problem defined but objectives are vague or not deliverable	Problem definition unclear and objectives missing or irrelevant

			SDG aligned objectives		
			(7-6)	**(5-3)**	**(2-0)**
C	**Presentation (Q&A) (Psychomotor & Affective)**	**6**	Communicates ideas clearly and confidently, answers all Q&A effectively	Communicates ideas clearly bit unable to answer most Q&A	Poor Communication and unable to answer Q&A
			(6-5)	**(4-2)**	**(1-0)**

PHASE-I: REVIEW_1 (30M)

Level of Achievement					
		Marks	**Good**	**Average**	**Poor**
		Marks Range	**(10-8)**	**(7-4)**	**(3-0)**
A	**Literature Survey (Cognitive, Psychomotor)**	**10**	Literature survey includes minimum 40 papers from reputed journals (IEEE Transactions, IEEE Access, Elsevier, Springer, PLOS ONE, etc.)	Literature survey includes minimum 30 papers, some may not be from top-tier journals.	Very few papers (less than 20) referred or non-reputed sources used.
		Marks Range	**(10-8)**	**(7-4)**	**(3-0)**
B	**Need Analysis for Literature Survey (Justification for each paper)**	**10**	Provides clear and strong justification for each selected paper. Clearly identifies research gaps and explains the need for the proposed work	Provides justification for some papers, but lacks depth or clarity. Limited identification of research gaps.	Little or no justification for selected papers. No research gap identified and lacks analysis.

		Marks Range	(10-8)	(7-4)	(3-0)
C	**Presentation & Technical Documentation (Congnitive, Affective)**	**10**	Clear and confident PPT presentation. Answers most questions during Q&A.	Presentation is understandable but lacks clarity. Answers only a few questions.	Poor communication and slide organization. Unable to explain work or answer questions.

PHASE-I: REVIEW_2

Level of Achievement					
		Marks	**Good**	**Average**	**Poor**
A	**Methodology Design**	**20**	ML Models with High Performance/Efficient work	Basic Algorithm / Medium Performances /work well but lacks optimization	Old Method (Existing work) Low performances
			(20-13)	**(12-7)**	**(6-1)**
B	**Technical report with plagiarism report (Cognitive & Affective)**	**20**	Technical report with less than 10% of plagiarism	Technical report with less than 15% of plagiarism	Technical report with less than 20% of plagiarism
			(20-13)	**(12-7)**	**(6-1)**
C	**Presentation/ Q&A**	**10**	Clear and confident PPT presentation. Answers most questions during Q&A.	Presentation is understandable but lacks clarity. Answers only a few questions.	Poor communication and slide organization. Unable to explain work or answer questions.
			(10-8)	**(7-4)**	**(3-0)**

MAJOR PROJECT PHASE-II

Components	Marks
Continuous Internal Evaluation (CIE)	100 Marks
Semester End Examination (SEE)	100 Marks
Total	200 Marks

CIE:-

SL.NO	COMPONENTS	MARKS
1	PHASE-I: REVIEW_0	NO MARKS
2	PHASE-I: REVIEW_1	50MARKS
3	PHASE-I: REVIEW_2	50MARKS
TOTAL		**100 MARKS**

SEE :-

SL.NO	COMPONENTS	MARKS
1	DEMO WITH PRESENTATION	40 MARKS
2	REPORT WITH PAPER	40MARKS
3	VIVA	20MARKS
TOTAL		**100 MARKS**

PHASE-II: REVIEW_0 (No Marks: A review of previous phase)

Level of Achievement				
		Good	**Average**	**Poor**
A	Literature Survey & Problem Refinement	Comprehensive literature survey completed using reputed journals. Clear refinement of problem based on research gap identified.	Literature survey done but lacks depth or clarity in identifying gap.	Inadequate survey and unclear problem refinement.

B	Final Problem Statement & Objectives	Clearly refined problem statement aligned with SDG. Objectives are measurable, achievable, and research-based.	Problem defined but objectives lack clarity or feasibility.	Problem and objectives unclear or not aligned.
C	System Design	Clearly defined methodology/algorithm with tools & technologies.	Basic design and partially justified methodology.	Weak or unclear design and methodology.

PHASE-II: REVIEW_1 (50 M)

Level of Achievement					
		Marks	**Good**	**Average**	**Poor**
	Implementation Progress	**Marks Range**	**(30-20)**	**(19-10)**	**(9-0)**
A		**30**	Significant implementation started. At least one module completed with initial results.	Partial implementation with limited output.	Minimal or no progress in implementation.
		Marks Range	**(20-13)**	**(12-7)**	**(6-1)**
B	**Presentation/ Q&A**	**20**	Clear PPT, explains system design, tools, algorithms and partial results. Demonstrates strong understanding during Q&A	Basic presentation. Answers to questions are partially correct	Poor presentation and lacks knowledge in the work. Weak or incorrect answers during Q&A.

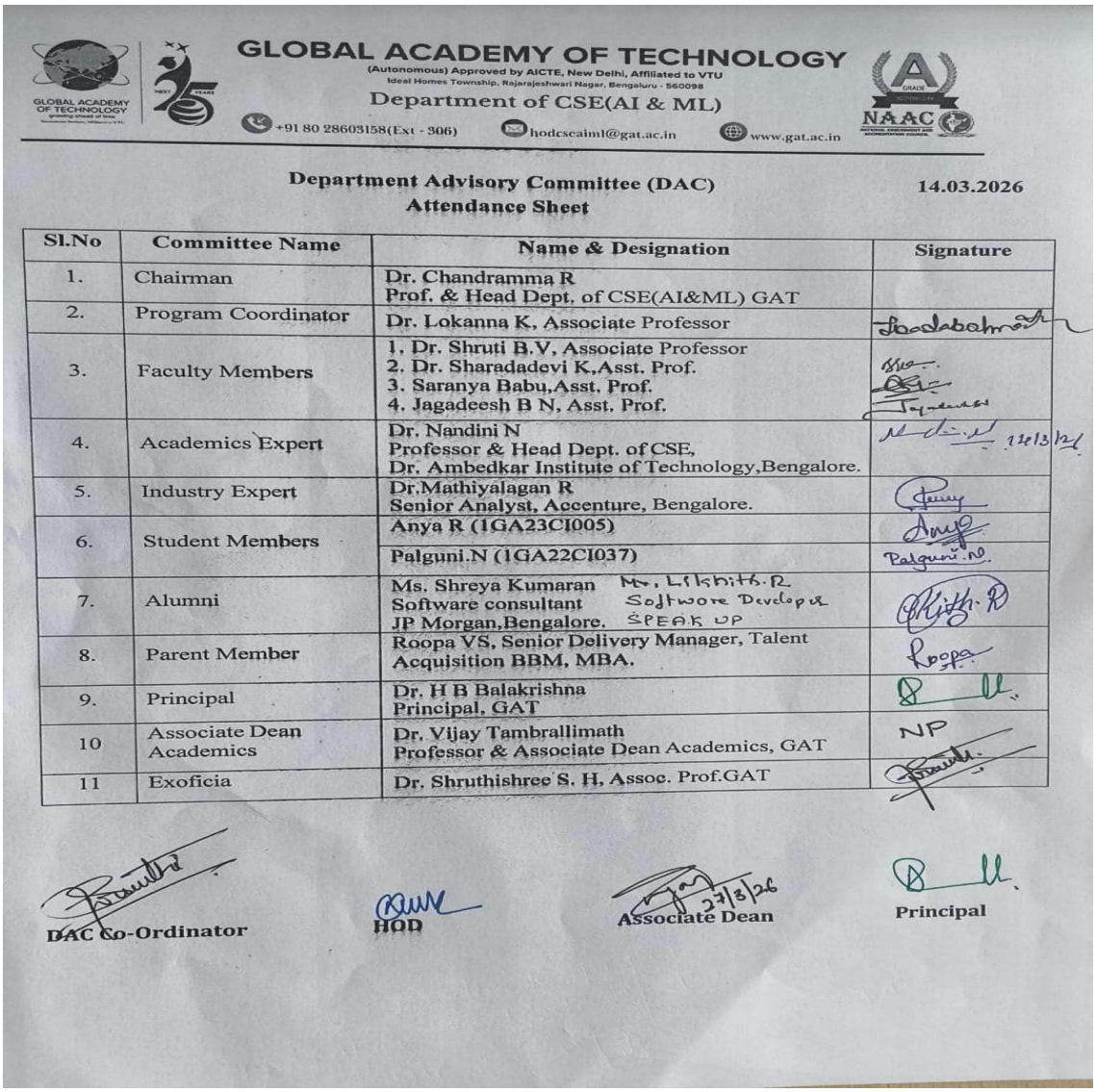
PHASE-II: REVIEW_2 (50 M)

Level of Achievement					
		Marks	**Good**	**Average**	**Poor**
A	**Implementation & Results**	**10**	All modules implemented successfully. Experimental results aligned with objectives. **(10-7)**	Partial implementation with limited results. **(6-3)**	Minimal progress and weak results. **(2-1)**
B	Technical Report	**20**	Detailed report with design, implementation & results. Plagiarism < 10%. **(20-13)**	Moderate quality report; plagiarism < 15%. **(12-7)**	Incomplete report; plagiarism < 20%. **(6-1)**
C	Paper / Patent Progress	**20**	Paper drafted and submitted to reputed journal/conference. **(20-13)**	Paper in preparation or partially completed. **(12-7)**	No progress towards publication. **(6-1)**

The above major project rubrics were discussed and approved by BoS Members. The same rubrics will be followed from the 2023 scheme.

13. BoS APPROVALS

Department Advisory Board approval



GLOBAL ACADEMY OF TECHNOLOGY
(Autonomous) Approved by AICTE, New Delhi, Affiliated to VTU
Ideal Homes Township, Rajarajeshwari Nagar, Bengaluru - 560098
Department of CSE(AI & ML)
+91 80 28603158(Ext - 306) hodcseaiml@gat.ac.in www.gat.ac.in

Department Advisory Committee (DAC) 14.03.2026
Attendance Sheet

Sl.No	Committee Name	Name & Designation	Signature
1.	Chairman	Dr. Chandramma R Prof. & Head Dept. of CSE(AI&ML) GAT	
2.	Program Coordinator	Dr. Lokanna K, Associate Professor	
3.	Faculty Members	1. Dr. Shruti B.V, Associate Professor 2. Dr. Sharadadevi K,Asst. Prof. 3. Saranya Babu,Asst. Prof. 4. Jagadeesh B N, Asst. Prof.	
4.	Academics Expert	Dr. Nandini N Professor & Head Dept. of CSE, Dr. Ambedkar Institute of Technology,Bengaluru.	12/3/26
5.	Industry Expert	Dr.Mathiyalagan R Senior Analyst, Accenture, Bengalore.	
6.	Student Members	Anya R (1GA23CI005) Palguni.N (1GA22CI037)	
7.	Alumni	Ms. Shreya Kumaran Mr. Likhith.R Software consultant Software Developer JP Morgan,Bengalore. SPEAK UP	
8.	Parent Member	Roopa VS, Senior Delivery Manager, Talent Acquisition BBM, MBA.	
9.	Principal	Dr. H B Balakrishna Principal, GAT	
10	Associate Dean Academics	Dr. Vijay Tambrallimath Professor & Associate Dean Academics, GAT	NP
11	Exoficia	Dr. Shruthishree S. H, Assoc. Prof.GAT	

DAC Co-Ordinator HOD 27/3/26 Associate Dean Principal

CSE(AI&ML) | AY 2025-2026

DEPARTMENT ADVISORY COMMITTEE MEETING (DAC)

Agenda

1. Welcome Address by the Head of the Department.
2. Institute Vision and Mission.
3. Discussion on Vision and Mission, PEO's, PSO's of the Department.

4. Confirmation of minutes of the previous PAC Meeting.

5. Credit distribution, Discussion and deliberation on 2024 scheme and 2026 Scheme and Syllabus (III-VIII Semester).

6. Program Outcomes (PO) Gap analysis.

7. Stakeholders Feedback on Syllabus.

8. Discussion on Teaching Learning Process (TLP).

9. Department Activities Conducted.

10. Achievements by Faculty/Students.

11. Internship/Placement Details.

12. Future Plan Conclusion.

As per Member suggestion

Agenda 2 and 3: Institute Vision and Mission, Discussion on Vision and Mission, PEO's, PSO's of the Department.

Member suggested enhancing practical exposure and skill-based outcomes. It was recommended to strengthen industry collaboration to achieve PSOs effectively.

Agenda 4 and 6: Minutes of Metting (Mom) of PAC Meeting, Po Gap Analysis.

The gap analysis indicates that while targets are clearly defined, attainment levels need improvement across most POs and PSOs. Focused academic strategies, continuous monitoring, and enhanced teaching methodologies are essential to bridge the gap and achieve desired learning outcomes.

Agenda 5 and 7: Discussion and Deliberation on 2024 Scheme and 2026 Scheme (III–VIII Sem) and Stakeholders' Feedback on Syllabus.

The committee also acknowledged that the syllabus effectively promotes critical thinking, problem-solving abilities, and practical exposure among students. Suggestions provided by stakeholders were constructive and focused on further enhancing industry interaction, incorporating hands-on training, and strengthening internship opportunities.

The Committee discussed the importance of strengthening industry collaboration through formal Memorandums of Understanding (MoUs) with reputed organizations and industries relevant to the program. Such collaborations are essential to bridge the gap between academic learning and industry requirements, enhance students' practical exposure, and improve employability skills.

The members emphasized initiating MoUs with industries in emerging areas such as Artificial Intelligence, Machine Learning, Cyber Security, and Data Science. These collaborations may include activities such as internships, industry-based projects, guest lectures, workshops, faculty development programs, and research initiatives.

The Board also suggested identifying potential industry partners and establishing long-term relationships to ensure continuous engagement and mutual benefit. Proper monitoring and periodic review of MoU activities were recommended to ensure effective implementation and outcomes.

The above points were discussed in the BoS meeting and got approved.

Internal Quality Committee ratification

Program Assessment Committee (PAC)

PAC Members: -

Sl. No.	Faculty Name	Designation
1.	Dr. Chandramma R	Professor & Head Dept. of CSE[AIML]
2.	Dr. Shruti B.V	Associate Professor
3.	Dr.Lokanna K	Associate Professor
4.	Dr. Shruthishree S.H	Associate Professor
5.	Dr. Sharadadevi K	Assistant Professor
6.	Prof. Saranya Babu	Assistant Professor
7.	Prof. Kaavyashree B.S	Assistant Professor
8.	Prof. Nasrath B.K	Assistant Professor
9.	Prof.Jagadeesh B.N	Assistant Professor

PAC meeting conducted on 6th February 2026 in the department from 10AM to 12 PM.
The following points were discussed: -

- Discussion and deliberation on the 24 Scheme Syllabus III – VIII Semester.
- Discussion of PO Attainment AY 2025-2026 and Target set for AY 2025-2026.
- Organizing Value-added Courses, Workshops, Seminars and Up-skills Programs.

Agenda 1:

Confirmation of PAC committee members and review of previous Minutes of Meeting (MOM).

- Identification of gaps between BOS syllabus and Program Outcomes (POs).
- Discussion on need for curriculum updates to meet industry expectations and OBE standards.
- Decision to document gaps and submit recommendations to BOS.
- Review of 24 Scheme syllabus (III–VIII Semester) for structure and relevance.

- Allocation of subjects to faculty members for detailed analysis.
- Faculty presentations on course objectives, content, and improvements.
- Collection of suggestions and inputs from all staff members.
- Incorporation of modifications to enhance practical exposure and industry relevance.
- Finalization of revised syllabus with mutual agreement of committee members

Agenda 2:

- Review and analysis of PO attainment for AY 2025–2026.
- Evaluation of academic performance and outcome achievement.
- Assignment of faculty as Course Coordinators based on expertise.
- Responsibility to review previous attainment levels and identify gaps.
- Preparation and verification of Target Setting Framework.
- Ensuring alignment between Course Outcomes (COs) and Program Outcomes (POs).
- Monitoring of continuous improvement strategies.
- Emphasis on systematic planning, accountability, and improved attainment.

Agenda 3:

- Planning of value-added courses, workshops, seminars, and up-skilling activities
- Focus on enhancing students' practical and technical competencies
- Identification of emerging technology topics
- Suggestion of external resource persons by faculty
- Emphasis on continuous learning initiatives
- Aim to improve students' employability and skill development
- Summary of decisions and action points discussed
- Commitment from members for effective implementation in the academic year

The above points were discussed and approved by the BoS members.

Question paper moderation norms

The SEE Question paper pattern for the 2026 Scheme is as follows:

- Part A (20 Marks): 10 questions of two marks each (all compulsory)
- Part B (80 Marks): There will be two full questions (with a maximum of three sub questions) from each module carrying 16 marks each. Students are required to answer any five full questions choosing at least one full question from each module.

The sample Question paper was presented by the BoS Chairman Dr. Chandramma R and it has been approved by BoS members and forwarded to Academic Council.

Rubric approval:

INTERNSHIP

Sl No	Particulars	Marks Weightage
1	Internship Review 1	40 Marks
2	Internship Review 2	40 Marks
3	Report	20 Marks
	Total	100 marks

A. Technical Understanding & Application 20 Marks				B. Presentation & Viva Voce 10 Marks		Professionalism & Learning Reflection 10 Marks		Total Marks 40 marks
1.Describe Organization & Work Domain (5 marks)	2.Illustrate Assigned Task/Project (5 marks)	3.Application of Engineering Concepts (5 marks)	4. Tools, Software & Technology Used (5 marks)	5.Presentation Clarity & Conceptual Understanding (5 marks)	6.Q&A (5 marks)	7.Diary Entry (5 marks)	8. Professional Conduct (5 marks)	
CO1	CO1	CO2	CO2	CO3	CO3	CO4	CO4	
L2	L2	L3	L3	L4	L4	L3	L3	

MINI PROJECT RUBRICS

	SL.NO	COMPONENTS	MARKS
CIE	1	REVIEW_0	20MARKS
	2	REVIEW_1	30MARKS
	3	REVIEW_2	50MARKS
	TOTAL		100 MARKS
SEE			--

REVIEW_0 (20M)

Level of Achievement					
		Marks	**Good**	**Average**	**Poor**
A	**Identification of problem domain & Detailed Analysis**	**7**	Clearly identifies a relevant SDG Problem and conducts detailed technical and contextual analysis	Identifies the problem but analysis is superficial or incomplete	Problem not clearly identified or only partial/weak analysis
			(7-6)	**(5-3)**	**(2-0)**
B	**Defining problem statement & objectives**	**7**	Clearly identifies a Problem a statements and formulates measurable, Achievable and SDG aligned objectives	Problem defined but objectives are vague or not deliverable	Problem definition unclear and objectives missing or irrelevant
			(7-6)	**(5-3)**	**(2-0)**
C	**Presentation (Q&A)**	**6**	Communicates ideas clearly and confidently, answers all Q&A effectively	Communicates ideas clearly bit unable to answer most Q&A	Poor Communication and unable to answer Q&A
			(6-5)	**(4-2)**	**(1-0)**

PHASE-I: REVIEW_1(30M)

Level of Achievement					
		Marks	**Good**	**Average**	**Poor**
A	**Literature Survey**	**10**	Literature survey includes minimum 30 papers from reputed journals (IEEE Transactions, IEEE Access, Elsevier, Springer, PLOS ONE, etc.)	Literature survey includes minimum 20 papers, some may not be from top-tier journals.	Very few papers (less than 10) referred or non-reputed sources used.

			Clearly identifies research gaps and explains the need for the proposed work	Limited identification of research gaps.	No research gap identified and lacks analysis.
			(10-8)	**(7-4)**	**(3-0)**
B	**Methodology/ Design**	**10**	ML Models with High Performance/Efficient work	Basic Algorithm / Medium Performances /work well but lacks optimization	Old Method (Existing work) Low performances
			(10-8)	**(7-4)**	**(3-0)**
C	**Presentation, Question & Answers**	**10**	Clear and confident PPT presentation. Answers most questions during Q&A.	Presentation is understandable but lacks clarity. Answers only a few questions.	Poor communication and slide organization. Unable to explain work or answer questions.
			(10-8)	**(7-4)**	**(3-0)**

REVIEW 2 (50 M)

Level of Achievement					
		Marks	**Good**	**Average**	**Poor**
A	**Implementation & Results**	**20**	All modules implemented successfully. Experimental results aligned with objectives.	Partial implementation with limited results.	Minimal progress and weak results.
			(20-13)	**(12-7)**	**(6-1)**
	Technical Report		Detailed report with design, implementation & results. Plagiarism < 10%.	Moderate quality report; plagiarism < 15%.	Incomplete report; plagiarism < 20%.

B		**20**	**(20-13)**	**(12-7)**	**(6-1)**
C	**Paper / Patent Progress**	**10**	Paper drafted and submitted to reputed journal/conference. **(10-7)**	Paper in preparation or partially completed. **(6-3)**	No progress towards publication. **(2-1)**

Laboratory courses

a) Continuous Internal Evaluation (CIE)	
1	**Observation + Record (Max. Marks 30) - (A)** Observation : Writeup + Execution + Viva Voce = 5+15+5 = 20 M Record: 10 M
2	**Internal Assessment (Max. Marks 20) - (B)** Writeup + Execution + Viva Voce = 20+60+20 = 100 (scaled down to 20) Total Marks = A + B = 50 Marks
b) **Semester End Examination (SEE):**	
1	Writeup + Execution + Viva Voce = 20+60+20= 100 Marks (scaled down to 50) Total Marks = 50 Marks

- **Rubrics for Evaluation of Observation 20M**

Attribute	Max. Marks	Good	Satisfactory	Poor
		4-5	**2-3**	**0-1**
Writeup	**05**	Writes the program without errors.	Writes the program with few mistakes.	Unable to write the program.
	Max. Marks	**9-10**	**5-8**	**0-4**
Execution of program	**10**	• Debugs the program independently. • Executed the program for all possible inputs.	• Works with little help from faculty. • All possible input cases not covered.	• Unable to complete the execution of the program within the lab session.
	Max. Marks	**3-5**	**1-2**	**0**
Viva Voce	**05**	• Able to explain the logic of the program. • Answered all questions.	• Partially understood the logic of the program. • Answered few questions.	• Not understood the logic of the program. • Not answering any questions

- **Rubrics for Evaluation of Record 10M**

Attribute	Max. Marks	9-10	5-8	0-4
Complete Program with Algorithm (wherever applicable) and all possible Outputs	**10**	• Complete program, algorithm and outputs.	• Writes program with few mistakes • Outputs are not clear. • Late submissions.	• Not submitted the records. • Incomplete program • Not written algorithms

- **Rubrics for Evaluation of Internal Test & SEE 100M**

Attribute	Max Marks	Good	Satisfactory	Poor
		15-20	**8-14**	**0-7**
Writeup	**20**	• Complete source code. • No syntax and logical errors. • All possible inputs listed with expected output.	• Completes source code. • Syntax and logical errors exist. • All possible inputs listed with expected output.	• Incomplete source code. • Change of program (zero marks).
	Max Marks	**50-60**	**25-49**	**0-24**
Execution	**60**	Able to debug the program and get the right set of outputs.	• Program, executed for only few input cases. • With few errors.	• Program with many errors. • Not executed.
	Max Marks	**15-20**	**8-14**	**0-7**
Viva Voce	**20**	Answering all questions.	Answering few questions.	Not Able to answer basic questions.

The above rubrics were discussed and approved by BoS.

Rubrics of laboratory courses are subject to change based on the nature of the course and in case a mini project is included.

14. CONCLUDING REMARKS

"The Board of Studies approved the proposed curriculum changes, assessment reforms, and implementation plan effective from Academic Year 2026–27. Further, the proceedings is sent across to Academic Council for approval"

GLOBAL ACADEMY OF TECHNOLOGY
Department of CSE(AI & ML)

Date:28-03-2026

Board of Studies Meeting

Attendance List

Sl. No.	Designation	Name	Affiliation	Signature
1.	Chairman	Dr. Chandramma R	Professor & HOD Dept. of CSE(AI&ML), GAT, Bengaluru.	28/3/2026
2.	VTU Nominee	Dr. B. M Sagar	Professor & Dean (Student affairs) Dept. of ISE, RV College of Engineering, Bengaluru-560059	28/3/26
3.	Academic Subject Expert	Dr. Indiramma	Professor, Dept. of CSE, BMS College of Engineering, Bengaluru	–
4.	Academic Subject Expert	Dr.V.Vinoth Kumar	Associate Professor School of Computer Science and Information Systems (SCORE), Vellore Institute of Technology, Vellore, India.	Online
5.	Academic Subject Expert	Dr. Sachin Prabhu	Research Software Engineer University of Leeds, United Kingdom	Online
6.	Industry Representative	Mr. Vijay Muniraj	Assistant Director/ Product Engineering Lead, EY(Earnest and Young) Bengaluru.	Online

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Department of CSE(AI & ML)

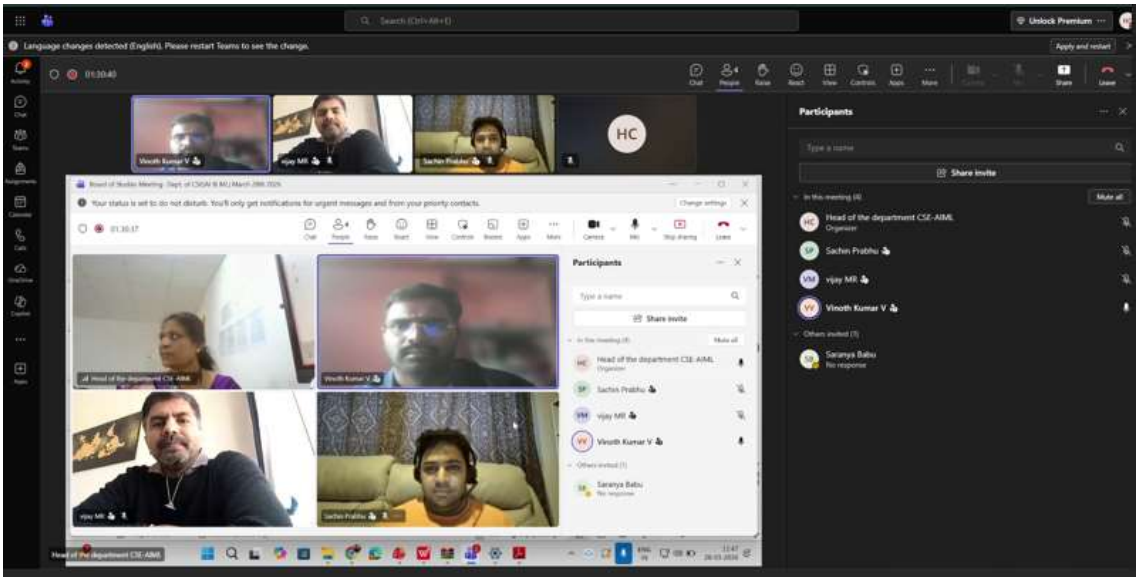
7.	Industry Representative	Mr. Nataraja K M	Technical Architect, LG soft India, Bengaluru.	—
8.	Member	Dr. Lokanna Kadakolmath	Associate Professor, Dept. of CSE(AI&ML), GAT, Bengaluru.	28/03/2026
9.	Member	Dr. Shruti B V	Associate Professor, Dept. of CSE(AI&ML), GAT, Bengaluru.	28/3/2026
10	Member	Mrs. Saranya Babu	Assistant Professor, Dept. of CSE(AI&ML), GAT, Bengaluru.	28/3/2026
11	Member	Dr. Shruthishree S H	Associate Professor, Dept. of CSE(AI&ML), GAT, Bengaluru.	28/03/26
12	Invited Member	Dr. H.B. Balakrishna	Principal, GAT, Bengaluru	
13	Invited Member	Dr. Vijay Tambrallimath	Associate Dean Academics, GAT, Bengaluru	28/3/26

HOD 28/3/2026
CSE(AI&ML)

28/3/26
Associate Dean- Academics

Dr. H. B. Balakrishna
Principal

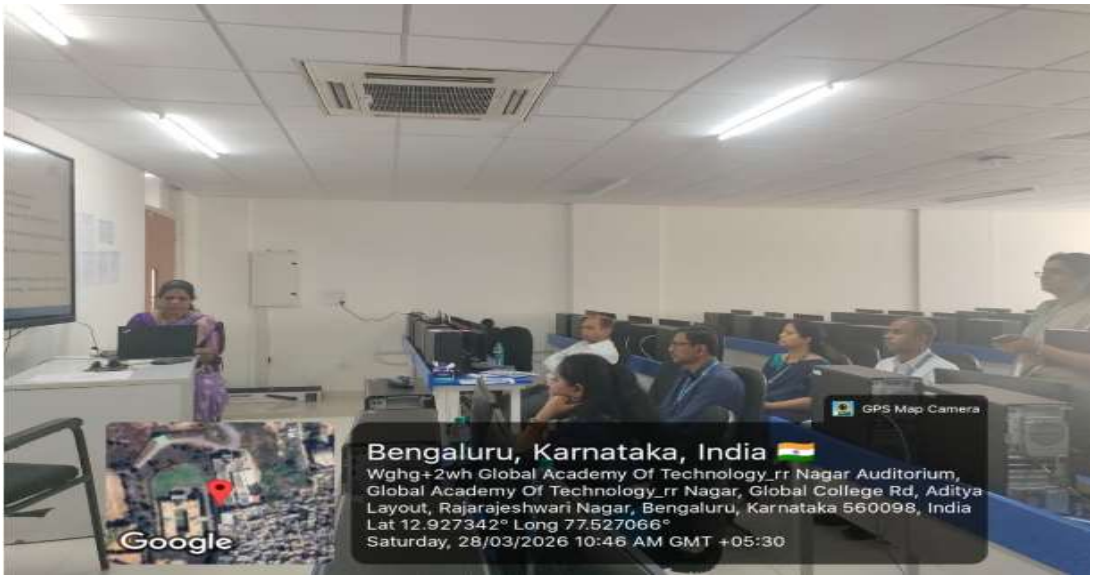
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BOS ELECTRONICS AND COMMUNICATION ENGINEERING

15-11-2025

MINUTES OF 7th MEETING OF BOARD OF STUDIES (BOS)

Meeting Called By: Dr. Madhavi Mallam, Chairman, BOS – ECE

Agenda 1: Actions implemented for third and fourth semester syllabus of 6th BoS meeting held on 17/05/2025
Agenda 2: Discussion and approval of Fifth to Eighth Semester 2024 Scheme & Syllabus
Agenda 3: *Presentation of Elective Course Options and Criteria for Selecting Electives*
Agenda 4: *Review of Courses That Have Undergone Revision in 2024Scheme*
Agenda 3: Discussion and approval of First year Syllabus for 2026 Batch
Agenda 4: Presentation and Discussion of Newly Introduced courses
Agenda 5: Discussion on online courses for Eighth semester 2024 Scheme
Agenda 6: *Courses Addressing Employability, Entrepreneurship, and Skill Development*
Agenda 7: *Discussion on Certificate/Diploma/Value added Programs*
Agenda 8: *List of Courses That Address Issues Related to Gender, Environment, and Sustainability, Human Values, and Professional Ethics*
Agenda 9: *Discussion on Feedback from Stakeholders on the Curriculum*
Agenda 10: *Discussion on Skill labs*
Agenda 11: *Feedback and Suggestions from Faculty and Experts*

Members Present:

Sl. No.	Designation	Members	Email	Signature
1.	Chairman	Dr. Madhavi Mallam	hodece@gat.ac.in 9182160989	
2.	Subject Expert	Dr. B. Naresh Kumar Reddy, **NIT, Tiruchirappalli**	bnkreddy@nitt.edu 9966539090	15/11/25
3.	VTU Nominee	Dr. A.V. Narasimhadhan, NIT K	dhansiva@nitk.edu.in 9113989303	
4.	Industry representative	Dr. Sandeep Kumar K	sandeep.kumark@tatatechnologies.com 9986972006	
5.	Alumni	Mr. Shivaraj A.B.	shivarajab095@gmail.com 7760773198	A.B
6.	Invited member	Dr. H.B. Balakrishna Principal	principal@gat.ac.in 8050003891	
7.	Member convenor	Mr. Tilak Kumar L	tilakkumar@gat.ac.in 9739864175	15/11/25
8.	Member	Dr. Ravi J	ravi.j@gat.ac.in 9481252624	
9.	Member	Dr. Shridhar Kabbur	shridhar.kabbur@gat.ac.in 9844675461	15/11/25
10.	Member	Dr. Shreedhar H.K.	shreedharhks@gat.ac.in 9880647811	15/11/25
11.	Member	Dr. Leelavathi H.P.	leelavathi.hp@gat.ac.in 8884086686	15/11/25
12.	Member	Dr. Manjunatha R.C.	manjunath.rc@gat.ac.in 9738829003	15/11/25

Opening Remarks

The Chairman of the Board of Studies (BoS), Department of Electronics & Communication Engineering, welcomed all members to the 7th BoS meeting. In the address, the Chairman highlighted key achievements of the department, including the increase in student intake from **180 to 240** from the **Academic Year 2024–25**, and emphasized that the department's **Vision and Mission are aligned with those of the institute**.

Agenda 1 – Action Taken Report: 6th BoS Meeting (17/05/2025)

The Chairman presented a summary of the **actions implemented on the suggestions from the 6th BoS**, specifically regarding revisions to the **third and fourth semester syllabus**. The curriculum enhancements were aimed at improving **academic rigor and industry relevance**.

Agenda 2 – Presentation and Discussion on Newly Introduced Courses

The Chairman briefed the Board on the newly introduced courses under the **2024 scheme**.

Key discussion points:

- **Dr. A.V. Narasimhadhan** inquired about the inclusion of communication and MIMO–related subjects. The Chairman clarified that the new courses were introduced primarily for the **VLSI domain**, while **communication subjects are scheduled in higher semesters**, with a **MIMO course offered in VIII semester**.
- **Mr. Shivaraj** appreciated the relevance of newly introduced subjects which will upskill students and improve employability.
- **Dr. Naresh and Dr. Sandeep** suggested renaming certain subjects for better clarity and industry alignment.

The Chairman reiterated that the primary outcomes of new courses include:

- Research publications
- Patent filings
- Better career prospects

The proposed course additions and their implications for **placement opportunities** were acknowledged positively by external BoS members.

Agenda 3 – Discussion and Approval of 2024 Scheme & Syllabus (Fifth to Eighth Semesters)

The Chairman presented the complete **fifth to eighth semester curriculum** under the 2024 scheme.

Key discussions:

- **Communication Lab and DSP:** Dr. A.V. Narasimhadhan inquired about their inclusion. The Chairman confirmed that both were integrated into a single course.
- **Elective Sequencing:** Dr. Narasimhadhan suggested interchanging electives between the 5th and 6th semesters.
- **IPCC Subjects:** Dr. Naresh sought clarification on the number of IPCC courses; the Chairman confirmed **one IPCC course is scheduled in the sixth semester**.
- **Computer Vision:** Dr. Narasimhadhan suggested offering it in the 7th semester. **It was clarified that Computer Vision is scheduled in the 8th semester** under the 2024 scheme.

The curriculum for **Semesters V–VIII** was **approved by the Board**.

Agenda 4 – Discussion on First-Year Syllabus (Batch 2026)

The Board reviewed the **first-year syllabus for the 2026 batch**.
The Principal suggested presenting the curriculum sequentially from the **first to eighth semester** for better clarity.
The recommendation was accepted.

Agenda 5 – Online Courses for Eighth Semester

The Chairman presented a list of **ten proposed online elective courses** for the eighth semester and requested members to shortlist **eight courses**.

Discussion outcomes:

- In response to a query by **Mr. Shivaraj A.B.**, the Chairman confirmed that each online course carries **3 credits**.
- The Principal recommended expanding the list to **twelve online courses** and emphasized assigning **competent faculty members** for delivery.

Agenda 6 – Courses Addressing Employability, Entrepreneurship and Skill Development

The Chairman presented the list of courses and initiatives incorporated in the curriculum that focus on enhancing **employability, entrepreneurship, and skill development** of students.

Key discussion points:

- Members appreciated the inclusion of courses such as **Machine Learning, Embedded Systems, VLSI Design, Communication Laboratories, Technical Writing, and Mini/Major Projects**, which directly contribute to industry readiness.
- It was highlighted that **Value-Added Programs, NPTEL/Online Certifications, and Skill-Based Laboratories** play a vital role in improving practical competencies.
- External experts suggested strengthening **entrepreneurship orientation** through startup awareness sessions, innovation challenges, and incubation support.

- The Board recommended periodic **industry interaction, internships, and hackathons** to further bridge the gap between academia and industry expectations.
- Emphasis was also given to developing **soft skills, communication abilities, teamwork, and leadership qualities** alongside technical expertise.

The Board acknowledged that the existing curriculum and supplementary initiatives adequately support student **career preparedness and entrepreneurial mindset**, and recommended **continuous enhancement based on industry trends and stakeholder feedback**.

Agenda 7 – Discussion on Certificate / Diploma / Value-Added Programs

The Chairman presented the list of proposed **Certificate, Diploma, and Value-Added Programs** intended to enhance students' practical knowledge and industry readiness.

Key discussion points:

- External members appreciated the initiative of introducing short-term certification programs aligned with emerging technologies.
- It was suggested that programs in **VLSI Design, Embedded Systems, Artificial Intelligence, IoT, and Data Analytics** be prioritized.
- Members emphasized collaboration with industry partners for certification authenticity and hands-on exposure.
- The Board recommended scheduling these programs during semester breaks or weekends to avoid academic overload.

The proposals were **welcomed and approved**, with a recommendation to periodically review program outcomes.

Agenda 8 – Courses Addressing Gender, Environment & Sustainability, Human Values, and Professional Ethics

The Chairman presented the list of courses mapped to **institutional and regulatory requirements** related to social responsibility and ethics.

Key discussion points:

- Members acknowledged that courses such as **Environmental Studies, Universal Human Values, Professional Ethics, Constitution of India, and related modules** adequately address the mandated themes.
- The Board suggested integrating **case studies and project-based learning** to improve student engagement and practical understanding.
- It was also recommended to embed sustainability and ethical considerations within core technical subjects wherever feasible.

The Board expressed satisfaction with the coverage and advised **continuous monitoring of course outcomes**.

Agenda 8 – Discussion on Stakeholder Feedback on Curriculum

The Chairman presented summarized feedback received from **students, alumni, employers, and faculty** regarding the existing curriculum.

Key discussion points:

- Stakeholders appreciated the inclusion of **emerging technology courses and laboratory-oriented learning**.
- Suggestions were received to further strengthen **industry interaction, internships, and real-time project exposure**.
- Alumni feedback emphasized the importance of **communication skills and interdisciplinary knowledge**.
- Employers recommended increased focus on **problem-solving skills, coding proficiency, and design tools**.

The Board noted the feedback and recommended that **relevant suggestions be incorporated** in future curriculum revisions.

Agenda 10 – Discussion on Skill Labs

The Chairman briefed the Board on the establishment and utilization of **Skill Laboratories** within the department.

Key discussion points:

- Members appreciated the availability of dedicated labs for **VLSI, Embedded Systems, Communication Systems, and Signal Processing**.
- It was suggested to enhance lab infrastructure with **latest software tools, FPGA kits, and simulation platforms**.
- The Board recommended conducting **periodic workshops and industry-led lab sessions** to maximize student benefit.

The initiatives undertaken for skill development were **well received** and further strengthening was encouraged.

Agenda 11 – Feedback and Suggestions from Faculty and Experts

General Curriculum & Content Feedback

- **Microprocessors:** Dr. Naresh queried inclusion; **It was clarified that Microcontrollers are covered under Embedded Syatems in Semester I.**
- The Principal advised:
  - Applying for **MODROB funding** for new laboratories
  - Identifying **curriculum–industry gaps**
  - Incorporating **ability enhancement courses aligned with industry needs**
  - Accurately reflecting teaching hours in **TLP documentation**

Technical Recommendations from External Members

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Approved by UGC, AICTE and Govt of Karnataka
Department of Electronics and Communication Engineering

- **Dr. A.V. Narasimhadhan**
  - Use **MATLAB** for simulation and hardware experiments; include **FPGA-based labs**
  - Add textbooks:
    - *Machine Learning with Python* – Andreas C. Müller & Sarah Guido
    - *Pattern Recognition* – Christopher M. Bishop
  - Include **NPTEL – Signals & Systems (Prof. V.M. Gadre)**
  - Add **filter–related experiments in the Signal Processing Lab**
  - Add **feedback systems in Control Engineering**
- **Dr. Sandeep Kumar**
  - Reduce **lab duration from 3 to 2 hours**
  - Add lab components to **Machine Learning with Python**
  - Include **OpenCV and MATLAB activities in Digital Image Processing**
- **Joint Suggestions (Dr. A.V. Narasimhadhan & Dr. Sandeep)**
  - Reorganize Signal Processing subjects:
    - Analog Filters → **Signals & Systems (Semester III)**
    - Z–Transform → **Digital Signal Processing**
- **Additional Suggestions**
  - Add **RISC-V pipelining** in Embedded Systems – *Dr. Naresh*
  - Incorporate **AI–based NPTEL courses**
  - Training support for **C2S, MATLAB, and other tools**
  - Include **Algorithm Design & Analysis (ADA), and Software Defined Vehicles (SDV)** in **Automotive Electronics** – *Mr. Shivaraj & Dr. Sandeep*

Conclusion

The meeting concluded with a **vote of thanks**.

The Chairman expressed sincere gratitude to the **Management, Chief Strategy and Systems, Principal, and External BoS Members** for their valuable inputs and active participation.

Chairman, BoS & HoD
Department of ECE
Global Academy of Technology

Dr. MADHAVI MALLAM
PROFESSOR & HEAD
HEAD OF THE DEPARTMENT
Dept. of Electronics & Communication Engineering
Global Academy of Technology
Rajarajeshwarinagar, Bangalore-98

Proceedings of

BOARD of STUDIES

Program

ELECTRONICS AND COMMUNICATION ENGINEERING

A.Y. 2025-2026

28th March 2026

Bos Chairman Associate Dean Academics Principal

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1. INTRODUCTION & OBJECTIVES

Purpose of the Meeting:

- Review academic performance and curriculum effectiveness
- Align curriculum with PO, PSO, SDGs, Washington Accord WK profiles
- Ensure NEP 2020 and NCrF compliance
- Strengthen skill-based, experiential, and industry-integrated learning
- Improve CO–PO attainment and placement conversion
- Ensure continuous improvement

2. CONSTITUTION OF BoS

Sl. No.	Name	Designation
1	**Dr. Madhavi Mallam** HOD, ECE, GAT, Bengaluru-560098 9182160989, hodece@gat.ac.in	Chairman
2	**Dr. H B Balakrishna** Principal, Global Academy of Technology, Bengaluru-560098 8050003891, principal@gat.ac.in	Invited Member
3	**Dr. Vijay Tambrallimath** Professor and Associate Dean Academics, GAT, Bengaluru- 560098 9480324605, dean@gat.ac.in	Invited Member
4	**Dr. B Naresh Kumar Reddy** Assistant Professor, ECE, NIT–Tiruchirappalli (NIRF – 9th Rank), TamilNadu-620015 9966539090, bnkreddy@nitt.edu	Member (Subject Expert)
5	**Dr. A V Narasimhadhan** Assistant Professor, ECE, NITK – Surathkal (NIRF – 17th Rank), Mangaluru-575025 9113989303, dhansiva@nitk.edu.in	Member (VTU Nominee)
6	**Dr. Sandeep Kumar K** Senior Lead & Education Specialist, Tata Technologies Pvt. Ltd., Bengaluru 9986972006, Sandeep.kumark@tatatechnologies.com	Member (Industry)
7	**Mr. Shivaraj A B** Product Owner, AUMOVIO, Bengaluru 7760773198, shivarajab095@gmail.com	Member (Alumni)
8	**Dr. Ravi J** Dean - Student Affairs, Professor, ECE, GAT, Bengaluru-560098 9481252624, ravi.j@gat.ac.in	Member
9	**Dr. Leelavathi H P** Professor, ECE, GAT, Bengaluru-560098 8884086686, leelavathi.hp@gat.ac.in	Member

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10	**Dr. Manjunatha R C** Professor, ECE, GAT, Bengaluru-560098 9738829003, manjunath.rc@gat.ac.in	Member
11	**Dr. Shazia Sultana** Associate Professor, ECE, GAT, Bengaluru – 560098 9739440836, shazia.sulthana@gat.ac.in	Member
12	**Mr. Tilak Kumar L** Assistant Professor, ECE, GAT, Bengaluru-560098 9739864175, tilakkumar@gat.ac.in	Member Convener
13	**Mrs. Dhanushree B L** Assistant Professor, ECE, GAT, Bengaluru-560098 9742745068, dhanushree.bl@gat.ac.in	Member

Mail Communication to BoS Members:

From: Dr. Madhavi Mallam, HOD ECE GAT
Sent: Saturday, March 14, 2026 1:01 PM
To: dhansiva@nitk.edu.in <dhansiva@nitk.edu.in>; bnkreddy@nitt.edu <bnkreddy@nitt.edu>; Kumar K, Dr.Sandeep <sandeep.kumark@tatatechnologies.com>; shivarajab095@gmail.com <shivarajab095@gmail.com>
Subject: Board of Studies Invitation regarding

Dear all

Greetings from the Department of Electronics and Communication Engineering, Global Academy of Technology.

You are cordially invited to attend the **8th Board of Studies (BOS) Meeting** of the Department. The meeting is scheduled to discuss and approve important academic matters related to the curriculum and scheme of the program.

Agenda of the Meeting:

1. Approval of the complete syllabus for the **2024 Scheme**, which was discussed in the **7th BOS Meeting.**
2. Discussion and approval of the **First-Year syllabus and scheme for 2026 Scheme.**

Meeting Details:

Date: 28th March 2026
Time: 10:00 AM onwards
Venue: Placement Board Room, Global Academy of Technology

https://outlook.office365.com/mail/inbox/id/AAQkADQ0NTVkOTNiLWUyMjltNDA3Ni1iNjcyLTNlNTYzNGE4NmE0OQAQALIqXDwRBSpLhzUXcevq... 1/2

Your valuable suggestions and approval will greatly contribute to strengthening the academic framework of the department. We kindly request you to attend the meeting and share your expert inputs.

Kindly Acknowledge your acceptance.

We look forward to your kind presence.

Thank you.

WARM REGARDS

Dr. Madhavi Mallam
Professor & HOD
Dept. of ECE, GAT

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3. CONFIRMATION OF PREVIOUS MINUTES

Statement:

"The Minutes of the previous BoS meeting held on 15/11/2025 were circulated and confirmed."

Resolution No.: **GAT/ECE/BOS/2/2025**

4. ACTION TAKEN REPORT (ATR)

Sl No	Previous Discussion	Status (Completed/ Partial/Pending)	Remarks
1	Curriculum Revisions	Completed	All the suggestions are incorporated
2	Course additions	Completed	Added 8 new courses relevant to Industry
3	Internship policy updates	Partial	Internship and industry interaction were discussed; recommended to strengthen through periodic industry interaction, internships, and hackathons
4	Online Courses for VIII Semester	Completed	List expanded and refined; recommendation to increase courses and assign competent faculty

5. STAKEHOLDER FEEDBACK ANALYSIS

5.1. Feedback

Sources	Remark
Students	Include courses in line with Industry needs.
Alumni	The curriculum in the department has improved and is in alignment with industry. Need to focus on core electronics and placement.
Industry	Overall curriculum and academic scheme meet your expectations for entry-level engineers. Need to include Ability Enhancement Courses.
Faculty	The current curriculum provides knowledge of electronics and communication engineering.
Affiliated Colleges	The curriculum finds itself on par with the affiliated university. Interaction with industry for internships will add value.

5.2. Need Analysis

Level	Remark
Local	Addressing the specific needs of the immediate ecosystem (nearby tech parks, local MSMEs, or regional challenges).
Regional/ National	Aligning with national missions (e.g., *Make in India*, *Digital India*) and the standards set by bodies like **AICTE** or **UGC**
Global	Preparing students for international research, global tech giants (Apple, Intel, Google), and universal challenges.
Local	Addressing the specific needs of the immediate ecosystem (nearby tech parks, local MSMEs, or regional challenges).

5.3. Summary Table

Agenda	Key Suggestions	Proposed Action
Local	Provide hand on Value added courses on embedded systems.	The students are introduced to PCB Design Techniques, Embedded systems & Robotics with real time examples to fetch employment in the companies.
Regional/ National	Provide courses in line with Semiconductor India Movement	Inclusion of Industry driven Courses provided by ELEVIUM Technologies.
Global	Exposure to universities abroad for advanced research opportunity	The students were given an opportunity to interact with Shizuoka University, Japan to lean about Design and Fabrication of Nano materials.

6. VISION, MISSION, PEO & PSO REVIEW

Institute Vision Component	Department Vision Component	Consistency
Become a premier institution	Provide Quality Technical Education	Excellence in education is the primary driver for achieving "premier" status.
Imparting quality education in engineering and management.	Imparting quality education in Electronics and Communication Engineering	The department identifies ECE as its specific domain to fulfil the institute's engineering mandate.
To meet the changing needs of society.	With a focus on global challenges and societal needs.	Both emphasize "societal needs," while "global challenges" specifically addresses the "changing" nature of the world.

Key Alignment Features

- **Domain Specificity**: The department vision takes the institute's general "engineering" goal and applies it specifically to **Electronics and Communication**.
- **Relevance**: By including "global challenges," the department ensures it stays updated with "changing needs" like 5G, semiconductor technology, and sustainable electronics.
- **Stakeholder Focus**: Both visions emphasize serving society, which is a critical "strong vision" trait identified in Strategic Planning Models.

Consistency Mapping: Institute vs. Department Mission

Institute Mission (IM)Component	Department Mission (DM) Component	Consistency
IM1: Conducive Environment & Quality Teaching	DM1 & DM2	**Strongly Consistent:** DM1 focuses on "good practices of teaching-learning" and DM2 provides the "state-of-the-art infrastructure" (modern labs) required to create the "conducive environment" mentioned in IM1.
IM2: Research, Innovation & Industry Collaboration	DM1 & DM3	**Strongly Consistent:** DM1 emphasizes "strong industry-institute interaction" while DM3 specifically targets "research and innovation in emerging areas" to produce innovators and leaders, directly fulfilling IM2.

IM3: Ethical Values & Environmental Consciousness	DM4	**Direct Alignment:** DM4 explicitly mirrors the institute's goal by aiming to "imbibe professional ethics and social values" with a specific "concern for the environment."

Key Alignment Features

- **Infrastructure Support:** There is a logical flow where the Institute's "modern infrastructure" (IM1) is realized through the Department's "system and subsystem level development" (DM2).
- **Industry Focus:** Both levels prioritize industry interaction, which is critical for Electronics and Communication Engineering, where technology changes rapidly.
- **Holistic Development:** The "holistic education" mentioned in IM3 is operationalized in DM4 through the teaching of professional ethics and social values.

"The Vision, Mission, PEO and PSOs were Reviewed."

7. CO–PO ATTAINMENT REVIEW

7.1 Outgoing Batch Analysis

PO	Target	Achieved	Gap	Action Plan
PO1	**1.8**	**2.05**	**-0.25**	**Target Achieved**
PO2	**1.8**	**1.65**	**0.15**	Target is not achieved, Revision of syllabus
PO3	**1.8**	**1.57**	**0.23**	Target is not achieved, pedagogy modification
PO4	**1.8**	**1.42**	**0.38**	Target is not achieved, precise mapping of POs
PO5	**1.8**	**1.71**	**0.09**	Target is not achieved, reinforcement of key concepts through modern tools.
PO6	**1.8**	**1.47**	**0.33**	Target is not achieved, more student engagement needed
PO7	**1.8**	**1.56**	**0.24**	Target is not achieved, revision of syllabus
PO8	**1.8**	**1.74**	**0.06**	Target is not achieved, precise mapping of POs
PO9	**1.8**	**1.74**	**0.06**	Target is not achieved, Minor improvement needed

PO10	**1.8**	**1.70**	**0.10**	Target is not achieved, Minor improvement needed
PO11	**1.8**	**1.67**	**0.13**	Target is not achieved , Minor improvement needed
PO12	**1.8**	**1.47**	**0.33**	Target is not achieved , Scope for better revision sessions
PSO1	**1.8**	**1.54**	**0.26**	Target is not achieved, Scope for better revision sessions
PSO2	**1.8**	**1.28**	**0.52**	Target is not achieved , Scope for better revision sessions

➢ **Low Performing (High Gap ≥ 0.30)**

- **PO4** (Gap: 0.38)
- **PO6** (Gap: 0.33)
- **PO12** (Gap: 0.33)
- **PSO2** (Gap: 0.52)

Possible Reasons:

- Weak conceptual understanding in core subjects mapped to these outcomes
- Insufficient practical exposure or hands-on learning
- Poor alignment between teaching methods and outcome requirements
- Assessment tools not effectively measuring the intended skills
- Low student engagement or difficulty level too high
- Lack of real-world application or case studies

➢ **Moderately Low Performing (Gap: 0.20 – 0.29)**

- **PO3** (0.23)
- **PO7** (0.24)
- **PSO1** (0.26)

Possible Reasons:

- Partial attainment due to inconsistent student performance
- Limited practice or reinforcement of key topics
- Gaps in continuous assessment strategies
- Some students struggling, while others perform adequately

➢ **Slightly Below Target (Gap: 0.10 – 0.19)**

- **PO2** (0.15)
- **PO10** (0.10)
- **PO11** (0.13)

- Minor improvement needed in delivery or evaluation
- Slight mismatch between expected and achieved outcomes
- Scope for better revision sessions or doubt-clearing

Near Target (Gap < 0.10)

- **PO5 (0.09), PO8 (0.06), PO9 (0.06)**
  Able to Perform well; only fine-tuning required

- **Course revision required**

- **The following subjects were unable to attain the target in PO4.**

Sl. No.	Course Code	Set Target for PO4	Attainment value for PO4
1	21ECE32	1.8	0.65
2	21ECE61	1.8	0.67

- **The following subjects were unable to attain the target in PO6.**

Sl. No.	Course Code	Set Target for PO6	Attainment value for PO4
1	21CHE12/22	1.8	0.72
2	21ECE561	1.8	0.77
3	21ECE62	1.8	0.59
4	21ECES84	1.8	0.91

- **The following subjects were unable to attain the target in PO12.**

Sl. No.	Course Code	Set Target for PO12	Attainment value for PO12
1	21CSE13	1.8	0.93
2	21MEE15	1.8	0.68
3	21ELN16/26	1.8	0.7
4	21ECE32	1.8	0.68
5	21ECE34	1.8	0.64
6	21ECE35	1.8	0.72
7	21ECE42	1.8	0.65
8	21ECE71	1.8	.72
9	21ECE72	1.8	0.72
10	21ECE72	1.8	0.63

- **The following subjects were unable to attain the target in PSO2.**

8. CURRICULUM DESIGN & COMPREHENSIVE MAPPING

8.1. Credit Structure

1 credit = 30 hours

Total Program Credits – 160

Category	Credits	% of Total
Basic Sciences	23	14.37
Basic Engineering	24	15
Humanities & Social Sciences	8	5
Program Core	53	33.13
Program Electives	15	9.375
Open Electives	6	3.75
Projects	11	6.875
Internship	10	6.25
Skill Courses (NCrF aligned)	10	6.25

8.2 Mapping Framework

8.2.1. PO/PSO Mapping Table

POs	Courses
PO1	BMATE24101, BCEDK24103, BESCK24104C, BPLCK24105B, BCHEE24102 BMATE24201, BPHYE24202, BBEE24203, BETCK24205B, BIDTK24208, BESCK24204D BMATE24301, BEC24302, BEC24303, BEC24304, BECL24305, BEC24306A, BEC24306B, BEC24306C, BEC24306D, BEC24358A, BEC24358B, BEC24358C, BEC24358D BMATE24401, BEC24402, BEC24403, BEC24404, BECL24405, BEC24406A, BEC24406B, BEC24406C, BEC24406D, BEC24457A, BEC24457B, BEC24457C, BEC24457D, BBOK24407 BEC24502, BEC24503, BECL24504, BEC24505A, BEC24505B, BEC24505C, BEC24505D, BEC24505E, BEC24505F, BEC24556A, BEC24556B, BEC24556C, BEC24556D, BRMK24557 BEC24601, BEC24602, BEC24603, BEC24604A, BEC24604B, BEC24604C, BEC24604D, BEC24604E, BEC24604F, BEC24605A, BEC24605B, BEC24605C, BEC24605D, BECL24607, BEC24657A, BEC24657B, BEC24657C, BEC24657D

	BEC24701, BEC24702, BEC24703, BEC24704A, BEC24704B, BEC24704C, BEC24704D, BEC24704E, BEC24704F, BEC24705A, BEC24705B, BEC24705C, BEC24705D BEC24801A, BEC24801B, BEC24801C, BEC24801D, BEC24802A, BEC24802B, BEC24802C, BEC24802D
PO2	BMATE24101, BESCK24104C, BPLCK24105B, BCHEE24102 BMATE24201, BBEE24203, BETCK24205B, BIDTK24208, BESCK24204D BMATE24301, BEC24302, BEC24303, BEC24304, BECL24305, BEC24306A, BEC24306B, BEC24306C, BEC24306D, BEC24358A, BEC24358B, BEC24358C, BEC24358D BMATE24401, BEC24402, BEC24403, BEC24404, BECL24405, BEC24406A, BEC24406B, BEC24406C, BEC24406D, BEC24457A, BEC24457B, BEC24457C, BEC24457D, BBOK24407 BEC24502, BEC24503, BECL24504, BEC24505A, BEC24505B, BEC24505C, BEC24505D, BEC24505E, BEC24505F, BEC24556A, BEC24556B, BEC24556C , BEC24556D BEC24601, BEC24602, BEC24603, BEC24604A, BEC24604B, BEC24604C, BEC24604D, BEC24604E, BEC24604F, BEC24605A, BEC24605B, BEC24605C, BEC24605D, BECL24607, BEC24657A, BEC24657B, BEC24657C, BEC24657D BEC24701, BEC24702, BEC24703, BEC24704A, BEC24704B, BEC24704C, BEC24704D, BEC24704E, BEC24704F, BEC24705A, BEC24705B, BEC24705C, BEC24705D BEC24801A, BEC24801B, BEC24801C, BEC24801D, BEC24802A, BEC24802B, BEC24802C, BEC24802D
PO3	BMATE24101, BPLCK24105B BMATE24201, BIDTK24208 BEC24302, BEC24303, BEC24304, BECL24305, BEC24306A, BEC24306D, BEC24358A, BEC24358B, BEC24358C, BEC24358D BEC24402, BEC24403, BEC24404, BECL24405, BEC24406A, BEC24406B, BEC24406C, BEC24406D, BEC24457A, BEC24457B, BEC24457C, BEC24457D BEC24502, BEC24505A, BEC24505B, BEC24505C, BEC24505D, BEC24505E, BEC24505F, BEC24556A, BEC24556B, BEC24556C, BEC24556D

	BEC24602, BEC24603, BEC24604A, BEC24604B, BEC24604C, BEC24604D, BEC24604E, BEC24604F, BEC24605A, BEC24605B, BEC24605C, BEC24605D, BECL24607, BEC24657A, BEC24657C, BEC24657D BEC24701, BEC24703, BEC24704A, BEC24704B, BEC24704C, BEC24704D, BEC24704E, BEC24704F, BEC24705A, BEC24705B, BEC24705C, BEC24705D BEC24801A, BEC24801B, BEC24801C, BEC24801D, BEC24802A, BEC24802B, BEC24802C, BEC24802D
PO4	BPLCK24105B BIDTK24208 BEC24302, BEC24303, BEC24358D BEC24403, BEC24457D BEC24502, BEC24505D, BEC24505E, BEC24505F, BRMK24557 BEC24602, BEC24603, BEC24604B, BEC24604D, BEC24604E, BEC24604F, BECL24607, BEC24657D BEC24701, BEC24704B, BEC24704D, BEC24704E, BEC24704F BEC24801D, BEC24802A, BEC24802C, BEC24802D
PO5	BCEDK24103, BPLCK24105B BMATE24301, BEC24304, BECL24305, BEC24358A, BEC24358B, BEC24358C BMATE24401, BEC24403, BECL24405, BEC24457C, BEC24457C, BEC24457D BEC24502, BEC24503, BECL24504, BEC24505A, BEC24505B, BEC24505D, BEC24505E, BEC24505F, BEC24556A, BEC24556B BEC24602, BEC24603, BEC24604D, BEC24604E, BEC24604F, BECL24607, BEC24657C, BEC24657D BEC24701, BEC24704D, BEC24704E, BEC24704F BEC24801B, BEC24801D, BEC24802A, BEC24802C, BEC24802D
PO6	BICOK24107, BSFHK24108, BCHEE24102 BPHYE24202, BETCK24205B

	BEC24358D BEC24457B, BEC24457D BEC24501, BEC24505C, BEC24505F, BEC24556C BEC24604E, BEC24604F, BEC24605B, BECL24607, BEC24657A BEC24703, BEC24704B, BEC24704C, BEC24704E, BEC24705B
PO7	BECL24305, BCHEE24102, BEC24358D, BBOK24407 BEC24501, BECL24504, BEC24505F BEC24604E, BEC24604F, BEC24605B, BEC24657B BEC24704B, BEC24704C, BEC24704E, BEC24705B, BEC24705C
PO8	BCHEE24102, BEC24358D BEC24505C, BEC24505D, BEC24505F, BEC24556C, BRMK24557 BEC24604A, BEC24604D, BEC24604E, BEC24604F, BEC24605B, BEC24657B BEC24704B, BEC24704C, BEC24704D, BEC24704E, BEC24705B BEC24801D
PO9	BCEDK24103, BPWSK24106 BBEE24203, BENGK24206, BKSKK24207, BKBKK24207 BEC24358C, BEC24358D BEC24404, BEC24457C BEC24501, BEC24505B, BEC24505D, BEC24505F, BEC24556B, BRMK24557 BEC24602, BEC24604A, BEC24604D, BEC24604E, BEC24604F, BEC24605C, BEC24605D, BECL24607, BEC24657A BEC24701, BEC24704B, BEC24704D, BEC24704E, BEC24705D BEC24801B, BEC24801C, BEC24801D
PO10	BEC24306A, BEC24358C, BEC24358D

	BEC24457C, BEC24457D BEC24501, BEC24505B BEC24604E, BEC24605D BEC24701, BEC24702, BEC24703, BEC24704B, BEC24704E, BEC24705A BEC24801B
PO11	BMATE24101, BESCK24104C, BPLCK24105B BMATE24201, BBEE24203, BETCK24205B, BIDTK24208 BEC24302, BEC24303, BEC24306A, BEC24358C, BEC24358D BEC24402, BEC24406A, BEC24406D, BEC24457A, BEC24457B, BEC24457C, BEC24457D BEC24501, BEC24502, BECL24504, BEC24505D, BEC24505E, BEC24505F, BEC24556D, BRMK24557 BEC24602, BEC24603, BEC24604A, BEC24604C, BEC24604D, BEC24604E, BEC24604F, BEC24605C, BECL24607, BEC24657B BEC24702, BEC24703, BEC24704B, BEC24704C, BEC24704D, BEC24704E, BEC24704F, BEC24705A, BEC24705B, BEC24705C BEC24801A, BEC24801C, BEC24801D
PSO1	BEC24302, BEC24303, BEC24304, BECL24305, BEC24306A, BEC24306B, BEC24306C, BEC24306D, BEC24358A, BEC24358B, BEC24358D BEC24402, BEC24403, BEC24404, BECL24405, BEC24406B, BEC24406C, BEC24406D, BEC24457A, BEC24457B, BEC24457D, BBOK24407 BEC24502, BEC24503, BECL24504, BEC24505A, BEC24505B, BEC24505C, BEC24505D, BEC24505E, BEC24505F, BEC24556A, BEC24556B, BEC24556C, BEC24556D BEC24601, BEC24602, BEC24603, BEC24604A, BEC24604B, BEC24604C, BEC24604D, BEC24604E, BEC24604F, BEC24605A, BEC24605B, BEC24605C, BEC24605D, BECL24607, BEC24657A, BEC24657C, BEC24657D

	BEC24701, BEC24703, BEC24704A, BEC24704B, BEC24704C, BEC24704D, BEC24704E, BEC24704F, BEC24705A, BEC24705B, BEC24705C BEC24801A, BEC24801B, BEC24801C, BEC24801D, BEC24802A, BEC24802B, BEC24802C, BEC24802D
PSO2	BEC24302, BEC24303, BEC24304, BECL24305, BEC24306A, BEC24306B, BEC24306D, BEC24358A, BEC24358B, BEC24358C, BEC24358D BEC24402, BEC24403, BEC24404, BECL24405, BEC24406A, BEC24406B, BEC24406D, BEC24457A, BEC24457B, BEC24457C, BEC24457D, BBOK24407 BEC24502, BEC24503, BECL24504, BEC24505B, BEC24505C, BEC24505D, BEC24505E, BEC24505F, BEC24556A , BEC24556C , BEC24556D BEC24601, BEC24602, BEC24603, BEC24604A, BEC24604B, BEC24604C, BEC24604D, BEC24604E, BEC24604F, BEC24605A, BEC24605B, BEC24605C, BEC24605D, BECL24607, BEC24657A, BEC24657B, BEC24657C, BEC24657DBEC24701, BEC24703, BEC24704A, BEC24704B, BEC24704C, BEC24704D, BEC24704E, BEC24704F, BEC24705A, BEC24705B, BEC24705C BEC24801A, BEC24801B, BEC24801C, BEC24801D, BEC24802A, BEC24802B, BEC24802C, BEC24802D

8.2.2. SDG Mapping Table

SDGs	Courses
SDG3	BSFHK24158, BSFHK24258, BETCK24105/205K BNSK24359, BPEK24359, BYOK24359, BLAK24359 BBOK24407, BNSK24459, BPEK24459, BYOK24459, BLAK24459 BNSK24559, BPEK24559, BYOK24559 BNSK24659, BPEK24659, BYOK24659 BEC24801B, BEC24801C
SDG4	BMATE24101, BCHEE24102, BECDK24103, BPWSK24106, BENGK24106, BSKK24107 / BKBKK24107, BSFHK24158, BIDTK24158

	BMATE24201, BPHYE24202, BENGK24206, BPWSK24206, BSKK24207 / BKBKK24207, BIDTK24258, BSFHK24258, BESCK24104/204D, BESCK24104/204H, BPLCK24105/205A, BPLCK24105/205B, BPLCK24105/205C, BPLCK24105/205D, BPLCK24105/205E, BPLCK24105/205F BMATE24301, BEC24303, BECL24305, BSCK24307, BLAK24359, BEC24306A, BEC24306C, BEC24306D, BEC24358A, BEC24358B, BEC24358C BMATE24401, BECL24405, BBOK24407, BUHK24408, BLAK24459, BEC24406A, BEC24406C, BEC24457A, BEC24457B, BEC24457C, BEC24457D BECL24504, BRMK24557, BLAK24559, BEC24505A, BEC24505B, BEC24556A, BEC24556B BECL24607, BLAK24659, BEC24604A, BEC24604B, BEC24605D, BEC24657A, BEC24657B BEC24705D BEC24801A, BEC24801B, BEC24801C, BEC24801D, BEC24802A, BEC24802B, BEC24802C, BEC24802D
SDG8	BPWSK24106, BENGK24106, BENGK24206, BPWSK24206, BESCK24104/204D BPLCK24105/205A, BPLCK24105/205B, BPLCK24105/205C, BPLCK24105/205D, BPLCK24105/205E, BPLCK24105/205F BEC24304, BECL24305, BEC24306A, BEC24358A, BEC24358C BEC24457A, BEC24457C BEC24501, BECP24507, BEC24505A, BEC24556A BECP24606 BECP24706, BEC24704D BEC24801D, BEC24802A, BEC24802D
SDG9	BMATE24101, BCHEE24102, BECDK24103, BIDTK24158 BMATE24201, BPHYE24202, BEEE24203, BIDTK24258, BESCK24104/204A, BESCK24104/204B, BESCK24104/204C, BESCK24104/204E, BESCK24104/204G, BESCK24104/204H, BESCK24104/204H

	BETCK24105/205B, BETCK24105/205C, BETCK24105/205D, BETCK24105/205G, BETCK24105/205H, BETCK24105/205I, BETCK24105/205K, BETCK24105/205L, BETCK24105/205M, BETCK24105/205N BMATE24301, BEC24302, BEC24303, BEC24304, BEC24306B, BEC24306C, BEC24306D, BEC24358B BMATE24401, BEC24402, BEC24403, BEC24404, BECL24405, BEC24406A, BEC24406B, BEC24406C, BEC24406D, BEC24457B, BEC24457D BEC24501, BEC24502, BEC24503, BECL24504, BECP24507, BRMK24557, BEC24505B, BEC24505C, BEC24505D, BEC24505E, BEC24505F, BEC24556B, BEC24556C, BEC24556D BEC24601, BEC24602, BEC24603, BECP24606, BECL24607, BEC24604A, BEC24604B, BEC24604C, BEC24604D, BEC24604E, BEC24604F, BEC24605A, BEC24605B, BEC24605C, BEC24605D, BEC24657A, BEC24657B, BEC24657C, BEC24657D BEC24701, BEC24702, BEC24703, BECP24706, BEC24704A, BEC24704B, BEC24704C, BEC24704D, BEC24704E, BEC24704F, BEC24705A, BEC24705B, BEC24705C, BEC24705D BEC24801A, BEC24801B, BEC24801C, BEC24801D, BEC24802A, BEC24802B, BEC24802C, BEC24802D

8.2.3. WK Mapping Table

WKs	Courses
WK1	BMATE24101, BCHEE24102 BMATE24201, BPHYE24202 BMATE24301, BEC24302, BEC24304, BEC24306A, BEC24306B, BEC24306D, BEC24358B, BEC24358D BMATE24401, BEC24404, BECL24405, BEC24406A, BEC24406B, BEC24406D, BEC24457B, BBOK24407 BEC24501, BEC24502, BEC24503, BECL24504, BEC24505A, BEC24505B, BEC24505C, BEC24505D, BEC24505E, BEC24505F, BEC24556B, BEC24556C, BEC24556D, BRMK24557, BEC24556C, BEC24556E, BEC24556D

	BEC24601, BEC24602, BEC24603, BEC24604A, BEC24604B, BEC24604C, BEC24604D, BEC24604E, BEC24604F, BEC24605A, BEC24605B, BEC24605C, BEC24605D, BEC24657A, BEC24657B, BEC24657C, BEC24657E, BEC24657D BEC24702, BEC24703, BEC24704A, BEC24704B, BEC24704C, BEC24704D, BEC24704E, BEC24705A, BEC24705B, BEC24705C, BEC24705D BEC24801A, BEC24801B, BEC24801C, BEC24801D, BEC24802A, BEC24802B, BEC24802C, BEC24802D
WK2	BMATE24101 BMATE24201 BMATE24301, BEC24302, BEC24303, BEC24304, BEC24306A, BEC24306B, BEC24306C, BEC24306D, BEC24358A, BEC24358B, BEC24358C BMATE24401, BEC24402, BEC24403, BEC24404, BECL24405, BEC24406A, BEC24406B, BEC24406C, BEC24406D, BEC24457A, BEC24457B, BEC24457C, BEC24457D BEC24501, BEC24502, BEC24503, BECL24504, BEC24505A, BEC24505B, BEC24505C, BEC24505D, BEC24505E, BEC24505F, BEC24556A, BEC24556B, BEC24556C, BEC24556D, BRMK24557, BEC24556C, BEC24556E, BEC24556D BEC24601, BEC24602, BEC24603, BEC24604A, BEC24604B, BEC24604C, BEC24604D, BEC24604E, BEC24604F, BEC24605A, BEC24605B, BEC24605C, BEC24605D, BEC24657A, BEC24657B, BEC24657C, BEC24657E, BEC24657D BEC24701, BEC24702, BEC24703, BEC24704A, BEC24704B, BEC24704C, BEC24704D, BEC24704E, BEC24704F, BEC24705B, BEC24705C, BEC24705D BEC24801A, BEC24801B, BEC24801C, BEC24801D, BEC24802A, BEC24802B, BEC24802C, BEC24802D
WK3	BECDK24103, BESCK24104/204A, BESCK24104/204B, BESCK24104/204C, BESCK24104/204D, BESCK24104/204E, BESCK24104/204F, BESCK24104/204G, BESCK24104/204H, BETCK24105/205A, BETCK24105/205B BEEE24203, BEEE24203, BETCK24105/205C, BETCK24105/205D, BETCK24105/205L, BETCK24105/205M, BETCK24105/205N, BPLCK24105/205A, BPLCK24105/205A, BPLCK24105/205B,

	BPLCK24105/205C, BPLCK24105/205D, BPLCK24105/205E, BPLCK24105/205F BMATE24301, BEC24302, BEC24303, BEC24304, BEC24306B, BEC24306C, BEC24358A, BEC24358B, BEC24358C, BEC24358D BMATE24401, BEC24402, BEC24403, BEC24404, BECL24405, BEC24406A, BEC24406B, BEC24406C, BEC24406D, BEC24457A, BEC24457B, BEC24457C, BEC24457D, BBOK24407 BEC24501, BEC24502, BEC24503, BECL24504, BEC24505A, BEC24505B, BEC24505C, BEC24505D, BEC24505E, BEC24505F, BEC24556A, BEC24556B, BEC24556C, BEC24556D, BRMK24557, BEC24556C, BEC24556E, BEC24556D BEC24602, BEC24603, BEC24604A, BEC24604B, BEC24604C, BEC24604D, BEC24604E, BEC24604F, BEC24605A, BEC24605B, BEC24605C, BEC24605D, BEC24657A, BEC24657B, BEC24657C, BEC24657E, BEC24657D BEC24701, BEC24702, BEC24703, BEC24704A, BEC24704B, BEC24704C, BEC24704D, BEC24704E, BEC24704F, BEC24705A, BEC24705B, BEC24705C, BEC24705D BEC24801A, BEC24801B, BEC24801C, BEC24801D, BEC24802A, BEC24802B, BEC24802C, BEC24802D
WK4	BESCK24104/204G, BETCK24105/205A, BETCK24105/205B, BETCK24105/205C, BETCK24105/205D, BETCK24105/205G, BETCK24105/205H, BETCK24105/205K, BETCK24105/205L, BETCK24105/205M, BETCK24105/205N BEC24302, BEC24306B, BEC24306A, BEC24306C, BEC24358A, BEC24358B, BEC24358C, BEC24358D BEC24402, BEC24403, BEC24404, BECL24405, BEC24406A, BEC24406D, BEC24457A, BEC24457C, BEC24457D BEC24501, BEC24502, BEC24503, BECL24504, BEC24505A, BEC24505C, BEC24505D, BEC24505E, BEC24505F, BEC24556A, BEC24556C, BRMK24557, BEC24556C, BEC24556E, BEC24556D BEC24602, BEC24604A, BEC24604B, BEC24604C, BEC24604D, BEC24604E, BEC24604F, BEC24605A, BEC24605B, BEC24605D, BEC24657A, BEC24657B, BEC24657D, BEC24657C, BEC24657E, BEC24657D

	BEC24701, BEC24703, BEC24704A, BEC24704B, BEC24704C, BEC24704D, BEC24704E, BEC24704F, BEC24705A, BEC24705B, BEC24705C BEC24801A, BEC24801D, BEC24802A, BEC24802B, BEC24802C, BEC24802D
WK5	BECDK24103 BIDTK24258 BECL24305, BEC24306B, BEC24358B, BEC24358D BEC24501, BEC24503, BECL24504, BEC24505A, BEC24505C, BEC24505D, BEC24505E, BEC24505F, BEC24556C, BRMK24557, BEC24556C, BEC24556E, BEC24556D BEC24602, BEC24604A, BEC24604B, BEC24604E, BEC24604F, BEC24605D, BEC24657C, BEC24657E, BEC24657D BEC24701, BEC24703, BEC24704A, BEC24704C, BEC24704D, BEC24704E, BEC24704F, BEC24705B, BEC24705D BEC24801D, BEC24802A, BEC24802B, BEC24802C, BEC24802D
WK6	BPLCK24105/205A, BPLCK24105/205A, BPLCK24105/205B, BPLCK24105/205C, BPLCK24105/205D, BPLCK24105/205E, BIDTK24258, BESCK24104/204D, BETCK24105/205A, BETCK24105/205B, BETCK24105/205D, BETCK24105/205M, BETCK24105/205N BMATE24301, BEC24302, BECL24305, BEC24306A, BEC24358A, BEC24358C, BEC24358D BMATE24401, BEC24402, BEC24403, BEC24406A, BEC24406B, BEC24406D, BEC24457A, BEC24457B, BEC24457C, BEC24457D BEC24505B, BEC24505F, BEC24556A, BRMK24557, BEC24556E BEC24604B, BEC24602, BEC24604D, BEC24604F, BEC24605A, BEC24605B, BEC24605D, BECL24607, BEC24657A, BEC24657C, BEC24657D, BEC24657E BEC24701, BEC24702, BEC24704C, BEC24704F, BEC24705A, BEC24705B, BEC24705C BEC24801B

WK7	BSFHK24158, BETCK24105/205E, BETCK24105/205F, BETCK24105/205I, BETCK24105/205J BSFHK24258, BESCK24104/204A, BESCK24104/204F BEC24505C, BEC24505F, BEC24556C, BRMK24557, BEC24556E BEC24604B, BEC24604F, BEC24657D, BEC24657E BEC24703, BEC24704C, BEC24704F, BEC24705B
WK8	BPWSK24106, BENGK24106, BICOK24107, BSFHK24158 BSFHK24258 BENGK24206, BPWSK24206, BSKK24207 / BKBKK24207, BICOK24207 BEC24306B, BEC24358B BECL24504, BEC24505D, BEC24505E, BEC24505F, BRMK24557, BEC24556C, BEC24556E, BEC24556D BEC24604D, BEC24604E, BEC24604F, BEC24657B, BEC24657D, BEC24657C, BEC24657E, BEC24657D BEC24701, BEC24703, BEC24704D, BEC24704E, BEC24704F BEC24801D
WK9	BEC24306B, BEC24358B, BEC24358C, BEC24505D, BEC24505E BEC24406D, BEC24457C BECL24504, BRMK24557, BEC24556C, BEC24556D BEC24604D, BEC24604E, BEC24657B, BEC24657C, BEC24657D BEC24702, BEC24704C, BEC24704D, BEC24704E, BEC24705A, BEC24705B, BEC24705C BEC24801D

8.3 Percentage-Based Reporting

% of courses revised	20

% skill-based courses	36
% courses with apprenticeship/fieldwork	10
% online credited courses (SWAYAM, NPTEL)	4
% project-based courses	30

9. NEW COURSE PROPOSALS

New courses proposed:

Sl. No	Semester	Course Code	Name of the Course
1	3	BEC24306B	Embedded System Design
2	3	BEC24358B	Embedded System Design Laboratory
3	4	BEC24406B	SoC Design and Flow
4	4	BEC24457B	SoC Design and Flow Laboratory
5	5	BEC24556D	Micro-python for Embedded Systems
6	5	BEC24556E	TSMC Reference flow-based Design Implementation
7	5	BEC24556F	System Verilog for RTL Verification
8	6	BEC24657D	Advanced Embedded System
9	6	BEC24657E	Static Timing Analysis
10	6	BEC24657F	Advanced SV and Verification using Python
11	7	BEC24704D	Productization using Embedded Technologies
12	7	BEC24704E	Physical Design
13	7	BEC24704F	Universal Verification Methodology

1. Embedded System Design (BEC24306B)

Rationale	This course is introduced to equip students with essential knowledge and skills in embedded system design using ARM Cortex-M architectures. It addresses the growing demand in industries such as IoT, automotive, and automation by providing hands-on experience in firmware development and hardware interfacing, thereby enhancing employability and industry readiness.
Course Objectives	• Understand the basic organization of a computer organization. • Demonstrate the functioning of different sub-systems, such as processor, Input/output, and memory. • Understand the various microcontroller architecture and interfaces, programming for ARM Cortex M4 using programming model. • Develop programs for C-4, 32-bit microcontroller to interface peripherals. • Understand the architecture level concept of cortex-M4 processor. Apply the interfacing of peripherals and test the output on target/simulator for various application interfaces.
COs	• Understand the basic organization of a computer organization. • Demonstrate the functioning of different sub-systems, such as processor, Input/output, and memory.

	• Understand the various microcontroller architecture and interfaces, programming for ARM Cortex M4 using programming model. • Develop programs for C-4, 32-bit microcontroller to interface peripherals. • Understand the architecture level concept of cortex-M4 processor. Apply the interfacing of peripherals and test the output on target/simulator for various application interfaces.
Skill Alignment (NCrF level)	Level: 5 – 6
Assessment Scheme	Component — Marks Continuous Internal Evaluation (CIE) — 50 Semester End Examination (SEE) — 50 Total — 100 CIE Breakdown: • Test 1: 30 Marks • Test 2: 30 Marks • Assignment: 20 Marks • Final CIE: Average of tests + assignment
Industry Relevance	This course is highly relevant to industries such as: • Embedded Systems and IoT • Automotive Electronics • Consumer Electronics • Robotics and Industrial Automation
SDG mapping	SDG4, SDG8, SDG9

2. Embedded System Design Laboratory (BEC24358B)

Rationale	This laboratory course provides hands-on experience in embedded system design using ARM Cortex-M microcontrollers. It enables students to develop practical skills in firmware programming, peripheral interfacing, and real-time system implementation, addressing industry demand in embedded and IoT domains.
Course Objectives	• Understand the organization and operation of ARM-based microcontrollers. • Analyze the functioning of processor, memory, and I/O subsystems. • Develop firmware for the ARM Cortex-M4 using standard programming tools. • Interface and control peripherals using C on a 32-bit Cortex-M4 microcontroller. • Implement and test Cortex-M4 processor interfacing techniques on target hardware or simulators.

COs	• CO1: Understand the basic organization of a computer organization. • CO2: Demonstrate the functioning of different sub-systems, such as processor, Input/output, and memory. • CO3: Understand the various microcontroller architecture and interfaces, programming for ARM Cortex M4 using programming model. • CO4: Develop programs for C-4, 32-bit microcontroller to interface peripherals. • CO5: Understand the architecture level concept of cortex-M4 processor. Apply the interfacing of peripherals and test the output on target/simulator for various application interfaces.
Skill Alignment (NCrF level)	**Level:** 5–6
Assessment Scheme	a) Continuous Internal Evaluation (CIE) = 50 marks b) Semester End Examination (SEE) = 50 marks Total = 100 marks **CIE Components:** • Weekly Experiment Evaluation (20 Marks) • Internal Lab Exam (30 Marks) **SEE Components:** • Write-up: 15 Marks • Experiment Conduction: 70 Marks • Viva Voce: 15 Marks
Industry Relevance	This course is aligned with industry requirements in: • Embedded Systems and IoT • Automotive Electronics • Robotics and Industrial Automation
SDG mapping	SDG4, SDG8, SDG9

3. SoC Design and Flow (BEC24406B)

Rationale	This course is introduced to equip students with knowledge of System-on-Chip (SoC) design and industry-standard design flows using Verilog and Linux-based environments. It addresses the growing demand in semiconductor and VLSI industries by providing skills in RTL design, verification, and system integration.
Course Objectives	• Develop the skills to navigate, manage, and troubleshoot a Shell scripting. • Comprehend the overall system-on-chip (SoC) design flow, including specification, design, verification, and validation processes. • To understand the design and verification of digital logic circuits using hardware description language i.e., Verilog.

	• Learn the techniques for integrating RTL designs with peripheral IPs using wrappers to create a cohesive and functional SoC.
COs	• CO1: Able to design, write, and automate Linux shell scripts to efficiently for the applications. • CO2: Understand SoC and its various types. • CO3: Analyse the Hardware Description Languages, Program structure and basic language elements of Verilog • CO4: Analyse types of modelling, modules, functions of Verilog and simulate related Programs. • CO5: Designing the wrappers for peripherals IP's
Skill Alignment (NCrF level)	**Level:** 5–6
Assessment Scheme	a) Continuous Internal Evaluation (CIE) = 50 marks b) Semester End Examination (SEE) = 50 marks Total = 100 marks CIE Breakdown: • Test 1: 30 Marks • Test 2: 30 Marks • Assignment: 20 Marks • Final CIE: Average of tests + assignment •
Industry Relevance	This course is highly relevant to: • Semiconductor and VLSI industries • Chip design and verification domains
SDG mapping	SDG4, SDG8, SDG9

4. SoC Design and Flow Laboratory (BEC24457B)

Rationale	This laboratory course provides practical exposure to SoC design flow using Linux and Verilog. It equips students with hands-on skills in RTL design, simulation, and IP integration, meeting industry requirements in VLSI and semiconductor domains.
Course Objectives	• Develop the ability to navigate, manage, and troubleshoot Linux shell scripting for automation tasks. • Understand the System-on-Chip (SoC) design flow, including specification, design, verification, and validation stages. • Gain practical knowledge in the design and verification of digital logic circuits using Verilog HDL. • Learn to integrate RTL designs with peripheral IPs using wrappers to build a cohesive and functional SoC.
COs	• CO1: Able to design, write, and automate Linux shell scripts to efficiently for the applications.

	• CO2: Understand SoC and its various types • CO3: Analyse the Hardware Description Languages, Program structure and basic language elements of Verilog. • CO4: Analyse types of modelling, modules, functions of Verilog and simulate related Programs. • CO5: Designing the wrappers for peripherals IP's
Skill Alignment (NCrF level)	**Level:** 5–6
Assessment Scheme	a) Continuous Internal Evaluation (CIE) = 50 marks b) Semester End Examination (SEE) = 50 marks Total = 100 marks **CIE Components:** • Weekly Experiment Evaluation: 20 Marks • Internal Lab Examination: 30 Marks **SEE Components:** • Write-up: 15 Marks • Experiment Conduction: 70 Marks • Viva Voce: 15 Marks
Industry Relevance	This course aligns with: • Semiconductor and VLSI industries • SoC design and verification domains
SDG mapping	SDG4, SDG8, SDG9

5. Micro-python for Embedded Systems (BEC24556C)

Rationale	This course is introduced to equip students with modern embedded programming skills using MicroPython. It bridges software and hardware by enabling rapid prototyping of IoT and embedded applications, addressing industry demand in IoT, automation, and smart systems.
Course Objectives	• Understand the MicroPython environment and get hands-on with REPL (Read-Eval-Print Loop). • Interface sensors and actuators with MicroPython. • Connect MicroPython-enabled devices to networks and build IoT applications.
COs	• CO1: Demonstrate understanding of Install and configure MicroPython on various microcontrollers and use REPL for basic interaction. • CO2: Implementation of interfacing digital input/output operations using GPIO, interrupts, and timers. • CO3: Able to understand the concepts of interface sensors and actuators using ADC, PWM, DAC and display data.

	• CO4: Implement serial communication using UART, I2C, SPI protocols to interface external modules. • CO5: Develop and deploy basic IoT applications using Wi-Fi, web servers, and cloud communication.
Skill Alignment (NCrF level)	**Level:** 5–6
Assessment Scheme	a) Continuous Internal Evaluation (CIE) = 50 marks b) Semester End Examination (SEE) = 50 marks Total = 100 marks **CIE Breakdown:** • CIE Test 1: 30 Marks • CIE Test 2: 30 Marks • Laboratory Component: 20 Marks **SEE:** • Theory Examination (100 Marks scaled to 50)
Industry Relevance	This course is highly relevant to: • IoT and Embedded Systems industries • Smart devices and automation sectors
SDG mapping	SDG4, SDG8, SDG9

6. System Verilog for RTL Verification (BEC24556E)

Rationale	This course is introduced to address the growing demand for verification engineers in the semiconductor industry. It equips students with skills in RTL design, SystemVerilog-based verification, and testbench development, aligning with modern SoC design and verification practices.
Course Objectives	To learn RTL design and verify it effectively, this course covers essential topics including coding standards, FSM implementation, CDC/error detection techniques, Protocols and Testbench Components.
COs	• CO1: Demonstrate an understanding of RTL coding standards, FSM design techniques, and CDC/error detection mechanism. • CO2: Apply memory and FIFO design concepts to build and verify various architectures including synchronous, asynchronous, and circular FIFOs • CO3: Design and implement standard communication protocols, controllers, and bridges such as SPI, I2C, UART, APB, AHB, AXI, and USB-to-UART. • CO4: Analyze and implement SystemVerilog OOPs concepts and testbench architecture to build efficient reusable verification components. • CO5: Develop complete SystemVerilog testbenches using interfaces, BFMs, monitors, scoreboards, and reference models for RTL verification.

Skill Alignment (NCrF level)	**Level:** 6–7
Assessment Scheme	a) Continuous Internal Evaluation (CIE) = 50 marks b) Semester End Examination (SEE) = 50 marks Total = 100 marks **CIE Breakdown:** • CIE Test 1: 30 Marks • CIE Test 2: 30 Marks • Laboratory Component: 20 Marks **SEE:** • Theory Examination (100 Marks scaled to 50)
Industry Relevance	This course is highly relevant to: • Semiconductor and VLSI industries • Chip design and verification domains
SDG mapping	SDG4, SDG8, SDG9

7. TSMC Reference Flow Based Design Implementation (BEC24556D)

Rationale	This course is introduced to provide industry-oriented knowledge of advanced VLSI design using TSMC reference flows. It equips students with skills in RTL-to-GDSII implementation, timing analysis, and physical design, addressing the growing demand in semiconductor and chip design industries.
Course Objectives	• Understand Fab Reference Flow Fundamentals. • Master TSMC Reference Flow for Up to 28nm.
COs	• CO1: Understand standard cell libraries and key technology files, and explain NLDM's role in timing characterization. • CO2: Describe foundation IPs and PDKs, analyze power in standard cells, apply STA concepts, and evaluate PVT impacts on timing and power. • CO3: Design and verify CMOS inverter layouts, perform parasitic extraction and simulations, and apply BSIM modeling for device analysis. • CO4: Apply RTL-to-GDSII flow for 28nm and below TSMC technologies, focusing on advanced node challenges. • CO5: Design, analyze, and apply advanced reference flows for TSMC below-28nm nodes to create manufacturable, reliable, and high-performance integrated circuits.
Skill Alignment (NCrF level)	**Level:** 6–7
Assessment Scheme	a) Continuous Internal Evaluation (CIE) = 50 marks b) Semester End Examination (SEE) = 50 marks Total = 100 marks **CIE Breakdown:** • CIE Test 1: 30 Marks

	• CIE Test 2: 30 Marks • Laboratory Component: 20 Marks **SEE:** • Theory Examination (100 Marks scaled to 50)
Industry Relevance	This course is highly relevant to: • Semiconductor and VLSI industries • Chip design, physical design, and verification domains
SDG mapping	SDG4, SDG8, SDG9

8. Advanced Embedded System (BEC24657C)

Rationale	This course is introduced to provide advanced knowledge in embedded systems and IoT technologies. It equips students with skills in communication protocols, networking, and RTOS-based system design, addressing industry demand in IoT, automation, and smart systems.
Course Objectives	• To apprise learners about IoT architecture, distinct protocols, and the way they are implemented. • To apply concepts and perform timing calculations for simple circuits. • Getting acquainted with industry-standard timing analysis tools to do complicated design setup timing analysis.
COs	• CO1: Demonstrate understanding of Software Design for IoT protocol. • CO2: Implementation of interfacing TCP, UDP, MQTT concepts. • CO3: Able to understand the concepts of IoT Data Link Layer and Network Layer Protocols • CO4: Understand and apply the concepts of Transport and Session Layer Protocols on IoT devices. • CO5: Understand and apply the concepts of Transport and Session Layer Protocols on IoT devices.
Skill Alignment (NCrF level)	**Level:** 6–7
Assessment Scheme	a) Continuous Internal Evaluation (CIE) = 50 marks b) Semester End Examination (SEE) = 50 marks Total = 100 marks **CIE Breakdown:** • CIE Test 1: 30 Marks • CIE Test 2: 30 Marks • Laboratory Component: 20 Marks **SEE:** • Theory Examination (100 Marks scaled to 50)

Industry Relevance	This course is highly relevant to: • IoT and Embedded Systems industries • Smart devices, industrial automation, and communication systems
SDG mapping	SDG4, SDG8, SDG9

9. Advanced SV and Verification using Python (BEC24657E)

Rationale	This course is introduced to provide advanced knowledge in digital system design and verification using SystemVerilog and modern verification techniques. It addresses industry demand for skilled verification engineers by focusing on CPU architecture, pipelining, cache systems, and assertion-based verification.
Course Objectives	To learn the System Verilog constructs and apply constructs to model System Verilog testbench architecture.
COs	• CO1: Describe the architecture and key differences between CPUs and GPUs, pipelining stages, types of hazards, and cache memory organization. • CO2: Understanding pipelining techniques, cache coherency protocols (MESI), and virtual memory mechanisms including TLB and page table walker • CO3: Apply SystemVerilog constructs to build testbench components and verification environments for pipelined processors and memory subsystems. • CO4: Analyze pipeline hazards and implement logic to resolve structural, data, and control hazards in a five-stage pipeline with verification. • CO5: Construct and verify assertion-based validation using SystemVerilog Assertions (SVA) to ensure
Skill Alignment (NCrF level)	**Level:** 6–7
Assessment Scheme	a) Continuous Internal Evaluation (CIE) = 50 marks b) Semester End Examination (SEE) = 50 marks Total = 100 marks **CIE Breakdown:** • CIE Test 1: 30 Marks • CIE Test 2: 30 Marks • Laboratory Component: 20 Marks **SEE:** • Theory Examination (100 Marks scaled to 50)
Industry Relevance	This course is highly relevant to: • Semiconductor and VLSI industries

	• Chip design and verification domains
SDG mapping	SDG4, SDG8, SDG9

10. Static Timing Analysis (BEC24657D)

Rationale	This course is introduced to provide in-depth knowledge of timing analysis in VLSI design. It equips students with skills in timing constraints, analysis, and closure using industry-standard tools, addressing the growing demand in semiconductor and chip design industries.
Course Objectives	• To apply concepts and perform timing calculations for simple circuits • To familiarize with industry standard timing analysis tools to perform setup timing analysis for complex designs • Use terminologies effectively while communicating with peers in the industry • To analyze timing reports from a timing analysis tool.
COs	• CO1: Apply STA fundamentals using correct timing terminology and analysis techniques. • CO2: Develop and validate SDC timing constraints including exceptions for complex clock domains. • CO3: Interpret STA reports from synthesis and implementation flows, identifying violations and their root causes. • CO4: Analyze the impact of physical design, parasitics, and PVT variation on timing across pre-/post-CTS and post-route stages. • CO5: Execute timing ECO flows and achieve timing closure using Synopsys tools. Perform full-chip signoff timing analysis using MMMC methodology with extracted parasitic data.
Skill Alignment (NCrF level)	**Level:** 6–7
Assessment Scheme	a) Continuous Internal Evaluation (CIE) = 50 marks b) Semester End Examination (SEE) = 50 marks Total = 100 marks **CIE Breakdown:** • CIE Test 1: 30 Marks • CIE Test 2: 30 Marks • Laboratory Component: 20 Marks **SEE:** • Theory Examination (100 Marks scaled to 50)
Industry Relevance	This course is highly relevant to: • Semiconductor and VLSI industries • Chip design, physical design, and timing verification domains

SDG mapping	SDG4, SDG8, SDG9

11. Physical Design (BEC24704D)

Rationale	This course is introduced to provide practical and theoretical knowledge of VLSI physical design processes such as floorplanning, placement, routing, and signoff. It equips students with industry-relevant skills required for ASIC design and semiconductor industries.
Course Objectives	• To understand the concepts of Physical Design Process such as partitioning, Floor planning, Placement and Routing. Verifying and validating the integrated circuit layout.
COs	• CO1: Understand the goals, objectives, measurements, and algorithms of floorplanning and power planning. • CO2: Discover solutions for the congestion issues of physical design flow of an ASIC. • CO3: Apply efficient algorithms to synthesize the clock tree and analyze the challenges in the flow. • CO4: Apply the algorithms to route the signals efficiently. • CO5: Analyse the importance of parasitic extraction and generate GDSII File for fabrication of an ASIC.
Skill Alignment (NCrF level)	**Level:** 6–7
Assessment Scheme	a) Continuous Internal Evaluation (CIE) = 50 marks b) Semester End Examination (SEE) = 50 marks Total = 100 marks **CIE Breakdown:** • CIE Test 1: 30 Marks • CIE Test 2: 30 Marks • Laboratory Component: 20 Marks **SEE:** • Theory Examination (100 Marks scaled to 50)
Industry Relevance	This course is highly relevant to: • Semiconductor and VLSI industries • ASIC design and physical design domains
SDG mapping	SDG4, SDG8, SDG9

12. Productization using Embedded Technologies (BEC24704C)

Rationale	This course is introduced to equip students with skills in designing secure and reliable embedded systems for IoT applications. It focuses on IoT security, cryptography, and real-world product

	development, addressing industry needs in embedded systems and cybersecurity domains.
Course Objectives	• To transfer technological knowledge and expertise for creating reliable and safe Internet of Things solutions. • To apply concepts and perform timing calculations for simple circuits. • Getting acquainted with industry-standard timing analysis tools to do complicated design setup timing analysis.
COs	• CO1: Design and implement cryptography algorithms. • CO2: Build security systems using elementary blocks. • CO3: Build Trustable cloud based IoT systems. • CO4: Design IoT security problems using light weight cryptography. • CO5: Identify the necessity of cyber security regulations and practices.
Skill Alignment (NCrF level)	**Level:** 6–7
Assessment Scheme	a) Continuous Internal Evaluation (CIE) = 50 marks b) Semester End Examination (SEE) = 50 marks Total = 100 marks **CIE Breakdown:** • CIE Test 1: 30 Marks • CIE Test 2: 30 Marks • Laboratory Component: 20 Marks **SEE:** • Theory Examination (100 Marks scaled to 50)
Industry Relevance	This course is highly relevant to: • IoT and Embedded Systems industries • Cybersecurity and smart system domains
SDG mapping	SDG4, SDG8, SDG9

13. Universal Verification Methodology (BEC24704E)

Rationale	This course is introduced to equip students with industry-standard verification skills using UVM for complex SoC designs. It focuses on building scalable and reusable verification environments, addressing the growing demand for verification engineers in the semiconductor industry.
Course Objectives	• To understand the concepts of UVM methodologies for complex digital designs, bug identification, and functional coverage.
COs	• CO1: Understand different UVM constructs to build verification environment.

	• CO2: Use UVM specific constructs, and SV OOP concepts to run test cases/regressions, for efficient functional and code coverage. • CO3: Perform functional simulations to validate and debug designs using an industry standard RTL simulator. • CO4: Model and develop the UVM testbench architecture for a given RTL design. • CO5: Develop a complete and comprehensive verification plan for the given design specifications of a digital design.
Skill Alignment (NCrF level)	**Level:** 6–7
Assessment Scheme	a) Continuous Internal Evaluation (CIE) = 50 marks b) Semester End Examination (SEE) = 50 marks Total = 100 marks **CIE Breakdown:** • CIE Test 1: 30 Marks • CIE Test 2: 30 Marks • Laboratory Component: 20 Marks **SEE:** • Theory Examination (100 Marks scaled to 50)
Industry Relevance	This course is highly relevant to: • Semiconductor and VLSI industries • Chip design and verification domains
SDG mapping	SDG4, SDG8, SDG9

The Board of Studies (BoS) has reviewed and discussed the proposed course in detail. The course content, objectives, and outcomes are found to be aligned with current academic standards, industry requirements, and NEP guidelines. The BoS recommends the inclusion of this course in the curriculum from the academic year 2024.

The proposed courses are designed to align with current industry trends in embedded systems, VLSI design, and verification, ensuring strong theoretical and practical competency among students. They enhance skill development, employability, and support outcome-based education.

10. SKILL, MOOC & VALUE-ADDED REVIEW

- NPTEL/ SWAYAM integration

  NPTEL–SWAYAM integration is implemented in the VIII semester, offering courses such as: Deep Learning Biomedical Signal Processing, Computer Networks & Internet Protocol, Foundations of Cyber Physical Systems. These enable self-paced learning, certification, and exposure to IIT/IISc content.

- NCMC placement course (Sem 3–6)

NCMC Placement Training (Zero Credit) is conducted from Semester III to VI, focusing on: Aptitude, Coding skills ,Interview preparation Communication skills.

- Global Audit course

  Global Audit Course such as VLSI Design / FPGA, Artificial Intelligence & Machine Learning, Cyber Security, provides opportunities for interdisciplinary and international learning exposure, improving adaptability and global competence.

- Embedded apprenticeship
  Embedded Apprenticeship enhances industry readiness through practical exposure, real-time problem-solving, and work-based learning. Emphasis is given to hands-on training, self-learning, and industry-relevant skill development.

The curriculum ensures holistic development through MOOCs, training, and industry exposure, enhancing employability and aligning with OBE and industry needs.

11. INTERNSHIP & INDUSTRY INTEGRATION

- **% students completing internships**: 100%
- **Semester-long apprenticeship:** From III semester.
- **Industry co-teaching model:** such as Embedded Systems, VLSI Design, Computer Networks, Deep Learning, and Cyber Physical Systems, where industry experts contribute through guest lectures, case studies, and practical insights.
- **Assistant PoP / Associate PoP/ PoP inclusion**: Planning for Professor of Practice for upcoming Academic Year.
- **Hackathon-based credits:** Provided through participation in national and institutional hackathons, enhancing innovation, teamwork, and industry-oriented problem-solving skills for 2026 Scheme onwards.

Overall, the curriculum ensures 100% internship participation, early apprenticeship opportunities and active involvement of Industry experts, along with hackathon-based learning, creating a robust ecosystem for experiential and industry-driven education. This approach significantly enhances practical skills, innovation, employability, and entrepreneurial mindset, aligning with Outcome-Based Education (OBE).

12. RESEARCH & CAPSTONE

- Mandatory research publication/patent

  All students are required to undertake a research-oriented capstone of Major-project that culminates in either a research publication or a patent filing.

Students are encouraged to publish their work in peer-reviewed journals, reputed conferences, or indexed platforms (Scopus/SCI/UGC Care). Alternatively, innovative projects with novelty may be submitted for patent filing (provisional/full).

The research work shall demonstrate originality, problem-solving ability, and application of domain knowledge.

The publication/patent will be considered as a mandatory component of the capstone evaluation, and appropriate weightage will be assigned during assessment.

- Capstone evaluation rubric

Review	Criteria	Excellent (1)	Good (0.7)	Satisfactory (0.4)	Needs Improvement (0.2)
Review 1 (Total Marks:50)	**Incorporation of suggestions (10)**	Changes are made as per modifications suggested during mid-term evaluation and new innovations added	Changes are made as per modifications suggested during mid-term evaluation	Changes are partially made as per modifications suggested during mid-term evaluation	Suggestions during mid-term evaluation are not incorporated
	Results Demo (20)	System/Prototype works smoothly, demonstrates three-fourth of objectives, real-time problem-solving.	System works with minor glitches, half of the objectives shown.	Partial implementation of objectives, limited demo success.	System/demo fails or incomplete.
	Presentation skills (5)	Clear, confident, engaging, effective use of visuals.	Good communication, some scope for improvement.	Presentation understandable but lacks clarity or confidence.	Weak communication, unclear presentation.
	Viva Voce (5)	Answers are clear, accurate, show deep understanding and critical thinking.	Answers mostly correct, minor gaps in depth.	Answers partially correct, lack confidence.	Unable to answer, shows little understanding.
	Guide Evaluation (10)	Excellent technical knowledge and punctuality	Good technical knowledge and punctuality	Average technical knowledge and punctuality	Poor technical knowledge and punctuality

Review	Criteria	Excellent (1)	Good (0.7)	Satisfactory (0.4)	Needs Improvement (0.2)
Review 2 (Total Marks: 50)	**Complete Project Demo (15)**	System/Prototype works smoothly, demonstrates full functionality, real-time problem-solving.	System works with minor glitches, functionality mostly shown.	Partial implementation, limited demo success.	System/demo fails or incomplete.
	Publication (20)	Published in Scopus indexed journal	Published in Scopus indexed conference	Published in National conference	Published in poor quality journal or conference
	Presentation skills (5)	Clear, confident, engaging, effective use of visuals.	Good communication, some scope for improvement.	Presentation understandable but lacks clarity or confidence.	Weak communication, unclear presentation.
	Guide Evaluation (10)	Excellent technical knowledge and punctuality	Good technical knowledge and punctuality	Average technical knowledge and punctuality	Poor technical knowledge and punctuality
Final Project report (Total Marks: 50)	**Description of Concepts and technical details (15)**	Excellent explanation of concepts and technical details	Good explanation of concepts and technical details	Average explanation of concepts and technical details	poor explanation of concepts and technical details
	Report presentation and discussions (20)	Excellent report formatting and presentation	Good report formatting and presentation	Average report formatting and presentation	poor report formatting and presentation
	Report organization and format (10)	Project report is according to the specified format. References and citations are appropriate and well mentioned	Project report is according to the specified format. References and citations are appropriate but not mentioned well	Project report is according to the specified format but some mistakes. In-sufficient references and citations	Project report not prepared according to the specified format. References and citations are not appropriate
	Language, grammar and formatting (5)	Excellent English grammar and language	Good English grammar and language	Average English grammar and language	Poor English grammar and language

The Board of Studies (BoS) has reviewed the Research and Capstone requirements, including the mandatory research publication/patent component and evaluation rubric. The structure ensures the development of research aptitude, innovation, and industry-relevant problem-solving skills among students. The BoS approves the inclusion of this framework for implementation for 2024 scheme and 1st year 2026 Scheme.

13. BoS APPROVALS

List of Department Advisory Board (DAB) Members

Sl no	Members	Details	Contact Details / Email Address	
1	Dr. Madhavi Mallam	HoD & Chair Person of PAC, Dept. of ECE, GAT, Bengaluru	9182160989	hod.ece@gat.ac.in
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4	Mr Santhosh Surya Kiran Kolluri	Skilltroniks Technologies Private Limited S2, 2nd Floor, 74&75 Corner stone building, 6th Cross, Patel Nanjundappa Layout, Kothanur, Bengaluru, Karnataka-560077	9880020949	support@skilltroniks.org https://Skilltroniks.org
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9	Dr. Anitha S Sastry (Convenor)	Associate Professor. Dept ECE, GAT, Bengaluru	9731988228	anitha.sastry@gat.ac.in
10	Mrs Ojashwini	Assistant Professor, Dept of ECE	9743322998	Ojashwini.rn@gat.ac.in

- Department Advisory Board Approval
  - The minutes of the Department Advisory Board meeting held on 14th March 2026 are discussed.
- Question Bank Moderation Norms
  - The changes brought in the CIE evaluation pattern and amendments in SEE conduction were discussed.

- Rubric approval
  - The evaluation rubrics for capstone projects, mini projects, Internships and Alternate Assessment tools were discussed.

The Board of Studies has reviewed and noted the composition of the Department Advisory Board, along with the ratification by the Internal Quality Committee, question paper moderation norms, and evaluation rubrics. The BoS hereby approves the same, ensuring adherence to academic quality standards, transparency, and continuous improvement in teaching–learning and assessment processes.

14. CONCLUDING REMARKS

"The Board of Studies approved the proposed curriculum changes, assessment reforms, and implementation plan effective from Academic Year 2026–27. Further, the proceedings is sent across to Academic Council for approval"

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Ideal Homes Township, Rajarajeshwari Nagar, Bengaluru – 560 098

Department of Electronics & Communication Engineering

8th Board of Studies (BOS) meeting

Date: 28/03/2026

Sl. No.	Name	Designation	Signature
1	**Dr. Madhavi Mallam** HOD, ECE, GAT, Bengaluru-560098 9182160989, hodece@gat.ac.in	Chairman	28/3/26
2	**Dr. B Naresh Kumar Reddy** Assistant Professor, ECE, NIT–Tiruchirappalli (NIRF – 9th Rank), TamilNadu-620015 9966539090, bnkreddy@nitt.edu	Member (Subject Expert)	Online
3	**Dr. A V Narasimhadhan** Assistant Professor, ECE, NITK – Surathkal (NIRF – 17th Rank), Mangaluru-575025 9113989303, dhansiva@nitk.edu.in	Member (VTU Nominee)	Online
4	**Dr. Sandeep Kumar K** Senior Lead & Education Specialist, Tata Technologies Pvt. Ltd., Bengaluru 9986972006, Sandeep.kumark@tatatechnologies.com	Member (Industry)	Online
5	**Mr. Shivaraj A B** Product Owner, AUMOVIO, Bengaluru 7760773198, shivarajab095@gmail.com	Member (Alumni)	28/3/26
6	**Dr. H B Balakrishna** Principal, Global Academy of Technology, Bengaluru-560098 8050003891, principal@gat.ac.in	Invited Member	
7	**Dr. Vijay Tambrallimath** Professor and Associate Dean Academics, GAT, Bengaluru- 560098 9480324605, dean@gat.ac.in	Invited Member	28/3/26
8	**Dr. Ravi J** Dean - Student Affairs, Professor, ECE, GAT, Bengaluru-560098 9481252624, ravi.j@gat.ac.in	Member	
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11	**Dr. Shazia Sultana** Associate Professor, ECE, GAT, Bengaluru – 560098 9739440836, shazia.sulthana@gat.ac.in	Member	AB
12	**Mr. Tilak Kumar L** Assistant Professor, ECE, GAT, Bengaluru-560098 9739864175, tilakkumar@gat.ac.in	Member Convener	28/3/26
13	**Mrs. Dhanushree B L** Assistant Professor, ECE, GAT, Bengaluru-560098 9742745068, dhanushree.bl@gat.ac.in	Member	AB.

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28 March 2026

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1. INTRODUCTION & OBJECTIVES

Purpose of the Meeting:

- Review academic performance and curriculum effectiveness
- Approval of Syllabus 2024 Scheme and its alignment with PO, PSO, SDGs, Washington Accord WK profiles
- Approval of Scheme of 2026 III – VIII Semester
- Ensure NEP 2020 and NCrF compliance
- Strengthen skill-based, experiential, and industry-integrated learning
- Improve CO–PO attainment and placement conversion
- Ensure continuous improvement

2. CONSTITUTION OF BoS

The following is the list of participants for the BoS held on 28th March 2026.

S.No.	Name	Designation
1	Dr. Deepika Masand	Chairman, BoS
2	Dr. Parimala	VTU Nominee
3	Dr. R.S. Geetha	Subject Expert 1
4	Dr. Felix Orlando Maria Joseph	Subject Expert 2
5	Dr. Prathap Reddy	Subject Expert 3
6	Mrs. Kusuma N	Industry Representative
7	Mr. Vishwas	Distinguished Alumnus
8	Dr. Ruma Sinha	Internal Member
9	Dr. Nagarathna K	Internal Member
10	Dr. Jayachitra G	Internal Member
11	Mr. Balagopal Reddy	Internal Member
12	Dr. H.B. Balakrishna, Principal	Invited Member
13	Dr. Vijay T, Associate Dean Academics	Invited Member

Global Academy of Technology

Autonomous Institution Affiliated to Visveswaraya Technological University
Approved by UGC, AICTE and Govt of Karnataka

The proof of invitation and response received is below:

Scheduled BOS Meeting EEE Department, GAT regarding Summarize

Dr. Deepika Masand<hodeee@gat.ac.in>

To: parimalaritti@gmail.com; rsgeetha.eee@bmsce.ac.in; felixfee@iitr.ac.in; **+7 others**

Sat 2026-03-14 09:38

Cc: Principal GAT; Dean, Global Academy of Technology

Proposed Syllabus V_VIII_Se... 5 MB | Approved_3rd to 8th Semest... 403 KB | Draft_syllabus_I_year_course_... 3 MB

Show all 7 attachments (10 MB) Save all to OneDrive - Global Academy of Technology Download all

Respected Sir/Madam,

Greetings from Global Academy of Technology.

We are pleased to invite you to the upcoming meeting of the Board of Studies scheduled on **28th March 2026 @ 9.30 A.M in HOD office, EEE dept, GAT.**

The agenda of the meeting shall be:

- Approval of proposed 2024 scheme Syllabus from V – VIII Semesters.
- Approval of proposed 2026 Scheme for III - VIII Semesters.
- Approval of proposed First Year Courses handled by EEE department - 2026 Scheme
- Approval of proposed Value-Added Programs for the Academic Year 2026-27
- Any other subject with the permission of the Chair

Requesting you to kindly confirm your presence and acknowledge the mail, as your expertise and valuable inputs are vital for achieving academic excellence.

The soft copy of the draft schemes & syllabi is hereby attached, in order to facilitate the review of the proposed scheme & syllabi in detail.

During the meeting, any changes/modifications as proposed can be discussed and implemented.

Thanking you and looking forward for your presence.

WARM REGARDS
Dr. DEEPIKA MASAND
Prof. & HOD
Department of EEE

VM

Vishwas M.G<vishwas87@gmail.com>

To: Dr. Deepika Masand

Wed 2026-03-25 11:14

Cc: parimalaritti@gmail.com; rsgeetha.eee@bmsce.ac.in; felixfee@iitr.ac.in; **+8 others**

Hi Madam,

I will be travelling and will not be able to make it to the meeting.

Regards,
Vishwas

Global Academy of Technology

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Approved by UGC, AICTE and Govt of Karnataka

Scheduled BOS Meeting EEE Department, GAT regarding Summarize

KN Kusuma N<kusuma@cmti.res.in>

To: Dr. Deepika Masand Sat 2026-03-28 07:24

Cc: parimalaritti@gmail.com; rsgeetha.eee@bmsce.ac.in; felixfee@iitr.ac.in; **+8 others**

Dear Madam,

Greetings from CMTI!

This is for your kind information that today due to some personal urgent work, I am going on out of station and I have to be present there.

For this reason I am unable to attend the BOS meeting today, I apologize for the same. Kindly proceed with the meeting.

I thank you for consideration.

धन्यवाद/Thanking You
सादर/with Warm Regards
कुसुमा एन / Kusuma N
वैज्ञानिक - एफ एवं केंद्र प्रमुख - संवेदक, दृष्टी प्रौद्योगिकी और आई टी केंद्र
Scientist-F & Centre Head - Centre for Sensors and Vision Technology
केन्द्रीय विनिर्माणकारी प्रौद्योगिकी संस्थान (सीएमटीआई)
Central Manufacturing Technology Institute (CMTI),
भारी उद्योग एवं लोक उद्यम मंत्रालय के अधीन स्वायत्त अनुसंधान एवं विकास संस्थान
An autonomous R&D Institute under the Ministry of Heavy Industries & Public Enterprises
तुमकुर रोड, बेंगलूरु 560022, कर्नाटक, भारत
Tumkur Road, Bengaluru 560022, Karnataka, INDIA
ई-मेल/E-mail: kusuma@cmti.res.in
वेबसाइट/Website: http://cmti.res.in/
फोन नं/Phone.: +91-80-22188349
Mobile:9449842664 (Office)
Mobile:9740084892 (Whatsapp)

BOS

Re: Scheduled BOS Meeting EEE Department, GAT regarding Summarize this email

GS Geetha R S<rsgeetha.eee@bmsce.ac.in>

To: Dr. Deepika Masand Mon 16-03-2026 15:38

Dear Madam
I will be attending the meeting.

Best regards,

Dr. R.S. Geetha
Professor, Dept. of EEE,
BMSCE

Global Academy of Technology

Autonomous Institution Affiliated to Visveswaraya Technological University
Approved by UGC, AICTE and Govt of Karnataka

Re: Board of Studies -EEE -GAT dated 24th May 2025 @ 9.30 A.M - Reg

Summarize this email

GS

Geetha R S<rsgeetha.eee@bmsce.ac.in>

To: Dr. Deepika Masand

Tue 20-05-2025 16:26

Cc: **bos-eee-2023-26@gat.ac.in;** Principal GAT; **+1 other**

Dear Madam
I am sorry for the late reply. I would like to bring to your kind notice that due to personal reasons I am not able to attend the Board of Studies meeting offline on 24th May 2025. I request you to kindly consider for me to attend the meeting online.

Best regards,

Dr. R.S. Geetha
Professor, Dept. of EEE,
BMSCE

Re: Scheduled BOS Meeting EEE Department, GAT regarding Summarize this email

BR

B. Prathap Reddy<bprathap@iiti.ac.in>

To: Dr. Deepika Masand

Mon 16-03-2026 15:33

Cc: Principal GAT; Dean, Global Academy of Technology

Start reply with: Sounds great, thank you! | Great! See you then! | That would be great, thank you!

Respected Ma'am,

I am available for the same and happy to join the BOS meeting online on 28th March 2026 from 9.30 A.M

I will go through the syllabus and give you the suggestions from my side during the meeting.

Thanks and Regards,
Dr. Prathap Reddy. B,
Assistant Professor,
Department of Electrical Engineering,
Indian Institute of Technology Indore, Khandwa Road, Simrol,
Indore, India, 453552
Mobile: +91 8330967808

https://sites.google.com/iiti.ac.in/bprathap

3. CONFIRMATION OF PREVIOUS MINUTES

Statement:

The Minutes of the previous BoS meeting held on 24.05.2025 were circulated and confirmed.

Resolution No.: 01

4. ACTION TAKEN REPORT (ATR):

Sl No	Previous Discussion	Status (Completed/ Partial/Pending)	Remarks
1	Curriculum revisions	Completed	
2	Course additions	Completed	
3	Internship policy updates	Recommended for Approval in ACM	

5. STAKEHOLDER FEEDBACK ANALYSIS

5.1. Feedback

STAKEHOLDER'S FEEDBACK ANALYSIS ON CURRICULUM - (2026 SCHEME)

Stakeholder	No. of Responses	Average Score (out of 5)	Overall Satisfaction Level
Students	122	4.5	Very Satisfied
Faculty	12	4.5	Very Satisfied
Alumni	22	4.2	Satisfied
Employers	4	3.9	Moderately Satisfied
Parents	12	4.2	Satisfied

ACTION TAKEN REPORT ON CURRICULUM FEEDBACK- [2024 SCHEME]

1.	Feedback Received From	Suggestion/ Observation	Action Taken	Status
2.	Students	Need for more Practical oriented courses and project-based courses	Program specific course lab has been included in 1st semester and project-based courses have been introduced from 1st semester onwards.	To be approved in BoS
3.	Alumni	Include more number of Program Specific Labs and AI based courses	Program specific course lab has been included in 1st semester and a course named "Introduction to AI Application" has been introduced in 2nd semester.	To be approved in BoS

4.	Employers	Project-based courses may be improved	The following project-based courses have been introduced. Innovation and Design Thinking Lab Interdisciplinary Project-based learning Community Project Environmental Science Project Hackathon-based Project Capstone Project-Phase-1 Capstone Project-Phase-1	To be approved in BoS
5.	Faculty	Artificial Intelligence-related courses can be included in the curriculum	The course named "Introduction to AI Application" has been included in 2nd semester as core course and Professional elective courses named "AI Techniques for Electric Vehicles" and "Big DATA Analytics in Power System" have been included in 7th semester.	To be approved in BoS
6.	Parents	Placement & Training may be considered as a part of curriculum.	The NCMC course called "Placement and Training" has been included in the curriculum from 3rd semester onwards	To be approved in BoS

5.2. Need Analysis

The need Analysis was carried out for the proposed 2026 curriculum recommended for approval in the BoS:

At the Local level, the gaps identified in the existing scheme are listed below:

1. Need of Early Disciplinary Orientation:
   - First-year students under 2024 scheme did not have program-specific theory or laboratory exposure, delaying their understanding of the Electrical and Electronics Engineering (EEE) discipline.
   - Introducing early EEE courses and labs addresses the local student need for identity formation, confidence and better academic progression
2. Limited Continuous Project Learning:
   - The confinement of projects to only mini and major projects reduces opportunities for hands-on learning, creativity, and skill reinforcement across semesters.
   - Students need a sustained exposure to problem-solving and design thinking.
   - A structured, multi-semester project framework is required that fulfils the local need for experiential learning continuity and better learning outcomes.
3. Need of Introductory AI Exposure:
   - Students have courses on AI only in later semesters as open electives, despite its growing relevance in electrical systems, automation, power electronics, and smart grids.

- This creates a skill gap at the student level, limiting participation in internships, hackathons, and interdisciplinary projects available locally.
- An early AI course supports local student competitiveness and readiness for higher-level coursework.

4. Insufficient Community and Societal Engagement:
    - It is important for students to work on community or societal projects addressing local societal issues, such as energy efficiency, sustainability, and infrastructure challenges.
    - Embedding community and environmental projects enhances social responsibility, ethical awareness, and application of engineering knowledge within the local ecosystem.

At the Regional level, especially in a technology-driven ecosystem like Karnataka and South India, the gaps limit alignment with industry expectations and workforce demands.

1. Industry Demand for Early Skill Readiness:
    - Regional industries need graduates with early exposure to core engineering tools, labs, and emerging technologies.
    - Disciplinary and AI exposure in the later semester results in graduates requiring additional training, reducing their immediate employability.

2. Need for AI Integrated and Interdisciplinary Engineers:
    - The regional industrial ecosystem increasingly values engineers who can integrate AI, data analytics, and automation with core electrical engineering.
    - The absence of foundational AI education limits students' eligibility for regional internships, R&D roles, startups, and hackathons.

3. Emphasis on Continuous Applied Learning:
    - Regional employers prefer graduated with profiles have regular project based learning in their curriculum.
    - Progressive project-based learning (community, environmental, hackathon, capstone) aligns student skill development with regional innovation and startup culture.
4. Regional Sustainability and Infrastructure Challenges:
    - Issues such as renewable energy integration, energy management, environmental sustainability, and smart infrastructure are region-specific priorities
    - Structured community and environmental projects enable students to address real regional challenges, strengthening institute–industry–society collaboration.

At the National Level, it is required that the Curriculum is aligned with the Regulatory bodies, NEP 2020 and NCrF objectives.

1. Alignment with NEP 2020 Mandates
    - NEP 2020 emphasizes early disciplinary exposure, experiential learning, flexibility, and interdisciplinary education.
    - This needs to be addressed in the proposed 2026 Scheme.

2. National Priority on Emerging Technologies
   - Artificial Intelligence, automation, and digital technologies are recognized nationally as strategic areas for economic growth and global competitiveness.
   - Early AI education supports the national goal of producing future-ready engineers capable of contributing to Industry 4.0, smart grids, and digital infrastructure.
3. Experiential Learning and NCrF Alignment:
   - The curriculum should be aligned to National Credit Framework
   - Introducing semester-wise projects (community, environmental, hackathon, capstone, internship) directly fulfils this national requirement.
4. Engineering for Societal and Sustainable Development
   - NEP 2020 emphasizes education integrates societal engagement, ethics, sustainability, and community service.
   - Formal inclusion of community and environmental projects shall enable students to contribute to national goals such as sustainable development, social innovation, and inclusive growth.

5.3. Summary Table

Agenda	Key Suggestions	Proposed Action
Review of Previous BoS Action Points	Members were apprised of the action points discussed in the previous BoS meeting. Appreciation was expressed for timely implementation of approved items	The action taken report was noted and approved.
Consideration and Approval of Syllabi 22EEE82A and 22EEE82B as a Corrigendum	The Board approved the Syllabi	
Approval of Syllabus V - VIII Semester - 2024 Scheme	The proposed syllabus was reviewed in detail with reference to learning outcomes, industry relevance, and academic rigor. Suggestions regarding content sequencing and reference materials were discussed.	The syllabus for V–VIII Semester under the 2024 scheme was approved with minor modifications as suggested by the Board.
Approval of Scheme III - VIII Semester - 2026 Scheme	The Board discussed the revised scheme structure, credit distribution, and compliance with regulatory guidelines.	The Scheme for III–VIII Semester (2026) was approved and recommended for implementation from the academic year 2026–27.

Approval of First Year Courses -2026 Scheme	Members suggested alignment of foundational courses with NEP guidelines and inclusion of skill-based and experiential learning components.	The First-Year courses under the 2026 scheme were approved and forwarded to the Academic Council for further approval.
Proposed Value-Added Programs AY 2026-27	The Board recommended introducing value-added programs focusing on employability skills, emerging technologies, and industry certifications.	The proposed value-added programs for AY 2026–27 were approved

The Suggestions by the board are listed below:

Suggestions by External Members			
S.No.	**External Member Name**	**Suggestions**	**Remarks**
1	Dr. Parimala	• Suggested that Power Electronics to be taught in IV Sem and Machines I & II to be merged to have more niche courses in the curriculum under the given credit structure. • Suggested to include simulation exercises as Self learning, map to PO5 in applicable courses. Courses from Coursera, Infosys Springboard to be encouraged under Self Learning. • For Embedded Systems simple programs can be kept in theory only, higher end problems in lab. If possible, Class may also be conducted in lab for better hands on • Dr. Parimala suggested In Power Systems III omit SCADA and include topology and incident matrices to be included. • STM 32 workshop should be conducted for students for Industry readiness	The suggestions were agreed, to be incorporated.
2	Dr. R.S Geetha	• Suggested that MOSFET to be covered in detail, and remove two transistor analogy, add buck boost, SiC may be added • SCADA can be covered as a value-added program. • Under the 2026 Scheme Basic Electrical Engineering, a module of DC Machines can be included, in place of illumination. • Field work can be taken by students under Management course as case studies.	
3	Dr. Prathap Reddy	• Suggested to add Buck, Boost topologies and SiC. • Instead of Class A,B,C,D chopper configurations include SMPC. • For the course Python for ML applications all programs, should be aligned to EEE applications,	

		• Suggested that under Introduction to Electrical Engineering for other streams, Conventional energy, tariff, domestic wiring may be added • More Transformer experiments can be included in the Program Specific Lab in the First Year	

- All the members suggested to map the courses to relevant SDGs .
- The members authorised the chairman to incorporate changes suggested in the syllabus and approved the same.

6. VISION, MISSION, PEO & PSO REVIEW

Checklist:

- Alignment with institutional vision
- Alignment with industry trends
- PEO attainment evidence
- Career progression tracking

The Vision, Mission, PEOs, and PSOs were reviewed for the AY 2026–27

7. CO–PO ATTAINMENT REVIEW

7.1 Outgoing Batch Analysis

The PO Attainment of the Outgoing Batch is below: (2021- 2025)

PO	Target	Achieved	GAP	Action
PO1	2	2.1	-0.1	• The foundation of theoretical and applied understanding of electrical sciences, mathematics, and engineering fundamentals required by the Electrical Engineering curriculum has been effectively developed among students. • Majority of the courses in the curriculum focus on imparting engineering knowledge. • Continue integrating analytical problem-solving into tutorials and emphasize real-time case studies in core subjects as applicable.
PO2	2	1.66	0.34	• Incorporate more numerical problem solving during regular lectures to enhance the problem analysis and solving capability. • Tutorial classes may be conducted to solve/practice more numerical wherever applicable. • Introduce open-ended analytical problem-solving exercise based on simulation, wherever possible. • Arrange guided practice and remedial support for slow learners.
PO3	2	1.58	0.42	• Emphasize on real-world design-based mini projects and case studies across courses to strengthen design and development skills. • Open ended experiments may be added for applicable laboratory components to improve the attainment of this PO.

				• Conduct hands-on sessions and workshops to improve real world problem solving capabilities.
PO4	2	1.53	0.47	• Enhance laboratory experiments and project work to include open-ended investigations requiring data collection and analysis. • Organize hands on workshop for improved learning • Encourage students to prepare technical reports and literature reviews to strengthen investigation skills.
PO5	2	2.08	-0.08	• Students efficiently use modern tools. • Continue to integrate software tools and simulation platforms in labs and courses. • Encourage students to use advanced computational tools for their project work. • Further enhancement through advanced tool-based exercises and industry-relevant software training may be introduced.
PO6	2	1.76	0.24	• Integrate real-world societal problem discussions and case studies into the curriculum. • Encourage participation in community-based projects and outreach activities. • Introduce community-based projects and service-learning initiatives to enhance awareness of societal responsibilities. • Conduct expert talks and field visits to demonstrate real-world societal impacts.
PO7	2	1.59	0.41	• Integrate sustainability-related case studies and green technology modules into core and elective courses. • Include assignments and projects focusing on sustainable engineering practices. • Promote awareness through case studies on environmental impact and green technologies. • Encourage students to work on energy-efficient and eco-friendly solution design problems. • Introduce more courses related to environmental awareness and sustainability along with project based learning to improve PO7 attainment.
PO8	2	1.89	0.11	• Ethical awareness is demonstrated through adherence to professional practices during internships and project work. • Include ethical behaviors and integrity as evaluation parameters in reviews, lab assessments and student presentations wherever applicable. • Conduct awareness programs and seminars on ethical responsibilities in engineering practice.
PO9	2	2.01	-0.01	• The attainment is very close to the target, indicating that students are effectively developing teamwork and collaboration skills.

				• Existing practices such as group assignments, mini-projects, and team-based activities will be continued and further strengthened. • To achieve and consistently exceed the target, the following actions will be implemented: o Increasing team-based projects with clearly defined roles and responsibilities o Encouraging peer learning mechanisms o Conducting collaborative problem-solving sessions and group discussions o Promoting participation in technical events, hackathons, and interdisciplinary team activities
PO10	2	1.88	0.12	• Students exhibit oral and written communication skills through technical presentations, report preparation, and seminars. • Introduce more opportunities for oral presentations, seminars, and project demonstrations within coursework. • Mock GD session can be conducted to further improve verbal communication skill.
PO11	2	2.29	-0.29	• The attainment exceeds the target, indicating strong understanding of project planning and management aspects. • Continue integrating project planning, budgeting, and cost estimation exercises in projects. • More project based courses may be introduce to further improve project management skills.
PO12	2	1.67	0.33	• Require more awareness of continuous professional development opportunities and online courses. • Encourage participation in MOOCs, online certifications (NPTEL, Infosys Springboard etc), and skill development programs. • Introduce self-learning components within courses to promote independent learning habits. • Promote use of digital learning resources and research articles
PSO1	2	1.82	0.18	• Curated video links will be provided to students to support better visualization and improved conceptual clarity of complex topics. • Mini-projects and remedial classes for slow learners will be introduced to support better learning outcomes and improve attainment. • Simulation experiments may be added to laboratory component to strengthen understanding.
PSO2	2	2.14	-0.14	• Existing practices such as case studies, simulations, and problem-solving approaches will be continued. • Expert sessions are proposed on modern power systems related topics to further improve on practical aspects.

PSO3	2	1.84	0.16	• Continue encouraging mini and major projects focusing on real-time control applications. Introduce advanced workshops on embedded systems, PCB design, to enhance design depth and industry readiness. • Conduct additional hands-on training sessions / mini projects aligned with PSO3 to strengthen practical understanding.

Based on the above attainment, the following points were discussed:
The PO–PSO attainment analysis indicate that the low-performing POs are:

- PO3 - Design/Development of Solutions,
- PO4 - Investigation of Complex Problems
- PO7 - Environment and Sustainability

Therefore, it is needed to increase exposure to open-ended design, investigative learning, and sustainability-driven engineering practices.

- As a corrective measure, under the 2026 Scheme, Project work has been included from III Sem onwards.
- To address the identified gaps, pedagogical modifications are planned, shifting from conventional lecture-based delivery to active learning strategies such as problem-based learning, case study discussions, mini-design projects, hands-on workshops, and collaborative learning activities.
- Faculty will be encouraged to undergo FDPs on Outcome-Based Education, problem-based learning methodologies, modern software tools, open-ended laboratory design, and emerging areas such as sustainability and green technologies. These interventions are expected to enhance PO attainment levels in subsequent assessment cycles.

8. CURRICULUM DESIGN & COMPREHENSIVE MAPPING

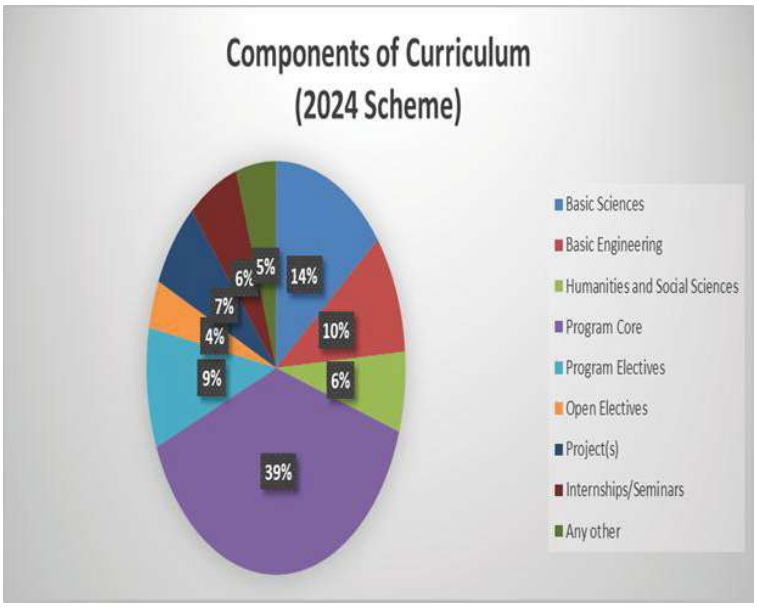
8.1. Credit Structure

1 credit = 30 hours
Total Program Credits – 160

Components of Curriculum Scheme 2024

Curriculum Component	Curriculum Content (% of total number of credits of the program)	Total number of credits
Basic Sciences	14.37	23
Basic Engineering	9.38	15
Humanities and Social Sciences	6.25	10
Program Core	38.75	62
Program Electives	9.38	15
Open Electives	3.75	6
Project(s)	6.88	11

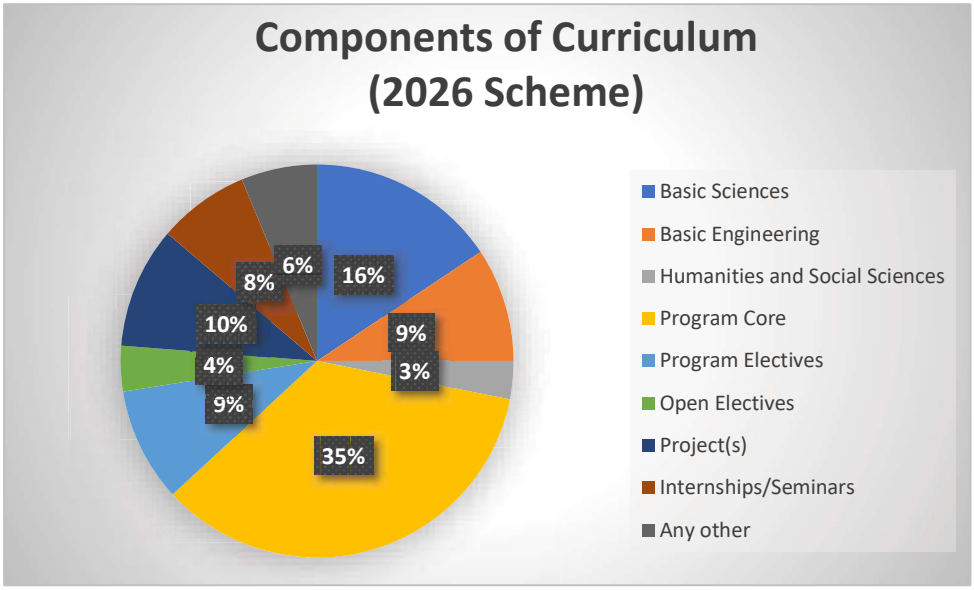
Internships/Seminars	6.25	10
Anyother (BIDTK24108 – Innovation & Design Thinking; BRMK24557 – Research Methodology & IPR; BEE24358x – Ability Enhancement Course-III; BEE24457x – Ability Enhancement Course-IV; BEE24556x – Ability Enhancement Course-V; BEE24657x – Ability Enhancement Course-VI)	5	8
Total number of Credits:		**160**



Components of Curriculum Scheme 2026

Curriculum Component	Curriculum Content (% of total number of credits of the program)	Total number of credits
Basic Sciences	15.63	25
Basic Engineering	9.37	15
Humanities and Social Sciences	3.13	5
Program Core	35	56
Program Electives	9.37	15
Open Electives	3.75	6
Project(s)	10	16
Internships/Seminars	7.5	12
Any other BPLC26205x-Programming Language Course,	6.25	10

BEEL26307x / BEEL26406x / BEEL26607x Ability Enhancement Labs, BAIA26203 Introduction to AI and Applications		
Total number of Credits:		**160**



8.2 Mapping Framework

8.2.1. PO/PSO Mapping Table:

The PO/PSO Mapping Table for the Courses under 2024 Scheme is listed below:

PO Number	List of Courses
PO1: Engineering Knowledge	BMATE24101-Mathematics-I for EEE stream, BPHYE24102-Applied Physics for EEE stream, BEEE24103- Elements of Electrical Engineering, BESCK24104X-Engineering Science Course-I, BESCK24204X- Engineering Science Course-II BETCK24105C- Sensor Systems, BETCK24105D- Electromechanical Systems & Measurements, BENGK24106-Communicative English, BMATE24201-Mathematics-II for EEE stream, BHEE24202-Applied Chemistry for EEE stream BIDTK24108-Innovation and Design Thinking, BSFHK24208-Scientific Foundations of Health, BEE24301-Maths, BEE24302- Electrical Machines-I, BEE24303-Analog Electronic Circuits BEE24304-Electric Circuits, BEEL24305-MATLAB Programming, BEE24306A-Digital Logic Design, BEE24306B-Measurements and Instrumentation, BEE24306C-Computer Organization and Architecture, BEE24306D-Electromagnetic Field Theory, BEE24358A-Electrical Hardware Lab, BEE24358B-Circuit Laboratory using LT SPICE, BEE24358C-SCI Lab for Transformers and Generators, BEE243528D-Measurement Lab, BEE24401-Mathematics, BEE24402-Electrical Machines-II, BEE24403-Power System-I

	BEE24404-Control Systems, BEE24405-Control Systems Laboratory, BEE24406A-Data Structures using C, BEE24406B- Engineering Materials, BEE24406C-Digital System Design using Verilog HDL, BEE24406D-Micro Electro-Mechanical Systems, BEE24457A-Digital Logic Design Laboratory BEE24457B-PCB Design, BEE24457C-Arduino Based Projects BEE24457D-Assembly Language Programming, BEE24501-Management & Economics, BEE24502-Power Electronics BEE24503-Power System-II, BEEL24504-Auto CAED BEE24505A-Embedded Systems, BEE24505B-OOPS using C++ BEE24505C-Utilization of Electric Power, BEE24505D-Technologies of Renewable Energy Sources, BEE24556A-Embedded C Programming, BEE24556B-Data Visualization using Power BI, BEE24556C-Project Management using GIT BEE24556D-PCB Design, BEEP24507-Mini Project, BEE24601-Signal Processing, BEE24602-Power System III BEE24603-Industrial Drives and Applications, BEE24604A-Introduction to AI&ML, BEE24604B-Micro Grid, BEE24604C-VLSI Design, BEE24604D-Internet of Things & its, Applications, BEE24605A-Electric Vehicles BEE24605B-Industrial Automation, BEE24605C-Technologies of Renewable Energy Sources, BEE24605D-Utilization of Electric Power, BEE24606-Project Phase-I, BEEL24607-Power System Simulation Lab, BEE256057A-Internet of Things Lab BEE24657B-Python Programming for ML Application, BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24701-Power System IV BEE24702-Electric Vehicles, BEE24703-Smart Grid, BEE24704A-Switched Mode Power Converters, BEE24704B-FACTS & HVDC, BEE24704C-Robotics and Automation, BEE24704D-Big Data Analytics in Power Systems, BEE24705A-Internet of Things, BEE24705B-Smart Grid Technology, BEE24705C-Energy Storage Systems, BEE24705D-Energy Auditing, BEEP24706-Major Project Phase-II, BEE24801A-AI Techniques for Electric Vehicles, BEE24801B-Battery Management System, BEE24801C-Electrical Power Quality, BEE24801D-Soft Computing Techniques, BEE24802A-Programmable Logic Controller, BEE24802B-Advanced Control System, BEE24802C-Embedded System for EV Application, BEE24802D-Energy Conservation & Auditing
PO2: Problem Analysis	BMATE24101-Mathematics-I for EEE stream, BEEE24103- Elements of Electrical Engineering, BESCK24104X- Engineering Science Course-I, BESCK24204X-Engineering Science Course-II, BETCK24105C- Sensor Systems, BETCK24105D-Electromechanical Systems & Measurements, BENGK24106-Communicative English, BMATE24201- Mathematics-II for EEE stream, BHEE24202-Applied Chemistry for EEE stream, BIDTK24108-Innovation and Design Thinking, BSFHK24208-Scientific Foundations of Health, BEE24301-Maths, BEE24302-Electrical Machines-I, BEE24303-Analog Electronic Circuits, BEE24304-Electric Circuits, BEEL24305-MATLAB Programming, BEE24306A-Digital Logic Design, BEE24306B-Measurements and Instrumentation, BEE24306C-Computer Organization and Architecture, BEE24306D-Electromagnetic Field Theory, BEE24358A-Electrical Hardware Lab, BEE24358B-Circuit Laboratory using LT SPICE, BEE24358C-SCI Lab for Transformers and Generators, BEE243528D-

	Measurement Lab, BEE24401-Mathematics, BEE24402-Electrical Machines-II, BEE24403-Power System-I BEE24404-Control Systems, BEE24405-Control Systems Laboratory, BEE24406A-Data Structures using C, BEE24406C-Digital System Design using Verilog HDL, BEE24406D-Micro Electro-Mechanical Systems, BEE24457A-Digital Logic Design Laboratory, BEE24457B-PCB Design, BEE24457C-Arduino Based Projects, BEE24457D-Assembly Language Programming BEE24501-Management & Economics, BEE24502-Power Electronics, BEE24503-Power System-II, BEEL24504-Auto CAED, BEE24505A-Embedded Systems, BEE24505B-OOPS using C++, BEE24505C-Utilization of Electric Power, BEE24505D-Technologies of Renewable Energy Sources, BEE24556A-Embedded C Programming, BEE24556B-Data Visualization using Power BI, BEE24556C-Project Management using GIT, BEE24556D-PCB Design, BEEP24507-Mini Project BEE24601-Signal Processing, BEE24602-Power System III, BEE24603-Industrial Drives and Applications, BEE24604A-Introduction to AI&ML, BEE24604B-Micro Grid, BEE24604C-VLSI Design, BEE24604D-Internet of Things & its Applications, BEE24605A-Electric Vehicles, BEE24605B-Industrial Automation, BEE24605C-Technologies of Renewable Energy Sources, BEE24605D-Utilization of Electric Power, BEE24606-Project Phase-I, BEEL24607-Power System Simulation Lab, BEE256057A-Internet of Things Lab, BEE24657B-Python Programming for ML Application, BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24701-Power System IV, BEE24702-Electric Vehicles, BEE24703-Smart Grid, BEE24704A-Switched Mode Power Converters, BEE24704B-FACTS & HVDC, BEE24704C-Robotics and Automation, BEE24704D-Big Data Analytics in Power Systems, BEE24705A-Internet of Things, BEE24705B-Smart Grid Technology, BEE24705C-Energy Storage Systems, BEE24705D-Energy Auditing, BEEP24706-Major Project Phase-II, BEE24801A-AI Techniques for Electric Vehicles, BEE24801B-Battery Management System, BEE24801C-Electrical Power Quality, BEE24801D-Soft Computing Techniques, BEE24802A-Programmable Logic Controller, BEE24802B-Advanced Control System, BEE24802C-Embedded System for EV Application, BEE24802D-Energy Conservation & Auditing
PO3: Design/Development of Solutions	BMATE24101-Mathematics-I for EEE stream, BMATE24201- Mathematics-II for EEE stream, BIDTK24108-Innovation and Design Thinking, BEE24301-Maths, BEE24302- Electrical Machines-I, BEE24303-Anal,og Electronic Circuits, BEE24304-Electric Circuits. BEE24306A-Digital Logic Design, BEE24306D-Electromagnetic Field Theory, BEE243528D-Measurement Lab, BEE24401-Mathematics, BEE24402-Electrical Machines-II, BEE24404-Control Systems, BEE24405-Control Systems Laboratory, BEE24406A- Data Structures using C, BEE24406C-Digital System Design using Verilog HDL, BEE24406D-Micro Electro-Mechanical Systems, BEE24457A-Digital Logic Design Laboratory, BEE24457B-PCB Design, BEE24457C-Arduino Based Projects, BEE24457D-Assembly Language Programming, BEE24501-Management & Economics BEE24503-Power System-II, BEE24505A-Embedded Systems BEE24505B-OOPS using C++, BEE24505C-Utilization of Electric Power, BEE24556B-Data Visualization using Power BI, BEE24556C-Project Management

	using GIT, BEE24556D-PCB Design, BEEP24507-Mini Project, BEE24601-Signal Processing BEE24602-Power System III, BEE24603-Industrial Drives and Applications, BEE24604A-Introduction to AI&ML, BEE24604B-Micro Grid, BEE24604C-VLSI Design, BEE24604D-Internet of Things & its Applications, BEE24605A-Electric Vehicles, BEE24605B-Industrial Automation, BEE24605D-Utilization of Electric Power, BEE24606-Project Phase-I, BEE256057A-Internet of Things Lab, BEE24657B-Python Programming for ML Application, BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24702-Electric Vehicles, BEE24703-Smart Grid, BEE24704A-Switched Mode Power Converters, BEE24704C-Robotics and Automation, BEE24704D-Big Data Analytics in Power Systems, BEE24705A-Internet of Things, BEE24705C-Energy Storage Systems, BEE24705D-Energy Auditing, BEEP24706-Major Project Phase-II, BEE24801A-AI Techniques for Electric Vehicles, BEE24801B-Battery Management System, BEE24801C-Electrical Power Quality, BEE24801D-Soft Computing Techniques, BEE24802A-Programmable Logic Controller, BEE24802B-Advanced Control System, BEE24802C-Embedded System for EV Application, BEE24802D-Energy Conservation & Auditing
PO4: Conduct Investigations of Complex Problems	BEE24302- Electrical Machines-I, BEE24306A-Digital Logic Design, BEE24358A-Electrical Hardware Lab, BEE24358B-Circuit Laboratory using LT SPICE, BEE24402-Electrical Machines-II, BEE24501-Management & Economics, BEE24502-Power Electronics, BEE24556B-Data Visualization using Power BI, BEE24556C-Project Management using GI, BEE24556D-PCB Design, BEEP24507-Mini Project, BEE24602-Power System III, BEE24603-Industrial Drives and Applications, BEE24604B-Micro Grid, BEE24605A-Electric Vehicles, BEE24605B-Industrial Automation, BEE24606-Project Phase-I, BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24701-Power System IV, BEE24702-Electric Vehicles, BEE24704C-Robotics and Automation, BEE24705C-Energy Storage Systems BEEP24706-Major Project Phase-II, BEE24801A-AI Techniques for Electric Vehicles, BEE24802A-Programmable Logic Controller, BEE24802C-Embedded System for EV Application
PO5: Engineering Tool Usage	BETCK24105D- Electromechanical Systems & Measurements, BEEL24305-MATLAB Programming, BEE24358B-Circuit Laboratory using LT SPICE, BEE24358C-SCI Lab for Transformers and Generators, BEE24406A- Data Structures using C, BEE24457B-PCB Design, BEE24457C-Arduino Based Projects, BEE24457D-Assembly Language Programming, BEE24501-Management & Economics, BEE24502-Power Electronics, BEEL24504-Auto CAED, BEE24505A-Embedded Systems, BEE24505B-OOPS using C++, BEE24505D-Technologies of Renewable Energy Sources, BEE24556A-Embedded C Programming, BEE24556B-Data Visualization using Power BI, BEE24556D-PCB Design, BEEP24507-Mini Project, BEE24601-Signal Processing, BEE24602-Power System III, BEE24603-Industrial Drives and Applications, BEE24604A-Introduction to AI&ML, BEE24604C-VLSI Design, BEE24604D-Internet of Things & its Applications, BEE24605A-Electric Vehicles, BEE24605B-Industrial Automation, BEE24605C-Technologies of Renewable Energy Sources, BEE24606-Project Phase-I, BEEL24607-Power System Simulation Lab, BEE256057A-Internet of Things Lab,

	BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24704A-Switched Mode Power Converters, BEE24704C-Robotics and Automation, BEE24704D-Big Data Analytics in Power Systems, BEE24705A-Internet of Things, BEEP24706-Major Project Phase-II, BEE24801A-AI Techniques for Electric Vehicles, BEE24801D-Soft Computing Techniques, BEE24802A-Programmable Logic Controller, BEE24802C-Embedded System for EV Application
PO6: The Engineer and The World	BPHYE24102-Applied Physics for EEE stream, BETCK24105C- Sensor Systems, BENGK24106-Communicative English, BEE24302- Electrical Machines-I, BEE24402-Electrical Machines-II, BEE24403-Power System-I BEE24406B- Engineering Materials, ,BEE24406D-Micro Electro-Mechanical Systems, BEE24501-Management & Economics, BEE24502-Power Electronics, BEE24503-Power System-II, BEE24505A-Embedded Systems, BEE24505C-Utilization of Electric Power, BEE24505D-Technologies of Renewable Energy Sources, BEEP24507-Mini Project, BEE24602-Power System III, BEE24604D-Internet of Things & its Applications, BEE24605A-Electric Vehicles, BEE24605B-Industrial Automation, BEE24605C-Technologies of Renewable Energy Sources, BEE24605D-Utilization of Electric Power, BEE24606-Project Phase-I, BEEL24607-Power System Simulation Lab, BEE256057A-Internet of Things Lab, BEE24657B-Python Programming for ML Application, BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24701-Power System IV, BEE24704A-Switched Mode Power Converters, BEE24704B-FACTS & HVDC, BEE24705A-Internet of Things, BEE24705B-Smart Grid Technology, BEE24705C-Energy Storage Systems, BEEP24706-Major Project Phase-II, BEE24801A-AI Techniques for Electric Vehicles, BEE24801B-Battery Management System, BEE24802A-Programmable Logic Controller, BEE24802B-Advanced Control System
PO7: Ethics	BENGK24106-Communicative English, BEE24302- Electrical Machines-I,BEE24303-Analog Electronic Circuits, BEEL24305-MATLAB Programming, BEE24358 A-Electrical Hardware Lab BEE24358C-SCI Lab for Transformers and Generators, BEE24402-Electrical Machines-II, BEE24403-Power System-I, BEE24406A- Data Structures using C, BEE24457A-Digital Logic Design Laboratory, BEE24457C-Arduino Based Projects, BEE24457D-Assembly Language Programming, BUHK24408-Universal Human Values, BEE24501-Management & Economics, BEE24502-Power Electronics, BEE24556A-Embedded C Programming, BEEP24507-Mini Project, BEE24601-Signal Processing, BEE24602-Power System III, BEE24605B-Industrial Automation, BEE24606-Project Phase-I, BEEL24607-Power System Simulation Lab, BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24701-Power System IV, BEE24702-Electric Vehicles, BEE24704B-FACTS & HVDC, BEE24704C-Robotics and Automation, BEE24705C-Energy Storage Systems BEE24705D-Energy Auditing, BEEP24706-Major Project Phase-II, BEE24801A-AI Techniques for Electric Vehicles, BEE24802D-Energy Conservation & Auditing
PO8: Individual and Collaborative Teamwork	BHEE24202-Applied Chemistry for EEE stream, BEE24302- Electrical Machines-I, BEE24303-Analog Electronic Circuits, BEEL24305-MATLAB Programming, BEE24358A-Electrical Hardware Lab, BEE24358B-Circuit Laboratory using LT

	SPICE, BEE24358C-SCI Lab for Transformers and Generators, BEE243528D-Measurement Lab, BEE24402-Electrical Machines-II, BEE24406A- Data Structures using C, BEE24457A-Digital Logic Design Laboratory, BEE24457B-PCB Design, BEE24457C-Arduino Based Projects, BEE24457D-Assembly Language Programming, BUHK24408-Universal Human Values, BEE24501-Management & Economics, BEE24502-Power Electronics, BEEL24504-Auto CAED, BEE24556A-Embedded C Programming, BEE24556B-Data Visualization using Power BI, BEE24556D-PCB Design, BEEP24507-Mini Project, BEE24601-Signal Processing, BEE24602-Power System III, BEE24605B-Industrial Automation, BEE24605D-Utilization of Electric Power, BEE24606-Project Phase-I, BEE256057A-Internet of Things Lab, BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24701-Power System IV, BEE24705D-Energy Auditing, BEEP24706-Major Project Phase-II, BEE24802D-Energy Conservation & Auditing
PO9: Communication	BENGK24106-Communicative English, BKSKK24107/ BKBKK24107 Samskrutika Kannada/Balake Kannada, BICOK24107-Indian Constitution, BEE24302- Electrical Machines-I, BEE24303-Analog Electronic Circuits, BEEL24305-MATLAB Programming, BEE24358A-Electrical Hardware Lab, BEE24358B-Circuit Laboratory using LT SPICE, BEE24358C-SCI Lab for Transformers and Generators, BEE243528D-Measurement Lab, BEE24402-Electrical Machines-II, BEE24406A- Data Structures using C, BEE24457A-Digital Logic Design Laboratory, BEE24457C-Arduino Based Projects, BEE24457D-Assembly Language Programming, BUHK24408-Universal Human Values, BEE24501-Management & Economics, BEE24502-Power Electronics, BEEL24504-Auto CAED, BEE24556B-Data Visualization using Power BI, BEE24556C-Project Management using GIT, BEE24556D-PCB Design, BEEP24507-Mini Project BEE24601-Signal Processing, BEE24602-Power System III, BEE24605B-Industrial Automation, BEE24606-Project Phase-I, BEEL24607-Power System Simulation Lab, BEE256057A-Internet of Things Lab, BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24701-Power System IV, BEE24705D-Energy Auditing, BEEP24706-Major Project Phase-II, BEE24802A-Programmable Logic Controller, BEE24802D-Energy Conservation & Auditing
PO10: Project Management and Finance	BEE24358B-Circuit Laboratory using LT SPICE, BEE24457C-Arduino Based Projects, BEE24501-Management & Economics, BEE24556C-Project Management using GIT, BEEP24507-Mini Project, BEE24606-Project Phase-I, BEE256057A-Internet of Things Lab, BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24701-Power System IV, BEEP24706-Major Project Phase-II, BEE24801A-AI Techniques for Electric Vehicles
PO11: Life-Long Learning	BMATE24101-Mathematics-I for EEE stream, BEEE24103- Elements of Electrical Engineering, BESCK24104X- Engineering Science Course-1, BESCK24204X-Engineering Science Course-II, BETCK24105C- Sensor Systems, BETCK24105D-Electromechanical Systems & Measurements, BMATE24201- Mathematics-II for EEE stream, BENGK24106-Communicative English, BKSKK24107/ BKBKK24107 Samskrutika Kannada/Balake Kannada, BICOK24107-Indian Constitution, BIDTK24108-Innovation and Design Thinking, BSFHK24208-Scientific Foundations of Health, BEE24301-Maths, BEE24302- Electrical

	Machines-I, BEE24303-Analog Electronic Circuits, BEE24304-Electric Circuits, BEEL24305-MATLAB Programming, BEE24306A-Digital Logic Design, BEE24306B-Measurements and Instrumentation, BEE24306C-Computer Organization and Architecture, BEE24306D-Electromagnetic Field Theory, BEE24358A-Electrical Hardware Lab, BEE24358B-Circuit Laboratory using LT SPICE, BEE24358C-SCI Lab for Transformers and Generators, BEE243528D-Measurement Lab, BEE24401-Mathematics, BEE24402-Electrical Machines-II, BEE24403-Power System-I, BEE24405-Control Systems Laboratory, BEE24406A-Data Structures using C, BEE24406B- Engineering Materials, BEE24406C-Digital System Design using Verilog HDL, BEE24406D-Micro Electro-Mechanical Systems, BEE24457A-Digital Logic Design Laboratory, BEE24457B-PCB Design, BEE24457C-Arduino Based Projects, BEE24457D-Assembly Language Programming, BUHK24408-Universal Human Values, BEE24501-Management & Economics, BEE24502-Power Electronics, BEE24503-Power System-II, BEEL24504-Auto CAED, BEE24505A-Embedded Systems, BEE24505B-OOPS using C++, BEE24505C-Utilization of Electric Power, BEE24556A-Embedded C Programming, BEE24556B-Data Visualization using Power BI, BEE24556C-Project Management using GIT, BEE24556D-PCB Design, BEEP24507-Mini Project, BEE24601-Signal Processing, BEE24602-Power System III, BEE24604B-Micro Grid, BEE24604D-Internet of Things & its Applications, BEE24605A-Electric Vehicles, BEE24605B-Industrial Automation, BEE24605D-Utilization of Electric Power, BEE24606-Project Phase-I, BEEL24607-Power System Simulation Lab, BEE256057A-Internet of Things Lab, BEE24657B-Python Programming for ML Application BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24701-Power System IV, BEE24702-Electric Vehicles, BEE24703-Smart Grid, BEE24704A-Switched Mode Power Converters, BEE24704B-FACTS & HVDC, BEE24704C-Robotics and Automation, BEE24704D-Big Data Analytics in Power Systems, BEE24705A-Internet of Things, BEE24705B-Smart Grid Technology, BEE24705C-Energy Storage Systems, BEE24705D-Energy Auditing, BEEP24706-Major Project Phase-II, BEE24801A-AI Techniques for Electric Vehicles, BEE24801B-Battery Management System, BEE24801C-Electrical Power Quality, BEE24801D-Soft Computing Techniques, BEE24802A-Programmable Logic Controller, BEE24802B-Advanced Control System, BEE24802C-Embedded System for EV Application, BEE24802D-Energy Conservation & Auditing
PSO1: Design DC machines, transformers and dynamic AC machines	BETCK24105D- Electromechanical Systems & Measurements, BEE24302-Electrical Machines-I, BEE24304-Electric Circuits, BEE24306D-Electromagnetic Field Theory, BEE24358A-Electrical Hardware Lab, BEE24402-Electrical Machines-II, BEE24406C-Digital System Design using Verilog HDL, BEE24502-Power Electronics, BEE24503-Power System-II, BEEL24504-Auto CAED, BEE24505C-Utilization of Electric Power, BEEP24507-Mini Project, BEE24602-Power System III, BEE24603-Industrial Drives and Applications, BEE24604B-Micro Grid, BEE24605B-Industrial Automation, BEE24606-Project Phase-I, BEEL24607-Power System Simulation Lab, BEE24701-Power System IV, BEE24702-Electric Vehicles, BEE24705C-Energy Storage Systems, BEEP24706-Major Project Phase-II

PSO2: Understand generation, transmission, distribution and utilization of electric power	BETCK24105D- Electromechanical Systems & Measurements, BEE24302-Electrical Machines-I, BEE24304-Electric Circuits, BEE24306D-Electromagnetic Field Theory, BEE24358A-Electrical Hardware Lab, BEE24402-Electrical Machines-II, BEE24403-Power System-I, BEE24406C-Digital System Design using Verilog HDL, BEE24501-Management & Economics, BEE24503-Power System-II, BEEL24504-Auto CAED, BEE24505C-Utilization of Electric Power, BEE24505D-Technologies of Renewable Energy Sources, BEEP24507-Mini Project BEE24602-Power System III, BEE24603-Industrial Drives and Applications, BEE24604B-Micro Grid, BEE24605B-Industrial Automation, BEE24605D-Utilization of Electric Power, BEE24606-Project Phase-I, BEEL24607-Power System Simulation Lab, BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24701-Power System IV, BEE24702-Electric Vehicles, BEE24703-Smart Grid, BEE24704B-FACTS & HVDC, BEE24704D-Big Data Analytics in Power Systems, BEE24705C-Energy Storage Systems, BEE24705D-Energy Auditing, BEEP24706-Major Project Phase-II, BEE24801A-AI Techniques for Electric Vehicles, BEE24801B-Battery Management System, BEE24801C-Electrical Power Quality, BEE24802A-Programmable Logic Controller, BEE24802B-Advanced Control System, BEE24802D-Energy Conservation & Auditing
PSO3: Design analog and digital electronic circuits and controllers	BETCK24105C- Sensor Systems, BEE24303-Analog Electronic Circuits, BEE24304-Electric Circuits, BEEL24305-MATLAB Programming, BEE24306A-Digital Logic Design, BEE24306B-Measurements and Instrumentation, BEE24306C-Computer Organization and Architecture, BEE24358B-Circuit Laboratory using LT SPICE, BEE24358C-SCI Lab for Transformers and Generators, BEE243528D-Measurement Lab, BEE24404-Control Systems, BEE24405-Control Systems Laboratory, BEE24406A- Data Structures using C, BEE24406B-Engineering Materials, BEE24406C-Digital System Design using Verilog HDL, BEE24406D-Micro Electro-Mechanical Systems, BEE24457A-Digital Logic Design Laboratory, BEE24457B-PCB Design, BEE24457C-Arduino Based Projects, BEE24457D-Assembly Language Programming, BEE24502-Power Electronics, BEE24505A-Embedded Systems, BEE24505B-OOPS using C++, BEE24556A-Embedded C Programming, BEE24556B-Data Visualization using Power BI, BEE24556C-Project Management using GIT, BEE24556D-PCB Design, BEEP24507-Mini Project, BEE24601-Signal Processing, BEE24602-Power System III, BEE24603-Industrial Drives and Applications, BEE24604A-Introduction to AI&ML, BEE24604B-Micro Grid, BEE24604C-VLSI Design, BEE24604D-Internet of Things & its Applications, BEE24605B-Industrial Automation, BEE24606-Project Phase-I, BEEL24607-Power System Simulation Lab, BEE256057A-Internet of Things Lab, BEE24657B-Python Programming for ML Application, BEE24657C-Energy Audit Projects, BEE24657D-Project on Renewable Energy Sources, BEE24701-Power System IV, BEE24702-Electric Vehicles, BEE24704A-Switched Mode Power Converters, BEE24704B-FACTS & HVDC, BEE24704C-Robotics and Automation, BEE24704D-Big Data Analytics in Power Systems, BEEP24706-Major Project Phase-II, BEE24801A-AI Techniques for Electric Vehicles, BEE24801B-Battery Management System, BEE24801C-Electrical Power Quality, BEE24801D-Soft Computing Techniques, BEE24802A-Programmable Logic Controller

	BEE24802B-Advanced Control System, BEE24802C-Embedded System for EV Application

8.2.2. SDG Mapping Table

SDG	Subjects (Course Code – Course Title)
SDG 4 – Quality Education	BEE24301 – Mathematics; BEE24401 – Mathematics; BEEL24305 – MATLAB Programming; BEE24358C – Python Programming for Electrical Applications; BEE24406A – Data Structures using C; BEE24457B – Data Handling with Excel; BEE24505B – OOPS using C++; BEE24556B – Data Visualization (Power BI); BRMK24557 – Research Methodology and IPR
SDG 7 – Affordable and Clean Energy	BEE24302 – Electrical Machines-I; BEE24402 – Electrical Machines-II; BEE24403 – Power System-I; BEE24503 – Power Systems-II; BEE24602 – Power System-III; BEE24701 – Power System-IV; BEE24502 – Power Electronics; BEE24505D – Renewable Energy Technologies; BEE24604B – Microgrid; BEE24605A – Electric Vehicles; BEE24605C – Renewable Energy; BEE24702 – Electric Vehicles; BEE24703 – Smart Grid; BEE24705B – Smart Grid Technology; BEE24705C – Energy Storage Systems; BEE24801B – Battery Management Systems; **Embedded System for EV Application - BEE24802C** , BEE24802D – Energy Conservation & Auditing, AI Techniques for Electric Vehicles - BEE24801A
SDG 9 – Industry, Innovation and Infrastructure	BEE24304 – Electric Circuits; BEE24303 – Analog Electronics Circuits; BEE24306A – Digital Logic Design; BEE24306D – Electromagnetic Field Theory; PCB Design – BEE24556CD, BEE24404 – Control Systems; BEE24601 – Signal Processing; BEE24603 – Industrial Drives & Applications; BEE24604C – VLSI Design; BEE24604D – IoT; BEE24605B – Industrial Automation; BEE24704A – SMPS; BEE24704B – FACTS & HVDC; Introduction to AI&ML – BEE24604A; BEE24704C – Robotics & Automation; BEE24704D – Big Data in Power Systems; BEE24801C – Power Quality; BEE24802A – PLC; BEE24802B – Advanced Control Systems; BEE24802C – Embedded Systems for EV, Embedded System for EV Application – BEE24802C, AI Techniques for Electric Vehicles – BEE24801A, Python Programming for ML Application - BEE24657B
SDG 11 – Sustainable Cities and Communities	BESK24508 – Environmental Studies; BEE24657C – Energy Audit Projects; BEE24705D – Energy Auditing; BSCK24307 – Social Connect and Responsibility; BNSK24359 – NSS; BNSK24459 – NSS; BIKS24608 – Indian Knowledge System; BEE24803 – Internship; BEEP24507 – Mini Project; BEEP24606 – Project Phase I; BEEP24706 – Major Project Phase II

8.2.3. WK Mapping Table

WK	Subjects (Course Code – Course Title)
WK1 – Natural Sciences & Basic Knowledge	BEE24301 – Mathematics; BEE24401 – Mathematics; BBOK24407 – Biology for Engineers; BEE24406B – Engineering Materials
WK2 – Mathematical & Computational Analysis	BEE24301 – Mathematics; BEE24401 – Mathematics; BEEL24305 – MATLAB Programming; BEE24358C – Python Programming for Electrical Applications; BEE24406A – Data Structures using C; BEE24457B – Data Handling with Excel; BEE24505B – OOPS using C++; BEE24556B – Data Visualization (Power BI); BEE24657B – Python for ML
WK3 – Engineering Fundamentals	BEE24304 – Electric Circuits; BEE24303 – Analog Electronics Circuits; BEE24306A – Digital Logic Design; BEE24306D – Electromagnetic Field Theory; BEE24404 – Control Systems
WK4 – Engineering Specialist Knowledge	BEE24302 – Electrical Machines-I; BEE24402 – Electrical Machines-II; BEE24403 – Power System-I; BEE24503 – Power Systems-II; BEE24602 – Power System-III; BEE24701 – Power System-IV; BEE24502 – Power Electronics; BEE24601 – Signal Processing; BEE24604C – VLSI Design; BEE24704A – SMPS; BEE24704B – FACTS & HVDC; BEE24801C – Power Quality; BEE24802B – Advanced Control Systems
WK5 – Sustainability & Environmental Awareness	BEE24505D – Renewable Energy Technologies; BESK24508 – Environmental Studies; BEE24604B – Microgrid; BEE24605A – Electric Vehicles; BEE24605C – Renewable Energy; BEE24657C – Energy Audit Projects; BEE24657D – Renewable Energy Project; BEE24702 – Electric Vehicles; BEE24703 – Smart Grid; BEE24705B – Smart Grid Technology; BEE24705C – Energy Storage Systems; BEE24705D – Energy Auditing; BEE24801B – Battery Management Systems; BEE24802D – Energy Conservation & Auditing
WK6 – Engineering Practice (Technology)	BEEL24305 – MATLAB Programming; BEE24306B – Measurements & Instrumentation; BEE24306C – Computer Organization & Architecture; BEE24358A – Electrical Hardware Lab; BEE24358B – Circuits Lab using LT Spice; BEE24358D – Measurement Lab; BEEL24405 – Control Systems Lab; BEE24406C – Digital Systems Design; BEE24457A – Digital Logic Design Lab; BEE24457C – Arduino Based Projects; BEE24457D – Assembly Language Programming; BEEL24504 – AUTO CAED; BEE24505A – Embedded Systems; BEE24505C – Utilization of Electrical Power; BEE24556A – Embedded C Programming; BEE24556D – PCB Design; BEE24603 – Industrial Drives & Applications; BEE24604D – IoT; BEE24605B – Industrial Automation; BEE24605D – Utilization of Electrical Power; BEEL24607 – Power System Simulation Lab; BEE24657A – IoT Lab; BEE24704C – Robotics & Automation; BEE24705A – Smart IoT; BEE24802A – PLC; BEE24802C – Embedded Systems for EV; BEE24803 – Internship
WK7 – Engineering & Society	BSCK24307 – Social Connect and Responsibility; BNSK24359 – NSS; BNSK24459 – NSS; BEE24501 – Engineering Economics and

	Management; BEE24556C – Project Management with GIT; BIKS24608 – Indian Knowledge System; BEE24803 – Internship
WK8 – Research & Critical Thinking	BRMK24557 – Research Methodology and IPR; BEEP24507 – Mini Project; BEEP24606 – Project Phase I; BEEP24706 – Major Project Phase II; BEE24604A – AI & ML; BEE24704D – Big Data in Power Systems; BEE24801A – AI for EV; BEE24801D – Soft Computing
WK9 – Ethics & Professional Responsibility	BUHK24408 – Universal Human Values; BRMK24557 – Research Methodology and IPR

8.3 Percentage-Based Reporting:

Percentage Based Reporting for 2024 Scheme, is mentioned below:

% of courses revised	70% of the courses are revised from III Sem onwards
% skill-based courses	40%
% courses with apprenticeship/fieldwork	5%
% online credited courses (SWAYAM, NPTEL)	Under Electives 3%
% project-based courses	4%

Percentage Based Reporting for 2026 Scheme, is mentioned below:

% of courses revised	Pending for next BoS after preparation of draft syllabus
% skill-based courses	43% (incl, Placement NCMC Course)
% courses with apprenticeship/fieldwork	8%
% online credited courses (SWAYAM, NPTEL)	6%
% project-based courses	5%

9. NEW COURSE PROPOSALS

Under the 2024 Scheme, the details of New Courses is below:

1. **Course: Data Visualization using Power BI - BEE24556B**

Rationale

This course introduces students to the fundamentals of data visualization using Microsoft Power BI. The course provides practical exposure to importing, cleaning, transforming, modelling, and visualizing engineering datasets. Students learn to develop interactive reports and dashboards to support data-driven decision-making in electrical engineering applications.

2. **Course Objectives**

CLO.1	Apply Power BI tools to connect and import engineering datasets from various sources.

CLO.2	Apply data cleaning and transformation techniques to prepare engineering datasets for analysis.
CLO.3	Apply basic DAX functions to create calculated columns and measures.
CLO.4	Analyze engineering datasets and design appropriate visualizations with interactivity.
CLO.5	Design and evaluate simple interactive dashboards using Power BI.

3. COs

Course Outcome	Description
CO1	Import engineering datasets from Excel and CSV files into Power BI
CO2	Perform data cleaning, transformation and create relationships between tables
CO3	Create calculated columns and basic measures using DAX
CO4	Analyze datasets and design visualizations with filters and slicers
CO5	Design and evaluate an interactive dashboard for electrical engineering applications

4. Skill Alignment (NCrF level)

The course Maps to Level 6 – Analytical Skill of NCrF levels

5. Assessment Scheme :

Continuous Internal Evaluation (CIE):

As part of the CIE process, progressive continuous evaluation is done for AEC laboratory on weekly basis of conduct of experiments by students either individually or in group based on the laboratory. The breakup of the marks allocated is given in the TABLE-1:

TABLE-1 WEEKLY EVALUATION OF CONDUCT OF EXPERIMENT		
SL No	Activity	Maximum Marks
1	Conduct of experiment and documentation	10
2	Analysis & interpretation of results	05
3	Viva voce	05

- Internal exam conducted at the end of the semester or on completion of a predefined set of experiments based on the laboratory. The evaluation detail of laboratory internal exam is given in TABLE-2.

TABLE-2 CLASS INTERNAL EXAM (CIE)		
SL No	Activity	Maximum Marks
1	Detailed write-up about the experiment with relevant procedure and calculation	10
2	Conduction of experiment	15

3	Viva voce	05
Total		**30**

TABLE-3 FINAL CIE CALCULATION		
SL No	Metrics Used	Maximum Marks
1	Average of all weekly evaluations of conduct of experiment	20
2	Class Internal Exam	30
Total		**50**

MINIMUM MARKS REQUIREMENT IN CIE

Any student who scores CIE marks < 20 out of 50 are ineligible to write the semester end exam (SEE) for the respective laboratory.

Semester End Examination (SEE):

SEE Examination is conducted for 50 marks.

6. Industry Relevance

This course equips students with industry-relevant data analytics and visualization skills using Microsoft Power BI, enabling them to analyze engineering data and create interactive dashboards widely used in electrical, energy, and industrial sectors for data-driven decision-making.

7. SDG mapping

SDG4: Quality Education

2. Course: Python Programming for ML Application - BEE24657B

1. Rationale

The Python Programming for ML Applications course provides an introduction to essential machine learning concepts and commonly used algorithms. It covers supervised learning techniques (linear/logistic regression, decision trees, k-NN, naïve Bayes, SVMs, neural networks), basic clustering methods, and feature reduction approaches. The course also explains key principles such as hypothesis space, overfitting, bias–variance, and model evaluation through cross-validation. Practical learning is reinforced through hands-on exercises and Python-based implementations.

2. Course Objectives

CLO.1	Understand and apply fundamental machine learning concepts and commonly used algorithms.
CLO.2	Apply supervised and unsupervised learning techniques using Python.
CLO.3	Develop Python programs to analyze model performance using evaluation metrics and cross-validation.
CLO.4	Use data Implement feature reduction and preprocessing methods for real-world datasets.
CLO.5	Develop hands-on skills in building, training, and testing ML models using Python programming.

3. COs

Course Outcome	Description
CO1	Describe fundamental concepts and types of machine learning.
CO2	Implement supervised learning algorithms using Python.
CO3	Apply basic clustering and feature reduction techniques
CO4	Evaluate machine learning models using appropriate metrics and cross-validation.
CO5	Develop simple ML applications through hands-on Python programming.

4. Skill Alignment (NCrF level)

The course Maps to Level 6 – Analytical Skill of NCrF levels

5. Assessment Scheme

Continuous Internal Evaluation (CIE):

As part of the CIE process, progressive continuous evaluation is done for AEC laboratory on weekly basis of conduct of experiments by students either individually or in group based on the laboratory. The breakup of the marks allocated is given in the TABLE-1:

TABLE-1 WEEKLY EVALUATION OF CONDUCT OF EXPERIMENT		
SL No	Activity	Maximum Marks
1	Conduct of experiment and documentation	10
2	Analysis & interpretation of results	05
3	Viva voce	05

Internal exam conducted at the end of the semester or on completion of a predefined set of experiments based on the laboratory. The evaluation detail of laboratory internal exam is given in TABLE-2.

TABLE-2 CLASS INTERNAL EXAM (CIE)		
SL No	Activity	Maximum Marks
1	Detailed write-up about the experiment with relevant procedure and calculation	10
2	Conduction of experiment	15
3	Viva voce	05
Total		**30**

TABLE-3 FINAL CIE CALCULATION		
SL No	Metrics Used	Maximum Marks
1	Average of all weekly evaluations of conduct of experiment	20
2	Class Internal Exam	30
Total		**50**

MINIMUM MARKS REQUIREMENT IN CIE

Any student who scores CIE marks < 20 out of 50 are ineligible to write the semester end exam (SEE) for the respective laboratory.

Semester End Examination (SEE):

SEE Examination is conducted for 50 marks

6. Industry Relevance

This course equips students with practical Python-based machine learning skills required for roles in data analytics, artificial intelligence, automation, fintech, healthcare analytics, and intelligent engineering systems.

7. SDG mapping

SDG 9 – Industry, Innovation and Infrastructure

3. Course: AI Techniques for Electric Vehicles - BEE24801A

1. Rationale

The rapid global transition toward sustainable transportation has positioned Electric Vehicles at the forefront of modern engineering innovation. As EV technologies grow increasingly complex, Artificial Intelligence has emerged as a transformative enabler — driving smarter battery management, autonomous control, energy optimization, and intelligent charging infrastructure. This course equips students introduces AI methodologies to EV systems, bridging theoretical knowledge with real-world engineering applications. By the end of this course, students will be prepared to contribute meaningfully to the next generation of intelligent, efficient, and sustainable electric mobility systems.

2. Course Objectives

CLO.1	Explain the fundamentals of AI, ML, Deep Learning, EV data acquisition, CAN communication, and cybersecurity challenges in AI-driven EV systems.
CLO.2	Apply suitable AI techniques for SOC/SOH estimation, battery degradation prediction, fault detection, and thermal/battery safety management.
CLO.3	Analyze AI-based models for motor drive optimization, inverter control, and predictive maintenance of EV electrical subsystems.
CLO.4	Evaluate AI-driven approaches for EV charging systems, including load forecasting, smart charging optimization, and PV-integrated charging station scheduling.
CLO.5	Understand AI-enabled solutions for autonomous and connected vehicles incorporating ADAS, navigation algorithms, and data-driven decision systems.

3. COs

Course Outcome	Description
CO1	To develop foundational knowledge of AI, ML, and Deep Learning and their integration within the modern EV ecosystem.
CO2	To apply AI techniques for battery characterization, health estimation, safety, and efficient Battery Management Systems (BMS)
CO3	To analyze and optimize electric motor drives, inverters, and control systems using AI-based models.
CO4	To examine AI-enabled approaches for EV charging infrastructure, load forecasting, and renewable-integrated charging systems.
CO5	To explore AI-driven technologies for autonomous and connected vehicles, including ADAS, navigation, and safety considerations.

4. Skill Alignment (NCrF level)

The course Maps to Level 6 – Analytical Skill of NCrF levels

5. Assessment Scheme

Semester End Examination (SEE):

SEE Question paper is to be set for 100 marks and the marks scored will be proportionately reduced to 50.

Continuous Internal Evaluation (CIE):

Two internal tests will be conducted, each for 50 marks. The average score of these tests will be scaled down to 30 marks and considered for the CIE. In addition, the CIE will include an AAT component of 20 marks.

Typical Evaluation pattern for integrated courses is shown in the Table below.

Table: Distribution of weightage for CIE & SEE

	Component	Marks	Total Marks
CIE	CIE Test-1	30	Avg. CIE +AAT = 50
	CIE Test-2	30	
	AAT	20	
SEE	Semester End Examination	100	50
		Grand Total	100

SEE Examination is conducted for 50 marks

3. Industry Relevance

This course equips students with cutting-edge AI skills for electric vehicle systems, preparing them for careers in EV manufacturing, autonomous mobility, smart transportation, battery technology, and renewable-integrated automotive industries.

7. SDG mapping

SDG 7 – Affordable and Clean Energy
SDG 9 – Industry, Innovation and Infrastructure

4. Course: Embedded System for EV Application - BEE24802C

1. Rationale

This course introduces the fundamentals of automotive embedded systems used in modern vehicles. It covers automotive hardware, sensors, microcontrollers, embedded software, and communication protocols. It also explains testing and validation methods to ensure reliable and safe automotive systems.

2. Course Objectives

CLO.1	Illustrate the architecture and functional subsystems of automotive embedded systems used in electric vehicles.
CLO.2	Apply knowledge of automotive hardware components including microcontrollers, sensors and actuators used in vehicle control systems.
CLO.3	Analyze the characteristics and interfacing techniques of automotive sensors and transducers.
CLO.4	Implement embedded software concepts and communication protocols used in automotive applications.
CLO.5	Analyze verification, validation and testing methods used in automotive embedded systems.

3. COs

Course Outcome	Description
CO1	Illustrate the architecture and subsystems of automotive embedded systems used in electric vehicles.
CO2	Apply automotive hardware concepts involving microcontrollers, sensors and actuators used in EV systems.
CO3	Analyze the operation and interfacing of automotive sensors used in vehicle control systems.
CO4	Implement embedded programming concepts and communication protocols used in automotive systems.
CO5	Analyze testing, verification and diagnostic techniques used in automotive embedded systems.

4. Skill Alignment (NCrF level)

The course Maps to Level 6 – Analytical Skill of NCrF levels

5. Assessment Scheme

Semester End Examination (SEE):

SEE Question paper is to be set for 100 marks and the marks scored will be proportionately reduced to 50.

Continuous Internal Evaluation (CIE):

Two internal tests will be conducted, each for 50 marks. The average score of these tests will be scaled down to 30 marks and considered for the CIE. In addition, the CIE will include an AAT component of 20 marks.

Typical Evaluation pattern for integrated courses is shown in the Table below.

Table: Distribution of weightage for CIE & SEE

	Component	Marks	Total Marks
CIE	CIE Test-1	30	**Avg. CIE +AAT = 50**
	CIE Test-2	30	
	AAT	20	
SEE	**Semester End Examination**	**100**	**50**
		Grand Total	**100**

SEE Examination is conducted for 50 marks

6. Industry Relevance

This course prepares students with industry-relevant skills in automotive embedded systems, enabling them to design, implement, and test reliable control systems used in electric vehicles, smart mobility, and automotive electronics industries.

7. **SDG mapping**

SDG 7 – Affordable and Clean Energy
SDG 9 – Industry, Innovation and Infrastructure

- All the above proposed courses were appreciated and recommended for approval in the ACM
- The Syllabi for the courses of 2026 Scheme would be approved for BoS in the next BoS meeting.

10. SKILL, MOOC & VALUE-ADDED REVIEW

- **NPTEL/ SWAYAM integration**:
  1. Under the 2024 Scheme, Online courses are introduced in the VIII Sem. The proposed list of courses are included in the syllabus and are subject to modifications based on the list of courses available on the NPTEL platform.
  2. Under the 2026 Scheme, UHV is proposed to be taken online in addition to Open Elective in VII Elective in VIII and VIII Semester and Professional Electives in VIII Sem.
  3. The choice of Online Courses can be initiated from the V Sem onwards
- **NCMC placement course (Sem 3–6)**
  The Placement training courses have been introduced in the 2026 Scheme under NCMC Course.
- **The following Value-Added Programs were proposed for AY 2026-27**:
  1. PCB Design Using KiCad and Hardware Prototyping
  2. Real-Time Embedded Applications Using STM32
  3. Electric Vehicle Powertrain Modelling Using MATLAB/Simulink
  4. Industry-Led VAP on Energy Auditing and Efficiency Practices
  5. PLC Programming and Industrial Control Systems

The BoS appreciated the Initiatives and recommended the above for approval in the ACM.

11. INTERNSHIP & INDUSTRY INTEGRATION

- During the AY 2025-26, 100% students have enrolled for internship in industry. The Internship monitoring is carried out through the VTU Internship portal.
- Aligned with VTU Guidelines. Similar internship structure will be followed during AY 2026-27
- The department has initiated Industry assisted learning in collaboration with IMTMA, for industry relevant exposure
- The department proposes to appoint Professor of Practice during the AY 2026-27
- Under the 2026 Scheme, in the 2 credits are allotted for Hackathon Based Projects, in the V Sem.

The above internship and Industry Integration implementation was recommended for approval in ACM.

12. RESEARCH & CAPSTONE

- To augment Research Skills in students, and develop real-world problem-solving skills, it was proposed that the outcome of each project should be a Publication/Patent/Product.
- The following Capstone Project Rubrics were approved by the BoS:

Review - 1

Criteria	Weight (%)	Performance Indicators	Rubric Levels (1–4)	POs/PSOs Mapped
C1. Problem Identification, Relevance & Literature Survey	25	Problem clarity, industrial/social relevance, depth of literature review	4 (Excellent): Problem well-defined, highly relevant, comprehensive literature survey.3 (Good): Clear problem, moderately relevant, good literature support.2 (Average): Problem vague, limited relevance, superficial review.1 (Needs Improvement): Unclear problem, no relevance, minimal survey.	PO1, PO2, PO6, PO11, PSO1, PSO2, PSO3
C2. Project Objectives & Methodology	25	Well-framed objectives, feasibility, systematic approach, Cost analysis	4: Clear objectives, sound and feasible methodology.3: Objectives defined with minor gaps, methodology fairly systematic.2: Objectives vague, methodology unclear.1: Not defined objectives clearly, no clear method.	PO3, PO4, PO10, PO11
C3. Teamwork & Contribution	25	Individual contribution, cooperation, task distribution	4: Excellent collaboration, equal contributions.3: Good teamwork, distributed work.2: Unequal contribution, limited teamwork.1: Needs Improvement in teamwork, very low contribution.	PO7, PO8
C4. Presentation & Communication	25	Clarity of oral presentation, technical writing skills	4: Highly confident, clear, technically sound presentation.3: Good clarity, minor issues.2: Average clarity, weak technical delivery.1: Needs Improvement in Communication, lacks clarity.	PO9

Review – 2

Criteria	Weight (%)	Performance Indicators	Rubric Levels (1–4)	POs/PSOs Mapped
C1. Design & Implementation	25	Creativity, innovation, technical soundness of design & implementation	4 (Excellent): Innovative, optimized, successfully implemented.3 (Good): Functional design, implemented with minor gaps.2 (Average): Partial/limited implementation.1 (Needs Improvement): Poor design, no implementation.	PO3, PO5, PO10, PSO1, PSO2, PSO3
C2. Experimental Work / Simulation / Results & Discussion	25	Experimental validation, result accuracy, analysis quality	4: Thorough experiments/simulations, valid results, strong analysis.3: Good experiments with acceptable results.2: Limited experiments, weak analysis.1: No significant experiments/results.	PO2, PO4, PO5, PO6, PO11
C3. Project Outcomes & Applications	25	Extent to which objectives achieved, industrial/social impact	4: Objectives fully achieved, clear industrial/social relevance.3: Most objectives achieved, some relevance.2: Limited achievement, vague outcomes.1: No clear outcomes.	PO6, PO11, PSO3
C4. Report & Presentation	25	Quality of written report & viva-voce presentation	4: Comprehensive, well-structured, error-free, professional presentation.3: Clear report with minor issues.2: Average report, lacks structure.1: Incomplete or poor-quality report.	PO9, PSO3

The above Research and Capstone Implementation and Rubrics was recommended for approval in ACM.

13. BoS APPROVALS

The following Members of the Department Advisory Committee for AY 2026-27 were approved by the BoS:

Sl. No.	Name and Designation	Department/Organization
1	Dr. H B Balakrishna, Principal	Global Academy of Technology
2	Dr. Deepika Masand, Professor & HOD	Dept. of EEE, GAT, Bengaluru
3	Dr. Ruma Sinha, Associate Professor	Dept. of EEE, GAT, Bengaluru
4	Prof. Vinay B Koradoor, Asstt. Professor	Dept. of EEE, GAT, Bengaluru
5	Dr. Mahesh GS, Professor & HoD	Dept. of EEE, GSSSITEW Mysore

6	Mr. A,K, Shukla, Senior R&D Engineer	EDN, BHEL, Mysore Road, Bangalore
7	Mr. Prahlad R, Senior Manager, Power System Engineering	Schneider Electric (Alumni)
8	Mr. Vijay Kumar G, parent	SLV Enterprises (Parent)
9	Ms. Anjitha Ravindran, Associate Wiring Harness Engineer	Volvo (Alumni)
10	Ms. Syeda Ruqqaiya, [1GA23EE056] 6th Semester Student, Dept. of EEE	Global Academy of Technology, Bengaluru
11	Ms. Anusha M, [1GA24EE003] 4th Semester Student, Dept. of EEE	Global Academy of Technology, Bengaluru

14. CONCLUDING REMARKS

The Board of Studies approved the proposed curriculum changes, assessment reforms, and implementation plan effective from Academic Year 2026–27. Further, the proceedings is sent across to Academic Council for approval

Global Academy of Technology
An Autonomous Institution Affiliated to Visvesvaraya Technological University, Belgavi
Approved by UGC, AICTE and Govt. of Karnataka
NBA Accredited CSE, CV, ECE, EEE, ISE and ME Programmes

Department of Electrical and Electronics Engineering

Attendance report for the Board of Studies Meeting held on 28th March 2026 at 9:30 AM in the chamber of the Department of Electrical and Electronics Engineering, Global Academy of Technology

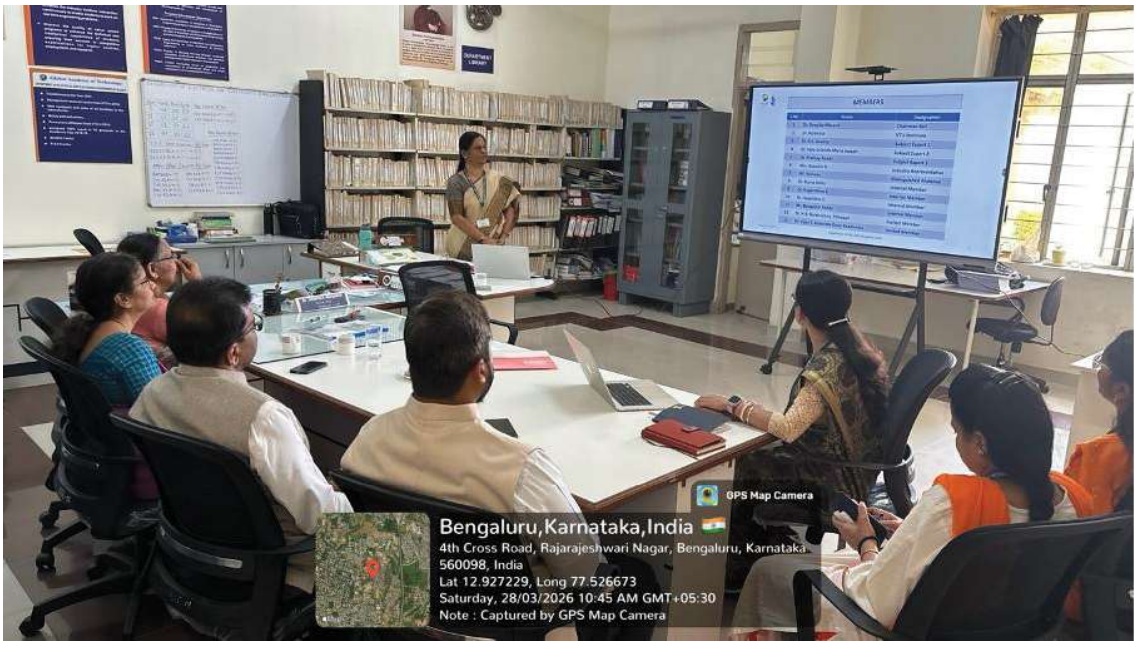
Sl. No.	Name	Designation	Signature
1.	Dr. DEEPIKA MASAND	Chairman	Masand 28/3/26
2.	Dr. R.S GEETHA	Subject Expert 1	28/3/26
3.	Dr. FELIX ORLANDO MARIA JOSEPH,	Subject Expert 2	– ABSENT –
4.	Dr. PRATHAP REDDY,	Subject Expert 3	Joined online
5.	Dr. PARIMALA	VTU Nominee	Parimala 28/3/26
6.	Mrs. KUSUMA N	Industry representative	– ABSENT –
7.	Mr. VISHWAS	A distinguished Alumnus	– ABSENT –
8.	Dr. RUMA SINHA	Member convenor	
9.	Mr. BALAGOPAL REDDY G	Member	
10.	Dr. NAGARATHNA K	Member	K
11.	Dr. JAYACHITRA	Member	
12.	Dr. H B BALA KRISHNA	Invited Member	
13.	Dr. VIJAY T	Invited Member	28/3/26

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GLOBAL ACADEMY OF TECHNOLOGY

(An Autonomous Institution Approved by AICTE, Affiliated to VTU, Belagavi, Karnataka)

Ideal Homes Township, Rajarajeshwari Nagar, Bengaluru – 560 098

Department of Information Science & Engineering

BOS Members- Department of Information Science and Engineering
Academic Year 2025-26

Sl. No	Designation	Name and Designation	Affiliation	Signature
1.	BOS Chairman	Dr. Kumaraswamy S	Professor and Head-ISE Global Academy of Technology, Bengaluru	Sk Swamy
2.	VTU-Nominee	Dr. Sanjay. H.A	Principal, BMSIT&M, Bengaluru	Online
3.	Subject Expert-1	Dr. V.N. Manjunath Aradhya	Professor Dept. of Computer Applications JSS Science and Technology University, Mysore	Online
4.	Subject Expert-2	Dr. Hareesha K.S.	Professor, Department of Data Science & Computer Applications, MIT, Manipal, Manipal Academy of Higher Education (MAHE), MANIPAL	Online
5.	Subject Expert-3	Dr. B H Shekar	Professor, Department of Computer Science, Mangalore University, Mangala Gangotri, Mangalore	11.04.26
6.	Industry Representative	Dr.Manjunath Shantharamu	Principal Engineer & Technical Lead | Ph.D. | Driving Innovation & Solutions at Samsung, Mysore, Karnataka.	11/04/2026
7.	Alumini	Anurag M Khot	AI Engineering Product Manager Waterlabs AI	
8.	Member Convener	Dr Vimuktha E Salis	Professor-ISE Global Academy of Technology, Bengaluru	
9.	Member	Dr.Kiran Y C	Professor-ISE, Global Academy of Technology, Bengaluru	11/4
10.	Member	Dr. Nirmala H	Professor-ISE, Global Academy of Technology, Bengaluru	11/4/26
11.	Member	Dr. Bhagyashri R Hanji	Professor-ISE, Global Academy of Technology, Bengaluru	11/4/26
12.	Member	Dr.Deepak G	Professor-ISE Global Academy of Technology, Bengaluru	
13.	Invited Member	Prof. Sharmila. C	Assistant Professor- ISE Global Academy of Technology, Bengaluru	11/4/26
14.	Invited Member	Prof.Pathanjali C	Assistant Professor- ISE Global Academy of Technology, Bengaluru	11/4/26
15.	Invited Member	Prof.Prashanth J	Assistant Professor- ISE Global Academy of Technology, Bengaluru	11/4
16.	Invited Member	Dr. H B Balakrishna	Principal, Global Academy of Technology, Bengaluru	
17.	Invited Member	Dr.Vijay Tambrallimath	Associate Dean-Academics, GAT Bengaluru.	11/4/26

Sk-Swamy 11/4/26

Signature of the Head of Dept.

Head of Department
Information Science & Engineering
Global Academy of Technology
Bangalore - 560098

Signature of Principal

PRINCIPAL
Global Academy of Technology
Ideal Homes Township,
Rajarajeshwari Nagar, Bangalore-560 098

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Approved by UGC, AICTE and Govt of Karnataka

Department of Information Science and Engineering

Draft Minutes of Meting- Board of Studies 2025-26

Meeting Date & Time	11th April 2026, 10:00am-1:00pm	Mode of Meeting	Blended Mode
https://teams.microsoft.com/meet/47856583231060?p=4W8OMCcmP3r6166p8l			
Meeting Chair	Dr. Kumaraswamy S Chairman-BOS	Meeting Convenor	Dr. Vimuktha Evangeleen Salis
Meeting Title	Board of Studies Meeting April 25-26	Drafted Date	13th April 2026

Members Present:

Sl. No	Designation	Name and Designation	Affiliation
1	BOS Chairman	Dr. Kumaraswamy S	Professor and Head-ISE Global Academy of Technology, Bengaluru
2	VTU-Nominee	Dr. Sanjay. H.A	Principal, BMSIT&M, Bengaluru
3	Subject Expert-1	Dr. V.N. Manjunath Aradhya	Professor Dept. of Computer Applications JSS Science and Technology University, Mysore
4	Subject Expert-2	Dr. Hareesha K.S.	Professor, Department of Data Science & Computer Applications, MIT, Manipal, Manipal Academy of Higher Education (MAHE), MANIPAL
5	Subject Expert-3	Dr. B H Shekar	Professor, Department of Computer Science, Mangalore University, Mangala Gangotri, Mangalore
6	Industry Representative	Dr. Manjunath Shantharamu	Principal Engineer & Technical Lead | Ph.D. | Driving Innovation & Solutions at Samsung, Mysore, Karnataka.
7	Alumni Representative	Mr. Anurag M Khot	Waterlabs AI, Bengaluru, Karnataka
8	Member	Dr. Kiran Y C	Professor-ISE, Global Academy of Technology, Bengaluru
9	Member Convener	Dr Vimuktha E Salis	Professor-ISE Global Academy of Technology, Bengaluru
10	Member	Dr. Nirmala H	Professor-ISE, Global Academy of Technology, Bengaluru
11	Member	Dr. Bhagyashri R Hanji	Professor-ISE Global Academy of Technology, Bengaluru
12	Member	Dr. Deepak G	

13	Invited Member	Prof. Sharmila. C	Assistant Professor- ISE Global Academy of Technology, Bengaluru
14	Invited Member	Prof Pathanjali. C	Assistant Professor- ISE Global Academy of Technology, Bengaluru
15	Invited Member	Prof. Prashanth J	Assistant Professor- ISE Global Academy of Technology, Bengaluru
16	Invited Member	Dr. H B Balakrishna	Principal, Global Academy of Technology, Bengaluru
17	Invited Member	Dr. Vijaykumar T	Dean-Academics, GAT Bengaluru.

Agenda:

1. Welcome and opening remarks
2. Discussion on the Vision, Mission, PSOs, PEOs of the Department and Recommendation on Amendment of PSO's
3. Review of minutes from previous BOS meeting, DAC/DAB meeting
4. Discussion on the Scheme and Syllabus
   UG - 2024 Scheme: V - VIII Semester Syllabus
   UG - 2026 Scheme: I - VIII Semester Scheme, Common Subject Introduction to Python
5. Change in evaluation methodology of CIE (from 3 IA to 2 IA and Marks 40 to 50 and AAT)
6. Change in Question paper Pattern with question Bank for 2026 Scheme (NEW) and for existing Schemes of 2024 and 2023
7. Discussion on Open Book Test
8. Corrigendum – 2024 Scheme
9. Approval of Common Board Subjects in 2026 Scheme
10. Discussion on methodologies for Innovative Teaching, Learning and evaluation technique
11. Academic planning for the upcoming year (Value Added Programs, Student Development Programs, Faculty development programs, Inclusion of emerging topics/technologies and industry-relevant content.)
12. Feedback and suggestions from Board members
13. Any other matter with the permission of the Chair
14. Concluding remarks

Proceedings:

1. Dr. Kumaraswamy, BoS Chairman, opened the meeting for discussion and presentation.
2. The welcome address was delivered by Dr. Bhagyashri R Hanji, Member BoS Committee
3. With the permission of the Chair Dr. Vimuktha E Salis, Member Convenor, presented the agenda of 2025-26 BOS

Recommendations on the agenda

Sl.No	Common Discussion	Suggestions
1.	**Discussion on the Vision, Mission, PSOs, PEOs of the Department**	Dr. Shekar BH recommended revisiting the Department Vision Statement The 2 recommended PO's were approved with slight modifications by the board
2.	**Review of minutes from previous BOS meeting, DAC/DAB meeting**	The action taken was reviewed by the board and expert committee and the suggestions of DAB meeting were appreciated
3.	**Discussion on the Scheme and Syllabus**	
	UG - 2024 Scheme: V - VIII Semester Syllabus	
	Dr. Shekar subject Expert recommended the following suggestions for V - VIII Semester Syllabus:	**. Core Curriculum Strengthening** • Core subjects should be retained to ensure strong foundational knowledge. • Programming subjects such as **C++** should be explicitly offered. **2. Machine Learning & Related Domains** • The sequence and flow of **Machine Learning topics** need to be revisited for better conceptual progression. • Overlapping content across **Machine Learning, Data Mining, Deep Learning, and Big Data Analytics** should be reviewed and minimized. **3. Interdisciplinary Integration** • Introduce **Economics concepts** within **Software Project Management** to enhance practical and managerial understanding. • Include **ISE domain-specific subjects** such as **Medical Imaging**, aligned with relevant **SDGs**. **4. Subject Content Design** • Avoid directly copying textbook content into the syllabus. • Replace descriptive "what/why" statements with **concise topic-based entries.** **5. Course Structuring & Titles** • Rename **Computer Vision** to **Image Processing** for clarity and broader applicability. • Reduce the syllabus load of **Generative AI (Open Elective)** for better manageability. **6. Electives & Learning Pathways** • Design **Professional Electives** in a progressive manner aligned with **thrust**

		areas/domains. • Expand offerings in **Data and Information Science-related courses.** **7. Certification & External Learning** • Encourage offering **SWAYAM** and **NPTEL** courses as part of the curriculum framework. **8. Skill Enhancement & Value Addition** • Include **prompt-based testing tools** as value-added components. • Incorporate emerging areas like: o **Generative AI** o **Large Language Models (LLMs)** o **Data Analytics for IoT** **9. Positive Feedback Highlights** • The inclusion of **GenAI, LLMs, and IoT Data Analytics** was well appreciated and should be continued and strengthened. 10. Suggested to change the Subject Title from Web Scrapping to Web Harvesting
	Dr. Manjunath Shantharamu subject Expert recommended the following suggestions for V - VIII Semester Syllabus:	1. Core subjects should be retained to ensure a strong foundational base. 2. Programming languages such as C, C++, and Java should be explicitly included in the curriculum. 3. Introduce emerging multidisciplinary subjects like Physical AI, preferably delivered by industry experts. 4. Specialized subjects such as Ethical Hacking and Biology for Engineers should be taught by domain experts to ensure depth and relevance. 5. Explore integration of AI-enabled software testing tools to support multidomain test case development and practical exposure. **6.** Optimize and reduce the syllabus load of Generative AI (Open Elective) and Large Language Models (LLM) for better manageability and effective learning 7. **Certification & External Learning:** Encourage offering **SWAYAM** and **NPTEL** courses as part of the curriculum framework and courses from Nvidia , Azure
	Mr. Anurag M Khot, Dr. Manjunath Aradhya and Dr. Hareesha recommended the following	The syllabus has been well received for integrating contemporary and industry-relevant subjects; however, it is essential to retain core concepts to ensure a strong foundational base.

UG - 2026 Scheme: I - VIII Semester Scheme		
	Subject Experts recommended the following suggestions for I-VIII Semester Scheme: Syllabus of 2026-27 Scheme Common Board "Introduction Python Programming " (BPLC26105B/205B)	It is recommended not to introduce Artificial Intelligence in the II Semester, ensuring students first build strong foundational knowledge. Probability and Statistics may be integrated as a part of IV Semester Mathematics, while Discrete Mathematics combined with Statistics can be considered for the III Semester. C++ is strongly recommended as a core programming subject in the curriculum. The Joint BoS may reconsider course sequencing, specifically: Swapping Object-Oriented Programming with Java to the III Semester and Moving Computer Networks to the IV Semester The inclusion of emerging topics such as Smart City, Digital Twin, Fog Computing, and Edge Computing in the 2026 syllabus was well appreciated. Adjunct Faculty or Professor of Practice to be recruited to bridge gap between academia and industry Approved by the BoS Experts
4.	**Change in evaluation methodology of CIE (from 3 IA to 2 IA and Marks 40 to 50 and AAT)**	The BoS Chairman and experts approved the amendment in the CIE component. It was emphasized that teachers should adopt rigorous assessment practices while evaluating the 20 marks allotted to the AAT component.
5.	**Change in Question paper Pattern with question Bank for 2026 Scheme (NEW) and for existing Schemes of 2024 and 2023**	The amendment was approved by the committee **Question Bank for 2026 Scheme with elaborate questions**
6.	**Discussion on Open Book CIE**	Programming based or MCQ based containing critical questions Open Book was recommended rather than subjective questions
7.	**General Discussions on Proposed Value-Added Program, Skill Program, Workshops**	The Proposed Value addition courses and Skill Courses were approved
8.	**Corrigendum – 2024 Scheme Subject**	BIS24403 – Design and Analysis of Algorithms and BISL24405 Design and Analysis of Algorithms

		Changes in the contents were verified and approved
9.	**Discussion on ICT and Innovative Teaching Methods**	The Tools and Methods for innovative teaching methods were approved.
9.	**Approval of Common Board Subjects in 2026 Scheme**	Common Board Subjects in 2026 Scheme was approved with a recommendation to The Joint BoS to reconsider course sequencing, specifically: 1. Swapping Object-Oriented Programming with Java to the III Semester and Moving Computer Networks to the IV Semester 2. Probability and Statistics may be integrated as a part of IV Semester Mathematics, while Discrete Mathematics combined with Statistics can be considered for the III Semester

Proposed Value added Programs

1. Problem Solving
2. Unix Shell Programming
3. Unity for ARVR
4. DevOps with Docker & Kubernetes
5. MLOps (Machine Learning Operations)
6. Training on Placement Soft Skills and Communication

Proposed Skill Development Programs

Sl. No	Name of the Course	Duration	Intended Student Group
1	IoT -ThingSpeak	30 Hours	3rd Sem
2	Node JSON	30 Hours	4th Sem
3	Prometheus & Grafana	30 Hours	5th Sem
4	Jenkins	30 Hours	6th Sem

Proposed Faculty Development Programs

1. Workshops on Design Thinking, System Architecture, and Project Mentorship
2. Hands-on FDPs in Python
3. frameworks, Cloud (AWS/Azure), DevOps (Docker, Kubernetes), Data Engineering tools
4. Workshops on Interdisciplinary Applications of AI, IoT, Healthcare, and Sustainable Solutions
5. FDPs on Green Computing, SDG integration, and sustainable technologies
6. Workshops on AI Ethics, Cyber Law, Data Privacy, and Professional Responsibility
7. Training in collaborative learning methods, team facilitation, and peer assessment techniques
8. FDPs on technical communication, rubric-based evaluation, and outcome-based assessment
9. Training in Agile, Scrum, DevOps pipelines, and project management tools (JIRA, Git)

Proposed Interdisciplinary Subjects

1	AI for All
2	Mobile Applications Development
3	Prompt Engineering
4	Physical AI
5	Data Analysis-Tools and Techniques

Summary of Discussion and Recommendation:

1. The curriculum should maintain a strong focus on core subjects to ensure foundational knowledge.
2. Programming languages such as C, C++, and Java should be explicitly included.
3. The syllabus should balance emerging technologies with core fundamentals.
4. The flow and sequencing of subjects, especially in Machine Learning and related domains, should be optimized.
5. Overlapping content across similar subjects should be reviewed and minimized.
6. Interdisciplinary integration should be encouraged across courses.
7. Domain-specific and multidisciplinary subjects should be introduced with support from industry and domain experts. Adjunct Faculty or Professor of Practice to be recruited
8. The curriculum should include industry-relevant and need-based emerging topics.
9. Syllabus design should focus on concise topic-based content rather than descriptive textbook material.
10. Subject titles and structure should be updated to reflect clarity and current trends.
11. Electives should be designed progressively based on thrust areas and specialization domains.
12. Self-learning components and quality assignments through platforms like SWAYAM, NPTEL, and industry certifications should be encouraged.
13. Evaluation methods should emphasize rigor, analytical thinking, and practical application.
14. AI-enabled tools and modern technologies should be incorporated for enhanced learning and assessment.
15. To organize a workshop on IoT, recognizing it as a current industry demand, and to collaborate with industry partners for project development and implementation.
16. It was also suggested to make student participation in departmental and interdepartmental events mandatory, and to encourage them to engage in events hosted by other campuses — and, if possible, in other states — to broaden their exposure and enhance their overall learning experience.
17. It was recommended to enhance the quality of student projects by aligning them with the Sustainable Development Goals (SDGs) and encouraging an interdisciplinary approach across various domains
18. Overall, the syllabus was **well appreciated for its relevance**, with a recommendation to retain strong foundational concepts..

The Chairperson thanked all the members for their active participation and valuable suggestions. The meeting was adjourned at 2:00pm

Geo-tagged Photos



Fig 1. Discussion by the Committee

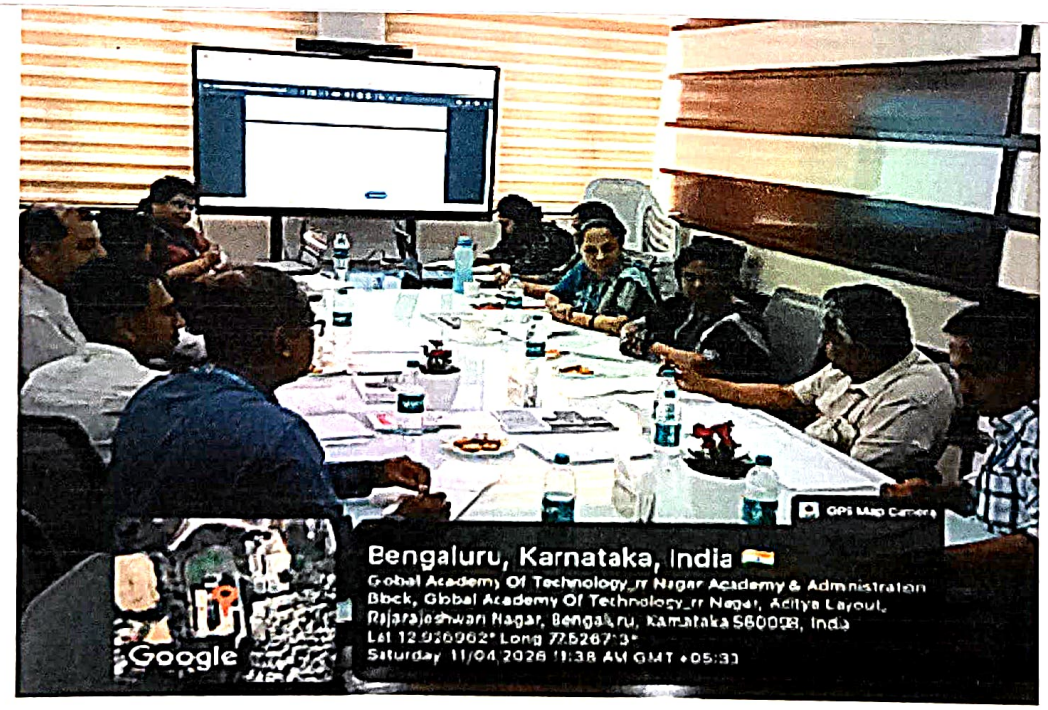


Fig 2. Discussion by the Committee

Prepared By Dr. Vimuktha E Salis Member Convenor, BoS Professor ISE, GAT	Approved By Dr. Kumara Swamy. S Chairman, BoS Professor & Head, ISE, GAT

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GLOBAL ACADEMY OF TECHNOLOGY

Autonomous Institution Affiliated to Visveswaraya Technological University
Approved by UGC, AICTE and Govt of Karnataka

Meeting of all members of Board of Studies (Mechanical Engineering)

Meeting Chair: Dr. Bharat Vinjamuri, BoS Chairman (ME)

Date: 13-04-2026
Venue: Conference Hall, GAT
Meeting time: 11:00 AM

AGENDA

1. Approval of Previous BoS Minutes
2. Discussion on Fifth to Eighth Semester Scheme and Syllabus for 2024 Batch
3. Discussion on First Year (FY) Scheme for 2026 Batch
4. Presentation and Discussion of Newly Introduced Courses
5. Presentation of Elective Course Options and Criteria for Selecting Electives
6. Review of Courses That Have Undergone Revision
7. Courses Addressing Employability, Entrepreneurship, and Skill Development
8. Discussion on Certificate/Diploma/Value-Added Programs
9. Courses Addressing Gender, Environment & Sustainability, Human Values, and Professional Ethics
10. Discussion on Stakeholder Feedback and Need Analysis
11. Skill, MOOC & Value-Added Course Review
12. Vision, Mission, PEO & PSO Review
13. CO–PO Attainment Review and Program Articulation Matrix
14. Curriculum Design & Comprehensive Mapping
15. SDG Mapping and WK Mapping
16. Internship & Industry Integration, Research & Capstone
17. Feedback and Suggestions from Faculty and Experts

Sl. No.	Designation	Members	Email	Signature
01	Chairman	Dr. Bharat Vinjamuri, Prof. & HoD, Dept. of ME	hodmech@gat.ac.in bharat.vk@gat.ac.in 9986579555	13/4/26
02	Subject Expert	Dr. Amarnath M Professor, Department of ME, Indian Institute of Information Technology Design and Manufacturing, Jabalpur	amarnath.cmy@gmail.com amarnath@iiitdmj.ac.in 9425805414	13/04/26
03	VTU Nominee	Dr. Bharathish Professor, Department of ME, R V C E, Bangalore	bharatisha@rvce.edu.in 9538288686	
04	Industry Expert	Mr. Pradeep Kallur Cofounder & Managing Director, Medini Technologies	pradeep@medini.in 99000 81006	13.04.26
05	Industry Expert	Dr. T Ram Prabhu Joint Director/Scientist DRDO, Bangalore	ramprabhu.t@gmail.com 9535531407	Attended online through Google Meet. https://meet.google.com/dfm-egnt-wew

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06	Alumni	Mr. Suhas Sathyakiran Analyst, Renewable Energy and Energy Efficiency, CSTEP Bengaluru -560094	suhas.sathyakiran@cstep.in 8073200435	Suhas S 13/4/26
07	Member convenor	Dr. Ravi Kumar D V Prof. Dept. of ME	ravikumardv@gat.ac.in 9341865545	13/4/26
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10	Member	Dr. Asha P B Assoc. Prof. Dept. of ME	ashapb@gat.ac.in 8553502541	13/4/26
11	Invited member	Dr. H.B. Balakrishna Principal	principal@gat.ac.in 8050003891	
12	Invited member	Dr. Vijay T Dean Academics	vijayt@gat.ac.in 9480324605	13/4/26

HoD-ME

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Department of Mechanical Engineering

Meeting Minutes

The Board of Studies (BoS) meeting of the Department of Mechanical Engineering was convened on 13th April 2026 at 11:00 AM, chaired by Dr. Bharat Vinjamuri, Head of the Department and Chairman, BoS.

The meeting was attended by all internal members, VTU nominee, external expert, industry representatives, and alumni member as per the approved constitution of BoS. Mr. Ram Prabhu,

Dr. Bharat Vinjamuri welcomed all the members and emphasized the importance of continuous curriculum enhancement aligned with NEP 2020, OBE principles, and industry requirements.

Meeting Summary

1. Confirmation and Approval of Previous BoS Minutes

- The Minutes of the previous BoS meeting held on **31st May 2025** were circulated to all members prior to the meeting for review.
- All members carefully reviewed the document and expressed satisfaction with the accuracy of the recorded discussions and resolutions.
- No corrections or modifications were suggested by any member.

The ATR of the previous BoS meeting was presented and discussed

Sl. No	Action Item	Status	Remarks
1	Curriculum Revision	Completed	Updated with AI, EV, Industry 4.0
2	Course Additions	Completed	Data Analytics, Robotics, Digital Twin
3	Internship Policy	Completed	Mandatory internship in 8th semester
4	Skill Courses	Completed	MATLAB, CAD/CAE strengthened
5	Industry Interaction	Partial	Collaborations in progress

Suggestions from Members

- **Principal:** Suggested maintaining a structured format with clear resolution mapping for future BoS documentation.
- **Dr. Bharathish (VTU Nominee):** Recommended including action-oriented remarks along with minutes for better tracking.
- **Industry Expert (Dr. T. Ram Prabhu):** Advised linking previous decisions with measurable outcomes in future reports.
-

Resolution No.: BoS/ME/2026/01 – Approved

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2. Discussion on Fifth to Eighth Semester Scheme and Syllabus for 2024 Batch

The Chairman presented the detailed scheme and syllabus structure for the fifth to eighth semesters under the 2024 batch. The scheme was developed in alignment with the guidelines of AICTE, VTU, NEP 2020, and Outcome-Based Education (OBE) principles. The structure ensured a balanced distribution of Program Core Courses, Professional Electives, Open Electives, Ability Enhancement Courses, internships, and project work.

It was highlighted that the curriculum emphasizes experiential learning, with a strong focus on laboratory components, mini and major projects, and industry internships. The integration of NPTEL courses as a mandatory requirement was also discussed, enabling students to gain exposure to national-level learning platforms. The members appreciated the flexibility introduced in the scheme, which allows students to choose electives based on their interests and career aspirations.

The Board acknowledged that the revised structure effectively bridges the gap between theoretical knowledge and practical application, ensuring that students are better prepared for industry requirements. After detailed deliberation, the scheme and syllabus for the fifth to eighth semesters were approved.

Suggestions from Members

- **Dr. Bharathish A:** Suggested reducing redundant theoretical content and increasing application-oriented modules.
- **Principal:** Recommended integrating site visits and industrial case studies within core subjects.
- **Industry Experts (Dr. Ram Prabhu and Mr. Pradeep Kallur):** Recommended inclusion of AI and Industry 4.0 applications across core subjects.

Resolution No.: BoS/ME/2026/02 – Approved

3. Discussion on First Year (FY) Scheme for 2026 Batch

The First-Year scheme for the 2026 batch was presented with an emphasis on building a strong foundational base in engineering education. The scheme includes courses in Basic Sciences, Engineering Sciences, Humanities, and Skill Development, designed to create a holistic learning environment.

The Board discussed the importance of aligning the first-year curriculum with NEP 2020 guidelines, ensuring interdisciplinary exposure and early introduction to engineering concepts. The inclusion of courses that promote analytical thinking, problem-solving, and communication skills was appreciated. The members also emphasized that the first-year curriculum should act as a strong platform for advanced learning in subsequent semesters.

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The Board approved the First-Year scheme with the suggestion to continuously monitor its effectiveness and incorporate emerging trends where necessary.

Suggestions from Members

- **Principal:** Suggested introducing self-learning assignments and activity-based learning in the first year.
- **Dr. Bharathish A:** Recommended early exposure to engineering applications and mini projects.
- **Dr. Amarnath:** Suggested inclusion of programming and computational tools at an early stage.

Resolution No.: BoS/ME/2026/03 – Approved

4. Presentation and Discussion of Newly Introduced Courses

The Chairman presented a set of newly introduced courses aimed at addressing emerging industry trends and technological advancements. These included courses such as Smart Manufacturing, Digital Twin Technology, Artificial Intelligence in Manufacturing, Electric Vehicle Battery Technology and Thermal Management, Biomechanics, and Sustainable Product Design.

The members appreciated the inclusion of these courses, noting that they reflect current industry requirements and future technological directions. The introduction of interdisciplinary subjects like Biomechanics and AI in Manufacturing was particularly commended, as it broadens the scope of mechanical engineering education.

Industry experts emphasized that such courses would significantly enhance students' employability by equipping them with relevant skills in cutting-edge domains. The Board approved the inclusion of these courses in the curriculum.

Suggestions from Members

- **Dr. Bharathish:** Recommended strengthening Digital Twin and Simulation-based learning.
- **Principal:** Suggested ensuring practical demonstration and lab components for new courses.
- **Dr. Ram Prabhu, Industry Expert:** Emphasized integration of AI and IoT applications in mechanical engineering.
- **Mr. Suhas, Alumni Representative:** Suggested aligning courses with industry certifications and real-world applications.

Resolution No.: BoS/ME/2026/04 – Approved

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5. Presentation of Elective Course Options and Criteria for Selecting Electives

The elective course structure was presented in detail, with electives categorized into major domains such as Design, Thermal Engineering, Manufacturing, and Management. The Board discussed the importance of offering a diverse range of electives to cater to different student interests and career paths.

The criteria for selecting electives were clearly defined, including student demand, faculty expertise, availability of resources, and industry relevance. The increase in the number of elective options was appreciated, as it enhances flexibility and allows students to specialize in their areas of interest.

The Board recommended continuous review of elective offerings to ensure alignment with emerging technologies and industry needs. The elective structure and selection criteria were approved.

Suggestions from Members

- **Dr. Bharathish A:** Suggested including electives on Condition Monitoring and Vibrations.
- **Principal:** Recommended periodic revision of electives based on industry trends.
- **Mr. Pradeep Kallur:** Suggested electives related to advanced manufacturing and sustainability.

Resolution No.: BoS/ME/2026/05 – Approved

6. Review of Courses That Have Undergone Revision

The Chairman presented the list of courses that had undergone revision, including Material Science and Smart Materials, Composite Materials, and Mechatronics (with the inclusion of Autotronics). The revisions focused on incorporating modern technologies, improving practical exposure, and aligning the content with industry practices.

The Board appreciated the efforts taken to update the syllabus, particularly the integration of advanced tools and applications. It was noted that the revisions would enhance students' understanding and provide them with practical skills required in real-world scenarios.

The revised courses were approved, with a suggestion to periodically review all courses to maintain their relevance.

Suggestions from Members

- **Dr. Bharathish:** Recommended inclusion of **data acquisition and simulation tools**.
- **Principal:** Suggested increasing **lab components and demonstrations**.
- **Dean Academics:** Emphasized continuous **syllabus updation based on feedback**.

Resolution No.: BoS/ME/2026/06 – Approved

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7. Courses Addressing Employability, Entrepreneurship, and Skill Development

The Board reviewed courses designed to enhance employability, entrepreneurship, and skill development. Core courses such as Machine Design, Automation & Robotics, and Finite Element Methods were identified as critical for employability. Skill-based courses like MATLAB, Data Analytics, CATIA, and 3D Printing were also highlighted.

Entrepreneurship-oriented courses such as Engineering Economics, Project & Operations Management, and Supply Chain Management were discussed, emphasizing their role in developing business acumen among students.

The Board acknowledged that the curriculum effectively integrates technical knowledge with skill development and entrepreneurial thinking, thereby preparing students for diverse career opportunities.

Suggestions from Members

- **Dr. Ram Prabhu:** Suggested including industry case studies and problem-solving assignments.
- **Principal:** Recommended field visits and industrial exposure.
- **Dean Academics:** Suggested integration of interdisciplinary projects.

Resolution No.: BoS/ME/2026/07 – Approved

8. Discussion on Certificate/Diploma/Value-Added Programs

The Board discussed various certificate and value-added programs offered by the department, including programs in CNC Technology, Robotics, Automotive Technology, and simulation tools such as MATLAB and CFD. The collaboration with IMTMA for a design course was highlighted as a significant industry partnership.

The members emphasized the importance of industry certifications, such as Autodesk certification, in enhancing students' employability. It was suggested that value-added programs should be continuously updated based on industry requirements and stakeholder feedback.The Board approved the continuation and expansion of these programs.

Suggestions from Members

- **Dr. Bharathish:** Suggested introducing certification in Condition Monitoring and Vibrations.
- **Principal:** Recommended linking certifications with placement opportunities.
- **Mr. Pradeep Kallur:** Suggested collaboration with industry partners for certification programs.

Resolution No.: BoS/ME/2026/08 – Approved

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9. Courses Addressing Gender, Environment & Sustainability, Human Values, and Professional Ethics

The Board reviewed courses that address societal and ethical aspects, including Environmental Studies, Universal Human Values, Indian Constitution, Social Connect and Responsibility, and Green Energy Technology. These courses were recognized for promoting awareness of sustainability, ethics, and social responsibility among students.

The Board appreciated the integration of these themes into the curriculum and recommended further strengthening of sustainability-related content through projects and practical activities.

Suggestions from Members

- **Principal:** Suggested practical demonstrations of sustainability concepts (e.g., solar models).
- **Dr. Amarnath:** Recommended including carbon footprint analysis in projects.
- **Dr. Ram Prabhu:** Emphasized integration of ethics in core subjects.

Resolution No.: BoS/ME/2026/09 – Approved

10. Discussion on Stakeholder Feedback and Need Analysis

Feedback from students, alumni, industry experts, and faculty was presented and analyzed. Students emphasized the need for more hands-on learning and exposure to modern tools. Alumni and industry experts highlighted the importance of emerging technologies such as AI, EVs, and Data Analytics.

The Board noted that the curriculum revisions and new course introductions have effectively addressed these concerns. It was recommended that stakeholder feedback should continue to play a central role in curriculum development.

Suggestions from Members

- **Dr. Bharathish:** Suggested micro-labs and tabletop experiments.
- **Principal:** Recommended continuous feedback collection mechanisms.
- **Mr. Pradeep Kallur:** Emphasized industry readiness and skill transfer mechanisms.

Resolution No.: BoS/ME/2026/10 – Approved

11. Skill, MOOC & Value-Added Course Review

The integration of MOOCs, particularly NPTEL courses, was discussed as a key component.of the curriculum. The Board appreciated the initiative to make such courses mandatory, as they provide access to high-quality learning resources.

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Skill development courses and value-added programs were also reviewed, with an emphasis on enhancing practical skills and industry readiness. The Board recommended further expansion of these offerings.

Suggestions from Members

- **Dean Academics:** Suggested increasing MOOC-based credits.
- **Principal:** Recommended monitoring student performance in MOOCs.
- **Mr. Pradeep Kallur:** Suggested including industry-recognized certifications.

Resolution No.: BoS/ME/2026/11 – Approved

12. Vision, Mission, PEO & PSO Review

The Board reviewed the Vision, Mission, Program Educational Objectives (PEOs), and Program Specific Outcomes (PSOs) of the department. It was observed that these are well-aligned with institutional goals, industry requirements, and societal needs.

The Board expressed satisfaction with the clarity and relevance of these statements and approved them without any modifications.

Suggestions from Members

- **Principal:** Suggested periodic review based on stakeholder feedback.
- **Mr. Pradeep Kallur:** Recommended aligning PEOs with future industry demands.

Resolution No.: BoS/ME/2026/12 – Approved

13. CO–PO Attainment Review and Program Articulation Matrix

The CO–PO attainment analysis for the outgoing batch was presented. While several Program Outcomes achieved the target levels, certain POs such as sustainability, lifelong learning, and design skills showed gaps.

The Board discussed strategies to improve attainment levels, including the introduction of SDG-based learning, strengthening laboratory and design components, and enhancing communication skills through structured activities.

Suggestions from Members

- **Dr. Bharathish:** Suggested design-based and simulation-based learning.
- **Principal:** Recommended improving communication and presentation skills.
- **Mr. Pradeep kallur:** Suggested strengthening project-based learning.

Resolution No.: BoS/ME/2026/13 – Approved

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14. Curriculum Design & Comprehensive Mapping

The curriculum design was presented with a total credit structure of 160 credits, ensuring a balanced distribution across various components. The CO–PO mapping framework was also discussed in detail.

The Board appreciated the systematic approach to curriculum design and its alignment with OBE principles. The integration of interdisciplinary courses and emerging technologies was recognized as a key strength.

Suggestions from Members

- **Dr. Bharathish:** Recommended integration of modern tools across courses.
- **Principal:** Suggested ensuring clear CO-PO mapping visibility.

Resolution No.: BoS/ME/2026/14 – Approved

15. SDG Mapping and WK Mapping

The Board reviewed the integration of Sustainable Development Goals (SDGs) and Washington Accord Knowledge (WK) profiles into the curriculum. It was noted that these mappings ensure global relevance and prepare students to address real-world challenges.

The Board recommended further strengthening of SDG-based projects and activities.

Suggestions from Members

- **Industry Expert:** Suggested including real-world sustainability projects.
- **Dean Academics:** Recommended strengthening SDG awareness among students.

Resolution No.: BoS/ME/2026/15 – Approved

16. Internship & Industry Integration, Research & Capstone

The internship structure was discussed, highlighting the mandatory internship in the final semester. Two types of internships were identified: in-house/CoE internships and research internships under funded projects.The Board emphasized the importance of industry collaboration and real-world problem-solving through capstone projects. The integration of AI tools in internships and project documentation was also discussed.

Suggestions from Members

- **Principal:** Suggested tracking internship outcomes.
- **Industry Expert:** Recommended industry-sponsored projects.
- **Dr. Bharathish:** Suggested integrating AI tools in project documentation.

Resolution No.: BoS/ME/2026/16 – Approved

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17. Feedback and Suggestions from Faculty and Experts

Dr. Bharathish, VTU Nominee (RV College of Engineering), recommended reducing conventional content and making the curriculum more application oriented. He suggested introducing courses on Condition Monitoring and Vibrations, procuring equipment such as dynamometers for research, and promoting micro-labs and simulation-based teaching to enhance practical learning.

The Principal, Dr. H.B. Balakrishna, emphasized incorporating self-learning components, making industrial/site visits mandatory, and strengthening practical demonstrations in green energy technologies to improve experiential learning.

Dr. T. Ram Prabhu, Industry Expert (DRDO, Bengaluru), appreciated the overall curriculum structure and suggested strengthening the integration of Artificial Intelligence (AI) within mechanical engineering courses to improve industry readiness.

The Dean Academics, Dr. Vijay T, highlighted the need for interdisciplinary learning and emphasized shifting towards a more skill-based and application-oriented curriculum.

Dr. Amarnath Muniyappa, Academic Council Nominee (External Expert, IIITDM Jabalpur), suggested promoting research-oriented learning, including mini-projects and case studies, and encouraged the use of computational and open-source tools. He also recommended enhancing industry–academia interaction and focusing on innovation and product development.

Mr. Suhas Sathyakiran, Alumnus (CSTEP, Bengaluru), suggested strengthening content in advanced and smart materials, especially related to EVs and energy systems, and emphasized application-oriented material selection and industry-relevant projects.

Mr. Pradeep Kallur, Industry Expert (Medini technologies) suggested to procure advanced equipment such as FFT analyzers, accelerometers, and fiber laser machines, and adopting tools like MATLAB, Simulink, and FEM software to strengthen practical and computational skills.

The Board acknowledged all suggestions and recommended their phased implementation.

Resolution No.: BoS/ME/2026/17 – Noted and Approved

CONCLUSION

The Chairman expressed his sincere gratitude to all the members for their valuable suggestions and active participation in the meeting. He emphasized the importance of continuous improvement in the curriculum, ensuring strong alignment with industry requirements, and maintaining a clear focus on enhancing students' skills and fostering innovation.
The meeting concluded with a vote of thanks.

14/4/26

Chairman, BoS & HoD
Dr. Bharat Vinjamuri

Head of Department
Mechanical Engineering
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Head of Department
Mechanical Engineering
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Proceedings of

BOARD of STUDIES

Program

Master of Business Administration

AY 2025 - 26

28th March 2026

BoS Chairman

Dean, MBA

Associate Dean, Academics

Principal

Head of the Department
Dept. of Management Studies (MBA)
Global Academy of Technology
Rajarajeshwari Nagar, Bengaluru - 560 098

Professor & Associate Dean Academics
Global Academy of Technology
Bengaluru - 560098.

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1. INTRODUCTION & OBJECTIVES

Purpose of the Meeting:

1. Review of Minutes and Plan of Action Framework suggested during previous BOS Meeting.
2. Seek approval for 2026 scheme of teaching and evaluation pertaining to first year (Effective from AY 2026-27 onward).
3. Seek approval for 2026 syllabus pertaining to first year.
4. Seek approval for value added programs.
5. Discussion and Review of Continuous Internal Evaluation Components of first year courses.
6. Reaffirmed credit structure of MBA Programme.

2. CONSTITUTION OF BoS

#	Name	Designation	Affiliation	Role in BOS
1	Dr. Sanjeev Kumar Thalari	Professor & HOD	Global Academy of Technology, Dept. of Management Studies	Chairman
2	Dr. H B Balakrishna	Principal	Global Academy of Technology	Invited Member
3	Dr. Vijay T	Associate Dean	Global Academy of Technology	Invited Member
4	Dr. Binu P Paul	Dean, MBA	Global Academy of Technology	Invited Member
5	Dr. Tanuja Agarwala	Professor	Faculty of Management Studies, University of Delhi, New Delhi	VTU Nominee
6	Dr. Magesh R	Professor & HOD	Anna University	Member
7	Dr. Roopam Goswami	Vice President	JP Morgon, Banglaore	External Member, Industry
8	Mrs. Lalitha N	Executive Director	EY, Bangalore	Invited Member, Professor of Practice
9	Mr. Shinto Joseph	Director – South East Asia & ANZ Operations	LDRA Ltd. Bangalore	Invited Member Industry
10	Dr. Buvaneswari P	Professor	Global Academy of Technology	Convener
11	Dr. Roopa K	Senior Assoc. Professor	Global Academy of Technology	Member
12	Dr. Nanthini M	Senior Asst. Professor	Global Academy of Technology	Member

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3. CONFIRMATION OF PREVIOUS MINUTES

Statement:

"The Minutes of the previous BoS meeting held on 10/06/2023 were circulated and confirmed."

Resolution No.: GAT/MBA/2024-25/BOS/MOM/21.11.2024.

4. ACTION TAKEN REPORT (ATR)

Sl No	Previous Discussion	Status (Completed/ Partial/Pending)	Remarks
01	Curriculum revisions	Completed	Approved by BOS
02	Course additions	Completed	
03	Internship policy updates	Completed	
04	Value Added Programme	Completed	
05	CIE framework	Completed	

5. STAKEHOLDER FEEDBACK ANALYSIS

5.1. Feedback

Sources	**Remark**
Students	The present curriculum needs to be updated to reflect current industry practices.
Alumni	Some courses should be revised to include new technologies and techniques or business trends.
Industry	The balance between theoretical and practical components needs improvement.
Faculty	The burden of the courses are more that leads to failure of research.
Affiliated Colleges	All subjects to be mapped with AI application

5.2. Need Analysis

Level	**Remark**
Local	Address the skill gaps and encourage contextual learning.
Regional	Align MBA curriculum with industrial requirements in order to bridge the gap between academia and industry.
National	Curriculum focuses on implementation of outcome-based education and standardised the credit systems.
Global	Integration of AI and Business analytics

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5.3. Summary Table

Agenda

1. **Review of Minutes and Plan of Action Framework suggested during previous BOS Meeting.**
2. **Seek approval for 2026 scheme of teaching and evaluation pertaining to first year (Effective from AY 2026-27 onward).**
3. **Seek approval for 2026 syllabus pertaining to first year.**
4. **Seek approval for value added programs.**
5. **Discussion and Review of Continuous Internal Evaluation Components of first year courses.**
6. **Ratification of the scheme & syllabus of 2025-26.**

Agenda #	Key Suggestions	Proposed Action
1	Review of Minutes and Plan of Action Framework suggested during previous BOS Meeting.	
	The following suggestions made by the previous BOS - Validate authenticity and quality of value-added certificate programs, - Revision of elective selection process, inclusion of business ethics and corporate governance. - Explore a separate track on Technology Management / Digital transformation	Based on the previous suggestions, the following are the proposed action taken - Certificate course on Lingua skill has been introduced. - To include the business, ethics, and corporate governance, the department has introduced the course on Legal aspects of business. - The department has introduced Digital Transformation and Innovation based on the suggestions made by the BoS members in the meeting.
2	**Seek approval for 2026 scheme of teaching and evaluation pertaining to first year (Effective from AY 2026-27 onward**	
	Explained MBA 2026 scheme structure including professional core courses, professional skill development courses, academic enhancement courses, professional elective courses, internship and capstone project with total 100 credits.	Adopt and continue implementation of structured credit distribution across 4 semesters.
3	**Seek approval for 2026 syllabus pertaining to first year.**	

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	Introduced 2026 syllabus with outcome-based framework (Knowledge, Skills, Attitude);	Approve and implement revised 2026 scheme for AY 2026-27 with structured course framework and the proposed structure is valid for 2 years.
4	**Seek approval for value added programs**	
	Proposed multiple value-added certification programs (Analytics, Digital Marketing, EY Taxation, HR Analytics, Supply Chain, etc.) with defined learning outcomes.	Approve and integrate value-added programs into curriculum to enhance employability and industry readiness.
5	**Discussion and Review of Continuous Internal Evaluation Components of first year courses.**	
	Reviewed Continuous Internal Evaluation (CIE) structure of 50 marks includes tests, assignment and other augmented components and semester end examination of 50 marks.	Approve and implement revised CIE structure with rationalized internal assessment components.
6	**Ratification of the scheme & syllabus of 2025-26**	
	Ratification of the scheme & syllabus of 2025-26.	Sought the ratification of the scheme & Syllabus of 2025-26

6. Vision, Mission, PEO & PSO Review

6.1. Alignment with institutional vision and Industry Trends

The Department Vision is closely aligned with the Institution Vision, as both emphasize quality, excellence, and societal relevance. The alignment can be explained as follows:

6.1.1. Focus on Quality Education

The institute aims to *"impart quality education in technology and management"*, while the department aspires to be a *"centre of excellence in management."*

The department contributes directly to the institutional goal by ensuring high standards in management education, thereby strengthening the overall quality mandate of the institution.

6.1.2. Commitment to Excellence

The institutional vision highlights becoming a *"premier institution,"* which implies excellence across all disciplines.

The department's vision of becoming a *"centre of excellence"* supports this by striving for superior teaching, research, and industry engagement within the management domain.

6.1.3. Addressing Changing Needs

The institute focuses on meeting the evolving needs of *people and industry.*

The department aligns with this by contributing to *business and societal development*, which inherently includes sustainable practices, ethical decision-making, and responsiveness to dynamic industry trends.

6.1.4. Contribution to Society and Industry

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Both visions emphasize impact beyond academics:

The institute mentions *people, planet, and industry*, reflecting a holistic approach.

The department explicitly focuses on *business and society*, ensuring that management education produces responsible leaders who can address economic and social challenges.

6.1.5. Integrated Institutional Growth

The department acts as a key pillar in achieving the broader institutional vision:

By excelling in management education, the department enhances the institute's reputation and helps position it as a premier institution.

6.2. Alignment with Institute Mission and Industry Trends

6.2.1. Continuous Learning through Quality Teaching–Learning

The institute emphasizes creating a conducive environment for continuous learning through quality teaching supported by modern infrastructure.

- The department supports this through value-added and experiential programs, which enhance practical knowledge and intellectual development.
- Experiential learning (projects, case studies, and internships) strengthens the teaching–learning process envisioned by the institution.

6.2.2. Promotion of Research and Industry Collaboration

The institutional mission focuses on promoting research and innovation through collaboration with industry.

- The department's emphasis on an entrepreneurial, agile, flexible, and collaborative culture directly contributes to innovation and industry interaction.

6.2.3. Holistic Education, Ethics, and Environmental Consciousness

The institute aims to inculcate ethical values and environmental consciousness through holistic education programs.

- The department aligns with this by nurturing socially responsible change-maker professionals.
- This reflects a commitment to ethics, sustainability, and responsible business practices.

6.2.4. Professional Development and Employability

While the institution focuses broadly on learning and development,

- The department specifically ensures *intellectual and professional development* and *continuous employability*.

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- This strengthens the institutional goal by producing competent, industry-ready graduates.

6.2.5. Collaborative and Adaptive Culture

The institutional mission encourages collaboration (especially with industry).

- The department reinforces this through a *collaborative and flexible culture*, enabling adaptability to changing business environments and fostering teamwork.

The Vision, Mission, PEO and PSOs were approved by BoS members.

7. CO – PO Attainment Review

7.1. Outgoing Batch Analysis

PO	Target	Achieved	Gap	Action Plan
1	70%	72.6	Nil	NA
2	70%	72.8	Nil	
3	70%	73.1	Nil	
4	70%	73.1	Nil	
5	70%	73.4	Nil	
6	70%	73.7	Nil	
7	70%	73.9	Nil	

8. Curriculum Design & Comprehensive Mapping

8.1 Credit Structure

Semester	Framework of Courses	No. of courses	No. of credits/course	Total no. of credits
I	Professional Core Courses	06	04	24
	Professional Skill Development Courses	01	01	01
	Academic Enhancement Course	01	NCMC	00
	(A) Total no. of credits in the Semester – I			**25**
II	Professional Core Courses	06	04	24
	Professional Skill Development Courses	01	01	01
	Academic Enhancement Course	01	NCMC	01
	(B) Total no. of credits in the Semester – II			**25**
III	Professional Core Courses	02	03	06
	Professional Elective Courses	04	03	12
	Internship	01	06	06
	Professional Skill Development	01	01	01

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	(C)Total no. of Credits in the Semester - III			**25**
IV	Professional Core Courses	02	03	06
	Professional Elective Courses	04	03	12
	Internship	01	06	06
	Professional Skill Development	01	01	01
	(D)Total no. of Credits in the Semester - IV			**25**
	Total no. of credits in the MBA Programme (A+B+C+D)			**100**

8.2. Mapping Framework

8.2.1. PO / PSO Mapping Table

POs / PSOs	Courses
PO1 (Management knowledge application)	Management and Organisational Behaviour, Managerial Economics, Marketing Management, Strategic Management, Indian Business Environment
PO2 (Analytical & critical thinking)	Statistics for Managers, Business Analytics & Intelligence, Operation Research, Financial Management, Big Data Analytics, Research Methodology
PO3 (Leadership & attitude)	Human Resource Management, Entrepreneurship Development, Organisational Behaviour, Mini Project, Societal Project
PO4 (Global, ethical, legal understanding)	Research Methodology & IPR, Sustainable Development Goals, Indian Business Environment, Business Communication, Legal Aspects (related course)
PO5 (Teamwork & leadership execution)	Business Communication, HRM, Mini Project, Internship, Capstone Project
PO6 (Employability & lifelong learning)	Skill Development Courses (ADMA), Internship, Value-added Programs (NPTEL, NCFM), Financial Reporting Analysis
PO7 (Innovation & entrepreneurship)	Entrepreneurship Development, Innovation & Design Thinking, Startup Management, Business Plan & Venture Creation

PSO Mapping

PSOs	**Courses**
PSO1 (Leadership & administration)	Strategic Management, HRM, Organizational Behaviour, Capstone Project, Internship
PSO2 (Professional & entrepreneurial skills)	Financial Management, Marketing Management, Business Analytics, Entrepreneurship Development, Digital Marketing, ERP

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PSO3 (Social, legal & ethical responsibility)	Sustainable Development Goals, Indian Business Environment, Research Methodology & IPR, Societal Project

8.2.2. SDG Mapping Table

Course	Mapped SDGs
Management & Organizational Behaviour	SDG 3, 5, 8
Managerial Economics	SDG 7, 8, 9, 10, 11
Statistics for Managers	SDG 4, 9
Financial Reporting Analysis	SDG 8, 12
Business Communication	SDG 4
Marketing Management	SDG 8, 12
HRM	SDG 3, 5, 8
Financial Management	SDG 1, 8
Business Analytics	SDG 4, 9
Operations Research	SDG 9, 12
Research Methodology & IPR	SDG 4
Entrepreneurship Development	SDG 1, 8, 9
Strategic Management	SDG 8, 9
Sustainable Development Goals (Course)	SDG 1–17 (Holistic coverage)
Innovation & Design Thinking	SDG 9
Indian Business Environment	SDG 8, 10
Internship	SDG 8
Capstone Project	SDG 9
Societal Project	SDG 1, 10, 11

8.3. Percentage Based Reporting

% of courses revised	23%
% skill-based courses	15%
% courses with apprenticeship/fieldwork	50%
% online credited courses (SWAYAM, NPTEL)	0%
% project-based courses	50%

9. New Course Proposals

9.1. Organisation Structure Training

1. Rationale

Organisational Structure Training is designed to introduce students to the fundamental concepts, principles, and practices of structuring organizations effectively. The course focuses on understanding how different organisational structures—such as functional, divisional, matrix, and team-based structures—are designed and implemented to achieve business objectives.

2. Course Objectives

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a. Understand the concept and importance of organisational structure in business.
b. Learn different types of organisational structures and work flow model used in organizations.
c. Analyze how structure affects communication, decision-making, and performance.
d. Identify roles, responsibilities, and authority relationships within organizations.
e. Develop the ability to design simple organisational structures for business situations.

3. Course Outcomes

Course Outcome	Description	Mapped POs/PSOs	Blooms Taxonomy Level
CO1	Explain the basic concepts of organisational structure and its significance.	PO3, PO2, PSO1, PSO2	L2
CO2	Identify and differentiate between various types of organisational structures.	PO1, PO2, PSO1, PSO2	L3
CO3	Understand the relationship between organisational structure and business efficiency.	PO2, PO3, PO4, PO5, PSO1, PSO2, PSO3	L4
CO4	Apply knowledge to analyze real-world organisational structures.	PO1, PO2, PO3, PO4, PO5, PSO1, PSO2, PSO3	L4
CO5	Design a suitable organisation structure for business.	All POs and PSOs	L6

4. Skill Alignment

- Communication skill
- Decision Making skill
- Leadership skill
- Team working sills
- Negotiation skill

5. Assessment Scheme

Continuous Internal Assessment (CIA) = 100 marks
i. CIA 1 – 50 Marks
ii. CIA 2 – 50 Marks

6. Industry Relevance

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It emphasizes the relationship between organisational structure and key managerial aspects such as communication, authority, responsibility, coordination, and decision-making. Students will explore how organisational design influences efficiency, flexibility, and overall performance in both traditional and modern business environments.

7. **SDG mapping**

SDG 8 & 9 – Decent Work & Economic growth, Industry, Innovation & Infrastructure

9.2. Societal Project

1. **Rationale**

- A societal project is an initiative designed to address social issues and improve the well-being of individuals or communities.
- These projects focus on solving real-life problems such as poverty, education gaps, health care access, environmental sustainability, and social inequality.
- They involve identifying a community need, planning solutions, implementing activities, and evaluating the impact.
- The main objective of a societal project is to create positive social change.

2. **Course objectives**

- To understand social issues and community needs.
- To apply management knowledge in real-life societal contexts.
- To develop analytical and problem-solving skills for social challenges.
- To promote ethical values and social responsibility.
- To enhance teamwork, leadership and communication skills.

3. **Outcomes**

Course Outcome	Description	Mapped POs/PSOs	Blooms Taxonomy Level
CO1	Explain key societal issues and their impact on communities	PO1,PO2,PO4 / PSO1,2,3	Understand
CO2	Identify and analyze problems faced by society using basic tools	PO1, PO2, PO4, PO5 / PSO1, PSO2, PSO3	Analyze
CO3	Apply management concepts to propose solutions for social issues	PO1,PO2,PO3,PO4,PO5 / PSO1, PSO2, PSO3	Apply

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CO4	Evaluate the effectiveness of solutions in real-world contexts	PO1,PO2,PO3,PO4,PO5,PO6,PO7 / PSO1, PSO2, PSO3	Evaluate
CO5	Develop and present a project report with feasible recommendations	PO1,PO2,PO3,PO4,PO5,PO6,PO7 / PSO1, PSO2, PSO3	Create

4. **Skill Alignment**

- Inquiry and Enquiry Skills
- Communication skill
- Presentation skill
- Leadership skill
- Teamwork
- Negotiation skill

5. **Assessment Scheme**

Evaluation Methodology

Continuous Internal Assessment (CIA) = 100 marks

i. CIA 1 – 50 Marks
ii. CIA 2 – 50 Marks

6. **Industry Relevance**

- Societal projects provide MBA students with strong industry relevance by building real-world skills in sustainability, corporate social responsibility (CSR), and stakeholder management.
- They connect theory with practical and ethical decision making, enhancing employability through demonstrated leadership, empathy, and the ability to solve complex social and environmental challenges..

7. **SDG Mapping**

- All the below SDGs can be mapped to societal projects.

SDG	Theme
SDG – 1	No poverty
SDG – 2	Zero Hunger
SDG – 3	Good Health
SDG – 4	Quality Education
SDG – 5	Gender Equality
SDG – 6	Clean water
SDG - 7	Affordable and clean Energy

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SDG – 8	Decent work & Economic growth
SDG – 9	Industry, Innovation & Infrastructure
SDG – 10	Reduced inequalities
SDG - 11	Sustainable cities & communities
SDG – 12	Responsible consumption
SDG - 13	Climate action
SDG - 14	Life below water

9.3. Academic Enhancement Courses

- Organisation Structure Training and the Societal Project will be treated as academic enhancement courses and will not carry any academic credits.

10. New Electives Proposal

Proposed New Elective – Entrepreneurship and Small Business

10.1. Rationale

The dynamic business environment, rapid technological changes, and increasing emphasis on self-employment have made entrepreneurship a critical competency for management graduates. This elective is designed to:

- Encourage entrepreneurial thinking among students.
- Promote innovation and new venture creation.
- Support the development of small businesses, which are key drivers of economic growth and employment.
- Equip students with the ability to identify business opportunities and manage startups effectively.

10.2. Elective objectives:

The proposed elective aims to:

- Develop an understanding of entrepreneurial concepts, processes, and challenges.
- Equip students with skills to identify and evaluate business opportunities.
- Enable preparation of business plans and startup strategies.
- Foster innovation, creativity, and risk-taking ability.
- Provide knowledge on managing and scaling small businesses.

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10.3. Skill Alignment

- Entrepreneurial skill
- Innovation and Creativity
- Analytical skill
- Managerial skill
- Interpersonal skill
- Technological skill and
- Problem solving skill.

10.4. Assessment Scheme – Will be presented along with the syllabus presentation.

10.5. Industry Relevance

- Startups and MSMEs contribute significantly to employment and GDP.
- There is increasing demand for intrapreneurs within organizations.
- Aligns with initiatives like Startup India and Make in India.
- Encourages collaboration with incubators, accelerators, and industry mentors.
- Prepares students for roles such as entrepreneur, business consultant, startup manager, and innovation strategist.

10.6. SDG Mapping

SDG	Relevance to the Course
SDG 4: Quality Education	Promotes entrepreneurial learning and skill development
SDG 8: Decent Work and Economic Growth	Encourages job creation through startups and small businesses
SDG 9: Industry, Innovation and Infrastructure	Supports innovation and development of sustainable enterprises
SDG 10: Reduced Inequalities	Enables inclusive entrepreneurship and opportunities for diverse groups
SDG 12: Responsible Consumption and Production	Encourages sustainable business practices
SDG 17: Partnerships for the Goals	Promotes collaboration with industry, incubators, and stakeholders

The member of the BOS have approved the new elective for the batch 2026 – 27 and 2027 – 28.

11. Value Added Review

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The following value-added certificate programs were submitted for the Board's approval:

Semester – I

- Fundamental Analytics for Functional Decision - making

Semester – II

- Advanced Analytics for functional decision-making.
- Certificate courses on Digital Marketing and Block Chain Technology

Semester – III

- EY Training on International Taxation – 1
- Certification on Digital Marketing
- Business Plan & Pitch Deck Preparation
- Certification on IBM Business Analytics
- Certification on Retail Supply Chain Management.
- Certification on HR Analytics

Semester – IV

- EY Training on International Taxation – 2
- Certification on Advanced Digital Marketing and Block Chain
- Certification on Advanced HR Analytics
- Big Data Analytics using Python & R
- Certification on Logistics & Route Optimisation
- Financial Modelling for Startups

Further, the BoS Chairman, Dr. Sanjeev Kumar Thalari, highlighted the outcomes from the Value-Added Courses.

1. **Fundamental Analytics for Functional Decision making:** Students will be able to apply fundamental analytics tools and data interpretation techniques to make effective functional decisions across key business areas.
2. **NCFM – IAPM:** Ability to evaluate investment avenues and build optimized portfolios using financial analysis techniques.
3. **Advanced Analytics for Functional Decision making:** Ability to use advanced analytics and predictive models for effective functional decision-making.
4. **Training on International Taxation by EY:** Ability to understand global taxation principles and apply tax strategies in international business contexts.
5. **Certification on Digital Marketing:** Ability to design and implement digital marketing strategies using online platforms and analytics tools.
6. **Certification on Business Plan and Pitch Deck Preparation:** Ability to develop structured business plans and compelling pitch decks for entrepreneurial and investor presentations.
7. **Certification on IBM Business Analytics:** Ability to use business analytics tools for data – driven problem – solving and managerial decision – making.

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8. **Certification on Retail Supply Chain Management:** Ability to manage retail operations and optimize supply chain processes for improved customer value.
9. **Certification on HR Analytics:** Ability to use people analytics for evidence based HR decision-making, and workforce optimization.
10. **Training on International Taxation by EY – Series 2:** Ability to apply advanced international taxation concepts in cross-border business decisions and compliance.
11. **Certification on Advanced Digital Marketing & Block chain:** Ability to leverage advanced digital marketing strategies and blockchain technology applications for business innovation.
12. **Big Data Analytics using Python & R:** Ability to analyse large datasets using Python and R for predictive and strategic business insights.
13. Logistics Analytics and Route Optimization Certification: Ability to build financial models for startup valuation, forecasting, and investment planning.
14. **Advanced HR Analytics Certification:** Ability to apply advanced workforce analytics for strategic talent and organizational decisions.

The BoS members have approved the above proposed value-added courses.

12. Internship & Industry Integration

The Department of MBA proposed the following project based learning which has divided into 4 semesters.

- % of Students Completing – 100%
- Industry co-teaching model
    - PoP
    - Guest Lecture
- **Assistant PoP / Associate PoP / PoP Inclusion** – Yes

13. Research & Capstone

Semester – IV: Capstone Project

- Submitted Capstone Project will be published
- Capstone Evaluation Rubric

Total Marks = 150

a. Continuous Internal Evaluation (CIA) Marks = 50
b. Semester End Examination (SEE) Marks = 100*

*Semester End Examination will be conducted for 100 marks

The BoS members have approved the above proposed.

14. BoS Approvals

Rubric Approval

- Discussion and Review of Continuous Internal Assessment Components of first year courses.
    - a) Continuous Internal Assessment (CIA) = 50 marks
    - b) Semester End Examination (SEE) = 50 marks

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Total = 100 marks

Sl. No.	Components			Marks
1	Internal Assessment Test (Rationalized to 25 Marks)	Test 1	Test 2	25
		50	50	
2	Assignments 1 & 2			10
3	Faculty Choice			10
4	Faculty Choice			5

List of Identified Continuous Internal Evaluation Components

1. Case study
2. Competitions Winning
3. Debates
4. Group Discussions
5. Mini Projects
6. Societal Projects
7. Oral Test
8. Quiz
9. Open book exam
10. Seminars
11. Current Affairs Review
12. Skill Development Activities
13. Presentations
14. Gamification
15. Simulation
16. Surprise Test
17. Workbook
18. MOOCs
19. Value Added Programs
20. Upskilling Programs
21. Field Visits
22. Industrial Visits
23. Club Activities
24. Class Participation
25. Business Model Canvas & Presentation
26. Lab Record (Practical Papers)
27. Viva
28. Outreach Programs
29. External Event Participation
30. Publications

The BOS member have reviewed and approved the rubrics for Continuous Internal Assessment.

15. Concluding Remarks

1. Concluding Remarks by Dr. Tanuja Agarwala, VTU Nominee

Dr. Tanuja Agarwala initiated the review process by appreciating the process adopted by the Department in constructing a robust curriculum and rendered the following suggestions:

a. Although a sizable number of value-added courses are offered, the load in the program related courses may place little stress on the students, or the seriousness among students taking these courses. So recommended to reduce the number of courses in third and fourth semester.

b. Offer the value-added courses on a need basis and spread it throughout the program duration, which will reduce the burden on the students.

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c. For selection of elective courses, instead of offering fundamental group and augmented group, which perhaps forces the students to select from the limited options available in fundamental group and augmented group, a combined option can be given to enable the students to exercise their choices.

d. Suggested to rename a course on "Management and Organizational Behaviour" as a "Management Concepts and Organisational Behaviour.

e. **Finally, the member recommended for approval of** the full scheme of teaching and evaluation of I & II year & the Syllabus, value-added courses and CIE framework of first year (I & II Semester) for the Batch 2026-27 & 2027-28.

2. Concluding Remarks by Mr. Roopam Goswami, Member, Industry

Mr. Roopam Goswami extended heartfelt appreciation for the well thought out and well-structured curriculum presented by the Chairman, BoS and submitted the following suggestions:

a. Profusely appreciated the inclusion of sector specific, technology oriented courses in the electives. He elaborated on how Artificial Intelligence (AI) in our country is scaling up the operations of various industrial organizations.
b. Suggested including a separate track on Technology Management/Digital Transformation and incorporating cutting-edge courses to create a competitive advantage for the program.
c. He expressed the strong competition between CA and MBA candidates. To compete with CA counterparts, MBA graduates should develop the following skills:

- Foundation Microsoft Excel courses
- Advanced Microsoft Excel courses

d. He also highlighted that many finance elective students have opportunities in banking operations. Hence, students are expected to develop competencies in wealth management roles.
e. Finally, he concluded that the technical competencies of students are crucial to compete in the present competitive world.
f. **Finally, the member recommended for approval of** the full scheme of teaching and evaluation of I & II year & the Syllabus, value-added courses and CIE framework of first year (I & II Semester) for the Batch 2026-27 & 2027-28.

3. Concluding Remarks by Dr. Magesh R, Member, Academia

a. The member attended online, witnessed the presentation for few minutes, and left the meeting due to other preoccupied schedules.
b. BoS chairman will send the presentation highlights to the member online and will get the reviews.

4. Concluding Remarks by Dr. H B Balakrishna, Principal, Invited Member, GAT

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a. The member suggested that use cases on scenario based which are available online offered by IIT and other institutions of national importance.
b. The member suggested to assess based on impact analysis in view of
    i. Placement
    ii. Higher studies
    iii. Research perspectives and
    iv. Entrepreneurship perspectives.
c. The member further highlighted that taking few sustainable development goals and what way that course can advocate the students in terms of employment.
d. He finally suggested that the introduction of Artificial Intelligence as a value-added course or bridge course brings the strong connection between academia and industry to encourage the employability rate of the students.
e. **Finally, the member recommended for approval of** the full scheme of teaching and evaluation of I & II year & the Syllabus, value-added courses and CIE framework of first year (I & II Semester) for the Batch 2026-27 & 2027-28.

5. Concluding Remarks by Mr. Shinto Joseph, Invited Member, Industry

Dr. Sanjeev Kumar Thalari, Chairman, BoS expressed gratitude to Mr. Shinto Joseph for his valuable contribution to the meeting and requested to share his suggestions on the scheme of teaching and evaluation, syllabus and other course related deliverables.

b. The member appreciated the futuristic approach adopted in designing the curriculum and the robust courses introduced in the program. He recommended and approved the full (I year & II year) scheme of teaching and evaluation, syllabus, and value-added courses for the Batch 2026–28, as well as the II-year scheme of teaching and evaluation for the Batch 2026–28.
c. The member recommended introducing tools and techniques for teaching through gamification in education to improve students' understanding levels.
d. The member also highlighted the importance of strong industry interaction and alumni involvement to achieve real-world applications in management education.
e. The member suggested designing induction programs in such a way that they expose students to ground level realities from the beginning, enabling them to understand current situations through data collection and research.
f. Suggested to focus more on encouraging start-ups.
g. The member also suggested tying up with incubation canters to develop entrepreneurial mindsets among students and provide them with opportunities to become first-generation entrepreneurs in their families.
h. The member finally suggested that the courses should be more independent and practical rather than purely theoretical in perspective.
i. **Finally, the member recommended for approval of** the full scheme of teaching and evaluation of I & II year & the Syllabus, value-added courses and CIE framework of first year (I & II Semester) for the Batch 2026-27 & 2027-28.

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6. **Concluding Remarks by Mrs. Lalitha, Invited Member, Professor of Practice,**

Dr. Sanjeev Kumar Thalari extended gratitude and invited Mrs. Lalitha to share her views on the proposed scheme of teaching and evaluation, syllabus and other course related deliverables.

a. Thanked all the members of the meeting for the excellent preparation of the course curriculum.
b. Suggested the inclusion of a few courses on Artificial Intelligence and Generative AI.
c. The member also highlighted that UG graduates tend to join corporates for brand value. However, this scenario is different for PG graduates, as they focus more on retention, and their attrition rate is very low because they are career oriented.
d. Under Pan-India operations, around 1,000 companies are planning to establish globally. Out of these, most organizations are focusing on Silicon Valley like cities such as Bangalore, Karnataka. Hence, she suggested that mini projects are necessary and should be practical-oriented rather than theoretical.
e. Finally, The member recommended and approved the full (I year & II year) scheme of teaching and evaluation, syllabus, and value-added courses for the Batch 2026–28, as well as the II-year scheme of teaching and evaluation for the same batch.
f. **Finally, the member recommended for approval of** the full scheme of teaching and evaluation of I & II year & the Syllabus, value-added courses and CIE framework of first year (I & II Semester) for the Batch 2026-27 & 2027-28.

At the end, all the members present both online and offline expressed their appreciation for the BoS presentation and appreciated the systematic process adopted to achieve the intended educational outcomes. The structured approach, clarity in objectives, and alignment with outcome-based education were well received, reflecting the institution's commitment to academic excellence and continuous improvement.

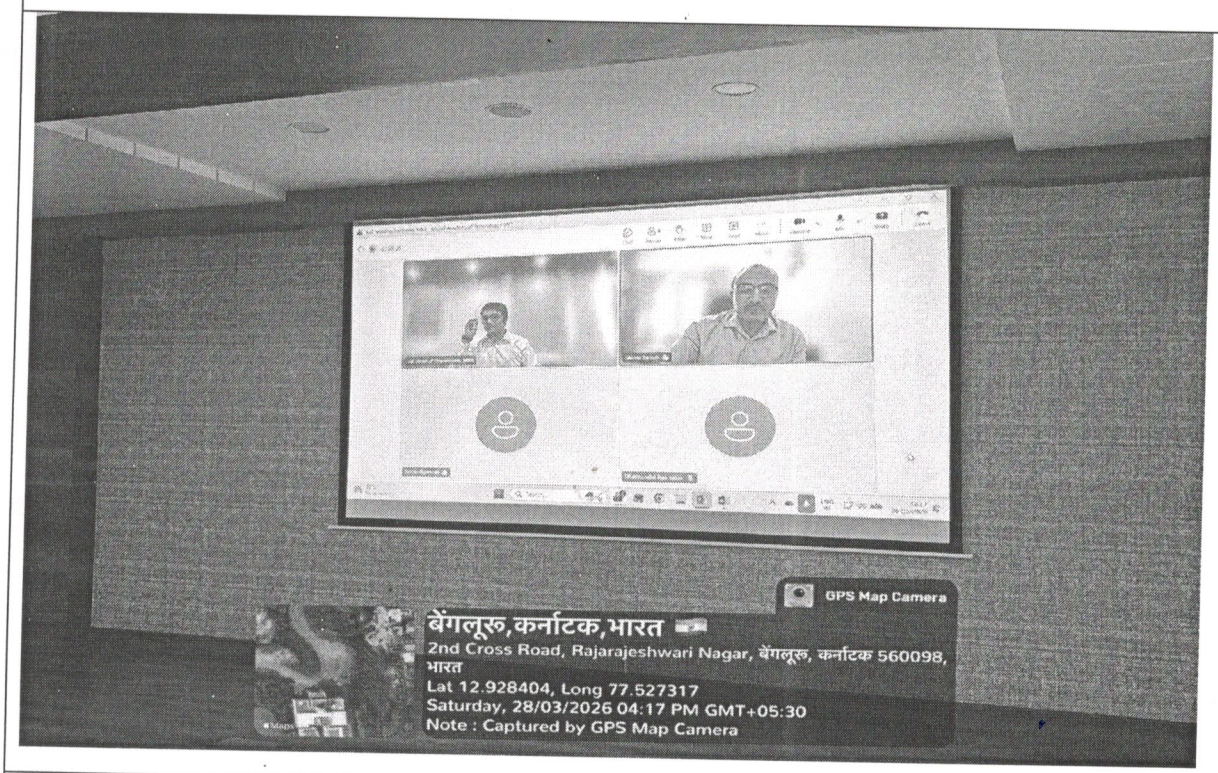
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Normal/Geo Tagged Photos



Mr. Roopam



Online Discussion – Dr. Shinto Joseph

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Group Photo of Members, BoS and Faculty Attended



Members - BoS

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GLOBAL ACADEMY OF TECHNOLOGY

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Approved by AICTE

DEPARTMENT OF MANAGEMENT STUDIES

BOARD OF STUDIES

Date Of Meeting: March 28, 2026 Time: 2.30 pm – 5.30 pm
Venue (Internal) : Placement Board Room, GAT
Venue (External): Online – (Platform: Microsoft Teams)

Sl.No	Name	Designation	Affiliation	Role in BOS	Signature
1	Dr. Sanjeev Kumar Thalari	Professor & HOD	Global Academy of Technology, Department of Management Studies	Chairman	
2	Dr. H B Balakrishna	Principal	Global Academy of Technology	Invited Member	
3	Dr. Vijay T	Assoc. Dean	Global Academy of Technology	Invited Member	28/3/26
4	Dr. Binu P Paul	Dean, MBA	Global Academy of Technology	Invited Member	
5	Dr. Tanuja Agarwala	Professor	Faculty of Management Studies, University of Delhi, New Delhi	VTU Nominee	Online
6	Dr. Magesh R	Professor & HOD	Anna University	Member	Online
7	Mr. Roopam Goswami	Vice President	JP Morgan, Bangalore	External Member Industry	
8	Mrs. Lalitha N	ED	EY, Bangalore	Invited Member, Professor of Practice	
9	Mr. Shinto Joseph	Director - South East Asia & ANZ Operations	LDRA Limited, Bangalore	Invited Member Industry	Online
10	Dr. Buvaneswari P	Professor	Global Academy of Technology	Convener	
11	Dr. Roopa K	Sr. Assoc. Professor	Global Academy of Technology	Member	
12	Dr. Nanthini M	Sr. Asst. Professor	Global Academy of Technology	Member	

HOD

Principal
PRINCIPAL
Global Academy of Technology
Ideal Homes Township,
Rajarajeshwari Nagar, Bangalore-560 098

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Proceedings of

BOARD of STUDIES

Program

AERONAUTICAL ENGINEERING

AY 2025 - 26

07 April 2026

Head of the Department
Dept. of Aeronautical Engineering
Global Academy of Technology
R.R. Nagar, Bengaluru - 560 098

7/4/26
Associate Dean Academics
Dean Academic
Global Academy of Technology,
Rajarajeshwarinagar, Bengaluru-98

Principal
PRINCIPAL
Global Academy of Technology
Ideal Homes Township,
Rajarajeshwari Nagar, Bangalore-560 098

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1. INTRODUCTION & OBJECTIVES

Purpose of the Meeting:

- Confirmation of the minutes of the previous BOS meeting.
- Review of action taken on the resolutions passed in the previous BOS meeting.
- Discussion and approval of the scheme and syllabus for the academic year 2026–27 (2024 scheme and syllabus for the 5th to 8th semesters, and the 2026 scheme)
- Discussion and approval of new courses / elective courses in emerging areas such as Machine Learning and Artificial Intelligence, Digital twin, Additive manufacturing etc.
- Approval of course outcomes (COs) and mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs).
- Discussion on NCrF compliance and credit structure modifications as per NEP guidelines.
- Approval of laboratory courses, project guidelines, and internship structure.
- Discussion on value-added courses, certification programs, and industry collaborations.
- Discussion on assessment methods and evaluation schemes (CIE, SEE, rubrics, etc.).
- Approval of question paper patterns and examination guidelines.
- Discussion on research initiatives, innovation activities, and student project domains.
- Discussion on faculty development programs, workshops, and expert lectures.
- Any other matter with the permission of the Chair.

2. CONSTITUTION OF BoS

Table of participants

S.No	Name	Designation	Organization	Position
1	Dr. Bino Prince Raja D	Professor & HOD	Aeronautical Department, GAT	Chairman
2	Dr.N. Balakrishnan	Professor	Aerospace Department, Indian Institute of Science, Bangalore	VTU Nominee
3	Dr Madhusudan A. Padmanabhan,	Scientist-H/OS & Associate Technology Director, Airframe Directorate	Aeronautical Development Agency (ADA), DRDO, Bangalore	Industry Representative
4	Dr. Shripathi V	Director, Global Aerospace & Defense, Business Development	MSC Software (Cadence)	Industry Representative
5	Dr.Nagaraja S R	Chairman	Department of Aerospace Engineering, Dayananda Sagar University, Bangalore	Institution/Academic Council Nominee
6	Dr. Tamilselvam N	Associate Professor	Aeronautical Department, GAT, Bangalore	Member Secretary
7	Dr.Suresh C	Associate Professor	Aeronautical Department, GAT, Bangalore	Member
8	Dr. Tamal Jana	Associate Professor	Aeronautical Department, GAT, Bangalore	Member
9	Dr. Paramesh T	Assistant Professor	Aeronautical Department, GAT, Bangalore	Member
10	Prof. Chandrika M B	Assistant Professor	Aeronautical Department, GAT, Bangalore	Member
11	Ms. Rushika Jaishanker	Associate I, Technical Publication, DHC	Capgemini Pvt. Ltd., Bangalore	Alumni Member
12	Mr. Poornesh M	Student	2022 Batch	Meritorious Student
13	Dr. Balakrishna H B	Principal	GAT, Bangalore	Special Invitee
14	Dr. Vijay Tambrallimath	Associate Dean	GAT, Bangalore	Special Invitee

Proof of invitation sent and response received

Outlook

Re: Invitation to BoS Meeting – Aeronautical Engineering (07.04.2026)

From DSU AERO AE <chairman-ae@dsu.edu.in>
Date Mon 4/6/2026 12:58 PM
To Dr. Tamilselvam N <tamilselvam@gat.ac.in>; Head of Department, Aeronautical Engineering <hodae@gat.ac.in>

Dear Sir

Thanks for the invitation. I will be there.

With Regards

Dr. Nagaraja S. R.
Professor and Chairperson
Department of Aerospace Engineering,
Dayananda Sagar University,
Devarakaggalahalli, Harohalli,
Kanakapura Road, Bengaluru South Dt,
Bengaluru – 562 112

Mobile: +91-9845641131
Email: chairman-ae@dsu.edu.in
Website : www.dsu.edu.in

On Mon, Mar 30, 2026 at 2:20 PM Dr. Tamilselvam N <tamilselvam@gat.ac.in> wrote:

> Dear BoS Members,
>
> Greetings from the Department of Aeronautical Engineering,
> Global Academy of Technology, Bengaluru.
>
> You are cordially invited to attend the Board of Studies (BoS) meeting scheduled on 07.04.2026 at the Placement Board Room (9.30 AM-12.20 PM). The meeting will focus on curriculum review, stakeholder feedback, and approval of the revised scheme and syllabus.
>
> For your kind perusal, please find attached the following documents:
>
> - Agenda of the BoS Meeting
> - 2024 Scheme (3rd to 8th Semesters)
> - 2024 Syllabus (3rd to 8th Semesters)
> - 2026 Scheme (3rd to 8th Semesters)
>
> We request all members to kindly go through the attached agenda and documents before the meeting and come prepared to share your valuable feedback and suggestions. Your active participation will be crucial in strengthening the curriculum, aligning it with industry needs, and ensuring compliance with NBA and NEP 2020 standards.
>
> Looking forward to your presence and contributions

3. CONFIRMATION OF PREVIOUS MINUTES

The Minutes of the previous BoS meeting held on 14th May 2025 were circulated and confirmed.

Resolution No.: GAT/AE/BOS/2024-25/02

4. ACTION TAKEN REPORT (ATR)

Sl No	Previous Discussion	Status (Completed/ Partial/Pending)	**Remarks**
	Curriculum revisions	Completed	• 3rd–8th semester scheme (2024) revised as per NEP 2020 with flexibility and industry relevance. • Provision for interdisciplinary electives from 5th semester. • CO–PO mapping revised and aligned with IQAC expectations. • 3rd and 4th semester syllabi updated and approved. • Reynolds Transport Theorem added to Fluid Mechanics. • Vibrations topics embedded in Aircraft Structures–1. • Contributions of Indian and foreign scientists included under Indian Knowledge Systems. Faculty instructed to include recent advancements in first 10 minutes of each class.
	Course additions	Completed	• New course: *Electricals and Electronics for Sensor Development* (5th semester). • Value-added courses finalized: *Drone Technology*, *Measurements and Instrumentation*, *Electricals and Electronics for Sensor Development*. New elective: *Digitalization in Aeronautics* (5th semester).
	Internship policy updates	Completed	Internship policy changes from 2023 batch to 2024 batch discussed and updated.
	Any points discussed	Completed	• Employability and skill development enhancements embedded from 1st semester (Design Thinking, project-based learning, innovation-driven modules). • Drone and programming modules added to technical/value-added courses.

			• Department labs showcased via posters and social media campaigns. • Skill development courses finalized: *Advanced CAAD*, *CAE*, *Aeronautical Technical Publication*, *Drone Pilot Training*. • Recommendations for MATLAB, Python, Power BI, and Design Thinking accepted. • Credit load of 1-credit courses optimized for deeper learning. • CATIA retained for design labs (SolidWorks procurement deferred). Stakeholder feedback integrated: IPCC experiments placed at end of syllabus; faculty advised to adopt integrated teaching methods.
	Any points discussed	Completed	• Internal Curriculum Review Committee formed by HoD to monitor implementation. • Follow-up review meeting scheduled after one semester to assess outcomes and challenges. • Enhanced assessment mechanisms introduced in 7th–8th semester syllabi. • Updated reference books included: *Aircraft Performance and Stability* by J.D. Anderson, *History of Aerodynamics* by J.D. Anderson. • Aptitude and Placement Training coordinated with Placement Department, with Aeronautical Engineering Department providing technical/domain-specific support.

5. STAKEHOLDER FEEDBACK ANALYSIS

5.1. Feedback

(2024 scheme and syllabus)

Sources	Remark
Students	Students emphasized inclusion of AI/ML, drones, programming, and experiential learning. They requested more internships, industry visits, and practical exposure. Some felt the curriculum is good but suggested adding skill-based courses and modern tools.
Alumni	Alumni highlighted the need for hands-on projects, simulation-based assignments, UAV systems, avionics, and industry-linked problem-solving. They recommended alumni sessions to share current industry requirements.
Industry	Industry experts appreciated the industry orientation but stressed updating avionics/UAV courses, integrating AI with avionics, and adding aviation-specific analytics. They suggested bridging academia-industry gaps through internships, MoUs, and training on modern software.
Faculty	Faculty recommended adding aeroelasticity, advanced UAV systems, and AI-driven flight control. They emphasized industry collaboration, guest lectures, and promoting interdisciplinary electives. They also noted the importance of career guidance and competitive exam preparation.
Affiliated Colleges	Faculty from other institutions suggested strengthening stakeholder connections, updating labs with modern simulation tools, and promoting NPTEL/SWAYAM courses in AI/ML, CFD, and Drone Technology.

(2026 scheme)

Sources	Remark
Students	• Requested more CAD-based and analytical subjects • Asked for increased industrial visits and practical exposure • Emphasized programming, AI, drone technology, and simulation-based assignments • Suggested experiential learning activities to strengthen fundamentals
Alumni	• Highlighted importance of hands-on projects from early semesters • Recommended integration of MATLAB/AI for aerospace applications • Suggested realignment of 3rd–5th semester courses to include emerging technologies • Proposed alumni-led industry sessions for sharing current practices
Industry	• Recommended restructuring subjects (e.g., aeroelasticity and aircraft design shifted earlier) • Called for aviation-specific analytics courses • Stressed training in FEM-based simulation tools (NASTRAN, MATLAB, Hypermesh) • Suggested MoUs, company-based projects, and career guidance sessions
Faculty	• Proposed electives in Space Technology, Advanced Drone Systems, AI in Aerospace, and Sustainable Aviation • Emphasized industry collaboration and guest lectures • Recommended career guidance and competitive exam preparation • Suggested experiential learning and stronger stakeholder connections
Parents	• Appreciated employability focus of the scheme • Asked for more industrial visits • Stressed importance of career guidance exposure

5.2. Need Analysis

(2024 scheme and syllabus)

Level	Remark
Local	Strong demand for industry visits, alumni interactions, and practical exposure to align with Bengaluru's aerospace ecosystem.
Regional	Emphasis on collaborations with PSUs, startups, and regional industries to strengthen employability and innovation.
National	Alignment with national initiatives like SDGs, skill-based learning, and integration of MOOCs (SWAYAM/NPTEL). Industry experts from L&T, ALTEN, Airbus, etc., highlighted the need for modern tools and analytics.
Global	Calls for integrating emerging technologies (AI/ML, UAVs, Digital Twin, Sustainable Aviation) to meet Washington Accord profiles and global aerospace standards. Industry-academia linkage and exposure to international practices were emphasized.

(2026 scheme)

Level	Remark
Local	• Strong demand for industrial visits and career guidance sessions • Parents and alumni emphasized experiential learning • Industry-linked projects seen as essential for Bengaluru's aerospace ecosystem
Regional	• Recommendations for collaborations with PSUs, startups, and regional industries • Faculty and industry experts stressed simulation-based learning • Suggested MoUs with companies for projects and training
National	• Alignment with SDGs and skill-based learning initiatives • Integration of MOOCs (SWAYAM/NPTEL) recommended • Industry experts (Airbus, Capgemini, L&T) highlighted need for modern tools, analytics, and AI integration
Global	• Calls for integrating UAVs, AI/ML, Digital Twin, and Sustainable Aviation • Alumni and faculty emphasized exposure to international practices • Need to align with Washington Accord profiles and global aerospace standards

6. VISION, MISSION, PEO & PSO REVIEW

Checklist:

- Alignment with institutional vision — Verified
- Alignment with emerging AI technologies — Verified
- PEO attainment evaluation — Reviewed
- Alumni career progression tracking — Reviewed

Resolution: The Vision, Mission, PEO and PSOs were reviewed and approved by the Board.

7. CO–PO ATTAINMENT REVIEW

7.1 Outgoing Batch Analysis

2021 Batch

Sl. No.	PO	Target	Achieved	Gap	Action Plan
1	PO1	3	2.6	0.4	Students will be provided with advanced problem-solving sessions and regular numerical practice workshops.
2	PO2	3	2.5	0.5	Real-world problem analysis and structured literature review assignments will be integrated into coursework.
3	PO3	2	1.6	0.4	Design-based mini projects and open-ended problem statements will be introduced in every semester.
4	PO4	2	1.9	0.1	Experimental learning and research-oriented activities will be continued and expanded.
5	PO5	3	2.0	**1.0**	Mandatory training in industry-relevant software such as ANSYS, CATIA, and MATLAB will be conducted.
6	PO6	2	1.4	0.6	Societal impact discussions and industry case studies will be included in classroom and project work.
7	PO7	2	1.6	0.4	Environmental impact analysis will be made a compulsory component of student projects.
8	PO8	2	1.5	0.5	Seminars and evaluations on professional ethics will be organized regularly.
9	PO9	2	1.8	0.2	Teamwork-based learning approaches will be continued through group projects and collaborative tasks.

10	PO10	3	2.1	0.9	Mock presentations, group discussions, and technical writing sessions will be conducted systematically.
11	PO11	3	2.0	**1.0**	A project management module with practical exposure will be introduced into the curriculum.
12	PO12	2	1.4	0.6	Certification courses and structured self-learning activities will be made mandatory for all students.

Low Performing POs

- **PO5** – Modern Tool Usage (Consistently highest gap)
- **PO11** – Project management
- **PO10** – Communication skills
- **PO6** – Engineer & society
- **PO12** – Lifelong learning

Course Revision Required

- Strengthen tool-intensive courses with mandatory labs and software training.
- Introduce communication-focused subjects such as Technical Writing and Presentation Skills.
- Add a Project Management module to address PO11.
- Incorporate Self-learning and certification components to strengthen PO12.
- Include interdisciplinary and industry-based projects for broader exposure.

Pedagogy Modification

- Conduct technical presentations, seminars, group discussions, and mock interviews regularly.
- Adopt Project-Based Learning (PBL) and simulation-based teaching methods.
- Ensure continuous evaluation through assignments, case studies, and tool-based tasks.

Faculty Training Need

- Provide training in advanced engineering tools (ANSYS, CATIA, MATLAB).
- Train faculty in communication skill mentoring techniques.
- Organize Faculty Development Programs (FDPs) on industry-relevant practices and digital/simulation-based learning.
- Encourage faculty to undertake consultancy projects and collaborate with industry for practical exposure.

8. CURRICULUM DESIGN & COMPREHENSIVE MAPPING

8.1. Credit Structure

1 credit = 30 hours; Total Program Credits –160

Credits Distribution for 2024 batch among Curricular Components (160 Credits)

Category	Credits	% of Total (160)
Basic Sciences (BS)	18	11.25%
Basic Engineering (ES)	28	17.5%
Humanities & Social Sciences (HS)	6	3.75%
Program Core (PC + IPCC)	53	33.1%
Program Electives (PE)	15	9.4%
Open Electives (OE)	6	3.75%
Projects (PW)	11	6.9%
Internship / Seminar (SR)	10	6.25%
Skill Courses (AEC, ETC/PLC, NCMC – NCrF aligned)	13	8.1%
Total	160	100%

Credits Distribution for 2026 batch among Curricular Components (160 Credits)

Category	Credits	% of Total (160)
Basic Sciences (BS)	24	15%
Basic Engineering (ES)	22	13.75%
Humanities & Social Sciences (HS)	5	3.1%
Program Core (PC)	59	36.9%
Program Electives (PE)	15	9.4%
Open Electives (OE)	6	3.75%
Projects (PW)	14	8.75%
Internship / Seminar (SR)	12	7.5%
Skill Courses (AEC, NCMC, etc., NCrF aligned)	3	1.9%
Total	160	100%

8.2 Mapping Framework

8.2.1. PO/PSO Mapping Table

PO/PSO Mapping Table for 2024 Scheme

Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
BMATC24301	Transforms & Complex Analysis	3	3	2	2								3	1
BAE24302	Mechanics of Materials	3	3	2	1	1				1	1		3	1
BAE24303	Fluid Mechanics	3	3	2	1	2					1		3	2
BAE24304	Aero Engineering Thermodynamics	3	3	2	2	1							3	1
BAEL24305	CAAD Lab	2	2	2	1	3				2	1		2	3
BAE24306A–D	ETC/PLC (Materials, IoT, Digitalization, Sustainable Aviation)	2	2	2	1	3	2	2		2	1		3	3
BSCK24307	Social Connect & Responsibility	1	1	1	1		2	2	3	2	2	1	2	1
BAE24358x	Ability/Skill Enhancement (AI/ML, Soft Skills, Ethics, Data Analytics)	2	2	2	1	3	2	2	2	2	3	2	2	3
BMATC24401	Transforms & Probability	3	3	2	2								3	1
BAE24402	Aircraft Propulsion	3	3	2	1	2					1		3	2
BAE24403	Low Speed Aerodynamics	3	3	2	1	2					1		3	2
BAE24404	Aircraft Structures I	3	3	3	1	1				1	1		3	1
BAEL24405	Low Speed Aerodynamics Lab	2	2	2	1	3				2	1		2	3
BAE24406A–D	ETC/PLC (Control Engg, Cybersecurity, Additive Mfg, Hybrid Propulsion)	2	2	2	1	3	2	2		2	1	2	3	3
BBOK24407	Biology for Engineers	2	1	1	1		2	2			1		2	1
BUHK24408	Universal Human Values	1	1	1	1		2	2	3	2	2	1	2	1
BAE24501	Aviation Management & Economy	1	2	1	1		1			1	2	2	2	1
BAE24502	Aircraft Structures II	3	3	3	1	1				1	1	1	3	2
BAE24503	High-Speed Aerodynamics	3	3	2	1	2					1		3	2
BAEL24504	Modelling & Analysis Lab	2	2	2	1	3				2	1		2	3
BAEP24507	Mini Project	2	2	3	2	3	1	1	1	3	2	2	3	3
BRMK24557	Research Methodology & IPR	1	1	1	3						2	2	2	2
BESK24508	Environmental Studies	2	2	2	2		3	3	2	2	2		2	1
BAE24601	Finite Element Methods	3	3	3	2	3				1	1	1	3	3
BAE24602	Flight Mechanics	3	3	2	2	2				1	1		3	2
BAE24603	Guidance & Control	3	3	2	2	2				1	1	1	3	2
BAEL24607	Flight Simulation Lab	2	2	2	1	3				2	1		2	3
BAEP24606	Project Phase I	2	3	3	3	2	1	1		3	3	3	3	3
BIKS24608	Indian Knowledge System	1	1	1	1		2	2	3	2	2	1	2	1
BAE24701	Avionics & Systems	2	3	2	1	3				1	1	1	3	3
BAE24702	Computational Fluid Dynamics	3	3	2	2	3				1	1	1	3	3
BAE24703	Aircraft Design	3	3	3	2	2				2	2	2	3	3
BAEP24706	Major Project Phase II	3	3	3	3	3	2	2	2	3	3	3	3	3
BAE24801x	Professional Elective IV (NPTEL)	2	2	2	1	2				1	1	1	2	2
BAE24802x	Open Elective V (NPTEL)	1	1	1	1	2				1	1	1	1	2
BAE24803	Internship (Industry/Research)	3	3	3	3	3	2	2	2	3	3	3	3	3

No. of Courses Mapped	**(out of 73)**	49	47	28	53	22	13	24	35	30	16	52	48	55
Coverage %	**(courses addressing PO)**	64	61	36	69	29	17	31	45	39	21	71	66	71
Effectiveness Rating	**(H/M/L)**	H	H	M	H	M	M	M	M	M	M	H	H	H

PO/PSO Mapping Table of 2026 scheme

Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
BMAT26301	Transforms and Complex Analysis	3	3	2	2								3	1
BAE26302	Mechanics of Materials	3	3	2	1	1				1	1		3	1
BAE26303	Fluid Mechanics	3	3	2	1	2					1		3	2
BAE26304	Aero Engineering Thermodynamics	3	3	2	2	1							3	1
BAE26305	Aerospace Materials & Digital Manufacturing	2	3	2	1	2		1					3	2
BAEL26306	CAAD Lab	2	2	2	1	3				2	1		2	3
BAEL26307x	Ability Enhancement Lab (Sem 3)	2	2	2	1	3				2	1		2	3
BCP26308	Community Project (PBL)	2	2	2	2	2	3	2		2	2	2	3	2
BNSS/BPE/BYOG/BMUS	NSS / PE / Yoga / Music (Sem 3)						2	2	2	3	2		2	1
BMATD26310	Mathematics for Lateral Entry	3	3	2									3	1
BPAT26311	Placement & Training (Sem 3)									2	3	2	2	2
BMAT26401	Transform Calculus, Probability & Sampling	3	3	2	2								3	1
BAE26402	Aircraft Propulsion	3	3	2	1	2					1		3	2
BAE26403	Low Speed Aerodynamics	3	3	2	1	2					1		3	2
BAE26404	Aircraft Structures I	3	3	3	1	1				1	1		3	1
BAEL26405	MATLAB for Aeronautics	2	2	1	1	3				1	1		2	3
BAEL26406	UAV & Drone Technology	2	2	2	1	2	1	2		2	1		2	3
BAE26407	Astro-biology	2			2		2	2					2	1
BEP26408	Environmental Science Project	1	1	1	2	1	2	3		2	1		2	2
BNSK/BPEK/BYOK/BMUS	NSS / PE / Yoga / Music (Sem 4)						2	2	2	3	2		2	1
BMATD26410	Mathematics Lateral Entry (Sem 4)	3	3	2									3	1

BPAT26411	Placement & Training (Sem 4)									2	3	2	2	2
BAE26501	Aviation Management & Economics	1	2	1	1		1			1	2	2	2	1
BAE26502	Aircraft Structures II	3	3	3	1	1				1	1	1	3	2
BAE26503	High-Speed Aerodynamics	3	3	2	1	2					1		3	2
BAE26504	Aircraft Control Engineering	3	3	2	2	2				1	1	1	3	2
BRM26506	Research Methodology & IPR	1	1	1	3						2	2	2	2
BAEL26507	Modelling & Analysis Lab	2	2	2	1	3				2	1		2	3
BAE26508	Hackathon-Based Project	2	2	3	2	3	1		1	3	2	2	3	3
BPAT26509	Placement & Training (Sem 5)									1	2	3	2	2
BIKS26510	Indian Knowledge System (NPTEL)	1					2	2	3	1	1		1	1
BAE26601	Finite Element Methods	3	3	3	2	3				1	1	1	3	3
BAE26602	Flight Mechanics	3	3	2	2	2				1	1		3	2
BAE26603	Guidance & Control	3	3	2	2	2				1	1	1	3	2
BAE26604	Composite Materials & Structures	3	3	3	1	2				1	1	1	3	2
BAE26605x	Professional Elective II	2	2	2		2							2	2
BAEL26606	Flight Simulation Lab	2	2	2	1	3				2	1		2	3
BAEL26607 x	Ability Enhancement Lab (Sem 6)	2	2	2	1	3				2	1		2	3
BAE26608	Capstone Project - Phase I	2	3	3	3	2	1	1		3	3	3	3	3
BAE26609	Universal Human Value (NPTEL)						3	2	3		2		1	1
BPAT26611	Placement & Training (Sem 6)									2	3	2	2	2
BAE26701	Avionics	2	3	2	1	3				1	1	1	3	3
BAE26705	Capstone Project - Phase II	3	3	3	3	2	1	1		3	3	3	3	3
BAE26803x	Internship (Sem 8 / Two-semester)	3	3	3	3	3	1	1		3	3	3	3	3
No. of Courses Mapped	**(out of 73)**	**57**	**51**	**48**	**30**	**55**	**24**	**15**	**26**	**37**	**32**	**18**	**54**	**50**
Coverage %	**(courses addressing PO)**	**74**	**67**	**62**	**41**	**72**	**33**	**20**	**35**	**48**	**42**	**25**	**74**	**68**
Effectiveness Rating	**(H/M/L)**	**H**	**H**	**H**	**M**	**H**	**M**	**M**	**M**	**M**	**M**	**M**	**H**	**H**

8.2.2. SDG Mapping Table

SDG Mapping Table for 2024 Scheme

SDG	Course
SDG 3 – Good Health & Well-Being	BSCK24307 – Social Connect and Responsibility
	BNSK24359 / BPEK24359 / BYOK24359 – NSS / Physical Education / Yoga
	BLAK24359 – Liberal Arts
	BBOK24407 – Biology for Engineers
	BUHK24408 – Universal Human Values
	BNSK24459 / BPEK24459 / BYOK24459 / BLAK24459 – NSS / Physical Education / Yoga / Liberal Arts
SDG 4 – Quality Education	BMATC24301 – Transforms and Complex Analysis
	BMATC24401 – Transforms and Probability
	BRMK24557 – Research Methodology and IPR
	BPAT26311 / 26411 / 26509 / 26611 – Placement & Training
	BIKS24608 – Indian Knowledge System
SDG 5 – Gender Equality	BSCK24307 – Social Connect and Responsibility
	BUHK24408 – Universal Human Values
SDG 7 – Affordable & Clean Energy	BAE24304 – Aero Engineering Thermodynamics
	BAE24402 – Aircraft Propulsion
	BAE24406D – Electric and Hybrid Propulsion
SDG 8 – Decent Work & Economic Growth	BAE24501 – Aviation Management & Economy
	BAE24508 – Environmental Studies (Civil)
	BAEP24507 – Mini Project
	BAEP24606 – Project Phase I
	BAEP24706 – Major Project Phase II
	BAE24803 – Internship (Industry/Research)
SDG 9 – Industry, Innovation & Infrastructure	BAE24302 – Mechanics of Materials
	BAE24303 – Fluid Mechanics
	BAEL24305 – CAAD Lab
	BAE24306A – Aerospace Materials and Digital Manufacturing
	BAE24306C – Digitalization in Aeronautics
	BAE24403 – Low Speed Aerodynamics
	BAE24404 – Aircraft Structures I
	BAEL24405 – Low Speed Aerodynamics Lab
	BAE24406A – Aircraft Control Engineering
	BAE24406B – Additive Manufacturing and Smart Materials
	BAEL24457A – MATLAB for Aeronautics
	BAEL24457C – Python for Aerodynamics & Flight Simulation
	BAE24502 – Aircraft Structures II
	BAE24503 – High-Speed Aerodynamics
	BAEL24504 – Modelling and Analysis Lab
	BAE24601 – Finite Element Methods
	BAE24602 – Flight Mechanics
	BAE24603 – Guidance and Control
	BAEL24607 – Flight Simulation Lab
	BAE24701 – Avionics and Systems
	BAE24702 – Computational Fluid Dynamics
	BAE24703 – Aircraft Design

	BAE24801A – Advanced Aircraft Control Systems with MATLAB/SIMULINK
	BAE24801C – Aircraft Design
SDG 10 – Reduced Inequalities	BSCK24307 – Social Connect and Responsibility
	BUHK24408 – Universal Human Values
	BIKS24608 – Indian Knowledge System
SDG 11 – Sustainable Cities & Communities	BAE24306B – IoT and Smart Sensors in Aviation
	BAE24306D – Sustainable Aviation & Green Technologies
	BAEL24657B – Air Traffic Management & Airport Operations
	BAE24705C – Drone Technology
	BAE24705B – Airport Planning and Management
SDG 12 – Responsible Consumption & Production	BAE24305 – Aerospace Materials and Digital Manufacturing
	BAE24406B – Additive Manufacturing and Smart Materials
	BAE24604A – Composite Materials and Structures
	BRMK24557 – Research Methodology and IPR
SDG 13 – Climate Action	BAE24303 – Fluid Mechanics
	BAE24304 – Aero Engineering Thermodynamics
	BAE24306D – Sustainable Aviation & Green Technologies
	BAE24406D – Electric and Hybrid Propulsion
	BESK24508 – Environmental Studies
SDG 16 – Peace, Justice & Strong Institutions	BUHK24408 – Universal Human Values
	BIKS24608 – Indian Knowledge System
	BSCK24307 – Social Connect and Responsibility
SDG 17 – Partnerships for the Goals	BAEP24507 – Mini Project
	BAEP24606 – Project Phase I
	BAEP24706 – Major Project Phase II
	BAE24803 – Internship (Industry/Research)

SDG Mapping Table for 2026 Scheme

SDG 3 – Good Health & Well-Being	BEP26408 – Environmental Science Project
	BYOG26309 / BYOK26409 – Yoga
	BPE26309 / BPEK26409 – Physical Education (Sports & Athletics)
	BMUS26309 / BMUS26409 – Music
	BAE26407 – Astro-biology
SDG 4 – Quality Education	BMAT26301 – Program Specific Mathematics
	BMAT26401 – Program Specific Mathematics
	BMATD26310 – Mathematics for Lateral Entry Students
	BMATD26410 – Mathematics for Lateral Entry Students
	BRM26506 – Research Methodology and IPR
	BPAT26311 / BPAT26411 / BPAT26509 / BPAT26611 – Placement & Training (NCMC, Sems 3–6)
	BIKS26510 – Indian Knowledge System (NPTEL/VTU Online)
	BAE26609 – Universal Human Values (NPTEL/VTU Online)
SDG 5 – Gender Equality	BAE26609 – Universal Human Values (NPTEL/VTU Online)

	BCP26308 – Community Project (Project-Based Learning)
SDG 7 – Affordable & Clean Energy	BAE26304 – Aero Engineering Thermodynamics
	BAE26402 – Aircraft Propulsion
	BAE26503 – High-Speed Aerodynamics
SDG 8 – Decent Work & Economic Growth	BPAT26311 – Placement & Training
	BPAT26411 – Placement & Training
	BPAT26509 – Placement & Training
	BPAT26611 – Placement & Training
	BAE26501 – Aviation Management & Economics
	BAE26508 – Hackathon-Based Project
	BAE26608 – Capstone Project Phase I
	BAE26705 – Capstone Project Phase II
	BAE26803x – Internship (Industry/Research/Societal/Online)
SDG 9 – Industry, Innovation & Infrastructure	BAE26302 – Mechanics of Materials
	BAE26303 – Fluid Mechanics
	BAE26305 – Aerospace Materials & Digital Manufacturing
	BAEL26306 – CAAD Lab
	BAEL26405 – MATLAB for Aeronautics
	BAEL26406 – UAV & Drone Technology
	BAE26502 – Aircraft Structures II
	BAE26504 – Aircraft Control Engineering
	BAEL26507 – Modelling & Analysis Lab
	BAE26601 – Finite Element Methods
	BAE26602 – Flight Mechanics
	BAE26603 – Guidance & Control
	BAE26604 – Composite Materials & Structures
	BAEL26606 – Flight Simulation Lab
	BAE26701 – Avionics
	BAE26508 – Hackathon-Based Project
	BAE26608 – Capstone Project Phase I
	BAE26705 – Capstone Project Phase II
SDG 10 – Reduced Inequalities	BAE26609 – Universal Human Values (NPTEL/VTU Online)
	BIKS26510 – Indian Knowledge System (NPTEL/VTU Online)
	BCP26308 – Community Project (PBL)
SDG 11 – Sustainable Cities & Communities	BAEL26406 – UAV & Drone Technology
	BEP26408 – Environmental Science Project
	BCP26308 – Community Project (PBL)
SDG 12 – Responsible Consumption & Production	BAE26305 – Aerospace Materials & Digital Manufacturing
	BAE26604 – Composite Materials & Structures
	BRM26506 – Research Methodology and IPR
SDG 13 – Climate Action	BAE26303 – Fluid Mechanics
	BAE26304 – Aero Engineering Thermodynamics
	BEP26408 – Environmental Science Project
	BAEL26307B – Sustainable Aviation & Green Technologies (AEC Lab)
SDG 16 – Peace, Justice & Strong Institutions	BAE26609 – Universal Human Values (NPTEL/VTU Online)

	BIKS26510 – Indian Knowledge System (NPTEL/VTU Online)
	BCP26308 – Community Project (PBL)
SDG 17 – Partnerships for the Goals	BCP26308 – Community Project (PBL)
	BAE26508 – Hackathon-Based Project
	BAE26608 – Capstone Project Phase I
	BAE26705 – Capstone Project Phase II
	BPAT26311 / BPAT26411 / BPAT26509 / BPAT26611 – Placement & Training
	BAE26803x – Internship (Industry/Research/Societal/Online)

8.2.3. WK Mapping Table

WK Mapping Table for 2024 scheme

WK	Courses
WK1 – Engineering Fundamentals	BMATC24301 – Transforms & Complex Analysis; BMATC24401 – Transforms & Probability; BBOK24407 – Biology for Engineers
WK2 – Core Engineering Knowledge	BAE24302 – Mechanics of Materials; BAE24303 – Fluid Mechanics; BAE24304 – Aero Engineering Thermodynamics; BAE24402 – Aircraft Propulsion; BAE24403 – Low Speed Aerodynamics; BAE24404 – Aircraft Structures I; BAE24502 – Aircraft Structures II; BAE24503 – High-Speed Aerodynamics; BAE24601 – Finite Element Methods; BAE24602 – Flight Mechanics; BAE24603 – Guidance & Control; BAE24701 – Avionics & Systems; BAE24702 – Computational Fluid Dynamics; BAE24703 – Aircraft Design
WK3 – Specialized Knowledge	BAEL24305 – CAAD Lab; BAEL24405 – Low Speed Aerodynamics Lab; BAEL24504 – Modelling & Analysis Lab; BAEL24607 – Flight Simulation Lab; BAEP24507 – Mini Project; BAEP24606 – Project Phase I; BAEP24706 – Major Project Phase II; BAE24801x – Professional Elective IV (NPTEL); BAE24802x – Open Elective V (NPTEL); BAE24803 – Internship
WK4 – Problem Analysis & Design	BAE24306A–D – ETC/PLC (Materials, IoT, Digitalization, Sustainable Aviation); BAE24406A–D – ETC/PLC (Control Engg, Cybersecurity, Additive Mfg, Hybrid Propulsion); BAEL24457A–D – AEC/SEC (MATLAB, Python, Communication, AR); BRMK24557 – Research Methodology & IPR
WK5 – Society, Environment, Sustainability	BSCK24307 – Social Connect & Responsibility; BUHK24408 – Universal Human Values; BESK24508 – Environmental Studies
WK6 – Modern Tool Usage	BAEL24305 – CAAD Lab; BAEL24457A – MATLAB for Aeronautics; BAEL24457C – Python for Aerodynamics; BAEL24607 – Flight Simulation Lab
WK7 – Engineer & Society	BSCK24307 – Social Connect & Responsibility; BUHK24408 – Universal Human Values; BIKS24608 – Indian Knowledge System

WK8 – Research & Lifelong Learning	BRMK24557 – Research Methodology & IPR; BAEP24507 – Mini Project; BAEP24606 – Project Phase I; BAEP24706 – Major Project Phase II; BAE24803 – Internship
WK9 – Ethics & Professional Practice	BUHK24408 – Universal Human Values; BSCK24307 – Social Connect & Responsibility; BIKS24608 – Indian Knowledge System

WK Mapping Table for 2026 scheme

WK	Courses
WK1 – Engineering Fundamentals	BMAT26301 – Transforms & Complex Analysis; BMAT26401 – Transform Calculus & Probability; BAE26407 – Astro-biology
WK2 – Core Engineering Knowledge	BAE26302 – Mechanics of Materials; BAE26303 – Fluid Mechanics; BAE26304 – Aero Engineering Thermodynamics; BAE26305 – Aerospace Materials & Digital Manufacturing; BAE26402 – Aircraft Propulsion; BAE26403 – Low Speed Aerodynamics; BAE26404 – Aircraft Structures I; BAE26502 – Aircraft Structures II; BAE26503 – High-Speed Aerodynamics; BAE26504 – Aircraft Control Engineering; BAE26601 – Finite Element Methods; BAE26602 – Flight Mechanics; BAE26603 – Guidance & Control; BAE26604 – Composite Materials & Structures; BAE26701 – Avionics
WK3 – Specialized Knowledge	BAEL26306 – CAAD Lab; BAEL26405 – MATLAB for Aeronautics; BAEL26507 – Modelling & Analysis Lab; BAEL26606 – Flight Simulation Lab; BAE26608 – Capstone Project Phase I; BAE26705 – Capstone Project Phase II; BAE26803x – Internship
WK4 – Problem Analysis & Design	BAEL26307x – AEC Labs (AI/ML, Green Tech, Digitalization, Data Analytics); BAEL26406 – UAV & Drone Technology; BAEL26607x – AEC Labs (System Engineering, Wind Tunnel, Digital Twin, ATM); BAE26508 – Hackathon Project
WK5 – Society, Environment, Sustainability	BCP26308 – Community Project; BEP26408 – Environmental Science Project; BAE26609 – Universal Human Values; BIKS26510 – Indian Knowledge System
WK6 – Modern Tool Usage	BAEL26306 – CAAD Lab; BAEL26405 – MATLAB for Aeronautics; BAEL26606 – Flight Simulation Lab; BAEL26607x – Digital Twin, Wind Tunnel, ATM
WK7 – Engineer & Society	BCP26308 – Community Project; BEP26408 – Environmental Science Project; BAE26609 – Universal Human Values; BIKS26510 – Indian Knowledge System
WK8 – Research & Lifelong Learning	BRM26506 – Research Methodology & IPR; BAE26508 – Hackathon Project; BAE26608 – Capstone Project Phase I; BAE26705 – Capstone Project Phase II; BAE26803x – Internship
WK9 – Ethics & Professional Practice	BAEL26307C – Ethics, Technology & Engineering; BAE26609 – Universal Human Values; BIKS26510 – Indian Knowledge System

8.3 Percentage-Based Reporting

2024 Scheme (Compared to 2023 scheme)

Metric	2024 Scheme	Change/Observation
% of courses revised	~65%	2024 introduced more AEC/SEC, ETC/PLC, sustainability, and ethics courses.
% skill-based courses	~30%	2024 added more labs (Python, AR, MATLAB) and skill enhancement courses.
% courses with apprenticeship/fieldwork	~20%	2024 strengthened project-based learning with Mini Project, Project Phase I, Major Project Phase II, Internship.
% online credited courses (SWAYAM/NPTEL)	~15%	2024 integrated NPTEL electives (Professional & Open Electives).
% project-based courses	~25%	2024 emphasized structured project phases.

2026 Scheme (Compared to 2024 scheme)

Metric	2026 Scheme	Change/Observation
% of courses revised	~70%	2026 introduced further revisions with UAV/Drone Tech, Hackathon, Capstone Projects, Digital Twin, Wind Tunnel labs, strengthening experiential learning.
% skill-based courses	~35%	2026 expanded skill-based offerings (Drone Tech, ATM, Digital Twin, Wind Tunnel, UAV labs) compared to 2024.
% courses with apprenticeship/fieldwork	~25%	2026 added Community Project (PBL), Hackathon, Capstone Projects, Internship, increasing field/applied learning.
% online credited courses (SWAYAM/NPTEL)	~20%	2026 increased online electives (Professional Electives III–V, Open Electives I–II, Universal Human Values, Indian Knowledge System).
% project-based courses	~30%	2026 strengthened project-based learning with Hackathon, Capstone Projects, Community Project, Internship.

9. NEW COURSE PROPOSALS

2024 scheme (Compared to 2023 Scheme)

Course Code & Title	Rationale	Course Objectives	COs (Summary)	Skill Alignment (NCrF)	Assessment Scheme	Industry Relevance	SDG Mapping
BAE24306A – Aerospace Materials and Digital Manufacturing	Introduced to expose students to advanced aerospace materials and Industry 4.0 manufacturing practices.	Understand aerospace material properties and apply digital manufacturing techniques.	Identify aerospace materials; Apply digital manufacturing processes; Evaluate sustainability in production.	Level 5–6: • Materials Engineering • Digital Manufacturing • Sustainability	CIE 50 + SEE 50	Aerospace manufacturing, additive manufacturing industries.	SDG 9: Industry, Innovation & Infrastructure • SDG 12: Responsible Consumption & Production
BAE24306B – IoT and Smart Sensors in Aviation	Added to integrate IoT applications in aerospace systems.	Learn IoT architecture and sensor applications in aviation.	Understand IoT concepts; Apply smart sensors; Analyze data integration in aircraft systems.	Level 5–6: • IoT Systems • Sensor Integration • Data Handling	CIE 50 + SEE 50	Aviation IoT, UAV systems, smart aircraft monitoring.	SDG 9: Industry, Innovation & Infrastructure • SDG 11: Sustainable Cities & Communities
BAE24306C – Digitalization in Aeronautics	Introduced to align with digital transformation in aerospace.	Apply digital tools for aeronautical system design and analysis.	Use digital platforms; Apply simulation tools; Evaluate digital workflows.	Level 5–6: • Digital Tools • Simulation • Industry 4.0	CIE 50 + SEE 50	Aerospace digitalization, CAD/CAE industries.	SDG 9: Industry, Innovation & Infrastructure
BAE24306D – Sustainable Aviation & Green Technologies	Introduced to address sustainability and climate action in aviation.	Understand sustainable aviation practices and green technologies.	Identify green technologies; Apply sustainable design; Evaluate environmental impact.	Level 5–6: • Sustainability • Green Engineering • Climate Action	CIE 50 + SEE 50	Green aviation, renewable propulsion systems.	SDG 7: Affordable & Clean Energy • SDG 13: Climate Action
BAE24358A – AI & ML in Aerospace Engineering	Introduced to integrate AI/ML applications in aerospace.	Apply AI/ML techniques to aerospace problems.	Understand AI/ML basics; Apply ML models; Analyze aerospace datasets.	Level 5–6: • AI/ML • Data Analysis • Problem Solving	CIE 50 + SEE 50	AI/ML in aerospace, predictive maintenance.	SDG 4: Quality Education • SDG 9: Industry, Innovation & Infrastructure

BAE24358B – Development of Soft Skills for Engineers	Introduced to strengthen communication and employability.	Improve communication, teamwork, and leadership skills.	Communicate effectively; Work in teams; Demonstrate professional ethics.	Level 5–6: • Communication • Teamwork • Leadership	CIE 50 + SEE 50	Industry readiness, employability skills.	SDG 4: Quality Education • SDG 8: Decent Work & Economic Growth
BAE24358C – Ethics, Technology and Engineering	Introduced to address ethical issues in technology.	Understand ethics in engineering and technology.	Identify ethical dilemmas; Apply ethical frameworks; Evaluate societal impact.	Level 5–6: • Ethics • Professional Responsibility	CIE 50 + SEE 50	Engineering ethics, compliance roles.	SDG 16: Peace, Justice & Strong Institutions
BAE24358D – Data Analytics Using Power BI	Introduced to provide industry-oriented analytics skills.	Apply Power BI for aerospace data visualization.	Use Power BI tools; Analyze datasets; Create dashboards.	Level 5–6: • Data Analytics • Visualization • Industry Tools	CIE 50 + SEE 50	Data analytics, aerospace industry dashboards.	SDG 9: Industry, Innovation & Infrastructure
BAE24406B – Additive Manufacturing and Smart Materials	Introduced to expand manufacturing technologies.	Apply additive manufacturing in aerospace.	Understand AM techniques; Apply smart materials; Evaluate applications.	Level 6: • Additive Manufacturing • Smart Materials	CIE 50 + SEE 50	Aerospace manufacturing, AM industries.	SDG 9: Industry, Innovation & Infrastructure • SDG 12: Responsible Consumption
BAE24406C – Aerospace Cyber Security & Secure Avionics Systems	Introduced to address cybersecurity in aerospace.	Understand cyber threats and secure avionics.	Identify threats; Apply security protocols; Evaluate avionics safety.	Level 6–7: • Cybersecurity • Avionics Systems	CIE 50 + SEE 50	Aerospace cybersecurity, avionics safety.	SDG 9: Industry, Innovation & Infrastructure
BAE24406D – Electric and Hybrid Propulsion	Introduced to align with sustainable propulsion.	Understand electric and hybrid propulsion systems.	Identify propulsion types; Apply hybrid models; Evaluate efficiency.	Level 6: • Propulsion Systems • Sustainability	CIE 50 + SEE 50	Green aviation, hybrid propulsion industry.	SDG 7: Affordable & Clean Energy • SDG 13: Climate Action
BAE24457A – MATLAB for Aeronautics	Introduced to strengthen computational skills.	Apply MATLAB in aeronautical problems.	Use MATLAB tools; Simulate systems; Analyze results.	Level 5–6: • Computational Tools • Simulation	CIE 50 + SEE 50	Aerospace simulation, computational industries.	SDG 4: Quality Education
BAE24457B – Technical Communicatio	Introduced to strengthen	Develop technical writing and	Write reports; Communicat	Level 5–6: • Communicati	CIE 50 + SEE 50	Industry readiness,	SDG 4: Quality Education

n and Research Skills	research and communication.	research skills.	e research; Apply documentation standards.	on • Research Skills		research roles.	
BAE24457C – Python for Aerodynamics & Flight Simulation	Introduced to strengthen programming skills.	Apply Python in aerodynamics simulations.	Write Python code; Simulate flight; Analyze results.	Level 5–6: • Programming • Simulation	CIE 50 + SEE 50	Aerospace simulation, programming roles.	SDG 4: Quality Education • SDG 9: Industry, Innovation
BAE24457D – Introduction to Augmented Reality	Introduced to align with AR/VR technologies.	Apply AR in aerospace visualization.	Understand AR basics; Apply AR tools; Evaluate applications.	Level 5–6: • AR/VR • Visualization	CIE 50 + SEE 50	Aerospace visualization, AR industries.	SDG 9: Industry, Innovation & Infrastructure
BAE24556A – UAV & Drone Technology	Introduced to align with UAV advancements.	Understand UAV design and applications.	Identify UAV components; Apply UAV systems; Evaluate UAV applications.	Level 6: • UAV Systems • Drone Tech	CIE 50 + SEE 50	UAV industry, drone applications.	SDG 9: Industry, Innovation • SDG 11: Sustainable Cities
BAE24556B – Additive Manufacturing (3D Printing)	Expanded manufacturing technology elective.	Apply 3D printing in aerospace.	Understand 3D printing; Apply AM techniques; Evaluate applications.	Level 6: • Additive Manufacturing • 3D Printing	CIE 50 + SEE 50	Aerospace manufacturing, AM industries.	SDG 9: Industry, Innovation • SDG 12: Responsible Consumption
BAE24556C – System Engineering for Aeronautics	Introduced to strengthen systems approach.	Apply system engineering principles.	Understand system design; Apply integration; Evaluate performance.	Level 6: • Systems Engineering • Integration	CIE 50 + SEE 50	Aerospace systems engineering.	SDG 9: Industry, Innovation
BAE24556D – Probability & Statistics for Aerospace Engineering	Introduced to strengthen analytical skills.	Apply probability and statistics in aerospace.	Understand probability; Apply statistics; Analyze aerospace data.	Level 5–6: • Statistics • Data Analysis	CIE 50 + SEE 50	Aerospace data analysis.	SDG 4: Quality Education
BAE24657A – Digital Twin & Industry 4.0	Introduced to align with Industry 4.0.	Apply digital twin concepts in aerospace.	Understand digital twin; Apply Industry 4.0 tools; Evaluate applications.	Level 6–7: • Digital Twin • Industry			

2026 scheme (Compared to 2024 Scheme)

Course Code & Title	Rationale	Course Objectives	COs (Summary)	Skill Alignment (NCrF)	Assessment Scheme	Industry Relevance	SDG Mapping
BAE26407 – Astro-biology	Introduced to integrate interdisciplinary science with aerospace, linking biology and space exploration.	Understand life sciences in space environments and their relevance to aerospace engineering.	Explain astrobiology concepts; Apply biological principles to space systems; Analyze sustainability of life in space.	Level 5–6: • Interdisciplinary Knowledge • Space Biology • Analytical Thinking	CIE 50 + SEE 50	Space research, astrobiology labs, ISRO/NASA projects.	SDG 3: Good Health & Well-Being • SDG 9: Industry, Innovation & Infrastructure
BAE26508 – Hackathon-Based Project	Introduced to promote innovation, teamwork, and rapid prototyping.	Solve real-world aerospace problems through hackathon-style projects.	Identify problems; Prototype solutions; Present outcomes.	Level 6–7: • Innovation • Teamwork • Rapid Prototyping	CIE 100 (continuous project evaluation)	Aerospace startups, innovation hubs, industry hackathons.	SDG 8: Decent Work & Economic Growth • SDG 9: Industry, Innovation & Infrastructure • SDG 17: Partnerships
BAE26608 – Capstone Project Phase I	Introduced to strengthen project-based learning and industry integration.	Initiate major aerospace projects with industry/research linkage.	Define project scope; Conduct literature review; Develop methodology.	Level 6–7: • Research • Project Planning • Problem Solving	CIE 100	Industry-linked projects, R&D labs, internships.	SDG 9: Industry, Innovation & Infrastructure • SDG 17: Partnerships
BAE26705 – Capstone Project Phase II	Continuation of Phase I, focusing on execution and outcomes.	Execute aerospace projects and present findings.	Implement project plan; Analyze results; Present outcomes.	Level 6–7: • Execution • Research • Communication	CIE 100 + Viva	Industry-ready engineers, research publications, patents.	SDG 9: Industry, Innovation & Infrastructure • SDG 17: Partnerships

BAE26803x – Internship (Industry/Research/Societal/Online)	Introduced to provide extended industry exposure (14–20 weeks).	Gain hands-on experience in aerospace industry/research.	Apply classroom knowledge; Work in industry settings; Reflect on learning.	Level 6–7: • Industry Exposure • Applied Learning • Professional Skills	CIE 100 + Report + Viva	Aerospace companies, ISRO, DRDO, airlines, startups.	SDG 8: Decent Work & Economic Growth • SDG 9: Industry, Innovation & Infrastructure
BAEL26607A – Digital Twin & Industry 4.0	Introduced to align with digital transformation in aerospace.	Apply digital twin concepts in aerospace systems.	Understand digital twin; Apply Industry 4.0 tools; Evaluate applications.	Level 6–7: • Digital Twin • Industry 4.0 • Simulation	CIE 50 + SEE 50	Aerospace digitalization, predictive maintenance.	SDG 9: Industry, Innovation & Infrastructure
BAEL26607B – Wind Tunnel Techniques and Measurements	Introduced to strengthen experimental aerodynamics.	Conduct wind tunnel experiments and analyze results.	Perform wind tunnel tests; Collect data; Interpret results.	Level 6–7: • Experimental Skills • Data Analysis	CIE 50 + SEE 50	Aerospace R&D labs, testing facilities.	SDG 9: Industry, Innovation & Infrastructure
BAEL26607C – Air Traffic Management & Airport Operations	Introduced to align with aviation operations and management.	Understand ATM systems and airport operations.	Explain ATM concepts; Apply operational strategies; Evaluate efficiency.	Level 6–7: • Operations Management • Aviation Systems	CIE 50 + SEE 50	Airlines, airport management, aviation authorities.	SDG 11: Sustainable Cities & Communities • SDG 8: Decent Work
BAEL26607D – Hypersonic Technology	Introduced to strengthen advanced aerospace propulsion knowledge.	Understand hypersonic flight principles and applications.	Explain hypersonic concepts; Apply propulsion models; Evaluate challenges.	Level 7: • Advanced Propulsion • Hypersonics	CIE 50 + SEE 50	Defense, space exploration, hypersonic R&D.	SDG 9: Industry, Innovation & Infrastructure • SDG 13: Climate Action

The Board of Studies unanimously approves the introduction of the identified new courses into the curriculum, effective from the academic year 2026–27.

10. SKILL, MOOC & VALUE-ADDED REVIEW

Skill development courses	MOOC courses	Value added Programme introduced
MATLAB for Aeronautics	Advanced Aircraft Control Systems with MATLAB/SIMULINK	Technical Report Writing
Python for Aerodynamics & Flight Simulation	Lighter than Air Systems	Drone Technology
AI & ML in Aerospace Engineering	Aircraft Design	Measurements & Instrumentation
Development of Soft Skills for Engineers	Fundamentals of Theoretical and Experimental Aerodynamics	Electricals & Electronics for Sensor Development
Data Analytics Using Power BI	Introduction to Aerospace Propulsion	Aeronautical Technical Publication
Digital Twin & Industry 4.0	Wind Energy	Drone Pilot Training
Wind Tunnel Techniques & Measurements	Aeromechanics of Unmanned Aerial Vehicles	Advanced CAAD / CAE
Air Traffic Management & Airport Operations	Air Transportation: An Overview	

The Board of Studies unanimously approves the integration of NPTEL/SWAYAM courses, NCMC placement modules, global audit electives, and embedded apprenticeship components into the 2024 and 2026 schemes, ensuring alignment with NEP guidelines, NCrF skill levels, and industry readiness.

11. INTERNSHIP & INDUSTRY INTEGRATION

- **% Students Completing Internships:** In the 2024 scheme, internship was mandated in the VIII semester (14–20 weeks), with over 100% of students successfully completing industry or research internships. In the 2026 scheme, internship options were diversified (Industry, Research, Societal, Online, Post-Placement, Skill Enhancement), ensuring 100% student participation through the VTU centralized portal.
- **Semester-long Apprenticeship:** The 2024 scheme included Major Project Phase II and internship in the final year. The 2026 scheme strengthened this by introducing semester-long apprenticeships through **Capstone Project Phase I (VI sem)** and **Capstone Project Phase II (VII sem)**, integrated with industry/research labs.
- **Industry Co-Teaching Model:** In the 2024 scheme, industry experts were invited for guest lectures and workshops. The 2026 scheme formalized **industry co-teaching**, with professionals from aerospace and AI/ML domains co-delivering modules in electives (e.g., UAV, Digital Twin, Cyber Physical Systems).
- **Assistant PoP / Associate PoP / PoP Inclusion:** The 2026 scheme introduced structured **Practice of Profession (PoP)** modules, allowing Assistant PoP and Associate PoP roles to

mentor students during internships, hackathons, and capstone projects, ensuring professional practice exposure.

- **Hackathon-Based Credits:** The 2024 scheme encouraged hackathon participation informally. The 2026 scheme institutionalized hackathon-based learning with **BAE26508 Hackathon-Based Project (V sem)**, awarding credits for innovation-driven problem solving.

The Board of Studies unanimously approves the enhanced internship and industry integration framework in the 2026 scheme, including diversified internship models, semester-long apprenticeships, industry co-teaching, PoP inclusion, and hackathon-based credits, ensuring 100% student participation and stronger industry readiness.

12. RESEARCH & CAPSTONE

- **Mandatory Research Publication/Patent**: In the 2024 scheme, research exposure was embedded through Research Methodology & IPR (V Sem) and Major Project Phase II (VII/VIII Sem), mandated students to publish papers or file patents. The 2026 scheme strengthened this requirement by mandating Capstone Project Phase I (VI Sem) and Capstone Project Phase II (VII Sem), with explicit guidelines for at least one research publication or patent filing per student group. Students are required to submit proof of publication in peer-reviewed journals/conferences or patent application details as part of project evaluation.
- **Integration with Industry & Research Labs:** Capstone projects in the 2026 scheme are aligned with industry problems, societal challenges, and research domains, ensuring practical relevance and innovation. Industry mentors and faculty co-guide projects, and outcomes are tracked for intellectual property generation.
- **Outcome-Based Alignment:** Research and capstone deliverables are mapped to PO11 (Project Management & Lifelong Learning) and PO4 (Investigations of Complex Problems), with attainment measured through publications, patents, and project demonstrations.

Capstone Project Evaluation Rubric

Review 0: Project Phase I (Project Synopsis/ Proposal Evaluation)

Total: 20 Marks

			Level of Achievement		
		Marks	**Good**	**Average**	**Poor**
A	**Identification of problem domain & Detailed Analysis**	7	Clearly identifies a relevant SDG-9 problem and conducts **detailed technical and contextual analysis**	Identifies the problem but **analysis is superficial or incomplete**	Problem not clearly identified or only **partial / weak analysis**
			(7–6)	**(5–3)**	**(2–0)**

B	**Defining problem statement & objective (Cognitive)**	7	Clearly defines problem statement and formulates **measurable, achievable and SDG-9–aligned objectives**	Problem defined but **objectives are vague or not deliverable**	Problem definition unclear and **objectives missing or irrelevant**
			(7–6)	**(5–3)**	**(2–0)**
C	**Presentation (Q&A) (Psychomotor & Affective)**	6	Communicates ideas **clearly and confidently**, answers **all Q&A effectively**	Communicates ideas clearly but **unable to answer most Q&A**	Poor communication and **unable to answer Q&A**
			(6–5)	**(4–2)**	**(1–0)**

Phase-I Review-I

Total: 30 Marks

Criterion	Marks	Good	Average	Poor
	Marks Range	**15–12**	**11–6**	**5–0**
A. Problem Analysis, Methodology & Literature Survey *(Cognitive, Psychomotor)*	**15**	• Clearly defines problem aligned to **SDG-9.** • Well-designed methodology/algorithm using modern tools or hardware. • **Literature survey includes minimum 36 papers** from reputed journals (IEEE Transactions, IEEE Access, Elsevier, Springer, PLOS ONE, etc.) • Strong comparison of methods and **clear research gap identified.**	• Problem statement is defined but SDG-9 alignment is partial. • Methodology is basic or partially justified. • Literature survey includes **minimum 20 papers**, some may not be from top-tier journals. • Limited comparison and **unclear research gap.**	• Problem statement unclear or not mapped to SDG-9. • Methodology/design not clearly explained. • Very few papers (less than 15) referred or **non-reputed sources used.** • No clear gap identification.
	Marks Range	**10–8**	**7–4**	**3–0**
B. Implementation Progress & Results *(Cognitive, Psychomotor)*	**10**	• Clear objectives defined • At least one objective fully implemented. • Demonstrates meaningful partial results with justification. • Results are relevant to problem and methodology.	• Objectives defined but implementation is partial • Initial or incomplete results shown • Results lack proper validation or explanation	• Objectives unclear or not measurable • Implementation not started or very minimal • No meaningful results demonstrated
	Marks Range	**5–4**	**3–2**	**1–0**

C. Presentation & Technical Documentation *(Cognitive, Affective)*	5	• Clear and confident PPT presentation • Demonstrates at least two objectives • Answers most questions during Q&A • Submits minimum two chapters of report (Introduction & Literature Survey)	• Presentation is understandable but lacks clarity • Demonstrates at least one objective • Answers only a few questions • Submits only one chapter of report	• Poor communication and slide organization • Unable to explain work or answer questions • Report not submitted or incomplete

Phase-I Review-II

Total: 50 Marks

			Level of Achievement		
	Criteria	**Marks**	**Good**	**Average**	**Poor**
A	**Completion of at least 2 objectives with experimental results.** ***(Cognitive and Psychomotor)*** **Presentation and communication skills** ***(Affective and Psychomotor)***	20	• Students complete at least 2 objectives with experimental results demonstrated. • Demonstrated good presentation and communication skills	• Students complete at least one objective. • Demonstrated average presentation and communication skills	• Extra time required for completion at least one objective. • Requires more efforts in presentation and communication skills
			(20-13)	**(12-7)**	**(6-1)**
B	**Technical report with plagiarism report.** ***(Cognitive and Affective)***	10	Technical report with less than 10% of plagiarism	Technical report with less than 15% of plagiarism	Technical report with less than 20% of plagiarism
			(10-7)	**(6-3)**	**(2-1)**
C	**Paper Publication Status/ Patent Status**	20	Published / Accepted in reputed journal.	Paper/Patent accepted but awaiting publication	Paper/Patent submitted and under consideration
			(10-7)	**(6-3)**	**(2-1)**

RUBRICS for PROJECT Phase II: Review – I (2023 Batch AY 2026-27)

No.	Parameters	Marks	Outstanding	Very Good	Fair	Poor
A	**Implementation & Execution**	10	Project is fully functional, well-implemented, and meets objectives.	Project is mostly functional with minor issues.	Project has major issues but shows effort.	Project is incomplete or non-functional.
			(10 Marks)	**(9-7 Marks)**	**(6-4 Marks)**	**(3-0 Marks)**

B	**Innovation & Creativity**	5	Highly innovative with a novel approach.	Some elements of innovation but mostly conventional.	Basic implementation with minimal innovation.	No innovation, standard implementation.
			(5 Marks)	**(4 Marks)**	**(3-2 Marks)**	**(1-0 Marks)**
C	**Results & alysis**	5	Clear, well-explained results with in-depth analysis.	Results are presented but analysis lacks depth.	Results are present but with weak analysis.	Poor or missing results and analysis.
			(5 Marks)	**(4 Marks)**	**(3-2 Marks)**	**(1-0 Marks)**
D	**Paper Publication Status**	10	Published and available online	Accepted but awaiting publication	Submitted and under consideration	No attempt made
			(10 Marks)	**(9-7 Marks)**	**(6-4 Marks)**	**(3-0 Marks)**
E	**Guide Progress Evaluation**	10	Meets the guide consistently as per the agreed schedule, always prepared, punctual, and actively engages in discussions. Communicates progress and implements feedback effectively.	Meets the guide regularly with occasional minor delays. Comes prepared most of the time and follows up on feedback with some lapses.	Meetings are inconsistent, with some long gaps. Sometimes unprepared and slow in implementing feedback.	Does not meet the guide at all or fails to communicate and make progress.
			(10 Marks)	**(9-7 Marks)**	**(6-4 Marks)**	**(3-0 Marks)**

RUBRICS for PROJECT Phase II: Review – II (2023 Batch AY 2026-27)

No.	Parameters	Marks	Outstanding	Very Good	Fair	Poor
A	**Implementation & Execution**	10	Project is fully functional, well-implemented, and meets objectives.	Project is mostly functional with minor issues.	Project has major issues but shows effort.	Project is incomplete or non-functional.
			(10 Marks)	**(9-7 Marks)**	**(6-4 Marks)**	**(3-0 Marks)**

B	**Quality of results / conclusions / solutions.**	**10**	The defined objective sta ted are met. Extensive studies are done and inferences drawn. C lear and valid suggestions made for further work.	Many of the expected objectives are achieved. Many observations and inferences are made and attempts to identify the issues are made. Some suggestions have been made for further work.	Only a few of the expected objectives ar e achieved. A few inferences are made on the observed failures/issues. No further work suggested.	None of the expected objectives ar e achieved. The team is unable to derive any inferences on the failures/issues observ ed. Any kind of observation or studies is not made.
			(10 Marks)	**(9-7 Marks)**	**(6-4 Marks)**	**(3-0 Marks)**
C	**Report**	**30**	The report is as per the prescribed format and having less than 15% plagiarism.	The report is as per the format prescribed and having plagiarism between 15% to 20%.	The report is as per the format prescribed and having plagiarism between 20% to 25%.	The report is as per the format prescribed and having plagiarism greater than 25%.
			(30 Marks)	**(29-19 Marks)**	**(18 - 12 Marks)**	**(11-0 Marks)**
D	**Paper Publication Status/ Patent Status**	**10**	Published and available online in reputed journal.	Paper/Patent accepted but awaiting publication	Paper/Patent submitte d and under consideration	No such attempt made
			(10 Marks)	**(9-7 Marks)**	**(6-4 Marks)**	**(3-0 Marks)**

The Board of Studies unanimously approves the mandatory inclusion of research publication or patent filing as an outcome of capstone projects in the 2026 scheme, with structured evaluation rubrics (Phase I & II reviews) ensuring rigor, transparency, plagiarism control, and alignment with NBA Outcome-Based Education standards and SDG-9.

13. BoS APPROVALS

- **Department Advisory Board (DAB) Approval:** The revised schemes (2024 and 2026) were presented to the Department Advisory Board, which confirmed alignment with industry expectations, stakeholder feedback, and NEP 2020 guidelines. The DAB endorsed the inclusion of new skill-based courses, MOOCs, and value-added programs to strengthen employability and innovation.
- **Internal Quality Committee (IQAC) Ratification:** The Internal Quality Assurance Cell reviewed the curriculum changes, CO–PO mapping, and attainment rubrics. IQAC ratified the modifications, ensuring compliance with NBA Outcome-Based Education standards and institutional quality benchmarks.
- The new question paper pattern for the CIE and SEE was discussed and approved by the Board.

- **Rubric Approval:** The Board reviewed and approved detailed rubrics for **Capstone Projects, Internships, and Skill Development Courses**. These rubrics include parameters for problem identification, methodology, innovation, plagiarism control, presentation, and mandatory research publication/patent filing. The rubrics ensure transparent evaluation and measurable attainment of Program Outcomes.

The Board of Studies unanimously approves the Department Advisory Board endorsement, IQAC ratification, CIE and SEE question paper pattern and rubric frameworks for the 2024 and 2026 schemes, ensuring quality assurance, transparency, and compliance with NBA and NEP 2020 standards.

Minutes of the Board of Studies (BoS) Meeting

Department of Aeronautical Engineering

Date: 07.04.2026

Venue: Placement Board Room

Time: 9.30 AM – 12.30 PM

1. Opening & Proceedings

- The Chairman delivered the welcome note and introduced absentee members to the board.
- The agenda of the meeting was presented and confirmed.
- The Vision and Mission of the AE program were reiterated to all members.
- The curriculum design process was elaborated, covering the end-to-end BoS workflow, including stakeholder feedback, PAC/DAC recommendations, and IQAC ratification.

2. Scheme Presentations & Comparisons

- The 2024 scheme (5th–8th semesters) was reviewed, with corrections noted (Professional Elective in VIII semester listed as Open Elective).
- The 2026 scheme (3rd–8th semesters) was presented, highlighting NCrF alignment, credit distribution, and inclusion of Capstone Projects, Hackathon-based credits, and diversified internships.
- Comparative analysis of the 2023, 2024, and 2026 schemes was presented, showing progressive integration of industry-driven courses, MOOCs, and skill-based learning.

3. Quality Improvement & Program Matrices

- Gap Analysis for the 2021 batch was presented; CQI mechanisms discussed.
- Program Articulation Matrix for the 2026 scheme was reviewed.
- Low attainment in PO6 (Engineer & Society) and PO7 (Environment & Sustainability) was noted; corrective actions proposed through project-based learning and environmental impact modules.

4. PAC & DAC Recommendations

- Inclusion of recommended courses approved (AI/ML modules, UAV systems, Digital Twin).
- Systems Engineering introduced as a subject.
- UAV & Drone Technology shifted to VI semester.
- MATLAB introduced in lower semesters with MathWorks support.

- "Modeling & Analysis Lab" renamed to Digital Engineering Lab.

5. MOOC & NPTEL Courses

- NPTEL MOOCs to be offered in both odd and even cycles.
- MOOCs positioned in pre-final year; IITs to be contacted for coordination.
- Research Methodology and Environmental Studies identified as suitable NPTEL offerings.
- NPTEL certification integrated into curriculum; internal exams to be conducted for students who do not clear.

6. New Courses & Curriculum Additions

- **Emerging Technology Courses:** Introduced Digital Twin, UAV & Drone Technology, Cyber Physical Systems, Sustainable Aviation, Hypersonic Technology to strengthen industry relevance.
- **AI/ML Integration:** Approved AI & ML in Aerospace Engineering and Machine Learning Practices, with gradual integration of AI/ML modules into core aeronautical subjects.
- **Systems Engineering:** Added as a subject to provide holistic exposure to aerospace system design and lifecycle management.
- **Laboratory Enhancements:** Renamed Modeling & Analysis Lab to Digital Engineering; introduced MATLAB in lower semesters with MathWorks support.
- **Industry-Oriented Courses**: Approved electives in Certification & Testing, MSC Software Applications, Engineering Standards/Digital Engineering Standards.
- **MOOC/NPTEL Integration:** Final-year electives delivered via NPTEL/SWAYAM, with certification mandated and internal evaluation for non-cleared students.
- **Value-Added Programs (VAP):** Introduced Drone Pilot Training, Technical Report Writing, Measurements & Instrumentation, Electricals & Electronics for Sensor Development to complement the core curriculum.

7. Pedagogy, Assessment & Evaluation

- Revised question paper pattern approved.
- Assessment methods and evaluation rubrics for Capstone Projects (Phase I & II) ratified, including plagiarism control and mandatory publication/patent.
- Teaching-Learning Process (TLP) changes endorsed: shift from lecture-based to skill-based delivery, integration of small projects in each course, and industry co-teaching models.

8. Industry Inputs & Competitive Positioning

- Industry collaboration approved for 8–12 month in-college training programs followed by recruitment (Knowledge Institute of Technology, Salem model).

- Internship policy strengthened: 8–12-month internships based on industry problem statements; startup internships problem-specific, industry internships broader.
- Hackathon-based credits introduced (V semester).

9. BoS Approvals

- Department Advisory Board endorsement confirmed.
- IQAC ratification completed.
- Question paper moderation norms approved
- Rubric frameworks for projects, internships, and skill courses approved.

10. Resolutions Sought from the Board

Resolution No.	Agenda Item	Decision	Remarks
GAT/AE/BOS/2026-27/01	Confirmation of Previous Minutes	Minutes of the BoS meeting held on 14.05.2025 confirmed.	No modifications required.
GAT/AE/BOS/2026-27/02	Action Taken Report	ATR on curriculum revisions, new courses, internship policy, and employability enhancements approved.	IQAC ratification completed.
GAT/AE/BOS/2026-27/03	2024 Scheme (5th–8th Semesters)	Corrections approved: UAV shifted to VI sem, Modeling & Analysis Lab renamed, MATLAB introduced earlier, AI/ML integration across subjects.	Professional Elective corrected to Open Elective in VIII sem.
GAT/AE/BOS/2026-27/04	2026 Scheme (3rd–8th Semesters)	Curriculum structure, credit allocation, electives, labs, projects, and internships approved.	NCrF alignment ensured.
GAT/AE/BOS/2026-27/05	Outcome-Based Enrichment	Integration of NPTEL/VTU online courses, skill development, employability modules, and AICTE activity points approved.	Supports continuous learning.
GAT/AE/BOS/2026-27/06	New Courses & Curriculum Additions	Approval of new courses: AI/ML in Aerospace, Cyber Physical Systems, Sustainable Aviation, Hypersonics, Space Technology, Certification & Testing.	Industry-driven electives emphasized.

GAT/AE/BOS/2026-27/07	Value-Added Courses & Internships	Approval of Drone Tech, Technical Report Writing, Measurements & Instrumentation, Electricals & Electronics for Sensor Development, hackathon-based projects, and community projects.	Industry co-teaching model adopted.
GAT/AE/BOS/2026-27/08	Stakeholder Feedback Analysis	Feedback from students, alumni, industry, faculty, and parents incorporated into curriculum updates.	PAC and DAB inputs integrated.
GAT/AE/BOS/2026-27/09	Curriculum Mapping	Curriculum mapped to PEOs, POs, PSOs, Washington Accord profiles, and SDGs.	SDG-9 alignment emphasized in capstone.
GAT/AE/BOS/2026-27/10	Assessment & Evaluation Framework	Rubrics for Capstone Projects, CO/PO attainment review, corrective actions, and CQI mechanisms approved.	Plagiarism control and mandatory publication/patent included.
GAT/AE/BOS/2026-27/11	Evaluation Methods & Delivery	Revised question paper pattern, assessment strategies, and skill-based pedagogy approved.	Industry collaboration in teaching endorsed.
GAT/AE/BOS/2026-27/12	Department Goals	Approval of short-term and long-term goals for curriculum development, industry-academia collaboration, research integration, and innovation.	Competitive positioning strengthened.
GAT/AE/BOS/2026-27/13	BoS Approvals	DAB endorsement, IQAC ratification, question paper moderation norms, and rubric frameworks approved.	Ensures transparency and quality assurance.

Normal/Geo Tagged Photos









14. CONCLUDING REMARKS

The Board of Studies approved the proposed curriculum changes, assessment reforms, and implementation plan effective from Academic Year 2026–27. Further, the proceedings is sent across to Academic Council for approval.

S. No.	Name of the Faculty	Signature with date
1.	Dr. Bino Prince Raja D	7.4.26
2.	Dr. N. Balakrishnan	7/4/26
3.	Dr. Madhusudan A. Padmanabhan	7-4-2026
4.	Dr. Shripathi V	07/04/2026
5.	Dr. Nagaraja S R	7/4/2026
6.	Dr. Tamilselvam N	7/4/26
7.	Dr. Suresh C	7/4/26
8.	Dr. Tamal Jana	07/04/26
9.	Dr. Paramesh T	7/4/26
10.	Prof. Chandrika M B	7/4/26
11.	Ms. Rushika Jaishanker	7/4/26
12.	Mr. Poornesh M	7/4/26
13.	Dr. Balakrishna H B	
14.	Dr. Vijay Tambrallimath	7/4/26