



SCHEME & SYLLABUS




Head of Department
of Science Engineering
Global Academy of Technology
Bangalore - 98



Department of Information Science
and Engineering


Dean Academic
Global Academy of Technology,
Rajarajeshwari Nagar, Bengaluru - 98

III -VIII Semester Scheme & Syllabus (2022-23)

Information Science & Engineering

Autonomous-2022

GLOBAL ACADEMY OF TECHNOLOGY

(Autonomous institution affiliated to VTU, Belagavi.

Accredited by NAAC with 'A' grade,

NBA Accredited CS, E&C, E&E, MECH and IS branches)

Ideal Homes Township,

Raja Rajeshwari Nagar, Bengaluru-560098.

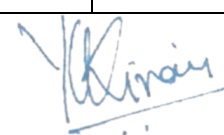
Scheme & Syllabus of UG Autonomous Program – 2022 batch (3rd - 8th Semester)

III-SEMESTER:

Sl. No.	Course Code	Course Title	Teaching Hours/Week			Examination			CREDITS
			L	T	P	CIE	SEE	Total	
1	22MAT31X	Discrete Mathematics – I (Branch Specific)	2	2	0	50	50	100	3
2	22ISE32	Digital Logic Design and Computer Organization (Integrated)	3	0	2	50	50	100	4
3	22ISE33	Data Structure (Integrated)	3	0	2	50	50	100	4
4	22ISE34	Operating Systems	3	0	0	50	50	100	3
5	22ISE35	ESC/ETC/PLC Object Oriented Programming using Java	2	0	2	50	50	100	3
6	22ISE36	Web Technology and Its Applications (Integrated)	2	0	2	50	50	100	3
Total						300	300	600	20

IV-SEMESTER:

Sl. No.	Course Code	Course Title	Teaching Hours/Week			Examination			CREDITS
			L	T	P	CIE	SEE	Total	
1	22MAT41X	Discrete Mathematics -II (Branch Specific)	2	2	0	50	50	100	3
2	22ISE42	Design and Analysis of Algorithms (Integrated)	3	0	2	50	50	100	4
3	22ISE43	Database Management Systems(Integrated)	3	0	2	50	50	100	4
4	22ISE44	Software Engineering	3	0	0	50	50	100	3
5	22ISE45	ESC/ETC/PLC Data Communications	2	0	2	50	50	100	3
6	22ISE46	Mobile Application Development (Integrated)	2	0	2	50	50	100	3
Total						300	300	600	20





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(Effective from the academic year 2022-23)



V SEMESTER

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question and Answer Paper Setting Board (PSB)	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Self -Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	HSMS	22ISE51	Software Project Management & Economics	TD: IS PSB: IS	3	0	0		03	50	50	100	3
2	IPCC	22ISE52	Computer Networks (Integrated)	TD: IS PSB: IS	3	0	2		03	50	50	100	4
3	PCC	22ISE53	Theory of Computations	TD: IS PSB: IS	3	2	0		03	50	50	100	4
4	PCCL	22ISEL54	Data Visualization Lab	TD: IS PSB: IS	0	0	2		03	50	50	100	1
5	PEC	22ISE55X	Professional Elective - I	TD: IS PSB: IS	3	0	0		03	50	50	100	3
6	PROJ	22ISE56	Mini Project	TD: IS PSB: IS	0	0	4		03	100		100	2
7	AEC	22RMIK57	Research Methodology and IPR	HSS	2	2	0		03	50	50	100	3
8	MC	22CIVK58	Environmental Studies	TD: CV/Env/Chem PSB:CV	2	0	0		02	50	50	100	2
9	MC	22NSK59	National Service Scheme (NSS)	NSS coordinator	0	0	2			100		100	0
		22PEK59	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		22YOK59	Yoga	Yoga Teacher									
									Total	550	350	900	22

Professional Elective Course - I

22ISE55A	Computer Vision	22ISE55C	Distributed Systems
22ISE55B	Unix System Programming	22ISE55D	Cloud Computing

PCC: Professional Core Course, **PCCL:** Professional Core Course laboratory, **UHV:** Universal Human Value Course, **MC:** Mandatory Course (Non-credit), **AEC:** Ability Enhancement Course, **SEC:** Skill Enhancement Course, **L:** Lecture, **T:** Tutorial, **P:** Practical **S= SDA:** Skill Development Activity, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **K:** The letter in the course code indicates common to all the stream of engineering. **PROJ:** Project /Mini Project. **PEC:** Professional Elective Course.

Professional Core Course (IPCC): Refers to Professional Core Course Theory Integrated with practical of the same course. Credit for IPCC can be 04 and its Teaching– Learning hours (L : T : P) can be considered as (3 : 0 : 2) or (2 : 2 : 2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper. For more details, the regulation governing the Degree of Bachelor of Engineering /Technology (B.E./B.Tech.) 2022-23

National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE)(Sports and Athletics), and Yoga(YOG) with the concerned coordinator of the course during the first week of III semesters. Activities shall be carried out between III semester to the VI semester (for 4 semesters). Successful completion of the registered course and requisite CIE score is mandatory for the award of the degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the course is mandatory for the award of degree.

Mini-project work: Mini Project is a laboratory-oriented/hands on course that will provide a platform to students to enhance their practical knowledge and skills by the development of small systems/applications etc. Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or a multidisciplinary Mini- project can be assigned to an individual student or to a group having not more than 4 students.

CIE procedure for Mini-project:

(i) Single discipline: The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two faculty members of the Department, one of them being the Guide. The CIE marks awarded for the Mini-project work shall be based on the evaluation of the project report, project presentation skill, and question and answer session in the ratio of 50:25:25. The marks awarded for the project report shall be the same for all the batches mates.

(ii) Interdisciplinary: Continuous Internal Evaluation shall be group-wise at the college level with the participation of all the guides of the project.

The CIE marks awarded for the Mini-project, shall be based on the evaluation of the project report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

No SEE component for Mini-Project.

Professional Elective Courses (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course. The minimum number of students' strengths for offering a professional elective is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.



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(Effective from the academic year 2022-23)



VI SEMESTER

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Self-Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	IPCC	22ISE61	Full Stack Development (Integrated)	TD: IS PSB: IS	3	0	2		03	50	50	100	4
2	PCC	22ISE62	Machine Learning	TD: IS PSB: IS	4	0	0		03	50	50	100	4
3	PEC	22ISE63X	Professional Elective - II	TD: IS PSB: IS	3	0	0		03	50	50	100	3
4	OEC	22ISE64X	Open Elective -I	TD: IS PSB: IS	3	0	0		03	50	50	100	3
5	PROJ	22ISEP65	Major Project Phase - I	TD: IS PSB: IS	0	0	4		04	100	--	100	2
6	PCCL	22ISEL66	Machine Learning Lab	TD: IS PSB: IS	0	0	2		03	50	50	100	1
7	AEC/ SDC	22ISE67X	Ability Enhancement Course/ SkillDevelopment Course - III	TD & PSB: Concerned Department	If the course is offered as a Theory				01	50	50	100	1
					1	0	0						
					If course is offered as a practical								
					0	0	2						
8	MC	22NSK68	National Service Scheme (NSS)	NSS coordinator	0	0	2			100	-	100	0
		22PEK68	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		22YOK68	Yoga	Yoga Teacher									
9	IKS	22IKS69	Indian Knowledge System		1	0	0		01	100	-	100	0
10	UHV	22UHV69	Universal Human Values		1	0	0		01	100	-	100	0
Total									700	300	1000	18	

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Professional Elective Course			
22ISE63A	Blockchain Technology	22ISE63C	Wireless Sensor Networks
22ISE63B	Ethical Hacking	22ISE63D	Computer Graphics
Open Elective Course			
22ISE64A	Introduction to Data Structures	22ISE64C	Introduction to Computer Networks
22ISE64B	Introduction to Operating Systems	22ISE64D	Introduction to JAVA
Ability Enhancement Course / Skill Enhancement Course - III			
22ISE67A	Mobile Application Development	22ISE67C	IT Law and Ethics
22ISE67B	Tosca – Automated Software Testing	22ISE67D	Devops
PCC: Professional Core Course, PCCL: Professional Core Course laboratory, UHV: Universal Human Value Course, MC: Mandatory Course (Non-credit), AEC: Ability Enhancement Course, SEC: Skill Enhancement Course, L: Lecture, T: Tutorial, P: Practical S= SDA: Skill Development Activity, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation. K : The letter in the course code indicates common to all the stream of engineering. PROJ: Project /Mini Project. PEC: Professional Elective Course. PROJ: Project Phase -I, OEC: Open Elective Course			
Professional Core Course (IPCC): Refers to Professional Core Course Theory Integrated with practical of the same course. Credit for IPCC can be 04 and its Teaching– Learning hours (L : T : P) can be considered as (3 : 0 : 2) or (2 : 2 : 2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper. For more details, the regulation governing the Degree of Bachelor of Engineering /Technology (B.E./B.Tech.) 2022-23			
National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE)(Sports and Athletics), and Yoga(YOG) with the concerned coordinator of the course during the first week of III semesters. Activities shall be carried out between III semester to the VI semester (for 4 semesters). Successful completion of the registered course and requisite CIE score is mandatory for the award of the degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the course is mandatory for the award of degree.			
Professional Elective Courses (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course. The minimum number of students' strengths for offering professional electives is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.			
Open Elective Courses: Students belonging to a particular stream of Engineering and Technology are not entitled to the open electives offered by their parent Department. However, they can opt for an elective offered by other Departments, provided they satisfy the prerequisite condition if any. Registration to open electives shall be documented under the guidance of the Program Coordinator/ Advisor/Mentor. The minimum numbers of students' strength for offering Open Elective Course is 10. However, this condition shall not be applicable to class where the admission to the program is less than 10.			
Project Phase-I : Students have to discuss with the mentor /guide and with their help he/she has to complete the literature survey and prepare the report and finally define the problem statement for the project work.			



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(Effective from the academic year 2022-23)



Scheme A- VII SEMESTER (Swappable VII and VIII SEMESTER)

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Self -Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	IPCC	22ISE71	Big Data Analytics (Integrated)	TD: IS PSB: IS	3	0	2		03	50	50	100	4
2	IPCC	22ISE72	Industrial Internet of Things (Integrated)	TD: IS PSB: IS	3	0	2		03	50	50	100	4
3	PCC	22ISE73	Information and Network Security	TD: IS PSB: IS	4	0	0		03	50	50	100	4
4	PEC	22ISE74X	Professional Elective-III	TD: IS PSB: IS	3	0	0		03	50	50	100	3
5	OEC	22ISE75X	Open Elective- II	TD: IS PSB: IS	3	0	0		01	50	50	100	3
6	PROJ	22ISEP76	Major Project Phase-II	TD: IS PSB: IS	0	0	12		03	100	100	200	6
Total									350	350	700	24	

Professional Elective Course

22ISE74A	Deep Learning	22ISE74C	Information Retrieval and Natural Language Processing
22ISE74B	Quantum Computing	22ISE74D	.Net Frame Work for Applications

Open Elective Course

22ISE75A	Introduction to DBMS	22ISE75C	Introduction Software Engineering
22ISE75B	ReactJS	22ISE75D	Web Technology

PCC: Professional Core Course, **PCCL:** Professional Core Course laboratory, **PEC:** Professional Elective Course, **OEC:** Open Elective Course **PR:** Project Work, **L:** Lecture, **T:** Tutorial, **P:** Practical **S= SDA:** Skill Development Activity, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **TD-** Teaching Department, **PSB:** Paper Setting department, **OEC:** Open Elective Course, **PEC:** Professional Elective Course. **PROJ:** Project work

Note: VII and VIII semesters of IV years of the program

(1) Institutions can swap the VII and VIII Semester Schemes of Teaching and Examinations to accommodate research internships/ industry internships after the VI

semester.

(2) Credits earned for the courses of VII and VIII Semester Scheme of Teaching and Examinations shall be counted against the corresponding semesters whether the VII or VIII semesters is completed during the beginning of the IV year or the later part of IV years of the program.

Professional Elective Courses (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course. The minimum number of students' strengths for offering professional electives is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.

Open Elective Courses:

Students belonging to a particular stream of Engineering and Technology are not entitled to the open electives offered by their parent Department. However, they can opt for an elective offered by other Departments, provided they satisfy the prerequisite condition if any. Registration to open electives shall be documented under the guidance of the Program Coordinator/ Advisor/Mentor. The minimum numbers of students' strength for offering Open Elective Course is 10. However, this condition shall not be applicable to class where the admission to the program is less than 10.

PROJECT WORK (21MEP75): The objective of the Project work is

- (i)** To encourage independent learning and the innovative attitude of the students.
- (ii)** To develop interactive attitude, communication skills, organization, time management, and presentation skills.
- (iii)** To impart flexibility and adaptability.
- (iv)** To inspire team working.
- (v)** To expand intellectual capacity, credibility, judgment and intuition.
- (vi)** To adhere to punctuality, setting and meeting deadlines.
- (vii)** To install responsibilities to oneself and others.
- (viii)** To train students to present the topic of project work in a seminar without any fear, face the audience confidently, enhance communication skills, involve ingroup discussion to present and exchange ideas.

CIE procedure for Project Work:

(1) Single discipline: The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two senior faculty members of the Department, one of whom shall be the Guide.

The CIE marks awarded for the project work, shall be based on the evaluation of the project work Report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

(2) Interdisciplinary: Continuous Internal Evaluation shall be group-wise at the college level with the participation of all guides of the college. Participation of external guide/s, if any, is desirable. The CIE marks awarded for the project work, shall be based on the evaluation of project work Report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

SEE procedure for Project Work: SEE for project work will be conducted by the two examiners appointed by the University. The SEE marks awarded for the project work shall be based on the evaluation of project work Report, project presentation skill, and question and answer session in the ratio 50:25:25.



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Scheme A- VIII SEMESTER (Swappable VII and VIII SEMESTER)

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Self -Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	PEC	22ISE81X	Professional Elective -IV (Online Courses)	PSB: IS	3	0	0		03	50	50	100	3
2	OEC	22ISE82X	Open Elective - III (Online Courses)	PSB: IS	3	0	0		03	50	50	100	3
3	INT	22ISEI83	Internship (Industry/Research) (14 - 20 weeks)	PSB: IS	0	0	12		03	100	100	200	10
Total									200	200	400	16	

Professional Elective Course (Online courses)

22ISE81A	Reinforcement Learning (Tentative) https://nptel.ac.in/courses/106106143	22ISE81C	Multi-Core Computer Architecture (Tentative) https://nptel.ac.in/courses/106103184
22ISE81B	Social Network Analysis (Tentative) https://nptel.ac.in/courses/106106239	22ISE81D	Design & Implementation of Human-Computer Interfaces (Tentative) https://nptel.ac.in/courses/106103237

Open Elective Courses (Online Courses)

22ISE82A	Software Testing (Tentative) https://nptel.ac.in/courses/106101163	22ISE82C	Responsible & Safe AI Systems (Tentative) https://nptel.ac.in/courses/106106472
22ISE82B	Introduction to Industry 4.0 and Industrial Internet of Things (Tentative) https://nptel.ac.in/courses/106105195	22ISE82D	Data Science for Engineers (Tentative) https://nptel.ac.in/courses/106106179

L: Lecture, **T:** Tutorial, **P:** Practical **S= SDA:** Skill Development Activity, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **TD-** Teaching Department, **PSB:** Paper Setting department, **OEC:** Open Elective Course, **PEC:** Professional Elective Course. **PROJ:** Project work, **INT:** Industry Internship / Research Internship / Rural Internship

Note: VII and VIII semesters of IV years of the program

Swapping Facility

- Institutions can swap VII and VIII Semester Scheme of Teaching and Examinations to accommodate **research internships/ industry internships/Rural Internship** after the VI semester.
- Credits earned for the courses of VII and VIII Semester Scheme of Teaching and Examinations shall be counted against the corresponding semesters whether VII or
- VIII semester is completed during the beginning of IV year or later part of IV year of the program.

Rajarajeshwari Nagar, Bengaluru – 560098, Karnataka. INDIA

Phone: +91 80 28603158, Telefax: +91 80 28603157, Email: info@gat.ac.in, Website: www.gat.ac.in

Elucidation:

At the beginning of IV years of the program i.e., after VI semester, VII semester classwork and VIII semester **Research Internship /Industrial Internship / Rural Internship** shall be permitted to be operated simultaneously by the University so that students have ample opportunity for an internship. In other words, a good percentage of the class shall attend VII semester classwork and a similar percentage of others shall attend to Research Internship or Industrial Internship or Rural Internship.

Research/Industrial /Rural Internship shall be carried out at an Industry, NGO, MSME, Innovation centre, Incubation centre, Start-up, centre of Excellence (CoE), Study Centre established in the parent institute and /or at reputed research organizations/institutes.

The mandatory Research internship /Industry internship / Rural Internship is for 14 to 20 weeks. The internship shall be considered as a head of passing and shall be considered for the award of a degree. Those, who do not take up/complete the internship shall be declared to fail and shall have to complete it during the subsequent University examination after satisfying the internship requirements.

Research internship: A research internship is intended to offer the flavour of current research going on in the research field. It helps students get familiarized with the field and imparts the skill required for carrying out research.

Industry internship: Is an extended period of work experience undertaken by students to supplement their degree for professional development. It also helps them learn to overcome unexpected obstacles and successfully navigate organizations, perspectives, and cultures. Dealing with contingencies helps students recognize, appreciate, and adapt to organizational realities by tempering their knowledge with practical constraints.

Rural Internship: Rural development internship is an initiative of Unnat Bharat Abhiyan Cell, RGIT in association with AICTE to involve students of all departments studying in different academic years for exploring various opportunities in techno-social fields, to connect and work with Rural India for their upliftment.

The faculty coordinator or mentor has to monitor the student's internship progress and interact with them to guide for the successful completion of the internship. The students are permitted to carry out the internship anywhere in India or abroad. University shall not bear any expenses incurred in respect of the internship.

With the consent of the internal guide and Principal of the Institution, students shall be allowed to carry out the internship at their hometown (**within or outside the state or abroad**), provided favorable facilities are available for the internship and the student remains regularly in contact with the internal guide. **University shall not bear any cost involved in carrying out the internship by students.** However, students can receive any financial assistance extended by the organization.

Professional Elective /Open Elective Course: These are ONLINE courses suggested by the respective Board of Studies. Details of these courses shall be made available for students on the VTU web portal.

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VI SEMESTER Scheme B - for the candidates who seek a two-semester internship with project work /Start-up

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Self -Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	IPCC	22ISE61	Full Stack Development (Integrated)	TD: IS PSB: IS	3	0	2		03	50	50	100	4
2	PCC	22ISE62	Machine Learning	TD: IS PSB: IS	4	0	0		03	50	50	100	4
3	PEC	22ISE63X	Professional Elective - II	TD: IS PSB: IS	3	0	0		03	50	50	100	3
4	OEC	22ISE64X	Open Elective -I	TD: IS PSB: IS	3	0	0		03	50	50	100	3
5	PCCL	22ISEL66	Machine Learning Lab	TD: IS PSB: IS	0	0	2		03	50	50	100	1
6	AEC/ SDC	22ISE67X	Ability Enhancement Course/ Skill Development Course - III	TD & PSB: Concerned Department	If the course is offered as a Theory				01	50	50	100	1
					1	0	0						
					If course is offered as a practical								
					0	0	2						
7	MC	22NSK68	National Service Scheme (NSS)	NSS coordinator	0	0	2			100	---	100	0
		22PEK68	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		22YOK68	Yoga	Yoga Teacher									
8	IKS	22IKS69	Indian Knowledge System		1	0	0		01	100	-	100	0
9	UHV	22UHV69	Universal Human Values		1	0	0		01	100	-	100	0
Total									600	300	900	16	

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V. K. Kishan



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Scheme B - VII and VIII semesters for the candidates who seek an internship with project work)

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Self-Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	IPCC	22ISE71	Big Data Analytics (Integrated)	TD: IS PSB: IS	3	0	2		03	50	50	100	4
2	IPCC	22ISE72	Industrial IOT (Integrated)	TD: IS PSB: IS	3	0	2		03	50	50	100	4
3	PCC	22ISE73	Information and Network Security	TD: IS PSB: IS	4	0	0		03	50	50	100	3
4	PEC	22ISE74X	Professional Elective-III (MOOC COURSES)	TD: IS PSB: IS	3	0	0		03	50	50	100	3
5	OEC	22ISE75X	Open Elective- II (MOOC COURSES)	TD: IS PSB: IS	3	0	0		01	50	50	100	3
6	PEC	22ISE81X	Professional Elective-IV (MOOC COURSES)	TD: IS PSB: IS	3	0	0		03	50	50	100	3
7	OEC	22ISE82X	Open Elective- III (MOOC COURSES)	TD: IS PSB: IS	3	0	0		03	50	50	100	3
8	PROJ	22ISEP84	Major Project Phase-II	TD: IS PSB: IS	0	0	12		03	100	100	200	9
9	INT	22ISEI83	Internship (Industry/Research) (14 - 20 weeks)	TD: IS PSB: IS	0	0	12		03	100	100	200	10
Total									550	550	1100	42	

PCC: Professional Core Course, **PCCL:** Professional Core Course laboratory, **PEC:** Professional Elective Course, **OEC:** Open Elective Course **PR:** Project Work, **L:** Lecture, **T:** Tutorial, **P:** Practical **S= SDA:** Skill Development Activity, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **TD-** Teaching Department, **PSB:** Paper Setting department, **OEC:** Open Elective Course, **PEC:** Professional Elective Course. **PROJ:** Project work

Note: VII and VIII semesters of IV years of the program

(1) Institutions can swap the VII and VIII Semester Schemes of Teaching and Examinations to accommodate research internships/ industry internships after the VI

Rajarajeshwari Nagar, Bengaluru – 560098, Karnataka. INDIA

Phone: +91 80 28603158, Telefax: +91 80 28603157, Email: info@gat.ac.in, Website: www.gat.ac.in