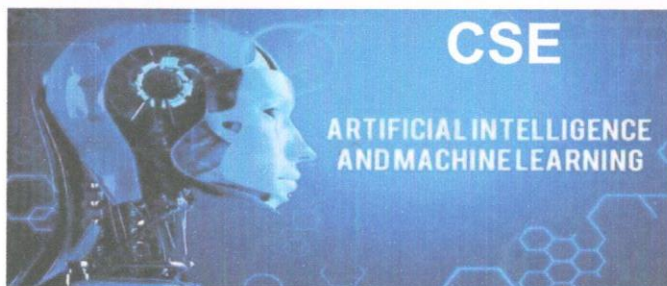




SCHEME



Department of Computer Science and
Engineering (AI&ML)

AM
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Bangalore- 560 098.

Ridhu
24/05/25
Dean Academic
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2022 SCHEME

Computer Science and Engineering
(AI&ML)

III – VIII Semester

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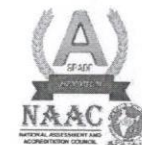
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III SEMESTER

Sl. No.	Course Code	Course Title	Course Type	Teaching Dept.	Teaching Hours/Week			Examination			CREDITS
					L	T	P	CIE	SEE	Total	
1	22MAT31A	Discrete Mathematics and Graph Theory	BS	MAT	2	2	0	50	50	100	3
2	22CML32	Data Structures (Integrated)	IPC	Respective Department	3	0	2	50	50	100	4
3	22CML33	Digital Design and Computer Organization (Integrated)	IPC		3	0	2	50	50	100	4
4	22CML34	Operating Systems	PC		3	0	0	50	50	100	3
5	22CML35	Introduction to Web Technologies(Integrated)	PLC		2	0	2	50	50	100	3
6	22CML36	Unix and Shell Programming (Integrated)	AEC		2	0	2	50	50	100	3
Total								300	300	600	20

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IV SEMESTER

Sl. No.	Course Code	Course Title	Course Type	Teaching Dept.	Teaching Hours/Week			Examination			CREDITS
					L	T	P	CIE	SEE	Total	
1	22MAT41A	Probability and Linear Algebra	BS	MAT	2	2	0	50	50	100	3
2	22CML42	Database Management Systems (Integrated)	IPC	Respective Department	3	0	2	50	50	100	4
3	22CML43	Design and Analysis of Algorithms (Integrated)	IPC		3	0	2	50	50	100	4
4	22CML44	Software Engineering	PC		3	0	0	50	50	100	3
5	22CML45	Object Oriented Programming with Java (Integrated)	ETC		2	0	2	50	50	100	3
6	22CML46	Advanced Python	AEC		2	2	0	50	50	100	3
Total								300	300	600	20


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V 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	HSMS	22CML51	Management, Economics and Finance for IT Engineers	TD: CI PSB: CI	3	0	0		03	50	50	100	3
2	IPCC	22CML52	Computer Networks	TD: CI PSB: CI	3	0	2		03	50	50	100	4
3	PCC	22CML53	Fundamentals of Machine Learning	TD: CI PSB: CI	4	0	0		03	50	50	100	4
4	PCCL	22CMLL54	Fundamentals of Machine Learning Laboratory	TD: CI PSB: CI	0	0	2		03	50	50	100	1
5	PEC	22CML55X	Professional Elective – I	TD: CI PSB: CI	3	0	0		03	50	50	100	3
6	PROJ	22CMLP56	Mini Project	TD: CI PSB: CI	0	0	4		03	100	-	100	2
7	AEC	22RMIK57	Research Methodology and IPR	Any Department	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

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22CML55A	Enterprise Java Programming	22CML55C	Fundamentals of Internet of Things
22CML55B	Cryptography & Network security	22CML55D	Data mining & Data warehousing

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:

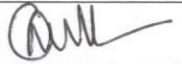
(i) Single discipline: The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two faculty members of the Department, one of them being the Guide. The CIE marks awarded for the Mini-project work shall be based on the evaluation of the project report, project 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 batch mates.

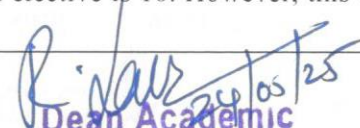
(ii) Interdisciplinary: Continuous Internal Evaluation shall be group-wise at the college level with the participation of all the guides of the project.

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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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	22CML61	Cloud Computing	TD: CI PSB: CI	3	0	2		03	50	50	100	4
2	PCC	22CML62	Advanced Machine learning	TD: CI PSB: CI	4	0	0		03	50	50	100	4
3	PEC	22CML63X	Professional Elective - II	TD: CI PSB: CI	3	0	0		03	50	50	100	3
4	OEC	22CML64X	Open Elective -I	TD: PSB:Respective Department	3	0	0		03	50	50	100	3
5	PROJ	22CMLP65	Major Project Phase - I	TD: CI PSB: CI	0	0	4		03	100	--	100	2
6	PCCL	22CMLL66	Advanced Machine learning Laboratory	TD: CI PSB: CI	0	0	2		03	50	50	100	1
7	AEC/ SDC	22CML67X	Ability Enhancement Course/ SkillDevelopment Course	TD & PSB: CI	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	22IKSK69	Indian Knowledge System	PSB:HSS TD:CI	1	0	0		01	100	--	100	0
10	MC	22UHV69	Universal Human Values	Any Department	1	0	0		01	100	--	100	0
Total									700	300		1000	18

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Professional Elective Course

22CML63A	Server side Scripting	22CML63C	Networking And Data Analysis In Iot
22CML63B	Fundamentals of Cyber security	22CML63D	Fundamentals of Data Science

Open Elective Course

22CML64A	Chat GPT-AI Learning models	22CML64C	Introduction to Machine Learning
22CML64B	Scala Programming	22CML64D	Mobile Application Development

Ability Enhancement Course / Skill Enhancement Course

22CML67A	MongoDB
22CML67B	Data Visualization

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 al 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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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	
					L	T	P	S					
1	IPCC	22CML71	Natural Language Processing	TD: CI PSB: CI	3	0	2		03	50	50	100	4
2	IPCC	22CML72	Deep Learning	TD: CI PSB: CI	3	0	2		03	50	50	100	4
3	PCC	22CML73	Computer vision and image processing	TD: CI PSB: CI	3	2	0		03	50	50	100	4
4	PEC	22CML74X	Professional Elective-III	TD: CI PSB: CI	3	0	0		03	50	50	100	3
5	OEC	22CML75X	Open Elective- II	TD: PSB: Respective Department	3	0	0		01	50	50	100	3
6	PROJ	22CMLP76	Major Project Phase-II	TD: CI PSB: CI	0	0	12		03	100	100	200	6
									Total	350	350	700	24

Professional Elective Course

22CML74A	Framework for Application Deployment	22CML74C	Industrial IOT
22CML74B	Ethical Hacking	22CML74D	Business Intelligence & Analytics

Open Elective Course

22CML75A	R Programming	22CML75C	Fundamentals of IOT
22CML75B	Java Programming	22CML75D	Digital Image Processing

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

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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 (22CMLP76): 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:

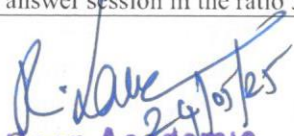
(1) Single discipline: The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two senior faculty members of the Department, one of whom shall be the Guide.

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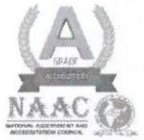
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Scheme A- VIII SEMESTER (Swappable VII and VIII SEMESTER)

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination				Credits
					Theory Lectur	Tutorial	Practical / Drawing	Self -Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	PEC	22CML81x	Professional Elective -IV (Online Courses)	TD: CI PSB:CI	3	0	0		03	50	50	100	3
2	OEC	22CML82x	Open Elective - III (Online Courses)	TD: CI PSB: CI	3	0	0		03	50	50	100	3
3	INT	22CMLI83	Internship (Industry/Research) (14 - 20 weeks)		0	0	12		03	100	100	200	10
Total										200	200	400	16

Professional Elective Course (Online courses)

22CML81A	Parametrized Algorithm	22CML81C	Large Language Models
22CML81B	Blockchain and its Applications	22CML81D	Social Network Analysis

Open Elective Courses (Online Courses)

22CML82A	Cyber Security and Privacy	22CML82C	Natural Language Processing
22CML82B	Computer Vision	22CML82D	Responsible and Safe AI systems

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.

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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.

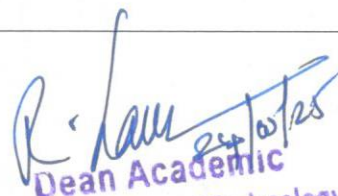
Rural Internship: Rural development internship is an initiative of Unnat Bharat Abhiyan Cell, RGIT in association with AICTE to involve students of all departments studying in different academic years for exploring various opportunities in techno-social fields, to connect and work with Rural India for 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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Scheme B- VII SEMESTER (Swappable VII and VIII SEMESTER)

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board	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	IPCC	22CML71	Natural Language Processing (To be completed in 5 th /6 th semester)	TD: CI PSB: CI	3	0	2			03	50	50	100	4
2	IPCC	22CML72	Deep Learning (To be completed in 5 th /6 th semester)	TD: CI PSB: CI	3	0	2			03	50	50	100	4
3	PCC	22CML73	Computer vision and image processing (To be completed in 5 th /6 th semester)	TD: CI PSB: CI	3	2	0			03	50	50	100	4
4	PEC	22CML74X	Professional Elective-III (To be completed in 5 th /6 th semester)	TD: CI PSB: CI	3	0	0			03	50	50	100	3
5	OEC	22CML75X	Open Elective- II (To be completed in 5 th /6 th semester)	TD:PSB: Respective Department	3	0	0			01	50	50	100	3
6	PROJ	22CMLP76	Major Project Phase-II	TD: CI PSB: CI	0	0	12			03	100	100	200	6
Total											350	350	700	24

Professional Elective Course

22CML74A	Framework for Application Deployment	22CML74C	Industrial IOT
22CML74B	Ethical Hacking	22CML74D	Business Intelligence & Analytics

Open Elective Course

22CML75A	R Programming	22CML75C	Fundamentals of IOT
22CML75B	Java Programming	22CML75D	Digital Image Processing

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

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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 (22CMLP76): The objective of the Project work is

(ix) To encourage independent learning and the innovative attitude of the students.

(x) To develop interactive attitude, communication skills, organization, time management, and presentation skills.

(xi) To impart flexibility and adaptability.

(xii) To inspire team working.

(xiii) To expand intellectual capacity, credibility, judgment and intuition.

(xiv) To adhere to punctuality, setting and meeting deadlines.

(xv) To install responsibilities to oneself and others.

(xvi) 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:

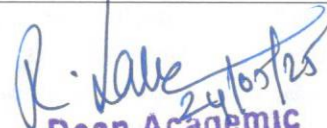
(3) **Single discipline:** The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two senior faculty members of the Department, one of whom shall be the Guide.

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.

(4) **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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B.E. in Computer Science and Engineering(AI&ML) Scheme of Teaching and Examinations 2022

Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

(Effective from the academic year 2022-23)

Scheme B- 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 Lectur	Tutorial	Practical / Drawing	Self-Study		Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S						
1	PEC	22CML81x	Professional Elective -IV (Online Courses)	TD: CI PSB:CI	3	0	0			03	50	50	100	3
2	OEC	22CML82x	Open Elective - III (Online Courses)	TD: CI PSB: CI	3	0	0			03	50	50	100	3
3	INT	22CML83	Internship (Industry/Research) (14 - 20 weeks)		0	0	12			03	100	100	200	10
Total											200	200	400	16

Professional Elective Course (Online courses)

22CML81A	Parametrized Algorithm	22CML81C	Large Language Models
22CML81B	Blockchain and its Applications	22CML81D	Social Network Analysis

Open Elective Courses (Online Courses)

22CML82A	Cyber Security and Privacy	22CML82C	Natural Language Processing
22CML82B	Computer Vision	22CML82D	Responsible and Safe AI systems

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 programSwapping 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.

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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