

**Study Scheme: PG Programme
(Batch 2023 Onwards)**

M.Tech. in Computer Science and Engineering

Vision & Mission of Department

Vision

To achieve technical & research excellence in the field of Computer Science and Engineering with industrial & social perspective.

Mission

- To provide environment for imparting high quality technical education, skill development, research and development.
- To disseminate sound knowledge of recent Computer Technologies by organizing seminar/workshops/short-term courses.
- To develop interaction and collaboration with the industry.
- To facilitate Hand-on training to the students for promoting Self-Employment.

Program Outcomes (POs) – PG

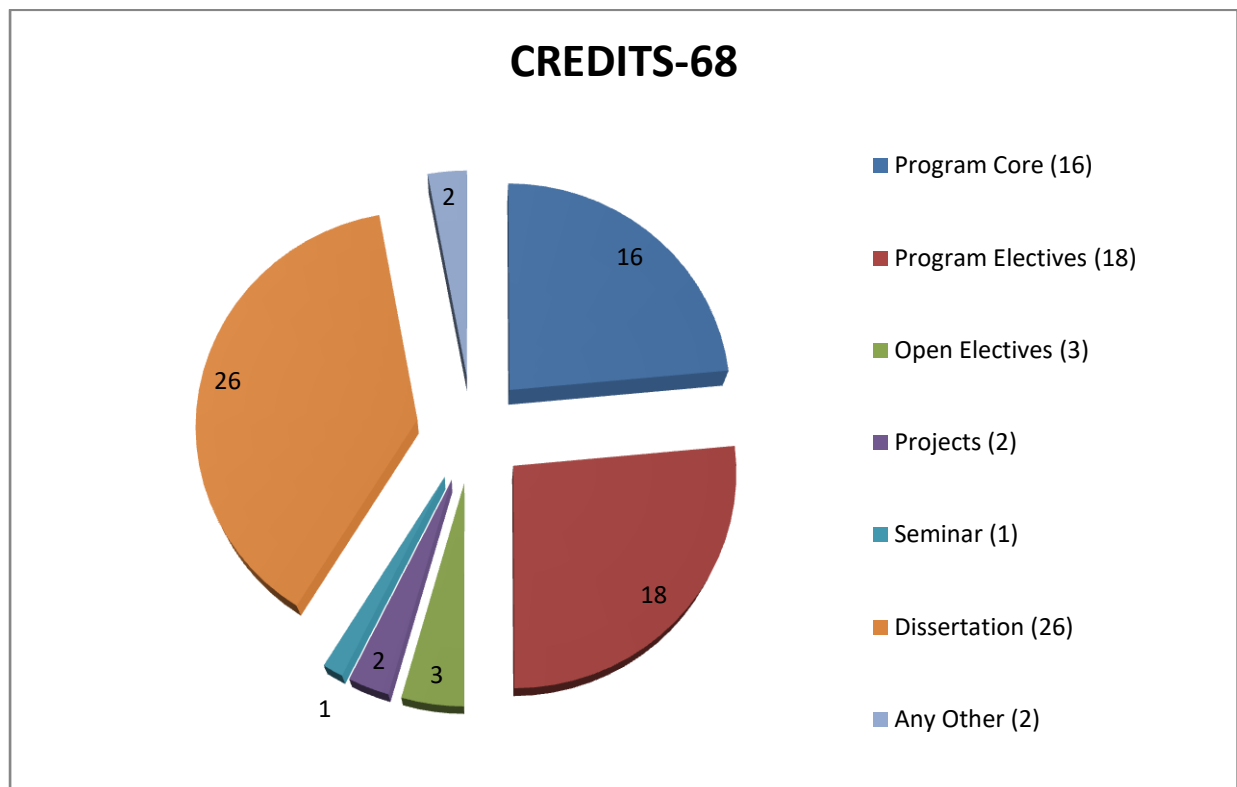
1. **Scholarship of Knowledge:** Acquire in-depth knowledge of specific discipline or professional area, including wider and global perspective, with an ability to discriminate, evaluate, analyse, and synthesise existing and new knowledge, and integration of the same for enhancement of knowledge.
2. **Critical Thinking:** Analyse complex engineering problems critically, apply independent judgement for synthesising information to make intellectual and/or creative advances for conducting research in a wider theoretical, practical and policy context.
3. **Problem Solving:** Think laterally and originally, conceptualise, and solve engineering problems, evaluate a wide range of potential solutions for those problems and arrive at feasible, optimal solutions after considering public health and safety, cultural, societal, and environmental factors in the core areas of expertise.
4. **Research Skill:** Extract information pertinent to unfamiliar problems through literature survey and experiments, apply appropriate research methodologies, techniques and tools, design, conduct experiments, analyse, and interpret data, demonstrate higher order skill and view things in a broader perspective, contribute individually/in group(s) to the development of scientific/technological knowledge in one or more domains of engineering.
5. **Usage of modern tools:** Create, select, learn, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities with an understanding of the limitations.
6. **Collaborative and Multidisciplinary work:** Possess knowledge and understanding of group dynamics, recognise opportunities and contribute positively to collaborative-multidisciplinary scientific research, demonstrate a capacity for self-management and teamwork, decision-making based on open-mindedness, objectivity, and rational analysis in order to achieve common goals and further the learning of themselves as well as others.
7. **Project Management and Finance:** Demonstrate knowledge and understanding of engineering and management principles and apply the same to one's own work, as a member and leader in a team, manage projects efficiently in respective disciplines and multidisciplinary environments after consideration of economical and financial factors.
8. **Communication:** Communicate with the engineering community, and with society at large, regarding complex engineering activities confidently and effectively, such as, being able to comprehend and write effective reports and design documentation by adhering to appropriate standards, make effective presentations, and give and receive clear instructions.

9. **Life-long Learning:** Recognise the need for and have the preparation and ability to engage in life-long learning independently, with a high level of enthusiasm and commitment to improve knowledge and competence continuously.
10. **Ethical Practices and Social Responsibility:** Acquire professional and intellectual integrity, professional code of conduct, ethics of research and scholarship, consideration of the impact of research outcomes on professional practices and an understanding of responsibility to contribute to the community for sustainable development of society.
11. **Independent and Reflective Learning:** Observe and examine critically the outcomes of one's actions and make corrective measures subsequently and learn from mistakes without depending on external feedback.

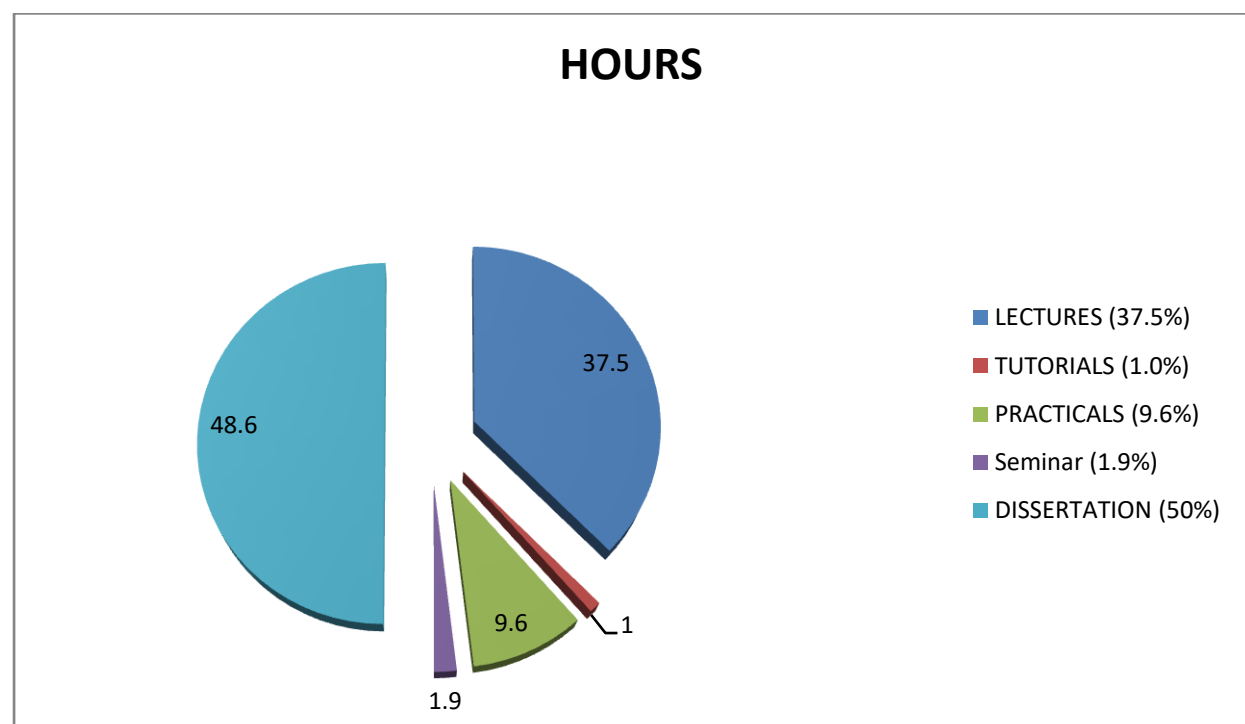
Program Specific Outcomes (PSO's) – PG

- 1) **Program Specific Outcome (PSO) 1:** The ability to take up higher studies, research, and development in modern computing environment.
- 2) **Program Specific Outcome (PSO) 2:** The ability to apply mathematical foundation, algorithmic principles, comprehend the technical advancements, and use research based knowledge for modelling and simulation of the problems.

DISTRIBUTION OF COURSE CREDITS (PG)



CONTACT HOURS DISTRIBUTION (PG)



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Semester-I							
Sr. No.	Subject Code	Subject Name	L	T	P	Hrs.	Credits
1	PCCS-811	Artificial Intelligence	3	0	0	3	3
2	PCCS-812	Operating System Design	3	0	0	3	3
3	PECS-811	Core Elective-I	3	0	0	3	3
4	PECS-812	Core Elective-II	3	0	0	3	3
5	RMAL-811	Research Methodology and IPR	2	0	0	2	2
6	ACMH-811	English research paper writing & Professional Communication	2	0	0	2	0
7	PCCS-813	Artificial Intelligence Lab	0	0	4	4	2
8	PECS-813	Core Elective-I Lab	0	0	4	4	2
		Total	16	0	8	24	18
Semester-II (A)							
Sr. No.	Subject Code	Subject Name	L	T	P	Hrs.	Credits
1	PCCS-821	Machine Learning	3	1	0	4	4
2	PCCS-822	Advanced Network Principles and Protocols	3	0	0	3	3
3	PCCS-823	Cyber Security	3	0	0	3	3
4	PECS-821	Core Elective-III	3	0	0	3	3
5	PECS-822	Core Elective-IV	3	0	0	3	3
6	ACMH-821	Constitution Of India	2	0	0	2	0
7	PECS-823	Core Elective-IV Lab	0	0	2	2	1
8	PCCS-824	Seminar	0	0	2	2	1
		Total	17	1	4	22	18
Students are to be encouraged to go to industrial training/ Internship during summer break							
Semester-III							
Sr. No.	Subject Code	Subject Name	L	T	P	Hrs.	Credits
1	PECS-911	Core Elective-V	3	0	0	3	3
2	OECS-911	Open Elective	3	0	0	3	3
3	PCCS-911	Dissertation (Part-1)	0	0	20	20	10
		Total	6	0	20	26	16
Semester-IV							
Sr. No.	Subject Code	Subject Name	L	T	P	Hrs.	Credits
1	PCCS-921	Dissertation (Part-2)	0	0	32	32	16
		Total	0	0	32	32	16

List of Core Electives

CORE ELECTIVE-I (PECS-811)		
Sr. No.	Subject Code	Subject Name
1	PECS-811A	Parallel Computing
2	PECS-811B	Data Preparation and Analysis
3	PECS-811C	Advance Database Systems
CORE ELECTIVE-I LAB(PECS-813)		
Sr. No.	Subject Code	Subject Name
1	PECS-813A	Parallel Computing Lab
2	PECS-813B	Data Preparation and Analysis Lab
3	PECS-813C	Advance Database Systems Lab
CORE ELECTIVE-II (PECS-812)		
Sr. No.	Subject Code	Subject Name
1	PECS-812A	Distributed Systems
2	PECS-812B	Advance Algorithms
3	PECS-812C	Big Data Analytics
CORE ELECTIVE-III (PECS-821)		
Sr. No.	Subject Code	Subject Name
1	PECS-821A	Deep Learning
2	PECS-821B	Software Project Management
3	PECS-821C	Computer Vision
CORE ELECTIVE-IV (PECS-822)		
Sr. No.	Subject Code	Subject Name
1	PECS-822A	Cloud Computing
2	PECS-822B	Internet of Things
3	PECS-822C	Bioinformatics
CORE ELECTIVE-IV LAB (PECS-823)		
Sr. No.	Subject Code	Subject Name
1	PECS-823A	Cloud Computing Lab
2	PECS-823B	Internet of Things Lab
3	PECS-823C	Bioinformatics Lab
CORE ELECTIVE-V (PECS-911)		
Sr. No.	Subject Code	Subject Name
1	PECS-911A	Optimization Techniques
2	PECS-911B	Pattern Recognition
3	PECS-911C	Data Sciences

List of Open Electives

OPEN ELECTIVE		
Sr. No.	Subject Code	Subject Name
1	OECS-911A	Big Data Analytics
2	OECS-911B	Internet of Things
3	OECS-911C	Deep Learning
4	OECS-911D	Cloud Computing
5	OECS-911E	Cyber Security