Department of Computer Science and Engineering

Additional Minor Degree

Date: 02-01-2026

I. Academic Requirements: (Min 20 credits)

1. CSE- Additional Minor Degree is open to UG students of Non- CSE branches (Mechanical, Civil, ECE, EEE, Bio-Tech and Chemical Engg)
2. Students may apply after completion of 2nd Semester.
3. Students opting for the Additional Minor Degree shall register only for those courses which they have not studied in any of the previous semesters as part of their regular (major) curriculum.
4. Further, the selected Minor Degree courses must not be listed in the curriculum of the student's parent department in any of the forthcoming semesters.
5. Registration for a course that has been already completed earlier or is scheduled to be studied in future semesters of the parent program shall not be permitted under the Minor Degree.

II. Specialization in CSE

a) Computer Engineering b) AI &ML c) Cyber Security d) Internet of Things

Core elective courses shall be common for all specializations.

A) CORE ELECTIVE LIST – Any 3 courses

SNO	Course Title	Credits
1.	Operating Systems	3
2.	Data structures/ Design and Analysis of Algorithms	3
3.	Object Oriented Programming (OOPs)	3
4.	Computer Organization and Architecture	4
5.	Database Management Systems	3
6.	Computer Networks	3
7.	Artificial Intelligence & Machine Learning	4
8.	Software Engineering	3

Core Elective NPTEL Equivalent courses during Jan-26 AY:25-26

SNo	Course Title	No of Weeks/ Credits	NPTEL Link
1.	Discrete Mathematics	12/3	https://onlinecourses.nptel.ac.in/noc26_cs68/preview
2.	Fundamentals of Object Oriented Programming	12/3	https://onlinecourses.nptel.ac.in/noc26_cs87/preview
3.	Programming in Modern C++	12/3	https://onlinecourses.nptel.ac.in/noc26_cs52/preview
4.	Programming in Java	12/3	https://onlinecourses.nptel.ac.in/noc26_cs36/preview
5.	The Joy of Computing using Python	12/3	https://onlinecourses.nptel.ac.in/noc26_cs84/preview
6.	Data Base Management System	12/3	https://onlinecourses.nptel.ac.in/noc26_cs72/preview
7.	Design and Analysis of Algorithms	8/2	https://onlinecourses.nptel.ac.in/noc26_cs67/preview
8.	Computer Networks and Internet Protocol	12/3	https://onlinecourses.nptel.ac.in/noc26_cs35/preview
9.	Introduction to Machine Learning	12/3	https://onlinecourses.nptel.ac.in/noc26_cs74/preview

COMPUTER ENGINEERING (Any THREE Courses or TWO Courses and Project) – 8 to 11Credits

SNO	Course Title	Credits
1.	Programming in Java	3
2.	Machine Learning	3
3.	Deep learning	3
4.	Natural Language Processing	3
5.	Quantum computing	1 to 3
6.	Human computer interface	3
7.	Getting Started with Competitive Programming	3
8.	Affective Computing- advanced topic	3
9.	Introduction to Large Language Models (LLMs)	3
10.	Algorithms in Computational Biology and Sequence Analysis	3

Above list is tentative and can be suitably updated based on needs of the Industry and availability of relevant course

NPTEL Equivalent courses during Jan-26, AY:25-26

SNO	Course Title	Prerequisite s	No of Weeks/ C redits	Nptel link
1.	Programming in Java		12/3	https://onlinecourses.nptel.ac.in/noc26_cs36/preview
2.	Getting Started with Competitive Programming	Data Structures	12/3	https://onlinecourses.nptel.ac.in/noc26_cs69/preview
3.	Introduction to Machine Learning		12/3	https://onlinecourses.nptel.ac.in/noc26_cs74/preview
4.	Cloud Computing and Distributed Systems		12/3	https://onlinecourses.nptel.ac.in/noc26_cs29/preview
5.	Foundations of Deep Learning: Concepts and Applications		12/3	https://onlinecourses.nptel.ac.in/noc26_cs01/preview
6.	Deep Learning	Machine learning	12/3	https://onlinecourses.nptel.ac.in/noc26_cs66/preview
7.	Natural language Processing	Knowledge on probabilities	12/3	https://onlinecourses.nptel.ac.in/noc26_cs45/preview
8.	Affective Computing	Programming, AI and ML	12/3	https://onlinecourses.nptel.ac.in/noc26_cs61/preview
9.	Introduction to Large Language Models (LLMs)	Machine learning and python	12/3	https://onlinecourses.nptel.ac.in/noc26_cs88/preview
10.	Algorithms in Computational Biology and Sequence Analysis	AI and Data Science	12/3	https://onlinecourses.nptel.ac.in/noc26_cs19/preview

AI & ML (Any THREE Courses or TWO Courses and Project) – 8 to 11 Credits

SNO	Course Title	Credits
1	Machine Learning	3
2	Computer Vision	3
3	Natural Language Processing	3
4	Reinforcement Learning	3
5	Data Science	2
6	Deep Learning	3/4

Above list is tentative and can be suitably updated based on needs of the Industry and availability of relevant course.

NPTEL Equivalent courses during Jan-26, AY:25-26

SNO	Course Title	No of Weeks/Credits	Nptel link
1	Computer Vision	12/3	https://nptel.ac.in/courses/108103174
2	Data Science for Engineers	8/2	https://nptel.ac.in/courses/106106179
3	Introduction to Machine Learning	12/3	https://nptel.ac.in/courses/106106139
4	Deep Learning	12/3	https://nptel.ac.in/courses/106105215
5	Foundation for Virtual and Augmented Reality Systems	12/3	https://nptel.ac.in/courses/106103842
6	Reinforcement Learning	12/3	https://nptel.ac.in/courses/106106143

CYBER SECURITY (Any THREE Courses or TWO Courses and Project) – 8 to 11Credits

SNO	Course Title	Credits
1	Internet of Things	3
2	Cyber Security	3
3	Applied Cryptography	3
4	Computer Graphics and Multimedia	3

Above list is tentative and can be suitably updated based on needs of the Industry and availability of relevant course

NPTEL Equivalent courses during Jan-25, AY:25-26

SNO	Course Title	No of Weeks/Credits	Nptel link
1	Foundations of Cryptography, IIIT Bangalore	12/3	https://nptel.ac.in/courses/106106221
2	Internet Crimes and Cyber Security	8/2	https://nptel.ac.in/courses/129106894
3	Foundation for Virtual and Augmented Reality Systems	12/3	https://nptel.ac.in/courses/106103842

INTERNET OF THINGS (Any THREE Courses OR TWO Courses and Project) 8 to 11 Credits

SNO	Course Title	Credits
1	IT 5.0	3
2	Internet of Things	3
3	Special Topics in IOT	3

#Above list is tentative and can be suitably updated based on needs of the industry and availability of relevant course.

NPTEL Equivalent courses during Jan-25, AY:25-26

SNO	Course Title	No of Weeks/ Credits	Nptel link
1	Introduction To Industry 4.0 And Industrial Internet Of Things	12/3	https://nptel.ac.in/courses/106105195
2	Introduction To Internet Of Things	12/3	https://nptel.ac.in/courses/106105166
3	Foundation for Virtual and Augmented Reality Systems	12/3	https://nptel.ac.in/courses/106103842

AMD Coordinators

Head, Dept of CSE

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2. **Isha Padhy**