

CURRICULUM
M.TECH. COMPUTER SCIENCE & ENGINEERING
CHOICE BASED CREDIT SYSTEM
STUDENTS LEARNING OUTCOMES

The curriculum and syllabi for M.Tech. Computer Science & Engineering program (2017-18) conform to Outcome Based Education (OBE) for a flexible and structured Choice Based Credit System (CBCS). In general, **ELEVEN STUDENT OUTCOMES** (a-k) have been identified and the curriculum and syllabi have been chosen in such a way that each of the modules meets one or more of these outcomes. Student outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire as they progress through the program. Further, each module in the program spells out clear instructional objectives which are mapped to the student outcomes.

The Student Outcomes are:

- (a) Ability to apply knowledge of Mathematics and science in software engineering solutions.
- (b) Ability to understand the engineering concepts and their applications using the acquired broad based knowledge.
- (c) Ability to practice and develop software for interpretation and analysis of data.
- (d) Ability to use the techniques, skills, and modern engineering tools necessary for software and hardware practices.
- (e) Ability to identify and analyze problems in related multiple disciplines including software development, middleware, software testing and computer networks.
- (f) Ability to design, develop and verify a software system to meet desired needs ensuring its reliability and security in addition to satisfying economic, social and ethical constraints.
- (g) Ability to apply Enterprise level application software for design of engineering product/process.
- (h) Ability to function as consultant for the development of sustainable software solutions.
- (i) An understanding of professional and ethical values.
- (j) Ability to communicate effectively in diverse groups and exhibit leadership skills.
- (k) To develop an understanding of global environment and its protection.

M.Tech COMPUTER SCIENCE AND ENGINEERING

SUMMARY OF PROGRAM CURRICULUM

Category	Total Number of Credits (M.Tech)	Percentage of Total credits
Program Core (PC)	45	60
Program Elective (PE)	8	11
Generic Elective (GE)	8	11
Seminar & Special Problem (SP)	2	2
Dissertation (DI)	12	16
	75	100

PROGRAM SCHEME

SEMESTER - I

MODULE CODE	CATEGORY	MODULE	L	T	P	C	Internal Marks	External Marks	Total Marks
CSEN5101	PC	WIRELESS MOBILE NETWORK	4	0	0	4	50	100	150
CSEN5102	PC	ANALYSIS & DESIGN OF ALGORITHM	4	0	0	4	50	100	150
CSEN5103	PC	ADVANCED OPEARTING SYSTEM	4	0	0	4	50	100	150
CSEN5104	PC	ADVANCED OPEARTING SYSTEM LAB	0	0	2	1	25	25	50
CSEN5105	PC	ADVANCED DATABASE MANAGEMENT SYSTEM	3	0	0	3	25	75	100
CSEN5106	PC	ADVANCED DATABASE MANAGEMENT SYSTEM LAB	0	0	2	1	25	25	50
CSEN5107	SP	SPECIAL PROBLEM	0	0	2	1	25	25	50
	GE	ELECTIVE-A Ψ	4	0	0	4	50	100	150
TOTAL			19	0	6	22	300	550	850

GENERIC ELECTIVE – A Ψ

L = Lecture

T = Tutorial

P = Practical

C = Credit Point

MODULE CODE	MODULE
SAPA0020	SAP-ABAP
SAPM0021	SAP-MM
SAPS0022	SAP-SD
SAPH0023	SAP-HCM
SAPF0024	SAP-FI
CCNA0025	CCNA
MATH0303	NUMERICAL METHODS

Ψ Additional fee, if any, shall be borne by the student.

SEMESTER - II

MODULE CODE	CATEGORY	MODULE	L	T	P	C	Internal Marks	External Marks	Total Marks
CSEN5108	PC	DATA WAREHOUSE AND MINING	4	0	0	4	50	100	150
CSEN5109	PC	KNOWLEDGE BASED SYSTEM DESIGN	3	0	0	3	25	75	100
CSEN5110	PC	KNOWLEDGE BASED SYSTEM DESIGN LAB	0	0	2	1	25	25	50
CSEN5111	PC	SOFT COMPUTING	3	0	0	3	25	75	100
CSEN5112	PC	SOFT COMPUTING LAB	0	0	2	1	25	25	50
CSEN5113	SP	SEMINAR	0	0	2	1	25	25	50
RESM0101	PC	RESEARCH METHODOLOGY	4	0	0	4	50	100	150
	PE	ELECTIVE-I	4	0	0	4	50	100	150
TOTAL			18	0	6	21	275	525	800

- L = Lecture**
T = Tutorial
P = Practical
C = Credit Point

ELECTIVE I

MODULE CODE	MODULE
CSEN5214	OPTIMIZATION TECHNIQUES
CSEN5215	MATHEMATICAL FOUNDATION & COMPUTER SCIENCE

SEMESTER - III

MODULE CODE	CATEGORY	MODULE	L	T	P	C	Internal Marks	External Marks	Total Marks
CSEN6101	PC	ADVANCED COMPUTER NETWORK	4	0	0	4	50	100	150
CSEN6102	PC	CLOUD COMPUTING	4	0	0	4	50	100	150
CSEN6103	PC	ADVANCED DATA STRUCTURES	3	0	0	3	25	75	100
CSEN6104	PC	ADVANCED DATA STRUCTURES LAB	0	0	2	1	25	25	50
CSEN6105	DI	LITERATURE SURVEY (DISSERTATION STAGE 1)*	0	0	0	2	50	50	100
	PE	ELECTIVE-II	4	0	0	4	50	100	150
	GE	ELECTIVE- B Ψ	4	0	0	4	50	100	150
TOTAL			19	0	2	22	300	550	850

L = Lecture
T = Tutorial
P = Practical
C = Credit Point

ELECTIVE II

MODULE CODE	MODULE
CSEN6206	ARTIFICIAL NEURAL NETWORK
CSEN6207	COMPUTATIONAL TECHNIQUES using MATLAB

GENERIC ELECTIVE B Ψ

MODULE CODE	MODULE
SAPA0320	SAP-ABAP
SAPM0321	SAP-MM
SAPS0322	SAP-SD
SAPH0323	SAP-HCM
SAPF0324	SAP-FI
ECEN5101	ADVANCED DIGITAL SIGNAL PROCESSING

Ψ Additional fee, if any, shall be borne by the student

SEMESTER - IV

MODULE CODE	CATEGORY	MODULE	L	T	P	C	Internal Marks	External Marks	Total Marks
CSEN6108	DI	DISSERTATION and VIVA (DISSERTATION STAGE 2)	-	-	-	10	250	250	500
TOTAL			0	0	0	10	250	250	500

L = Lecture

T = Tutorial

P = Practical

C = Credit Point

Students have to publish a research paper in a journal / conference of the research work done in the semester.