



Vidyalankar Institute of Technology

An Autonomous Institute affiliated to University of Mumbai

Master of Technology in Computer Engineering

Programme Structure

(With effect from the Academic Year 2022-23)

Preamble

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated, and taken forward in a systematic manner. Therefore, autonomy for Vidyalankar Institute of Technology is not merely a transition from pre-cooked syllabi to self-designed curriculum. Autonomy curriculum of the Institute offers required academic flexibility with emphasis on industry requirements and market trends, employability, problem-solving approach and research ability which leads to improving competency level of learners with diverse strengths. In line with this, the curriculum framework designed is **Choice-Based Credit and Grading System (CBCGS)**. Number of credits for courses learnt by learners, internships and dissertation is finalized considering the scope of study and the ability that a learner should gain through the programme.

The curriculum planned by the Institute offer flexibility and diversity to learners to choose any set of courses from a basket of electives. Learner can also choose to specialize in a domain as per their field of interest. The selection of unique specialization tracks based on recent developments and industrial requirements is a salient feature of this curricula ensuring employability. Each specialization track has mandatory core courses positioned and sequenced to achieve sequential and integral learning for the required depth of the specific domain. Learner can choose to complete these courses in first year of the engineering program that enables him/her to prepare for research during their final year. Credits additional to core course of track (if chosen), include dissertation, internships, publication/ copyright, advanced courses in the field of computer engineering, multi-disciplinary courses, special skill development courses and similar knowledge that make learner capable to do further research or work in industrial environment.

Thus, the academic plan of VIT envisages a shift from summative to formative and competency-based learning system which will enhance learner's ability towards higher education, employability and entrepreneurship.

Chairman, Board of Studies
Department of Computer Engineering
Vidyalankar Institute of Technology

Chairman, Academic Council
Vidyalankar Institute of Technology

CREDIT STRUCTURE

Learner needs to complete 30 credits from the list below in order to receive Masters of Technology (M.Tech) degree in Computer Engineering.

Code	Course Name	Credits
CE63	Advanced Data Structure and Algorithms	3
CE64	HPC, Cluster and Grid Computing	3
CE65	Parallel Algorithms and Programming	3
CE66	Computational Intelligence	3
CE67	Probability and Statistics for Data Science	3
CE68	Smart Sensors and Internet of Things	3
CE69	Data Encryption and Compression	3
CE70	Data Preparation and Exploration	3
CE71	IoT - Application and Communication Protocol	3
CE72	Ethical Hacking and Digital Forensics	3
CE73	Big Data	3
CE74	Wireless Access Technologies	3
CE75	Database Security and Access control	3
CE76	Natural Language Processing	3
CE77	IOT and Smart Cities	3
CE78	Intrusion Detection and Prevention	3
CE79	Major Dissertation Project	12
CE80	Internship	3
CE81**	Self-Study Course (max 3)	1
ET72	Wireless Adhoc and Sensor Networks	3
ET74	Advanced Digital Signal Processing	3
ET77	Embedded Communication Systems Design	3
ET86	Reconfigurable Computing and FPGAs	3

**Learner may opt for CE81 - Self-Study Course in consultation with the ME Coordinator of the department. A learner can register for up to a maximum of 1 Self-Study course per semester and maximum of 3 Self-Study courses during the complete tenure of M.Tech. program.

The following courses are Audit courses with no credits.

Code	Course Name	Credits
OE04	Sustainability Management	-
OE05	Operation Research	-
OE06	IPR and Patenting	-
OE07	Research Methodology	-

GUIDELINES

Learner can avail a Specialization Certificate from the Institute stating "Successful completion of Masters of Technology in Computer Engineering with Specialization in ____<Track Name> "

Mandatory Courses to be completed to avail Specialization Certificate are as stated below:

Core Courses for Specialization Certificate		
Data Science	Internet of Things	Computer Security
CE67	CE68	CE69
CE70	CE71	CE72
CE73	CE74	CE75
CE76	CE77	CE78

- Learner shall select courses from the ones offered by the department for that semester.
- Opting for track is not compulsory.
- Learner shall opt for a minimum of 6 credits per semester for initial 3 semesters of the programme.

Definition of Credit

Duration	Credit
1 Hr. Lecture (L) per week	1
1 Hr. Tutorial (T) per week	1
1 Hr. Practical (P) per week	0.5