



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



**B.TECH (COMPUTER SCIENCE AND ENGINEERING-
SPECIALIZATION)**

FOUR YEAR PROGRAM

**CURRICULUM STRUCTURE & SYLLABI
(2025-2029 BATCH ONWARDS)**



**SCHOOL OF ENGINEERING AND TECHNOLOGY
MODY UNIVERSITY OF SCIENCE AND TECHNOLOGY
LAKSHMANGARH**

B.Tech (Computer Science and Engineering-Specialization)
Four Year Program
Academic Curriculum (2025-2029 Batch Onwards)

Curriculum Components

Component	Credits
1. University Core (3 Courses)	6
2. University Elective (2 Courses)	6
3. Basic Science (9 Courses)	23
4. Engineering Science (9 Courses)	18
5. Program Core (31 Courses)	74
6. Program Elective / MOOCs(5 Courses)	15
7. Project / Summer Internship Project (11 Courses)	21
8. Proficiency (Non-Graded)	6
Total	163

First Year - Autumn Semester

Course Code	Course Title	Contact Hours Per Week			Credits	ETE Duration (Hours)	Weightage			
							CW	MTE	ETE	
		L	T	P						
UC 23.101	Human Values & Professional Ethics	2	0	0	2	3	10	40	50	
MA 23.101	Mathematics-I	3	1	0	4	3	10	40	50	
PY 23.101	Engineering Physics	3	0	0	3	3	10	40	50	
EE 25.101	Basics of Electrical Engineering	3	0	0	3	3	10	40	50	
CS 23.101	Programming for Problem Solving	3	0	0	3	3	10	40	50	
PY 23.111	Physics laboratory	0	0	2	1	2	50	50		
EE 23.111	Electrical Laboratory	0	0	2	1	2	50	50		
CS 23.111	Programming Laboratory	0	0	4	2	2	50	50		
ME 23.112	Mechanical Workshop	0	0	2	1	2	50	50		
CY 23.102	Environmental Sciences	2	0	0	2	3	10	40		50
PB 25.101	Project Based Learning	0	0	2	1			50		50
SF 101	Personal Grooming and Fine Dining(Non Grade)	0	0	2	1	2	50			50
	Total				23					

First Year -Spring Semester

Course Code	Course Title	Contact Hours Per Week			Credits	ETE Duration (Hours)	Weightage			
		L	T	P			CW	MTE		ETE
UC 23.102	Pragmatic English Communication	2	0	0	2	3	10	40		50
MA 23.102	Mathematics-II	3	1	0	4	3	10	40		50
CY 23.101	Engineering Chemistry	3	0	0	3	3	10	40		50
ME 25.101	Applied Mechanics	3	0	0	3	3	10	40		50
EC 25.101	Basics of Electronics Engineering	3	0	0	3	3	10	40		50
CS 23.102	Object Oriented Programming Through C++	3	0	0	3	3	10	40		50
ME 23.111	Computer Aided Engineering Drawing	0	0	4	2	2	50			50
CY 23.111	Chemistry Laboratory	0	0	2	1	2	50			50
EC 23.111	Electronics Laboratory	0	0	2	1	2	50			50
CS 23.112	Object Oriented Programming Laboratory	0	0	2	1	2	50			50
PB 25.102	Project Based Learning	0	0	2	1			50		50
SF 102	Social Grooming, Home & Decor and Business Communication (Non Grade)	0	0	2	1	2	50			50
	Total				24					

Project Based Learning (PBL) in Group of 3-5 Students

Second Year - Autumn Semester										
Course Code	Course Title	Contact Hours Per Week			Credits	ETE Duration (Hours)	Weightage			
		L	T	P			CW	MTE	PBL	ETE
MA 23.201	Mathematics-III	3	1	0	4	3	10	40		50
CS 25.201	Discrete Mathematics	3	0	0	3	3	10	40		50
CS 23.203	Data Structures	3	0	0	3	3	10	40		50
CS23.205	General Purpose Programming	3	0	0	3	3	10	40		50
EC 23.202	Digital Electronics	3	0	0	3	3	10	40		50
CS 23.253	Data Structures Laboratory	0	0	2	1	2	50			50
CS 23.255	General Purpose Programming laboratory	0	0	2	1	2	50			50
EC 23.224	Digital Electronics Laboratory	0	0	2	1	2	50			50
PB 25.201	Project Based Learning	0	0	2	1			50		50
SF 201	Personal Grooming Fine Dining and Home Safety (Non Grade)	0	0	2	1	2	50			50
					20					

Second Year -Spring Semester										
Course Code	Course Title	Contact Hours Per Week			Credits	ETE Duration (Hours)	Weightage			
		L	T	P			CW	MTE	ETE	
UC 25.201	Management and Entrepreneurship	2	0	0	2	2	10	40		50
UE	University Elective-I	3	0	0	3	3	20			80
CS23.204	Database Management Systems	3	0	0	3	3	10	40		50
CS 25.202	Advanced Programming	3	0	0	3	3	10	40		50
CS23.206	Theory of Computation	3	0	0	3	3	10	40		50
CS23.208	Computer Organization and Architecture	3	0	0	3	3	10	40		50
CS 23.211	Software Engineering	3	0	0	3	3	10	40		50
CS23.252	Advanced Programming Laboratory	0	0	2	1	2	50			50
CS23.254	Database Management Systems Laboratory	0	0	2	1	2	50			50
PB 25.202	Project Based Learning	0	0	2	1			50		50
SF 202	Social Grooming and Professional Skills(Non Grade)	0	0	2	1	2	50			50
					23					

Project Based Learning (PBL) in Group of 3-5 Students

Third Year - Autumn Semester									
Course Code	Course Title	Contact Hours Per Week			Credits	ETE Duration (Hours)	Weightage		
		L	T	P			CW	MTE	ETE
RM 23.101	Research Methodology	2	0	0	2	3	10	40	50
CS23.301	Design and Analysis of Algorithms	3	1	0	4	3	10	40	50
CS23.303	Operating System	3	0	0	3	3	10	40	50
CS23.307	Cyber Security	3	0	0	3	3	10	40	50
	Program Elective 1*	0	0	0	3		Based on NPTEL exam		
	Specialization	3	0	0	3	3	10	40	50
CS23.351	Design and Analysis of Algorithms Laboratory	0	0	2	1	2	20	40	40
CS23.357	Cyber Security Laboratory	0	0	2	1	2	20	40	40
CS23.353	Operating System Laboratory	0	0	2	1	2	20	40	40
CS 23.373	Summer Internship-I**	0	0	0	2	-	100		
CS 23.371	Project-1	0	0	4	2	2	-	50	50
GE 25.301	Proficiency (Non Credit, Non Grade)	-	-	-	1		100		
					25				
Third Year –Spring Semester									
Course Code	Course Title	Contact Hours Per Week			Credits	ETE Duration (Hours)	Weightage		
		L	T	P			CW	MTE	ETE
CS 23. 302	Artificial Intelligence and Machine Learning	3	0	0	3	3	10	40	50
CS23.304	Compiler Design	3	0	0	3	3	10	40	50
CS23.306	Computer Networks	3	0	0	3	3	10	40	50
CS 25.308	Digital Image Processing	3	1	0	4	3	10	40	50
	Specialization	3	0	0	3	3	10	40	50
CS 23.392	Colloquium	0	0	2	1	-	100		
CS 23.354	Compiler Design Laboratory	0	0	2	1	2	20	40	40
CS 23.356	Computer Networks Laboratory	0	0	2	1	2	20	40	40
CS 25.358	Digital Image Processing Laboratory	0	0	2	1	2	20	40	40
CS 25.359	Artificial Intelligence and Machine Learning Laboratory	0	0	2	1		20	40	40
CS 23.372	Project-2	0	0	4	2	2	-	50	50
GE 25.302	Proficiency (Non Credit, Non Grade)	-	-	-	1		100		
					23				

*The course may be taken through MOOC. NPTEL/SWAYAM/Coursera will be the authorized platform for this MOOC course. Minimum 8 weeks course is required for a 3 credit. After successful completion of these MOOC courses the students, shall, provide their successful completion NPTEL status/certificates to the University (COE) through HOD/NPTEL coordinator. The Course code of MOOC courses will be same as the course code given in NPTEL Certificate.

Proficiency (Non-Credit/Non Grade) shall be measured through level of participation in skill development programs i.e., sports, Yoga, Life skills, Music, Fine Arts, SEFS or decided by Departmental academic Committee

Fourth Year - Autumn Semester									
Course Code	Course Title	Contact Hours Per Week			Credits	ETE Duration (Hours)	Weightage		
		L	T	P			CW	MTE	ETE
UE	University Elective-II	3	0	0	3	3	20		80
	Program elective-2	3	0	0	3	3	10	40	50
	Specialization	3	0	0	3	3	10	40	50
CS 23.473	Summer Internship-II**	0	0	0	2	-	100		
CS 23.471	Capstone Project-1	0	0	4	2		100		
					13				

Fourth Year –Spring Semester									
Course Code	Course Title	Contact Hours Per Week			Credits	ETE Duration (Hours)	Weightage		
		L	T	P			CW	MTE	ETE
	Program elective-4	3	0	0	3	3	10	40	50
	Program elective-5	3	0	0	3	3	10	40	50
CS23.472	Capstone Project-2	0	0	12	6			50	50
	Total				12				

** Summer Internship-I and II must be performed in an Industry between summer vacation of end of Second Year and end of Third Year.

Credit Distribution across all Components								
Semester	UC	UE	BS	ES	PC	PE	Proj/SIP	Total
First	2		10	6	5			23
Second	2		8	11	4			24
Third	0		4	4	17			20
Fourth	2	3			18			23
Fifth			2		13	6	4	25
Sixth					18		3	23
Seventh		3				6	4	13
Eighth						6	6	12
Total	6	6	23	18	74	15	21	163

UC	University Core
UE	University Elective
BS	Basic Science
ES	Engineering Science
PC	Program Core
PE	Program Elective / MOOC
Proj/SIP	Project/Summer Internship

**B.Tech (Computer Science and Engineering-Specialization)
Four Year Program
Academic Curriculum (2025-2029 Batch Onwards)**

Program Elective 1	
	MOOC

Program Elective 2	
CS 23.412	Big Data and Unstructured Databases
CS 23.413	Distributed Databases
CS 23.462	Mobile App Development (Infosys)

Program Elective 3	
CS 23.431	Advanced Web Technologies
CS 23.441	Shell Programming
CS 23.461	Cloud Computing (Infosys)

Program Elective 4	
CS 23.493	Foundations and Applications of IoT
CS 23.495	Principles and Practices of Secure Computing
CS 23.463	Agile Software Development (Infosys)

Program Elective 5	
CS 23.494	Software Defined Networking
CS 23.464	Business Intelligence and its application (Infosys)
CS 23.465	Machine Learning using R (Infosys)

B.Tech. in Computer Science & Engineering -Specialization

B.Tech. in Computer Science & Engineering (Specialization in BlockChain Technology)

Course Code	Course name
CS 23.381	Block Chain and Crypto Currency
CS 23.391	Blockchain Components and Architecture
CS 23.482	Cyber Security with Blockchain

B.Tech. in Computer Science and Engineering (Specializing in Business System)

Course Code	Course name
CS 23.382	E-Customer Relationship Management
CS 23.390	Digital Marketing and Trend Analysis
CS 23.483	Enterprise Resource Planning

B.Tech in Computer Science & Engineering (Specialization in Data Science)

Course Code	Course name
CS 23.383	Introduction to Data Science
CS23.310	Predictive Modeling Analysis
CS 23.484	Big Data Analysis

B.Tech in Computer Science & Engineering (Specialization in Internet of Things)

Course Code	Course name
CS 23.384	Introduction to IOT
CS 23.394	Wireless Sensor Networks & IoT Standards
CS 23.485	IoT for Industries

B.Tech in Computer Science & Engineering (Specialization in Education Technology)

Course Code	Course name
CS 23.385	IT Service Management (ITSM)
CS 23.395	IT Infrastructure Management
CS 23.483	Enterprise Resource Planning

B.Tech in Computer Science & Engineering (Specialization in E-Commerce Technology)

Course Code	Course name
CS 23.382	E-Customer Relationship Management
CS 23.390	Digital Marketing and Trend Analysis
CS 23.483	Enterprise Resource Planning

B.Tech in Computer Science & Engineering (Specialization in Artificial Intelligence and Deep Learning)

Course Code	Course name
CS 23.387	Artificial Neural Networks
CS 23.397	Deep Learning
CS 23.488	Natural Language Processing

B.Tech.Computer Science & Engineering (Specialization in Edge Computing)

Course Code	Course name
CS 23.388	Microprocessors and Embedded Systems
CS 23.398	Cloud Architecture and Deployment of Models
CS 23.489	Edge Computing

B.Tech. Computer Science & Engineering (Specialization in Health Informatics)

Course Code	Course name
CS 23.387	Artificial Neural Networks
CS 23.399	Healthcare Data Analytics
CS 23.474	App of AI in HealthCare

B.Tech.Computer Science & Engineering (Specialization in Cloud Computing and Automation)

Course Code	Course name
CS 23.361	Cloud Architecture and Services
CS 23.374	Cloud Security Management
CS 23.475	IoT on Cloud

B.Tech. Computer Science & Engineering (Specialization in Bioinformatics)

**B.Tech (Computer Science and Engineering-Specialization)
Four Year Program
Academic Curriculum (2025-2029 Batch Onwards)**

Course Code	Course name
CS 23.362	Analytical Bioinformatics
CS 23.375	Molecular Modelling and Drug Design
CS 23.479	Molecular Evolution and Phylogeny

B.Tech. Computer Science & Engineering (Specialization in Information Security)

Course Code	Course name
CS 23.376	Network Security and Cryptography
CS23.374	Privacy and Security in IoT
CS 23.477	Blockchain for Cyber Security

B.Tech. Computer Science & Engineering (Cyber Security and Digital Forensics)

Course Code	Course name
CS 23.376	Network Security and Cryptography
CS23.374	Privacy and Security in IoT
CS 23.499	Digital Forensics and Malware Analysis

B.Tech. Computer Science & Engineering (Specialization in Robotics)

Course Code	Course name
CS 23.340	Elements of Robotics and Kinematics of Robot
CS 23.341	Human-Robot Interaction
CS 23.441	Robotic Process Automation

B.Tech. Computer Science & Engineering (Specialization in Gaming Technology)

Course Code	Course name
CS 23.342	Virtual and Augmented Reality
CS 23.343	Designing Human Computer Interfaces
CS 23.443	Game Design & Asset Creation