

CSE DEPARTMENT STUDENT COURSE DETAILS

Data Format:

Category Course_Code Course_Title Credits Prerequisite

HS	19EN101	Communicative English	4	-		
HS	19EN102	Technical English	4	-		
HS	19MS151	Principles of Management	3	-		
HS	19MS152	Total Quality Management (#)	3	-		
HS	19MS153	Management and Quality Principles for Engineering	3	-		
BS	19MA201	Calculus and Matrix Algebra	4	-		
BS	19MA206	Logic and Combinatorics	4	19MA201		
BS	19MA212	Algebra and Number Theory	4	19MA201		
BS	19MA218	Probability and Queueing Theory	4	19MA201		
BS	19PH205	Computational Physics	4	-		
BS	19CY205	Principles of Chemistry in Engineering	4	-		
ES	19ME302	Engineering Drawing	3	-		
ES	19CS301	Problem Solving and Python Programming	4	-		
ES	19EE305	Basic Electrical, Electronics and Measurement Engineering	3	-		
ES	19EC303	Digital Principles and System Design	4	-		
ES	19EC307	Communication Engineering	3	-		
ES	19CS302	Programming in C	4	-		
ES	19CS305	Computer Architecture	3	-		
ES	19CS308	Software Testing Laboratory	2	19CS410		
PC	19CS401	"Data Structures and Object Oriented Programming using C++"	4	19CS302		
PC	19CS402	Design and Analysis of Algorithms	3	19CS401/ 19IT405		
PC	19CS403	Programming Paradigms	4	19CS401		
PC	19CS404	Database Management System and its Applications	4	-		
PC	19CS405	Operating System	4	-		
PC	19CS406	Computer Networks	4	-		
PC	19CS407	Theory of Computation	3	19MA220/19MA206		
PC	19CS408	Software Engineering	4	-		
PC	19CS409	Compiler Design	4	-		
PC	19CS410	Web Programming	4	-		
PC	19CS411	Virtualization and Cloud Computing	4	19CS406		
PC	19CS412	Cryptography and Network Security	4	19CS406		
PC	19CS413	Artificial Intelligence	4	-		
PC	19CS414	Mobile Application Development	3	19CS404/ 19CS410 /19IT404		
PC	19EC408	Microprocessor and Microcontroller	4	19EC303		
PE	19AI407	Parallel Computing Architecture	4	-		
PE	19AI403	Introduction to Data Science	3	19AI301/19CS301		
PE	19AI409	Applied Artificial Intelligence	3	19AI301/19MA220/19AI405/19CS301		
PE	19AI410	Introduction to Machine Learning	3	-		
PE	19AI411	Neural Networks	3	-		
PE	19AI412	Web Data Mining	4	-		
PE	19AI413	Deep Learning and its Applications	3	-		
PE	19AI501	Applications of AI	3	-		
PE	19AI526	Database Security and Access Control	3	19AI527		
PE	19AI527	Security Assessment and Risk Analysis	4	-		

PE	19AI528	Advanced Graph Theory and Applications	3	19AI404/19CS402
PE	19AI529	Advanced Data Structures	3	"19AI408 / 19CS401"
PE	19AI502	Applied Natural Language Processing	3	-
PE	19AI503	Computer Vision	3	19AI406/19AI301/19CS301
PE	19AI530	Control of Robotic Systems	3	-
PE	19AI531	Cryptography and Security	3	-
PE	19AI532	Information Theory for Cyber Security	3	-
PE	19AI533	Introduction to Robotics	3	-
PE	19AI534	Kinematics and Dynamics of Robots	3	-
PE	19AI504	Mobile Robotics	3	-
PE	19AI505	Reinforcement Learning	3	19AI301/ 19MA218/ 19MA211/ 19AI410/ 19CS301
PE	19AI535	Robotic Sensors	3	-
PE	19AI536	Steganography and Digital Watermarking	3	-
PE	19AI506	Speech Processing	3	-
PE	19AI507	Special Topics in Artificial Intelligence	3	-
PE	19AI508	Soft Computing	3	-
PE	19AI537	Computer Graphics for Virtual Reality	3	-
PE	19AI538	Mathematical Modelling and Computer Aided Engineering	3	-
PE	19AI509	Concepts of Virtual and Augmented Reality	3	-
PE	19AI510	Mobile VR and AI in Unity	3	19AI304/19AI410/ 19AI408/ 19CS302
PE	19AI511	Scientific and Engineering Data Visualization	3	-
PE	19AI539	Mobile User Interface Development	3	19AI306/ 19AI307/ 19AI308 / 19CS401
PE	19AI540	Programming Mobile Devices	3	19AI306/19AI307/ 19AI308 / 19CS401
PE	19AI541	Cloud Computing	4	19AI401/19CS406
PE	19AI542	Agile Software Development	4	"19AI301/19AI304/ 19CS301"
PE	19AI512	NoSQL Database Design	3	19AI301 /19CS301
PE	19AI544	Virtualization and Containerization	3	19AI301/19CS405/19CS406
PE	19AI513	Game Programming	4	"19AI306 / 19CS401"
PE	19AI545	Modern Web Application Development	3	19AI306/19AI307/19AI308 19CS410
PE	19AI546	Web Server Programming	3	19AI306/19AI307/19AI308 / 19CS410
PE	19AI514	Self Driving Car	4	19AI301/19AI304/19CS301/19AI406/19AI410
PE	19AI515	Smart Manufacturing Technology	3	-
PE	19AI516	Bigdata Analytics	3	19AI408/ 19CS410
PE	19AI517	Business Analytics	3	-
PE	19AI518	Cognitive Systems	3	-
PE	19AI519	Distributed Database	3	19CS404
PE	19AI520	Data Warehousing and Data Mining	3	-
PE	19AI521	Expert Systems	3	-
PE	19AI522	Knowledge Engineering	3	19AI408/19CS410
PE	19AI523	Mobile Database	3	-
PE	19AI524	Multimedia Database	3	"19AI408 / 19CS410"
PE	19AI525	Video Processing	3	"19AI301 / 19CS301"
PE	19AI547	Blockchain for Business	3	19AI301/19AI304/ 19CS301
PE	19CS501	Machine Learning	3	19MA211/ 19MA212/ 19MA217/ 19MA218/ 9MA207
PE	19CS511	Natural Language Processing	3	19MA201
PE	19CS519	Data Science	3	"19CS301/ 19CS501"
PE	19CS520	Big Data Analytics	3	"19CS411/ 19CS519"
PE	19CS521	Data Warehousing and Data Mining	3	19CS404
PE	19CS522	Advanced Database Management System	3	19CS404

PE	19CS523	Information Retrieval	3	19AI410/19AI405/19CS501/19CS413
PE	19CS524	Deep Learning	3	19CS501
PE	19CS526	R Programming	3	"19CS301/ 19CS303"
PE	19CS512	Soft Computing	3	"19CS501 / 19AI410"
PE	19CS510	Social Network Analysis	3	"19CS501/ 19CS413"
PE	19CS504	Software Project Management	3	19CS408
PE	19CS505	Service Oriented Architecture	3	19CS410
PE	19CS503	Developing Web Application in .Net	3	"19CS404, 19CS410"
PE	19CS507	Human Computer Interaction	3	"19CS502, 19CS408"
PE	19CS502	Computer Graphics and Multimedia	3	19CS401
PE	19CS518	Game Design and Development	3	19CS502
PE	19EC416	Principles of Digital Signal Processing	3	19EC307
PE	19EC503	Digital Image Processing	3	"19EC416/ 19EC409/ 19EI403"
PE	19CS531	Virtual Reality	3	"19CS401/ 19CS301/ 19CS303"
PE	19CS509	Graph Theory and Applications	3	19MA206
PE	19CS517	Mobile Computing	3	"19CS406/ 19EC417"
PE	19EC508	Ad hoc and Wireless Sensor Networks	3	"19CS406/ 19EC412"
PE	19CS508	Parallel and Distributed Systems	3	"19CS305, 19CS401"
PE	19CS530	Cyber Security	3	"19CS412/ 19EC506/ 19EC306"
PE	19CS514	Network Management Systems	3	19CS406
PE	19CS515	Block Chain Architecture and its Use Cases	3	"19CS412/ 19EC506/ 19EC306"
PE	19CS513	Green Computing	3	-
PE	19CS506	Multicore Architecture	3	19CS305
PE	19EC414	Embedded Systems	3	19EC408
PE	19CS529	Quantum Computing	3	"19CS301/ 19CS303"
PE	19CS528	Robotics and its Applications	3	"19CS302/ 19EC408"
OE	19AG601	Principles of Crop Production	3	-
OE	19AG514	Food Packaging Technology	3	-
OE	19AG509	Human Engineering and Safety	3	-
OE	19AG424	Remote Sensing and GIS Applications	3	-
OE	19AG421	Dairy and Food Engineering	3	-
OE	19BM601	Fundamentals of Nutrition	3	-
OE	19BM602	Biomedical Waste Management	3	-
OE	19BM603	Healthcare Technologies	3	-
OE	19BM604	Prosthetic Engineering	3	-
OE	19BM605	Medical Devices	3	-
OE	19BM606	Biology for Engineers	3	-
OE	19CE510	Integrated Water Resources Management	3	-
OE	19CE521	Air Pollution Engineering	3	-
OE	19CE525	Traffic Engineering	3	-
OE	19CE527	Construction Engineering and Occupational Safety	3	-
OE	19CE528	Contract Laws and Regulations	3	-
OE	19EE601	Embedded Based Product Design and Development	3	-
OE	19EE602	Electrical Safety	3	-
OE	19EE603	Renewable Energy Sources	3	-
OE	19EE604	Fundamentals of Electric Power Utilization	3	-
OE	19EE605	Industrial Automation and Robotics	3	-
OE	19EE606	Solar Photovoltaic Energy	3	-
OE	19EC601	Electronic Packaging	3	-

OE	19EC602	Introduction to Micro Electro Mechanical Systems	3	-
OE	19EC603	Fuzzy Logic Systems and ANN	3	-
OE	19EC604	Consumer Electronics	3	-
OE	19EC605	Electronic System Design	3	-
OE	19EC606	Drones for Agriculture	3	-
OE	19EI601	Electrical and Electronic Measurements	3	-
OE	19EI602	Instrumentation and Control Systems	3	-
OE	19EI504	Environmental Instrumentation	3	-
OE	19EI508	SCADA Systems and Applications	3	-
OE	19EI511	Telemetry and Tele Control	3	-
OE	19BY201	Introduction to Biology	2	-
OE	19ME505	Computer Aided Design	3	-
OE	19ME511	Automobile Engineering	3	-
OE	19ME524	Sustainable and Green Manufacturing	3	-
OE	19ME529	Process Planning and Cost Estimation	3	-
OE	19ME531	Intellectual Property Rights	3	-
OE	19ME601	Mechatronics and Robotics	3	-
OE	19ME602	Hydraulic Drives and Controls	3	-
OE	19ME533	3D Printing Processes	4	-
OE	19MD501	Tele Health Technology	3	-
OE	19MD509	Bio MEMS	3	-
OE	19MD512	Medical Wearable Systems	3	-
OE	19MD601	Biomedical Sensors and Measurements	3	-
OE	19MD602	Biomedical Optics	3	-
OE	19CH503	Energy Technology	3	-
OE	19CH505	Green Technology	3	-
OE	19CH511	Food Technology	3	-
OE	19CH512	Drugs and Pharmaceutical Technology	3	-
OE	19CH516	Corrosion Technology	3	-
OE	19IT517	Data Security	3	-
OE	19IT518	Game Theory	3	-
OE	19IT519	Data Analysis using R Programming	3	-
OE	19IT520	Linux Fundamentals	3	-
OE	19IT521	Internet Technologies	3	-
OE	19IT522	Fundamentals of Databases	3	-
OE	19EN601	Creative Writing	2	-
OE	19EN602	English through Media	2	-
OE	19EN603	Introduction to Design	2	-
OE	19EN604	Design Thinking	2	-
OE	19EN605	Modern Trends in Physical Education and Sports Sciences	2	-
OE	19EN606	Psychology for Professionals	2	-
OE	19EN607	Heritage Studies	2	-
OE	19EN608	Mime Theatre Art	2	-
OE	19EN609	Gender Sensitization	2	-
OE	19EN610	French Basic	2	-
OE	19EN611	French Advanced	2	19EN610
OE	19EN612	German Basic	2	-
OE	19EN613	German Advanced	2	19EN612
OE	19EN614	Japanese Basic	2	-

OE	19EN615	Japanese Advanced	2	19EN614		
OE	19EN616	Yoga and Meditation	1	-		
OE	19EN617	Product Design for Future	2	-		
OE	19EN618	Indian Astronomy and Mathematics	2	-		
OE	19EN619	Inventions and Discoveries	2	-		
OE	19EN620	Mandarin	2	-		
OE	19EN621	Spanish Basic	2	-		
OE	19EN622	Spanish Advanced	2	19EN621		
OE	19EN623	Dream, Draw and Create	2	-		
OE	19MA601	Resource Management Techniques	3	-		
OE	19MA602	Statistics for Engineers	3	-		
OE	19CS604	Data Science for Engineers (NPTEL)	2	-		
OE	19CS606	Nano at Stanford (Edx (Stanford University))	2	-		
OE	19CS607	Reinforcement Learning(NPTEL)	2	-		
OE	19EC608	Programming in JAVA (NPTEL)	2	-		
OE	19EC616	Data Analytics with Python(NPTEL)	2	-		
OE	19EC620	Foundations of Cryptography (NPTEL)	2	-		
OE	19EC621	Introduction to Internet of Things (NPTEL)	2	-		
OE	19IT603	Ethical Hacking (NPTEL)	2	-		
OE	19IT602	Social Networks (NPTEL)	2	-		
EEC	19CS701	Mini Project	2	-		
EEC	19CS702	Project Work Phase I	2	-		
EEC	19CS703	Project Work Phase II	6	-		
EEC	19EY701	Soft Skills	1	-		
EEC	19EY702	Creative Skills for Communication	1	-		
EEC	19EY703	System of Numerical and Logical Terminologies	1	-		
EEC	19EY704	Advanced Quantitative and Logical Reasoning	1	-		
EEC	19EY705	Employment Enhancement Skills	1	-		
EEC	19EY706	Company Specific Assessments for Employability			1	-
MC	19MC801	Professional Ethics	0	-		
MC	19MC802	Environmental Science	0	-		
MC	19MC803	Constitution of India	0	-		
MC	19MC804	Internship/Entrepreneurship/Consultancy			2	-
MC	19MC805	Inplant Training	1	-		
MC	19MC806	Paper Publication	1	-		
MC	19MC807	National Service Scheme	0	-		
MC	19MC808	National Sports Organization	0	-		
MC	19MC809	Youth Red Cross	0	-		

HS: Humanities and Sciences

BS: Basic Sciences

ES: Engineering Sciences

PC: Professional Core

PE: Professional Elective

OE: Open Elective

EEC: Employability Enhancement Courses /Training Courses

MC: Mandatory Courses