

DEPARTMENT OF BIO-TECHNOLOGY						
S.NO.	COURSE CODE	COURSE NAME	L-T-P	CR	PRE-REQ.	OFFERED TO
GENETIC ENGINEERING						
1	15 BT 3251	Molecular Genetics & DNA forensics	3-0-0	3	15 BT 2208	BT
2	15 BT 4155	Transgenic Technology	3-0-0	3	15 BT 2208	BT
3	15 BT 4156	Genomics & Proteomics	3-0-0	3	15 BT 2208	BT
4	15 BT 4157	Molecular Expression Technology	3-0-0	3	15 BT 2208	BT
5	15 BT 4158	Biosafety & Bioethics	3-0-0	3	15 BT 2208	BT
INDUSTRIAL & FOOD BIOTECHNOLOGY						
1	15 BT 3252	Food Biotechnology	3-0-0	3	15 BT 2105	BT
2	15 BT 4159	Microbial Biotechnology	3-0-0	3	15 BT 2105	BT
3	15 BT 4160	Metabolic Engineering	3-0-0	3	15 BT 2105	BT
4	15 BT 4161	Bioprocess Plant Design and Economics	3-0-0	3	15 BT 2105	BT
5	15 BT 4162	Pharmaceutical Biotechnology	3-0-0	3	15 BT 2105	BT
BIOINFORMATICS						
1	15 BT 3253	Molecular Modelling and Drug Design	3-0-0	3	15 BT 3111	BT
2	15 BT 4163	Bioperl & Perl Programming	3-0-0	3	15 BT 3111	BT
3	15 BT 4164	Biomedical Informatics	3-0-0	3	15 BT 3111	BT
4	15 BT 4165	Systems Biology	3-0-0	3	15 BT 3111	BT
MEDICAL BIOTECHNOLOGY						
1	15 BT 3254	Cancer Biology	3-0-0	3	15 BT 1203	BT
2	15 BT 4167	Stem Cell Technology	3-0-0	3	15 BT 1203	BT
3	15 BT 4168	Nano Biotechnology	3-0-0	3	15 BT 1203	BT
4	15 BT 4169	Tissue Engineering	3-0-0	3	15 BT 1203	BT
5	15 BT 4170	Neuro Biology	3-0-0	3	15 BT 1203	BT

DEPARTMENT OF CIVIL ENGINEERING

S.NO.	COURSE CODE	COURSE NAME	L-T-P	CR	PRE-REQ.	OFFERED TO
STRUCTURAL ENGINEERING						
1	15 CE 3251	Advanced Design of Steel Structures	3-0-0	3	15 CE 3113	CE
2	15 CE 4156	Bridge Engineering	3-0-0	3	15 CE 3112	CE
3	15 CE 4157	Earthquake Resistant Design of Structures	3-0-0	3	15 CE 3112	CE
4	15 CE 4158	Prestressed Concrete	3-0-0	3	15 CE 3112	CE
5	15 CE 4159	Prefabricated Structures	3-0-0	3	NIL	CE
GEOTECHNICAL ENGINEERING						
1	15 CE 3252	Ground Improvement Techniques	3-0-0	3	15 CE 2210	CE
2	15 CE 4160	Advanced Foundation Engineering	3-0-0	3	15 CE 3111	CE
3	15 CE 4161	Geotechnical Earthquake Engineering	3-0-0	3	15 CE 2210	CE
4	15 CE 4162	Design of Earth Retaining Structures	3-0-0	3	15 CE 3111	CE
5	15 CE 4163	Geo synthetics and reinforced soil structure	3-0-0	3	15 CE 3111	CE
ENVIRONMENTAL AND WATER RESOURCES ENGINEERING						
1	15 CE 3253	Design of Hydraulics Structures	3-0-0	3	15 CE 2102	CE
2	15 CE 4164	Advanced Water Resources Engineering	3-0-0	3	15 CE 2209	CE
3	15 CE 4165	Environmental impact assessment	3-0-0	3	15 CE 2209	CE
4	15 CE 4166	Solid waste management and landfills	3-0-0	3	NIL	CE
5	15 CE 4167	Advanced Environmental Engineering	3-0-0	3	NIL	CE
TRANSPORTATION ENGINEERING						
1	15 CE 3254	Advanced Highway Engineering	3-0-0	3	15 CE 3115	CE
2	15 CE 4168	Traffic Engineering	3-0-0	3	15 CE 3115	CE
3	15 CE 4169	Advanced Pavement Design Engineering	3-0-0	3	15 CE 3115	CE
4	15 CE 4170	Urban Transport Systems Planning	3-0-0	3	15 CE 3115	CE
5	15 CE 4171	Railways, Docks, Harbors and airports	3-0-0	3	NIL	CE
GENERAL						
1	15 CE 3255	Modern Construction Materials	3-0-0	3	15 CE 2206	CE
2	15 CE 4172	Advanced Concrete technology	3-0-0	3	15 CE 2206	CE
3	15 CE 4173	Advanced Surveying	3-0-0	3	15 CE 2105	CE
4	15 CE 4174	Green Buildings	3-0-0	3	NIL	CE
5	15 CE 4175	Construction Management	3-0-0	3	15 CE 2207	CE

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING						
S.NO.	COURSE CODE	COURSE NAME	L-T-P	CR	PRE-REQ.	OFFERED TO
NETWORKING & SECURITY						
1	15 CS 3251	TCP/IP Protocol Suite	3-0-0	3	15CS 2208	CSE,ECE,ECM
2	15 CS 4159	Network Architecture and Design	3-0-0	3	15CS 2208	CSE,ECE,ECM
3	15 CS 4160	Network Security	3-0-0	3	15CS 2208	CSE,ECE,ECM
4	15 CS 4161	Wireless communications and Networks	3-0-0	3	15CS 2208	CSE,ECE,ECM
5	15 CS 4162	Computer Forensics	3-0-0	3	15CS 2208	CSE,ECE,ECM
SOFTWARE ENGINEERING						
1	15 CS 3252	Software Metrics and Measurements	3-0-0	3	15CS 1001	BT,CE,CSE,ECE,ECM,EEE,ME,PE
2	15 CS 4163	Software Verification and Validation	3-0-0	3	15CS 2101	CSE,ECM
3	15 CS 4164	Software Architecture and Design Patterns	3-0-0	3	15CS 2101	CSE,ECM
4	15 CS 4165	Software Project Management	3-0-0	3	15CS 2101	CSE,ECM
5	15 CS 4166	Fault Tolerant Computing	3-0-0	3	15CS 2101	CSE,ECM
DISTRIBUTED & CLOUD COMPUTING						
1	15 CS 3253	Enterprise Storage Systems	3-0-0	3	15 CS 2003	BT,CSE,ECM
2	15 CS 4167	Parallel Algorithms	3-0-0	3	15 CS 3211	CSE
3	15 CS 4168	Cloud Networking	3-0-0	3	15 CS 2208	CSE,ECE,ECM
4	15 CS 4169	Cloud Computing	3-0-0	3	15 CS 3211	CSE
5	15 CS 4170	High Performance Computing	3-0-0	3	15 CS 3211	CSE
COMPUTATIONAL INTELLIGENCE						
1	15 CS 3254	Soft Computing	3-0-0	3	15 CS 3107	CSE
2	15 CS 4171	Machine Learning	3-0-0	3	15 CS 3107	CSE
3	15 CS 4172	Natural Language Processing	3-0-0	3	15 CS 3107	CSE
4	15 CS 4173	Perception and Computer Vision	3-0-0	3	15 CS 3107	CSE
5	15 CS 4174	Multi Agent Systems	3-0-0	3	15 CS 3107	CSE
GRAPHICS & VISUALIZATION						
1	15 CS 3255	2D/3D Graphics	3-0-0	3	15 CS 2104	ME,CE
2	15 CS 4175	Multimedia Technologies	3-0-0	3	15 CS 3109	CSE
3	15 CS 4176	Game Graphics Programming	3-0-0	3	15 CS 3212	CSE
4	15 CS 4177	Animation & Visualization	3-0-0	3	15 CS 3212	CSE

5	15 CS 4178	Cross Platform Mobile Development	3-0-0	3	15 CS 3109	CSE
COMPUTATIONAL SCIENCE						
1	15 CS 3256	Modeling and Simulation for Sciences	3-0-0	3	15MT2005	CSE,ECM,ECE
2	15 CS 4179	Scientific Computing and Visualization	3-0-0	3	15 CS 1001	BT,CE,CSE,ECE,ECM,EEE,ME,PE
3	15 CS 4180	Parallel Computing	3-0-0	3	15EM2001	CSE,ECE,ECM
4	15 CS 4181	Optimization and Game Theory	3-0-0	3	15MT2005	CSE,ECM,ECE
5	15 CS 4182	Discrete Event Simulation	3-0-0	3	15MT2005	CSE,ECM,ECE
DATA ANALYTICS						
1	15 CS 3257	Data warehousing & Mining	3-0-0	3	15 CS 2003	BT,CSE,ECM
2	15 CS 4183	Big Data & Optimization	3-0-0	3	15 CS 2003	BT,CSE,ECM
3	15 CS 4184	Advanced Databases	3-0-0	3	15 CS 2003	BT,CSE,ECM
4	15 CS 4185	Information Visualization & Graph Analytics	3-0-0	3	15 CS 2003	BT,CSE,ECM
5	15 CS 4186	Data Science & Big Data Analytics	3-0-0	3	15 CS 2003	BT,CSE,ECM
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING						
S.NO.	COURSE CODE	COURSE NAME	L-T-P	CR	PRE-REQ.	OFFERED TO
VLSI						
1	15 EC 3251	Analog VLSI Design	3--0--0	3	15 EC 3107	ECE
2	15 EC 4154	Applications of MEMS Technology	3--0--0	3	15 EC 3107	ECE
3	15 EC 4155	CAD for VLSI Design	3--0--0	3	15 EC 2204	ECE
4	15 EC 4156	Design for Testability	3--0--0	3	15 EC 2204	ECE
5	15 EC 4157	Design of Semi-Conductor Memories	3--0--0	3	15 EC 3107	ECE
6	15 EC 4158	Low Power VLSI	3--0--0	3	15 EC 3107	ECE
7	15 EC 4159	Nanoelectronics	3--0--0	3	15 EC 3107	ECE
8	15 EC 4160	VLSI Subsystem Design	3--0--0	3	15 EC 2204	ECE
9	15 EC 4161	VLSI Technology	3--0--0	3	15 EC 3107	ECE
Communication						
1	15 EC 3252	RF System Design	3--0--0	3	15 EC 3108	ECE
2	15 EC 4162	Radiation Systems	3--0--0	3	15 EC 3108	ECE
3	15 EC 4163	RADAR and Navigational Aids	3--0--0	3	15 EC 3108	ECE
4	15 EC 4164	Microwave and Millimeter Wave Circuits	3--0--0	3	15 EC 3209	ECE
5	15 EC 4165	EMI/EMC	3--0--0	3	15 EC 3108	ECE

6	15 EC 4166	Cellular Communications	3--0--0	3	15 EC 2205	ECE
7	15 EC 4167	Satellite Communication	3--0--0	3	15 EC 3108	ECE
8	15 EC 4168	Optical Communications	3--0--0	3	15 EC 2205	ECE
9	15 EC 4169	Information Theory& Coding	3--0--0	3	15 EC 2205	ECE
10	15 EC 4170	Software Defined Radio	3--0--0	3	15 EC 3209	ECE
11	15 EC 4171	Fundamentals of Electronic Warfare	3--0--0	3	15 EC 3209	ECE
12	15 EC 4172	Electronic Navigation Systems	3--0--0	3	15 EC 3108	ECE
13	15 EC 4173	RADAR	3--0--0	3	15 EC 3108	ECE
14	15 EC 4174	Computational Electromagnetics	3--0--0	3	15 EC 2205	ECE
Signal Processing						
1	15 EC 3253	Intelligent Systems and Control	3--0--0	3	15 EC 2206	ECE
2	15 EC 4175	Adaptive Signal Processing	3--0--0	3	15 EC 2002	ECE
3	15 EC 4176	Statistical Signal Processing	3--0--0	3	15 MT 2005	ECE
4	15 EC 4177	Speech Signal Processing	3--0--0	3	15 EC 2206	ECE
5	15 EC 4178	Multimedia Signal Processing	3--0--0	3	15 EC 2002	ECE
6	15 EC 4179	Neural Networks and Fuzzy Control	3--0--0	3	15 EC 2206	ECE
DEPARTMENT OF ELECTRONICS & COMPUTER ENGINEERING						
S.NO.	COURSE CODE	COURSE NAME	L-T-P	CR	PRE-REQ.	OFFERED TO
EMBEDDED SYSTEMS						
1	15EM3251	Advanced Ambedded Processor Architecture	3--0--0	3	15EM2001	CSE,ECE,ECM
2	15EM4154	Embeeded Linux	3--0--0	3	15EM2001	CSE,ECE,ECM
3	15EM4155	Networking of Embedded Systems	3--0--0	3	15EM2001	CSE,ECE,ECM
4	15EM4156	System on Chip Architectures	3--0--0	3	15EM2001	CSE,ECE,ECM
5	15EM4157	Hardware Software Co Design	3--0--0	3	15EM2001	CSE,ECE,ECM
WIRELESS SENSOR						
1	15EM3252	Sensors and Sensing Principles	3--0--0	3	15 CS 2204	CSE,ECE,ECM
2	15EM4158	Wireless Communications & Networks	3--0--0	3	15 CS 2204	CSE,ECE,ECM
3	15EM4159	Wireless Sensor Networks	3--0--0	3	15 CS 2204	CSE,ECE,ECM
4	15EM4160	Sensor Networks Programming	3--0--0	3	15 CS 2204	CSE,ECE,ECM
5	15EM4161	Remote Sensing and GIS	3--0--0	3	15 CS 2204	CSE,ECE,ECM
WEB TECHNOLOGIES						

1	15EM3253	Web Services	3--0--0	3	15 CS 2002	ECE,ECM
2	15EM4162	Web Semantics	3--0--0	3	15 CS 2002	ECE,ECM
3	15EM4163	Enterprise Programming	3--0--0	3	15 CS 2002	ECE,ECM
4	15EM4164	Cloud Based Web Development	3--0--0	3	15 CS 2002	ECE,ECM
5	15EM4165	Web Analytics	3--0--0	3	15 CS 2002	ECE,ECM
INTERNET OF THINGS						
1	15-EM-3254	Principles of Micro Computer and Interfaces	3-0-0	3	15 EM 2001	CSE,ECE,ECM
2	15-EM-4166	Embedded Systems design using FPGA & Verilog	3-0-0	3	15 EM 2001	CSE,ECE,ECM
3	15-EM-4167	Machine to Machine Communications	3-0-0	3	15 CS 2204	CSE,ECE,ECM
4	15-EM-4168	RFID and Sensor Networks	3-0-0	3	15 CS 2204	CSE,ECE,ECM
5	15-EM-4169	Cloud of Things	3-0-0	3	15 CS 2204	CSE,ECE,ECM
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING						
S.NO.	COURSE CODE	COURSE NAME	L-T-P	CR	PRE-REQ.	OFFERED TO
POWER SYSTEMS						
1	15 EE 3251	Distribution System Planning & Automation	3--0--0	3	15 EE 3108	EEE
2	15 EE 4155	Restructured Power Systems	3--0--0	3	15 EE 3108	EEE
3	15 EE 4156	HVDC & FACTS	3--0--0	3	15 EE 3109	EEE
4	15 EE 4157	Power Quality	3--0--0	3	15 EE 3109	EEE
5	15 EE 4158	Smart Grid Technologies	3--0--0	3	15 EE 3210	EEE
POWER ELECTRONICS						
1	15 EE 3252	Advanced Power Electronics	3--0--0	3	15 EE 3109	EEE
2	15 EE 4159	Advanced Electrical Drives	3--0--0	3	15 EE 3211	EEE
3	15 EE 4160	HVDC & FACTS	3--0--0	3	15 EE 3109	EEE
4	15 EE 4161	Power Quality	3--0--0	3	15 EE 3109	EEE
5	15 EE 4162	Hybrid Electrical Vehicles	3--0--0	3	15 EE 3211	EEE
CONTROL SYSTEMS						
1	15 EE 3253	State Estimation & System Identification	3--0--0	3	15 EE 2207	ECE,EEE
2	15 EE 4163	Digital Control Systems	3--0--0	3	15 EE 2207	ECE,EEE
3	15 EE 4164	Non Linear Control Systems	3--0--0	3	15 EE 2207	ECE,EEE
4	15 EE 4165	Optimal Control Systems	3--0--0	3	15 EE 2207	ECE,EEE
5	15 EE 4166	Adaptive Control Systems	3--0--0	3	15 EE 2207	ECE,EEE

ENERGY SYSTEMS						
1	15 EE 3254	Energy Conservation & Audit	3--0--0	3	15 EE 2206	EEE
2	15 EE 4167	Utilization of Electrical Energy	3--0--0	3	15 EE 2206	EEE
3	15 EE 4168	Solar & Fuel cell Energy Systems	3--0--0	3	15 EE 2206	EEE
4	15 EE 4169	Wind & Biomass Energy Systems	3--0--0	3	15 EE 2206	EEE
5	15 EE 4170	Nuclear, Geothermal & Tidal Energy Systems	3--0--0	3	15 EE 2206	EEE
DIGITAL SYSTEMS						
1	15 EE 3255	Computer Architecture	3--0--0	3	15EC1101	EEE
2	15 EE 4171	PLD's & FPGAs	3--0--0	3	15EC1101	EEE
3	15 EE 4172	VLSI Design	3--0--0	3	15EC1101	EEE
4	15 EE 4173	Embedded System Design	3--0--0	3	15EC1101	EEE
5	15 EE 4174	DSP Processors	3--0--0	3	15EC1101	EEE
DEPARTMENT OF MECHANICAL ENGINEERING						
S.NO.	COURSE CODE	COURSE NAME	L-T-P	CR	PRE-REQ.	OFFERED TO
AUTOMOBILE ENGINEERING						
1	15 ME 3251	Automobile Engineering	3-0-0	3	15 ME 2210	ME
2	15 ME 4155	Automobile Engine Design	3-0-0	3	15 ME 3112	ME
3	15 ME 4156	Automotive Transmission	3-0-0	3	15 ME 3112	ME
4	15 ME 4157	Autotronics & Safety	3-0-0	3	15 ME 3115	ME
5	15 ME 4158	Alternative Energy Sources for Automobiles	3-0-0	3	NIL	ME
ROBOTICS & MECHATRONICS						
1	15 ME 3252	Industrial Automation and Controls	3-0-0	3	15 ME 3115	ME
2	15 ME 4159	Robotics: Modelling, Analysis and Control	3-0-0	3	15 ME 2209	ME
3	15 ME 4160	Modelling and Analysis of Dynamic Physical	3-0-0	3	15 ME 2209	ME
4	15 ME 4161	Theory and Design of Control Systems	3-0-0	3	15 ME 3115	ME
5	15 ME 4162	Smart Materials for Mechatronic Applications	3-0-0	3	15 ME 2105	ME
DESIGN AND MANUFACTURING						
1	15 ME 3253	Fracture Mechanics	3-0-0	3	15 ME 3112	ME
2	15 ME 4163	Mechanical Vibrations	3-0-0	3	15 ME 1001	BT,CE,CSE,ECE,ECM,EEE,ME,PE
3	15 ME 4164	Product Design	3-0-0	3	15 ME 3112	ME
4	15 ME 4165	Flexible Manufacturing Systems	3-0-0	3	15 ME 3113	ME

5	15 ME 4166	Reverse Engineering and Rapid Prototyping	3-0-0	3	NIL	
GENERAL PROFESSIONAL ELECTIVES (MECH)						
1	15 ME 4167	Condition Monitoring and Fault Diagnostics	3-0-0	3	15 GN 1003	BT,CE,CSE,ECE,ECM,EEE,ME,PE
2	15 ME 4168	Experimental Stress Analysis	3-0-0	3	15 ME 2106	ME
3	15 ME 4169	Advanced Mechanisms Design	3-0-0	3	15 ME 2209	ME
4	15 ME 4170	Computational Fluid Dynamics	3-0-0	3	15 ME 2104	ME
5	15 ME 4171	Refrigeration and Airconditioning	3-0-0	3	15 ME 2210	ME
DEPARTMENT OF PETROLEUM ENGINEERING						
S.NO.	COURSE CODE	COURSE NAME	L-T-P	CR	PRE-REQ.	OFFERED TO
UPSTREAM						
1	15 PE 3251	Well intervention & Stimulation Techniques	3-0-0	3	15 PE 2104	PE
2	15 PE 4153	Reservoir Modelling & Simulation	3-0-0	3	15 PE 2103	PE
3	15 PE 4154	Enhanced Oil Recovery	3-0-0	3	15 PE 2103	PE
4	15 PE 4155	Coal Bed Methane , Gas Hydrates and Shale Gas	3-0-0	3	NIL	PE
5	15 PE 4156	Directional Drilling & Offshore Structures	3-0-0	3	15 PE 2104	PE
6	15 PE 4157	Petroleum Production System Design	3-0-0	3	15 PE 3215	PE
DOWNSTREAM						
1	15 PE 3252	Petroleum Refining & Petrochemical Technology	3-0-0	3	NIL	PE
2	15 PE 4158	Polymer Science & Technology	3-0-0	3	NIL	PE
3	15 PE 4159	Refining Process, Modeling & Simulation	3-0-0	3	15 PE 2102	PE
4	15 PE 4160	Petroleum Refining Engineering	3-0-0	3	NIL	PE
5	15 PE 4161	Chemical Process Equipment Design & Drawing	3-0-0	3	15 PE 2208	PE