

The University offers fourteen B.Tech. programmes, BDes programme, two bachelor programmes namely BA(H) Economics, Bachelor of Business Administration at East Campus. The pace with which technology change is taking place in industry and market it is essential to keep up breast with the requirements of industry. This necessitates change in syllabus and introduction of new courses, though the foundation course remain same. Curriculum scheme of approximately 80% of programmes is revised in last 5 years.

CATEGORY CODING	EMP - EMPLOYABILITY, SKD - SKILL DEVELOPMENT, ENT -ENTREPRENEURSHIP	
Course Code	Course Title	CATEGORY
BACHELOR OF TECHNOLOGY		
Chemical Engineering		
II Year: Third Semester		
PE251	Engineering Materials and Metallurgy	EMP
CH201	Chemical Engineering Process Calculations	EMP
CH203	Transport Phenomena	EMP
CH205	Chemical Engineering Thermodynamis	EMP
CH207	Engineering Design and Analysis	EMP
FEC3	FEC	SKD
II Year: Fourth Semester		
EE272	Instrumentation and Process Control	EMP
CH202	Fluid Mechanics	EMP
CH204	Chemical Reaction Engineering -1	EMP
CH206	Mechanical Operations	EMP
CH208	Heat Transfer	EMP
FEC4		SKD
III Year: Fifth Semester		
CH301	Polymeric Materials	EMP
CH303	Mass Transfer-1	EMP
CH3XX	Departmental Elective course-1	EMP
CH3XX	Departmental Elective Course--2	EMP
CH3XX	Departmental Elective Course-3	EMP
MG301	Fundamentals of Management	SKD
III Year: Sixth Semester		
CH302	Chemical Reaction Engineering-II	EMP
CH304	Mass Transfer-II	EMP
CH306	Chemical Process Technology	EMP
CH3XX	Departmental Elective Course -4	EMP
CH3XX	Departmental Elective Course -5	EMP
HU302	Engineering Economics	ENT
IV Year: Seventh Semester		
CH401	B. Tech Project-I	ENT
CH403	Training Seminar	ENT
CH4XX	Departmental Elective Course -6	EMP
CH4XX	Departmental Elective Course -7	EMP
CH4XX	Departmental Elective Course -8	EMP

CH4XX	Departmental Elective Course -9	EMP
IV Year: Eighth Semester		
CH402	B.Tech Project-II	ENT
CH4XX	Departmental Elective Course-10	EMP
CH4XX	Departmental Elective Course -11	EMP
CH4XX	Departmental Elective Course -12	EMP
List of Department Electives courses		
CH305	Characterization of Materials	EMP
CH307	Petroleum Refining Engineering	EMP
CH309	Chemical Process and Simulations	EMP
CH311	Rheology	EMP
CH313	Corrosion Engineering	EMP
CH315	Plastic Technology	EMP
CH317	Resin Technology	EMP
CH319	Rubber Technology	EMP
CH321	Numerical Methods in Chemical Engineering	SKD
CH323	Biomaterials	EMP
CH308	Food Technology	EMP
CH310	Paint Technology	EMP
CH312	Polymer Processing Techniques	EMP
CH314	Fertilizer Technology	EMP
CH316	Coatings and Adhesives	EMP
CH318	Petrochemical Engineering	EMP
CH320	Packaging Technology	EMP
CH322	Tyre Technology	EMP
CH324	Heat Exchangers	EMP
CH405	Fiber Technology	EMP
CH407	Polymer Blends and Composites	EMP
CH409	Plant Engineering and Process Economics	ENT
CH411	Advance Mass Transfer Operations	EMP
CH413	Bio-Chemical Engineering	EMP
CH415	Rocket Propulsion and Explosives	EMP
CH417	Polymer Waste Management	ENT
CH419	Computational Fluid Dynamics	SKD
CH421	Polymer Reaction Engineering	EMP
CH423	Optimization Techniques	SKD
CH425	Application of Polymers in Biomedical	EMP
CH427	Combustion Engineering	EMP
CH429	Energy Resources	ENT
CH431	Membrane Technology	EMP
CH404	Fuel Cell Technology	ENT
CH406	Catalysis	EMP
CH408	Specialty Polymers	EMP
CH410	Process Engineering and Design	EMP
CH412	Thermoplastic Elastomers	EMP
CH414	Non-woven Technology	EMP

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CH416	Industrial Waste Management	ENT
CH418	Application of Nanotechnology in Polymers	ENT
CH420	Inorganic Polymers	EMP
CH422	Pharmaceutical Technology	EMP
CH424	Safety & Hazards in Chemical Industries	EMP
CH426	Biofuel Engineering	ENT
CH428	Energy Conservation and Recycling	ENT
Mathematics & Computing		
II Year: Third Semester		
CS251	Data Structure	SKD
MC201	Discrete Mathematics	EMP
MC203	Mathematics-III	EMP
MC205	Probability & Statistics	EMP
MC207	Engineering Analysis and Design (Differential Equations and Applications)	EMP
FEC	Foundation Elective 3	SKD
II Year: Fourth Semester		
CS262	Algorithm Design & Analysis	SKD
MC202	Real Analysis	EMP
MC204	Scientific Computing	EMP
MC206	Computer Organization & Architecture	EMP
MC208	Linear Algebra	EMP
FEC	Foundation Elective 4	SKD
III Year: Fifth Semester		
MC301	Operating System	EMP
MC303	Stochastic Processes	EMP
MC3xx	Departmental Elective Course - 1	EMP
MC3xx	Departmental Elective Course – 2	EMP
MC3xx	Departmental Elective Course - 3	EMP
MG301	Fundamentals of Management	ENT
III Year: Sixth Semester		
MC302	Data Base Management System	EMP
MC304	Theory of Computation	EMP
MC306	Financial Engineering	ENT
MC3xx	Departmental Elective Course -4	EMP
MC3xx	Departmental Elective Course -5	EMP
HU302	Engineering Economics	ENT
IV Year: Seventh Semester		
MC401	B.Tech. Project-I	ENT
MC403	Training Seminar	ENT
MC4xx	Departmental Elective Course -6	EMP
MC4xx	Departmental Elective Course -7	EMP
MC4xx	Departmental Elective Course -8	EMP
MC4xx	Departmental Elective Course -9	EMP
IV Year: Eighth Semester		
MC402	B.Tech. Project-II	ENT
MC4xx	Departmental Elective Course-10	EMP

MC4xx	Departmental Elective Course-11	EMP
MC4xx	Departmental Elective Course-12	EMP
List of Department Electives courses		
MC305	Operations Research	ENT
MC307	Object Oriented programming	SKD
MC309	Number Theory	EMP
MC315	Modern Algebra	EMP
MC317	Numerical methods for ODE	EMP
MC319	Complex Analysis	EMP
MC308	Computer Networks	SKD
MC310	Software Engineering	EMP
MC312	Artificial Intelligence	SKD
MC318	Computer Graphics	SKD
MC320	Web Technology	SKD
MC322	Cluster & Grid Computing	SKD
MC324	Big Data Analytics	SKD
MC411	Data Warehousing & Data Mining	SKD
MC413	Compiler Design	SKD
MC415	Wireless & Mobile Computing	SKD
MC417	Multimedia System Design	ENT
MC419	Machine Learning	SKD
MC404	Matrix Computation	EMP
MC406	Partial Differential Equations	EMP
MC408	Quality Control & Decision Making	ENT
MC410	Topology	EMP
MC412	Functional Analysis	EMP
MC418	Optimization Techniques.	EMP
MC420	Information Theory & Coding	EMP
MC422	Finite element methods	EMP
MC424	Game Theory	EMP
MC426	Differential Geometry	EMP
MC432	Fuzzy set & Fuzzy logic	EMP
MC434	Numerical Methods for PDE	EMP
MC436	Petrint Theory & Application	EMP
MC438	Tensor Calculus	EMP
MC440	Statistical Inference	EMP
Engineering Physics		
II Year: Third Semester		
ME251	Engineering Mechanics	EMP
EP201	Introduction to Computing	SKD
EP203	Mathematical Physics	EMP
EP205	Classical and Quantum Mechanics	EMP
EP207	Digital Electronics (Engineering Analysis and Design)	EMP
II Year: Fourth Semester		
EC272	Communication System	EMP

EP202	Condensed Matter Physics	EMP
EP204	Optics	EMP
EP206	Microprocessor and Interfacing	EMP
EP208	Computational Methods	EMP
III Year: Fifth Semester		
EP301	Semiconductor Devices	ENT
EP303	Electromagnetic Theory, antennas and Propagation	ENT
EP3xx	Departmental Elective Course-1	EMP
EP3xx	Departmental Elective Course-2	EMP
EP3xx	Departmental Elective Course-3	EMP
MG301	Fundamentals of Management	ENT
III Year: Sixth Semester		
EP302	Fiber Optics and Optical Communication	EMP
EP304	Fabrication and Characterization of Materials	EMP
EP306	Microwave Engineering	EMP
EP3xx	Departmental Elective Course-4	EMP
EP3xx	Departmental Elective Course-5	EMP
HU302	Engineering Economics	ENT
IV Year: Seventh Semester		
EP401	B.Tech. Project-I	ENT
EP403	Training Seminar	ENT
EP4XX	Departmental Elective Course -6	EMP
EP4XX	Departmental Elective Course -7	EMP
EP4xx	Departmental Elective Course -8	EMP
EP4xx	Departmental Elective Course-9	EMP
IV Year: Eighth Semester		
EP402	B.Tech. Project-II	ENT
EP4xx	Departmental Elective Course-10	EMP
EP4xx	Departmental Elective Course-11	EMP
EP4xx	Departmental Elective Course-12	EMP
List of Departmental Electives		
EP-305	Atomic and Molecular Physics	EMP
EP-307	Biophysics	EMP
EP-309	Quantum Information and Computing	SKD
EP-311	Computer Networking	SKD
EP-313	Thermodynamics of Materials	EMP
EP-315	Advanced Characterization Techniques in Material Sciences	EMP
EP-351	Physics of Engineering Materials	EMP
EP-308	Laser System and Instrumentation	ENT
EP-310	Medical Physics and Physiological measurements	ENT
EP-312	Fourier optics and holography	ENT
EP-314	Instrumentation and Control	EMP
EP-316	Cosmology and Astrophysics	EMP
EP-318	Science and Technology of Thin Films	ENT
EP-320	Computational Material Science	EMP

EP-322	Mechanical and Electrical Behavior of Thin Films	ENT
EP405	VLSI and FPGA design	EMP
EP407	Mobile and Satellite communication	EMP
EP-409	Information theory and coding	SKD
EP-411	Advanced Simulation Techniques in Physics	EMP
EP-413	Continuum Mechanics	EMP
EP-415	Nano Science and Technology	SKD
EP- 417	Optical Electronics	EMP
EP-419	Introduction to Automation and Motion Control	EMP
EP-421	Principles of Nuclear Engineering	EMP
EP-423	Space and Atmospheric Science-I	EMP
EP-425	Plasma Science and Technology-I	ENT
EP-427	Thermodynamics of Materials	EMP
EP404	Alternative Energy Storage and Conversion Devices	ENT
EP-406	Introduction to Spintronic	EMP
EP-408	Integrated Optics	EMP
EP-410	Robotic Engineering	SKD
EP-412	Nuclear Materials for Engineering Applications	EMP
EP-414	Space and Atmospheric Science-II	ENT
EP-416	Plasma Science and Technology-II	ENT
EP-418	Digital Signal Processing	EMP
EP-420	Fuzzy Logic and Neural Networks	SKD
EP-422	Embedded Systems Design	EMP
Biotechnology		
II Year: Third Semester		
MC251	Applied Mathematics	EMP
BT201	Introduction to Biotechnology	EMP
BT203	Biochemistry	EMP
BT205	Genetics	EMP
BT207	Fundamental of Computational Biology	EMP
	FEC	
II Year: Fourth Semester		
CO252	Data Structure and Algorithm	SKD
BT202	Molecular Biology	EMP
BT204	Drug Design and Delivery	ENT
BT206	Microbiology	EMP
BT208	Advances in Computational Biology	EMP
	FEC	
III Year: Fifth Semester		
BT 301	Immunology and Immuno-Technology	SKD
BT 303	Genetic Engineering	SKD
BT 3xx	Departmental Elective Course-1	EMP
BT3xx	Departmental Elective Course-2	EMP
BT3xx	Departmental Elective Course-3	EMP
HU301	Engineering Economics	ENT
III Year: Sixth Semester		

BT302	Plant Biotechnology	EMP
BT304	Animal Biotechnology	EMP
BT306	Genomics and Proteomics	EMP
BT3xx	Departmental Elective Course-4	EMP
BT3xx	Departmental Elective Course-5	EMP
MG302	Fundamentals of Management	ENT
IV Year: Seventh Semester		
BT 401	B.Tech Project-I	ENT
BT 403	Training Seminar	ENT
BT 4xx	Departmental Elective Course-6	EMP
BT 4xx	Departmental Elective Course-7	EMP
BT4xx	Departmental Elective Course-8	EMP
BT4xx	Departmental Elective Course-9	EMP
IV Year: Eighth Semester		
BT402	B.Tech Project-II	ENT
BT404	Departmental Elective Course-10	EMP
BT4xx	Departmental Elective Course-11	EMP
BT4xx	Departmental Elective Course-12	EMP
List of Departmental Elective Courses		
BT305	Instrumentation in Biotechnology	EMP
BT307	Food Biotechnology	ENT
BT309	Object oriented Programming	SKD
BT311	Introduction to Biomedical Engineering	EMP
BT313	Thermodynamics of Biological System	EMP
BT315	Current topics in Biotechnology	EMP
BT317	Enzymology and Enzyme Technology	EMP
BT319	Drug Design and Delivery	EMP
BT321	Bioprocess Plant Design	EMP
BT323	Population Genetics	EMP
BT325	Cell Biology	EMP
BT327	Minor Project (Only for students who opt for Minor)	ENT
BT308	Stem Cells and Regenerative Medicine	EMP
BT310	Biopolymers	ENT
BT312	Metabolic Engineering	EMP
BT314	Ecology and Evolution	EMP
BT316	Transgenic Technology	SKD
BT318	Bioenergy and Biofuels	ENT
BT320	Genomics in Medicine	ENT
BT322	Protein Engineering	ENT
BT324	Biodiversity and Bio resource Planning	EMP
BT326	Medical Microbiology	EMP
BT328	Bioinformatics approaches in Complex disorders	ENT
BT405	Fundamentals of Computational Biology	EMP
BT407	Bioprocess Tech & Downstream Process	SKD
BT409	Concepts in Neurobiology	EMP
BT411	Industrial Biotechnology	EMP

BT413	Nano biotechnology	EMP
BT415	Medical Physics	ENT
BT417	Plant Bioinformatics	EMP
BT419	Cancer Biology	EMP
BT421	Pharmacogenomics and Personalized Medicine	ENT
BT423	Technological Application in Food Technology	SKD
BT425	Biomaterials	EMP
BT427	Pharmaceutical Sciences	EMP
BT429	Nano-Biotechnology and Nano biomedicine	ENT
BT431	Biomaterials and clinical devices	EMP
BT433	Basic Epidemiology	EMP
BT435	Principle of imaging processing in medicine	SKD
BT437	Biomedical Instrumentation, biosensor and transducer	ENT
BT439	Principles and practice in Public Health	EMP
BT441	Rehabilitation Engineering	EMP
BT404	Advances in Computational Biology	SKD
BT406	Agriculture Microbiology	EMP
BT408	Bioethics and Intellectual Property Rights	EMP
BT410	System Biology	EMP
BT412	Advanced Bioanalytical Techniques	EMP
BT414	Clinical Biotechnology	EMP
BT416	Plant Metabolic Engineering	EMP
BT418	Crop protection and Pest management	EMP
BT420	Biosensor	ENT
BT422	Green Energy Technology	ENT
BT424	Neutraceuticals	ENT
BT426	Environmental Biotechnology	ENT
BT428	Food Engineering & Biotechnology	EMP
BT430	Waste water treatment	EMP
BT432	Bioprocess Plant Designing	EMP
BT434	Biostatistics	EMP
BT436	Tissue Engineering and Artificial Organs	EMP
Civil Engineering		
II Year: Third Semester		
EC251	Basic Electronics & Instrumentation	EMP
CE201	Civil Engineering Basics and Applications	EMP
CE203	Engineering Mechanics	EMP
CE205	Fluid Mechanics	EMP
CE207	Engineering Analysis and Design	EMP
II Year: Fourth Semester		
EN252	Environmental Engineering	EMP
CE202	Mechanics of solids	EMP
CE204	Engineering Survey	EMP
CE206	Soil Mechanics	SKD
CE208	Hydraulics & Hydraulic Machines	ENT

III Year: Fifth Semester		
CE301	Analysis of Determinate Structures	EMP
CE303	Design of RCC structures	ENT
CE3xx	Departmental Elective Course-1	EMP
CE3xx	Departmental Elective Course-2	EMP
CE3xx	Departmental Elective Course-3	EMP
MG301	Fundamentals of Management	
III Year: Sixth Semester		
CE302	Analysis of Indeterminate Structures	EMP
CE304	Geotechnical Engineering	ENT
CE306	Transportation Engineering	EMP
CE3xx	Departmental Elective Course-4	EMP
CE3xx	Departmental Elective Course-5	EMP
HU302	Engineering Economics	ENT
IV Year: Seventh Semester		
CE 401	B. Tech. Project	ENT
CE 403	Training Seminar	ENT
CE4XX	Departmental Elective Course-6	EMP
CE4XX	Departmental Elective Course-7	EMP
CE4XX	Departmental Elective Course-8	EMP
CE4XX	Departmental Elective Course-9	EMP
IV Year: Eighth Semester		
CE 402	B. Tech. Project (Contd. From VII Semester)	ENT
CE4XX	Departmental Elective Course-10	EMP
CE4XX	Departmental Elective Course-11	EMP
CE4XX	Departmental Elective Course-12	EMP
List of Departmental Elective Courses		
CE 305	Mechanics of Materials	EMP
CE 307	Advanced Geo-Technical Engineering	EMP
CE 309	Environmental Engineering Design	SKD
CE 311	Photogrammetry and Astronomy	EMP
CE 313	Earthquake Technology	SKD
CE 315	Rock Engineering	EMP
CE 317	Solid waste management and air pollution control	ENT
CE 319	Application of Geo-informatics Remote Sensing and GIS in Engineering	ENT
CE 321	Disaster Preparedness and mitigation	ENT
CE 323	Occupational Safety and Health	EMP
CE 325	Human Values and Ethics in Disaster Management	EMP
CE 327	Climate Change and Sustainable Development	ENT
CE 308	Disaster Management	EMP
CE 310	Geo-Technical Processes	EMP
CE 312	Waterpower System and Design	SKD
CE 314	Tunnel ,Ports and Harbour Engineering	EMP
CE 316	Matrix Methods of Structural Analysis	EMP
CE 318	Analysis and Design of Underground Structures	EMP

CE 320	Computational Hydraulics	EMP
CE 322	Traffic and Transportation Planning	ENT
CE 324	Infrastructure Resilience and Socio-Economic Dynamic	ENT
CE 405	Design of Steel Structure	SKD
CE 407	Water Resource Engineering	EMP
CE 409	Advanced Design of Concrete Structures	EMP
CE 411	Interaction Behaviour of Soil Structures	EMP
CE 413	Water Resources Management	ENT
CE 415	Transportation safety and Environment	EMP
CE 417	Finite element method for 2-D Structure	EMP
CE 419	Soil Dynamics	EMP
CE 421	Hydraulics Structure and flood control works	ENT
CE 423	Advanced Transportation Engineering	ENT
CE 425	Sustainable Construction and Practices	ENT
CE 427	Wind Loads on Structures	EMP
CE 429	Disaster Induced Risk	EMP
CE 431	Cyclonic Hazard Assessment and Mitigation	SKD
CE 433	Seismic Hazard Assessment and Mitigation	SKD
CE 435	Landslide Hazard Assessment and Mitigation	ENT
CE 404	Construction Technology and Management	SKD
CE 406	Advanced Design of Steel Structures	SKD
CE 408	Computational Geo-Mechanics	EMP
CE 410	Advanced Fluid Mechanics	EMP
CE 412	Construction and design aspects in transportation engineering	ENT
CE 414	Design of Bridges	SKD
CE 416	Geo-environmental and geo-hazard engineering	EMP
CE 418	Ground water and seepage	EMP
CE 420	Traffic Engineering	EMP
CE 422	Vulnerability and Risk Analysis	ENT
CE 424	Hazard Monitoring Prediction and Mitigation	ENT
CE 426	Retrofitting of Structures	EMP
Computer Engineering		
I Year: First Semester		
II Year: Third Semester		
EC261	Analog Electronics	EMP
CO201	Data Structures	SKD
CO203	Object Oriented Programming	SKD
CO205	Discrete Structures	EMP
CO207	Engineering Analysis and Design (Modeling and Simulation)	EMP
II Year: Fourth Semester		
EC262	Digital Electronics	EMP
CO202	Database Management Systems	EMP
CO204	Operating Systems Design	EMP
CO206	Computer Organization and Architecture	EMP
CO208	Algorithm Design and Analysis	EMP

III Year: Fifth Semester		
CO301	Software Engineering	EMP
CO303	Theory of Computation	EMP
CO3xx	Department Elective Course -1	EMP
CO3xx	Department Elective Course -2	EMP
CO3xx	Department Elective Course -3	EMP
HU301	Engineering Economics	ENT
III Year: Sixth Semester		
CO302	Compiler Design	EMP
CO304	Artificial Intelligence	SKD
CO306	Computer Networks	SKD
CO3xx	Department Elective Course-4	EMP
CO3xx	Department Elective Course-5	EMP
MG302	Fundamentals of Management	ENT
IV Year: Seventh Semester		
CO401	B.Tech. Project-I	ENT
CO403	Training Seminar	ENT
CO4xx	Department Elective Course -6	EMP
CO4xx	Department Elective Course -7	EMP
CO4xx	Department Elective Course -8	EMP
CO4xx	Department Elective Course -9	EMP
IV Year: Eighth Semester		
CO402	B.Tech. Project-II	ENT
CO4xx	Department Elective Course-10	EMP
CO4xx	Department Elective Course -11	EMP
CO4xx	Department Elective Course -12	EMP
List of Departmental Elective Courses		
CO-305	Information Theory and coding	EMP
CO-307	Digital Signal Processing	EMP
CO-309	Advanced Data Structures	SKD
CO-311	Microprocessors and Interfacing	EMP
CO-313	Computer Graphics	EMP
CO-315	Optimization Techniques	EMP
CO-317	Soft Computing	SKD
CO-319	Enterprise Java programming	SKD
CO-321	Embedded Systems	SKD
CO-323	Data Compression	SKD
CO-325	Probability and Statistics	EMP
CO-327	Machine Learning	SKD
CO329	Methods for Data Preparation & Analysis	EMP
CO 331	Minor Project (Only for students who opt for Minor)	ENT
CO-308	Parallel Algorithms	EMP
CO-310	Digital Image Processing	EMP
CO-312	Communications Engineering	EMP
CO-314	Optical Networks	EMP

CO-316	High Speed Networks	EMP
CO-318	Advanced Database Management Systems	EMP
CO-320	Multimedia System Design	EMP
CO-322	Real Time System	ENT
CO-324	Pattern Recognition	ENT
CO-326	Object Oriented Software Engineering	EMP
CO405	Information and Network Security	EMP
CO407	Distributed Systems	EMP
CO-409	Robotics	SKD
CO-411	Computer Vision	ENT
CO-413	VLSI Design	SKD
CO-415	Wireless and Mobile Computing	ENT
CO-417	Software Testing	EMP
CO-419	High Performance Computing	EMP
CO-421	Grid and Cluster Computing	EMP
CO-423	Swarm & Evolutionary Computing	EMP
CO-427	Web Technology	SKD
CO-429	Neural Networks	SKD
CO-431	Reinforcement Learning	SKD
CO-433	Distributed Systems	EMP
CO-404	Data-Warehousing and Data Mining	SKD
CO-406	Parallel Computer Architecture	EMP
CO-408	Intellectual Property Rights	EMP
CO-410	Bio Informatics	EMP
CO-412	Software Quality and Metrics	EMP
CO-414	Big Data Analytics	SKD
CO-416	Cloud Computing	SKD
CO-418	Natural Language Processing	EMP
CO-420	Cyber Forensics	SKD
CO-422	Semantic Web and Web Mining	EMP
CO-424	Software Project Management	EMP
Electrical Engineering		
II Year: Third Semester		
MC261	Numerical and Engineering Optimization Methods	EMP
EE201	Network Analysis & Synthesis	EMP
EE203	Electronic Devices and Circuits	EMP
EE205	Electromechanical Energy Conversion and Transformer	EMP
EE207	Electromagnetic Field Theory	EMP
II Year: Fourth Semester		
ME252	Power Plant Engineering	EMP
EE202	Linear Integrated Circuit	EMP
EE204	Digital circuits and System	EMP
EE206	Control Systems	EMP
EE208	Asynchronous and Synchronous Machines	EMP

III Year: Fifth Semester		
EE301	Power Electronics	EMP
EE303	Power Transmission and Distribution	EMP
EExxx	Departmental Elective Course- 1	EMP
EExxx	Departmental Elective Course- 2	EMP
EExxx	Departmental Elective Course- 3	EMP
HU301	Engineering Economics	ENT
III Year: Sixth Semester		
EE302	Electric Drives	EMP
EE304	Power System Analysis	EMP
EE306	Microprocessors & Microcontroller Applications	SKD
EEXXX	Departmental Elective Course- 4	EMP
EEXXX	Departmental Elective Course- 5	EMP
MG302	Fundamentals of Management	ENT
IV Year: Seventh Semester		
EE401	B.Tech Project-I	ENT
EE403	Training Seminar	ENT
EE4XX	Departmental Elective Course- 6	EMP
EE4XX	Departmental Elective Course- 7	EMP
EE4XX	Departmental Elective Course- 8	EMP
EE4xx	Departmental Elective Course- 9	EMP
IV Year: Eighth Semester		
EE402	B.Tech. Project-II	ENT
EE4xx	Departmental Elective Course-10	EMP
EE4xx	Departmental Elective Course-11	EMP
EE4xx	Departmental Elective Course-12	EMP
List of Departmental Elective Courses		
EE305	Signals and Systems	EMP
EE307	Power Station Practices	ENT
EE309	Special Electrical Machines	ENT
EE311	Energy Efficient Motors	ENT
EE313	Engineering Analysis and Design	ENT
EE315	Digital Control and State Variable Analysis	EMP
EE317	Renewable Energy Systems	ENT
EE319	Digital System Design	SKD
EE321	Soft Computing Techniques	SKD
EE323	Fundamentals of Machine Learning	SKD
EE325	Internet of Things	SKD
EE327	Introduction to Python Programming	SKD
EE308	Power System Operation and Control	SKD
EE310	Communication Systems	EMP
EE312	Power System Optimization	ENT
EE314	Power Electronic Applications to Power Systems	ENT
EE316	Electrical Energy Storage Systems	ENT
EE318	Switched Mode Power Supplies	ENT
EE320	VLSI Design	SKD

EE322	Advanced Analog Circuit Design	EMP
EE324	Design, Estimation & Costing of Industrial Electrical Systems	ENT
EE326	CMOS Analog Integrated Circuits	EMP
EE328	Deep Learning with Artificial Neural Network	SKD
EE330	Introduction to ARM Architecture	EMP
EE332	Wireless Sensor Networks	EMP
EE405	Digital Signal Processing	EMP
EE407	Instrumentation and Measurement	EMP
EE409	Switchgear and Protection	EMP
EE411	Power System Modeling & Simulation	EMP
EE413	Power System Reliability	EMP
EE415	Design of Electrical Machines	ENT
EE417	Advanced Topics in Electrical Machines	ENT
EE419	Pulse Width Modulation for Power converters	ENT
EE421	Advanced Communications	EMP
EE423	Microcontroller and Embedded Systems	EMP
EE425	IC Technology	SKD
EE427	Computer Architecture	EMP
EE429	Power Electronics Application to Photovoltaic Systems	SKD
EE404	Power System Dynamics & Stability	EMP
EE406	Distribution Systems Analysis & Control	EMP
EE408	Restructured Power Systems	EMP
EE410	Power System Planning	EMP
EE412	High Voltage Engineering	EMP
EE414	Distributed Generation	ENT
EE416	Grid Integration of Renewable Energy Sources	ENT
EE418	Selected Topics in Power Electronics	EMP
EE420	Power Quality	EMP
EE422	HVDC Transmission	EMP
EE424	Flexible AC Transmission Systems	EMP
EE426	Smart Grid	EMP
EE428	Digital Image Processing	SKD
EE430	Filter Design	SKD
EE432	AI and Expert Systems	SKD
EE434	Computer Control of Processes	SKD
EE436	Nonlinear and Adaptive Control	SKD
EE438	DSP Applications to Electromechanical Systems	SKD
EE440	SCADA & Energy Management Systems	SKD
EE442	Robotics and Machine Vision	SKD
EE444	Utilization of Electrical Energy & Traction	EMP
EE446	Data Communication and Computer Networks	EMP
EE448	Big Data Analytics	SKD
EE450	Cloud Computing Fundamentals	SKD
Electronics & Communication Engineering		
II Year: Third Semester		
EE251	Electronic Instrumentation and Measurements	EMP

EC201	Analog	EMP
	Electronics – I	EMP
EC203	Digital Design – I	EMP
EC205	Signals & Systems	EMP
EC207	Engineering Analysis & Design (Network Analysis and Synthesis)	EMP
II Year: Fourth Semester		
EE262	Electromagnetics	EMP
EC 202	Analog	EMP
	Electronics–II	EMP
EC204	Digital Design – II	EMP
EC206	Communication Systems	EMP
EC208	Computer Architecture	EMP
III Year: Fifth Semester		
EC301	Digital Communication	EMP
EC303	Linear Integrated Circuits	EMP
EC3xx	Departmental Elective Course -1	EMP
EC3xx	Departmental Elective Course- 2	EMP
EC3xx	Departmental Elective Course- 3	EMP
HU301	Engineering Economics	ENT
III Year: Sixth Semester		
EC302	VLSI Design	SKD
EC304	Digital Signal Processing	EMP
EC306	Embedded Systems	EMP
EC3xx	Departmental Elective Course -4	EMP
EC3xx	Departmental Elective Course- 5	EMP
MG302	Fundamentals of Management	ENT
IV Year: Seventh Semester		
EC401	B. Tech Project-I	ENT
EC403	Training Seminar	ENT
EC4xx	Departmental Elective Course- 6	EMP
EC4xx	Departmental Elective Course- 7	EMP
EC4xx	Departmental Elective Course- 8	EMP
EC 4xx	Departmental Elective Course- 9	EMP
IV Year: Eighth Semester		
EC402	B. Tech Project-II (Contd. From VII Sem.)	ENT
EC4xx	Departmental Elective Course- 10	EMP
EC4xx	Departmental Elective Course- 11	EMP
EC4xx	Departmental Elective Course- 12	EMP
List of Departmental Elective Courses		
EC 305	Semiconductor Device Electronics	EMP
EC 307	Antenna Design	EMP
EC 309	Bio – Medical Electronics & Instrumentation	EMP
EC 311	Algorithms Design And Analysis	SKD
EC 313	Microprocessors And Interfacing	EMP

EC 315	Computer Communication Networks	EMP
EC 317	Operating Systems	EMP
EC 319	CMOS Analog Integrated Circuits	EMP
EC 321	IC Technology	EMP
EC 323	Control Systems	EMP
EC 325	Probability and Random Process	EMP
EC 327	Time – Frequency Analysis	SKD
EC 329	Analog Signal Processing	SKD
EC 308	Analog Filter Design	SKD
EC 310	Testing And Diagnosis Of Digital System Design	EMP
EC 312	Software Defined Radio And Cognitive Radio	EMP
EC 314	RF Design	EMP
EC 316	Wireless Sensor Networks	EMP
EC 318	RF Circuits in CMOS Technology	EMP
EC 320	Soft Computing	SKD
EC 322	Green Sensors	ENT
EC 324	Nano Electronics	ENT
EC 326	Data Converters	EMP
EC 328	Speech Recognition	SKD
EC 330	Digital Image Processing	SKD
EC 332	Information Theory and Coding	SKD
EC 334	Electronics System Design	EMP
EC 336	Flexible Electronics	SKD
EC 338	Design Verification	EMP
EC 340	Robust Analog Circuit Design	EMP
EC 342	Machine Learning	SKD
EC 405	Microwave Engineering	EMP
EC 407	Optical Communication	EMP
EC 409	Computer Vision	SKD
EC 411	Bio – Medical Signal and Image Processing	ENT
EC 413	Power Electronics	EMP
EC 415	System On Chip Design	EMP
EC 417	CAD For VLSI Design	EMP
EC 419	Memory Design	EMP
EC 421	Computer And Numerical Techniques In Electromagnetics	EMP
EC 423	Internet and Web Technologies	EMP
EC 425	Mixed Signal Design	EMP
EC 427	Mathematical Modelling & Simulation	SKD
EC 429	Emerging Semiconductor Devices	ENT
EC 431	MEMS and Sensor Design	EMP
EC 433	Hardware Design Methodology	EMP
EC 435	Quantum Electronics and Communication	EMP
EC 437	Fractals and its application in electronics	SKD
EC 439	Microwave integrated circuit	EMP
EC 441	Radar Signal processing	EMP
EC 443	RF MEMS Design and Technology	EMP

EC 445	Nano photonic Devices for Communications	EMP
EC 447	Spread Spectrum Techniques and Multiple Access	EMP
EC 449	Adaptive Signal Processing	SKD
EC 451	Reconfigurable Computing	EMP
EC 453	Statistical Signal Processing	SKD
EC 455	Data Analytics	SKD
EC 457	Natural Language Processing	SKD
EC 459	Adaptive Filter Theory	SKD
EC 461	Multi-rate Signal Processing	SKD
EC 404	Wireless Communication	EMP
EC 406	Autonomous Mobile Robots	EMP
EC 408	Low Power VLSI Design	EMP
EC 410	Advanced Coding Theory	SKD
EC 412	Machine Learning	SKD
EC 414	EMC / EMI	EMP
EC 416	Pattern Recognition	SKD
EC 418	Estimation and Detection Theory	SKD
EC 420	Cloud Computing	SKD
EC 422	Robotics & Machine Vision	EMP
EC 424	Fault Tolerant Computing	EMP
EC 426	Distributed Computing	EMP
EC 428	Neuroelectronics	ENT
EC 430	Advanced Computer Architecture	EMP
EC 432	Bio – Impedance Based Measurements	EMP
EC 434	Fundamentals of MIMO	EMP
EC 436	Advance Microwave & Antenna Design	EMP
EC 438	Radar and Satellite Communication	EMP
EC 440	Photonic Integrated Circuits and Communication	EMP
EC 442	Microwave Digital Communication	EMP
EC 444	Wavelets and its application in Antenna	EMP
EC 446	RF and Microwave Active circuits	EMP
EC 448	Optical Electronics for Communication Systems	EMP
EC 450	Optical Networks	EMP
EC 452	Optical CDMA systems	EMP
EC 454	5G Wireless technologies	EMP
EC 456	Wavelets in Signal Processing	SKD
EC 458	Deep Learning	SKD
EC 460	Computational Optimization	SKD
EC 462	Recent Trends in Artificial Intelligence	SKD
EC 464	Virtual Reality	EMP
EC 466	Human Computer Interaction	EMP
EC 468	Probabilistic Graphical Models	SKD
Environmental Engineering		
II Year: Third Semester		
CE251	Building Material & Construction	EMP
EN201	Strength of Materials	EMP

EN203	Engineering & Environmental Surveying	EMP
EN205	Environmental Chemistry & Microbiology	EMP
EN207	Engineering Analysis & Design	EMP
II Year: Fourth Semester		
CE252	Structural Analysis	EMP
EN202	Geotechnical Engineering	EMP
EN204	Water Engineering: Design & Application	ENT
EN206	Engineering Geology, GIS & Remote Sensing	ENT
EN208	Fluid Mechanics & Hydraulic Machines	ENT
III Year: Fifth Semester		
EN301	Waste Water Engineering: Design and Applications	ENT
EN303	Instrumentation Techniques for Environmental Monitoring	ENT
EN3xx	Departmental Elective Course-1	EMP
EN3xx	Departmental Elective Course-2	EMP
EN3xx	Departmental Elective Course-3	EMP
HU301	Engineering Economics	ENT
III Year: Sixth Semester		
EN302	Solid Waste Management	ENT
EN304	Air Pollution & Control	ENT
EN306	Hydrology & Ground Water Engineering.	ENT
EN3xx	Departmental Elective Course -4	EMP
EN3xx	Departmental Elective Course- 5	EMP
MG302	Fundamentals of Management	ENT
IV Year: Seventh Semester		
EN401	B. Tech Project-I	ENT
EN403	Training Seminar	ENT
EN4xx	Departmental Elective Course- 6	EMP
EN4xx	Departmental Elective Course- 7	EMP
EN4xx	Departmental Elective Course- 8	EMP
EN4xx	Departmental Elective Course- 9	EMP
IV Year: Eighth Semester		
EN402	B. Tech Project -II	ENT
EN404	Environmental Impact Assessment & Audit	ENT
EN4xx	Departmental Elective Course- 10	EMP
EN4xx	Departmental Elective Course- 11	EMP
List of Departmental Elective Courses		
EN305	Soil Pollution & Remediation	EMP
EN307	Planning and Design of Environmental Enng. Works	EMP
EN309	Water Resources System	EMP
EN311	Climate Change & CDM	ENT
EN313	Environmental Toxicology & Risk Assessment	EMP
EN315	Ecology and Bio-monitoring Techniques	EMP
EN317	Environmental Management	ENT
EN308	Hazardous & Biomedical Waste Management	EMP

EN310	Surface & Ground Water Pollution	EMP
EN312	Advance Surveying	EMP
EN314	Green Technology	ENT
EN316	Environmental Law and Policy	EMP
EN318	Transportation and Traffic Engineering	EMP
EN405	Project Management	EMP
EN407	Vibration Analysis & Control of Noise Pollution	EMP
EN409	Industrial Waste Management	EMP
EN411	Occupational Hazards, Health & Safety	EMP
EN413	Water and Soil Conservation	EMP
EN415	System Simulation & Modeling	SKD
EN417	Environmental Risk Assessment	EMP
EN419	Environmental Economics	ENT
EN421	Design of water distribution network	EMP
EN404	Environmental Impact Assessment & Audit	EMP
EN406	Advanced Open Channel Hydraulics	EMP
EN408	Risk and Reliability Analysis of Environmental System	EMP
EN410	Irrigation and Drainage Engineering	EMP
EN412	Environment and Sustainable Development	ENT
EN414	Disaster Management	EMP
EN416	Non-Conventional Energy Systems	ENT
EN418	Environmental Biotechnology	ENT
EN420	Life Cycle Assessment	ENT

Information Technology

I Year: First Semester

Group A

II Year: Third Semester

EC261	Analog Electronics	EMP
IT201	Data Structures	EMP
IT203	Object Oriented Programming	EMP
IT205	Discrete Structures	EMP
IT207	Engineering Analysis and Design (Modeling & Simulation)	EMP

II Year: Fourth Semester

EC262	Digital Electronics	EMP
IT202	Database Management Systems	EMP
IT204	Operating System	EMP
IT206	Computer Organization and Architecture	EMP
IT208	Algorithm Design and Analysis	EMP

III Year: Fifth Semester

IT301	Theory of Computation	EMP
IT303	Computer Networks	EMP
IT3xx	Departmental Elective Course -1	EMP
IT3xx	Departmental Elective Course -2	EMP
IT3xx	Departmental Elective Course -3	EMP

HU301	Engineering Economics	ENT
III Year: Sixth Semester		
IT302	Compiler Design	EMP
IT304	Software Engineering	EMP
IT306	Artificial Intelligence and Expert Systems	SKD
IT3xx	Department Elective Course -4	EMP
IT3xx	Department Elective Course -5	EMP
MG302	Fundamentals of Management	ENT
IV Year: Seventh Semester		
IT401	B.Tech. Project-I	ENT
IT403	Training Seminar	ENT
IT4xx	Department Elective Course- 6	EMP
IT4xx	Department Elective Course- 7	EMP
IT4xx	Department Elective Course- 8	EMP
IT4xx	Department Elective Course- 9	EMP
IV Year: Eighth Semester		
IT402	B.Tech. Project-II	ENT
IT4xx	Department Elective Course- 10	EMP
IT4xx	Department Elective Course- 11	EMP
IT4xx	Department Elective Course-12	EMP
List of Departmental Elective Courses		
IT305	Computer Graphics	EMP
IT307	Pattern Recognition	SKD
IT309	Information Theory and coding	SKD
IT311	Advanced Data Structures	SKD
IT313	Microprocessor & Interfacing	EMP
IT315	Distributed Systems	EMP
IT317	Soft Computing	SKD
IT319	Data Compression	SKD
IT321	Malware Analysis	EMP
IT323	Machine Learning	SKD
IT325	Secure Coding	EMP
IT308	Optimization Techniques	SKD
IT310	Parallel Algorithms	SKD
IT312	Cyber Forensics	EMP
IT314	Optical Networks	EMP
IT316	High Speed Networks	EMP
IT318	Advanced Database Management Systems	EMP
IT320	Multimedia System Design	EMP
IT322	Real Time System	EMP
IT324	Deep Learning	SKD
IT326	Object Oriented Software Engineering	EMP
IT328	Ethical Hacking	EMP
IT405	Data -Warehouse and Data Mining	EMP
IT407	Information and Network Security	EMP
IT409	Enterprise Java Programming	EMP

IT411	Digital Image Processing	SKD
IT413	VLSI Design	EMP
IT415	Software Project Management	EMP
IT417	High Performance Computing	EMP
IT419	Grid and Cluster Computing	EMP
IT421	Swarm Optimization & Evolutionary Computing	SKD
IT423	Computational Number Theory and Cryptography	SKD
IT425	Natural Language Processing	SKD
IT427	Intrusion Detection and Information Warfare	EMP
IT429	Cyber laws	EMP
IT431	Information Security and Audit	EMP
IT433	Multi modal data processing	SKD
IT404	Big data Analytics	SKD
IT406	Web Technology	SKD
IT408	Parallel Computer Architecture	EMP
IT410	Intellectual Property Rights	EMP
IT412	Bio Informatics	EMP
IT414	Software Testing	EMP
IT416	Nomadic Computing	EMP
IT418	Cloud Computing	SKD
IT420	Computer Vision	SKD
IT422	Embedded Systems	EMP
IT424	Semantic Web and Web Mining	EMP
IT426	Software quality and metrics	EMP
IT428	Mobile and Digital Forensics	EMP
IT430	Speech & Natural Language Understanding	SKD
Mechanical Engineering		
II Year: Third Semester		
PE251	Engineering Materials & Metallurgy	EMP
ME201	Mechanics of Solids	EMP
ME203	Thermal Engineering-I	EMP
ME205	Machine Drawing and Solid Modeling	EMP
ME207	Engineering Analysis and Design	EMP
II Year: Fourth Semester		
PE252	Manufacturing Machines	EMP
ME202	Thermal Engineering-II	EMP
ME204	Fluid Mechanics	EMP
ME206	Kinematics of Machines	EMP
ME208	Manufacturing Technology-I	EMP
III Year: Fifth Semester		
ME301	Fluid Systems	EMP
ME303	Dynamics of Machines	EMP
ME3xx	Departmental Elective Course -1	EMP
ME3xx	Departmental Elective Course -2	EMP

ME3xx	Departmental Elective Course -3	EMP
MG301	Fundamentals of Management	ENT
III Year: Sixth Semester		
ME302	Heat And Mass Transfer	EMP
ME304	Design of Machine Elements	EMP
ME306	Manufacturing Technology-II	EMP
ME3xx	Departmental Elective Course-4	EMP
ME3xx	Departmental Elective Course-5	EMP
HU302	Engineering Economics	ENT
IV Year: Seventh Semester		
ME401	B. Tech Project-I	ENT
ME403	Training Seminar	ENT
ME4xx	Departmental Elective Course-6	EMP
ME4xx	Departmental Elective Course-7	EMP
ME4xx	Departmental Elective Course-8	EMP
ME4xx	Departmental Elective Course-9	EMP
IV Year: Eighth Semester		
ME 402	B. Tech Project-II	ENT
ME 4xx	Departmental Elective Course -10	EMP
ME 4xx	Departmental Elective Course -11	EMP
ME4xx	Departmental Elective Course -12	EMP
List of Departmental Elective Courses		
ME 305	Design of Machine Elements	EMP
ME 307	Manufacturing Technology -II	EMP
ME 351	Power Plant Engineering	EMP
ME 353	Renewal Sources of Energy	ENT
ME 355	Thermal Systems	EMP
ME 361	Industrial Engineering	EMP
ME 363	Product Design & Simulation	ENT
ME 365	Computational Fluid Dynamics	SKD
ME 367	Finite Element Methods	SKD
ME 369	Total Life Cycle Management	ENT
ME 371	Value Engineering	ENT
ME 308	Gas Dynamics & Jet Propulsion	EMP
ME 310	Automation in Manufacturing	EMP
ME 312	Quality Management & Six Sigma Applications	EMP
ME 314	Mechanical Vibrations	EMP
ME 316	Power Plant Engineering	EMP
ME 318	Computer Aided Manufacturing	EMP
ME 320	Reliability & Maintenance Engineering	EMP
ME 322	Design of Mechanical Assemblies	EMP
ME 324	System modeling, simulation and analysis	SKD
ME 326	Pressure vessels and Piping Technology	EMP
ME 328	Composite Material Technology	EMP
ME 330	Production and Operations Management	EMP
ME 332	Finite Element Method	SKD

ME 407	Refrigeration & Air Conditioning	EMP
ME 409	Mechatronics & Control	EMP
ME 411	I.C. Engines	EMP
ME 413	Metrology	EMP
ME 415	Project Management	ENT
ME 419	Robotics & Automation	ENT
ME 421	Computational Fluid Dynamics	SKD
ME 423	Advanced Manufacturing Processes	EMP
ME 427	Operations Research	SKD
ME -429	Industrial Tribology	ENT
ME 431	Non-conventional Energy Sources	ENT
ME 433	Computer Integrated Manufacturing	EMP
ME 435	Optimization techniques	SKD
ME 404	Industrial Engineering	ENT
ME 406	Elastic & Plastic Behaviour of Materials	EMP
ME 408	Combustion Generated Pollution	EMP
ME 410	Advances in Welding & Casting	EMP
ME 412	Supply Chain Management	EMP
ME 414	Fracture Mechanics	EMP
ME 416	Nuclear Energy	ENT
ME 418	Operations and Manufacturing Strategy	EMP
ME 420	Materials management	EMP
ME 422	Fuel Cell	ENT
Mechanical Engineering with Specialization in Automotive Engineering		
I Year: First Semester		
II Year: Third Semester		
PE261	Quantitative Techniques	ENT
AE201	Engineering Mechanics	EMP
AE203	Thermodynamics	EMP
AE205	Manufacturing Machines	EMP
AE207	Engineering Analysis and Design	ENT
II Year: Fourth Semester		
EE272	Automotive Electrical and Electronics	EMP
AE202	Heat and Mass Transfer	EMP
AE204	Theory of Machines	EMP
AE206	Mechanics of Solids	EMP
AE208	Material Engineering & Metallurgy	EMP
III Year: Fifth Semester		
AE301	Manufacturing Technology	EMP
AE303	Fluid Mechanics And Hydraulic Machines	EMP
AE3xx	Departmental Elective Course -1	EMP
AE3xx	Departmental Elective Course -2	EMP
AE3xx	Departmental Elective Course -3	EMP
MG301	Fundamentals of Management	ENT

III Year: Sixth Semester		
AE302	Design of Machine Elements	EMP
AE304	Internal Combustion Engines	EMP
AE306	Alternative Fuels and	ENT
	Energy Systems	ENT
AE3xx	Departmental	EMP
	lective Course-4	EMP
AE3xx	Departmental	EMP
	Elective Course-5	EMP
HU302	Engineering Economics	ENT
IV Year: Seventh Semester		
AE401	B.Tech. Project-I	ENT
AE403	Training Seminar	ENT
AE4xx	Departmental	EMP
	lective Course-6	EMP
AE4xx	Departmental	EMP
	lective Course-7	EMP
AE4xx	Departmental	EMP
	lective Course-8	EMP
AE4xx	Departmental	EMP
	Elective Course-9	EMP
IV Year: Eighth Semester		
AE402	B.Tech Project-II	ENT
AE4xx	Departmental Elective Course -10	EMP
AE4xx	Departmental Elective Course -11	EMP
AE4xx	Departmental Elective Course -12	EMP
List of Departmental Elective Courses		
AE305	Automotive Aerodynamics & CFD	EMP
AE307	Combustion Generated Pollution	EMP
AE309	Operation Research	
AE311	Tyre Technology	EMP
AE313	Thermal Engineering	EMP
AE315	Turbo machinery and gas dynamics	EMP
AE317	Power units and transmission	EMP
AE319	Computer Simulation of I.C. Engine Process	EMP
AE321	Advanced strength of material	EMP
AE323	Finite Element Methods and Applications	SKD
AE308	Measurement and Instrumentation	EMP
AE310	Advanced Manufacturing Technology	EMP
AE312	Quality Management & Six Sigma Applications	EMP
AE314	Metrology	EMP
AE316	Advances in Welding & Casting	EMP
AE318	Materials for automobile components	EMP
AE320	Tribology and lubrication	EMP
AE322	Reliability & Maintenance Engineering	EMP
AE324	Elastic & Plastic Behaviour of Materials	EMP

AE326	Production Planning & Inventory Control	EMP
AE405	Design of Automobile Components	EMP
AE407	Production And Operations Management	EMP
AE409	Computer Aided Vehicle Design And Safety	EMP
AE411	Vehicle Maintenance & Tribology	EMP
AE413	Vehicle Transport Management	EMP
AE415	Power Plant Engineering	EMP
AE417	Robotics & Automation	ENT
AE419	Nuclear Energy	ENT
AE404	Computer Integrated Manufacturing Systems	EMP
AE406	Total Life Cycle Management	ENT
AE408	Refrigeration & Automobile Air Conditioning	EMP
AE410	Fuel Cells	ENT
AE412	Modern Vehicle Technology	EMP
AE414	Automobiles Vibration System Analysis	EMP
AE416	Renewable Sources of Energy	ENT
AE418	Supply Chain Management	EMP
AE420	Vehicle Safety Engineering	EMP
AE422	Packaging Technology	EMP
AE424	Mechatronics	EMP
AE426	Financial Management	ENT
AE428	Fracture mechanics	EMP
AE430	Product design and development	ENT
AE432	Tractors and Farm Equipment and Off Road Vehicles	ENT
AE434	Automobile process control	EMP
Production and Industrial Engineering		
II Year: Third Semester		
ME261	Kinematic And Dynamic Of Machines	EMP
PE201	Engineering Materials & Metallurgy	EMP
PE203	Thermal Engineering-I	EMP
PE205	Manufacturing Machines	EMP
PE207	Engineering Analysis And Design(Modeling And Simulation)	SKD
II Year: Fourth Semester		
ME262	Machine Design	EMP
PE202	Thermal Engineering-II	EMP
PE204	Industrial Engineering & Operation Research	SKD
PE206	Fluid Mechanics & Machinery	EMP
PE208	Metal Cutting & Tool Design	EMP
III Year: Fifth Semester		
PE301	Casting Technology	EMP
PE303	Production Planning& Control	EMP
PE3xx	Departmental	EMP
	Elective Course-1	EMP
PE3yy	Departmental	EMP

	Elective Course-2	EMP
PE3xx	Departmental	EMP
	Elective Course-3	EMP
MG301	Fundamentals of Management	ENT
III Year: Sixth Semester		
PE302	Welding Technology	EMP
PE304	Precision Manufacturing	EMP
PE306	Metrology & Quality Assurance	EMP
PE3xx	Departmental	EMP
	Elective Course-4	EMP
PE3xx	Department	EMP
	Elective Course-5	EMP
HU302	Engineering Economics	ENT
IV Year: Seventh Semester		
PE401	B. Tech Project-I	ENT
PE403	Training Seminar	ENT
PE4xx	Department Elective Course-6	EMP
PE4xx	Department Elective Course-7	EMP
PE4xx	Department Elective Course-8	EMP
PE4xx	Department Elective Course-9	EMP
IV Year: Eighth Semester		
PE402	B. Tech Project-II	ENT
PE4xx	Departmental Elective Course -10	EMP
PE4xx	Departmental Elective Course -11	EMP
PE4xx	Departmental Elective Course -12	EMP
List of Departmental Elective Courses		
PE305	Advance Machine Design	EMP
PE307	Finite Element Method	SKD
PE309	Rapid Prototyping Tooling & Manufacturing	ENT
PE311	Sustainable Manufacturing	ENT
PE313	Design Innovation & Manufacturing	ENT
PE315	Mechatronics	EMP
PE351	Advance Machining Process	EMP
PE353	Supply Chain Management	EMP
PE355	Work Study Design	SKD
PE357	Product Design & Simulation	ENT
PE359	Total Life Cycle Management	ENT
PE361	Total Quality Management	EMP
PE308	Green Energy Technology	ENT
PE310	Industrial Automation	EMP
PE312	Automobile Eng.	EMP
PE314	Manufacturing of Composite Materials	EMP
PE316	Advances in Welding	EMP
PE318	Advances in Casting	EMP
PE405	Metal Forming & Press Working	EMP
PE407	Quantitative Techniques	SKD

PE409	CNC Machine & Programming	SKD
PE411	Computer Integrated Design and Manufacturing	EMP
PE413	Robotics and Automation	ENT
PE415	Financial Management	ENT
PE417	Materials Management	EMP
PE419	Project Management	ENT
PE421	Reliability, Maintenance & Safety Engineering	EMP
PE423	Thermal Spray Technology	EMP
PE404	Total Quality Management	EMP
PE406	Manufacturing & Applications of Polymer Composites	EMP
PE408	Industrial Tribology	EMP
PE410	Packaging Technology	EMP
PE412	Supply Chain Management & Value Engineering	EMP
PE414	Flexible Manufacturing System	EMP
PE416	Work Study & Ergonomic	SKD
PE418	Advance Manufacturing Processes	EMP
Software Engineering		
I Year: First Semester		
Group A		
MA102	Mathematics – II	EMP
AP102	Physics – II	EMP
AC102	Chemistry	EMP
ME104	Basic Mechanical Engineering	EMP
ME106	Workshop Practice	EMP
II Year: Third Semester		
EC271	Digital Electronics	EMP
SE201	Data Structures	SKD
SE203	Object Oriented Programming	EMP
SE205	Operating System	EMP
SE207	Engineering Analysis and Design(Software Engineering)	EMP
FEC	Foundation Elective 3	SKD
II Year: Fourth Semester		
EC272	Computer System Architecture	EMP
SE202	Object Oriented Software Engineering	EMP
SE204	Machine Learning	SKD
SE206	Database Management Systems	EMP
SE208	Algorithm Design & Analysis	SKD
III Year: Fifth Semester		
SE301	Software Testing	EMP
SE303	Software Quality Metrics	EMP
SE3xx	Departmental Elective Course -1	EMP
SE3xx	Departmental Elective Course -2	EMP
SE3xx	Departmental Elective Course -3	EMP
HU301	Engineering Economics	ENT

III Year: Sixth Semester		
SE302	Empirical Software Testing	EMP
SE304	Computer Networks	SKD
SE306	Compiler Design	EMP
SE3xx	Departmental Elective Course -4	EMP
SE3xx	Departmental Elective Course -5	EMP
MG302	Fundamentals of Management	ENT
IV Year: Seventh Semester		
SE401	B.Tech. Project-I	ENT
SE403	Training Seminar	ENT
SE4xx	Departmental Elective Course -6	EMP
SE4xx	Departmental Elective Course -7	EMP
SE4xx	Departmental Elective Course -8	EMP
SE4xx	Departmental Elective Course- 9	EMP
IV Year: Eighth Semester		
SE402	B.Tech. Project-II	ENT
SE4xx	Departmental Elective Course- 10	EMP
SE4xx	Departmental Elective Course- 11	EMP
SE4xx	Departmental Elective Course- 12	EMP
List of Departmental Elective Courses		
SE305	Software Requirement Engineering	EMP
SE307	Computer Graphics	EMP
SE309	Information Theory and coding	EMP
SE311	Digital Signal Processing	EMP
SE313	Advanced Data Structures	EMP
SE315	Microprocessor & Interfacing	EMP
SE317	Distributed Systems	EMP
SE319	Soft Computing	EMP
SE321	Artificial Intelligence	EMP
SE323	Theory of Computation	SKD
SE325	Web Technology	EMP
SE327	Methods for Data Analysis	SKD
SE329	Predictive Modeling	EMP
SE333	Minor Project (Only for students who opt for Minor)	SKD
SE308	Software Reliability	EMP
SE310	Multimedia Systems	EMP
SE312	Parallel Computer Architecture	EMP
SE314	Bio-Informatics	EMP
SE316	Natural Language Processing	EMP
SE318	Advanced Database Management Systems	EMP
SE320	Data Compression	EMP
SE322	Real Time Systems	EMP
SE324	Parallel Algorithms	EMP
SE326	Probability and Statics	EMP
SE328	Business Analytics	EMP
SE409	Software Maintenance	EMP

SE411	Discrete Structures	EMP
SE413	Grid & Cluster Computing	EMP
SE415	Pattern Recognition	EMP
SE417	Agile Software Process	EMP
SE419	Cyber-Forensics	EMP
SE421	Robotics	EMP
SE423	Wireless and Mobile Computing	EMP
SE425	Intellectual Property Rights & Cyber Laws	EMP
SE427	Software Project Management	EMP
SE429	Data Warehouse & Data Mining	EMP
SE406	Advances in Software Engineering	EMP
SE408	Information & Network Security	EMP
SE410	Swarm & Evolutionary Computing	EMP
SE412	Semantic Web and Web Mining	EMP
SE414	Cloud Computing	EMP
SE416	Big Data Analytics	EMP
SE418	Data Management and Ethics	EMP
Electrical and Electronics Engineering		
I Year: First Semester		
II Year: Third Semester		
MC261	Numerical and Engineering Optimization Methods	SKD
EL201	Circuits and Systems	EMP
EL203	Electronic Devices and Circuits	EMP
EL205	Electromechanical Energy Conversion and Transformers	EMP
EL207	Engineering Analysis and Design	EMP
HU201	Engineering Economics	ENT
II Year: Fourth Semester		
EE252	Introduction to Electromagnetics	SKD
EL202	Linear Integrated Circuits	SKD
EL204	Digital circuits and Systems	SKD
EL206	Control Systems	EMP
EL208	Asynchronous and Synchronous Machines	EMP
MG202	Fundamentals of Management	EMP
III Year: Fifth Semester		
EL301	Power Electronics	EMP
EL303	Power Transmission and Distribution	EMP
EL3xx	Departmental Elective Course - 1	SKD
EL3xx	Departmental Elective Course - 2	SKD
UE3xx	Open Elective Course	SKD
HU303	Professional Ethics and Human Values	EMP
III Year: Sixth Semester		
EL302	Communication Systems - I	EMP
EL304	Power System Analysis	EMP
EL306	Microprocessor & Microcontroller Applications	EMP
EL3xx	Departmental Elective Course - 3	SKD
EL3xx	Departmental Elective Course - 4	SKD

HU302	Technical Communication	EMP
IV Year: Seventh Semester		
EL401	B.Tech Project-I	SKD
EL403	Training Seminar	SKD
EL405	Digital Signal Processing	EMP
EL407	Instrumentation and Measurement	EMP
EL409	Communication Systems - II	EMP
EL4xx	Departmental Elective Course - 5	SKD
IV Year: Eighth Semester		
EL402	B.Tech Project - II	SKD
EL4xx	Departmental Elective Course - 6	
EL4xx	Departmental Elective Course - 7	SKD
EL4xx	Departmental Elective Course - 8	SKD
List of Departmental Elective Courses		
EL-305	Signals and Systems	EMP
EL-307	Power Station Practices	EMP
EL-309	Special Electrical Machines	EMP
EL-311	Algorithms Design and Analysis	EMP
EL-313	IC Technology	EMP
EL-315	Digital Control & State Variable Analysis	EMP
EL-317	Renewable Energy Systems	EMP
EL-319	Digital System Design	EMP
EL-321	Soft Computing Techniques	EMP
EL-323	CMOS Analog Integrated Circuits	EMP
EL-308	Power System Operation and Control	EMP
EL-310	Distributed Generation	EMP
EL-312	Electric Drives	EMP
EL-314	Power Electronic Applications to Power Systems	EMP
EL-316	Electrical Energy Storage Systems	EMP
EL-318	Switched Mode Power Supplies	EMP
EL-320	VLSI Design	EMP
EL-322	Database Management Systems	EMP
EL-324	Design, Estimation & Costing of Industrial Electrical Systems	EMP
EL-326	Process Instrumentation & Control	EMP
EL-411	Power System Modeling & Simulation	EMP
EL-413	Power System Reliability	EMP
EL-415	Design of Electrical Machines	EMP
EL-417	Antenna and Wave Propagation	EMP
EL-419	Pulse Width Modulation for Power converters	EMP
EL-421	Switchgear and Protection	EMP
EL-423	Microcontroller & Embedded Systems	EMP
EL-425	Advanced Analog Circuit Design	EMP
EL-427	Computer Architecture	EMP
EL-429	Active and Passive Network Synthesis	EMP
EL-404	Power System Dynamics & Stability	EMP
EL-406	Distribution Systems Analysis & Control	EMP

EL-408	Restructured Power Systems	EMP
EL-410	Bio-medical Instrumentation	EMP
EL-412	High Voltage Engineering	EMP
EL-414	Operating System Design	EMP
EL-416	Grid Integration of Renewable Energy Sources	EMP
EL-418	Selected Topics in Power Electronics	SKD
EL-420	Power Quality	EMP
EL-422	HVDC Transmission	EMP
EL-424	Flexible AC Transmission Systems	EMP
EL-426	Smart Grid	EMP
EL-428	Digital Image Processing	EMP
EL-430	Filter Design	EMP
EL-432	AI and Expert Systems	EMP
EL-434	Computer Control of Processes	EMP
EL-436	Non-linear and Adaptive Control	EMP
EL-438	DSP Applications to Electromechanical Systems	EMP
EL-440	SCADA & Energy Management Systems	EMP
EL-442	Robotics and Machine Vision	EMP
EL-444	Utilization of Electrical Energy & Traction	EMP
EL-446	Data Communication and Computer Networks	EMP
EL-448	Microwave Engineering	EMP

List of Open Elective Courses

CO351	Enterprise & Java Programming	EMP
CO353	E-commerce & ERP	ENT
CO355	Cryptography & Information Security	EMP
CO357	Operating System	EMP
CO359	Intellectual Property Rights & Cyber Laws	EMP
CO361	Database Management System	EMP
EC351	Mechatronics	EMP
EC353	Computer Vision	SKD
EC355	Embedded System	SKD
EC 357	Digital Image Processing	EMP
EC359	VLSI Design	EMP
EE351	Power Electronic Systems	EMP
EE353	Electrical Machines and Power Systems	EMP
EE355	Instrumentation Systems	EMP
EE357	Utilization of Electrical Energy	EMP
EE359	Non-conventional Energy Systems	EMP
EE361	Embedded Systems	SKD
EN351	Environmental Pollution & E- Waste Management	EMP
EN353	Occupational Health & Safety Management	EMP
EN355	GIS & Remote Sensing	EMP
EP351	Physics of Engineering Materials	EMP
EP353	Nuclear Security	EMP
HU351	Econometrics	EMP
MA351	History Culture & Excitement of Mathematics	EMP

ME351	Power Plant Engineering	EMP
ME353	Renewable Sources of Energy	EMP
ME355	Combustion Generated Pollution	EMP
ME357	Thermal System	EMP
ME359	Refrigeration & Air Conditioning	EMP
ME361	Industrial Engineering	EMP
ME363	Product Design & Simulation	EMP
ME365	Computational fluid dynamics	EMP
ME367	Finite Element Methods	EMP
ME369	Total Life Cycle Management	EMP
ME371	Value Engineering	EMP
MG351	Fundamentals of Financial Accounting and Analysis	SKD
MG353	Fundamentals of Marketing	ENT
MG355	Human Resource Management	EMP
MG357	Knowledge and Technology Management	EMP
PE351	Advance Machining Process	EMP
PE 353	Supply Chain Management	ENT
PE355	Work Study Design	EMP
PE357	Product Design & Simulation	EMP
PE359	Total Life Cycle Management	EMP
PE361	Total Quality Management	EMP
PT361	High Performance Polymers	EMP
PT363	Separation Technology	EMP
PT365	Non-Conventional Energy	EMP
PT367	Polymer Waste Management	EMP
PT369	Nanotechnology in Polymers	EMP
PT371	Applications of Polymer Blends and Composite	EMP
IT 351	Artificial Intelligence and Machine Learning	SKD
IT 353	Data Structures and Algorithms	SKD
IT 355	Communication and Computing Technology	SKD
IT 357	Internet and Web Programming	SKD
IT 359	Java Programming	SKD
CE351	Geoinformatics and its Applications	EMP
BBA		
First Semester		
BBA101	Principles of Management	EMP
BBA102	Business Mathematics	EMP
BBA103	Financial Accounting	ENT
BBA104	Business Economics	EMP
BBA105	Computer Applications	EMP
BBA106	Computer Applications Lab	EMP
GExxx	General Elective - I	EMP
Second Semester		
BBA111	Business Environment	ENT
BBA112	Business Statistics & Opearations Research	ENT
BBA113	Business Laws	ENT

BBA114	E-commerce	EMP
BBA115	Business Communication	EMP
BBA116	E-commerce - Lab	EMP
GExxx	General Elective - II	EMP
Third Semester		
BBA201	Organization Behaviour	EMP
BBA202	Marketing Management	ENT
BBA201	Business Ethics and Corporate Social Responsibility	ENT
BBA201	Management Accounting	EMP
BBA201	Environmental Science* (NUES)	EMP
GExxx	Generic Elective -III	EMP
Fourth Semester		
BBA211	Human Resource Management	ENT
BBA212	Business Policy & Strategy	ENT
BBA213	Research Methodology	SKD
BBA214	Management Information System	EMP
BBA215	Research Methodology - Lab	EMP
GExxx	Generic Elective -IV	EMP
Fifth Semester		
BBA301	Income-tax Law and Practice	ENT
BBA302	Financial Management	ENT
BBA303	Entrepreneurship Development	ENT
BBA304	Summer Training Report & Viva Voice	EMP
BBA305	Discipline Specific Elective - I	EMP
BBA306	Discipline Specific Elective - II	EMP
Sixth Semester		
BBA311	Project Management	EMP
BBA312	International Business Management	EMP
BBA313	Project Report and Viva-Voce	EMP
BBA314	Discipline Specific Elective - III	EMP
BBA315	Discipline Specific Elective - IV	EMP
BA Economics		
First Semester		
BAE101	Introductory Microeconomics	EMP
BAE103	Introductory Macroeconomics	EMP
MGM1xx or DSC1xx	GEC III Management (MGM101) or GEC III Data Science (DSC101)	EMP
BAE105	Computers and Programming Fundamentals	SKD
BAE107	English Communication	EMP
BAE109	Basic Mathematics & Statistics	EMP
BAE111	Environmental Studies	EMP
Second Semester		
BAE102	Intermediate Microeconomics I	EMP
BAE104	Intermediate Macroeconomics I	EMP
BAE106	Mathematical Methods for Economics I	EMP
MGM1xx or DSC1xx	GEC III Management (MGM102) or GEC III Data Science (DSC102)	EMP
BAE108	Sociology of Development	EMP

BAE110	Financial Literacy	EMP
Third Semester		
BAE201	Intermediate Microeconomics II	EMP
BAE203	Intermediate Macroeconomics II	EMP
BAE205	Mathematical Methods for Economics II	EMP
MGM2xx or DSC2xx	GEC in Management (MGM201) or GEC in Data Science (DSC201)	EMP
BAE207	Soft Skills and Personality Development	ENT
BAE 209	Science Practice of Happiness	EMP
Fourth Semester		
BAE202	Advanced Microeconomics	EMP
BAE204	Advanced Macroeconomics	EMP
BAE206	Statistical Methods for Economics	EMP
MGM2xx or DSC2xx	GEC in Management (MGM202) or GEC in Data Science (DSC202)	EMP
BAE208	Analysis of Recent Economic Developments	ENT
BAE210	Logical Reasoning	SKD
Fifth Semester		
BAE301	Introductory Econometrics	EMP
BAE303	Development Economics I	EMP
BAE305	Indian Economics I	EMP
BAE307	Econometrics Analysis Package	EMP
MGM3xx or DSC3xx	GEC in Management (MGM301) or GEC in Data Science (DSC301)	EMP
BAE309	Summer Internship Project Report (SIP)	EMP
Sixth Semester		
BAE302	Development Economics II	ENT
BAE304	Indian Economy II	EMP
BAE306	Political Economy	EMP
BAE308	International Economics	EMP
MGM3xx or DSC3xx	GEC in Management (MGM302) or GEC in Data Science (DSC302)	EMP
Seventh Semester		
BAE401	Applied Econometrics	EMP
BAE403	Public Economics	EMP
BAE4xx	Discipline Specific Elective II	EMP
MGM4xx or DSC4xx	GEC in Management (MGM401) or GEC in Data Science (DSC401)	EMP
Eighth Semester		
BAE402	Financial Economics	ENT
BAE404	Environmental Economics	EMP
BAE4xx	Discipline Specific Elective III	EMP
BAE4xx	Discipline Specific Elective IV	EMP
MGM4xx or DSC4xx	GEC in Management (MGM402) or GEC in Data Science (DSC402)	EMP
B. Design		
First Semester		
DD101	World of Design	EMP
DD103	Sketching 2D/ 3D & Rendering	EMP
DD105	Elements of Desings	EMP
DD107	Tinkering Studio	SKD
DD109	Computer Graphics 2D	SKD

FEXXX	Foundation Elective - I	EMP
DD111	Field Study/ Design Project - 1	EMP
Second Semester		
DD102	Design Methodology & Methods	EMP
DD104	History of Design	EMP
DD106	Communication Studios and Semiotics	EMP
DD108	Material & Processes for Designers	EMP
DD110	Computer Aided 3D Visualization	SKD
FEXXX	Foundation Elective - II	EMP
DD112	Desing Project - 2	EMP


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The University offers fourteen B.Tech. programmes, BDes programme, two bachelor programmes namely BA(H) Economics, Bachelor of Business Administration at East Campus, twenty five M.Tech programmes, 05 Master of Business Management programmes including Master of Business Management (Executive), 05 MSc programmes and PhD programmes in various Engineering, Science and Management disciplines. The pace with which technology change is taking place in industry and market it is essential to keep up breast with the requirements of industry. This necessitates change in syllabus and introduction of new courses, though the foundation course remain same. Curriculum scheme of approximately 80% of programmes is revised in last 5 years.

CATEGORY CODING	EMP - EMPLOYABILITY, SKD - SKILL DEVELOPMENT, ENT -ENTREPRENEURSHIP
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Course Code	Course Title	CATEGORY
MASTER OF BUSINESS ADMINISTRATION (MBA)		
MBA		
First Semester		
MGT-11	Management Process and Organizational Behavior	EMP
MGT-12	Financial Accounting	EMP
MGT-13	Marketing Management	EMP
MGT-14	Managerial Economics	EMP
MGT-15	Decision Sciences	SKD
MGT-16	Legal Aspects of Management	EMP
MGT-17	Business Communication	EMP
MGT-18	Data Analysis Techniques	SKD
Second Semester		
MGT-21	Human Resource Management	EMP
MGT-22	Financial Management	EMP
MGT-23	Business Research Methods	EMP
MGT-24	Business Environment	EMP
MGT-25	Knowledge and Intellectual Capital Management	EMP
MGT-26	Operations and Supply Chain Management	EMP
MGT-27	Management Accounting	EMP
MGT-28	Information Technology and Innovation Management	EMP
MGT-29	#NCC/NSS/Sports/Dramatics/Yoga(NUE S)	SKD
Third Semester		
MGT-31	Business Analytics	EMP
MGT-32	Corporate Governance	EMP
MGT-33	Strategic Management	EMP
	Elective-I	EMP
	Elective-II	EMP
	Elective-III	EMP
	Elective-IV	EMP
MGT-34	Summer Internship Report	EMP
MGT-35	Managerial Skills Development (NUES)	SKD

Fourth Semester		
MGT-41	Project Management	EMP
MGT-42	Entrepreneurship Development	ENT
MGT-43	Business Intelligence	EMP
	Elective-I	EMP
	Elective-II	EMP
	Elective-III	EMP
	Elective-IV	EMP
MGT-44	Major Research Project	SKD
MGT-45	Emotional Intelligence and Managerial Effectiveness(NUES)	EMP
List of Electives		
Finance		
MGF-01	Investment Management	EMP
MGF-02	Tax Planning and Management	EMP
MGF-03	Investment Management and financial Services	EMP
MGF-04	Financial Markets and Institutions	EMP
MGF-05	International Financial Management	EMP
MGF-06	Corporate Mergers, Acquisitions and Restructuring	EMP
MGF-07	Financial Derivatives	EMP
MGF-08	Financial Modeling and Analysis	EMP
MGF-09	Management Control Systems	EMP
MGF-10	Strategic Cost Management	EMP
MGF-11	Financial Statement Analysis	EMP
MGF-12	Financial Risk Management	EMP
MGF-13	Investment Banking	EMP
Human Resource Management		
MGH-01	Industrial Relations & Labour Legislation	EMP
MGH-02	Compensation Management	EMP
MGH-03	Organizational Development	EMP
MGH-04	strategic Human Resource Management	EMP
MGH-05	Changing Paradigms in Leadership	ENT
MGH-06	Cross Cultural and International Human Resource Management	ENT
MGH-07	Performance Management	EMP
MGH-08	Training and Development	EMP
MGH-09	Interpersonal Processes and Counseling Skills for Managers	SKD
MGH-10	Team Building	SKD
Marketing		
MGM-01	Consumer Behaviour	EMP
MGM-02	Integrated Marketing Communications	EMP
MGM-03	Rural and Social Marketing	EMP
MGM-04	International Marketing	EMP
MGM-05	Sales and Distribution Management	EMP
MGM-06	Marketing Research	EMP
MGM-07	Retail Management	EMP
MGM-08	Promotion Management and Business 2 Business Marketing	EMP
MGM-09	Marketing of Services	EMP
MGM-10	Digital Marketing	EMP
MGM-11	Customer Relationship Management	EMP
MGM-12	Entrepreneurial Marketing and Sales	ENT
MGM-13	Strategic Brand Management	EMP

IT Management		
MG1-01	Business Process Reengineering and Change Management	EMP
MG1-02	Business Systems Analysis and Design	EMP
MG1-03	Database Management System	EMP
MG1-04/MGI-12	Data Warehousing & Data Mining	EMP
MG1-05	E-Business	EMP
MG1-06	Knowledge Management and Big Data Analysis	EMP
MG1-07	E-Governance	EMP
MG1-08	Strategic Telecommunications Management	EMP
MG1-09	Knowledge and Innovation Management	EMP
MG1-10/ MGI-13	Artificial Intelligence	EMP
MG1-11	KM Tools and E-Businesses	SKD
Knowledge Management		
MGK-01	Knowledge Creation, Critical Thinking and Innovation	ENT
MGK-02	Knowledge Management and Big Data	EMP
MGK-03	Knowledge Creation and Skill Development	ENT
MGK-04	Business Intelligence and Knowledge Management	EMP
MGK-05	Knowledge System Strategy and Development	EMP
MGK-06	Integrating Knowledge Management with Strategic Initiatives	EMP
MGK-07	Advanced Knowledge Management Concepts	EMP
MGK-08/ MGI-10	E-Learning and Knowledge Management	EMP
MGK-09	Intellectual Property and Knowledge Capital	EMP
MGK-10/ MGI-10	KM Tools and E-Businesses	ENT
Operations and Supply Chain Management		
MGS-01	SCM and E-Commerce	EMP
MGS-02	Operations Analytics	EMP
MGS-03	Logistics Planning and Strategy	EMP
MGS-04	Total Quality Management	EMP
MGS-05	Business Process Management and Change	EMP
MGS-06	Computer Aided Design and Manufacturing	EMP
MGS-07	Supply Chain Strategy and Innovation	EMP
MGS-08	Transportation and Distribution Management	EMP
MGS-09	IT Applications in SCM	EMP
MGS-10	Operations Research and Strategy	EMP
MGS-11	Materials and Store Management	EMP
MGS-12/ MSG-13	Decision Making Techniques	ENT
MBA (Executive)		
First Semester		
EMBA-101	Management Process and Organizational Behavior	EMP
EMBA-102	Financial Accounting	EMP
EMBA-103	Marketing Management	EMP
EMBA-104	Managerial Economics	EMP
EMBA-105	Quantitative Methods	EMP
EMBA-106	Production and Operations Management	EMP
EMBA-107	Computer Applications in Management	EMP
EMBA-108	Term Project	SKD
EMBA-109	*Comprehensive Viva Voce	EMP

Second Semester		
EMBA-201	Human Resource Management	EMP
EMBA-202	Financial Management	EMP
EMBA-203	Marketing Research	EMP
EMBA-204	Business Environment	EMP
EMBA-205	Management of Innovation, Technology and Change	ENT
EMBA-206	Supply Chain Management	EMP
EMBA-207	Corporate Law	EMP
EMBA-208	Minor Project	EMP
EMBA-209	*Comprehensive Viva-Voce	EMP
Third Semester		
EMBA-301	Strategic Management	EMP
EMBA-302	International Business Management	EMP
EMBA-303	Information Technology Management	EMP
	Elective-I (Elective Group-I)	EMP
	Elective-II (Elective Group-I)	EMP
	Elective-I (Elective Group-II)	EMP
	Elective-II (Elective Group-II)	EMP
EMBA-308	Minor Project	EMP
EMBA-309	*Comprehensive Viva Voce	EMP
Fourth Semester		
EMBA-401	Project Management	EMP
EMBA-402	Corporate Governance, Values and Ethics	ENT
	Elective-III (Elective Group-I)	EMP
	Elective-IV (Elective Group-I)	EMP
	Elective-III (Elective Group-II)	EMP
	Elective-IV (Elective Group-II)	EMP
EMBA-407	Major Project	EMP
EMBA-408	*Comprehensive Viva Voce	EMP
List of Electives		
Information Technology Management (ITM)		
EIT-01	Data Warehousing and Database Management	EMP
EIT-02	Business System Analysis and Design	EMP
EIT-03	Knowledge Management & Innovation	ENT
EIT-04	Managing Software Exports	EMP
EIT-05	Mobile Commerce & Security	ENT
EIT-06	BPR and ERP Implementation	ENT
EIT-07	E-Governance	EMP
EIT-08	Business Process Re-engineering	EMP
EIT-09	Sectoral Application of ITM	ENT
EIT-10	Emerging Issues in ITM	ENT
EIT-11	Data Analytics-1	EMP
EIT-12	Data Analytics- 2	EMP
KNOWLEDGE AND TECHNOLOGY MANAGEMENT (KTM)		
EKTM-01	Internet Business Models and Business Strategies	ENT

EKTM-02	IT Enabled Services Management	EMP
EKTM-03	ERP Implementation	EMP
EKTM-04	Data Base Management	EMP
EKTM-05	Telecommunication for Business	EMP
EKTM-06	Mobile commerce and Security	ENT
EKTM-07	Knowledge management and Innovation	ENT
EKTM-08	E-Business and E- Commerce	EMP
EKTM-09	Sectoral Application and Emerging Issues in KTM	ENT
EKTM-10	E-Governance	EMP
EKTM-11	Data Analytics-1	EMP
EKTM-12	Data Analytics- 2	EMP
Supply Chain Management (SCM)		
ESCM-01	Total Quality Management	EMP
ESCM-02	International Logistics Management	EMP
ESCM-03	Transportation Management	EMP
ESCM-04	Service Operations Management	EMP
ESCM-05	SCM and Customers Relationship Management	EMP
ESCM-06	Business Process Re-engineering	EMP
ESCM-07	IT in Supply Chain Management	EMP
ESCM-08	Sectoral Application of SCM	SKD
Marketing		
EMK-01	International marketing management	EMP
EMK-02	Retail Management	EMP
EMK-03	Marketing of Services	EMP
EMK-04	Advertising and Brand Management	EMP
EMK-05	Rural Marketing	EMP
EMK-06	Sales and Distribution Management	EMP
EMK-07	Consumer Behavior	EMP
EMK-08	Customer Relationship Management	EMP
EMK-09	Digital Marketing	ENT
Finance		
EFM-01	Security analysis and portfolio Management	EMP
EFM-02	Mergers, Acquisition and Corporate restructuring	EMP
EFM-03	Corporate Business taxation and Planning	EMP
EFM-04	International Financial Management	EMP
EFM-06	Investment Banking	EMP
EFM-07	Futures, Options and Risk Management	SKD
EFM-08	Project Appraisal and Finance	EMP
EFM-09	Commodity and Price Risk management	EMP
EFM-10	Managing Financial Institutions and Markets	EMP
Human Resource Management (HRM)		
EHR-01	Management of Industrial Relations & Labour Legislation	EMP
EHR-02	Compensation Management	EMP
EHR-03	Organizational Change and Development	EMP
EHR-04	Human Resource Development: Strategies and Systems	EMP
EHR-05	Global Human Resource Management	EMP
EHR-06	Management of Training and development	EMP
EHR-07	Interpersonal processes and Counseling skills for Managers	SKD
MBA (Business Analytics)		

First Semester		
MB101	Management Process & Organizational Behaviour	EMP
MB102	Marketing Management	EMP
MB103	Business Research Methods	SKD
MB104	Financial Accounting & Cost Analysis	EMP
MB105	Managerial Economics	EMP
MB106	Business Communication	SKD
MB107	Introduction to Business Analytics	SKD
MB108	Database Management Systems	SKD
MB109	Data Querying & Visualization	SKD
Second Semester		
MB201	Human Resource Management	EMP
MB202	Introduction to Big Data Systems	SKD
MB203	Financial Management	EMP
MB204	Data Warehousing and Data Mining	SKD
MB205	Introduction to Programming using Python	SKD
MB206	Operations and Supply Chain Management	EMP
MB207	Predictive Modelling	SKD
MB208	Changing Paradigm in Leadership	ENT
MB209	Predictive Analytics Practicum	SKD
Third Semester		
MB 301	Summer Internship	EMP
MB 302	Machine Learning	SKD
MB 303	Big Data Analytics	SKD
MB 304	R for Machine Learning	SKD
MBGxxx	Generic Elective – I	EMP
MBGxxx	Generic Elective – II	EMP
MBDxxx	Discipline Specific Elective – I	EMP
MBDxxx	Discipline Specific Elective – II	EMP
Fourth Semester		
MB 401	Project Dissertation	EMP
MB 402	Enterprise Performance Management	EMP
MB 403	Entrepreneurship Development	ENT
MB 404	Project Management	EMP
MBGxxx	Generic Elective– III	EMP
MBDxxx	Discipline Specific Elective– III	EMP
MBDxxx	Discipline Specific Elective– IV	EMP
Discipline Specific Electives		
MBD 001	Advanced Machine Learning	SKD
MBD 002	Marketing Analytics	EMP
MBD 003	Pricing Analytics	EMP
MBD 004	Financial Analytics	EMP
MBD 005	Retail Analytics	EMP
MBD 006	HR Analytics	EMP
MBD 007	Time Series Analysis	SKD
MBD 008	Social Media and Web Analytics	EMP
MBD 009	Healthcare Analytics	EMP
MBD 010	Operations and Supply Chain Analytics	EMP
MBD 011	Data Management and Ethics	SKD

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MBD 012	Digital Marketing Analytics	EMP
MBD 013	Weather Analytics	SKD
MBD 014	Security Analytics	SKD
MBD 015	Decision Analysis Techniques	SKD
MBD 016	Swarm Optimization and Evolutionary Computing	SKD
Generic Electives		
MBG001	Compensation Management	EMP
MBG002	Industrial Relations and Labour Legislation	EMP
MBG003	Training and Development	EMP
MBG004	Internet of things	SKD
MBG005	Natural Language Processing	SKD
MBG006	Semantic Web & Web Mining	SKD
MBG007	International Financial Management	EMP
MBG008	Managing Financial Institutions and Markets	EMP
MBG009	Security Analysis and Portfolio Management	EMP
MBG010	Knowledge and Innovation Management	ENT
MBG011	Financing the Entrepreneurial Business	ENT
MBG012	Corporate Governance	EMP
MBG013	Total Quality Management	EMP
MBG014	Logistics Planning and Strategy	EMP
MBG015	Operations Research and Strategy	EMP
MBG016	International Marketing	EMP
MBG017	Knowledge Creation, Critical Thinking and Innovation	ENT
MBA (Innovation, Entrepreneurship and Venture Development) (IEV)		
Semester I Module I		
MBE I 101	Know/Manage Entrepreneurial Talent	ENT
MBE C111	Theories and Models of Entrepreneurship	ENT
MBE C112	Research Methods-Data, Models & Decisions	ENT
MBE DEC 111	Principles of Technology-Innovation-Management.	ENT
MBE DEC 112	Opportunities Mapping-Sector & Competitive Analysis of Start-up Ecosystem of Region & Nation. (Focus on Sector)	ENT
MBE MOOC 113	Or, Choice of any MOOC, or Course of Independent Study under industry/entrepreneur mentor/faculty approved by DEPARTMENT as of equivalent credit and desired content.	ENT
MBE SC 111	Workshops/certification/awards in areas like: Ideation, Business Model Canvas, Design Innovation, Technological Innovation & Designing, Entrepreneurship, Data Analytic etc.	ENT
MBE CP1	Creative Problem Solving/Idea-Proof-of-Concept Submission *(A candidate is expected to work at least sixteen hours in a week)	ENT
MBE EL1	Feasibility Analysis, Leadership, Teamwork, Decisionmaking, Ethics and socially conscious decisions, etc.	ENT
Semester I Module II		
MBE C121	Innovation/Development and Managing Customer Value	ENT
MBE C122	Entrepreneurial Finance : Concept & Management.	ENT
MBE DEC 111	Managerial Economics and Environment in India for Entrepreneurs.	ENT
MBE DEC 112	Start up Law, Company Act and Sector Regulatory Environment (Focus on Sector)	ENT

MBE DEC 113	Or, Choice of any MOOC, or Course of Independent Study under industry/entrepreneur mentor approved by DEPARTMENT as of equivalent credit and desired content.	ENT
MBE DEC 121	Workshops/certification/awards in areas like: 1. Start-up Ecosystem Management: Concept and Best Practices of Pre-incubation Services Facilities - Mandatory 2. Enterprise Development, Management, Negotiation, Marketing & Research, Lean Start-up Models etc. As guided by Faculty Coordinator	ENT
MBE CP2	Development of Innovation/Prototype & Submission. *(A candidate is expected to work at least sixteen hours in a week)	ENT
MBE EL2	Perspective Essentials to value creation: Demand and Forecast, Market Segmentation, Pricing Strategy, Budgeting, Social Responsible Managerial Decision Making. Positioning and Value Proposition to all stakeholders in Value chain	ENT
Semester II Module III		
MBE C231	Entrepreneurial Leadership – Org Behaviour.	ENT
MBE C232	New Venture Establishment & Management	ENT
MBE DEC 231	Measuring and Managing Strategic Performance of Existing and New Ventures	ENT
MBE DEC 232	Corporate and Social Entrepreneurship	ENT
MBE DEC 113	Or, Choice of any MOOC, or Course of Independent Study under industry/entrepreneur mentor approved by DEPARTMENT as of equivalent credit and desired content.	ENT
MBE SC 231	Workshops/certification/awards in areas like: 1. Start-up Ecosystem Management II : Concept and Best Practices of Incubation & Acceleration Services Management for Start-ups 2. Lean Start-up, Venture Planning & Management, Operation Management, Performance Management etc.	ENT
MBE CP3	Development of Business Model for the Innovation. Developing a Minimum Viable Product & Business Model to get into the Market. *(A candidate is expected to work at least sixteen hours in a week)	ENT
MBE EL 2	Building and implementing competitive capabilities and developing high performance organizations	ENT
MBE ALS 1	Action Based Learning on <Market Research & Customer Feedback> <Innovation and Business Model Validation> <Dummy Business & Service Portfolio Build> <Fund & Resource Generation Strategy> <Managing Resources in Start-up Environment>	ENT
Semester III Module IV		
MBE C341	Venture Financing: Funding, M&A, Valuation Techniques	ENT
MBE C342	Venture Growth Strategies	ENT
MBE DEC 341, 342	Digital Marketing/ Talent and Team Management/ HR Management: Performance and Competence mapping	ENT

MBE DEC 343	Choice of any MOOC, or Course of Independent Study under industry/entrepreneur mentor approved by DEPARTMENT as of equivalent credit and desired content.	ENT
MBE SC 341	Workshops/certification/awards in areas like Venture funding, Government support for star-ups, building value chains and value proposition and valuation, supply chain and vendor selection/management, developing sales channel.	ENT
MBE EL 2	Building and implementing competitive capabilities and developing high performance organizations	ENT
Semester III Module V		
MBE C351	High performance organisations	ENT
MBE C352	Strategies for competition and quality	ENT
MBE DEC 351, 352	Government Strategies & Policies and International Economy Technology & Global Business Linkage Opportunities IPR Management	ENT
MBE DEC 353	Choice of any MOOC, or Course of Independent Study under industry/entrepreneur mentor approved by DEPARTMENT as of equivalent credit and desired content.	ENT
MBE SC 351	Workshops/certification/awards in areas like: Learn Start-up, Venture Planning & Management, Operation Management, Performance Management etc.	ENT
	Global Start-up Exchange Incubation Program Buying or Selling a business	
MBE EL 2	Building and implementing competitive capabilities and developing high performance organizations	ENT
Semester IV - Venture Establishment Phase		
MBE SC 461	Workshops/certification/awards in areas like: Learn Start-up, Venture Planning & Management, Operation Management, Performance Management etc.	ENT
MBE AL 2	Raise funding, Evaluation Readiness, Customer Base development Partnerships and Stakeholder management, Value chain partnerships and development of supply and forward chains, Credit and operations scale up	ENT
MASTER OF SCIENCE		
Biotechnology		
I Year: First Semester		
MSBT101	Biochemistry	EMP
MSBT103	Cell and Developmental Biology	EMP
MSBT105	Molecular Theory	EMP
MSBT107	Analytical Techniques	EMP
MSBT109	Biostatistics and computer Applications	EMP
MSBT111	Seminar	EMP
MSHU113	Communicative English	EMP
I Year: Second Semester		
MSBT102	Immunology	EMP
MSBT104	Microbiology and Industrial Applications	EMP
MSBT106	Genetic Engineering	EMP

MSBT108	Genetics	EMP
MSBT110X	GE1	
MSBT112	Project Proposal Presentation	EMP
MSMA 114	Fundamentals of Computer*	SKD
II Year: Third Semester		
MSBT201	Bioprocess Engineering & Technology	EMP
MSBT203	Immunotechnology and Molecular Virology	EMP
MSBT205	IPR & Biosafety	EMP
MSBT xxx	DSE-I	
MSBT xxx	DSE-II	
MSBT 234	Lab Based on Elective	
II Year: Fourth Semester		
MSBT 202	Project Work	EMP
MSBT 204	Genomics and Proteomics	EMP
MSBT 206x	GE-2	EMP
List of Departmental Elective Courses		
MSBT207	Microbial Technology	EMP
MSBT209	Computational Biology	SKD
MSBT211	Animal Biotechnology	EMP
MSBT213	Plant Biotechnology	EMP
MSBT215	Environmental Biotechnology	EMP
MSBT217	Nanobiotechnology	SKD
MSBT219	Protein Engineering	EMP
MSBT221	Molecular Virology	EMP
MSBT223	Industrial & Food Biotechnology	EMP
MSBT225	Diagnostics	EMP
MSBT227	Cancer Genetics	EMP
MSBT229	Evolutionary Genetics	EMP
MSBT231	Model Genetic Systems	EMP
MSBT233	Pharmacogenomics	EMP
MSBT235	Stem Cell Biology	EMP
MSBT237	Vaccines	ENT
MSBT239	Metabolic Engineering	SKD
MSBT241	Molecular Therapeutics	EMP
Generics Electives		
MSBT 1101	Nutraceuticals and Functional Foods	EMP
MSBT 1102	Translational Medicine	SKD
MSBT 1103	Algal Biotechnology	ENT
MSBT 1104	Introductory Biology	EMP
MSBT 1105	Environmental Biotechnology	EMP
MSBT 2061	Plant Molecular Farming	ENT
MSBT 2062	Advanced Biological Computing	SKD
MSBT 2063	Neurosciences	EMP
MSBT 2064	Biomass conversion and Biorefinery	EMP
MSBT 2065	Bioenergy	EMP
Chemistry		
Semester - I		
MSCH101	Inorganic Chemistry-1	EMP
MSCH103	Organic Chemistry-1	EMP
MSCH105	Physical Chemistry-1	EMP

MSCH107*	Elementary Topics for Chemists	EMP
MSCH109	Chemistry Practical - 1	EMP
MSHU111**	Communicative English	EMP
Semester - II		
MSCH102	Inorganic Chemistry-2	EMP
MSCH104	Organic Chemistry-2	EMP
MSCH106	Physical Chemistry-2	EMP
MSCH108	Chemistry Practical - 2	EMP
MSCH110	GE-1	EMP
MSCH112	Basics of IPR and Computers	EMP
Semester - III		
MSCH201	Organic Chemistry-3	EMP
MSCH203	Physical Chemistry-3	EMP
MSCH205	Inorganic Chemistry - 3	EMP
MSCH207	Elective-1/Track-I	EMP
MSCH209	Elective - 2 (Specialization Laboratory)	EMP
Semester - IV		
MSCH-202	Special papers in Chemistry a. Inorganic Chem b. Organic Chem c. Physical Chem	EMP
MSCH-204	Project Work	EMP
MSCH-206	Elective -3/Track-I	EMP
MSCH-208	GE-2	EMP
Physics		
Semester - I		
MSPH 101	Mathematical Physics	EMP
MSPH103	Classical Mechanics	EMP
MSPH105	Quantum Mechanics	EMP
MSPH107	Applied Optics	EMP
MSPH109	Electronics	EMP
MSPH111	Physics Lab - 1	EMP
MSHU113	Communicative English	EMP
Semester - II		
MSPH102	Advanced Quantum Mechanics	EMP
MSPH104	Statistical Mechanics	EMP
MSPH106	Computational Methods	EMP
MSPH108	Electrodynamics	EMP
MSPH110	Solid State Physics	EMP
MSPH112	Physics Lab - II	EMP
MSCT114	IT related course	SKD
Semester - III		
MSPH201	Atomic and Molecular Physics	EMP
MSPH203	Nuclear and Particle Physics	EMP
MSPH205	Dissertation - I	EMP
MSPH207	Elective - I/Track - I	EMP
MSXX XXX	GE-1	EMP
MSPH211	Advanced Physics Lab. - I	EMP
Semester - IV		
MSPH202	Advanced Semiconductor Devices	SKD

MSPH204	Elective - II/Track - I	EMP
MSXX XXX	GE-2	EMP
MSPH208	Advance Physics Lab- II	EMP
MSPH110	Dissertation - II	EMP
Elective - 1		
MSPH207	Fibre and Integrated Optics	ENT
MSPH209	Advanced Condensed Matter Physics	EMP
MSPH213	Advanced Numerical Physics	EMP
MSPH215	Plasma Physics	EMP
MSPH217	Characterization Techniques	EMP
Elective - 2		
MSPH204	Space and Atmospheric Science	EMP
MSPH206	Laser and Spectroscopy	EMP
MSPH212	Spintronics	EMP
MSPH214	Advanced Electronics	EMP
MSPH216	Advanced Functional Materials	EMP
Mathematics		
Semester - I		
MSMA101	Abstract Algebra	EMP
MSMA103	Real Analysis	EMP
MSMA105	Ordinary Differential Equations	EMP
MSMA107	Discrete Mathematics	EMP
MSMA109	Mathematical Statistics	EMP
MSMA111	Programming Lab.-1	EMP
MSHU113	Communicative English	SKD
Semester - II		
MSMA102	Complex Analysis	SKD
MSMA104	Partial Differential Equations	EMP
MSMA106	Topology	EMP
MSMA108	Linear Algebra	EMP
MSMA110	Numerical Analysis	EMP
MSMA112	Programming Lab.-II	EMP
MSMA114	Fundamentals of Computer*	SKD
Semester - III		
MSMA201	Fundamental Analysis	EMP
MSMA203	Operation Research	EMP
MSMA205	Dissertation - I	EMP
MSMAXXX	DSE-I/Track-1	EMP
MSMAXXX	DSE-2	EMP
XXXX XXXX	GEC-1	EMP
Semester - IV		
MSMA202	Measure and Integration	EMP
MSMA204	Dissertation - II	EMP
MSMA XXX	DSE 3/Track - 1	EMP
MSMA XXX	DSE 4	EMP
XXXX XXXX	GEC 2	EMP
Electives		
MSMA207	Stochastic process	EMP
MSMA209	Analysis and Design of Algorithms	SKD
MSMA211	Number Theory	EMP

MSMA213	Mathematical Modelling and Simulation	SKD
MSMA215	Calculus of Variation	EMP
MSMA217	Graph Theory	SKD
MSMA219	Datanase Management System	SKD
MSMA221	Integral Transforms & Equations	SKD
MSMA223	Cryptography and Coding Theory	SKD
MSMA225	Classical Mechanics	SKD
MSMA206	Financial Mathematics	SKD
MSMA208	Data Mining	EMP
MSMA210	Optimization Techniques	EMP
MSMA212	Approximation Theory	EMP
MSMA214	General Relativity and Cosmology	EMP
MSMA216	Finite Element Method	EMP
MSMA218	Machine Learning	SKD
MSMA220	Advanced Partial Diferential Equations	EMP
MSMA222	Univalent Function Theory	EMP
MSMA224	Fuzzy Sets and Applications	EMP
MASTER OF TECHNOLOGY		
Bioinformatics		
Semester-I		
BIO501	Introduction to Bioinformatics	EMP
BIO503	Advanced Proteomics	EMP
BIO5401/5403/..... ...	Elective 1	EMP
BIO5301/5303/..... ...	Elective 2	EMP
BIO5201/5203/..... ...	Elective 3/ University Elective I	EMP
/UEC5201/5203/.....		EMP
Semester-II		
BIO502	Advances in Bioinformatics	EMP
BIO504	High Throughput Structural Biology	EMP
BIO5402/5404/..... ...	Elective 4	EMP
BIO5302/5304/..... ...	Elective 5	EMP
BIO5202/5204/..... .../ UEC5202/5204/.....	Elective 6/ University Elective II	EMP
Semester-III		
Track 1		
BIO651	Research Project	EMP
Track 2		
BIO601	Major Project I	SKD
BIO6401/6403/..... ...	Elective 7	EMP
BIO6301/6303/..... ...	Elective 8	FMP

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R Pandey

BIO6201/6203/..... ...	Elective 9	EMP
Semester-IV		
Track 1		
BIO652	Research Project	SKD
Track 2		
BIO602	Major Project II	SKD
List of Electives		
BIO5401	Computer Graphics	EMP
BIO5403	Computer Aided Drug Design	EMP
BIO5405	Pharmacogenomics and Personalized Medicine	EMP
BIO5407	OMICS in Medicine	EMP
BIO5301	Data Warehousing and Data Mining	EMP
BIO5303	Genomics: From Human Genome Project to Medical Applications	EMP
BIO5305	Combinatorial Methods in Biopharmaceuticals	EMP
BIO5307	Microarray Technology	EMP
BIO5201	Open Area Seminar - I	EMP
BIO5203	Analysis of Biological System	EMP
BIO5205	Plant Bioinformatics	EMP
BIO5207	Database Management System	SKD
BIO5402	Advanced Genetic Engineering	EMP
BIO5404	Systems Biology	EMP
BIO5406	Web Application Development	SKD
BIO5408	Image Processing in Medicine	SKD
BIO5302	Minor Project	EMP
BIO5304	Medical Bioinformatics	EMP
BIO5306	Pharmacoinformatics	EMP
BIO5308	Immunoinformatics	EMP
BIO5202	Open Area Seminar-II	EMP
BIO5204	Python programming for Bioinformatics	SKD
BIO5206	Bioethics and IPR	EMP
BIO5208	Perl Programming for Bioinformatics	SKD
BIO6401	Drug Design and Discovery	EMP
BIO6403	Neurobiology	EMP
BIO6405	Cell and Molecular Biology	EMP
BIO6407	Biostatistics	EMP
BIO6301	Nanotechnology in Healthcare	EMP
BIO6303	Resource Planning and Management in Bioinformatics	EMP
BIO6305	Advanced Drug Delivery Systems	EMP
BIO6307	Artificial Intelligence	SKD
BIO6201	Design and Analysis of Algorithms	EMP
BIO6203	Molecular Evolution	EMP
BIO6205	Molecular and Cellular Biophysics	EMP
BIO6207	Entrepreneurship	ENT
INDUSTRIAL BIOTECHNOLOGY (IBT)		
Semester-I		

Group A		
IBT501	Bioenergy	EMP
IBT503	Industrial Plant Biotechnology	EMP
Group B		
IBT5401/5403/..... ...	Elective 1	EMP
IBT5301/5303/..... ...	Elective 2	EMP
IBT5201/5203/..... ... /UEC5201/5203/.....	Elective 3/ University Elective I	EMP
		EMP
Semester-II		
Group C		
IBT502	Functional Genomics and Proteomics	EMP
IBT504	Bioprocess Engineering and Reactor Design	EMP
Group D		
IBT5402/5404/..... ...	Elective 4	EMP
IBT5302/5304/..... ...	Elective 5	EMP
IBT5202/5204/..... .../ UEC5202/5204/.....	Elective 6/ University Elective II	EMP
Semester-III		
Group E		
IBT601	Major Project I	EMP
IBT6401/6403/..... ...	Elective 7	EMP
IBT6301/6303/..... ...	Elective 8	EMP
IBT6201/6203/..... ...	Elective 9	EMP
Semester-IV		
Group F		
IBT652	Research Project	SKD
IBT602 Major Project II	Major Project II	EMP
List of Electives		
IBT5401	Bioinstrumentation	EMP
IBT5403	Bioseparation Technology	EMP
IBT5405	Nutraceuticals and Functional Foods	ENT
IBT5407	Recombinant DNA Technology	EMP
IBT5301	Industrial Microbiology and Fermentation Technology	EMP
IBT5303	Food Engineering & Biotechnology	
IBT5305	Green Energy	ENT
IBT5307	Medical Biotechnology and Health Care	EMP
IBT5201	Open Area Seminar	EMP
IBT5203	Algal Biotechnology	EMP

IBT5205	Applied Molecular biology and Genetic Engineering	EMP
IBT5207	Nutritional Biochemistry	EMP
IBT5402	Advanced Environmental Biotechnology	EMP
IBT5404	Biopolymer Technology	EMP
IBT5406	Quality Management	EMP
IBT5408	Plant Molecular Farming	EMP
IBT5302	Minor Project	EMP
IBT5304	Biochemical Thermodynamics	EMP
IBT5306	Transport Phenomenon	EMP
IBT5308	Biopharmaceuticals	EMP
IBT5202	Nanobiotechnology	EMP
IBT5204	Biosensor Technology	EMP
IBT5206	Advanced Computational Genomics	EMP
IBT5208	Food Microbiology	EMP
IBT6401	Enzyme Technology and Industrial Applications	EMP
IBT6403	Metabolic Engineering.	EMP
IBT6405	Vaccine Technology	SKD
IBT6407	Advanced Biochemistry	EMP
IBT6301	Industrial waste water treatment	EMP
IBT6303	Metagenomics	EMP
IBT6305	Transgenic Technology	EMP
IBT6307	Biomaterials	ENT
IBT6201	Bioethics, Biosafety and IPR	EMP
IBT6203	Bioprocess Plant Design	EMP
IBT6205	Advanced Animal Biotechnology	EMP
IBT6207	Microbial Biotechnology	EMP
Computer Science Engineering		
Semester-I		
Group A		
CSE501	Advanced Database Management Systems	SKD
CSE503	Advanced Algorithms and Data Structures	SKD
Group B		
CSE5401/5403/..... ...	Elective 1	EMP
CSE5301/5303/..... ...	Elective 2	EMP
CSE5201/5203/..... .../ UEC5201/5203/.....	Elective 3/ University Elective I	EMP
Semester-II		
Group C		
CSE502	Distributed Systems	EMP
CSE504	Advanced Computer Networks	EMP
Group D		
CSE5402/5404/..... ...	Elective 4	EMP

CSE5302/5304/..... ...	Elective 5	EMP
CSE5202/5204/..... .../ UEC5202/5204/.....	Elective 6/ University Elective II	EMP
Semester-III		
Group E		
CSE651	Research Project	SKD
CSE601	Major Project I	EMP
CSE6401/6403/..... ...	Elective 7	EMP
CSE6301/6303/..... ...	Elective 8	EMP
CSE6201/6203/..... ...	Elective 9	EMP
Semester-IV		
Group F		
CSE652	Research Project	SKD
CSE602	Major Project II	EMP
List of Departmental Elective Courses		
CSE5401	Artificial Intelligence and Expert Systems	SKD
CSE5403	Data warehousing and Data Mining	SKD
CSE5405	Design of Embedded Systems	SKD
CSE5407	Information Retrieval	SKD
CSE5409	Soft Computing	EMP
CSE5411	Semantic Web	EMP
CSE5413	Machine Learning	SKD
CSE5301	Advanced Computer Graphics	EMP
CSE5303	Fault Tolerant and testable Systems	EMP
CSE5305	VLSI Design	EMP
CSE5307	Parallel Computer Architecture	EMP
CSE5309	Social Media and Online Marketing	EMP
CSE5311	Reliable System Design	EMP
CSE5313	Robotics Engineering	SKD
CSE5201	SEMINAR	EMP
CSE5203	Distributed Algorithms	EMP
CSE5205	Modeling & Simulation	EMP
CSE5207	Multivariate Calculus	EMP
CSE5209	Ethical Hacking	SKD
CSE5211	Software Lab	EMP
CSE5402	Wireless & Mobile Communication	EMP
CSE5404	Digital Image Processing	EMP
CSE5406	Software Testing	EMP
CSE5408	Computer Vision	EMP
CSE5410	Applied Cryptography	EMP
CSE5412	Optical Networks	EMP
CSE5302	MINOR PROJECT	EMP
CSE5304	Information and Network Security	EMP
CSE5306	Bioinformatics	EMP

CSE5308	Big Data Analytics	SKD
CSE5310	Security and Privacy in Social Networks	EMP
CSE5312	Probability and Statistical Theory	EMP
CSE5314	Business Intelligence	EMP
CSE5316	Mobile and Cellular Network Security	EMP
CSE5202	Optimization Tools	EMP
CSE5204	Statistical Tools	EMP
CSE5206	Geo-Informatics	EMP
CSE5208	Security Tools and Applications	EMP
CSE5210	Secure Coding	EMP
CSE5212	Linear Optimization	EMP
CSE5214	Advances in Multimedia Technology	EMP
CSE6401	Pattern Recognition	EMP
CSE6403	Software Project Management	EMP
CSE6405	Cluster & Grid Computing	EMP
CSE6407	Internet of Things	SKD
CSE6409	Nanotechnology	EMP
CSE6301	Natural Language Processing	EMP
CSE6303	Digital Forensics	EMP
CSE6305	Game Theory	EMP
CSE6307	Deep Learning	SKD
CSE6309	Blockchain and applications	SKD
CSE6311	Real Time Systems	EMP
CSE6313	Quantum Computing	EMP
CSE6201	Research Methodology	EMP
CSE6203	Enterprise Computing in JAVA	EMP
CSE6205	Advances in Internet & Web Technology	EMP
Artificial Intelligence		
Semester-I		
Group A		
AI501	Advance data structure and algorithm	EMP
AI503	Principles of AI	EMP
Group B		
AI5401/5403/.....	Elective 1	EMP
AI5301/5303/.....	AI5302/5304/.....	EMP
AI5201/5203/...../UEC5201/5203/.....	AI5201/5203/...../UEC5201/5203/.....	EMP
Semester-II		
Group C		
AI502	Machine Learning	EMP
AI504	Artificial Neural Networks	EMP
Group D		
AI5402/5404/.....	Elective 4	EMP
AI5302/5304/.....	Elective 5	EMP
AI5202/5204/...../UEC5202/5204/.....	Elective 6/ University Elective II	EMP
Semester-III		
Group E		
Track 1		
AI651	Research Project	SKD

Track 2		
AI601	Major Project I	EMP
AI6401/6403/..... ...	Elective 7	EMP
AI6301/6303/..... ...	Elective 8	EMP
AI6201/6203/..... ...	Elective 9	EMP
Semester-IV		
Group F		
Track 1		
AI652	Research Project	SKD
Track 2		
AI602	Major Project II	EMP
List of Electives		
AI5401	Programming language for AI	EMP
AI5403	Advance Database Management System	EMP
AI5405	Network Modelling & Simulation	EMP
AI5407	Image Processing	EMP
AI5409	Empirical Software Engineering	EMP
AI5301	Information Theory & Coding	EMP
AI5303	Optimization Techniques	EMP
AI5305	Information and Network Security	EMP
AI5307	Probability & Statistical Theory	EMP
AI5309	Fuzzy Logic & System	EMP
AI5311	Evolutionary Computing	EMP
AI5313	Applications of AI & its impact on Society	EMP
AI5201	SEMINAR	EMP
AI5203	Soft Computing	EMP
AI5205	Advance Computer Graphics	EMP
AI5207	Robotics Engineering	SKD
AI5209	Advance Biometrics	EMP
AI5211	Linear Algebra	EMP
AI5402	Natural Language Processing	EMP
AI5404	Speech and Text Processing	EMP
AI5406	Data Mining	EMP
AI5408	Online Prediction and Learning	EMP
AI5410	Deep Learning	SKD
AI5412	Computer Vision	EMP
AI5302	MINOR PROJECT	EMP
AI5304	Pattern Recognition	EMP
AI5306	Semantic Web	EMP
AI5308	Reinforcement Learning	EMP
AI5310	Security and Privacy in Social Networks	EMP
AI5312	Business Intelligence	EMP
AI5314	Mobile and Cellular Network Security	EMP
AI5316		
AI5202	Heuristic Methods	EMP
AI5204	Game Theory	EMP
AI5206	Intelligent Agents	EMP

AI5208	Genetic Algorithm & Evolutionary Algorithm	EMP
AI5210	Convolutional Neural Network	EMP
AI5212		
AI5214		
AI6401	Augmented Reality and Virtual Reality	EMP
AI6403	Big Data Security	EMP
AI6405	Advance Computer Vision	EMP
AI6407	Theoretical Machine Learning	EMP
AI6409	Digital Forensics	EMP
AI6301	Medical AI	EMP
AI6303	Neuro Evolution	EMP
AI6305	Statistical Machine Learning	EMP
AI6307	Block chain and applications	EMP
AI6309	Quantum AI	EMP
AI6311	Intellectual Property Rights	EMP
AI6313	IOT	SKD
AI6201	Advance Robotics	SKD
AI6203	Software Testing Using Machine Learning	EMP
AI6205	Business Data Analytics	EMP
AI6207	Digital Video	EMP
AI6209	Predictive Modelling	EMP
Environmental Engineering		
Semester-I		
Group A		
ENE501	Water Pollution	EMP
ENE503	Air Pollution & Control	EMP
Group B		
ENE5401/5403/.....	Elective 1	EMP
ENE5301/5303/.....	Elective 2	EMP
ENE5201/5203/..... / UEC5201/5203/.....	Elective 3/University Elective I	EMP
Semester-II		
Group C		
ENE502	Water Engineering Design	EMP
ENE504	Solid Waste Management	EMP
Group D		
ENE5402/5404/5406	Elective 4	EMP
ENE5302/5304/.....	Elective 5	EMP
ENE5202/5204/..... / UEC5202/5204/.....	Elective 6/University Elective II	EMP
Semester-III		
Group E		
Track 1		

ENE651	Research Project	SKD
Track 2		
ENE601	Major Project I	EMP
ENE6401/6403/.....	Elective 7	EMP
ENE6301/6303/.....	Elective 8	EMP
ENE6201/6203/.....	Elective 9	EMP
Semester IV		
Group F		
Track 1		
ENE652	Research Project	SKD
Track 2		
ENE602	Major Project II	EMP
List of Electives		
ENE5401	Industrial Wastewater Treatment	EMP
ENE5403	Planning & Design of Environmental Services	EMP
ENE5405	Groundwater & Seepage	EMP
ENE5301	Environmental Chemistry & Microbiology	EMP
ENE5303	Occupational Safety & Health	EMP
ENE5305	Instrumentation	EMP
ENE5201	SEMINAR	EMP
ENE5203	Advanced Mathematics & Statistics	EMP
ENE5205	Design of Hydraulic Structures	EMP
ENE5402	Global Warming & Climate Change	EMP
ENE5404	Waste Containment & Remediation Technology	EMP
ENE5406	Environmental Planning & Management	EMP
ENE5302	MINOR PROJECT	EMP
ENE5304	Environmental Monitoring & Assessment	EMP
ENE5306	Green Technology & Sustainability	EMP
ENE5202	Environmental Policy & Law	EMP
ENE5204	Human Values & Ethics	EMP
ENE6401	Environment Impact Assessment & Audit	EMP
ENE6403	Remote Sensing & GIS	EMP
ENE6301	Air Quality Modeling	EMP
ENE6303	Life Cycle Assessment	EMP
ENE6201	Hazardous Waste Management	EMP
ENE6203	Bioremediation	EMP
Geotechnical Engineering		
Semester-I		
Group A		
GTE501	Advanced Soil mechanics	EMP
GTE503	Advance Foundation Engineering	EMP
Group B		
GTE5401/5403/...	Elective 1	EMP
GTE5301/5303/...	Elective 2	EMP

GTE5201/5203/.../ UEC5201/5203/...	Elective 3/University Elective I	EMP
Semester-II		
Group C		
GTE502	Rock Mechanics	EMP
GTE504	Soil dynamics and machine foundation	EMP
Group D		
GTE5402/5404/...	Elective 4	EMP
GTE5302/5304/...	Elective 5	EMP
GTE5202/5204/.../ UEC5202/5204/...	Elective 6/University Elective II	EMP
Semester-III		
Group E		
Track 1		
GTE651	Research Project	SKD
Track 2		
GTE601	Major Project I	EMP
GTE6401/6403/...	Elective 7	EMP
GTE6301/6303/...	Elective 8	EMP
GTE6201/6203/...	Elective 9	EMP
Semester-IV		
Group F		
Track 1		
GTE652	Research Project	SKD
Track 2		
GTE602	Major Project II	EMP
List of Electives		
GTE5401	Geo-environmental Engineering	EMP
GTE5403	Geotechnical Exploration	EMP
GTE5405	Application of remote sensing and GIS in Geotechnical Engineering	EMP
GTE5407	Cost Management of Engineering Project	ENT
GTE5301	Geotechnical Earthquake Engineering	EMP
GTE5303	Stability Analysis of Slopes	EMP
GTE5305	Earth Pressure & Earth Retaining Structures	EMP
GTE5307	Pavement analysis and Design	EMP
GTE5201	Seminar	EMP
GTE5203	FEM in Geotechnical Engineering	EMP
GTE5205	Offshore Geotechnical Engineering	EMP
GTE5207	Composite Material	EMP
GTE5402	Theoretical Soil Mechanics	EMP
GTE5404	Unsaturated Soil Mechanics	EMP
GTE5406	Critical State Soil Mechanics	EMP

GTE5408	Operational Research	EMP
GTE5302	MINOR PROJECT	EMP
GTE5304	Soil Structure Interaction	EMP
GTE5306	Disaster Mitigation and Management	EMP
GTE5308	Uncertainties, risk and reliability in Geotechnical Engineering	EMP
GTE5202	Ground Water Hydrology	EMP
GTE5204	Physical Modelling in Geomechanics	EMP
GTE5206	Numerical and Analytical Method in Geomechanics	EMP
GTE5208	Waste to Energy	EMP
GTE6401	Plasticity & Fracture Mechanics in Rock Structures	EMP
GTE6403	Theory of Elasticity and Plasticity in Geomechanics	EMP
GTE6405	Design of Underground/Sub Structures	EMP
GTE6407	Structural Geology	EMP
GTE6301	Geosynthetics	EMP
GTE6303	Ground Improvement Techniques	EMP
GTE6305	Excavation Technology	EMP
GTE6307	Probability and Statistical Methods in Engineering	EMP
GTE6201	Design of Underground Excavations	EMP
GTE6203	Foundations on Weak Rocks	EMP
GTE6205	Geotechnical Design Studio	EMP
Structural Engineering		
Semester-I		
Group A		
STE501	Structural Dynamics	EMP
STE503	Prestressed Concrete Design	EMP
Group B		
STE5401/5403/..... ...	Elective 1	EMP
STE5301/5303/..... ...	Elective 2	EMP
STE5201/5203// UEC5201/5203//.....	Elective 3/University Elective I	EMP
Semester-II		
Group C		
STE502	Advanced Theory of Structures	EMP
STE504	Analysis and Design of Bridges	EMP
Group D		
STE5402/5404/..... ...	Elective 4	EMP
STE5302/5304/..... ...	Elective 5	EMP
STE5202/5204/..... ...	Elective 6	EMP
Semester-III		
Group E		
Track 1		
STE651	Research Project	SKD
Track 2		
STE601	Major Project I	EMP

STE6401/6403/..... ...	Elective 7	EMP
STE6301/6303/..... ...	Elective 8	EMP
STE6201/6203/..... ...	Elective 9	EMP
Semester-IV		
Group F		
Track 1		
STE652+B20	Research Project	SKD
Track 2		
STE602	Major Project II	EMP
List of Elective Courses		
STE5401	Design of Advanced Reinforced Concrete Structures	EMP
STE5403	Design of Advanced Steel Structures	EMP
STE5405	Computational Methods in Structural Engineering	EMP
STE5407	Cyclone Risk and Hazard Assessment	EMP
STE5301	Theory of Plates & Shells	EMP
STE5303	Theory of Elasticity & Plasticity	EMP
STE5305	Stability Analysis of Structures	EMP
STE5307	Advanced Building Construction and Management	EMP
STE5201	Seminar	EMP
STE5203	Advanced Concrete Technology	EMP
STE5205	Design of Fibre Reinforced Composite Structures	EMP
STE5207	Total Life Cycle Management	EMP
STE5402	Finite Element Method of structural analysis	EMP
STE5404	Design of Tall Buildings	EMP
STE406	Seismic Hazard and Risk Assessment	EMP
STE5408	Earthquake Resistant Design of Structures	EMP
STE5410	Reliability Analysis of Structures	EMP
STE5302	MINOR PROJECT	EMP
STE5304	Soil Structure Interaction	EMP
STE5306	Retrofitting of Structures	EMP
STE5308	Disaster Mitigation and Management	EMP
STE5310	Random Vibration	EMP
STE5202	Durability of Concrete Structures	EMP
STE5204	Building Services	EMP
STE5206	Waste to Energy	EMP
STE5208	Sustainable Building Technologies	EMP
STE6401	Design of Hydraulic Structures	EMP
STE6403	Soil Dynamics	EMP
STE6405	Wind Engineering	EMP
STE6407	Design of Masonry Structures	EMP
STE6301	Instrumentation and Rehabilitation of Structures	EMP
STE6303	Structural Vibration Control	EMP
STE6305	Ground Improvement Techniques	EMP
STE6307	Probability & Statistical Methods in Engineering	EMP
STE6201	Wind Engineering Lab	EMP
STE6203	Pre-Fabricated Structures	EMP
STE6205	Form Work for Concrete Structures	EMP

HYDRAULICS & WATER RESOURCES ENGINEERING (HWE)		
Semester-I		
Group A		
HWE501	Computational Hydraulics	EMP
HWE503	Advanced fluid Mechanics	EMP
Group B		
HWE5401/5403/..	Elective 1	EMP
HWE5301/5303/..	Elective 2	EMP
HWE5201/5203/../ UEC5201/5203/.	Elective 3/University Elective I	EMP
Semester-II		
Group C		
HWE502	Water Resources Systems Planning and management	EMP
HWE504	Advanced open channel Hydraulics	EMP
Group D		
HWE5402/5404/..	Elective 4	EMP
HWE5302/5304/..	Elective 5	EMP
HWE5202/5204/../ UEC5202/5204/.	Elective 6/University Elective II	EMP
Semester - III		
Track - 1		EMP
HWE651	Research Project	EMP
Track - 2		EMP
HWE601	Major Project I	EMP
HWE6401/6403/...	Elective 7	EMP
HWE6301/6303/...	Elective 8	EMP
HWE6201/6203/...	Elective 9	EMP
Semester - IV		
Track 1		
HWE652	Research Project	SKD
Track 2		
HWE602	Major Project II	EMP
Elective - 1		
HWE5401	Advanced Hydrology	EMP
HWE5403	Environmental Hydraulics	EMP
HWE5405	Coastal Engineering	EMP
HWE5407	Systems Engineering	EMP
Elective - 2		
HWE5301	Water Power Engineering	EMP
HWE5303	Geotechnical Earthquake Engineering	EMP
HWE5305	Sediment Transport	EMP
HWE5307	Water and Soil Conservation Engineering	EMP
Elective - 3		
HWE5201	Seminar	EMP
HWE5203	Environmental System Modelling	EMP
HWE5205	Engineering Risk Analysis	EMP
HWE5207	Urban Water Infrastructure	EMP
Elective - 4		
HWE5402	Design of Flood Control and River Training Works	EMP

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HWE5404	Irrigation and Drainage Engineering	EMP
HWE5406	Hydrometeorology	EMP
HWE5408	Hydro-informatics and Simulations	EMP
Elective - 5		
HWE5302	MINOR PROJECT	EMP
HWE5304	Applications of GIS and Remote Sensing in Water Resources Engineering	EMP
HWE5306	Soil Structure Interaction	EMP
HWE5308	Disaster Mitigation and Management	EMP
Elective - 6		
HWE5202	Ground Water Hydrology	EMP
HWE5204	Transients in Pipes	EMP
HWE5206	Offshore Geotechnical Engineering	EMP
HWE5208	Waste to Energy	EMP
Elective - 7		
HWE6401	Design of Hydraulic Structures	EMP
HWE6403	Environmental Impact Assessment	EMP
HWE6405	Water pollution control and stream Sanitation	EMP
HWE6407	Stability Analysis of Slopes	EMP
Elective - 8		
HWE6301	Water Resources Economics	EMP
HWE6303	An Introduction to Sustainable development	EMP
HWE6305	Ground Improvement Techniques	EMP
HWE6307	Probability and Statistical Methods in Engineering	EMP
Elective - 9		
HWE6201	Subsurface Investigations	EMP
HWE6203	Introduction to AI Techniques	EMP
HWE6205	Geotechnical Practice for Waste Management System and Ground modifications	EMP
GEOINFORMATICS		
Semester-I		
Group A		
GEO501	Remote Sensing, Photogrammetry and Satellite Image Processing	SKD
GEO503	Introduction to Geographic Information System and Web GIS	SKD
Group B		
GEO5401/5403/...	Elective 1	EMP
GEO5301/5303/..	Elective 2	EMP
GEO5201/5203/...	Elective 3/University	EMP
/UEC5201/5203/..	Elective I	EMP
Semester-II		
Group C		
GEO502	Principles of Optical, Thermal and Hyperspectral Remote Sensing	SKD
GEO504	Microwave and Lidar Remote Sensing	SKD
Group D		
GEO5402/5404/...	Elective 4	EMP
GEO5302/5304/..	Elective 5	EMP

GEO5202/5204/.../ UEC5202/5204/..	Elective 6/ University Elective II	EMP
Semester-III		
Group E		
Track 1		
GEO651	Research Project	SKD
Track 2		
GEO601	Major Project I	EMP
GEO6401/6403/..	Elective 7	EMP
GEO6301/6303/..	Elective 8	EMP
GEO6201/6203/..	Elective 9	EMP
Semester-IV		
Group F		
Track 1		
GEO652	Research Project	SKD
Track 2		
GEO602	Major Project II	EMP
Elective - 1		
GEO5401	Surveying, Satellite Geodesy, GPS/GNSS	SKD
CSE5401	Artificial Intelligence and Expert	SKD
Elective - 2		
GEO5301	Probability, Statistics and Information theory in Geoinformatics	EMP
PSY5307	Applied Mathematics	EMP
SPD5303	Wavelets in Signal Processing	EMP
Elective 3		
GEO5201	Two week Survey and Mapping Camp (Local)	EMP
SWE5203	Probability and Statistics	EMP
Elective - 4		
GEO5402	Advanced Image Processing in Geoinformatics	SKD
SWE5406	Machine Learning	SKD
BIO5408	Image Processing in Medicine	SKD
SWE5408	Big Data Analysis	SKD
Elective - 5		
GEO5302	Modelling and Analysis of Geospatial Data	SKD
CSE5314	Business Intelligence	ENT
SWE5306	Pattern Recognition	SKD
Elective - 6		
GEO5202	Research Methods and Communication Skills	EMP
SWE5202	Research Methodology	EMP
Elective - 7		
GEO6401	Geoinformatics in Target Detection	EMP
GEO6403	Geoinformatics in Geotechnical Engineering and Geohazards	EMP
GEO6405	Geoinformatics in Transportation	EMP
GEO6407	Geoinformatics in hydrology and Glaciology	EMP

Elective 8		
GEO6301	Geoinformatics in Disaster Management Management	EMP
GEO6303	Geoinformatics in Health Care in Health Care	EMP
GEO6305	Geoinformatics in Geosciences	EMP
Elective 9		
GEO6201	Geoinformatics in Atmosphere and Oceanic Studies	EMP
GEO6203	Geoinformatics in Agriculture	EMP
GEO6205	Geoinformatics Urban Planning and Infrastructure	EMP
GEO6207	Design and Development of Sensors for Remote Sensing	SKD
Microwave & Optical communication		
Semester - I		
Group A		
MOC501	Advance Electro- magnetic Theory	EMP
MOC503	Optical Communication Systems	EMP
Group B		
MOC5401/5403/.....	Elective 1	EMP
MOC5301/5303/.....	Elective 2	EMP
MOC5201/5203/...../ UEC5201/5203/.....	Elective 3/ University Elective I	EMP
Semester - II		
Group C		
MOC502	Digital Microwave Engineering	EMP
MOC504	Optical Networks	EMP
Group D		
MOC5402/5404/.....	Elective 4	EMP
MOC5302/5304/.....	Elective 5	EMP
MOC5202/5204/..... .../ UEC5202/5204/.....	Elective 6/ University Elective II	EMP
Semester - III		
Group E		
Track 1		
MOC651	Research Project	SKD
Track 2		
MOC601	Major Project I	EMP
MOC6401/6403/.....	Elective 7	EMP
MOC6301/6303/.....	Elective 8	EMP
MOC6201/6203/.....	Elective 9	EMP
Semester - IV		
Group F		
Track 1		
MOC652	Research Project	SKD
Track 2		
MOC602	Major Project II	EMP

List of Electives

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(Formerly Delhi College of Engineering)
Bawana Road, Delhi-110042

Randey

MOC5401	Advanced Microwave Devices & Circuits	EMP
MOC5403	Photonic switching & Networks	EMP
MOC5405	Wireless Communication	EMP
MOC5407	Optics & Lasers	EMP
MOC5409	Quantum Computing	EMP
MOC5301	Communi-cation Networks	EMP
MOC5303	RF Microwave & Millimeter circuits	EMP
MOC5305	Nano photonics &Plasmo-nics	EMP
MOC5307	Optical Electronics	EMP
MOC5309	Soft Computing in Microwave Engineering	EMP
MOC5201	SEMINAR	EMP
MOC5203	Optical Intercon-nects	EMP
MOC5205	Radar Engineering	EMP
MOC5207	Information Theory	EMP
MOC5209	Language Lab	EMP
MOC5402	Antenna Design	EMP
MOC5404	Communi-cation Protocol Design	EMP
MOC5406	Optoelect-ronic Devices and Circuits	EMP
MOC5408	Optical Sensors	EMP
MOC5410	Satellite Communi-cations	EMP
MOC5302	Minor Project	EMP
MOC5304	Numerical Techniques in Electromagnetics	EMP
MOC5306	EMI/EMC	EMP
MOC5308	Radar Signal Processing	EMP
MOC5310	Radiating Systems in RF Communi-cations	EMP
MOC5202	Photo voltaics	EMP
MOC5204	Bio-Photonics	EMP
MOC5206	MIMO Wireless Communi-cation	EMP
MOC6401	Smart Antenna	EMP
MOC6403	Fiber optic Compon-ents	EMP
MOC6405	Wireless Optical Communi-cation	EMP
MOC6407	Biological Effects of Electroma-gnetic Fields	EMP
MOC6409	Broadband Communi-cation Systems	EMP
MOC6301	Statistical Mathema-tics	EMP
MOC6303	Integrated Optics	EMP
MOC6305	Quantum Electronics	EMP
MOC6307	Optical Computing	EMP
MOC6309	Optical Signal Processing	EMP
MOC6311	Spread Spectrum Communi-cation	EMP
MOC6201	Wireless Sensor Networks	EMP
MOC6203	Special Topics on Optical Communi-cations	EMP
MOC6205	Special Topics on Microwave communi-cation	EMP
MOC6207	Neuromo-rphic Engineering	EMP
Signal Processing & Digital Design		
Semester - I		
Group A		
SPD501	Advanced Digital Signal Processing	EMP
SPD503	Image Analysis and Processing	EMP
Group B		

SPD5401/5403/..... ...	Elective 1	EMP
SPD5301/5303/..... ...	Elective 2	EMP
SPD5201/5203/...□ UEC5201/5203/..... ...	Elective 3/ University Elective I	EMP
Semester - II		
Group C		
SPD502	Pattern Analysis and Machine Intelligence	EMP
SPD504	Embedded System	EMP
Group D		
SPD5402/5404/.....	Elective 4	EMP
SPD5302/5304/.....	Elective 5	EMP
SPD5202/5204/...□ UEC5202/5204/.....	Elective 6/ University Elective II	EMP
Semester - III		
Group E		
Track 1		
SPD651	Research Project	SKD
Track 2		
SPD601	Major Project I	EMP
SPD6401/6403/.....	Elective 7	EMP
SPD6301/6303/.....	Elective 8	EMP
SPD6201/6203/.....	Elective 9	EMP
Semester - IV		
Group F		
Track 1		
SPD652	Research Project	SKD
Track 2		
SPD602	Major Project II	EMP
List of Electives		
SPD5401	Wireless communication	EMP
SPD5403	Advanced Digital System Design + (concepts of Fault Tolerance)	EMP
SPD5405	Analog Signal Processing	EMP
SPD5407	Soft Computing	EMP
SPD5301	Digital Watermarking	EMP
SPD5303	Wavelets in Signal Processing	EMP
SPD5305	Advanced Computer Architecture	EMP
SPD5307	Network Security & Cryptography	EMP
SPD5201	SEMINAR	EMP
SPD5203	Language Lab	EMP
SPD5205	Statistical Signal Processing	EMP
SPD5207	Wireless sensor networks	EMP
SPD5209	Real Time Operating Systems	EMP
SPD5402	Computer Vision	SKD
SPD5404	IOT & Applications	SKD
SPD5406	Speech Processing	EMP
SPD5408	Fractional Delay Filters	EMP

SPD5302	MINOR PROJECT	EMP
SPD5304	Biomedical Signal Modelling	EMP
SPD5306	Object Tracking	SKD
SPD5308	Optimization Techniques	EMP
SPD5310	Artificial Intelligence	SKD
SPD5312	Reconfigurable Computing	EMP
SPD5202	Research Methodology & Report writing	EMP
SPD5208	VLSI Signal processing Architecture	EMP
SPD6401	Multispectral signal Analysis	EMP
SPD6403	Testing and Diagnosis of Digital system design	EMP
SPD6405	Detection and estimation theory	EMP
SPD6407	Digital Design and verification	EMP
SPD6301	Data Analytics	EMP
SPD6303	SOC Design testing and verification	EMP
SPD6305	FPGA Based System Design	EMP
SPD6307	Biomedical Signal & image processing	EMP
SPD6201	Operation Research	EMP
SPD6203	Multirate signal processing	EMP
VLSI Design & Embedded Systems		
Semester - I		
Group A		
VLS501	Analog IC Design	EMP
VLS503	Digital CMOS IC Design	EMP
Group B		
VLS5401/5403/..... ...	Elective 1	EMP
VLS5301/5303/..... ...	Elective 2	EMP
VLS5201/5203/..... /UEC5201/5203/..... ...	Elective 3/ University Elective I	EMP
Semester - II		
Group C		
VLS502	Embedded System Design	EMP
VLS504	Low power VLSI Design	EMP
Group D		
VLS5402/5404/.....	Elective 4	EMP
VLS5302/5304/.....	Elective 5	EMP
VLS5202/5204/... UEC5202/5204/.....	Elective 6/ University Elective II	EMP
Semester - III		
Group E		
Track 1		
VLS651	Research Project	SKD
Track 2		
VLS601	Major Project I	EMP
VLS6401/6403/..... ...	Elective 7	EMP

VLS6301/6303/..... ...	Elective 8	EMP
VLS6201/6203/..... ...	Elective 9	EMP
Semester - IV		
Group F		
Track 1		
VLS652	Research Project	SKD
Track 2		
VLS602	Major Project II	EMP
List of Electives		
VLS5401	Digital Design with HDL (Verilog)	EMP
VLS5403	Digital Signal Processing	EMP
VLS5405	Soft Computing	EMP
VLS5407	IC technology	EMP
VLS5301	Device modelling	EMP
VLS5303	Reconfigurable Computing	EMP
VLS5305	Hardware software codesign	EMP
VLS5307	Organic and Flexible Electronics	EMP
VLS5201	SEMINAR	EMP
VLS5203	Micro and Nanoelectronics	EMP
VLS5205	Micro and Nanofabrication	EMP
VLS5207	Field Programmable Analog Arrays	EMP
VLS5402	Analog Filter Design	EMP
VLS5404	Internet enabled embedded devices	EMP
VLS5406	CAD for VLSI Systems	EMP
VLS5408	CMOS RF Circuit Design	EMP
VLS5302	MINOR PROJECT	EMP
VLS5304	FPGA based Digital Signal Processing	EMP
VLS5306	Testing and Diagnosis of Digital System Design	EMP
VLS5308	Memory Design and Testing	EMP
VLS5202	CMOS nano neuromorphic circuits	EMP
VLS5204	Real Time Operating Systems	EMP
VLS5206	Clock Tree Synthesis	EMP
VLS5208	Layout design and skills with analog perspective	EMP
VLS6401	Mixed Signal Design	EMP
VLS6403	Embedded Signal Processing	EMP
VLS6405	Biomedical Circuits	EMP
VLS6407	Fault Tolerant computing	EMP
VLS6301	Speech Processing	EMP
VLS6303	Embedded Automotive systems	EMP
VLS6305	Machine Learning	EMP
VLS6307	Advanced Computer Architecture	EMP
VLS6309	Embedded Software	EMP
VLS6311	Phase Locked Loop Design	EMP
VLS6201	VLSI signal processing architecture	EMP
VLS6203	FPGA based soft computing	EMP
VLS6205	Selected topics in embedded systems	EMP
VLS6207	Selected topics in VLSI	EMP
Material Science and Technology		

Semester - I		
Group A		
MST501	Physics of Nanomaterials	EMP
MST503	Chemistry of Nanomaterials	EMP
Group B		
MST5401/5403/.....	Elective 1	EMP
MST5301/5303/.....	Elective 2	EMP
MST5201/5203/...../ UEC5201/5203/.....	Elective 3/University Elective I	EMP
Semester - II		
Group C		
MST502	Analytical Techniques	EMP
MST504	Design and Synthesis of Nanostructures	EMP
Group D		
MST5402/5404/.....	Elective 4	EMP
MST5302/5304/.....	Elective 5	EMP
MST5202/5204/...../ UEC5202/5204/.....	Elective 6/University Elective II	EMP
Semester - III		
Group E		
Track 1		
MST651	Research Project	SKD
Track 2		
MST601	Major Project I	EMP
MST6401/6403/.....	Elective 7	EMP
MST6301/6303/.....	Elective 8	EMP
MST6201/6203/.....	Elective 9	EMP
Semester - IV		
Group F		
Track 1		
MST652	Research Project	SKD
Track 2		
MST602	Major Project II	EMP
List of Electives		
MST5401	Computational Physics and Programming	EMP
MST5403	Nanoscale Modeling and Simulation	EMP
MST5405	Environmental Nanotechnology	EMP
MST5301	Thin Film Technology	EMP
MST5303	Functional Materials and Devices	EMP

MST5305	Material Science at Nanoscale	EMP
MST5201	SEMINAR	EMP
MST5203	Research Methodology	EMP
MST5205	Micro Economics	EMP
MST5402	Nanophotonics	EMP
MST5404	Spectroscopic Techniques for Nanomaterials	EMP
MST5406	Molecular Spectroscopy	EMP
MST5302	Minor project	EMP
MST5304	Renewable Energy Technology	EMP
MST5306	Structural Analysis of Nanomaterials	EMP
MST5202	Nano-Electronics and Devices	EMP
MST5204	Nanocomposites	EMP
MST6401	Nanobiotechnology	EMP
MST6403	Nanosensors and Devices	EMP
MST6405	Microelectromechanical Systems (MEMS)	EMP
MST6301	Nanolithography and Device Fabrication	EMP
MST6303	Plasma Technology	EMP
MST6305	Nanotechnology for Medical Diagnostic and Therapy	EMP
MST6201	Spintronics	EMP
MST6203	Biophotonics	EMP
Power System		
Semester - I		
Group A		
PSY501	Advanced Power System Analysis	EMP
PSY503	Advanced Power Electronics	EMP
Group B		
PSY5401/5403/..... ...	Elective 1	EMP
PSY5301/5303/..... ...	Elective 2	EMP
PSY5201/5203/..... /UEC5201/5203/..... ...	Elective 3/ University Elective I	EMP
Semester - II		
Group C		
PSY502	Advanced Power System Protection	EMP
PSY504	Power System Operation and Control	EMP
Group D		
PSY5402/5404/..... ...	Elective 4	EMP
PSY5302/5304/..... ...	Elective 5	EMP
PSY5202/5204/... UEC5202/5204/.....	Elective 6/ University Elective II	EMP
Semester - III		
Group E		
Track 1		
PSY651	Research Project	SKD

Track 2		
PSY601	Major Project I	EMP
PSY6401/6403/..... ...	Elective 7	EMP
PSY6301/6303/..... ...	Elective 8	EMP
PSY6201/6203/..... ...	Elective 9	EMP
Semester - IV		
Group F		
Track 1		
PSY652	Research Project	SKD
Track 2		
PSY602	Major Project II	EMP
List of Electives		
PSY5401	Power System Dynamics and Stability	EMP
PSY5403	Advanced Control Systems	EMP
PSY5405	Modelling of Electrical Machines	EMP
PSY5407	Soft Computing Techniques	EMP
PSY5301	Power System Instrumentation	EMP
PSY5303	Flexible AC Transmission Systems	EMP
PSY5305	Optimization Techniques for Power Systems	EMP
PSY5307	Applied Mathematics	EMP
PSY5201	SEMINAR	EMP
PSY5203	Nuclear Energy and Power	EMP
PSY5205	Forecasting Techniques in Power Systems	EMP
PSY5207	Switched Mode Power Supplies	EMP
PSY5402	Renewable Energy Systems	EMP
PSY5404	High Voltage Engineering	EMP
PSY5406	Power Quality	EMP
PSY5408	Advanced Digital Signal Processing	EMP
PSY5410	High Voltage DC Transmission	EMP
PSY5302	Minor Project	EMP
PSY5304	Intelligent Control Techniques	EMP
PSY5306	Analog Filter Design	EMP
PSY5308	Dynamics of Synchronous Machines	EMP
PSY5310	Smart Grid	EMP
PSY5202	Restructured Power Systems	EMP
PSY5204	Power System Planning	EMP
PSY5206	Machine learning	SKD
PSY5208	PMU and Advanced Metering	EMP
PSY5210	EHV AC Power Transmission	EMP
PSY6401	SCADA & Energy Management	EMP
PSY6403	Computer Aided Power System Analysis	EMP
PSY6405	Microcontroller & Embedded Systems	SKD
PSY6407	Advanced Electric Drives	EMP
PSY6301	Power System Reliability	EMP
PSY 6303	Transients in Power Systems	EMP
PSY6305	Advanced Distribution Systems	EMP
PSY6307	Grid and Sub-Station Planning and Technologies	EMP

PSY6309	Modern Electric Traction System	EMP
PSY6201	Energy Auditing and Conservation	EMP
PSY6203	Electricity Market and Regulations	EMP
PSY6205	Digital Communication	EMP
PSY6207	Energy, Ecology and Environment	EMP
PSY6209	Artificial Intelligence	SKD
Power Electronics & Systems		
Semester - I		
Group A		
PES501	Modelling of Electrical Systems	EMP
PES503	Power Electronics Converters	EMP
Group B		
PES5401/5403/	Elective 1	EMP
PES5301/5303/	Elective 2	EMP
PES5201/5203/..... /UEC5201/5203/.....	Elective 3/ University Elective I	EMP
Semester - II		
Group C		
PES502	Advanced Power Semiconductor Devices and Magnetics	EMP
PES504	Controller Design for Power Electronic Converters	EMP
Group D		
PES5402/5404/	Elective 4	EMP
PES5302/5304/ 5312	Elective 5	EMP
PES5202/5204/ UEC5202/5204/	Elective 6/ University Elective II	EMP
Semester - III		
Group E		
Track 1		
PES651	Research Project	SKD
Track 2		
PES601	Major Project I	EMP
PES6401/6403/ 6409	Elective 7	EMP
PES6301/6303/	Elective 8	EMP
PES6201/6203/	Elective 9	EMP
Semester - IV		
Group F		
Track 1		
PES652	Research Project	SKD
Track 2		
PES602	Major Project II	EMP
List of Electives		
PES5401	Power Quality	EMP
PES5403	Electrical Drives and Systems	EMP
PES5405	Switch Mode Power Converters	EMP
PES5407	Grid-Connected Power Converter and Systems	EMP
PES5301	Multipulse and Multilevel Converters	EMP
PES5303	Special Electromechanical System	EMP

PES5305	Advanced Digital Signal Processing	EMP
PES5307	Power Electronics for Photovoltaic and Wind Energy Systems	EMP
PES5201	Seminar	EMP
PES5203	Renewable Energy Systems	EMP
PES5205	AC and DC Microgrids	EMP
PES5207	Reliability Analysis of Power Electronic Converters	EMP
PES5402	Flexible AC transmission and Distribution	EMP
PES5404	Mechatronics and Vehicular Power Electronics	EMP
PES5406	Advanced Topics on Power Electronics Converter	EMP
PES5408	Distributed Generation Systems and System Design	EMP
PES5302	Minor Project	EMP
PES5304	High/Medium Voltage DC Transmission	EMP
PES5306	Electric Traction	EMP
PES5308	Energy Storage Systems	EMP
PES5310	Pulsed Power Electronics and Nuclear Energy	EMP
PES5312	Pulse Width Modulation for Power Converters	EMP
PES5202	Standards for Microgrid Application and Control	EMP
PES5204	Energy Management System	EMP
PES5206	Machine learning*	SKD
PES5208	PMU and Advanced Metering*	EMP
PES5210	Electric Vehicle and E-mobility	SKD
PES6401	Smart Grid and Distribution Automation	SKD
PES6403	Non-Linear Control of Power Electronic Converter	EMP
PES6405	Energy Efficiency Auditing and Loss Reduction	EMP
PES6407	Heat Sink, Thermoelectrics and Thermal Design	EMP
PES6409	Resonant Power Converters	EMP
PES6301	SCADA and Energy Management Systems	EMP
PES6303	Energy & Environmental Economics and Energy Policy	EMP
PES6305	Optimization Technique in Electrical system Design	EMP
PES6307	Power Line Communication and Control Applications	EMP
PES6201	Condition Monitoring, System Modelling & Forecasting	EMP
PES6203	Electricity Market and Regulations*	EMP
PES6205	Digital Communication*	EMP
PES6207	Industrial Safety	ENT
PES6209	Artificial Intelligence*	SKD
Software Engineering		
Semester - I		
Group A		
SWE501	Software Requirement Engineering	EMP
SWE503	Object Oriented Software Engineering	SKD
Group B		
SWE5401/5403/.....	Elective 1	EMP
SWE5301/5303/.....	Elective 2	EMP
SWE5201/5203/...../U EC5201/5203/.....	Elective 3	EMP
Semester - II		
Group C		
SWE502	Software Testing	EMP
SWE504	Empirical software Engineering	EMP
Group D		

SWE5402/5404/.....	Elective 4	EMP
SWE5302/5304/.....	Elective 5	EMP
SWE5202/5204/...../U EC5202/5204/.....	Elective 6	EMP
Semester - III		
Group E		
Track 1		
SWE651	Research Project	SKD
Track 2		
SWE6401/6403/....	Elective 7	EMP
SWE6301/6303/.....	Elective 8	EMP
SWE6201/6203/.....	Elective 9	EMP
Semester - IV		
Group F		
Track 1		
SWE652	Research Project	SKD
Track 2		
SWE602	Major Project II	EMP
List of Electives		
SWE5401	Advanced Database Management Systems	SKD
SWE5403	Programming Languages	EMP
SWE5407	Advanced Operating Systems	EMP
SWE5409	Data Warehousing Data Mining	EMP
SWE5301	Project Work	EMP
SWE5303	Artificial Intelligence	SKD
SWE5305	Information Retrieval	EMP
SWE5307	Fuzzy Logic and Neural Networks	EMP
SWE5309	Software Project Management	EMP
SWE5201	SEMINAR	EMP
SWE5203	Probability and Statistics	EMP
SWE5402	Software Design Patterns	EMP
SWE5404	Soft Computing	EMP
SWE5406	Machine Learning	SKD
SWE5408	Big Data Analytics	SKD
SWE5410	Wireless and Mobile Computing	EMP
SWE5302	NMINOR PROJECT	EMP
SWE5304	Optimization Techniques	EMP
SWE5306	Pattern Recognition	EMP
SWE5308	Distruted Systems	EMP
SWE5310	Natural Language Processing	EMP
SWE5202	Research Methodology	EMP
SWE5204	Predictive Modelling	EMP
SWE5206	Operation Research	EMP
SWE6401	Agile Methods	EMP
SWE6403	Software Reliability	EMP
SWE6405	Cluster and Grid Computing	EMP
SWE6407	Software Quality & Metrics	EMP
SWE6409	Swarm and Evolutionary Computing	EMP
SWE6201	Data Security & Privacy	EMP
SWE6203	Bio Informatics	EMP

SWE6205	Statistical Tools	EMP
Data Science		
Semester - I		
Group A		
DSC501	Mathematical Foundations of Computer Science	EMP
DSC503	Data Management and Ethics	EMP
Group B		
DSC5401/5403/.....	Elective 1	EMP
DSC5301/5303/.....	Elective 2	EMP
DSC5201/5203/.....		
UEC5201/5203/.....	Elective 3	EMP
Semester - II		
Group C		
DSC502	Data Preparation & Analysis	SKD
DSC504	Machine Learning	SKD
Group D		
DSC5402/5404/.....	Elective 4	EMP
DSC5302/5304/.....	Elective 5	EMP
DSC5202/5204/..... / UEC5202/5204/.....	Elective 6	EMP
Semester - III		
Group E		
Track 1		
DSC651	Research Project	SKD
Track 2		
DSC601	Major Project I	EMP
DSC6401/6403/.....	Elective 7	EMP
DSC6301/6303/.....	Elective 8	EMP
DSC6201/6203/.....	Elective 9	EMP
Semester - IV		
Group F		
Track 1		
DSC652	Research Project	SKD
Track 2		
DSC602	Major Project II	EMP
List of Electives		
DSC5401	Programming Languages	EMP
DSC5405	Advanced Database Management System	EMP
DSC5407	Advanced Operating System	EMP
DSC5409	Advanced Data Structures	EMP
DSC5405	Data Warehousing Data Mining	EMP
DSC5411	Software Project Management	EMP
DSC5301	Project Work	EMP

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DSC5303	Artificial Intelligence	EMP
DSC5305	Information Retrieval	EMP
DSC5307	Artificial Neural Networks	SKD
DSC5309	Business Analytics	ENT
DSC5201	SEMINAR	EMP
DSC5203	Research Methodology	EMP
DSC5205	Data Visualization	EMP
DSC5207	Stress Management	EMP
DSC5402	Web Analytics and Development	EMP
DSC5404	Pattern Recognition	EMP
DSC5406	Deep Learning	SKD
DSC5408	Big Data Analytics	EMP
DSC5410	Empirical Software Engineering	EMP
DSC5302	MINOR PROJECT	EMP
DSC5304	Optimization Techniques	EMP
DSC5306	Data Security & Privacy	EMP
DSC5308	Distributed Systems	EMP
DSC5310	Natural Language Processing	EMP
DSC5202	Predictive Modelling	EMP
DSC5204	Operational Research	EMP
DSC5206	Research Paper Writing	EMP
DSC6401	Advanced Machine Learning	EMP
DSC6403	Cloud Computing	EMP
DSC6405	Internet of Things	SKD
DSC6407	Multimedia Applications	EMP
DSC6409	GPU Computing	EMP
DSC6301	Intellectual Property Rights	ENT
DSC6303	Recommender Systems	EMP
DSC6305	Security Analytics	EMP
DSC6307	Software Quality & Metrics	EMP
DSC6309	Swarm and Evolutionary Computing	EMP
DSC6201	Soft Computing	EMP
DSC6203	Search Based Software Engineering	EMP
DSC6205	Statistical Tools	EMP
MASTER OF ECONOMICS		
MA (ECONOMICS)		
Semester-I		
MAE101	Microeconomics I	EMP
MAE103	Macroeconomics I	EMP
MAE105	Mathematical Methods for Economics I	EMP
MAE107	Introduction to Statistics and	EMP
	Econometrics	EMP
MAE109	Introduction to R	EMP
MAE111	Workshop (Compulsory)	EMP
	Optional Audit Course from MBA/MBA (BA)	EMP
Semester-II		
MAE102	Microeconomics II	EMP
MAE104	Macroeconomics II	EMP
MAE106	Mathematical Methods for Economics II	EMP
MAE108	Econometric Methods	EMP

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MAE110	Econometric Analysis with R	EMP
MAE112	Workshop	EMP
	(Compulsory)	EMP
	Optional Audit Course from MBA/MBA (BA)	EMP
Semester-III		
MAE201	Indian Economy	EMP
MAE203	Development Economics	EMP
MAE205	Dissertation	EMP
MAE207	Workshop (Compulsory)	EMP
MAE2xx	DSE I	EMP
MAE2xx	DSE II	EMP
	Any course MBA/MBA /MOOCs	EMP
	Optional Audit Course from MBA/MBA (BA)	EMP
Semester-IV		
MAE202	Contemporary Issues in Development Economics	EMP
MAE204	Dissertation	EMP
MAE206	Workshop (Compulsory)	EMP
MAE2xx	DSE III	EMP
MAE2xx	DSE IV	EMP
	Any course from MBA/MBA (BA)/MOOCs	EMP
	Any course from MBA /MBA (BA)/MOOCs	EMP
	Optional Audit Course from MBA/MBA (BA)	EMP
List of Discipline Specific Elective for Semester III		
1. Microeconomics		
MAE209	Game Theory 1	EMP
MAE211	Industrial Organisation 1	ENT
2. Macroeconomics		
MAE213	Dynamic Macroeconomics	EMP
MAE215	Macroeconomics of Development	EMP
3. History of Economic Thought		
MAE217	Evolution of Economic Ideas	EMP
MAE219	Political Economy	EMP
4. Econometric Methods and Applications		
MAE221	Microeconometrics	EMP
MAE223	Time Series Analysis	EMP
5. New Streams in Applied Economics		
MAE225	Environmental Economics	EMP
MAE227	Health Economics	EMP
MAE229	Behavioural Economics	EMP
MAE231	Experimental Economics	EMP
MAE233	Corporate Finance	ENT
MAE235	Economics of Education	EMP
List of Discipline Specific Elective for Semester IV		
1. Microeconomics		

MAE208	Game Theory 2	EMP
MAE210	Industrial Organisation 2	ENT
2. Macroeconomics		
MAE212	Monetary Theory and Policy	EMP
MAE214	International Macroeconomics	EMP
3. Econometric Methods and Applications		
MAE216	Spatial Econometrics	EMP
MAE218	Panel Data Econometrics	EMP
MAE220	Advanced forecasting methods	EMP
4. New Streams in Applied Economics		
MAE222	Energy Economics	EMP
MAE224	Labour Economics	EMP
MAE226	Financial Economics	EMP
MAE228	Law and Economics	EMP
MAE230	Remote Sensing and GIS	EMP
MAE232	International Trade	EMP
MAE234	Public Economics	EMP
MBA(FBE)		
Semester - I		
MB 101	Management Process & Organizational Behavior	EMP
MB 102	Marketing Management	EMP
MB 103	Decision Sciences	EMP
MB 104	Financial Accounting & Cost Analysis	EMP
MB 105	Managerial Economics	EMP
MB 106	Business Communication	EMP
MB 107	Entrepreneurship Development	ENT
MB 108	Changing Paradigm in Leadership	EMP
MB 109	Entrepreneurship Development Lab (NUES)*	ENT
Semester - II		
MB 201	Human Resource Management	EMP
MB 202	Management of Technology, Innovation and Change	EMP
MB 203	Financial Management	EMP
MB 204	Project Management	EMP
MB 205	Business Research Methods	ENT
MB 206	Business Environment	EMP
MB 207	Operations and Supply Chain Management	ENT
MB 208	Managerial Skills Development (NUES) *	ENT
Semester - III		
MB 301	Summer Internship	EMP
MB 302	Management of International Business	EMP
MB 303	Strategic Management	EMP
MB 304	Organization Development	EMP
MB 305	Business Plan Preparation & Seminar on Business Plan (NUES)*	ENT
MB 306	Paper – I (Specialization)	EMP
MB 307	Paper– II (Specialization)	EMP
MB 308	Paper – III (Specialization)	EMP
MB 309	Paper – IV (Specialization)	EMP
Semester - IV		
MB 401	Project Dissertation	EMP

MB 402	Industrial Relations and Labour Legislation	ENT
MB 403	Corporate Governance	ENT
MB 404	Government Policies, Institutions and Economic Zones for Entrepreneurship	ENT
MB 405	Paper – V (Specialization)	EMP
	Paper – VI (Specialization)	EMP
	Paper – VII (Specialization)	EMP
M.Des.		
Semester- I		
DD551	Sketching and Redering Skills	EMP
DD553	Model Making	EMP
DD555	Computer Aided 3D Modelling	EMP
DD557	Physical and Cognitive Dynamics in Vehicle Design	EMP
DD501	Design Project 1	EMP
Semester- II		
DD552	Form Exploration	EMP
DD554	Digital Sculpting Tools and Techniques	EMP
DD556	Advanced Rendering Techniques	EMP
DD558	Clay Modelling	EMP
DD502	Design Project 2	EMP
Semester- III		
DD651	Organizational model for entrepreneurship	EMP
DD653	Service and Mobility Design	EMP
DD655	Elective from other Discipline	EMP
DD603	Design Project 3	EMP
DD605	Internship	EMP
DD607	Design Research Seminar	EMP
Semester- IV		
DD602	Sponsored Self Sponsored Project	EMP
M.TECH (IEM)		
Semester - 1		
IEM501	Data Analytics	SKD
IEM503	Production & Operations Management	EMP
IEM54XX:	ELECTIVE TYPE 1	EMP
IEM54XX:	ELECTIVE TYPE 2	EMP
IEM54XX:	ELECTIVE TYPE 3	EMP
Semester - II		
IEM 502	Operations Research	ENT
IEM504	Supply Chain Management	ENT
IEM54XX:	ELECTIVE TYPE 4	EMP
IEM54XX:	ELECTIVE TYPE 5	EMP
IEM54XX:	ELECTIVE TYPE 6	EMP
Semester - III		
IEM651	Research Project	SKD
IEM 601	Project -1	EMP
IEM64XX	ELECTIVE TYPE 7	EMP
IEM63XX	ELECTIVE TYPE 8	EMP
IEM62XX	ELECTIVE TYPE 9	EMP
Semester - IV		
IEM652	Research Project	SKD

IEM602	Project -2	EMP
List of Electives		
IEM5401	AI/ML in Industrial Engineering and Management	SKD
IEM5403	Modelling & Simulation	EMP
IEM5405	Decision Science Modelling	EMP
IEM5407	Product Design & Development	EMP
IEM5301	Enterprise Resource Planning	EMP
IEM5303	Financial Management	ENT
IEM5305	Total Quality Management	EMP
IEM5307	Innovation and Entrepreneurship	ENT
IEM5201	Live Industry Project	EMP
IEM5203	Management Information System	EMP
IEM5205	Principal of Management	EMP
IEM5207	Maintenance Management	EMP
IEM5209	Contemporary Issues in Industrial Engineering and Management	EMP
IEM5402	Reliability Engineering	EMP
IEM5404	Industry 4.0 & Smart Manufacturing	EMP
IEM5406	Physical and Cognitive Economics	EMP
IEM5408	Supply Chain Analytics	EMP
IEM5302	Service Operations Management	EMP
IEM5304	International Logistics & Warehousing Management	EMP
IEM5306	Infrastructure Management	EMP
IEM5308	Industrial Economics	EMP
IEM5202	Value Engineering	EMP
IEM5204	Retail Supply Chain	ENT
IEM5206	Energy Management System	EMP
IEM5208	Industrial Waste Management	EMP
IEM5210	Contemporary Issues in Industrial Engineering and Management	EMP
IEM6401	Six -Sigma and Lean Manufacturing	EMP
IEM6403	Method Engineering and work Design	EMP
IEM6405	Advanced Operations Research	EMP
IEM6407	Computer Integrated Manufacturing & Robotics	SKD
IEM6301	Human Resource Development & Industrial Psychology	EMP
IEM6303	Knowledge Management	EMP
IEM6305	Global Business Management	EMP
IEM6307	Reverse Logistics	EMP
IEM6201	e-Commerce	ENT
IEM6203	Safety and Disaster Management	EMP
IEM6205	Facility Planning & Design	EMP
IEM6207	Humanitarian Supply Chain	EMP
IEM6209	Contemporary Issues in Industrial Engineering and Management	EMP
M.TECH (ESM)		
Semester - 1		
ESM501	Energy Systems	EMP
ESM503	Energy Management and Auditing	EMP
ESM54XX:	ELECTIVE TYPE 1	EMP
ESM54XX:	ELECTIVE TYPE 2	EMP
ESM54XX:	ELECTIVE TYPE 3	EMP
Semester - II		
ESM 502	Energy Storage Technology	EMP

ESM504	Energy Analysis	EMP
ESM54XX:	ELECTIVE TYPE 4	EMP
ESM54XX:	ELECTIVE TYPE 5	EMP
ESM54XX:	ELECTIVE TYPE 6	EMP
Semester - III		
ESM651-I	Research Project	SKD
ESM 601	Project -1	EMP
ESM64XX	ELECTIVE TYPE 7	EMP
ESM63XX	ELECTIVE TYPE 8	EMP
ESM62XX	ELECTIVE TYPE 9	EMP
Semester - IV		
ESM652	Research Project	SKD
ESM602	Project -2	EMP
Electives		
ESM5401	Foundations in Thermal Engineering	EMP
ESM5403	Foundations in Eletrical and Electronics Engineering	EMP
ESM5301	Measurement and Control Engineering	EMP
ESM5303	Economics and Planning of Energy System	EMP
ESM5305	Nuclear Energy Technology	EMP
ESM5201	Energy Analysis	EMP
ESM5203	Materials and Devices for Energy Applictions	EMP
ESM5205	Fundamentals of Sustainable Development	EMP
ESM5402	Solar Energy Engineering and Applications	EMP
ESM5404	Alternative Fuels for Transportation	EMP
ESM5406	Hydrogen Energy and Fuel Cells	EMP
ESM5302	Waste of Energy Conversion Technology	EMP
ESM5304	Wind and Hydro Energy	EMP
ESM5306	Energy Efficient Buildings	EMP
ESM5202	Cogeneration and Energy Efficiency	EMP
ESM5204	Integrated Energy System	EMP
ESM5206	Energy, Climate Changes and Carbon Trade	EMP
ESM6401	Numericals Simulation and Modelling of Energy System	EMP
ESM6403	Modern Refrigeration and Air Conditioner Systems	EMP
ESM6405	Solar Thermal Power Generation	EMP
ESM6301	Fuel Technology	EMP
ESM6303	Life Cycle and Reliability of Energy Systems	EMP
ESM6305	Direct Energy Conversion Technology	EMP
ESM6201	Zero Emission Vehicles	EMP
ESM6203	Electricity Regulations and Reforms in India	EMP
ESM6205	Carbon Capture and Storage Systems	EMP
Computer Aided Analysis and Design		
Semester I		
Group A		
CAD-501	System Modelling, Simulation and Analysis	EMP
CAD-503	Computational Mechanics of Materials	EMP
Group B		
CAD5401/5403/5405	Elective Type 1	EMP
CAD5301/5303/5305	Elective Type 2	EMP
CAD5201/5203/5205	Elective Type 3	EMP
UEC5201/5203/...		

Semester II		
Group C		
CAD 502	Finite Element Method	EMP
CAD 504	Computer Aided Design	EMP
Group D		
CAD5402/5404/5406	Elective Type 4	EMP
CAD5302/5304/5306	Elective Type 5	EMP
CAD5202/5204/5206 UEC5202/5204/...	Elective Type 6	EMP
Semester III		
Group E		
Track 1		
CAD 651	Research Project	SKD
Track 2		
CAD6401/6403/6405	Elective Type 7	EMP
CAD6301/6303/6305	Elective Type 8	EMP
CAD6201/6203/6205	Elective Type 9	EMP
CAD601	Project - 1	EMP
Semester IV		
Group F		
Track 1		
CAD 652	Research Project	SKD
Track 2		
CAD 602	Project-2	EMP
List of Electives		
CAD5401	Advanced Vibration and Control	EMP
CAD5403	Fracture Mechanics	EMP
CAD5405	Theory of elasticity and plasticity	EMP
CAD5301	Optimization Techniques in Design	EMP
CAD 5303	Numerical Methods in Engineering	EMP
CAD5305	Reliability Engineering	EMP
CAD5305	Seminar	EMP
CAD5201	Smart Materials	EMP
CAD5203	Human Factors in Engineering and Biomechanical Design	EMP
CAD5205	Design for Manufacture And CIM	EMP
CAD5402	Engineering Tribology and Bearing Design	EMP
CAD5404	Rapid Prototyping and Tooling	EMP
CAD5406	Innovative Engineering Design	EMP
CAD5308	Minor Project	EMP
CAD5302	Rotor Dynamics	EMP
CAD5304	Dynamic Behaviour of Materials	EMP
CAD5306	Product Design and Development	EMP
CAD5202	Robotics and control	SKD
CAD5204	Product Life Cycle Management	EMP
CAD5206	Noise and Acoustics Design	EMP
CAD6401	Computational Methods for Fluid Dynamics	EMP
CAD6403	Machine Tool Design	EMP
CAD6405	Pressure Vessels and Piping Design	EMP
CAD6301	Machine Vision and Artificial Intelligence	EMP
CAD6303	Mechatronic System Design	EMP

CAD6305	Instrumentation and Control Systems	EMP
CAD6201	Composite Material Technology	EMP
CAD6203	Surface Engineering	EMP
CAD6205	Automotive System Design	EMP
CAD6207	Data Analytics	SKD
Thermal Engineering		
Semester - I		
Group A		
THE501	Thermodynamics and Gas Dynamics	
THE503	Heat Transfer & Fluid Mechanics	
Group B		
THE5401/5403/.....	Elective 1	EMP
THE5301/5303/.....	Elective 2	EMP
THE5201/5203/..... / UEC5201/5203/.....	Elective 3/ University Elective I	EMP
Semester - II		
Group C		
THE502	Energy Systems	EMP
THE504	Turbomachines	EMP
Group D		
THE5402/5404/.....	Elective 4	EMP
THE5302/5304/.....	Elective 5	EMP
THE5202/5204/..... / UEC5202/5204/.....	Elective 6/ University Elective II	EMP
Semester - III		
Group E		
Track 1		
THE651	Research Project	SKD
Track 2		
THE601	Major Project I	EMP
THE6401/6403/.....	Elective 7	EMP
THE6301/6303/.....	Elective 8	EMP
THE6201/6203/.....	Elective 9	EMP
Semester - IV		
Group E		
Track 1		
THE652	Research Project	SKD
Track 2		
THE602	Major Project II	EMP
List of Electives		
THE5401	Advanced Refrigeration Systems	EMP
THE5403	Advanced I C Engines	EMP
THE5405	Power Plant Engg	EMP
THE5301	Computational Methods in Thermal & Fluid Engineering	EMP
THE5303	Optimization Techniques	EMP
THE5305	Finite Element Methods	EMP

THE5201	Seminar	EMP
THE5203	Renewable & Non -Conventional Energy Sources	EMP
THE5205	Measurement & Control Techniques	EMP
THE5402	Advanced Heat Transfer	EMP
THE5404	Advanced Fluid Dynamics	EMP
THE5406	Advanced Air Conditioning Systems	EMP
THE5302	Minor Project	EMP
THE5304	Solar Engineering Thermal Processes	EMP
THE5306	Thermal Energy Conservation	EMP
THE5202	Steam and Gas Turbines	EMP
THE5204	Combustion & Emissions	EMP
THE5206	Advanced Cryogenic systems	EMP
THE6401	Advanced Power Generation Systems	EMP
THE6403	Micro / Nano scale Heat Transfer	EMP
THE6405	Combustion Modeling	EMP
THE6301	Advanced Heating Ventilation & Air Conditioning	EMP
THE6303	Two Phase Flow Heat Transfer	EMP
THE6305	Exergy Analysis of Thermal Systems	EMP
THE6201	Advanced Energy Systems	EMP
THE6203	Dynamics and Control of Mechanical Systems	EMP
THE6205	Alternative Fuels	EMP
Production Engineering		
Semester - I		
Group A		
PRD501	Theory of Metal Cutting	EMP
PRD503	Welding Processes & Metallurgy	EMP
Group B		
PRD5401/5403/.....	Elective 1	EMP
PRD5301/5303/.....	Elective 2	EMP
PRD5201/5203/..... / UEC5201/5203/.....	Elective 3/University Elective I	EMP
Semester - II		
Group C		
PRD502	Plasticity & Metal Forming	EMP
PRD504	Casting Technology	EMP
Group D		
PRD5402/5404/.....	Elective 6/ University Elective II	EMP
PRD5302/5304/.....	Elective 5	EMP
PRD5202/5204/..... / UEC5202/5204/.....	Elective 6	EMP
Semester - III		
Group E		
Track 1		
PRD651	Research Project	SKD
Track 2		
PRD601	Major Project I	EMP
PRD6401/6403/.....	Elective 7	EMP

PRD6301/6303/.....	Elective 8	EMP
PRD6201/6203/...	Elective 9	EMP
Semester - IV		
Group F		
Track 1		
PRD652	Research Project	SKD
Track 2		
PRD602	Major Project II	EMP
List of Electives		
PRD5401	Computer Aided Design / Computer Aided Manufacturing	EMP
PRD5403	Computer Integrated Manufacturing Systems	EMP
PRD5405	Mechatronics	EMP
PRD5301	Principles of Machine Tools	EMP
PRD5303	Automation in Manufacturing	EMP
PRD5305	Process Engineering	EMP
PRD5201	Seminar	EMP
PRD5203	Operation Research	EMP
PRD5205	Optimization Techniques	EMP
PRD5402	Metrology	EMP
PRD5404	Methods Engineering and Ergonomics	EMP
PRD5406	Composite Materials and Processin	EMP
PRD5302	Minor Project	EMP
PRD5304	Maintenance Management	EMP
PRD5306	Managerial Concept & Organizational Behaviour	EMP
PRD5202	Industrial Quality Control	EMP
PRD5204	Supply Chain Management	ENT
PRD5206	Production & Operation Management	EMP
PRD6401	Advanced Machining Processes	EMP
PRD6403	Precision Engineering	EMP
PRD 640 5	Surface Engineering	EMP
PRD6301	Robotics	SKD
PRD63 0 3	Design for Manufacturing and Assembly	EMP
PRD63 0 5	Reliability Engineering	EMP
PRD6201	IT in manufacturing Enterprise	EMP
PRD62 0 3	Materials Management	EMP
PRD62 05	Project Management	EMP

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