



GALGOTIAS UNIVERSITY
GREATER NOIDA, UTTAR PRADESH
B.TECH, EEE MODULE WISE COURSE STRUCTURE
PROGRAM CORE

S.No.	Subjects	Contents
1	Semiconductor Devices and Circuits (ECE 101)	Module1:PN Diodes and Rectifiers Module2:Bipolar Junction Transistors Module3:Field Effect Transistors and special diodes Module4:Amplifiers Module5:Power Supply
2	Digital Design (ECE 201)	Module1:Number System and Boolean Algebra Module2:Combinational Circuits Module3:Synchronous Sequential Circuits Module4:Asynchronous Sequential Circuits Module5:PLD, Memories and Logic Families
3	Electromagnetic Field Theory (ECE 203)	Module1:Coordinate systems and transformation Module2:Electrostatics Module3:Magnetostatics Module4:Waves and applications Module5:Transmission lines
4	TRANSFORM TECHNIQUES FOR SIGNALS (ECE 205)	Module1:Introduction to Signals Module2:Laplace-Transform (LT) and Z-transform Module3:Fourier Transforms (FT) Module4:Introduction to Systems Module5:Time and frequency domain analysis of systems
5	ANALOG INTEGRATED CIRCUITS (ECE 301)	Module1:Frequency response & stability of an Op-Amp Module2:Op-Amp Circuits: Applications Module3:Active filters & Converters Module4:Non Linear Circuits & Regulators Module5:Non Linear Amplifiers & Phase-Locked Loops
6	Microprocessors and Microcontrollers (ECE 302)	Module1:Introduction to Microprocessors Module2:8086 Microprocessor Module3:I/O and Bus Interfacing Module4:8051 Microcontroller Module5:PIC Microcontroller
7	DIGITAL SIGNAL PROCESSING (ECE 306)	Module1:Discrete Time Signals and Systems Module2:Sampling of Continuous Time Signals Module3:Transform Analysis of LTI Systems Module4:Filter Design Techniques Module5:Fourier Analysis of Signals Using DFT
8	ANALOG AND DIGITAL COMMUNICATION (ECE 313)	Module1:Basics of Communication Theory Module2:Amplitude Modulation Module3:Angle Modulation Module4:Baseband Modulation Module5:Digital Modulation Strategies
9	ELECTRICAL MEASUREMENTS AND INSTRUMENTATION (EEE 201)	Module1:Philosophy Of Measurement & Analog Module2:Measurement of Electrical Quantities Module3:Instrument Transformer Module4:AC Potentiometer & Magnetic Measurement Module5:Digital Measurement of Electrical Quantities & Cathode Ray Oscilloscope

10	ELECTRICAL ENGINEERING MATERIALS (EEE 202)	Module1:Crystal Structure of Materials Module2:Conductivity of Metals Module3:Mechanism of Conduction in semiconductor materials Module4:Magnetic Properties of Material Module5:Dielectric Material S And Insulation
11	ELECTRICAL MACHINE-I (EEE 203)	Module1:Principles of Electro-mechanical Energy Conversion Module2:D.C. generators Module3:D.C. motors Module4:Single Phase Transformer Module5:Three Phase Transformers
12	NETWORK ANALYSIS AND SYNTHESIS (EEE204)	Module1:Graph Theory Module2:Network Theorems (Applications to ac networks) Module3:Network Functions Module4:Two Port Networks Module5:Network Synthesis & Filters
13	ELEMENTS OF POWER SYSTEM (EEE 205)	Module1:Power System Components Module2:Over Head Transmission Lines Module3:Corona, Interference and Insulators Module4:Mechanical Design of transmission line and Cables Module5:Neutral grounding
14	ELECTRICAL MACHINE-II (EEE 301)	Module1:Synchronous Generators Module2:Synchronous Motors Module3:Three phase Induction Machines-I Module4:Three phase Induction Machines-II Module5:Single phase Induction Motor
15	CONTROL SYSTEM (EEE 302)	Module1:Introduction to Control System Module2:Time Response analysis Module3:Control System Components Module4:Frequency response Analysis Module5:Introduction to Design of control systems
16	POWER ELECTRONICS (EEE 303)	Module1:Power semiconductor Devices Module2:DC-DC Converters Module3:Phase Controlled Converters Module4:AC Voltage Controllers Module5:Inverters
17	POWER SYSTEM ANALYSIS (EEE 304)	Module1:Representation of Power System Components Module2:Unsymmetrical faults Module3:Load Flow Analysis Module4:Power System Stability Module5:Traveling Waves
18	POWER SYSTEM PROTECTION & SWITCHGEAR (EEE 401)	Module1:Introduction to Protection System Module2:Relay Application and Characteristics Module3:Protection of Transmission Line Module4:Circuit Breaking Module5:Apparatus Protection
19	ELECTRIC DRIVES (EEE 402)	Module1:Fundamentals of Electric Drive Module2:Dynamics of Electric Drive Module3:Electric Braking Module4:Power Electronic Control of DC Drives Module5:Power Electronic Control of AC Drives
20	Engineering Mathematics –II (MAT 102)	Module1:Ordinary Differential Equations and Applications Module2:Laplace Transforms and its Applications Module3:Fourier series Module4:Partial Differential Equations and Its Applications

21	Engineering Mathematics –III (MAT 201)	Module1:Functions of Complex Variable Module2:Complex Integration Module3:Fourier transform and application Module4:Z- transform and application Module5:Probability Distributions
22	Applied Numerical Methods (MAT 202)	Module1:Approximation and Errors in computing Module2:Roots of Non Linear Equations and solution of system of Linear Equations Module3:Difference Operators & Interpolation Module4:Numerical Differentiation and Integration Module5:Numerical Solution of Ordinary and Partial Differential Equations
23	PRINCIPLES OF MANAGEMENT (MGT 201)	Module1:Historical Development Module2:Planning Module3:Formal and informal organization Module4:Creativity and Innovation, Leadership and Effective Communication Module5:System and process of Controlling
24	INDUSTRIAL ECONOMICS AND MANAGEMENT (MGT 301)	Module1:The Scope and Method of Managerial economics Module2:Demand and Supply Analysis Module3:Production Economics Module4:Market Structure Module5:Introduction to Macroeconomics

PROGRAM ELECTIVES

S.No.	Subjects	Contents
1	DATA BASE CONCEPTS (CSE 414)	Module1:overview of database management system Module2:Relational data Model and Language Module3:Data Base Design & Normalization Module4:Transaction Processing Concept Module5:Concurrency Control Techniques
2	VLSI Technology (ECE 307)	Module1:IC Fabrication technologies Module2:Fabrication of semiconductor devices Module3:CMOS Technology Module4:Subsystem Design Module5:GaAs Technology
3	EMBEDDED SYSTEM DESIGN (ECE 311)	Module1:Introduction to Embedded System Module2:Processor and Memory Organization Module3:Devices and Buses for Devices Network Module4:I / O Programming Schedule Mechanism Module5:Real Time Operating System [RTOS]
4	BIOMEDICAL ENGINEERING (ECE 312)	Module1:Basic physiological system of the body Module2:Bio-potential electrodes Module3:The Nervous System Module4:Patient care monitoring Module5:Biomedical computer applications
5	COMPUTER NETWORKS (ECE 402)	Module1:Data Communication Module2>Error Control and Data Link Protocols Module3:Network and Switching Module4:X.25, Frame Relay, ATM and SONET/ SDH Module5:Networking Devices and TCP / IP Protocol Suite
6	NEURAL NETWORKS AND FUZZY CONTROL (ECE 404)	Module1:Introduction to Artificial Neural Network Module2:Feedforward and Recurrent Neural Networks Module3:Unsupervised Learning and Self Organizing Networks

		Module4:Fuzzy Sets and Fuzzy Relations Module5:Fuzzy Decision Making and Neuro Fuzzy
7	DIGITAL IMAGE PROCESSING (ECE 409)	Module1:Introduction to Image Processing Module2:Signal Processing Module3:Image Restoration Module4:Segmentation Techniques Module5:Shape Analysis
8	NON-CONVENTIONAL ENERGY RESOURCES (EEE 403)	Module1:Introduction to Various non-conventional energy resources Module2:Solar Thermal Energy Module3:Geothermal Energy Module4:Thermo-electrical and thermionic Conversions Module5:Thermal Energy Conversion
9	HIGH VOLTAGE ENGINEERING (EEE 404)	Module1:Break Down In Gases, Liquid Dielectrics and Solid Dielectrics Module2:Generation of High Voltages and Currents Module3:Measurement of High Voltages and Currents Module4:Non-Destructive Testing Module5:High Voltage Testing
10	INDUSTRIAL AUTOMATION & CONTROL LOGIC (EEE 405)	Module1:Process Dynamics Module2:Controller Principles & Process loop Tunning Module3:Control Valves Module4:Special Control Structures Module5:Introduction to Sequence Control, PLCs & Relay Ladder
11	ADVANCED CONTROL SYSTEMS (EEE 406)	Module1:State Space Analysis of Continuous System Module2:Analysis of Discrete System Module3:Stability Analysis Module4:Optimal Control Module5:Adaptive Control
12	UTILIZATION OF ELECTRICAL ENERGY AND TRACTION (EEE 408)	Module1:Electric heating Module2:Electric welding Module3:Illumination Module4:Electric traction – i Module5:Electric traction – ii
13	POWER SYSTEM OPERATION AND CONTROL (EEE 411)	Module1:System load variation: System load characteristics, load curves Module2:Real Power - Frequency Control Module3:Reactive Power – Voltage Control Module4:Unit Commitment And Economic Dispatch Module5:Computer Control Of Power Systems