Jabalpur Engineering College, Jabalpur

(Declared Autonomous by MP Govt., Affiliated to RGPV, Bhopal)
(AICTE Model Curriculum Based Scheme) with Provision for Internship
Bachelor of Technology (B.Tech.) VII Semester (Electrical Engineering)

w.e.f. July 2024

S.No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted					Total Marks	Contact Hours Per Week			Total Credits
				Theory			Practical			L	T	P	
				End. Sem.	Mid Sem. Exam.	Quiz/ Assignment	End Sem.	Lab Work					
1	EE701M	PCC	High Voltage Engineering	70	20	10	30	20	150	3	-	2	4
2	EE702M	PCC	Electrical Drives	70	20	10	30	20	150	3	-	2	4
3	EE703M	PCC	Power System Control	70	20	10	30	20	150	3	-	2	4
4	EE704M	PEC	Professional Elective Course-II	70	20	10	-	-	100	3	1	-	4
5	EE705M	OEC	Open Elective Course-III	70	20	10	-	-	100	3	1	-	4
6	EE706M	MC	Industrial Training Evaluation	-	-	-	60	40	100	-	-	4	2
7	EE707M	DLC	Self-Learning Presentation (SWAYAM/NPTEL/MOOC)	-	-	-	-	-	-	-	-	-	8
			Total	**350**	**100**	**50**	**150**	**100**	**750**	**15**	**2**	**10**	**22**
8	EE708M	MC	NSS/NCC/Swachhata Abhiyan/Rural Outreach	Qualifier									
Additional Course for Honours or Minor Specialization				Permitted to opt for maximum three additional courses in subject code EE707M for the award of Honours (Minor Specialization).									

Note: 01. Departmental BOS will decide list of three/four elective subjects for each PEC and OEC.
02. MOOC/NPTEL subjects shall be taken with permission of HOD/Coordinator
03. Industrial training presentation & viva shall take place in VII Sem. which students have already done in VI Sem.

Professional Elective Course-II		
S.No.	**Subject Code**	**Subject Name**
1	EE704M A	Power System Planning & Reliability
2	EE704M B	Soft Computing Techniques
3	EE704M C	Advance Digital Communication

Open Elective Course-III		
S.No.	**Subject Code**	**Subject Name**
1	EE705M A	Generalized Theory of Electric Machines
2	EE705M B	Digital Control System
3	EE705M C	Advanced Industrial Electronics

PEC: Professional Elective Course (Branch Specific), OEC: Open Elective Course (Interdisciplinary), PCC: Professional Core Course, DLC: Distance Learning Course, MC: Mandatory Course

1 hour lecture (L) = 1 credit	1 hour Tutorial (T) = 1 credit	2 hour Practical (P) = 1 credit

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Subject Code	Subject Name	Maximum Marks Allotted						Hours/ Week			Total Credits
		Theory			Practical		Total Marks	L	T	P	
		End Sem	Mid-Sem Exam	Quiz/ Assignment	End Sem	Lab work					
EE701M	High Voltage Engineering	70	20	10	30	20	150	3	-	2	4

HIGH VOLTAGE ENGINEERING

Module-I:
Breakdown mechanism in gases: ionization, ionization processes, Townsend's mechanism, time lag for breakdown, Streamer theory, Paschen's law, effect of temperature on B.D. Voltage, Desirable properties of a gaseous insulation, SF6 as an insulator, vacuum as a dielectric.
Breakdown of gases in uniform and non-uniform fields: factors affecting time lag for BD, BD in a uniform AC field, BD under impulse voltage, volt time characteristics BD in non-uniform field, degree of non-uniformity, effect of polarity of electrode on BD voltages, corona: corona loss on conductor at DC voltage, corona loss on conductor at AC voltage.

Module-II Breakdown in liquids, solids, composite insulation and applications of insulating materials
Breakdown in liquid and solids : Break down in liquids, classification of liquids, B.D. in pure liquids, B.D. in commercial liquids, different theories of B.D. in liquids Different theories of B.D. in solids, intrinsic B.D. electromechanical B.D. thermal B.D. mechanism of B.D. occurring after prolonged operation, B.D. of composite dielectrics Partial discharge Applications of insulating materials.

Module-III Generation for HV testing
Generation of High Voltage: Impulse voltage, impulse voltage generation, single stage IG circuits- their analysis, multistage IG, constructional details of IG. Generation of High AC voltage: Cascaded transformer, series resonant transformer, tesla coil Generation of high DC voltage- half and full wave rectifier, voltage double circuit.

Module-IV HV Measurements
Measurement of impulse voltage by sphere gap, Measurement of AC, DC high voltage, sphere gap, voltage dividers, Measurement of dielectric constant and loss factor, Partial discharge measurements, impulse analyzer system.

Module -V Over voltage and insulation coordination
Charge formation in clouds, lightning surges, switching surges, protection against over- voltages, surge diverters, surge modifiers

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High voltage testing of power apparatus
Impulse testing of power transformer, testing of cables and some HV apparatus, testing of insulators, bushings, isolators and circuit breakers

Text Books:

1. M.S. naidu and V.Kamaraju, "High Voltage Engineering", Tata Mc Graw Hill, Fifth Edition.
2. D.V. Razevig "High Voltage Engineering", translated by Dr. M.P. Chourasia Khanna Pub, Second Edition.

Refrence Books:

1. E. Kuffel & W.S. Zingal, "High Voltage Engineering", Newres publication, Second Edition.
2. Kuffel & Abdulah, "High Voltage Engineering", First Edition.
3. C.L. Wadhana, "High Voltage Engineering", new age International Publication, Third Edition.

List of Experiments:

1. Various standards for high voltage testing of electrical apparatus
2. IE, IEC Standards
3. High voltage laboratories layout
4. Indoor and outdoor laboratory
5. Testing facilities
6. Safety precautions

Course Code : EE701M
Course Category: PCC
Course Name : High voltage

After completion of this course student will be able to-

CO-1: Understanding of breakdown phenomenon in gaseous dielectric in different field.

CO-2: Understanding of breakdown in liquid and solid dielectrics.

CO-3: Understanding of generation and measurement of high voltages and testing of different equipment.

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Subject Code	Subject Name	Maximum Marks Allotted						Hours/ Week			Total Credits
		Theory			Practical		Total Marks	L	T	P	
		End Sem	Mid-Sem Exam	Quiz/ Assignment	End Sem	Lab work					
EE702M	Electrical Drives	70	20	10	30	20	150	3	-	2	4

ELECTRICAL DRIVES

Module-I:
Basic Concepts of Electric Drives: Elements of drive systems, Requirement of electric drives, Rating & Selection ofdrives, groups and individual drives, Constant power and Constant torque drives.
Motor Mechanism dynamics: Review of Characteristics of AC & DC motors, load characteristic, load-drive speed torque characteristics, quadrant speed torque characteristics. Mechanical Systems Stability of Electric drives, referred moment of inertia and torque of motor load combination, load equalization.

Module-II:
DC Drives: Starting & braking of conventional, Phase controlled and chopper-controlled drives, Transient & Steadystate analysis, Energy recovery systems.

Module-III:
Induction Motor Drives: Conventional method of starting braking and speed control, PWM, (VSI) Voltage sourceInverter and Current Sources (CSI) fed IM drives, cyclo-converter fed drive, Vector control drives.
Slip Controlled IM Drives: Review of Conventional methods & converter controlled-Crammers & Scherbius drives;rotor impedance control.

Module-IV:
Synchronous Motors Drives: VSI and CSI fed; self-controlled-Brush less &. Commutator less dc & ac motor drives

Module-V:
Special Drives: Fundamentals of Switched reluctance motors, Stepper Motors, Permanent Magnet Motor Introductionto vector control; Digital control of drives.
Case Studies Electric traction, steel & cements plants, textile & paper mills, machine tool drive and CNC, electriccars.

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Text Books:

1. Pillai S. K., "A first course on Electrical Drives", Wiley Eastern, Second edition
2. Dubey G. K., "Power Semiconductor Controlled Drives", Prentice-Hall, Englewood Cliffs, First Edition.
3. Dubey G. K., "Fundamentals of Electrical Drives", Narosa Publishing Hous, Second Edition.
4. P.V. Rao, "Power semiconductor Drives", BS Publications, Fourth Edition.

Reference Books:

1. Bose B. K., "Power Electronics and AC Drives", Prentice-Hall, First Edition.
2. Murphy M. D. and Tumbuli F., "Power Electronic Control of AC Motors", Pergamon Press, OxfordUniversity Press, First Edition.

List of Experiments:

1. To perform Speed Torque characteristics of a separately excited DC motor using open and close loop armature voltage control.
2. To perform Speed Torque characteristics of a separately excited DC motor using open and close loop armature field control.
3. To perform four- quadrant Speed Torque characteristics of a separately excited DC motor using open and close loop control.
4. To perform Speed Torque characteristics of single phase Induction motor using open loop controlled V/f method.
5. To perform Speed Torque characteristics of single phase Induction motor using close loop controlled V/f method.
6. To perform Speed Torque characteristics of three phase Induction motor using open loop controlled V/f method.
7. To perform Speed Torque characteristics of three phase Induction motor using close loop controlled V/f method.
8. To perform the Speed control on three phase Induction motor using sensor-less vector control.
9. To perform Speed Torque characteristics of permanent magnet synchronous motor (PMSM) using open loop control.
10. To perform Speed Torque characteristics of permanent magnet synchronous motor (PMSM) using close loop control.
11. To perform Speed Torque characteristics of permanent magnet Brush less DC motor (PMBLDC) using open loop control.
12. To perform Speed Torque characteristics of permanent magnet Brush less DC motor (PMBLDC) using close loop control.
13. To perform Speed Torque characteristics of Switch Reluctance Motor (SRM) using open loop control.
14. To perform Speed Torque characteristics of Switch Reluctance Motor (SRM) using close loop control.

Course Code : EE702M
Course Category: PCC
Course Name : Electrical Drives

After completion of this course student will be able to-

CO-1: Relation between Power Electronic switches and Machines to from a drive.

CO-2: Application of various converter topology in association with Machines.

CO-3: Discussion of special drives and case studies.

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		Theory			Practical		Total Marks	L	T	P	
		End Sem	Mid-Sem Exam	Quiz/ Assignment	End Sem	Lab work					
EE703M	Power System Control	70	20	10	30	20	150	3	-	2	4

POWER SYSTEM CONTROL

Module-I: General problems associated with modem interconnected power systems, deregulation of electric utilities , Competitive market for generation, power system restructuring, congestion, available transfer capacities, pricing of energy.

Module-II: Distribution in deregulated market, the development in competition, demand side management, Maintaining distribution planning, transmission expansion in new environment, Transmission in open access, Unbundling Generation, Transmission and distribution, BOT, ISO power exchange (PX). Energy market and terms related to energy market.

Module-III: Introduction to SCADA, Introduction to Flexible AC Transmission System (FACTS), Voltage quality in power systems, Distributed generation. Phasor measurements unit-concept, working and applications in wide area, online monitoring of power system.

Module-IV: MW Frequency control - Coherency, Control area, modeling of speed control mechanism, load damping, block diagrammatic representation of single and two area interconnected system, static and dynamic response, optimum parameter adjustment.

Module-V: MVAR Voltage Control - Difference in control strategy over MW-f-control characteristics of an exciting system, DC AC and static excitation system, general block diagram representation of voltage regulators.

Text Books:

1. P.S. Kundur, Prabha Kundur, "Power System Stability and Control" ,McGraw HillEducation.
2. D.P.Kothari and 1.J.Nagrath, "Modem Power System Analysis",Tata Mc-Graw Hill Publishing Company, Third Edition.

Reference Books:

1. C.L.Wadhwa, "Electrical Power Systems", New-Age International Publishers", Sixth edition.
2. PSR Murthy," Power System Operation and Control",McGraw Hill Publishing

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Course Code : EE703M
Course Category: PCC
Course Name : Power System Control

After completion of this course student will be able to-

CO-1: Explain power system restructuring and deregulation.
CO-2: Determine voltage control methods in an interconnected system.
CO-3: Analyze frequency control in an interconnected system.

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Subject Code	Subject Name	Maximum Marks Allotted						Hours/ Week			Total Credits
		Theory			Practical		Total Marks	L	T	P	
		End Sem	Mid-Sem Exam	Quiz/ Assignment	End Sem	Lab work					
EE704M A	Power System Planning & Reliability	70	20	10	-	-	100	3	1	-	4

POWER SYSTEM PLANNING & RELIABILITY

Module-I: **Review of Probability Theory:** Element of probability theory, Probability Distribution, Random variable, Density and distribution functions. Reliability function, MTIF, Hazard rate function, Bathtub curve, Conditional probability, Binominal distribution, Poisson distributions, Normal distribution, Exponential distribution, Weibull distribution.

Module-II: **Reliability of Engineering Systems:** Component reliability, Reliability of systems with non-repairable components, Series configuration, Parallel configuration, combined series-parallel systems, System structure function, Minimal tie-set, Minimal cut-set and Decomposition methods. Repairable systems, MARKOV analysis, Load sharing system, Standby systems, degraded systems.

Module-III: **Reliability of Engineering Systems**: Reliability model of a generating unit, State space methods, Combing states, sequential addition method, Load modelling, Cumulative load model, merging of generation and load models, Loss of load probability, Percentage energy loss, Probability and frequency of failure, operating reserve calculations.

Module-IV: Power Network Reliability: Weather effect on transmission lines, Common mode failures, Switching after faults, three state components, normally open paths, Distribution system reliability.

Module-V: **Composite System Reliability**: Bulk Power supply systems, Effect of varying load, Inter connected systems, correlated and uncorrelated load models, Cost and worth of reliability.
Reliability Improvement & Testing: Reliability growth process, Growth curve, Growth model, Reliability life testing, Test time calculations, Length of test, Burn in testing, Acceptance testing, Accelerated life testing, Environmental test, Reliability estimations.

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Text Book:

1. J. Endreny, "Reliability Modelling in Electric Power Systems", John Wiley & Sons.

Reference Book:

1. Roy Billinton & Ronald, Nallan, "Reliability Evaluation of Power Systems", Plenum Press, New York

Course Code : EE704M A
Course Category: PEC
Course Name : Power System Planning & Reliability

After completion of this course student will be able to-

CO-1: Illustrate the basic concepts and techniques of modern reliability theory.
CO-2: Apply the approaches and techniques to assess reliability of Power systems.
CO-3: Introduce the principles and techniques of Quality Control and their practical uses in Design and monitoring of Power systems

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		Theory			Practical		Total Marks	L	T	P	
		End Sem	Mid-Sem Exam	Quiz/ Assignment	End Sem	Lab work					
EE704M B	Soft Computing Techniques	70	20	10	-	-	100	3	1	-	4

SOFT COMPUTING TECHNIQUES

Module-I: Introduction to Soft Computing
Concept of computing systems, "Soft" computing versus "Hard" computing, Characteristics of Soft computing, Requirement of Soft computing, Major areas of Soft Computing, Applications of Soft Computing techniques

Module-II: Artificial Neural Networks
Biological neurons and its working, Simulation of biological neurons to problem solving, Different ANNs architectures, Leaming rules and various activation functions,Training techniques for ANNs, Functional link network, Back propagation algorithm network and Radial basis function network, Applications of ANNs to solve some real life problems.

Module-III: Genetic Algorithms
Concept of "Genetics" and "Evolution" and its application to probabilistic search techniques, Basic GA framework and different GA architectures, GA operators: Encoding, Crossover, Selection, Mutation, etc, Solving single-objective, optimization problems using GAs.

Module-IV: Fuzzy logic
Introduction to Fuzzy logic, Fuzzy sets and membership functions, Operations on Fuzzy sets, Fuzzy relations, rules, propositions, implications and inferences, Defuzzification techniques, Fuzzy logic controller design, Some applications of Fuzzy logic.

Module-V: Multi-objective Optimization Problem Solving
Concept of multi-objective optimization problems (MOOPs) and issues of solving them, Multi-Objective Evolutionary Algorithm (MOEA), Non-Pareto approaches to solve MOOPs, Pareto-based approaches to solve MOOPs, Some applications with MOEAs.

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Text Books:

1. Nikola K. Kasabov, "Foundations of Neural Networks, Fuzzy Systems Engineering", MIT Press, 1998.
2. Rajasekaran and pai, "Neural Network, Fuzzy logic & Genetic Algorithms", PHI Learing
3. Ahmed M. Ibrahim, "Fuzzy Logic for Embedded Systems Applications", Elesvier Press

Reference Books:

1. S N Shivanandan, SN Deepa , "Principles of soft computing", Wiley India (P) Ltd, first edition 2007.
2. Melanie Mitchell, "An Introduction to Genetic Algorithms", MIT Press, 2000.
3. David E. Goldberg, "Genetic Algorithms In Search, Optimization And Machine Learning", Pearson Education.
4. S. Rajasekaran, and G. A. Vijayalakshmi, "Neural Networks, Fuzzy Logis and Genetic Algorithms Synthesis, and Applications", Prentice Hall of India, 2007.

Course Code : EE704M B
Course Category: PEC
Course Name : Soft Computing Techniques

After completion of this course student will be able to-

CO-1: Understand concepts, technologies, principle of soft computing with its usage in various applications.

CO-2: Develop application on different soft computing techniques like Fuzzy, GA, Neural network and Multi-objective Evolutionary optimization algorithm.

CO-3: Implement Neuro-Fuzzy, Neuro-Fuzzy-GA and Multi-objective Evolutionary expert system.

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Subject Code	Subject Name	Maximum Marks Allotted						Hours/ Week			Total Credits
		Theory			Practical		Total Marks	L	T	P	
		End Sem	Mid-Sem Exam	Quiz/Assignment	End Sem	Lab work					
EE704M C	Advance Digital Communication	70	20	10	-	-	100	3	1	-	4

ADVANCE DIGITAL COMMUNICATION

Module-I:
Digital PAM, binary PAM formats, line coding, band limited digital PAM systems Nyquist pulse shaping, equalization, synchronization techniques, bit and frame synchronization. Coded pulse modulation, voice digitization rate (VDR) of PCM, DPCM, DM, ADM, CVSD, log PCM, their performance comparison, VDR reduction by speech coding, VOCODERS, noise performance of PCM and DM, Digital multiplexes. AT & T and CCITT hierarchies, quasi-synchronous multiplexes

Module-II:
Digital CW modulation, BPSK, DPSK, DEPSK, QPSK, M PSK, QASK, BFSK, Doubinary encoding, QPR coherent and non-coherent systems, error probabilities in PSK, DPSK, FSK, QPSK, 16QAM, MSK, QPR and bit.

Module-III:
Matched correlation and optimum filters and symbol error rate

Module-IV:
Spread Spectrum techniques: DS, CAMA, FH, PN sequence, power requirement PN-sequence code, and Walsh code.

Module-V:
ISDN & Value added communication system simulation & Analysis using MATLAB &Simulink Application using communication toolboxes.

Text Books:

1. Haykins, "Digital Communication", Mc Graw Hill, First Edition.
2. B.P. Lathi, "Modern Digital & Analog Communication", Oxford University Press, Fourth Edition.

Reference Book:

1. A B Carlson, "Communication Systems", Mc Graw Hill, Fifth Edition.

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Course Code: **EE704M C**
Course Category: **PEC**
Course Name: **Advance Digital Communication**

After successful completion of the course, student will be able to:

CO-1: Understand and appreciate the need of various Modulation and spread spectrum techniques.

CO-2: Analyze the properties of basic Modulation techniques and apply them to Digital Communication.

CO-3: Design and develop the different types of Modulation techniques, equalizer to improve the performance under fading channels for various applications.

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Subject Code	Subject Name	Maximum Marks Allotted						Hours/ Week			Total Credits
		Theory			Practical		Total Marks	L	T	P	
		End Sem	Mid-Sem Exam	Quiz/ Assignment	End Sem	Lab work					
EE705M A	Generalized Theory of Electrical Machines	70	20	10	-	-	100	3	1	-	4

GENERALISED THEORY OF ELECTRICAL MACHINES

Module-I: Generalized Theory : Conversions - Basic two pole machines - Transformer with movable secondary - Transformer voltage and speed voltage Kron's primitive machine Analysis of electrical machines.

Module-II: Linear Transformation: Invariance of Power - Transformations from displaced brush axis, three phases to two phase, rotating axes to stationary axes Transformed impedance matrix Torque calculations.

Module-III: DC Machines: Generalized Representation - Generator and motor operation - Operation with displaced brushes - Steady state and transient analysis - sudden short circuit - Sudden application on inertia load - Electric braking of DC motors.

Module-IV: AC Machines: Synchronous Machines: Generalized Representation - Steady state analysis Transient analysis - Electro-mechanical transients. Induction Machines : Generalized representation performance equation - steady state analysis - Transient analysis Double case machine - Harmonics - Electric braking.

Module-V: Special Machines: Generalized Representation and steady state analysis of Reluctance motor Brushless DC Motor - Variable Reluctance Motor Single phase series motor.

Text Book:

1. Gupta J.B., "Theory & Performance of Electrical Machines", S.K.Kataria & Sons, New Delhi.

Reference Book:

1. Bimbhra P.S., "Generalized Circuit Theory of Electrical Machines", Khanna Pub Ltd. Fifth Edition

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Course Code : EE705M A
Course Category: OEC
Course Name : Generalized Theory of Electrical Machines

After successful completion of the course, student will be able to:

CO-1: Analyze and apply the concept of steady state analysis and electrical transients in polyphase machines

CO-2: The generator and motor operation in steady state and transient conditions

CO-3: Evaluate the basic operation and performance of special machines and can select special machines for different purpose.

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		Theory			Practical		Total Marks	L	T	P	
		End Sem	Mid-Sem Exam	Quiz/ Assignment	End Sem	Lab work					
EE705M B	Digital Control System	70	20	10	-	-	100	3	1	-	4

DIGITAL CONTROL SYSTEM

Module-I:
Introduction: Digital Control Systems, quantization and quantization error, Z-transform, Z-transforms of elementary functions, properties of Z-transform, Inverse Z-transform, Z-transform method for solving difference equations

Module-II:
Z-plane Analysis of Discrete time Control Systems: Introduction, Impulse sampling and data hold, pulse transfer function, realization of digital controllers and digital filters

Module-III:
Design of Digital control systems by Conventional methods: Introduction, Mapping between s-plane and z-plane, transient and steady-state response analysis, Design based on frequency response methods, Analytical Design method.

Module-IV:
State Space Analysis: State space representation of digital systems, solving discrete state space equations, pulse transfer function matrix, discretization of continuous time state space equations, Liapunov stability analysis.

Module-V:
Pole placement and State Observers design: Controllability, Observability, useful transformations of state space analysis and design, Design through pole placement, state observer

Text Books:

1. I H Nagrath, "State Space methods and digital control systems", New Age International, Seventh Edition.
2. M.Gopal, "Digital Control and state variable Methods", Tata McGraw Hill, Fourth Edition.

Reference Book:

1. Katsuhiko Ogatta, "Discrete time Control Systems", Prentice Hall of India, Second Edition.

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Course Code : EE705M B
Course Category: OEC
Course Name : Digital control system

After successful completion of the course, student will be able to-

CO-1: Acquire the knowledge of digital control system concepts. (Blooms cognitive level 1, 2)

CO-2: Analyze the considered digital control systems using state space and z domain technique (Blooms cognitive level 5)

CO-3: Design a digital controller to meet given performance specifications using conventional and recent methods (Bloom cognitive level -6)

CO-4: Examines the stability of the considered digital control systems using various techniques (Bloom cognitive level 5)

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Subject Code	Subject Name	Maximum Marks Allotted						Hours/ Week			Total Credits
		Theory			Practical		Total Marks	L	T	P	
		End Sem	Mid-Sem Exam	Quiz/ Assignment	End Sem	Lab work					
EE705M C	Advanced Industrial Electronics	70	20	10	-	-	100	3	1	-	4

ADVANCED INDUSTRIAL ELECTRONICS

Module-I
Introduction to modem power conductor devices: Gate tum off thyristor (GTO), Insulated Gate Bipolar Junction Transistor (IGBT), Power BJT, Power MOSFET, MOS controlled thyristor (MCT), Reverse conducting thyristor (RCT), Smart Power Devices (Power ICs) Rating, Static and dynamic characteristics, Safe operating areas, Protections of devices, Devices selection.

Module -II
DC to DC conversion, Buck Boost and Buck Boost converters (Circuit Configuration and analysis with different types of loads) Power factor, Harmonics and effect of source inductance in converter circuits. Resonant DC, DC converters, Switched mode power supply (SMPS).

Module- I I I
Concept of PWM in converters, Unity power factor converters, Voltage source inverters (VSI), Current source inverters (CSI), Application of VSI and CSI in induction motor control

Module-IV
Non Drive applications of power electronics inverters, Uninterruptedpower supply (UPS), Induction heating, Metal cutting, Active power line conditioning.

Module-V
Vector controlled and slip power controlled induction motor drives, Application of microprocessor, Micro controllers and DSP in Machine drives.

Text Books:

1. M.H. Rashid, "Power Electronics", Tata McGraw Hill Pub.
2. J.G. Kassakian, MF Schlecht and G.C. Verghese , "Principle of Power Electronics"

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Reference Books:

1. Dubey G.K , "Power Semiconductor Controlled Drives", Engle Wood Cliffe NJ, Prentice Hall
2. DC Griffith, "Uninterruptible power supply", Marcell Dekker, NY.

Course Code : EE705M C
Course Category: OEC
Course Name : Advanced Industrial Electronics

After successful completion of the course, student will be able to-

CO-1: Theoretical and practical knowledge on modem day semiconductor devices, their characteristics and control.
CO-2: Knowledge of power conditioners and their application.
CO-3: Working knowledge of static applications of advanced power electronics like UPS, DC to DC converters etc.

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