



RAAJDHANI ENGINEERING COLLEGE
Course Outcome

Subject(Code): Power System Operation and Control(C311)

Year/Semester of Study: 3rd/6th

COs	CO Statements
C311.1	Analyze power flows in power systems and understand the formation of the bus admittance matrix.
C311.2	Develop load flow programs.
C311.3	Apply optimization techniques to determine the optimal operating point on generator cost curves, considering factors such as fuel cost and operating constraints
C311.4	Incorporate the automatic frequency and voltage control strategies for single and two area case and analyze the effects, knowing the necessity of generation control.
C311.5	Derive power angle equation & swing equations.
C311.6	Analyze the dynamics of power system giving emphasis on stability study using equal area criteria and point by point method.

Subject(Code): Microprocessor and Micro Controller (C312)

Year/Semester of Study: 3rd/6th

COs	CO Statements
C312.1	Understand the Intel 8085/8086 architecture with explanation of internal organization.
C312.2	Know the programming proficiency using the various addressing modes and data transfer instructions of the 8086 microprocessor.
C312.3	Know the interfacing of peripheral device with 8bit and 16 bit microprocessor.
C312.4	Solve different logical problems based on instructions of microprocessor.
C312.5	Understand 8051 microcontroller architecture with internal organization.
C312.6	Differentiate the advanced microprocessor and its operation with 8086 and 8051.



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Course Outcome

Subject(Code): Optimization Engineering(C313) Year/Semester of Study:3rd Year/6th Sem

COs	CO Statements
C313.1	Formulate optimization problems as mathematical programming problems.
C313.2	Apply classical optimization techniques to solve linear programming problems.
C313.3	Apply classical optimization techniques to solve linear programming problems (Transportation problems, Assignment problems, IPP)
C313.4	Apply classical optimization techniques to solve nonlinear optimization problems.
C313.5	Apply Evolutionary algorithms to find global optimum of nonlinear optimization problems.
C313.6	Model and Optimize Queuing Theory.

Subject(Code): Electric Power System Protection(C314) Year/Semester of Study:3rd/6th

COs	CO Statements
C314.1	Analyze the principles and operation of Electrical Protection Systems & different faults in power system.
C314.2	Analyse the operating principles and design different types of Relays.
C314.3	Analyze the principles of Differential Relays, Static Relays and Comparator circuits.
C314.4	Analyze and understand the concepts of Apparatus Protection Schemes such as Transformer, generator and motor protection.
C314.5	Analyze and understand the concepts of Bus bar Protection Schemes and Numerical Relays.
C314.6	Analyse and understand operating principles of switchgears and different types of circuit breakers.



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Course Outcome

Subject(Code): Artificial Intelligence and Machine Learning (C315) Year/Semester of Study:
3rd/6th

COs	CO Statements
C315.1	Understand the foundations of AI, intelligent agents, and problem-solving strategies.
C315.2	Understand adversarial search, logical agents, and reasoning patterns
C315.3	Apply knowledge of First-Order Logic syntax, semantics, solve complex logical problems using unification, lifting, and forward/backward chaining algorithms,
C315.4	Analyze uncertainty adeptly, probability axioms, synthesize inference techniques , independence, and Bayes' Rule to solve complex problems .
C315.5	Evaluate probabilistic reasoning, synthesize Bayesian network representation, conditional distribution efficiency and fostering advanced modelling
C315.6	Synthesize advanced mastery across diverse learning methods, incorporating statistical learning, hidden variable learning, and rote learning,

Subject(Code):Essence of Indian Knowledge Tradition(C316) Year/Semester of Study:
3rd/6th

COs	CO Statements
C316.1	Identify the concept of Traditional knowledge and its importance.
C316.2	Identify the differences between Indigenous Tradition and Western Tradition.
C316.3	Explain the need and importance of protecting traditional knowledge.
C316.4	Illustrate the various enactments related to the protection of traditional knowledge.
C316.5	Interpret the concepts of Intellectual property to protect the traditional knowledge.
C316.6	Explain the importance of Traditional knowledge in Agriculture and Medicine.



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Subject(Code):Power System Operation and Control Lab(C317) Year/Semester of Study: 3rd/6th	
COs	CO Statements
C317.1	Analyze and model alternator behaviour, particularly focusing on synchronous reactance, short-circuit conditions, fault currents & Negative and zero sequence reactance.
C317.2	Analyze and model the transient behaviour of 3-phase salient pole alternators, focusing on sub-transient direct axis and quadrature axis synchronous reactances.
C317.3	Understand various protective relays, including IDMT over-current relays, biased relays, MHO distance relays,
C317.4	Analyse the power system to obtain the power flow solution using numerical iterative methods.
C317.5	Develop a suitable program for determining the transmission line parameters and its performance evaluation.
C317.6	Perform fault analysis for a given power system under symmetrical and unsymmetrical fault.

Subject(Code): Microprocessor and Micro Controller Lab(C318) Year/Semester of Study: 3rd/6th

COs	CO Statements
C318.1	Analyse the architecture and the instruction set of an Intel microprocessor.
C318.2	Understand language programming will be studied as well as the design of various types of digital and analog interfaces.
C318.3	Understand the operation of peripheral devices with different microprocessor.
C318.4	Describe the architecture and instruction set of 8251.
C318.5	Design Memory Interfacing circuits.
C318.6	Design and implement 8051 microcontroller based systems.



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Course Outcome

Subject(Code): Future-ready Contributor Program(C319)
3rd/6th

Year/Semester of Study:

COs	CO Statements
C319.1	Develop self-efficacy and inner strength.
C319.2	Discover how to achieve sustainable or lasting success, by making effective career choices.
C319.3	Understand solution and value creating individuals.
C319.4	Analyse collaboratively and as good citizens of the organization and country.
C319.5	Apply contributor thinking through effective project work.
C319.6	Develop new models of thinking and capacities.

Subject(Code): Seminar -I (C320)

Year/Semester of Study: 3rd/6th

COs	CO Statements
C320.1	Analyse topics on modern technology; prepare slides for power point presentation.
C320.2	Able to gain deep knowledge on modern technology by referring the journals/ magazines.
C320.3	Present before a huge audience or any topic without fear and with a voice clarity, good gate up and proper body language.
C320.4	Develop their communication skill.
C320.5	Write a detail report on any topic related to modern technology in the prescribed format.
C320.6	Attend any National or International Seminar.