Criterion I – Curricular Aspects

Criterion	Course Title	Justification
Employability	Engineering Mathematics - I	Builds foundational problem-solving skills.
	Engineering Physics	Develops analytical and experimental skills.
	Engineering Chemistry	Enhances material and process understanding.
	Computer Programming with C	Teaches coding and software development.
	Professional Communication	Improves workplace communication skills.
	Engineering Drawing	Develops technical drafting and design skills.
	Engineering Physics Lab	Hands-on experimental and measurement skills.
	Engineering Chemistry Lab	Practical knowledge of chemical processes.
	Computer Programming with C Lab	Practical coding and debugging experience.
	Workshop Practice A	Develops hands-on workshop skills.
	Engineering Mathematics - II	Advanced problem-solving and analytical skills.
	Principles of Electrical Engineering	Core electrical engineering fundamentals.
	Fundamentals of Electronics Engineering	Basics of electronic systems and circuits.
	Environmental Science	Awareness of environmental impact in engg.
	Computer Aided Drawing	Enhances CAD and design skills.
	Mechanics Engineering	Builds understanding of mechanical systems.
	Principles of Electrical Engineering Lab	Practical electrical circuit analysis.
	Fundamentals of Electronics Engineering Lab	Hands-on electronics experimentation.
	Workshop Practice B	Reinforces practical workshop skills.
	Engineering Mathematics - III	Advanced mathematical modeling skills.
	Engineering Electromagnetics	Understanding of electromagnetic systems.
	Analog Electronic Circuits	Design and analysis of analog circuits.
	Signals & Systems	Analysis of signals and system behavior.
	Circuit Analysis and Transients	Transient and steady-state circuit analysis.
	Analog Electronics Lab	Practical analog circuit design and testing.
	Circuit Analysis and Transient Lab	Hands-on transient circuit analysis.
	MATLAB	Programming and simulation skills.
	Engineering Mathematics - IV	Advanced mathematical tools for engineering.
	Electrical Machines - I	Understanding of electrical machines.
	Control Systems	Design and analysis of control systems.
	Electrical Measurement	Measurement techniques and instrumentation.
	Digital Electronics	Design and analysis of digital circuits.

Criterion I – Curricular Aspects

Criterion	Course Title	Justification
Employability	Electrical Machines-I Lab	Practical electrical machine testing.
	Control Systems Lab	Hands-on control system experimentation.
	Electrical Measurement Lab	Practical measurement techniques.
	Digital Electronics Lab	Hands-on digital circuit design.
	Power System -I	Fundamentals of power system analysis.
	Electrical Machines - II	Advanced electrical machine concepts.
	Microprocessors	Microprocessor programming and applications.
	Open Elective Courses-I	Interdisciplinary skills for industry needs.
	Power Electronics	Power electronic devices and applications.
	Electrical Machines-II Lab	Advanced electrical machine testing.
	Microprocessors Lab	Hands-on microprocessor programming.
	Power Electronics Lab	Practical power electronics experimentation.
	Power System-II	Advanced power system analysis.
	Non-Conventional Energy Sources	Renewable energy systems and applications.
	Open Elective Courses-II	Industry-relevant interdisciplinary skills.
	Seminar	Presentation and research skills.
	Power System Lab	Practical power system analysis.
	Power System Protection & Switchgear	Power system protection techniques.
	Power System - III	Advanced power system operation.
	Pre - Project	Project planning and execution skills.
	Power System Protection & Switchgear Lab	Hands-on protection system testing.
	Organisation of Engg Systems and HRM	Management and organizational skills.
	Advanced Power System Simulation Lab	Power system simulation and analysis.
	Industrial Training & Viva	Real-world industry experience.
	Major Project	Comprehensive project development skills.
	Advanced Control Systems	Advanced control system design.
	Utilisation and Traction	Applications of electrical systems in traction.
	Electrical Machine Design	Design principles of electrical machines.
	Advanced Power Electronics	Advanced power electronic systems.
	Power Station Practices	Power generation and management practices.
	Electrical Materials	Properties and apps. of electrical materials.
	Power Quality	Power system efficiency and reliability.

Criterion I – Curricular Aspects

Criterion	Course Title	Justification
Employability	FACTS	Flexible AC transmission system applications.
	Power Plant Engineering	Design and operation of power plants.
	Electric Drives	Control and applications of electric drives.
	Design of Photovoltaic Systems	Solar energy system design.
	Special Electrical Machines	Advanced electrical machine concepts.
	Industrial Drives and Control	Industrial motor control systems.
	HVDC	High-voltage direct current transmission.
	Electric Vehicles	Electric vehicle technology and applications.
	Smart Grid	Modern grid management and automation.
	High Voltage Engineering	High-voltage system design and safety.
	Restructuring of Power Systems	Modern power system planning and operation.
	Power System Dynamics and Stability	Stability analysis of power systems.
	Advanced Power System Analysis	Advanced power system modeling.
	Energy Audit and Management	Energy efficiency and management practices.
	Python Data Analytics	Data analysis and programming skills.
	SCADA Systems	Supervisory control and data acquisition.
	Fuzzy Logic and Neural Networks	AI and machine learning applications.
	Energy Management in Buildings	Energy-efficient building systems.
	Automatic Control	Automation and control system design.
	Engineering Statistics	Statistical analysis for engineering.

Criterion I – Curricular Aspects

Criterion	Course Title	Justification
Entrepreneurship	Open Elective Courses-I	Interdisciplinary skills for startups.
	Non-Conventional Energy Sources	Renewable energy business opportunities.
	Open Elective Courses-II	Industry-relevant entrepreneurial skills.
	Pre - Project	Innovation and project planning.
	Organisation of Engineering Systems and HRM	Management and entrepreneurship skills.
	Industrial Training & Viva	Real-world industry and startup exposure.
	Major Project	Comprehensive project and business planning.
	Electrical Machine Design	Design and innovation in machines.
	Power Station Practices	Energy generation business opportunities.
	Design of Photovoltaic Systems	Solar energy business opportunities.
	Electric Vehicles	Electric vehicle business opportunities.
	Smart Grid	Smart grid business opportunities.
	Energy Audit and Management	Energy efficiency business opportunities.
	Python Data Analytics	Data-driven business opportunities.

Criterion I – Curricular Aspects

Criterion	Course Title	Justification
Skill Development	Engineering Mathematics - I	Builds analytical problem-solving skills.
	Engineering Physics	Develops experimental and measurement skills.
	Engineering Chemistry	Enhances material and process understanding.
	Computer Programming with C	Teaches coding and software development.
	Professional Communication	Improves communication and presentation skills.
	Engineering Drawing	Develops technical drafting and design skills.
	Engineering Physics Lab	Hands-on experimental and measurement skills.
	Engineering Chemistry Lab	Practical knowledge of chemical processes.
	Computer Programming with C Lab	Practical coding and debugging experience.
	Workshop Practice A	Develops hands-on workshop skills.
	Engineering Mathematics - II	Advanced problem-solving and analytical skills.
	Principles of Electrical Engineering	Core electrical engineering fundamentals.
	Fundamentals of Electronics Engineering	Basics of electronic systems and circuits.
	Computer Aided Drawing	Enhances CAD and design skills.
	Mechanics Engineering	Builds understanding of mechanical systems.
	Principles of Electrical Engineering Lab	Practical electrical circuit analysis.
	Fundamentals of Electronics Engg Lab	Hands-on electronics experimentation.
	Workshop Practice A (duplicate)	Reinforces practical workshop skills.
	Engineering Mathematics - III	Advanced mathematical modeling skills.
	Engineering Electromagnetics	Understanding of electromagnetic systems.
	Analog Electronic Circuits	Design and analysis of analog circuits.
	Signals & Systems	Analysis of signals and system behavior.
	Circuit Analysis and Transients	Transient and steady-state circuit analysis.
	Analog Electronics Lab	Practical analog circuit design and testing.
	Circuit Analysis and Transient Lab	Hands-on transient circuit analysis.
	MATLAB	Programming and simulation skills.
	Engineering Mathematics - IV	Advanced mathematical tools for engineering.
	Electrical Machines - I	Understanding of electrical machines.
	Control Systems	Design and analysis of control systems.
	Electrical Measurement	Measurement techniques and instrumentation.
	Digital Electronics	Design and analysis of digital circuits.
	Electrical Machines-I Lab	Practical electrical machine testing.

Criterion I – Curricular Aspects

Criterion	Course Title	Justification
Skill Development	Control Systems Lab	Hands-on control system experimentation.
	Electrical Measurement Lab	Practical measurement techniques.
	Digital Electronics Lab	Hands-on digital circuit design.
	Power System -I	Fundamentals of power system analysis.
	Electrical Machines - II	Advanced electrical machine concepts.
	Microprocessors	Microprocessor programming and applications.
	Open Elective Courses-I	Interdisciplinary skills for industry needs.
	Power Electronics	Power electronic devices and applications.
	Electrical Machines-II Lab	Advanced electrical machine testing.
	Microprocessors Lab	Hands-on microprocessor programming.
	Power Electronics Lab	Practical power electronics experimentation.
	Power System-II	Advanced power system analysis.
	Open Elective Courses-II	Industry-relevant interdisciplinary skills.
	Seminar	Presentation and research skills.
	Power System Lab	Practical power system analysis.
	Power System Protection & Switchgear	Power system protection techniques.
	Power System - III	Advanced power system operation.
	Pre - Project	Project planning and execution skills.
	Power System Protection & Switchgear Lab	Hands-on protection system testing.
	Advanced Power System Simulation Lab	Power system simulation and analysis.
	Industrial Training & Viva	Real-world industry experience.
	Major Project	Comprehensive project development skills.
	Advanced Control Systems	Advanced control system design.
	Utilisation and Traction	Applications of electrical systems in traction.
	Electrical Machine Design	Design principles of electrical machines.
	Advanced Power Electronics	Advanced power electronic systems.
	Power Station Practices	Power generation and management practices.
	Electrical Materials	Properties and applications of electrical materials.
	Power Quality	Power system efficiency and reliability.
	FACTS	Flexible AC transmission system applications.
	Power Plant Engineering	Design and operation of power plants.

	Electric Drives	Control and applications of electric drives.
Criterion	**Course Title**	**Justification**
Skill Development	Design of Photovoltaic Systems	Solar energy system design.
	Special Electrical Machines	Advanced electrical machine concepts.
	Industrial Drives and Control	Industrial motor control systems.
	HVDC	High-voltage direct current transmission.
	Electric Vehicles	Electric vehicle technology and applications.
	Smart Grid	Modern grid management and automation.
	High Voltage Engineering	High-voltage system design and safety.
	Restructuring of Power Systems	Modern power system planning and operation.
	Power System Dynamics and Stability	Stability analysis of power systems.
	Advanced Power System Analysis	Advanced power system modeling.
	Energy Audit and Management	Energy efficiency and management practices.
	Python Data Analytics	Data analysis and programming skills.
	SCADA Systems	Supervisory control and data acquisition.
	Fuzzy Logic and Neural Networks	AI and machine learning applications.
	Energy Management in Buildings	Energy-efficient building systems.
	Automatic Control	Automation and control system design.
	Engineering Statistics	Statistical analysis for engineering.

Criterion I – Curricular Aspects

Criterion	Course Title	Justification
Professional Ethics	Professional Communication	Emphasizes ethical communication practices.
	Control Systems	Includes safety and ethical standards.
	Organisation of Engineering Systems and HRM	Covers workplace ethics and management.
	Industrial Training & Viva	Real-world ethical engineering practices.
	Major Project	Ethical project planning and execution.
	Power Station Practices	Focuses on ethical energy generation.
	Power Quality	Ensures ethical power system reliability.
	High Voltage Engineering	Emphasizes safety and ethical standards.
	Restructuring of Power Systems	Promotes ethical power system planning.

Criterion	Course Title	Justification
Gender	Organisation of Engineering Systems and HRM	Covers workplace diversity and gender equity.

Criterion	Course Title	Justification
Human Values	Organisation of Engineering Systems and HRM	Covers ethics and workplace diversity.
	Non-Conventional Energy Sources	Promotes sustainable energy for society.
	Design of Photovoltaic Systems	Focuses on renewable energy for communities.
	Electric Vehicles	Reduces environmental impact for society.
	Smart Grid	Enhances equitable energy distribution.
	Energy Audit and Management	Promotes responsible energy use.

Criterion I – Curricular Aspects

Criterion	Course Title	Justification
Environment and Sustainability	Environmental Science	Focuses on ecological balance and conservation.
	Non-Conventional Energy Sources	Covers renewable energy technologies (solar
	Open Elective Courses-I	Includes energy-efficient practices and tech.
	Open Elective Courses-II	Focuses on sustainable energy management systems.
	Power Station Practices	Emphasizes sustainable energy generation methods.
	Power Quality	Improves energy efficiency in power systems.
	FACTS	Enhances grid efficiency and reduces losses.
	Power Plant Engineering	Focuses on sustainable power generation techniques.
	Design of Photovoltaic Systems	Promotes solar energy utilization and design.
	Electric Vehicles	Reduces carbon emissions through green transport.
	Smart Grid	Enables efficient and sustainable energy distribution.
	Restructuring of Power Systems	Promotes sustainable energy policies and practices.
	Energy Audit and Management	Optimizes energy use for sustainability.
	Energy Management in Buildings	Focuses on energy-efficient building systems.