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2.6.2. Attainment of Programme outcomes and course outcomes evaluated by the institution

Attainment of Program Outcomes & Course Outcomes


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Department of Electrical and Electronics Engineering

Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs)

(A) PROGRAM OUTCOMES

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and Engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the Information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

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8.
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hics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.


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EEE Department-Course List(R16 Regulation)

Yesr/Sem	Course	Course Code
I/I	Mathematics-I	MA101BS
	Engineering chemistry	CH102BS
	Engineering Physics-I	PH103BS
	Professional Communication in English	EN104HS
	Engineering Mechanics	ME105ES
	Basic Electrical and Electronics Engineering	EE106ES
	English Language Communication Skills Lab	EN107HS
	Engineering workshop	ME108ES
I/II	Engineering Physics-II	PH201BS
	Mathematics-II	MA202BS
	Mathematics-III	MA203BS
	Computer Programming in C	CS204ES
	Engineering Graphics	ME205ES
	Engineering Chemistry Lab	CH206BS
	Engineering Physics Lab	PH207BS
	Computer Programming in C Lab	CS208ES
II/I	Mathamatics – IV	MA301BS
	Electromagnetic Fields	EE302ES
	Electrical Machines-I	EE303ES
	Network Theory	EE304ES
	Electronic Circuits	EE305ES
	Electrical Machines Lab - I	EE306ES
	Electronic Devices & Circuits Lab	EC306ES
	Networks Lab	EE307ES
II/II	Switching Theory & Logic Design	EC401ES
	Power Systems - I	EE402ES
	Electrical Machines – II	EE403ES
	Control Systems	EE404ES

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	Business Economics and Financial Analysis	SM405MS
	Control Systems Lab	EE406ES
	Electrical Machines Lab - II	EE407ES
	Electronic Circuits Lab	EE408ES
III-I	Electrical Measurements & Instrumentation	EE501PC
	Power Systems - II	EE502PC
	Microprocessors AND Microcontrollers	EI503PC
	Fundamentals Of Management	SM504MS
	Electrical Measurements & Instrumentation Lab	EE505PC
	Basic Electrical Simulation Lab	EE506PC
	Microprocessors AND Microcontrollers Lab	EI507PC
III-II	Power Systems Analysis	EE601PC
	Power Electronics	EE602PC
	Switch Gear and Protection	EE603PC
	Non-Conventional Power Generation	EE511OE
	Electrical And Electronics Instrumentation	EE614PE
	Power Systems Lab	EE604PC
	Power Electronics Lab	EE605PC
	Advanced English Communication Skills Lab	EN606HS
IV-1	Power Semiconductor Drives	EE701PC
	Power System Operation and Control	EE702PC
	HVDC Transmission	EE722PE
	Power Quality	EE732PE
	Flexible A.C. Transmission Systems	EE743PE
	Electrical Systems simulation lab	EE703PC
	Electrical Workshop	EE704PC
	Industrial Oriented Mini Project	EE705PC
	Seminar	EE706PC
IV-II	Renewable Energy Sources	MT831OE
	Electrical Distribution Systems	EE852PE
	Utilization of Electric Power	EE863PE
	Major Project	EE801PC

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Course Outcomes

MA301BS	II B.Tech EEE I sem:-Mathamatics – IV -Cos
CO1	Analyze the complex functions with reference to their analyticity, integration using Cauchy's integral theorem
CO2	Find the Taylor's and Laurent's series expansion of complex functions
CO3	The bilinear transformation
CO4	Express any periodic function in term of sines and cosines
CO5	Express a non-periodic function as integral representation
EE302ES	II B.Tech EEE I sem:-Electromagnetic Fields-Cos
CO1	Apply vector calculus to static electric – magnetic fields.
CO2	Compute the force, fields & Energy for different charge & current configurations & evaluate capacitance and inductance
CO3	Analyze Maxwell's equation in different forms (Differential and integral) in Electrostatic, Magnetic time varying fields
CO4	To analyze time varying electric and magnetic fields.
CO5	To analysis the force in magnetic field and magnetic potential
EE402ES	II B.Tech EEE II sem:- Power Systems - I Cos
CO1	Draw the layout of hydro power plant, thermal power station, Nuclear power plant and gas power plant and explain its operation
CO2	Describe A.C. and D.C. distribution systems and its voltage drop calculations
CO3	Illustrate various economic aspects of the power plant erection, operation and different tariff methods
CO4	Understand power factor improvement methods and determine economical power factor
CO5	Understand about GIS substation



EE403ES	II B.Tech EEE II- sem -Electrical Machines – II
CO1	Identify different parts of induction motors and specify their functions
CO2	Understand the operation and speed control methods of induction motors
CO3	Carry out different testing methods and assess the performance of transformers and induction motors
CO4	Explain the role of synchronous generators operation when connected to an infinite bus or when operating in parallel
CO5	Analyze the performance of single phase induction and ac series motors
EE502PC	III B.Tech EEE I sem:- Power Systems – II
CO1	Able to compute inductance and capacitance for different configurations of transmission lines.
CO2	Able to analyze the performance of transmission lines
CO3	Can understand transient's phenomenon of transmission lines.
CO4	Able to calculate sag and tension calculations.
CO5	Will be able to understand overhead line insulators and underground cables.
EE501PC	III B.Tech EEE I sem-: Electrical Measurements & Instrumentation-
CO1	Understand different types of measuring instruments, their construction, operation and characteristics
CO2	Identify the instruments suitable for typical measurements
CO3	Apply the knowledge about transducers and instrument transformers to use them effectively.
CO4	Calibrate PMMC instrument using D.C potentiometer
CO5	Apply the knowledge of smart and digital metering for industrial applications



EE601PC	III B.Tech EEE II-sem: Power Systems Analysis
CO1	Develop the Ybus matrices
CO2	Develop the Zbmatrices
CO3	Analyze load flow for various requirements of the power system
CO4	Analyze short circuit studies for the protection of power system
CO5	Estimate stability and instability in power systems
EE602PC	III B.Tech EEE II sem: Power Electronics
CO1	Choose the appropriate converter for various applications
CO2	Design the power converters suitable for particular applications
CO3	Develop the novel control methodologies for better performance.
CO4	Analyze the operation of voltage source inverters.
CO5	Analyze the operation of DC-DC choppers.
EE701PC	IV B.Tech EEE I sem: Power Semiconductor Drives -Cos
CO1	Identify the drawbacks of speed control of motor by conventional methods.
CO2	Differentiate Phase controlled and chopper controlled DC drives speed-torque characteristics merits and demerits
CO3	Understand Induction motor drive speed–torque characteristics using different control strategies its merits and demerits
CO4	Describe Slip power recovery schemes
CO5	Understand Synchronous motor drive speed–torque characteristics using different control strategies its merits and demerits
EE722PE	IV B.Tech EEE I sem: HVDC Transmission(-Cos
CO1	Compare EHV AC and HVDC system and to describe various types of DC links
CO2	Analyze Graetz circuit for rectifier and inverter mode of operation

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CO3	Describe various methods for the control of HVDC systems and to perform power flow analysis in AC/DC systems
CO4	Describe various protection methods for HVDC systems
CO5	Describe classify Harmonics and design different types of filters
EE852PE	IV B.Tech EEE II sem: Electrical Distribution Systems - Cos
CO1	distinguish between transmission, and distribution line and design the feeders
CO2	Understand Objectives of protection coordination
CO3	compute power loss and voltage drop of the feeders
CO4	design protection of distribution systems
CO5	understand the importance of voltage control and power factor improvement

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CO-PO Mapping

II B.Tech I Sem Subject: Electromagnetic Fields												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2		-	-	-	-	2	-	1
CO2	3	3	3	1		-	-	-	-	2	-	1
CO3	3	2	3	2		-	-	-	-	1	-	2
CO4	3	3	2	1		-	-	-	-	2	-	2
CO5	2	2	3	1		-	-	-	-	2	-	1
Avg	2.8	2.6	2.8	1.4	-	-	-	-	-	1.8	-	1.4

II B.Tech I Sem Subject: Electrical Machines-I												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2		-	-	-	1	1	-	2
CO2	3	2	2	0		-	-	-	1	0	-	3
CO3	3	3	2	2		-	-	-	1	1	-	2
CO4	3	2	2	1		-	-	-	1	2	-	1
CO5	2	2	2	2		-	-	-	1	0	-	2
Avg	2.8	2.4	2	1.4	-	-	-	-	1	0.8	-	2



II B.Tech II Sem Subject: Power Systems-I												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	1	1	0	2	1	1	-	1	-	-
CO2	3	3	1	1	0	2	1	1	-	1	-	-
CO3	2	3	1	1	0	2	1	1	-	1	-	-
CO4	2	3	1	1	0	2	1	1	-	1	-	-
CO5	2	3	1	1	0	2	1	1	-	1	-	-
Avg	2.2	3	1	1	-	2	1	1	-	1	-	-

II B.Tech II Sem Subject: Control Systems												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	-	2	-	-	-	-	1	-	-
CO2	3	2	3	-	1	-	-	-	-	2	-	-
CO3	2	2	3	-	2	-	-	-	-	1	-	-
CO4	2	2	2	-	1	-	-	-	-	2	-	-
CO5	2	2	3	-	2	-	-	-	-	2	-	-
Avg	2.2	2.2	2.8	-	1.6	-	-	-	-	1.6	-	-

III B.Tech I Sem Subject: Power Systems-II												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2		2	-	-	-	2		
CO2	3	3	2	3		1	-	-	-	2		1

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CO3	3	2	2	2		2	-	-	-	2		1
CO4	3	2	1	2		0	-	-	-	2		2
CO5	3	2	0	3		1	-	-	-	2		0
Avg	3	2.4	1.4	2.4	-	1.2	-	-	-	2	-	0.8

III B.Tech I Sem Subject: Electrical Measuring Instrumentation												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2			-	-	-	-	1		
CO2	3	2	1			-	-	-	-	1		
CO3	3	1	1			-	-	-	-	1		
CO4	3	2	1			-	-	-	-	1		
CO5	3	1	2			-	-	-	-	1		
Avg	3	1.6	1.4	-	-	-	-	-	-	1	-	-

III B.Tech II Sem Subject: Switchgear Protection												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	0	3		2	-	-	1	1		2
CO2	3	2	0	3		1	-	-	1	1		2
CO3	3	2	0	3	2	2	-	-	1	1		1
CO4	3	2	0	3		1	-	-	1	1		2
CO5	3	2	3	3	2	3	-	-	1	1		2
Avg	3	2.2	0.6	3	0.8	1.8	-	-	1	1	-	1.8



III B.Tech II Sem Subject: Power System Analysis												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	0		2	-	-	0	0		2
CO2	3	2	2	1		-	-	-	1	1		2
CO3	3	3	1	2		-	-	-	1	1		1
CO4	3	3	2	1		-	-	-	1	-		2
CO5	3	3	3	2		-	-	-	1	1		2
Avg	3	2.6	1.8	1.2	-	2	-	-	0.8	0.75	-	1.8

IV B.Tech I Sem Subject: FACTS												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	2	2	-	-	-	1	1		2
CO2	3	2	3	3	1	-	-	-	1	1		2
CO3	3	3	3	2	2	-	-	-	1	1		1
CO4	3	2	2	2	1	-	-	-	1	1		2
CO5	3	2	3	3	2	-	-	-	1	1		2
Avg	3	2.2	2.8	2.4	1.6	-	-	-	1	1	-	1.8

IV B.Tech I Sem Subject: POWER SEMICONDUCTOR DRIVES												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	0		2	-	1	-	-		2
CO2	3	2	2	0		2	-	1	-	-		2

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CO3	3	3	2	0		2	-	1	-	-		1
CO4	3	2	2	0		2	-	1	-	-		2
CO5	3	3	2	0		2	-	1	-	-		2
Avg	3	3	2	0		2	-	1	-	-		2

IV B.Tech I Sem Subject:Electrical Distribution System												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2		2	-	-	-	1	3	
CO2	3	2	3	3		1	-	-	-	2	2	
CO3	3	2	3	2		2	-	-	-	2	2	
CO4	3	2	2	2		-	-	-	-	1	3	
CO5	3	2	3	3		-	-	-	-	-	2	
Avg	3	2.2	2.8	2.4	-	1.67	-	-	-	1.5	2.4	-

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Program level Course-PO matrix of all courses INCLUDING first year courses

Note: 1. Enter correlation levels 1, 2 or 3 as defined 1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High), If there is no correlation, put “ ”

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MA101BS	Mathematics-I	2	1	0.8	1.25	0.2	1	-	-	-	-	-	-
CH102BS	Engineering chemistry	1.8	0.2	-	1	0.2	1	1	-	-	-	-	-
PH103BS	Engineering Physics-I	1.2	0.13	-	-	-	-	0.67	-	-	-	-	-
EN104HS	Professional Communication in English	1.4	0.2	-	-	-	-	-	-	-	-	-	-
ME105ES	Engineering Mechanics	2.2	1.6	-	1	-	-	-	1	-	0.2	-	-
EE106ES	Basic Electrical and Electronics Engineering	2.6	1.2	-	1	0.4	-	-	-	-	-	-	-
EN107HS	English Language Communication Skills Lab	1.4	0.2	-	-	-	-	-	-	-	-	-	-
ME108ES	Engineering workshop	1.8	0.4	0.4	1	-	-	-	-	-	-	-	-
PH201BS	Engineering Physics-II	1.8	0.2	-	-	-	-	-	-	-	-	-	-
MA202BS	Mathematics-II	2.4	-	-	-	-	-	-	-	-	-	-	-
MA203BS	Mathematics-III	1.6	-	-	2	-	-	-	-	-	-	-	-
CS204ES	Computer Programming in C	1.8	-	-	2.5	-	-	-	-	-	-	-	-
ME205ES	Engineering Graphics	1	-	-	1	0.2	-	-	-	-	-	-	-
CH206BS	Engineering Chemistry Lab	1.8	0.2	-	1	0.2	1	1	-	-	-	-	-
PH207BS	Engineering Physics Lab	1.8	0.2	-	-	-	-	-	-	-	-	-	-
CS208ES	Computer Programming in C Lab	1.8	-	-	2.5	-	-	-	-	-	-	-	-

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MA301BS	Mathamatics – IV	2.4	1.2	-	1	-	-	-	-	-	-	-	-
EE302ES	Electromagnetic Fields	2.8	2.6	2.8	1.4	-	-	-	-	-	1.8	-	1.4
EE303ES	Electrical Machines-I	2.8	2.4	2	1.4	-	-	-	-	1	0.8	-	2
EE304ES	Network Theory	3	2	-	-	-	-	-	-	-	-	-	-
EE305ES	Electronic Circuits	2.8	2.4	2	-	-	-	-	-	-	1.4	-	-
EE306ES	Electrical Machines Lab - I	2.8	2.4	2	1.4	-	-	-	-	1	0.8	-	2
EC306ES	Electronic Devices & Circuits Lab	2.8	2.4	2	-	-	-	-	-	-	1.4	-	-
EE307ES	Networks Lab	3	2	-	-	-	-	-	-	-	-	-	-
EC401ES	Switching Theory & Logic Design	1.6	2.6	1.2	-	0.6	-	0.75	-	-	-	-	2
EE402ES	Power Systems - I	2.2	3	1	1	-	2	1	1	-	1	-	-
EE403ES	Electrical Machines – II	2.4	2	1.8	1.5	-	-	-	-	1	1	-	2
EE404ES	Control Systems	3	2.6	2.8	1.5	-	1.75	-	2	-	1.6	-	2
SM405MS	Business Economics and Financial Analysis	2.2	2.2	2.4	-	-	-	-	1.67	1.67	-	1.67	-
EE406ES	Control Systems Lab	2.2	2.2	2.8	-	1.6	-	-	-	-	1.6	-	-
EE407ES	Electrical Machines Lab - II	2.4	2	1.8	1.5	-	-	-	-	1	1	-	2
EE408ES	Electronic Circuits Lab	2.8	2.4	2	-	-	-	-	-	-	1.4	-	-
EE501PC	Electrical Measurements & Instrumentation	3	1.6	1.4	-	-	-	-	-	-	1	-	-
EE502PC	Power Systems - II	3	2.4	1.4	2.4	-	1.2	-	-	-	2	-	0.8
EI503PC	Microprocessors AND Microcontrollers	3	2.4	1.6	-	-	2	-	-	-	1	-	-
SM504MS	Fundamentals Of Management	1.6	1.2	0.6	-	-	-	-	0.8	0.8	-	0.8	-
EE505PC	Electrical Measurements & Instrumentation Lab	3	1.6	1.4	-	-	-	-	-	-	1	-	-
EE506PC	Basic Electrical Simulation Lab	3	2	-	-	-	-	-	-	-	-	-	-

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EE507PC	Microprocessors AND Microcontrollers Lab	3	2.4	1.6	-	-	2	-	-	-	1	-	-
EE601PC	Power Systems Analysis	3	2.6	1.8	1.2	-	2	-	-	0.8	0.75	-	1.8
EE602PC	Power Electronics	3	1.8	0.6	1	-	2	-	-	1	1	-	1.8
EE603PC	Switch Gear and Protection	3	2.2	0.6	3	0.8	1.8	-	-	1	1	-	1.8
EE511OE	Non-Conventional Power Generation	2.6	2.2	1	1.4	-	2	1	1	-	1	-	-
EE614PE	Electrical and Electronics Instrumentation	3	2.2	2.8	2.4	1.6	-	-	-	-	-	2.4	1.8
EE604PC	Power Systems Lab	3	2.6	1.8	1.2	-	2	-	-	0.8	0.75	-	1.8
EE605PC	Power Electronics Lab	3	1.8	0.6	1	-	2	-	-	1	1	-	1.8
EN606HS	Advanced English Communication Skills Lab	1.4	0.2	-	-	-	-	-	-	-	-2.2	-	-
EE701PC	Power Semiconductor Drives	3	2.6	2	-	-	2	-	1	-	-	-	1.8
EE702PC	Power System Operation and Control	3	2.2	1	0.8	-	2	0.8	-	1	1	-	1
EE722PE	HVDC Transmission	3	2.2	2.8	2.4	1.6	-	-	-	1	1	-	1.8
EE732PE	Power Quality	3	1.8	0.6	1	-	2	-	-	1	1	-	1.8
EE743PE	Flexible A.C. Transmission Systems	3	2.2	2.8	2.4	1.6	-	-	-	1	1	-	1.8
EE703PC	Electrical Systems simulation lab	3	2	-	-	-	-	-	-	-	-	-	-
EE704PC	Electrical Workshop	2.6	1.2	-	1	0.4	-	-	-	-	-	-	-
EE705PC	Industrial Oriented Mini Project	3	3	3	3	3	2	2	3	3	3	3	3
EE706PC	Seminar	2	2	2	2	2	1	1	2	2	2	2	2
MT831OE	Renewable Energy Sources	2.6	2.2	1	1.4	-	2	1	1	-	1	-	-
EE852PE	Electrical Distribution Systems	3	2.2	2.8	2.4	-	1.67	-	-	-	1.5	2.4	-

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EE863PE	Utilization of Electric Power	2.6	2.2	1.8	1.8	-	2	1	1	-	1	-	-
EE801PC	Major Project	3	3	3	3	3	2	2	3	3	3	3	3

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CO Attainment:

The direct CO attainment is calculated by combining the internal attainment and Indirect attainment in a ratio of 25: 75.

CO Direct Attainment = 25% of Internal Exam Attainment Level + 75% of External Exam Attainment Level

Final CO attainment value is calculated by combining CO Direct attainment and Course Exit Survey

Final CO attainment= 80% of CO Direct Attainment + 20% of Course End survey attainment

CO Attainment Target Value: 1.8

Yesr/Sem	Course Code	Course	CO Attainment Value	Attained Target Value
I/I	MA101BS	Mathematics-I	2.04	YES
	CH102BS	Engineering chemistry	2.86	YES
	PH103BS	Engineering Physics-I	2.84	YES
	EN104HS	Professional Communication in English	2.86	YES
	ME105ES	Engineering Mechanics	2.86	YES
	EE106ES	Basic Electrical and Electronics Engineering	2.02	YES
	EN107HS	English Language Communication Skills Lab	2.9	YES
	ME108ES	Engineering workshop	2.88	YES
II/I	PH201BS	Engineering Physics-II	2.06	YES
	MA202BS	Mathematics-II	2.02	YES
	MA203BS	Mathematics-III	2.04	YES
	CS204ES	Computer Programming in C	2.1	YES
	ME205ES	Engineering Graphics	2.88	YES
	CH206BS	Engineering Chemistry Lab	2.88	YES
	PH207BS	Engineering Physics Lab	2.9	YES
	CS208ES	Computer Programming in C Lab	2.9	YES

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	MA301BS	Mathamatics – IV	2.04	YES
	EE302ES	Electromagnetic Fields	2.8	YES
	EE303ES	Electrical Machines-I	2.84	YES
	EE304ES	Network Theory	2.82	YES
	EE305ES	Electronic Circuits	2.86	YES
	EE306ES	Electrical Machines Lab - I	2.88	YES
	EC306ES	Electronic Devices & Circuits Lab	2.88	YES
	EE307ES	Networks Lab	2.9	YES
II/II	EC401ES	Switching Theory & Logic Design	2.9	YES
	EE402ES	Power Systems - I	2.88	YES
	EE403ES	Electrical Machines – II	2.9	YES
	EE404ES	Control Systems	2.88	YES
	SM405MS	Business Economics and Financial Analysis	2.9	YES
	EE406ES	Control Systems Lab	2.9	YES
	EE407ES	Electrical Machines Lab - II	2.9	YES
III- I	EE408ES	Electronic Circuits Lab	2.9	YES
	EE501PC	Electrical Measurements & Instrumentation	2.88	YES
	EE502PC	Power Systems - II	2.9	YES
	EI503PC	Microprocessors AND Microcontrollers	2.92	YES
	SM504MS	Fundamentals Of Management	2.12	YES
	EE505PC	Electrical Measurements & Instrumentation Lab	2.88	YES
	EE506PC	Basic Electrical Simulation Lab	2.88	YES
III-II	EI507PC	Microprocessors AND Microcontrollers Lab	2.9	YES
	EE601PC	Power Systems Analysis	2.04	YES
	EE602PC	Power Electronics	2.08	YES
	EE603PC	Switch Gear and Protection	2.9	YES
	EE511OE	Non-Conventional Power Generation	2.9	YES
	EE614PE	Electrical And Electronics	2.88	YES

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		Instrumentation		
	EE604PC	Power Systems Lab	2.92	YES
	EE605PC	Power Electronics Lab	2.88	YES
	EN606HS	Advanced English Communication Skills Lab	2.86	YES
IV-1	EE701PC	Power Semiconductor Drives	2.06	YES
	EE702PC	Power System Operation and Control	2.08	YES
	EE722PE	HVDC Transmission	2.88	YES
	EE732PE	Power Quality	2.86	YES
	EE743PE	Flexible A.C. Transmission Systems	2.82	YES
	EE703PC	Electrical Systems simulation lab	2.86	YES
	EE704PC	Electrical Workshop	2.9	YES
	EE705PC	Industrial Oriented Mini Project	2.92	YES
	EE706PC	Seminar	2.9	YES
IV-II	MT831OE	Renewable Energy Sources	2.88	YES
	EE852PE	Electrical Distribution Systems	2.86	YES
	EE863PE	Utilization of Electric Power	2.08	YES
	EE801PC	Major Project	2.9	YES

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PO Attainment:

Final PO attainment value is calculated by combining PO Direct Attainment , Employer Survey, and Alumni Survey

Final PO attainment= 80% of PO Direct Attainment + 10% of Course Exit Survey + 10% of Alumni Survey

PO Attainment Target Value: 1.8

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MA101BS	Mathematics-I	1.33	0.67	0.53	0.83	0.13	0.67	-	-	-	-	-	-
CH102BS	Engineering chemistry	1.8	0.2	-	1	0.2	1	1	-	-	-	-	-
PH103BS	Engineering Physics-I	1.2	0.13	-	-	-	-	0.67	-	-	-	-	-
EN104HS	Professional Communication in English	1.4	0.2	-	-	-	-	-	-	-	-	-	-
ME105ES	Engineering Mechanics	2.2	1.6	-	1	-	-	-	1	-	0.2	-	-
EE106ES	Basic Electrical and Electronics Engineering	1.73	0.8	-	0.67	0.27	-	-	-	-	-	-	-
EN107HS	English Language Communication Skills Lab	1.4	0.2	-	-	-	-	-	-	-	-	-	-
ME108ES	Engineering workshop	1.8	0.4	0.4	1	-	-	-	-	-	-	-	-
PH201BS	Engineering Physics-II	0.6	0.07	-	-	-	-	-	-	-	-	-	-
MA202BS	Mathematics-II	0.8	-	-	-	-	-	-	-	-	-	-	-
MA203BS	Mathematics-III	1.07	-	-	1.33	-	-	-	-	-	-	-	-
CS204ES	Computer Programming in C	1.2	-	-	1.67	-	-	-	-	-	-	-	-
ME205ES	Engineering Graphics	1	-	-	1	0.2	-	-	-	-	-	-	-
CH206BS	Engineering Chemistry Lab	1.8	0.2	-	1	0.2	1	1	-	-	-	-	-
PH207BS	Engineering Physics Lab	1.8	0.2	-	-	-	-	-	-	-	-	-	-
CS208ES	Computer Programming in C Lab	1.8	-	-	2.5	-	-	-	-	-	-	-	-
MA301BS	Mathematics – IV	1.6	0.8	-	0.67	-	-	-	-	-	-	-	-

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EE302ES	Electromagnetic Fields	2.8	2.6	2.8	1.4	-	-	-	-	-	1.8	-	1.4
EE303ES	Electrical Machines-I	2.8	2.4	2	1.4	-	-	-	-	1	0.8	-	2
EE304ES	Network Theory	3	2	-	-	-	-	-	-	-	-	-	-
EE305ES	Electronic Circuits	2.8	2.4	2	-	-	-	-	-	-	1.4	-	-
EE306ES	Electrical Machines Lab - I	2.8	2.4	2	1.4	-	-	-	-	1	0.8	-	2
EC306ES	Electronic Devices & Circuits Lab	2.8	2.4	2	-	-	-	-	-	-	1.4	-	-
EE307ES	Networks Lab	3	2	-	-	-	-	-	-	-	-	-	-
EC401ES	Switching Theory & Logic Design	1.6	2.6	1.2	-	0.6	-	0.75	-	-	-	-	2
EE402ES	Power Systems - I	2.2	3	1	1	-	2	1	1	-	1	-	-
EE403ES	Electrical Machines – II	2.4	2	1.8	1.5	-	-	-	-	1	1	-	2
EE404ES	Control Systems	3	2.6	2.8	1.5	-	1.75	-	2	-	1.6	-	2
SM405MS	Business Economics and Financial Analysis	2.2	2.2	2.4	-	-	-	-	1.67	1.67	-	1.67	-
EE406ES	Control Systems Lab	2.2	2.2	2.8	-	1.6	-	-	-	-	1.6	-	-
EE407ES	Electrical Machines Lab - II	2.4	2	1.8	1.5	-	-	-	-	1	1	-	2
EE408ES	Electronic Circuits Lab	2.8	2.4	2	-	-	-	-	-	-	1.4	-	-
EE501PC	Electrical Measurements & Instrumentation	3	1.6	1.4	-	-	-	-	-	-	1	-	-
EE502PC	Power Systems - II	3	2.4	1.4	2.4	-	1.2	-	-	-	2	-	0.8
EI503PC	Microprocessors AND Microcontrollers	3	2.4	1.6	-	-	2	-	-	-	1	-	-
SM504MS	Fundamentals Of Management	1.07	0.8	0.4	-	-	-	-	0.53	0.53	-	0.53	-
EE505PC	Electrical Measurements & Instrumentation Lab	3	1.6	1.4	-	-	-	-	-	-	1	-	-
EE506PC	Basic Electrical Simulation Lab	3	2	-	-	-	-	-	-	-	-	-	-

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EI507PC	Microprocessors AND Microcontrollers Lab	3	2.4	1.6	-	-	2	-	-	-	1	-	-
EE601PC	Power Systems Analysis	2	1.73	1.2	0.8	-	1.33	-	-	0.53	0.5	-	1.2
EE602PC	Power Electronics	2	1.2	0.4	0.67	-	1.33	-	-	0.67	0.67	-	1.2
EE603PC	Switch Gear and Protection	3	2.2	0.6	3	0.8	1.8	-	-	1	1	-	1.8
EE511OE	Non-Conventional Power Generation	2.6	2.2	1	1.4	-	2	1	1	-	1	-	-
EE614PE	Electrical And Electronics Instrumentation	3	2.2	2.8	2.4	1.6	-	-	-	-	-	2.4	1.8
EE604PC	Power Systems Lab	3	2.6	1.8	1.2	-	2	-	-	0.8	0.75	-	1.8
EE605PC	Power Electronics Lab	3	1.8	0.6	1	-	2	-	-	1	1	-	1.8
EN606HS	Advanced English Communication Skills Lab	1.4	0.2	-	-	-	-	-	-	-	-	-	-
EE701PC	Power Semiconductor Drives	2	1.73	1.33	-	-	1.33	-	0.67	-	-	-	1.2
EE702PC	Power System Operation and Control	2	1.47	0.67	0.53	-	1.33	0.53	-	0.67	0.67	-	0.67
EE722PE	HVDC Transmission	3	2.2	2.8	2.4	1.6	-	-	-	1	1	-	1.8
EE732PE	Power Quality	3	1.8	0.6	1	-	2	-	-	1	1	-	1.8
EE743PE	Flexible A.C. Transmission Systems	3	2.2	2.8	2.4	1.6	-	-	-	1	1	-	1.8
EE703PC	Electrical Systems simulation lab	3	2	-	-	-	-	-	-	-	-	-	-
EE704PC	Electrical Workshop	2.6	1.2	-	1	0.4	-	-	-	-	-	-	-
EE705PC	Industrial Oriented Mini Project	3	3	3	3	3	2	2	3	3	3	3	3
EE706PC	Seminar	2	2	2	2	2	1	1	2	2	2	2	2
MT831OE	Renewable Energy Sources	2.6	2.2	1	1.4	-	2	1	1	-	1	-	-
EE852PE	Electrical Distribution Systems	3	2.2	2.8	2.4	-	1.67	-	-	-	1.5	2.4	-
EE863PE	Utilization of Electric Power	1.73	1.47	1.2	1.2	-	1.33	0.67	0.67	-	0.67	-	-
EE801PC	Major Project	3	3	3	3	3	2	2	3	3	3	3	3
AVG Attainment		2.27	1.72	1.66	1.5	1.15	1.6	1.05	1.46	1.22	1.2	2.14	1.78

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80% of Direct Attainment	1.82	1.37	1.33	1.2	.92	1.28	0.84	1.17	0.97	0.96	1.71	1.42
Indirect Attainment	2.5	2.4	2.5	2.3	2.2	2.3	2.1	2.3	2.4	2.5	2.4	2.5
20% of Indirect Attainment	0.5	0.48	0.5	0.46	0.44	0.46	0.42	0.46	0.48	0.5	0.48	0.5
Final Attainment	2.32	1.85	1.83	1.66	1.36	1.74	1.26	1.63	1.45	1.46	2.19	1.92

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