Course Outcomes and CO-PO/PSO Mappings: ECE

MATHEMATICS-III (KAS-302)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C201.1 Apply the concept of Laplace transform and apply in solving real life problems.	3	3	2	3	3							3	3	2
C201.2 Apply the concept of Fourier and Z – transform to evaluate engineering problems	3	3	2	3	3							3	3	2
C201.3 Apply the concept of Formal Logic ,Group and Rings to evaluate real life problems	3	3	2	3	3							3	3	2
C201.4 Apply the concept of Set, Relation, function and Counting Techniques	3	3	2	3	3							3	3	2
C201.5 Apply the concept of Lattices and Boolean Algebra to create Logic Gates and Circuits, Truth Table, Boolean Functions, Karnaugh Maps	3	3	2	3	3							3	3	2
MATHEMATICS-III (KAS-302)	**3**	**3**	**2**	**3**	**3**							**3**	**3**	**2**
UHVPE (KVE-301)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C202.1 Demonstrate the significance of value inputs in a classroom, distinguish between values and skills, analyse the need, basic guidelines, content and process of value education, explore the meaning of happiness and prosperity and do a correct appraisal of the current scenario in the society						3	2	2	3			3		
C202.2 Distinguish between the Self and the Body, understand the meaning of Harmony in the Self the Co-existence of Self and Body.						3	2	2	3			3		
C202.3 Analyse the value of harmonious relationship based on trust, respect and other naturally acceptable feelings in human-human relationships and explore their role in ensuring a harmonious society						3	2	2	3			3		
C202.4 Analyse the harmony in nature and existence, and work out their mutually fulfilling participation in the nature.						3	3	2	3			3		
C202.5 Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.						3	3	3	3			3		
UHVPE (KVE-301)						**3**	**2.4**	**2.2**	**3**			**3**		

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Electronic Devices (KEC-301)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C203.1Students will be able to classify the basics of semiconductor materials and principle of quantum theory.	1	1	1	1	1							3	1	1
C203.2Students will be able to examine the charge carrier and their transport mechanism.	3	3	2	3	3							3	2	3
C203.3Students will be to demonstrate excess carrier behaviors and analysis of diode equation.	3	3	2	3	3							3	2	3
C203.4 Students will explain about breakdown mechanism and device level analysis of BJT.	1	1	1	1	1							3	1	1
C203.5. Students will create detailed level analysis of MOS transistor and various capacitive effects.	3	3	3	3	3							3	2	3
Electronic Devices (KEC-301)	**2.2**	**2.2**	**1.8**	**2.2**	**2.2**							**3**	**1.6**	**2.2**
Digital System Design (KEC-302)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C204.1. Design and analyze combinational logic circuits.	3	3	3	3	3							3	3	3
C204.2. Design and analyze modular combinational circuits with MUX / DEMUX, Decoder & Encoder	3	3	3	3	3							3	3	3
C204.3. Design & analyze synchronous sequential logic circuits	3	3	3	3	3							3	3	3
C204.4. Analyze various logic families.	3	3	2	3	3							3	3	2
C204.5. Design ADC and DAC and implement in amplifier, integrator, etc.	3	3	3	3	3							3	3	3
Digital System Design (KEC-302)	**3**	**3**	**2.8**	**3**	**3**							**3**	**3**	**2.8**
Network Analysis and Synthesis (KEC303)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C205.1 Apply the basics of electrical circuits with nodal and mesh analysis.	3	3	2	3	3							3	3	2
C205.2 Apply electrical network theorems.	3	3	2	3	3							3	3	2
C205.3 Apply Laplace transform for steady state and transient analysis.	3	3	2	3	3							3	3	2
C205.4 Determine different network functions.	3	3	2	3	3							3	3	2
C205.5 Implement the frequency domain techniques.	3	3	2	3	3							3	3	2
Network Analysis and Synthesis (KEC303)	**3**	**3**	**2**	**3**	**3**							**3**	**3**	**2**
Network Analysis and Synthesis Lab (KEC353)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C206.1 Apply basics of electrical circuits with nodal and mesh analysis.	3	3	2	3	3							3	3	2
C206.2 Apply the electrical network theorems.	3	3	2	3	3							3	3	2
C206.3 Analyse RLC circuits.	3	3	2	3	3							3	3	2
C206.4 Determine the stability of an electrical circuit.	3	3	2	3	3							3	3	2
C206.5 Design network filters.	3	3	3	3	3							3	3	3
Network Analysis and Synthesis Lab (KEC353)	**3**	**3**	**2.2**	**3**	**3**							**3**	**3**	**2.2**

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Digital System Design Lab (KEC352)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C207.1 Design and analyze combinational logic circuits.	3	3	3	3	3							3	3	3
C207.2 Design & analyze modular combinational circuits with MUX/DEMUX, decoder, encoder.	3	3	3	3	3							3	3	3
C207.3 Design & analyze synchronous sequential logic circuits.	3	3	3	3	3							3	3	3
C207.4 Design & build mini project using digital ICs.	3	3	3	3	3							3	3	3
Digital System Design Lab (KEC352)	**3**	**3**	**3**	**3**	**3**							**3**	**3**	**3**
Electronic Devices Lab (KEC351)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C208.1 Demonstrate the working of basic electronics lab equipment.	3	3	2	3	3							3	3	2
C208.2 Demonstrate the working of PN junction diode and its applications.	3	3	2	3	3							3	3	2
C208.3 Demonstrate the characteristics of Zener diode.	3	3	2	3	3							3	3	2
C208.4 Design a voltage regulator using Zener diode.	3	3	3	3	3							3	3	3
C208.5 Demonstrate the working of BJT, FET, MOSFET and apply the concept in designing of amplifiers.	3	3	2	3	3							3	3	2
Electronic Devices Lab (KEC351)	**3**	**3**	**2.2**	**3**	**3**							**3**	**3**	**2.2**
Mini Project/ Internship (KEC-354)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C209.1 Demonstrate the functioning of Analog & Digital electronics circuits through Multisim simulations or 8085 programming.	3	3	2	3	3					3		3	3	2
C209.2 Present their work in form of powerpoint presentations.	3	3	2	3	3					3		3	3	2
C209.3 Effectively write the learnt simulation and theory principles in form of report.	3	3	2	3	3					3		3	3	2
Mini Project/ Internship (KEC-354)	**3**	**3**	**2**	**3**	**3**					**3**		**3**	**3**	**2**
PYTHON PROGRAMMING (KNC-302)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C210.1To read and write simple Python programs.	1	1	1	1	1						1	3		
C210.2 To develop Python programs with conditionals and loops.	1	1	1	1	1						1	3		
C210.3To define Python functions and to use Python data structures – lists, tuples, dictionaries	1	1	1	1	1						1	3		
C210.4 To do input/output with files in Python	1	1	1	1	1						1	3		
C210.5 To do searching ,sorting and merging in Python	1	1	1	1	1						1	3		
PYTHON PROGRAMMING (KNC-302)	**1**	**1**	**1**	**1**	**1**						**1**	**3**		

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Technical Communication (KAS-402)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C212.1Students will be enabled to demonstrate the nature and objective of Technical Communication relevant for the work place as Engineers.							1	1	1	3				
C212.2 Students will utilize the technical writing for the purposes of Technical Communication and its exposure in various dimensions.							1	1	1	3				
C212.3 Students would imbibe inputs by presentation skills to enhance confidence in face of diverse audience.							1	1	2	3				
C212.4 Technical communication skills will create a vast know-how of the application of the learning to promote their technical competence.							1	1	2	3				
C212.5 It would enable them to evaluate their efficacy as fluent & efficient communicators by learning the voice-dynamics.							1	1	2	3				
Technical Communication (KAS-402)							**1**	**1**	**1.6**	**3**				
Communication Engineering (KEC-401)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C213.1 Students will be able to examine and compare different analog modulation schemes for their efficiency and bandwidth.	3	3	2	3	3							3	3	2
C213.2 Students will be able to describe the behavior of a communication system in presence of noise.	1	1	1	1	1							3	1	1
C213.3 Students will be able to differentiate various pulsed modulation system and examine their system performance.	3	3	2	3	3							3	3	2
C213.4 Students will be able to classify and describe various multiplexing techniques.	1	1	1	1	1							3	1	1
C213.5 Students will be able to evaluate different digital modulation schemes and compute the bit error performance.	3	3	3	3	3							3	3	3
Communication Engineering (KEC-401)	**2.2**	**2.2**	**1.8**	**2.2**	**2.2**							**3**	**2.2**	**1.8**

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Analog Circuits (KEC-402)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C214.1Students will be able to describe the characterstics of diodes and transistors.	1	1	1	1	1							3	1	1
C214.2Students will be able to implement and differentiate different types of feedback.	3	3	2	3	3							3	3	2
C214.3Students will be able to explain and design oscillators.	3	3	3	3	3							3	3	3
C214.4 Students will be able to describe current mirrors and design op-amp.	3	3	3	3	3							3	3	3
C214.5. Students will be able to classify the applications of op-amp and design of active filters.	3	3	3	3	3							3	3	3
Analog Circuits (KEC-402)	**2.6**	**2.6**	**2.4**	**2.6**	**2.6**							**3**	**2.6**	**2.4**
SIGNAL SYSTEM (KEC-403)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C215.1 Analyze different types of signals	3	3	2	3	3							3	3	2
C215.2 Analyze linear shift-invariant (LSI) systems	3	3	2	3	3							3	3	2
C215.3 Represent continuous and discrete systems in time and frequency domain using Fourier series and transform.	1	1	1	1	1							3	1	1
C215.4 Analyze discrete time signals in z-domain.	3	3	2	3	3							3	3	2
C215.5 Perform sampling and reconstruction of a signal.	1	1	1	1	1							3	1	1
SIGNAL SYSTEM (KEC-403)	**2.2**	**2.2**	**1.6**	**2.2**	**2.2**							**3**	**2.2**	**1.6**
Communication Engineering Lab (KEC451)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C216.1 Analyze and compare different analog modulation schemes for their modulation factor and power.	3	3	2	3	3							3	3	2
C216.2. Demonstrate pulse amplitude modulation.	3	3	2	3	3							3	3	2
C216.3. Analyze different digital modulation schemes and can compute the bit error performance.	3	3	2	3	3							3	3	2
C216.4. Study and simulate the Phase shift keying.	3	3	2	3	3							3	3	2
C216.5. Design a front end BPSK modulator and demodulator.	3	3	3	3	3							3	3	3
Communication Engineering Lab (KEC451)	**3**	**3**	**2.2**	**3**	**3**							**3**	**3**	**2.2**

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Analog Circuit Lab (KEC452)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C217.1. Verify and demonstrate the characteristics of transistors.	3	3	2	3	3							3	3	2
C217.2. Design and analyze various configurations of amplifier circuits.	3	3	2	3	3							3	3	2
C217.3. Design sinusoidal and non-sinusoidal oscillators.	3	3	3	3	3							3	3	3
C217.4. Verify the functioning of OP-AMP and design OP-AMP based circuits.	3	3	2	3	3							3	3	2
C217.5. Design ADC and DAC.	3	3	3	3	3							3	3	3
Analog Circuit Lab (KEC452)	**3**	**3**	**2.4**	**3**	**3**							**3**	**3**	**2.4**
Signal System Lab (KEC453)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C218.1. Demonstrate the basics operation of MATLAB.	3	3	2	3	3							3	3	2
C218.2. Analyse the time domain and frequency domain signals.	3	3	2	3	3							3	3	2
C218.3. Implement the concept of Fourier series and Fourier transforms.	3	3	2	3	3							3	3	2
C218.4. Find the stability of system using pole-zero diagrams and bode diagram.	3	3	2	3	3							3	3	2
C218.5. Design frequency response of the system.	3	3	3	3	3							3	3	3
	3	**3**	**2.2**	**3**	**3**							**3**	**3**	**2.2**
Computer System Security (KNC-401)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C219.1. To discover software bugs that pose cyber security threats and to explain how to fix the bugs to mitigate such threats			1	1	1	1					3	3		
C219.2 To discover cyber attack scenarios to web browsers and web servers and to explain how to mitigate such threats			1	1	1	1					3	3		
C219.3 To discover and explain mobile software bugs posing cyber security threats, explain and recreate exploits, and to explain mitigation techniques.			1	1	1	1					3	3		
C219.4 To articulate the urgent need for cyber security in critical computer systems, networks, and world wide web, and to explain various threat scenarios			1	1	1	1					3	3		
C219.5 To articulate the well known cyber attack incidents, explain the attack scenarios, and explain mitigation techniques.			1	1	1	1					3	3		
Computer System Security (KNC-401)			**1**	**1**	**1**	**1**					**3**	**3**		

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Integrated Circuits (KEC-501)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO301.1 Students will be able to define and describe the basic of analog IC design and a complete analysis of 741-IC Op-Amp	1	1	1	1	1							3	1	1
CO301.2 Students will be able to apply knowledge about Op-Amp based circuits and basic components of ICs to implement various types of filters.	3	3	2	3	3							3	3	2
CO301.3 Students will be able to apply the concept of Op-Amp based non-linear and wave-shaping circuits.	3	3	2	3	3							3	3	2
CO301.4 Students will be able to design CMOS digital integrated circuits and digital memory circuits.	3	3	3	3	3							3	3	3
CO301.5 Students will be able to describe the working principle of data converters along with application specific ICs such as 555 timer and PLL.	3	3	2	3	3							3	3	2
Integrated Circuits (KEC-501)	**2.6**	**2.6**	**2**	**2.6**	**2.6**							**3**	**2.6**	**2**
Microprocessor & Microcontroller (KEC502)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C302.1 Apply a basic concept of digital fundamentals to Microprocessor based personal computer system.	3	3	2	3	3							3	3	2
C302.2Analyze a detailed software & hardware structure of the Microprocessor.	3	3	2	3	3							3	3	2
C302.3Learn the basics of 8086 Microprocessor and Peripheral Devices like timer, USART etc.	1	1	1	1	1							3	1	1
C302.4Understand the difference between Microprocessors & Microcontrollers, and details Architecture of 8051 Microcontroller.	1	1	1	1	1							3	1	1
C302.5Learn the concept of 8051 instruction set and implement them to design projects on real timeproblems.	1	1	1	1	1							3	1	1
Microprocessor & Microcontroller (KEC502)	**1.8**	**1.8**	**1.4**	**1.8**	**1.8**							**3**	**1.8**	**1.4**

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Digital Signal Processing (KEC503)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C303.1 Design and describe different types of realizations of digital systems (IIR and FIR) and theirutilities	3	3	3	3	3							3	3	3
C303.2 Select design parameters of analog IIR digital filters (Butterworth and Chebyshev filters) andimplement various methods such as impulse invariant transformation and bilineartransformation of conversion of analog to digital filters.	3	3	3	3	3							3	3	3
C303.3 Design FIR filter using various types of window functions.	3	3	3	3	3							3	3	3
C303.4 Define the principle of discrete Fourier transform & its various properties and concept ofcircular and linear convolution. Also, students will be able to define and implement FFT i.e. afast computation method of DFT.	1	1	1	1	1							3	1	1
C303.5 Define the concept of decimation and interpolation. Also, they will be able to implement it invarious practical applications.	1	1	1	1	1							3	1	1
Digital Signal Processing (KEC503)	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**							**3**	**2.2**	**2.2**
VLSI TECHNOLOGY (KEC-053)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C304.1. Interpret the basics of crystal growth, wafer preparation and wafer cleaning.	3	3	2	3	3							3	3	2
C304.2. Evaluate the process of Epitaxy and oxidation.	3	3	3	3	3							3	3	3
C304.3. Differentiate the lithography, etching and deposition process.	3	3	2	3	3							3	3	2
C304.4. Analyze the process of diffusion and ion implantation.	3	3	2	3	3							3	3	2
C304.5. Express the basic process involved in metallization and packaging.	3	3	3	3	3							3	3	3
VLSI TECHNOLOGY (KEC-053)	3	3	2.4	3	3								3	2.4

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Optical Communication (KEC-058)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C305.1 Define and explain the basic concepts and theory of optical communication.	1	1	1	1	1							3	1	1
C305.2 Describe the signal losses with their computation and dispersion mechanism occurring inside the optical fiber cable.	3	3	2	3	3							3	3	2
C305.3 Differentiate the optical sources used in optical communication with their comparative study.	3	3	2	3	3							3	3	2
C305.4 Identify different optical components on receiver side; assemble them to solve real world problems related to optical communication systems.	3	3	2	3	3							3	3	2
C305.5 Evaluate the performance of an optical receiver to get idea about power budget and ultimately be an engineer with adequate knowledge in optical domain.	3	3	3	3	3							3	3	3
Optical Communication (KEC-058)	**2.6**	**2.6**	**2**	**2.6**	**2.6**							**3**	**2.6**	**2**
INTEGRATED CIRCUITS LAB (KEC-551)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C306.1. Design different non-linear applications of operational amplifiers such as log, antilog amplifiers and voltage comparators amplifiers and voltage comparators.	3	3	3	3	3							3	3	3
C306.2. Explain and design different linear applications of operational amplifiers such as filters.	3	3	3	3	3							3	3	3
C306.3. Demonstrate the function of waveforms generator using op-Amp.	3	3	2	3	3							3	3	2
C306.4. Construct multivibrator and oscillator circuits using IC555 and IC566 and perform measurements of frequency and time.	3	3	3	3	3							3	3	3
C306.5. Design and practically demonstrate the applications based on IC555 and IC566.	3	3	3	3	3							3	3	3
INTEGRATED CIRCUITS LAB (KEC-551)	**3**	**3**	**2.8**	**3**	**3**							**3**	**3**	**2.8**

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MICROPROCESSOR & MICROCONTROLLER LAB (KEC-552)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C307.1. Use techniques, skills, modern engineering tools, instrumentation and software/hardware appropriately to list and demonstrate arithmetic and logical operations on 8 bit data using microprocessor 8085.	3	3	2	3	3							3	3	2
C307.2. Examine 8085 & 8086 microprocessor and its interfacing with peripheral devices.	3	3	2	3	3							3	3	2
C307.3. State various conversion techniques using 8085 & 8086 and generate waveforms using 8085.	3	3	2	3	3							3	3	2
C307.4. Implement programming concept of 8051 Microcontroller.	3	3	2	3	3							3	3	2
C307.5. Design concepts to Interface peripheral devices with Microcontroller so as to design Microcontroller based projects.	3	3	3	3	3							3	3	3
MICROPROCESSOR & MICROCONTROLLER LAB (KEC-552)	**3**	**3**	**2.2**	**3**	**3**							**3**	**3**	**2.2**
DIGITAL SIGNAL PROCESSING LAB (KEC-553)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C308.1. Create and visualize various discrete/digital signals using MATLAB/Scilab.	3	3	2	3	3							3	3	2
C308.2. Implement and test the basic operations of Signal processing.	3	3	2	3	3							3	3	2
C308.3. Examine and analyse the spectral parameters of window functions.	3	3	2	3	3							3	3	2
C308.4. Design IIR and FIR filters for band pass, band stop, low pass and high pass filters.	3	3	3	3	3							3	3	3
C308.5. Design the signal processing algorithms using MATLAB/Scilab.	3	3	3	3	3							3	3	3
DIGITAL SIGNAL PROCESSING LAB (KEC-553)	**3**	**3**	**2.4**	**3**	**3**							**3**	**3**	**2.4**

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Mini Project/ Internship (KEC-554)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C309.1. Demonstrate the technical aspects of the training module completed.	3	3	2	3	3					3		3	3	2
C309.2. Present their work in form of powerpoint presentations.	3	3	2	3	3					3		3	3	2
C309.3. Effectively write the learnt simulation and theory principles in form of report.	3	3	2	3	3					3		3	3	2
Mini Project/ Internship (KEC-554)	**3**	**3**	**2**	**3**	**3**					**3**		**3**	**3**	**2**
Constitution of India, Law and Engineering (KNC-501)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C310.1 Identify and explore the basic features and modalities about Indian constitution.						1		1	1	1		1		
C310. 2 Differentiate and relate the functioning of Indian parliamentary system at the center and state level.						1		1	1		3	1		
C310.3 Differentiate different aspects of Indian Legal System and its related bodies.						1	3	1	1	2		3		
C310.4 Discover and apply different laws and regulations related to engineering practices.						3	3	3	3	2	2	3		
C310.5 Correlate role of engineers with different organizations and governance models.						3	3	3	3		2	2		
Constitution of India, Law and Engineering (KNC-501)						**2.333**	**3**	**2.333**	**2.333**	**2**	**2**	**2.667**		

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Digital Communication (KEC-601)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C311.1 Students will demonstrate the ability to formulate basic statistics involved in communication theory.	3	3	2	3	3							3	3	2
C311.2 Students will demonstrate the ability to formulate basic statistics involved in communication theory.	3	3	2	3	3							3	3	2
C311.3 Students will demonstrate the ability to explain the concepts of digital modulation schemes.	1	1	1	1	1							3	1	1
C311.4 Students will demonstrate the ability to analyze the performance of digital communication systems.	3	3	2	3	3							3	3	2
C311.5 Students will demonstrate the ability to apply the concept of information theory in digital systems.	3	3	2	3	3							3	3	2
Digital Communication (KEC-601)	**2.6**	**2.6**	**1.8**	**2.6**	**2.6**							**3**	**2.6**	**1.8**
Control System (KEC-602)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C312.1 Describe the basics of control systems along with different types of feedback and its effect. Additionally, they will also be able to explain the techniques such as block diagrams reduction, signal flow graph and modelling of various physical systems along with modelling of DC servomotor.	3	3	2	3	3							3	3	2
C312.2 Explain the concept of state variables for the representation of LTI system.	1	1	1	1	1							3	1	1
C312.3 Interpret the time domain response analysis for various types of inputs along with the time domain specifications.	3	3	2	3	3							3	3	2
C312.4 Distinguish the concepts of absolute and relative stability for continuous data systems along with different methods.	3	3	2	3	3							3	3	2
C312.5 Interpret the concept of frequency domain response analysis and their specifications.	3	3	2	3	3							3	3	2
Control System (KEC-602)	**2.6**	**2.6**	**1.8**	**2.6**	**2.6**							**3**	**2.6**	**1.8**

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Antenna & Wave Propagation (KEC-603)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C313.1 Student will Identify different coordinate systems and their applications in electromagnetic field theory to establish a relation between any two systems using the vector calculus.	1	1	1	1	1							3	1	1
C313.2 Student will explain the concept of static electric field, current and properties of conductors.	1	1	1	1	1							3	1	1
C313.3 Students will Demonstrate the knowledge of antenna fundamentals and radiation mechanism of the antenna	3	3	2	3	3							3	3	2
C313.4 Students will Analyze and design different types of basic antennas	3	3	2	3	3							3	3	2
C313.5 Students will Express the basic concepts of ground, space, sky wave propagation mechanism	1	1	1	1	1							3	1	1
Antenna & Wave Propagation (KEC-603)	**1.8**	**1.8**	**1.4**	**1.8**	**1.8**							**3**	**1.8**	**1.4**
ANALOG SIGNAL PROCESSING (KEC-064)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
314.1. Describe and apply fundamentals of signal processing in analog domain and its associatedconcepts like OTA and current conveyor.	3	3	2	3	3							3	3	2
314.2. Design filters using their designing parameters.	3	3	3	3	3							3	3	3
314.3. Solve problems and design higher order filters like Butterworth and Chebyshev.	3	3	3	3	3							3	3	3
314.4. Explain the reasons for delay in filter designing and its procedure to equalize.	1	1	1	1	1							3	1	1
314.5. Demonstrate the principles of the inductor simulation like general impedance convertor (GIC), optimal design of the GIC, Gorski-Popiel's Embedding Technique, Bruton's FDNR technique which are used for placing equivalent inductor on integrated circuits.	3	3	2	3	3							3	3	2
ANALOG SIGNAL PROCESSING (KEC-064)	**2.6**	**2.6**	**2.2**	**2.6**	**2.6**							**3**	**2.6**	**2.2**

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DIGITAL COMMUNICATION LAB (KEC-651)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
316.1. To formulate basic concepts of pulse shaping in digital communication.	3	3	3	3	3							3	3	3
316.2. To identify different line coding techniques and demonstrate the concepts.	3	3	2	3	3							3	3	2
316.3. To design equipments related to digital modulation and demodulation schemes.	3	3	3	3	3							3	3	3
316.4. To analyze the performance of various digital communication systems and evaluate the key parameters.	3	3	2	3	3							3	3	2
316.5. To conceptualize error detection & correction using different coding schemes in digital comm.	3	3	2	3	3							3	3	2
DIGITAL COMMUNICATION LAB (KEC-651)	**3**	**3**	**2.4**	**3**	**3**							**3**	**3**	**2.4**
CONTROL SYSTEM LAB (KEC-652)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
317.1. Classify different tools in MATLAB along with the basic matrix operations used in MATLAb.	1	1	1	1	1							3	1	1
317.2. Evaluate the poles and zeros on s-plane along with transfer function of a given system.	3	3	3	3	3							3	3	3
317.3. Construct state space model of a linear continuous system.	3	3	3	3	3							3	3	3
317.4. Evaluate the various specifications of time domain response of a given system	3	3	3	3	3							3	3	3
317.5. Appraise the steady state error of a given transfer function.	3	3	2	3	3							3	3	2
317.6. Examine the relative stability of a given transfer function using various methods such as root locus, Bode plot and Nyquist plot.	3	3	2	3	3							3	3	2
CONTROL SYSTEM LAB (KEC-652)	**3**	**3**	**2.6**	**3**	**3**							**3**	**3**	**2.6**

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CAD FOR ELECTRONICS LAB (KEC-653B)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
318.1. Design and analyze the performance of different type of inverters.	3	3	3	3	3							3	3	3
318.2. Design and analyze the performance of the basic logic gates using CMOS inverter circuit	3	3	3	3	3							3	3	3
318.3. Design and analyze the performance of the memory based digital circuits using CMOS inverter circuit.	3	3	3	3	3							3	3	3
318.4. Analyze the performance of the different configuration of MOS amplifier circuits.	3	3	2	3	3							3	3	2
CAD FOR ELECTRONICS LAB (KEC-653B)	**3**	**3**	**2.75**	**3**	**3**							**3**	**3**	**2.75**
Indian Tradition Culture and Society (KNC-602)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
319.1 Identify, explore and enhance the ability to understand the basic features of Society State and Polity in India.						1		1	1	1		1		
319.2 To understand and follow Indian Literature, Culture, Traditions and Practices.						1		1	1		2	1		
319.3 To understand and explain the basis of Indian Religion, Philosophy and Practices.						1	3	1		2		1		
319.4 To understand the basics of Science, Management and Indian Knowledge System.						3	2	1	3	2	1	3		
perspective of Indian Cultural Heritage and Performing Arts.						3	2	3	2		1	3		
Indian Tradition Culture and Society (KNC-602)						**2**	**2.333**	**1.5**	**2**	**2**	**1.333**	**2**		

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Information Theory & Coding (REC-071)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C402.1 Students will solve the problem related to Entropy, Joint Entropy and Conditional Entropy, Relative Entropy and Mutual Information, Relationship between Entropy and Mutual Information	3	3	2	3	3							3	3	2
C402.2 Students will be able to execute Data Compression, Examples of Codes, Kraft Inequality, Optimal Codes, Bounds on the Optimal Code Length	3	3	2	3	3							3	3	2
C402.3 Students will be able to identify the Examples of Channel Capacity, Symmetric Channels, Properties of Channel Capacity, Preview of the Channel Coding Theorem	1	1	1	1	1							3	1	1
C402.4 Students will analyse Introduction to block codes, Single-parity-check codes, Product codes, Repetition codes, Hamming codes	3	3	2	3	3							3	3	2
C402.5Students will Design Generator matrices for convolutional codes, Generator polynomials for convolutional codes	3	3	3	3	3							3	3	3
Information Theory & Coding (REC-071)	**2.6**	**2.6**	**2**	**2.6**	**2.6**							**3**	**2.6**	**2**
Optical Communication (REC-075)	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C403.1 Familiarize with basic concepts and theory of Optical Communication.	**1**	**1**	**1**	**1**	**1**							**3**	**1**	**1**
C403.2 Demonstrate OPCOMM components, assemble them and solve problems on Optical Communication system.	**3**	**3**	**3**	**3**	**3**							**3**	**3**	**3**
C403.3 Able to design, implements, analyze and maintains optical communication system.	**3**	**3**	**3**	**3**	**3**							**3**	**3**	**3**
C403.4 Gain knowledge of different source of light as well as receiver and their comparative study.	**3**	**3**	**2**	**3**	**3**							**3**	**3**	**2**
C403.5 To get idea about power budget and ultimately be an engineer with adequate knowledge in optical domain.	**1**	**1**	**1**	**1**	**1**							**3**	**1**	**1**
Optical Communication (REC-075)	**2.2**	**2.2**	**2**	**2.2**	**2.2**							**3**	**2.2**	**2**

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DATA COMMUNICATION NETWORKS REC-701	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C404.1 Identify the issues and challenges in the architecture of a network	1	1	1	1	1							3	1	1
C404.2 Describe the ISO/OSI seven layers in a network.	1	1	1	1	1							3	1	1
C404.3 Realize protocols at different layers of a network hierarchy	1	1	1	1	1							3	1	1
C404.4 Recognize security issues in a network.	1	1	1	1	1							3	1	1
DATA COMMUNICATION NETWORKS REC-701	1	1	1	1	1							3	1	1
VLSI Design REC-702	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C405.1 Model the behaviour of a MOS Transistor	3	3	2	3	3							3	3	2
C405.2 Design combinational and sequential circuits using CMOS gates	3	3	3	3	3							3	3	3
C405.3 Identify the sources of power dissipation in a CMOS circuit.	1	1	1	1	1							3	1	1
C405.4 Analyse SRAM cell and memory arrays	3	3	2	3	3							3	3	2
VLSI Design REC-702	2.5	2.5	2	2.5	2.5							3	2.5	2
Optical communication Lab REC-751	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C406.1 Demonstrate the concept of optical fiber link establishment.	3	3	2	3	3							3	3	2
C406.2 Measure losses and optical fibre parameters.	3	3	2	3	3							3	3	2
C406.3 Demonstrate the concept of multiplexing.	3	3	2	3	3							3	3	2
C406.4 Demonstrate various coding and decoding schemes for optical communication.	3	3	2	3	3							3	3	2
Optical communication Lab REC-751	3	3	2	3	3							3	3	2

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Electronics Circuits Lab REC-752	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C407.1 To implement the concept ofuniversal op-amp based biquad.	3	3	2	3	3							3	3	2
C407.2 To analyse amplitude control or stabilization applied to any sinusoidal oscillators and Op-amp/ OTA based function generator.	3	3	2	3	3							3	3	2
C407.3 To design log/antilog circuits and find applications of analog multiplier/ divider.	3	3	3	3	3							3	3	3
C407.4 To design a digital system and its hardware implementation using TTL/ CMOS ICs and Any circuit idea using 555 Timer.	3	3	3	3	3							3	3	3
C407.5 To design the circuit, Make hardware and measure various parameters and Simulation in Spice of the designed circuit.	3	3	3	3	3							3	3	3
Electronics Circuits Lab REC-752	3	3	2.6	3	3							3	3	2.6
Industrial training REC-753	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C408.1 Describe the functional details of the work carried during the training.	3	3	2	3	3					3		3	3	2
C408.2 Familiarize with the industry environment, ethics and work culture.	3	3	2	3	3					3		3	3	2
C408.3 Students will be capable of documenting and presenting the detailed process involved in the designing of the project, starting from the idea behind the project to the future aspects of the project.	3	3	2	3	3					3		3	3	2
C408.4 Students will be capable of working in a team and apply critical thinking for solving real life problems concerning society.	3	3	2	3	3					3		3	3	2

Project REC-754	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C409.1 Design PCB and mount the components over it and solder them.	3	3	3	3	3							3	3	3
C409.2 Analyze and design various hardware & software modules using the concepts of interfacing.	3	3	3	3	3							3	3	3
C409.3 Analyze and evaluate software & hardware testing and finally coming up with the demonstration of the designed functional model.	3	3	3	3	3							3	3	3
C409.4 Documenting and presenting the detailed process involved in the designing of the project, starting from the idea behind the project to the future aspects of the project.										3				
C409.5 Working in a team and apply critical thinking for solving real life problems concerning society.	3	3	2	3	3				3	3		3	3	2
Project REC-754	3	3	2.75	3	3				3	3		3	3	2.75
Satellite and Radar Systems REC-083	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C411.1 Describe satellite functioning and services.	1	1	1	1	1							3	1	1
C411.2 Explain orbital mechanism and launching.	1	1	1	1	1							3	1	1
C411.3 Identify earth segment and space segment components.	1	1	1	1	1							3	1	1
C411.4 Identify satellite access by various users.	1	1	1	1	1							3	1	1
C411.5 Describe DTH and compression standards.	1	1	1	1	1							3	1	1
Satellite and Radar Systems REC-083	1	1	1	1	1							3	1	1
Wireless and Mobile Communication REC-085	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C412.1 Describe the fundamentals of mobile communication systems.	1	1	1	1	1							3	1	1
C412.2 To choose system (TDMA/FDMA/CDMA) according to the complexity, installation cost, speed of transmission, channel properties etc.	3	3	2	3	3							3	3	2
C412.3 To identify the requirements of mobile communication as compared to static communication.	1	1	1	1	1							3	1	1
C412.4 To identify the limitations of 2G and 2.5G wireless mobile communication and use design of 3G and beyond mobile communication systems.	1	1	1	1	1							3	1	1
C412.5 To describe various modern wireless technologies and their applications.	3	3	2	3	3							3	3	2
Wireless and Mobile Communication REC-085	1.8	1.8	1.4	1.8	1.8							3	1.8	1.4

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Seminar REC-851	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C413.1. Describe latest developments in the field of ECE.	1	1	1	1	1							3	1	1
C413.2. Present their work in form of powerpoint presentations.										3				
C413.3. Effectively write the learnings derrived while preparing for the seminar topic.	1	1	1	1	1					3		3	1	1
C413.4. Communicate effectively on technical topics.										3				
Seminar REC-851	1	1	1	1	1					3		3	1	1
Project REC-852	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
C414.1 Design PCB and mount the components over it and solder them.	3	3	3	3	3							3	3	3
C414.2 Analyze and design various hardware & software modules using the concepts of interfacing.	3	3	3	3	3							3	3	3
C414.3 Analyze and evaluate software & hardware testing and finally coming up with the demonstration of the designed functional model.	3	3	3	3	3							3	3	3
C414.4 Documenting and presenting the detailed process involved in the designing of the project, starting from the idea behind the project to the future aspects of the project.										3				
C414.5 Working in a team and apply critical thinking for solving real life problems concerning society.	3	3	2	3	3				3	3		3	3	2
Project REC-852	3	3	2.75	3	3				3	3		3	3	2.75

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CO Attainment: ECE

		Internal						External	Average	In-Direct
Sub Code	Sem	CO1	CO2	CO3	CO4	CO5	AVG.			
KMC101	1st Year	3.00	1.73	2.15	2.65	2.12	2.33	2.04	2.13	2.72
KMC102		3.00	1.70	1.20	3.00	3.00	2.38	2.72	2.62	2.65
KAS103T		3.00	3.00	3.00	3.00	3.00	3.00	2.16	2.41	2.69
KAS102T/ KAS202T		3.00	3.00	3.00	3.00	3.00	3.00	2.97	2.98	2.66
KAS101T		3.00	3.00	3.00	3.00	3.00	3.00	2.03	2.32	2.76
KEE101T		2.03	2.46	3.00	3.00	3.00	2.70	2.85	2.80	2.7
KNC101		3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	2.73
KEC101T		3.00	3.00	3.00	3.00	3.00	3.00	2.17	2.42	2.55
KCS101T		3.00	0.60	3.00	2.10	3.00	2.34	3.00	2.80	2.66
KAS203T		3.00	3.00	3.00	3.00	3.00	3.00	2.99	2.99	2.69
KME101T		2.50	3.00	3.00	3.00	3.00	2.90	2.34	2.51	2.7
KEE151P/KEE251P		3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	2.55
KCS151P/KCS251P		2.25					2.25	3.00	2.78	2.57
KAS151P/KAS251P		2.23					2.23	3.00	2.77	2.64
KWS151P/KWS251P		2.47					2.47	3.00	2.84	2.56
KCE151P/KCE251P		2.47					2.47	3.00	2.84	2.49
KAS152P/KAS252P		2.60					2.60	3.00	2.88	2.54
KAS154P/KAS254P		2.35					2.35	3.00	2.81	2.71
KEC151P/KEC251P		2.53					2.53	3.00	2.86	2.48
KAS302	3rd Sem	2.48					2.48	3.00	2.84	2.5
KVE301		2.52	2.44	2.34	2.19	2.67	2.43	3.00	2.83	2.69
KEC301		3.00	2.21	2.17	1.13	1.30	1.96	3.00	2.69	2.45
KEC302		3.00	2.89	2.01	2.45	2.50	2.57	2.56	2.56	2.76
KEC303		3.00	3.00	3.00	1.99	2.96	2.79	3.00	2.94	2.5
KEC351		2.64					2.64	3.00	2.89	2.43
KEC352		2.70					2.70	3.00	2.91	2.45
KEC353		2.72					2.72	3.00	2.92	2.5
KEC354		2.90					2.90	NA	2.90	2.57
KNC302		3.00	3.00	3.00	2.14	2.32	2.69	1.63	1.95	2.5
KAS401	4th Sem	3.00	2.74	1.35	1.56	2.15	2.16	3.00	2.75	2.5
KEC401		3.00	2.26	1.71	3.00	3.00	2.59	2.70	2.67	2.52
KEC402		2.69	2.45	2.15	3.00	3.00	2.66	3.00	2.90	2.6
KEC403		2.56	1.14	2.45	2.74	3.00	2.38	3.00	2.81	2.62
KEC-451		3.00					3.00	3.00	3.00	2.39
KEC-452		3.00					3.00	3.00	3.00	2.52
KEC-453		3.00					3.00	3.00	3.00	2.51
KNC-401		1.92	2.17	1.08	2.93	3.00	2.22	3.00	2.77	2.53
KEC501	5th Sem	2.03	2.79	2.40	2.37	2.64	2.45	2.67	2.60	2.66
KEC502		2.53	2.22	2.97	1.51	1.65	2.18	3.00	2.75	2.53
KEC503		2.94	1.93	1.62	2.12	1.98	2.12	2.73	2.55	2.73
KEC053		2.86	1.77	1.71	2.14	2.07	2.11	2.83	2.61	2.29
KEC058		3.00	3.00	2.69	1.76	3.00	2.69	3.00	2.91	2.64
KEC551		3.00					3.00	3.00	3.00	2.57
KEC552		3.00					3.00	3.00	3.00	2.38
KEC553		3.00					3.00	3.00	3.00	2.42
KEC554		3.00					3.00	NA	3.00	2.4
KNC501		1.85	2.31	2.64	1.98	2.12	2.18	3.00	2.75	2.5
KEC-601	6th Sem	2.96	2.50	2.62	3.00	3.00	2.82	3.00	2.94	2.57
KEC-602		2.53	2.22	2.97	3.00	2.54	2.65	3.00	2.90	2.62
KEC-603		3.00	2.14	2.07	3.16	3.00	2.67	3.00	2.90	2.57
KEC064		2.80	3.00	3.00	2.02	2.61	2.69	3.00	2.91	2.35
KEC651		3.00					3.00	3.00	3.00	2.54
KEC652		3.00					3.00	3.00	3.00	2.53

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KEC653		3.00					3.00	3.00	**3.00**	**2.62**
KNC602		1.85	2.39	2.53	3.00	3.00	2.55	3.00	**2.87**	**2.85**
REC071	**7th Sem**	2.65	1.24	1.85	2.47		2.05	2.74	**2.53**	**2.78**
REC075		0.81	1.62	2.53	2.61	1.81	1.88	3.00	**2.66**	**2.66**
REC701		2.72	1.42	1.88	2.62	1.36	2.00	3.00	**2.70**	**2.48**
REC702		3.00	1.41	2.82	2.82	2.50	2.51	3.00	**2.85**	**2.47**
REC751		3.00					3.00	3.00	**3.00**	**2.45**
REC752		3.00					3.00	3.00	**3.00**	**2.54**
REC753		3.00					3.00	3.00	**3.00**	**2.34**
REC754		3.00					3.00	3.00	**3.00**	**1.86**
REC083	**8th Sem**	3.00	3.00	2.67	3.00	3.00	2.93	3.00	**2.98**	**2.58**
REC085		2.88	2.22	1.84	2.87	2.75	2.51	3.00	**2.85**	**2.68**
REC851		3.00					3.00	3.00	**3.00**	**2.5**
REC852		3.00					3.00	3.00	**3.00**	**2.4**

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			PO Attainment (Direct): ECE													
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Sub Code	Sem	CO Att.														
KMC101	1st & 2nd	2.13	2.13	1.42	1.42	1.42	0.71								0.57	0.43
KMC102		2.62	2.62	1.92	2.62	2.62	2.62	1.75							0.70	0.70
KAS103T		2.41	1.77	1.77	1.45	1.77	1.77							2.41	1.77	1.61
KAS102T/ KAS202T		2.98	2.18	2.18	1.79	2.18	2.18							2.98		
KAS101T		2.32	1.70	1.70	1.24	1.70	1.70							1.70	1.24	1.39
KEE101T		2.80	1.87	1.87	0.93	0.93	0.93							2.80	1.56	0.93
KNC101		3.00						2.60	2.60	2.60	2.60	2.60	2.60			
KEC101T		2.42	1.77	1.77	1.29	1.77	1.77							2.42	2.10	1.77
KCS101T		2.80	2.80	2.24	2.62	2.24	1.68							1.68		
KAS203T		2.99	2.19	2.19	1.80	2.19	2.19							1.80	1.95	1.66
KME101T		2.51	2.51	2.51	1.17		2.51	0.84	0.84	0.84		0.84		2.17	0.84	1.67
KEE151P/KEE251P		2.78	2.78	2.78	0.93	0.93	0.93							1.85		
KCS151P/KCS251P		2.77	2.22	2.03	1.48	2.40	1.29							2.77		
KAS151P/KAS251P		2.84	1.70	1.89	0.95	2.08	0.95							2.84	1.70	1.33
KWS151P/KWS251P		2.84	2.84	2.84	1.89	1.89	1.89								0.95	1.89
KCE151P/KCE251P		2.88	2.88	2.11	1.92	2.30	1.34								0.96	1.92
KAS152P/KAS252P		2.81	1.31	0.94	1.64	0.94	0.94							0.94		
KAS154P/KAS254P		2.86						2.22	2.22	1.59	2.86	2.86	2.86			
KEC151P/KEC251P		2.84	2.09	2.65	0.95	2.84	2.09	0.95	1.14		2.84	2.84	1.90	1.90	1.52	1.71
KAS301	3rd Sem	2.97	2.97	2.97	1.98	2.97	2.97							2.97	2.97	1.98
KVE301		2.83						2.83	2.26	2.07	2.83			2.83		
KEC301		2.69	1.97	1.97	1.61	1.97	1.97							2.69	1.43	1.97
KEC302		2.56	2.56	2.56	2.39	2.56	2.56							2.56	2.56	2.39
KEC303		2.94	2.94	2.94	1.96	2.94	2.94							2.94	2.94	1.96
KEC351		2.89	2.89	2.89	2.12	2.89	2.89							2.89	2.89	2.12
KEC352		2.91	2.91	2.91	2.91	2.91	2.91							2.91	2.91	2.91
KEC353		2.92	2.92	2.92	2.14	2.92	2.92							2.92	2.92	2.14
KEC354		2.90	2.90	2.90	1.93	2.90	2.90					2.90		2.90	2.90	1.93
KNC302		1.95	0.65	0.65	0.65	0.65	0.65						0.65	1.95		
KAS402	4th Sem	2.75							0.92	0.92	1.47	2.75				
KEC401		2.67	1.96	1.96	1.60	1.96	1.96							2.67	1.96	1.60
KEC402		2.90	2.51	2.51	2.32	2.51	2.51							2.90	2.51	2.32
KEC403		2.81	2.06	2.06	1.50	2.06	2.06							2.81	2.06	1.50
KEC-451		3.00	3.00	3.00	2.20	3.00	3.00							3.00	3.00	2.20
KEC-452		3.00	3.00	3.00	2.40	3.00	3.00							3.00	3.00	2.40
KEC-453		3.00	3.00	3.00	2.20	3.00	3.00							3.00	3.00	2.20
KNC-401		2.77			0.92	0.92	0.92	0.92					2.77	2.77		
KEC501	5th Sem	2.60	2.26	2.26	1.74	2.26	2.26							2.60	2.26	1.74
KEC502		2.75	1.65	1.65	1.28	1.65	1.65							2.75	1.65	1.28
KEC503		2.55	1.87	1.87	1.87	1.87	1.87							2.55	1.87	1.87
KEC053		2.61	2.61	2.61	2.09	2.61	2.61							2.61	2.61	2.09
KEC058		2.91	2.52	2.52	1.94	2.52	2.52							2.91	2.52	1.94
KEC551		3.00	3.00	3.00	2.80	3.00	3.00							3.00	3.00	2.80
KEC552		3.00	3.00	3.00	2.20	3.00	3.00							3.00	3.00	2.20
KEC553		3.00	3.00	3.00	2.40	3.00	3.00							3.00	3.00	2.40
KEC554		3.00	3.00	3.00	2.00	3.00	3.00					3.00		3.00	3.00	2.00
KNC501		2.75						2.14	2.75	2.14	2.14	1.84	1.84	2.45		
KEC-601	6th Sem	2.94	2.55	2.55	1.77	2.55	2.55							2.94	2.55	1.77
KEC-602		2.90	2.51	2.51	1.74	2.51	2.51							2.90	2.51	1.74
KEC-603		2.90	1.74	1.74	1.35	1.74	1.74							2.90	1.74	1.35
KEC064		2.91	2.52	2.52	2.13	2.52	2.52							2.91	2.52	2.13
KEC651		3.00	3.00	3.00	2.40	3.00	3.00							3.00	3.00	2.40
KEC652		3.00	3.00	3.00	2.60	3.00	3.00							3.00	3.00	2.60
KEC653		3.00	3.00	3.00	2.75	3.00	3.00							3.00	3.00	2.75
KNC602		2.87						1.91	2.23	1.43	1.91	1.91	1.27	1.91		
REC071	7th Sem	2.53	2.20	2.20	1.69	2.20	2.20							2.53	2.20	1.69
REC075		2.66	1.95	1.95	1.78	1.95	1.95							2.66	1.95	1.78
REC701		2.70	0.90	0.90	0.90	0.90	0.90							2.70	0.90	0.90
REC702		2.85	2.38	2.38	1.90	2.38	2.38							2.85	2.38	1.90
REC751		3.00	3.00	3.00	2.00	3.00	3.00							3.00	3.00	2.00
REC752		3.00	3.00	3.00	2.60	3.00	3.00							3.00	3.00	2.60
REC753		3.00	3.00	3.00	2.00	3.00	3.00					3.00		3.00	3.00	2.00
REC754		3.00	3.00	3.00	2.75	3.00	3.00				3.00	3.00		3.00	3.00	2.75
REC083	8th Sem	2.98	0.99	0.99	0.99	0.99	0.99							2.98	0.99	0.99
REC085		2.85	1.71	1.71	1.33	1.71	1.71							2.85	1.71	1.33
REC851		3.00	1.00	1.00	1.00	1.00	1.00					3.00		3.00	1.00	1.00
REC852		3.00	3.00	3.00	2.75	3.00	3.00				3.00	3.00		3.00	3.00	2.75
PO Attainment (Direct)			**2.4**	**2.3**	**1.8**	**2.3**	**2.2**	**1.8**	**1.9**	**1.7**	**2.5**	**2.6**	**2.0**	**2.7**	**2.2**	**1.9**

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PO Attainment (In-direct): ECE

			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Sub Code	**Sem**	**FB**														
KMC101		**2.72**	2.72	1.81	1.81	1.81	0.91								0.73	0.54
KMC102		**2.65**	2.65	1.94	2.65	2.65	2.65	1.77							0.71	0.71
KAS103T		**2.69**	1.97	1.97	1.61	1.97	1.97							2.69	1.97	1.79
KAS102T/ KAS202T		**2.66**	1.95	1.95	1.6	1.95	1.95							2.66		
KAS101T		**2.76**	2.02	2.02	1.47	2.02	2.02							2.02	1.47	1.66
KEE101T		**2.70**	1.8	1.8	0.9	0.9	0.9							2.7	1.5	0.9
KNC101		**2.73**						2.36	2.36	2.36	2.36	2.36	2.36			
KEC101T		**2.55**	1.87	1.87	1.36	1.87	1.87							2.55	2.21	1.87
KCS101T		**2.66**	2.66	2.13	2.49	2.13	1.6							1.6		
KAS203T	**1st & 2nd**	**2.69**	1.97	1.97	1.61	1.97	1.97							1.61	1.75	1.49
KME101T		**2.70**	2.7	2.7	1.26		2.7	0.9	0.9	0.9		0.9		2.34	0.9	1.8
KEE151P/KEE251P		**2.55**	2.55	2.55	0.85	0.85	0.85							1.7		
KCS151P/KCS251P		**2.57**	2.06	1.89	1.37	2.23	1.2							2.57		
KAS151P/KAS251P		**2.64**	1.58	1.76	0.88	1.94	0.88							2.64	1.58	1.23
KWS151P/KWS251P		**2.56**	2.56	2.56	1.7	1.7	1.7								0.85	1.7
KCE151P/KCE251P		**2.49**	2.49	1.83	1.66	1.99	1.16								0.83	1.66
KAS152P/KAS252P		**2.54**	1.18	0.85	1.48	0.85	0.85							0.85		
KAS154P/KAS254P		**2.71**						2.11	2.11	1.51	2.71	2.71	2.71			
KEC151P/KEC251P		**2.48**	1.82	2.31	0.83	2.48	1.82	0.83	0.99		2.48	2.48	1.65	1.65	1.32	1.49
KAS301		**2.50**	2.5	2.5	1.67	2.5	2.5							2.5	2.5	1.67
KVE301		**2.69**						2.69	2.15	1.97	2.69			2.69		
KEC301		**2.45**	1.8	1.8	1.47	1.8	1.8							2.45	1.31	1.8
KEC302		**2.76**	2.76	2.76	2.58	2.76	2.76							2.76	2.76	2.58
KEC303	**3rd Sem**	**2.50**	2.5	2.5	1.67	2.5	2.5							2.5	2.5	1.67
KEC351		**2.43**	2.43	2.43	1.78	2.43	2.43							2.43	2.43	1.78
KEC352		**2.45**	2.45	2.45	2.45	2.45	2.45							2.45	2.45	2.45
KEC353		**2.50**	2.5	2.5	1.83	2.5	2.5							2.5	2.5	1.83
KEC354		**2.57**	2.57	2.57	1.72	2.57	2.57					2.57		2.57	2.57	1.72
KNC302		**2.50**	0.83	0.83	0.83	0.83	0.83						0.83	2.5		
KAS402		**2.50**							0.83	0.83	1.33	2.5				
KEC401		**2.52**	1.85	1.85	1.51	1.85	1.85							2.52	1.85	1.51
KEC402		**2.60**	2.25	2.25	2.08	2.25	2.25							2.6	2.25	2.08
KEC403	**4th Sem**	**2.62**	1.92	1.92	1.4	1.92	1.92							2.62	1.92	1.4
KEC-451		**2.39**	2.39	2.39	1.75	2.39	2.39							2.39	2.39	1.75
KEC-452		**2.52**	2.52	2.52	2.01	2.52	2.52							2.52	2.52	2.01
KEC-453		**2.51**	2.51	2.51	1.84	2.51	2.51							2.51	2.51	1.84
KNC-401		**2.53**			0.84	0.84	0.84	0.84					2.53	2.53		
KEC501		**2.66**	2.31	2.31	1.77	2.31	2.31							2.66	2.31	1.77
KEC502		**2.53**	1.52	1.52	1.18	1.52	1.52							2.53	1.52	1.18
KEC503		**2.73**	2	2	2	2	2							2.73	2	2
KEC053		**2.29**	2.29	2.29	1.83	2.29	2.29							2.29	2.29	1.83
KEC058	**5th Sem**	**2.64**	2.29	2.29	1.76	2.29	2.29							2.64	2.29	1.76
KEC551		**2.57**	2.57	2.57	2.4	2.57	2.57							2.57	2.57	2.4
KEC552		**2.38**	2.38	2.38	1.74	2.38	2.38							2.38	2.38	1.74
KEC553		**2.42**	2.42	2.42	1.93	2.42	2.42							2.42	2.42	1.93
KEC554		**2.40**	2.4	2.4	1.6	2.4	2.4					2.4		2.4	2.4	1.6
KNC501		**2.50**						1.94	2.5	1.94	1.94	1.67	1.67	2.22		
KEC-601		**2.57**	2.23	2.23	1.54	2.23	2.23							2.57	2.23	1.54
KEC-602		**2.62**	2.27	2.27	1.57	2.27	2.27							2.62	2.27	1.57
KEC-603		**2.57**	1.54	1.54	1.2	1.54	1.54							2.57	1.54	1.2
KEC064	**6th Sem**	**2.35**	2.04	2.04	1.72	2.04	2.04							2.35	2.04	1.72
KEC651		**2.54**	2.54	2.54	2.03	2.54	2.54							2.54	2.54	2.03
KEC652		**2.53**	2.53	2.53	2.19	2.53	2.53							2.53	2.53	2.19
KEC653		**2.62**	2.62	2.62	2.4	2.62	2.62							2.62	2.62	2.4
KNC602		**2.85**						1.9	2.22	1.43	1.9	1.9	1.27	1.9		
REC071		**2.78**	2.41	2.41	1.85	2.41	2.41							2.78	2.41	1.85
REC075		**2.66**	1.95	1.95	1.77	1.95	1.95							2.66	1.95	1.77
REC701		**2.48**	0.83	0.83	0.83	0.83	0.83							2.48	0.83	0.83
REC702	**7th Sem**	**2.47**	2.06	2.06	1.65	2.06	2.06							2.47	2.06	1.65
REC751		**2.45**	2.45	2.45	1.64	2.45	2.45							2.45	2.45	1.64
REC752		**2.54**	2.54	2.54	2.2	2.54	2.54							2.54	2.54	2.2
REC753		**2.34**	2.34	2.34	1.56	2.34	2.34					2.34		2.34	2.34	1.56
REC754		**1.86**	1.86	1.86	1.71	1.86	1.86				1.86	1.86		1.86	1.86	1.71
REC083		**2.58**	0.86	0.86	0.86	0.86	0.86							2.58	0.86	0.86
REC085	**8th Sem**	**2.68**	1.61	1.61	1.25	1.61	1.61							2.68	1.61	1.25
REC851		**2.50**	0.83	0.83	0.83	0.83	0.83					2.5		2.5	0.83	0.83
REC852		**2.40**	2.4	2.4	2.2	2.4	2.4				2.4	2.4		2.4	2.4	2.2
PO Attainment (In-Direct)			**2.1**	**2.1**	**1.6**	**2.0**	**2.0**	**1.7**	**1.8**	**1.6**	**2.2**	**2.2**	**1.9**	**2.4**	**2.0**	**1.7**

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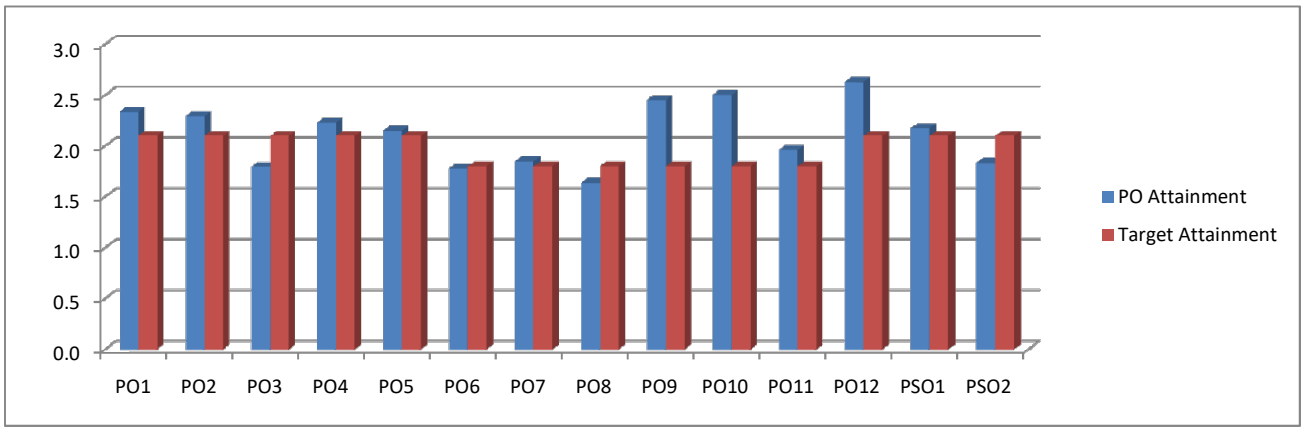
Final PO Attainment: ECE

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Direct	2.4	2.3	1.8	2.3	2.2	1.8	1.9	1.7	2.5	2.6	2.0	2.7	2.2	1.9
In-Direct	2.1	2.1	1.6	2.0	2.0	1.7	1.8	1.6	2.2	2.2	1.9	2.4	2.0	1.7
Final	2.3	2.3	1.8	2.2	2.2	1.8	1.8	1.6	2.5	2.5	2.0	2.6	2.2	1.8

Comparison of attained PO levels with the set Targets

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
PO Attainment	2.3	2.3	1.8	2.2	2.2	1.8	1.8	1.6	2.5	2.5	2.0	2.6	2.2	1.8
Target Attainment	2.1	2.1	2.1	2.1	2.1	1.8	1.8	1.8	1.8	1.8	1.8	2.1	2.1	2.1
Target Achieved	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No



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