Session 2022-23

Odd Sem

CO Statement and CO-PO Mapping

Course Name/code: Mathematics IV (KAS-302) **Session:2022-23** **Sem: III Even Semester**			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Apply the methods for solving Linear and non-linear partial differential equation.	3	Procedural
2	Apply the method of separation of variables to solve Heat, Wave, Laplace equations and Transmission line	3	Procedural
3	Evaluate moments, skewness, kurtosis and moment generating function and linear and non linear regression.	5	Procedural
4	Solve probability problems apply Binomial, Poission's and Normal distribution including sampling theory along with test of significance	3	Conceptual, Procedural
5	Analyze statistical data samples, hypothesis testing and control chart.	4	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**3**	**2**	**1**	**2**	**3**	**3**	**1**	**-**	**-**	**2**	**3**	**2**	**2**	**_**
CO2	**3**	**1**	**1**	**2**	**3**	**2**	**1**	**-**	**-**	**1**	**3**	**2**	**2**	**_**
CO3	**3**	**3**	**2**	**2**	**3**	**3**	**1**	**-**	**-**	**2**	**3**	**2**	**1**	**2**
CO4	**3**	**2**	**1**	**2**	**3**	**3**	**1**	**-**	**-**	**2**	**3**	**2**	**1**	**1**
CO5	**3**	**2**	**1**	**3**	**3**	**3**	**1**	**-**	**-**	**3**	**3**	**3**	**2**	**_**
Target Level	**3**	**2**	**1.2**	**2.2**	**3**	**2.8**	**1**			**2**	**3**	**2.2**	**1.6**	**1.5**

Course Name/code: Technical Communication/KAS 301 Session:2022-23 Sem: III Odd Semester			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Analyze the nature and objective of Technical Communication relevant for the workplace as Engineers.	BL 4 (Analyze)	K1, K2
2	Utilize the technical writing for the purposes of Technical Communication and its exposure in various dimensions.	BL 3 (Apply)	K2, K3
3	Imbibe presentation strategies inputs by presentation skills to enhance confidence in facing diverse audience in required situations at workplace.	BL 3 (Apply)	K2, K3, K4
4	Analyze the application of the technical communication to promote their competence for various media like Report generation, Resume design, GD and Interview etc.	BL 5 (Evaluate)	K4
5	Evaluate voice-dynamics and select appropriate cues for their own efficacy as fluent & efficient communicators.	BL 5 (Evaluate)	K2, K3

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1									**2**	**3**		**3**		
CO2									**2**	**3**		**3**		
CO3									**2**	**3**		**3**		
CO4									**2**	**3**		**3**		
CO5									**2**	**3**		**3**		
Target Level									**2**	**3**		**3**		

Course Name/code: Electronic Devices (KEC-301) Session:2022-23 Sem: III Odd Semester			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Understand the concepts of semiconductor physics to formulate Energy band gap.	2	Conceptual, Procedural
2	Understand Energy band gap diagram and mathematical model of semiconductor junctions	2	Conceptual, Procedural
3	Apply the concept of Carrier transport in semiconductors.	3	Conceptual, Procedural
4	Apply the mathematical model of MOS transistor for realizing electronic circuits.	3	Conceptual, Procedural.
5	Understand the mathematical model and working of special purpose diodes.	2	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**3**	3		**1**					**2**				**1**	**-**
CO2	**3**	3		1					2			**2**	**-**	**-**
CO3	**3**	3		1					2			**3**	**-**	**-**
CO4	**3**	3		1					2			**3**	**2**	**-**
CO5	**3**	3		1					2			**3**	**2**	**-**
Target Level	**3**	**3**		**1**					2			**2.75**	**1.67**	**-**

Course Name/code: Digital System Design/ KEC302		**Session:2022-23**	
Sem: III Odd Semester			
S. No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Apply the basics in Digital electronics	3	Conceptual, Procedural
2	Design Combinational Logic Circuits.	6	Conceptual, Procedural
3	Design synchronous sequential logic circuits	6	Conceptual, Procedural
4	Analyze various logic families.	4	Conceptual,
5	Apply the knowledge of DAC and ADC in the circuits.	3	Conceptual,

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**3**	**3**	**2**	**2**	**1**	**1**							**-**	**-**
CO2	**3**	**3**	**2**	**2**	**1**	**1**							**2**	**-**
CO3	**3**	**3**	**2**	**2**	**1**	**1**							**2**	**-**
CO4	**3**	**3**	**2**	**2**	**1**	**1**							**-**	**-**
CO5	**3**	**3**	**2**	**2**	**1**	**1**							**2**	**-**
Target Level	**3**	**3**	**2**	**2**	**1**	**1**							**2**	**-**

Course Name/code: Network Analysis and Synthesis/ KEC303 Session: 2022-23 Sem: III Odd Semester			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Understand basics electrical circuits with nodal and mesh analysis.	2	Conceptual, Factual
2	Apply network theorems on electrical circuit.	3	Conceptual, Factual
3	Analyse electrical circuits using Fourier series and transform.	4	Conceptual
4	Analyse steady state and transient state using Laplace Transform.	4	Conceptual
5	Analysis of various parameter for two port network and filter.	4	Conceptual

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**3**	**3**	**2**	**2**	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**2**	**_**
CO2	**2**	**2**	**3**	**3**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**2**	**1**
CO3	**2**	**3**	**3**	**3**	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**
CO4	**3**	**3**	**3**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**1**
CO5	**3**	**2**	**2**	**3**	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**2**	**_**
Target Level	**2.6**	**2.6**	**2.6**	**2.6**	**2.6**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**1.6**	**1**

Course Name/code: Electronics Devices Lab/KEC-351 Session:2022-23 Sem: III Odd Semester			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Understand working of basic electronics lab equipment.	2	Conceptual,
2	Understand working of PN junction diode and demonstrate its applications.	3	Conceptual
3	Understand characteristics of Zener diode.	2	Procedural
4	Design a voltage regulator using Zener diode.	4	Conceptual
5	Understand working of BJT, FET, MOSFET and apply the concept in designing of amplifiers.	3	Conceptual

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	**2**	**1**	**2**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**1**	**3**	**-**
CO2	**3**	**2**	**3**	**2**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**1**	**3**	**-**
CO3	**2**	**2**	**3**	**2**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**1**	**3**	**-**
CO4	**3**	**2**	**3**	**2**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**1**	**3**	**-**
CO5	**3**	**2**	**2**	**3**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**1**	**3**	**-**
Target Level	**2.6**	**1.8**	**2.6**	**2.2**	**1.8**	**1**	**-**	**-**	**-**	**-**	**-**	**1**	**3**	**-**

Course Name/code: Digital System Design Lab/ KEC352 **Session:2022-23** **Sem: III Odd Semester**			
S. No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Apply the basics of digital electronics to hardware.	3	Conceptual, Procedural
2	Verify the truth table of different flip flops using hardware.	5	Conceptual, Procedural
3	Design combinational logic circuits using hardware.	6	Conceptual, Procedural
4	Design sequential logic circuits using hardware.	6	Conceptual,
5	Design mini project using digital ICs.	6	Conceptual,

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**3**	**3**	**2**	**2**	**1**	**1**							**-**	**-**
CO2	**3**	**3**	**2**	**2**	**1**	**1**							**2**	**-**
CO3	**3**	**3**	**2**	**2**	**1**	**1**							**2**	**-**
CO4	**3**	**3**	**2**	**2**	**1**	**1**							**-**	**-**
CO5	**3**	**3**	**2**	**2**	**1**	**1**							**2**	**-**
Target Level	**3**	**3**	**2**	**2**	**1**	**1**							**2**	**-**

Course Name/code: Networks Analysis and Synthesis (KEC-353) Session:2022-23 Sem: III Odd Semester			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Understand basics of electrical circuits with nodal and mesh analysis.	2	Conceptual
2	Analyze electrical network theorems.	4	Procedural
3	Analyze RLC circuits.	4	Procedural
4	Analyze the stability of an electrical circuit.	4	Procedural
5	Apply the network analysis to design network filters.	4	Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**3**	**2**	**1**	**2**	**3**	**-**	**-**	**-**	**1**	**2**	**-**	**1**	**1**	**-**
CO2	**3**	**2**	**1**	**2**	**3**	**-**	**-**	**-**	**1**	**2**	**-**	**1**	**1**	**-**
CO3	**3**	**2**	**1**	**2**	**3**	**-**	**-**	**-**	**1**	**2**	**-**	**1**	**2**	**-**
CO4	**3**	**2**	**1**	**2**	**3**	**-**	**-**	**-**	**1**	**2**	**-**	**1**	**2**	**-**
CO5	**3**	**2**	**1**	**2**	**3**	**-**	**-**	**-**	**1**	**2**	**-**	**1**	**-**	**-**
Target Level	**3**	**2**	**1**	**2**	**3**	**- -**	**- -**	**-**	**1**	**2**	**-**	**1**	**1.5**	**-**

Course Name/code : Mini Project/Internship/ KEC-354 Session:2022-23 Sem: III Odd Semester			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Analyze the real-life-working environment & practices followed in the industry.	4	Factual
2	Critically examine the Idea behind the job undertaken with detailed analysis.	4	Conceptual
3	Identify the mechanism behind job management with importance of the spirit of team working.	4	Factual
4	Successfully complete the MOOC courses.	2	Factual
5	Analyze the Research papers from Nalanda econsortium.	4	Factual

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**-**	**2**	**-**	**2**	**-**	**2**	**-**	**-**	**2**	**2**	**-**	**1**	**-**	**-**
CO2	**-**	**-**	**-**	**2**	**-**	**2**	**-**	**-**	**2**	**2**	**2**	**1**	**-**	**-**
CO3	**-**	**-**	**-**	**2**	**-**	**2**	**-**	**-**	**2**	**2**	**2**	**1**	**-**	**-**
CO4	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**
CO5	**-**	**-**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**-**	**-**
Target Level	**-**	**2**	**-**	**2**	**-**	**2**	**-**	**-**	**2**	**1.75**	**2**	**1**	**-**	**-**

Course Name/code: Integrated Circuits (KEC-501) Session:2022-23 Sem: V Odd Semester			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Analyze complete internal analysis of Op-amp 741-IC	4	Conceptual, Procedural
2	Examine Op-amp based circuits & basic components of ICs such as various types of filters	4	Conceptual, Procedural, Fundamental Design Principles
3	Implement the concept of Op-Amp to design Op-amp based non - linear applications and wave shaping circuits	3	Conceptual, Procedural
4	Analyze basic digital IC circuits using CMOS technology	4	Conceptual, Procedural, Fundamental Design Principles
5	Analyze the functioning of application specific ICs such as 555 timer, VCO IC 566 and PLL.	4	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**3**	**3**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**2**
CO2	**3**	**3**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**2**
CO3	**3**	**3**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**2**
CO4	**3**	**3**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**2**
CO5	**3**	**3**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**2**

Target Level	**3**	**3**	**2**	**1**	**1**				**1.2**	**1.2**		**1**	**1**	**1**

Course Name/code: Microprocessors and Microcontrollers Session:2022-23 Sem: V Odd Semester (KEC 502)			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Understand the basic architecture of 8085 and interfacing devices	2	Conceptual
2	Apply the programming model of 8085 to write programs	3	Conceptual, Procedural
3	Understand the basic architecture of 8086 and different peripheral Devices	2	Conceptual
4	Understand the architecture of 8051 microcontroller	2	Conceptual
5	Understand the assembly programming to program interrupts, timers, serial ports in 8051	2	Conceptual

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**
CO1	**1**	**1**	**2**	**3**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**
CO2	**2**	**2**	**3**	**2**	**3**	**1**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**
CO3	**1**	**1**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**
CO4	**1**	**1**	**2**	**2**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**
CO5	**2**	**3**	**3**	**3**	**3**	**2**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**
Target Level	**1.4**	**1.6**	**2.2**	**2.2**	**2**	**1.2**						**1**		

Course Name/code: Digital Signal Processing/ KEC-503 **Session:2022-23** **Sem: V Odd Semester**			
S. No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Design different types of realizations of digital systems (IIR and FIR) and their utilities	3	Conceptual, Procedural
2	Design of digital IIR filters.	6	Conceptual, Procedural
3	Design of digital FIR filters.	6	Conceptual, Procedural
4	Compute DFT, FFT & its Inverse transform.	4	Conceptual, Procedural
5	Implement Decimation & Interpolation with its applications.	3	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**3**	**3**	**1**	**2**	**1**	**1**	-	-	-		**1**		-	-
CO2	**3**	**3**	**1**	**3**	**1**	**1**	-	-	-				**1**	-
CO3	**2**	**2**	**2**	**2**	**2**	**1**	-	-	-				**2**	-
CO4	**3**	**3**	**2**	**3**	**1**	**3**	-	-	-		**2**		-	-
CO5	**1**	**3**	**2**	**2**	**1**	**1**	-	-	-				**3**	-
Target Level	**2.4**	**2.8**	**1.6**	**2.4**	**1.2**	**1.4**	-	-	-		**1.5**		**1..2**	-

Course Name/code: VLSI Technology/ KEC-053 Session:2022-23 Sem: V Odd Semester			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Understand the basics of crystal growth, wafer preparation, wafer cleaning and corelate it with SSI, MSI, LSI and VLSI.	2	Factual
2	Analyze the epitaxy and oxidation process.	4	Conceptual
3	Analyze the lithography, etching and deposition process.	4	Conceptual
4	Analyze the process of diffusion and ion implantation process.	4	Conceptual
5	Outline the basic process involved in metallization and packaging.	4	Conceptual

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**
CO1	**2**	**2**	**1**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**2**	**2**
CO2	**3**	**2**	**1**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**2**	**-**
CO3	**2**	**2**	**1**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**2**
CO4	**3**	**2**	**1**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**1**	**2**
CO5	**2**	**2**	**1**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**1**	**-**
Target Level	**2.4**	**2**	**1**	**2**	**1**	**- -**	**-**	**-**	**-**	**-**	**-**	**2**	**1.5**	**2**

Course Name/code : Electronic Switching/KEC-055		**Session:2022-23**	
Sem:V ODD Semester			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Understand fundamentals of telecommunication systems and associated technologies.	understand	Factual, Conceptual, Fundamental Design Principles
2	Analyze Digital Switching in multidimensional space.	Analyze	Conceptual, Procedural
3	Analyze different parameter for improvement of switching system in tele communication.	Analyze	Factual, Conceptual, Fundamental Design Principles
4	Analyze the principles of the internal design and operation of telecommunication switches, and the essence of the key signalling systems.	Analyze	Conceptual, Procedural
5	Apply signalling system in application of tele communication as Packet switching and ATM.	Apply	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**1**	**-**	**-**	**2**	**-**	**1**	**-**	**-**			**-**	**1**	**1**	**1**
CO2	**1**	**2**	**1**	**-**	**-**	**1**	**-**	**-**			**1**	**1**	**2**	**2**
CO3	**2**	**3**	**2**	**3**	**1**	**2**	**-**	**-**			**1**	**2**	**2**	**2**
CO4	**2**	**2**	**2**	**3**	**1**	**2**	**-**	**-**			**2**	**2**	**2**	**2**
CO5	**2**	**2**	**3**	**3**	**2**	**3**	**-**	**-**			**2**	**2**	**3**	**3**
Target Level	**1.6**	**2.25**	**2**	**2.75**	**1.33**	**1.8**	**-**	**-**			**1.5**	**1.6**	**2**	**2**

Course Name/code: Optical Communication (KEC 058), Sem: 5, Odd Semester		Session:2022-23,	
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Analyze the basic concepts of optical fiber communication along with ray propagation.	BL-4	Conceptual
2	Apply the knowledge of basic optical communication to understand the losses in an optical Fiber.	BL-3	Factual, Conceptual
3	Analyze the structure, working principle and parameters of optical sources.	BL-3	Conceptual
4	Analyze the structure, working principle and parameters of optical detectors.	BL-5	Conceptual
5	Integrate knowledge of optical communication systems to analyze the optical receivers structure and performance.	BL-5	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**3**	**3**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**1**	**2**
CO2	**3**	**3**	**3**	**1**	**2**	**-**	**-**	**-**	**-**	**2**	**-**	**1**	**2**	**3**
CO3	**3**	**3**	**2**	**2**	**1**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**2**	**3**
CO4	**3**	**3**	**3**	**1**	**2**	**-**	**-**	**-**	**-**	**2**	**-**	**1**	**3**	**3**
CO5	**3**	**2**	**1**	**2**	**1**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**2**	**3**
Target Level	**3**	**2.8**	**2.2**	**1.4**	**1.4**	**-**	**-**	**-**	**-**	**1.4**	**-**	**1**	**2**	**2.8**

Course Name/code: Integrated Circuit Lab (KEC-551) **Session:2022-23** **Sem: V Odd Semester**			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Demonstrate different non-linear applications of operational amplifiers such as log, antilog amplifiers and voltage comparators.	3	Factual
2	Analyze different linear applications of operational amplifiers such as filters.	4	Procedural
3	Demonstrate the function of waveforms generator using op-Amp.	3	Procedural
4	Analyze multivibrator and oscillator circuits using IC555 and IC566 and perform measurements of frequency and time.	4	Procedural
5	Demonstrate the Schmitt trigger, Voltage Controlled Oscillator and Ramp generator based on IC555 and IC566.	3	Factual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course :														
PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**
CO1	**3**	**2**	**1**	**2**	**3**	**-**	**-**	**-**	**1**	**2**	**-**	**1**	**1**	**-**
CO2	**3**	**2**	**1**	**2**	**3**	**-**	**-**	**-**	**1**	**2**	**-**	**1**	**2**	**-**
CO3	**3**	**2**	**1**	**2**	**3**	**-**	**-**	**-**	**1**	**2**	**-**	**1**	**2**	**1**
CO4	**3**	**2**	**1**	**2**	**3**	**-**	**-**	**-**	**1**	**2**	**-**	**1**	**3**	**2**
CO5	**3**	**2**	**1**	**2**	**3**	**-**	**-**	**-**	**1**	**2**	**-**	**1**	**3**	**1**
Target Level	**3**	**2**	**1**	**2**	**3**	**- -**	**- -**	**-**	**1**	**2**	**-**	**1**	**2.2**	**1.3**

Course Name/code: Microprocessor & Microcontroller Lab (KEC-552) Session:2022-23 Sem: V Odd Semester			
S. No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
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.	Remember, understand	Conceptual
2	Examine 8085 & 8086 microprocessor and its interfacing with peripheral devices.	Analyze	Conceptual
3	State various conversion techniques using 8085 & 8086 and generate waveforms using 8085.	Apply	Conceptual, Procedural
4	Implement programming concept of 8051 Microcontroller.	Apply	Conceptual, Procedural
5	Design concepts to Interface peripheral devices with Microcontroller so as to design Microcontroller based projects.	Create	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**2**	**2**	**1**	**2**	**2**						**2**	**2**	**2**	**-**
CO2	**2**	**2**	**1**	**3**	**3**						**2**	**2**	**-**	**-**
CO3	**2**	**2**		**3**	**3**						**2**	**2**	**-**	**3**
CO4	**2**	**2**	**1**	**3**	**3**						**2**	**2**	**3**	**-**
CO5	**2**	**2**	**1**	**3**	**3**		**2**				**3**	**3**	**3**	**-**
Target Level	**2**	**2**	**1**	**2.8**	**2.8**		**2**				**2.2**	**2.2**	**2.6**	**3**

Course Name/code: Digital Signal Processing (DSP) Lab/ KEC-553 Session:2022-23 Sem: V ODD Semester			
S. No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Create and visualize various discrete/digital signals using MATLAB/Scilab.	3	Conceptual, Procedural
2	Implement and test the basic operations of Signal processing	6	Conceptual, Procedural
3	Examine and analyse the spectral parameters of window functions	6	Conceptual, Procedural
4	Design IIR and FIR filters for band pass, band stop, low pass and high pass filters.	4	Conceptual, Procedural
5	Design the signal processing algorithms using MATLAB/Scilab.	3	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**2**	**2**	**1**	**1**	**1**	**1**	-	-	-	**2**	**1**			
CO2	**3**	**1**	**2**	**2**	**3**	**2**	-	-	-		**1**	**1**	**1**	**1**
CO3	**2**	**2**	**3**	**1**	**2**	**1**	-	-	-		**2**			
CO4	**1**	**3**	**2**	**3**	**1**	**3**	-	-	-	**1**	**1**	**3**	**2**	**1**
CO5	**1**	**1**	**1**	**2**	**2**	**2**	-	-	-	**2**	**1**	**1**	**3**	
Target Level	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	-	-	-	**1.6**	**1.2**	**1.6**	**2**	**1**

Course Name/code : Mini Project/Internship/ KEC-554 Session:2022-23 Sem: Odd Semester			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Analyze the real-life-working environment & practices followed in the Industry.	4	Factual
2	Critically examine the Idea behind the job undertaken with detailed analysis.	4	Conceptual
3	Identify the mechanism behind job management with importance of the spirit of team working.	4	Factual
4	Successfully complete the MOOC courses.	2	Factual
5	Analyze the Research papers from Nalanda econsortium.	4	Factual

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**-**	**2**	**-**	**2**	**-**	**2**	**-**	**-**	**2**	**2**	**-**	**1**	**-**	**-**
CO2	**-**	**-**	**-**	**2**	**-**	**2**	**-**	**-**	**2**	**2**	**2**	**1**	**-**	**-**
CO3	**-**	**-**	**-**	**2**	**-**	**2**	**-**	**-**	**2**	**2**	**2**	**1**	**-**	**-**
CO4	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**
CO5	**-**	**-**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**-**	**-**
Target Level	**-**	**2**	**-**	**2**	**-**	**2**	**-**	**-**	**2**	**1.75**	**2**	**1**	**-**	**-**

Course Name/code: Indian Tradition, Culture and Society (KNC 502) Session:2022-23 **Sem: V ODD SEM.**			
S.NO	**COURSE OUTCOME**		
Students will be able to		**BL LEVEL**	**Knowledge Dimension**
CO 1	Identify the roots and details of some of the contemporary issues faced by our nation and try to locate possible solutions to these challenges by digging deep into our past.	2	Remembering Understanding
CO 2	Understand the importance of our surroundings and encourage the students to contribute towards sustainable development.	1	Understanding Applying
CO 3	Make aware of holistic lifestyles of Yogic-science and wisdom capsules in Sanskrit literature that are important in modern society with rapid technological advancements and societal disruptions.	1	Applying, Analyzing
CO 4	Sensitize towards issues related to 'Indian' culture, tradition and its composite character.	3	Applying, Analyzing
CO 5	Acquaint with Indian Knowledge System, Indian perspective of modern scientific worldview and basic principles of Yoga and holistic health care system.	4	Evaluating Creating

	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**PO-9**	**PO-10**	**PO-11**	**PO-12**	**PSO 1**	**PSO 2**
CO-1						**2**				**2**		**1**		
CO-2						**2**				**2**		**1**		
CO-3						**2**				**2**		**1**		
CO-4						**2**				**2**		**1**		
CO-5						**2**				**2**		**1**		
Target Level						**2**				**2**		**1**		

Course Name/code: PM&E/ KHU 702 Sem: ODD Semester		Session: 2022-23	
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Understand the theories of entrepreneurship and Entrepreneurial Development Programmes.	2	Factual
2	Create and exploit innovative business ideas and market opportunities.	5	Conceptual, Procedural
3	Understand the importance of Project Management and Project's life cycle	2	Factual, Conceptual
4	Analyze Project Finance and project report.	4	Conceptual, Procedural
5	Analyze Social Sector Perspectives and Social Entrepreneurship.	4	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	-	-	-	-	-	**1**	**1**	**2**	**2**	-	**3**	**1**	-	-
CO2	-	-	-	-	-	**2**	**2**	**3**	**3**	-	**3**	**2**	-	-
CO3	-	-	-	-	-	**3**	**3**	**2**	**3**	-	**3**	**2**	-	-
CO4	-	-	-	-	-	**2**	**3**	**2**	**3**	-	**3**	**2**	-	-
CO5	-	-	-	-	-	**2**	**3**	**3**	**2**	-	**3**	**3**	-	-
Target Level	-	-	-	-	-	**2**	**2.4**	**2.4**	**2.6**	-	**3**	**2**	-	-

Course Name/code: VLSI DESIGN/ KEC 072 Session:2022-23 Sem: Odd Semester			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Understand the basics of CMOS logic circuits and various steps involved in the design of Integrated circuits	2	Conceptual & Procedural
2	Analyze delay models, logical effort of path and various types of power dissipation	4	Conceptual & Procedural
3	Analyze the concept of Dynamic, Domino CMOS logic	4	Conceptual & Procedural
4	Analyze power logic circuits and different semiconductor memories used in present day technology.	4	Conceptual & Procedural
5	Analyze faults in digital circuits, Fault Models and various Testing Methodologies.	4	Conceptual & Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	**2**	**2**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**3**	**-**
CO2	**3**	**3**	**2**	**2**	**3**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**3**	**-**
CO3	**2**	**2**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**3**	**-**
CO4	**2**	**2**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**3**	**-**
CO5	**3**	**3**	**2**	**2**	**3**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**3**	**-**
Target Level	**2.4**	**2.4**	**2**	**2**	**2.4**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**3**	**-**

Course Name/code: Wireless & Mobile Communication/KEC076 Session:2022-23 Sem: VII ODD Semester			
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Understand the cellular concept to get insight of mobile radio communication and its evolution.	2	Conceptual
2	Analyse the working of vocoders and spread spectrum modulation for mobile radio communication.	4	Conceptual
3	Analyse the Equalization techniques of noise rejection and various multiple access techniques.	4	Conceptual, Procedural
4	Understand the various 2g and 3g standards of mobile communication with proper block diagram.	2	Conceptual, procedural
5	Apply the basic concepts of mobile communication to get insight of networking in mobile communication.	3	Conceptual

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**3**	**3**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**1**	**2**
CO2	**3**	**3**	**3**	**1**	**1**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**2**	**3**
CO3	**3**	**3**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**2**	**3**
CO4	**3**	**3**	**3**	**3**	**3**	**-**	**-**	**-**	**-**	**2**	**-**	**2**	**3**	**3**
CO5	**3**	**2**	**1**	**2**	**1**	**2**	**-**	**-**	**-**	**1**	**-**	**2**	**2**	**3**
Target Level	**3**	**2.8**	**2.2**	**1.8**	**1.6**	**2**	**-**	**-**	**-**	**1.2**	**-**	**1.4**	**2**	**2.8**

Course Name/code : MACHINE LEARNING / KOE-073 Session:2022-23 Sem:VII ODD Semester			
S. No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Understand fundamentals of Well-defined learning problems and Designing a Learning System.	understand	Factual, Conceptual, Fundamental Design Principles
2	Analysis of Decision tree learning algorithm and Artificial Neural Networks.	Analyze	Conceptual, Procedural
3	Analyze different parameter for Estimating Hypotheses Accuracy and Bayesian belief networks.	Analyze	Factual, Conceptual, Fundamental Design Principles
4	Analyze the principles of Computational Learning Theory and Instance-Based Learning.	Analyze	Conceptual, Procedural
5	Apply Genetic Algorithms for Hypothesis space search and Genetic Programming.	Apply	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**
CO1	**1**	**-**	**-**	**2**	**-**	**1**	**-**	**-**	**3**	**1**	**-**	**2**	**1**	**1**
CO2	**1**	**2**	**1**	**-**	**-**	**1**	**-**	**-**	**2**	**2**	**1**	**2**	**2**	**2**
CO3	**2**	**3**	**2**	**3**	**1**	**2**	**-**	**-**	**2**	**2**	**1**	**2**	**2**	**2**
CO4	**2**	**2**	**2**	**3**	**1**	**2**	**-**	**-**	**2**	**2**	**2**	**2**	**2**	**2**
CO5	**2**	**2**	**3**	**3**	**2**	**3**	**-**	**-**	**3**	**2**	**2**	**3**	**3**	**3**
Target Level	**1.6**	**2.25**	**2**	**2.75**	**1.3**	**1.8**	**0**	**0**	**2.4**	**1.8**	**1.5**	**2.2**	**2**	**2**

Course Name / Code: Information Theory and Coding / KEC-075		**Session: 2022-23**	
Sem: VII ODD Semester			
S. No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Evaluate the fundamentals of information theory and basics of communication systems.	**6**	Conceptual, Procedural
2	Understand the mathematical fundamentals to solve engineering problems in digital communications.	**6**	Conceptual, Procedural
3	Evaluate the concepts of information theory, channel coding and source coding and to optimize the channel performance.	**6**	Conceptual, Procedural
4	Analyse the mathematical functions on multi – disciplinary teams through projects.	**6**	Conceptual, Procedural
5	Evaluate applications of digital communication system using different error control techniques within realistic constraints.	**6**	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**3**	**3**	**1**	**3**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**
CO2	**3**	**2**	**1**	**2**	**2**	**-**	**2**	**-**	**-**	**-**	**-**	**1**	**-**	**-**
CO3	**2**	**3**	**2**	**3**	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**
CO4	**1**	**1**	**2**	**3**	**2**	**-**	**2**	**3**	**-**	**-**	**-**	**1**	**-**	**-**
CO5	**1**	**1**	**3**	**1**	**1**	**2**	**3**	**1**	**2**	**1**	**2**	**2**	**-**	**-**
Target Level	**2**	**2**	**1.8**	**2.4**	**2**	**2**	**2.3**	**2**	**2**	**1**	**2**	**1.2**	**-**	**-**

Course Name / Code: Vision for Humane Society / KOE-076		**Session: 2022-23**	
Sem: VII Semester			
S. No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Understand the essential complementarily between 'VALUES" and 'SKILLS'.	2	Factual
2	Understand how to ensure sustained happiness and prosperity.	2	Factual, Conceptual
3	Apply understanding of values and human reality to develop a holistic perspective towards life, and profession.	3	Conceptual, Procedural
4	Analyze harmony in nature and existence, and work out their mutually fulfilling participation in the nature.	4	Conceptual, Procedural
5	Analyze ethical and unethical practices to actualize a harmonious environment wherever they work.	4	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	-	-	-	-	-	1	1	2	2	-	-	3	-	-
CO2	-	-	-	-	-	2	2	3	3	-	-	3	-	-
CO3	-	-	-	-	-	3	3	2	3	-	-	3	-	-
CO4	-	-	-	-	-	2	3	2	3	-	-	3	-	-
CO5	-	-	-	-	-	2	3	3	**2**	-	-	3	-	-
Target Level	-	-	-	-	-	**2**	**2.4**	**2.4**	**2.6**	-	-	**3**	-	-

Course Name/code: VLSI DESIGN Lab/ KEC 751 B Sem: Odd Semester		Session:2022-23	
S.No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Design logic gates.	6	Conceptual & Procedural
2	Implement combinational and sequential circuits using CMOS logic.	4	Conceptual & Procedural
3	Analyze amplifier circuits.	4	Conceptual & Procedural
4	Design sequential circuits such as flip flop	6	Conceptual & Procedural
5	Do the layout designing for physical analysis of the MOS transistor and MOS based circuits.	6	Conceptual & Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PS O1**	**PS O2**
CO1	**2**	**2**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**1**	**1**	**1**	**2**	**-**
CO2	**3**	**3**	**2**	**2**	**3**	**-**	**-**	**-**	**-**	**1**	**1**	**1**	**3**	**-**
CO3	**2**	**2**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**1**	**1**	**1**	**3**	**-**
CO4	**2**	**2**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**1**	**1**	**1**	**3**	**-**
CO5	**3**	**3**	**2**	**2**	**3**	**-**	**-**	**-**	**-**	**1**	**1**	**1**	**3**	**-**
Target Level	**2.4**	**2.4**	**2**	**2**	**2.4**	**-**	**-**	**-**	**-**	**1**	**1**	**1**	**2.8**	**-**

Course Name / Code: Project I/ KEC-753			**Session: 2022-23**
Sem: VII ODD Semester			
S. No	**Course Outcomes**		
Students will be able to		**Bloom Level**	**Knowledge Dimension**
1	Identify the problem for the project through available literature survey.	2	Conceptual, Procedural
2	Analyze the problem and find the appropriate solution for the selected project	4	Conceptual, Procedural
3	Apply the knowledge of Electronics, Programming and Communication Engineering for the design of project	3	Conceptual, Procedural
4	Develop solutions for the problem by using the techniques, skills, and modern engineering tools.	6	Conceptual, Procedural
5	Function on multi-disciplinary teams through effective communication skill and team behavior.	4	Conceptual, Procedural
6	Understand the basics of engineering, finance, and management principles.	2	Conceptual, Procedural
7	Accomplish the project to meet desired needs within realistic constraints of ethics, environment, economy, and society	6	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**
CO1	**2**	**3**	**1**	**2**	**1**	**1**	**2**	**2**	**2**	**2**	**2**	**1**	**1**	**1**
CO2	**2**	**3**	**3**	**2**	**2**	**2**	**2**	**1**	**2**	**2**	**2**	**2**	**2**	**2**
CO3	**3**	**2**	**2**	**2**	**2**	**2**	**1**	**2**	**2**	**2**	2	**2**	**3**	**2**
CO4	**2**	**2**	**3**	**2**	**2**	**2**	**1**	**1**	**2**	**2**	2	**2**	**3**	**3**
CO5	**2**	**2**	**3**	**2**	**2**	**2**	**1**	**1**	**3**	**3**	2	**3**		**3**
CO6	**2**	**2**	**2**	**2**	**1**	**1**	**1**	**2**	**2**	**2**	2	**2**		**3**
CO7	**2**	**2**	**2**	**2**	**2**	**3**	**3**	**3**	**2**	**2**	**2**	**3**		
Target Level	**2.14**	**2.29**	**2.29**	**2.00**	**1.71**	**1.86**	**1.57**	**1.71**	**2.14**	**2.14**	**2.00**	**2.14**	**2.25**	**2.33**