

**ACADEMIC YEAR 2021-2022**

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**S1 EEE (2021-2025 Batch)- KTU 2019 Scheme**

<b>SL NO</b>	<b>COURSE CODE</b>	<b>SUBJECT NAME</b>	<b>STAFF HANDLED</b>
1	MAT101	Linear Algebra And Calculus	Ms LIJIMOLE
2	PHT 100	Engineering Physics A	Dr. Sasi B
3	EST 110	Engineering Graphics	Sasi K S
4	EST 120	Basics Of Civil And Mechanical Engineering	John P George
5	HUN 101	Life Skills	Sreeti Gangadharan
6	PHL 120	Engineering Physics Lab	Dr. Sasi B
7	ESL 120	Civil And Mechanicalworkshop	Mr Sivan S Kumar

**S3 EEE (2020-2024 Batch)**

<b>Sl no</b>	<b>Course code</b>	<b>Subject name</b>	<b>Staff handled</b>
1	MAT201	Partial Differential Equation And Complex Analysis	Ampady V K
2	EET201	CIRCUITS AND NETWORKS	Mr ARJUN MOHANLAL
3	EET203	MEASUREMENTS AND INSTRUMENTATION	Mr AMJITH S
4	EET205	ANALOG ELECTRONICS	Mrs PONNAMBILI S
5	EST200	Design and Engineering	Ms KRISHNENDU S
6	MCN201	Sustainable Engineering	Mr RAHUL N R
7	EEL201	CIRCUITS AND MEASUREMENTS LAB	Mr AMJITH S
8	EEL203	ANALOG ELECTRONICS LAB	Mr PRAJEESH R

**S5 EEE (2019- 2023 Batch)**

<b>Sl no</b>	<b>Course code</b>	<b>Subject name</b>	<b>Staff handled</b>
1	EET301	POWER SYSTEMS I	Mrs SEETHU VIJAYAN
2	EET303	MICROPROCESSORS AND MICROCONTROLLERS	Mrs MALU U
3	EET305	SIGNALS AND SYSTEMS	Mr PRAJEESH R
4	EET307	SYNCHRONOUS AND INDUCTION MACHINES	Mrs GAYATHRI DEVI G
5	HUT300	INDUSTRIAL ECONOMICS AND FOREIGN TRADE	Mrs GEETHA VIMAL
6	MCN301	DISASTER MANAGEMENT	Mr RAHUL P RAJ
7	EEL331	MICROPROCESSORS AND MICROCONTROLLERS LAB	Mrs MALU U
8	EEL333	ELECTRICAL MACHINES LAB II	Mrs SEETHU VIJAYAN

**S7 EEE (2018 - 2022 Batch) (2015 scheme)**

<b>Sl no</b>	<b>Course code</b>	<b>Subject name</b>	<b>Staff handled</b>
1	EE401	ELECTRONIC COMMUNICATION	Mr ARJUN MOHANLAL
2	EE403	DISTRIBUTED GENERATION AND SMART GRIDS	Mrs SEETHU VIJAYAN
3	EE405	ELECTRICAL SYSTEM DESIGN	Mr RAHUL P RAJ
4	EE407	DIGITAL SIGNAL PROCESSING	Mrs SAMITHA T
5	EE409	ELECTRICAL MACHINE DESIGN	Mr AMJITH S
6	EE465	POWER QUALITY	Mrs GAYATHRI DEVI G
7	EE451	Seminar & Project Preliminary	Mr ARJUN MOHANLAL
8	EE431	POWER SYSTEM LAB	Mrs GAYATHRI DEVI G

## EVEN SEMESTER

### S2 EEE (2021-2025 Batch)- KTU 2019 Scheme

Sl no	Course code	Subject name	Staff handled
1	CYT 100	Engineering Chemistry	Renju R
2	EST 100	Engineering Mechanics	Mr SASI K S
3	EST 130	Basics Of Electrical And Electronics Engineering	Mr AMJITH S
4	CYL 120	Engineering Chemistry Lab	Renju R
5	ESL 130	Electrical And Electronics Workshop	Mrs SAMITHA T
6	MAT102	Vector Calculus, Differential Equation And Transforms	Ms LIJIMOLE S
7	HUN10	Professional Communication	Sreeti Gangadharan
8	EST102	Programming In C	Ms NAMITHA T N

### S4 EEE (2020-2024 Batch)

Sl no	Course code	Subject name	Staff Handled
1	MAT204	Probability, Random Process And Numerical Methods	Mrs AMBILIMOL V P
2	EET202	DC MACHINES AND TRANSFORMERS	Mr ARJUN MOHANLAL
3	EET204	ELECTROMAGNETIC THEORY	Mr AMJITH S
4	EET206	DIGITAL ELECTRONICS	Mrs SAMITHA T
5	HUT200	Professional Ethics	Ponnambili S
6	MCN202	Constitution Of India	Mr KEVIN SEBASTIAN
7	EEL202	ELECTRICAL MACHINES LAB I	Mr ARJUN MOHANLAL
8	EEL204	DIGITAL ELECTRONICS LAB	Mrs ARATHI BABU

**S6 EEE (2019-2023 Batch)**

<b>Sl no</b>	<b>Course code</b>	<b>Subject name</b>	<b>Staff handled</b>
1	EET302	LINEAR CONTROL SYSTEMS	Mrs PONNAMBILI S
2	EET304	POWER SYSTEMS II	Ms LAKSHMIPRIYA K J
3	EET306	POWER ELECTRONICS	Mr RAHUL P RAJ
4	EET322	RENEWABLE ENERGY SYSTEMS	Mr ARJUN MOHANLAL
5	HUT310	MANAGEMENT FOR ENGINEERS	Mrs SONY SETHUKUMAR
6	EET308	COMPREHENSIVE COURSE WORK	Mr RAHUL P RAJ
7	EEL332	POWER SYSTEMS LAB	Ms LAKSHMIPRIYA K J
8	EEL334	POWER ELECTRONICS LAB	Mr AMJITH S

**S8 EEE (2018-2022 Batch)**

<b>Sl no</b>	<b>Course code</b>	<b>Subject name</b>	<b>Staff handled</b>
1	EE402	SPECIAL ELECTRIC MACHINES	Mr ARJUN MOHANLAL
2	EE404	INDUSTRIAL INSTRUMENTATION & AUTOMATION	Mr RAHUL P RAJ
3	EE474	ENERGY MANAGEMENT AND AUDITING	Mrs SEETHU VIJAYAN
4	CE482	ENVIRONMENTAL IMPACT ASSESSMENT	Mrs SAMITHA T
5	EE492	PROJECT	Mr ARJUN MOHANLAL

**S1 EEE (2021-2025 Batch)- KTU 2019 Scheme**

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<b>2</b>	PHT 100	Engineering Physics A	Dr. Sasi B
<b>3</b>	EST 110	Engineering Graphics	Sasi K S
<b>4</b>	EST 120	Basics Of Civil And Mechanical Engineering	John P George
<b>5</b>	HUN 101	Life Skills	Sreeti Gangadharan
<b>6</b>	PHL 120	Engineering Physics Lab	Dr. Sasi B
<b>7</b>	ESL 120	Civil And Mechanicalworkshop	Mr Sivan S Kumar

**COURSE OBJECTIVES AND COURSE OUTCOME FOR****MAT 101: LINEAR ALGEBRA AND CALCULUS**

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
<b>1</b>	Evaluate the limit of a sequence of numbers (infinite series) and determine whether the series converges.
<b>2</b>	Understand the meaning of partial derivatives and calculate partial derivatives.
<b>3</b>	Compute dot product, cross product, length of vectors. Compute partial derivatives, derivatives of vector-valued functions, gradient functions.
<b>4</b>	To change a double integral to polar co ordinate. Compute (relatively simple) triple integrals

<b>5</b>	Determine if a vector field is conservative and find a potential function if conservative. Evaluate line integrals in the plane and in space, including line integrals of vector fields.
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**COURSE OBJECTIVES AND COURSE OUTCOME FOR  
PHT 100: ENGINEERING PHYSICS A**

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
<b>1</b>	Develop innovative methods to produce soft water for industrial use and potable water at cheaper cost.
<b>2</b>	Substitute metals with conducting polymers and also produce cheaper biodegradable polymers to reduce environmental pollution. Design economically and new methods of synthesis nano materials.
	Have the knowledge of converting solar energy into most needy electrical.
<b>4</b>	Apply their knowledge for protection of different metals from corrosion. To prevents the monuments from getting corroded.
<b>5</b>	Recent trends in electrochemical energy storage devices.
<b>6</b>	Learn how to use different spectroscopy techniques for analysis purpose of simple molecules.

**COURSE OBJECTIVES AND COURSE OUTCOME FOR  
EST110: ENGINEERING GRAPHICS**

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
<b>1</b>	Understand the fundamental concepts of mechanics.
<b>2</b>	Students would be able to apply and demonstrate the concepts of resultant and equilibrium of force system.
<b>3</b>	Students would be able to determine the properties of planes and solids.
<b>4</b>	Understand the concepts of moment of inertia.
<b>5</b>	Students would be able to apply fundamental concepts of dynamics to practical problems.
<b>6</b>	Understand the basic elements of vibration.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
EST 120: BASICS OF CIVIL AND MECHANICAL ENGINEERING**

<b>Sl No</b>	<b>Subject Learning Outcomes or Course Outcomes</b>

	<b>On completion of course the students will be able to:</b>
<b>1</b>	Gain preliminary knowledge in basic concepts of Electrical Engineering.
<b>2</b>	Discuss the working of various dc and ac machines
<b>3</b>	To predict the behaviour of any electrical and magnetic circuits.
<b>4</b>	To identify the type of electrical machine used for that particular application.
<b>5</b>	To wire any circuit depending upon the requirement.
<b>6</b>	Understand working principle of various analogue electrical measuring instruments.

**COURSE OBJECTIVES AND COURSE OUTCOME FOR  
HUN101: LIFE SKILLS**

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
<b>1</b>	Able to appreciate and explain the different types of environmental pollution problems and their sustainable solutions
<b>2</b>	To be aware of problem related to global environmental issues
<b>3</b>	Able to apply the concepts of sustainability in their respective area of specialization
<b>4</b>	To understand the need of waste disposal and management



**COURSE OBJECTIVES AND COURSE OUTCOME FOR  
PHL 120: ENGINEERING PHYSICS LAB**

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
<b>1</b>	The students will be able to illustrate the fundamental aspects of civil engineering
<b>2</b>	The students should able to plan a building
<b>3</b>	Students will be able to explain about surveying for making horizontal and vertical measurements.
<b>4</b>	They will able to illustrate the uses of various building materials and construction of different components of a building.

**COURSE OBJECTIVES AND COURSE OUTCOME FOR  
ESL 120: CIVL AND MECHANICAL WORKSHOP**

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
<b>1</b>	To equip the students to apply the knowledge of Chemistry and take up Chemistry related topics as parts of their project works during higher semester of the course.
<b>2</b>	To impart sound knowledge in the different fields of theoretical chemistry so as to apply it to the problems in engineering field. (b) To develop analytical capabilities of students so that they can characterize, transform and use materials in engineering and apply knowledge gained in solving related engineering problems

3	To develop abilities and skills that are relevant to the study and practice of Chemistry.
4	To familiarize the students with different application oriented topics like new generation engineering material different instrumental methods etc.
5	To enable the students to acquire the knowledge in the concepts of chemistry for engineering applications.

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3	EET203	MEASUREMENTS AND INSTRUMENTATION	Mr AMJITH S
4	EET205	ANALOG ELECTRONICS	Mrs PONNAMBILI S
5	EST200	Design and Engineering	Ms KRISHNENDU S
6	MCN201	Sustainable Engineering	Mr RAHUL N R
7	EEL201	CIRCUITS AND MEASUREMENTS LAB	Mr AMJITH S
8	EEL203	ANALOG ELECTRONICS LAB	Mr PRAJEESH R

### MAT201: LINEAR ALGEBRA & COMPLEX ANALYSIS COURSE

Sl. No.	Subject Learning Outcomes or Course Outcomes
	On completion of course the students will be able to:
1	Understand the concept and the solution of partial differential equation.
2	Analyse and solve one dimensional wave equation and heat equation
3	

	Understand complex functions, its continuity differentiability with the use of Cauchy Riemann equations.
4	Evaluate complex integrals using Cauchy's integral theorem and Cauchy's integral formula, understand the series expansion of analytic function
5	Understand the series expansion of complex function about a singularity and Apply residue theorem to compute several kinds of real integrals.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
EET201 CIRCUITS AND NETWORKS**

Sl. No.	Subject Learning Outcomes or Course Outcomes
	<b>On completion of course the students will be able to:</b>
1	CO 1 Apply circuit theorems to simplify and solve complex DC and AC electric networks.
2	CO 2 Analyse dynamic DC and AC circuits and develop the complete response to excitations.
3	CO 3 Solve dynamic circuits by applying transformation to s-domain.
4	CO 4 Analyse three-phase networks in Y and $\Delta$ configurations.
5	CO 5 Solve series /parallel resonant circuits.
6	CO 6 Develop the representation of two-port networks using network parameters and analyse.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR**  
**EET203 MEASUREMENTS AND INSTRUMENTATION**

<b>Sl.No.</b>	<b>Subject Learning Outcomes Or Course Outcomes</b>
	<b>On Completion Of Course Student Will Be Able To:</b>
1	CO 1 Identify and analyse the factors affecting performance of measuring system
2	CO 2 Choose appropriate instruments for the measurement of voltage, current in ac and dc measurements
3	CO 3 Explain the operating principle of power and energy measurement
4	CO 4 Outline the principles of operation of Magnetic measurement systems
5	CO 5 Describe the operating principle of DC and AC bridges, transducers based systems.
6	CO 6 Understand the operating principles of basic building blocks of digital systems, recording and display units

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
EET205 ANALOG ELECTRONICS**

Sl.No.	Subject Learning Outcomes Or Course Outcomes
	<b>On Completion Of Course Student Will Be Able To:</b>
1	<b>CO 1</b> Design biasing scheme for transistor circuits.
2	<b>CO 2</b> Model BJT and FET amplifier circuits.
3	<b>CO 3</b> Identify a power amplifier with appropriate specifications for electronic circuit applications.
4	<b>CO 4</b> Describe the operation of oscillator circuits using BJT.
5	<b>CO 5</b> Explain the basic concepts of Operational amplifier(OPAMP)
6	<b>CO 6</b> Design and develop various OPAMP application circuits.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
MCN201 SUSTAINABLE ENGINEERING**

Sl. No.	Subject Learning Outcomes or Course Outcomes
	<b>On completion of course the students will be able to:</b>
1	Understand the relevance and the concept of sustainability and the global initiatives in this direction
2	Explain the different types of environmental pollution problems and their sustainable solutions
3	Discuss the environmental regulations and standards
4	Outline the concepts related to conventional and non-conventional energy
5	Demonstrate the broad perspective of sustainable practices by utilizing engineering knowledge and principles

## EST 200: DESIGN AND ENGINEERING

Sl. No.	Subject Learning Outcomes or Course Outcomes
	<b>On completion of course the students will be able to:</b>
1	Explain the different concepts and principles involved in design engineering.
2	Apply design thinking while learning and practicing engineering.
3	Develop innovative, reliable, sustainable and economically viable designs incorporating knowledge in engineering.

## COURSE OBJECTIVES AND COURSE OUTCOMES FOR

### EEL201 CIRCUITS AND MEASUREMENTS LAB

Sl.No.	Subject Learning Outcomes Or Course Outcomes
	<b>On Completion Of Course Student Will Be Able To:</b>
1	CO 1 Analyse voltage current relations of RLC circuits
2	CO 2 Verify DC network theorems by setting up various electric circuits
3	CO 3 Measure power in a single and three phase circuits by various methods
4	CO 4 Calibrate various meters used in electrical systems

5	CO 5 Determine magnetic characteristics of different electrical devices
6	CO 6 Analyse the characteristics of various types of transducer systems
7	CO 7 Determine electrical parameters using various bridges
8	CO 8 Analyse the performance of various electronic devices for an instrumentation systems and, to develop the team management and documentation capabilities.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
EEL203 ANALOG ELECTRONICS LAB**

<b>Sl.No.</b>	<b>Subject Learning Outcomes Or Course Outcomes</b>
	<b>On Completion Of Course Student Will Be Able To:</b>
1	<b>CO 1</b> Use the various electronic instruments and for conducting experiments.
2	<b>CO 2</b> Design and develop various electronic circuits using diodes and Zener diodes.
3	<b>CO 3</b> Design and implement amplifier and oscillator circuits using BJT and JFET.
4	<b>CO 4</b> Design and implement basic circuits using IC (OPAMP and 555 timers).
5	<b>CO 5</b> Simulate electronic circuits using any circuit simulation software.
6	<b>CO 6</b> Use PCB layout software for circuit design

**S5 EEE**

**S5 EEE (2019- 2023 Batch)**

<b>Sl no</b>	<b>Course code</b>	<b>Subject name</b>	<b>Staff handled</b>
1	EET301	POWER SYSTEMS I	Mrs SEETHU VIJAYAN
2	EET303	MICROPROCESSORS AND MICROCONTROLLERS	Mrs MALU U
3	EET305	SIGNALS AND SYSTEMS	Mr PRAJEESH R
4	EET307	SYNCHRONOUS AND INDUCTION MACHINES	Mrs GAYATHRI DEVI G
5	HUT300	INDUSTRIAL ECONOMICS AND FOREIGN TRADE	Mrs GEETHA VIMAL

6	MCN301	DISASTER MANAGEMENT	Mr RAHUL P RAJ
7	EEL331	MICROPROCESSORS AND MICROCONTROLLERS LAB	Mrs MALU U
8	EEL333	ELECTRICAL MACHINES LAB II	Mrs SEETHU VIJAYAN

**EET301  
POWER SYSTEMS I**

Sl. No.	Subject Learning Outcomes or Course Outcomes
	<b>On completion of course the students will be able to:</b>
<b>CO 1</b>	Identify the power generating system appropriate for a given area.
<b>CO 2</b>	Evaluate the electrical performance of any transmission line.
<b>CO 3</b>	Compute various physical characteristics of underground and overhead transmission systems.
<b>CO 4</b>	Select appropriate switchgear for protection schemes.
<b>CO 5</b>	Design a simple electrical distribution system as per the standards.

**EET303  
MICROPROCESSORS AND MICROCONTROLLERS**

Sl. No.	Subject Learning Outcomes or Course Outcomes
	<b>On completion of course the students will be able to:</b>
<b>CO 1</b>	Describe the architecture and timing diagram of 8085 microprocessor.
<b>CO 2</b>	Develop assembly language programs in 8085 microprocessor.
<b>CO 3</b>	Identify the different ways of interfacing memory and I/O with 8085 microprocessor.
<b>CO 4</b>	Understand the architecture of 8051 microcontroller and embedded systems.
<b>CO 5</b>	Develop assembly level and embedded C programs in 8051 microcontroller.



**EET305**  
**SIGNALS AND SYSTEMS**

Sl. No.	Subject Learning Outcomes or Course Outcomes
	<b>On completion of course the students will be able to:</b>
<b>CO 1</b>	Explain the basic operations on signals and systems.
<b>CO 2</b>	Apply Fourier Series and Fourier Transform concepts for continuous time signals.
<b>CO 3</b>	Analyse the continuous time systems with Laplace Transform.
<b>CO 4</b>	Analyse the discrete time system using Z Transform.
<b>CO 5</b>	Apply Fourier Series and Fourier Transform concepts for Discrete time domain.
<b>CO 6</b>	Describe the concept of stability of continuous time systems and sampled data systems.

**EET307**

**SYNCHRONOUS AND INDUCTION MACHINES**

Sl. No.	Subject Learning Outcomes or Course Outcomes
	<b>On completion of course the students will be able to:</b>
<b>CO 1</b>	Analyse the performance of different types of alternators.
<b>CO 2</b>	Analyse the performance of a synchronous motor.
<b>CO 3</b>	Analyse the performance of different types of induction motors.
<b>CO 4</b>	Describe operating principle of induction machine as generator.
<b>CO 5</b>	Explain the types of single phase induction motors and their working principle.

HUT300  
**INDUSTRIAL ECONOMICS AND FOREIGN TRADE**

Sl. No.	Subject Learning Outcomes or Course Outcomes

	<b>On completion of course the students will be able to:</b>
<b>CO 2</b>	Analyse the performance of a synchronous motor.
<b>CO 3</b>	Analyse the performance of different types of induction motors.
<b>CO 4</b>	Describe operating principle of induction machine as generator.
<b>CO 5</b>	Explain the types of single phase induction motors and their working principle.
<b>CO 2</b>	Analyse the performance of a synchronous motor.

MCN301 DISASTER MANAGEMENT

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
1	To understand the concepts of Power Electronics and the various applications
2	To get an insight on various electronic instruments, their configuration and measurements using them.
3	To understand the principle of operation of Transducers

**EEL331 MICROPROCESSORS AND MICROCONTROLLERS LAB**

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
<b>CO 1</b>	Develop and execute assembly language programs for solving arithmetic and logical problems using microprocessor/microcontroller.
<b>CO 2</b>	Design and Implement systems with interfacing circuits for various applications.
<b>CO 3</b>	Execute projects as a team using microprocessor/microcontroller for real life applications.

**EEL333**

**ELECTRICAL MACHINES LAB II**

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
<b>CO 1</b>	Analyse the performance of single phase and three phase induction motors by conducting suitable tests.
<b>CO 2</b>	Analyse the performance of three phase synchronous machine from V and inverted V curves.
<b>CO 3</b>	Analyse the performance of a three phase alternator by conducting suitable tests.

**S7 EEE**

**S7 EEE (2018 - 2022 Batch) (2015 scheme)**

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4	EE407	DIGITAL SIGNAL PROCESSING	Mrs SAMITHA T
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6	EE465	POWER QUALITY	Mrs GAYATHRI DEVI G
7	EE451	Seminar & Project Preliminary	Mr ARJUN MOHANLAL
8	EE431	POWER SYSTEM LAB	Mrs GAYATHRI DEVI G

EE401

ELECTRONIC COMMUNICATION

Sl. No.	Subject Learning Outcomes or Course Outcomes
	<b>On completion of course the students will be able to:</b>
1	Apply the knowledge of Shannon's source coding theorem and Channel coding theorem for designing an efficient and error free communication link.
2	Analyze various coding schemes
3	Design an optimum decoder for various coding schemes used.
4	
5	

EE403

DISTRIBUTED GENERATION AND SMARTGRIDS

Sl.	Subject Learning Outcomes or
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<b>No.</b>	<b>Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
1	The students will be able to understand the basics of microwave engineering and radar systems.
2	
3	

EE405

ELECTRICAL SYSTEM DESIGN

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
1	Know the working of optical source and detectors.
2	Compare the performance of various optical modulation schemes.
3	Apply the knowledge of optical amplifiers in the design of optical link.
4	Analyse the performance of optical amplifiers.

EE407

DIGITAL SIGNAL PROCESSING

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
1	Different types of network topologies and protocols.
2	The layers of the OSI model and TCP/IP with their functions.
3	The concept of subnetting and routing mechanisms.
4	The basic protocols of computer networks, and how they can be used to assist in network design and implementation.

EE409

ELECTRICAL MACHINE DESIGN

Sl. No.	Subject Learning Outcomes or Course Outcomes
	On completion of course the students will be able to:
1	Represent mathematically a systems and deriving their transfer function model.
2	Analyse the time response and frequency response of the systems for any input
3	Find the stability of system
4	Design a control system with suitable compensation techniques
5	Analyse a digital control system.

EE465 POWER QUALITY

Sl. No.	Subject Learning Outcomes or Course Outcomes
	On completion of course the students will be able to:
1	Understand the working principles of micro sensors and actuators
2	Understand the application of scaling laws in the design of micro systems
3	Understand the typical materials used for fabrication of micro systems
4	Understand the principles of standard micro fabrication techniques
5	Appreciate the challenges in the design and fabrication of Micro systems

EE431

POWER SYSTEM LAB

Sl. No.	Subject Learning Outcomes or Course Outcomes
	On completion of course the students will be able to:
1	Measurement of E-plane and H-plane characteristics
2	Study of Vector Network Analyser
3	Study of losses in Optical fiber

## EVEN SEMESTER

### S2 EEE (2021-2025 Batch)- KTU 2019 Scheme

Sl no	Course code	Subject name	Staff handled
1	CYT 100	Engineering Chemistry	Renju R
2	EST 100	Engineering Mechanics	Mr SASI K S
3	EST 130	Basics Of Electrical And Electronics Engineering	Mr AMJITH S
4	CYL 120	Engineering Chemistry Lab	Renju R
5	ESL 130	Electrical And Electronics Workshop	Mrs SAMITHA T
6	MAT102	Vector Calculus, Differential Equation And Transforms	Ms LIJIMOLE S
7	HUN10	Professional Communication	Sreeti Gangadharan
8	EST102	Programming In C	Ms NAMITHA T N

**COURSE OBJECTIVES AND COURSE OUTCOME FOR  
CYT100: ENGINEERING CHEMISTRY**

Sl. No.	Subject Learning Outcomes or Course Outcomes
	On completion of course the students will be able to:
1	Solve for the solutions and describe the behavior of a damped and driven harmonic oscillator in both time and frequency domains. Damped and Forced Oscillations oscillating system problems.
2	Define and explain the propagation of light in conducting and non-conducting media.
3	Define and explain the physics governing laser behaviour and light matter interaction in conducting and non-conducting media.
4	Apply wave optics and diffraction theory to a range of problems
5	Explain and calculate the physical effects of acoustic reflections, absorption, scattering, diffusion, diffraction, and propagation losses.
6	Use advanced theoretical, numerical, and experimental techniques to model and analyze acoustical elements in musical instruments, the human voice, room acoustics, and audio.

**COURSE OBJECTIVES AND COURSE OUTCOME FOR  
EST100: ENGINEERING MECHANICS**

Sl. No.	Subject Learning Outcomes or Course Outcomes
	On completion of course the students will be able to:
1	To hand letter will improve.
2	To perform basic sketching techniques will improve.
3	To draw orthographic projections and sections.



4	To use architectural and engineering scales will increase.
5	To produce engineered drawings will improve
6	To convert sketches to engineered drawings will increase.

**COURSE OBJECTIVES AND COURSE OUTCOME FOR  
EST130: BASICS OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Sl. No.	Subject Learning Outcomes or Course Outcomes
	On completion of course the students will be able to:
1	Student can identify the active and passive electronic components.
2	Student can setup simple circuits using diodes, transistors and other electronic components.
3	Student will get fundamental idea about basic communication and entertainment electronics.
4	Student will get fundamental idea about mobile operation.
5	Student will get fundamental idea about different electronic circuits.

**COURSE OBJECTIVES AND COURSE OUTCOME FOR  
CYL120: ENGINEERING CHEMISTRY LAB**

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
<b>1</b>	Solve for the solutions and describe the behavior of a damped and driven harmonic oscillator in both time and frequency domains. Damped and Forced Oscillations oscillating system problems.
<b>2</b>	Define and explain the propagation of light in conducting and non-conducting media.
<b>3</b>	Define and explain the physics governing laser behaviour and light matter interaction ting and non-conducting media.
<b>4</b>	Apply wave optics and diffraction theory to a range of problems
<b>5</b>	Explain and calculate the physical effects of acoustic reflections, absorption, scattering, diffusion, diffraction, and propagation losses.
<b>6</b>	Use advanced theoretical, numerical, and experimental techniques to model and analyze acoustical elements in musical instruments, the human voice, room acoustics, and audio.

**COURSE OBJECTIVES AND COURSE OUTCOME FOR**

### ESL130: ELECTRICAL AND ELECTRONICS WORKSHOP

Sl. No.	Subject Learning Outcomes or Course Outcomes
	On completion of course the students will be able to:
1	Student can identify the active and passive electronic components.
2	Student can setup simple circuits using diodes, transistors and other electronic components.
3	Student will get fundamental idea about basic communication and entertainment electronics.
4	Student will get fundamental idea about mobile operation.
5	Student will get fundamental idea about different electronic circuits.

### COURSE OBJECTIVES AND COURSE OUTCOME FOR

### MAT 102 - VECTOR CALCULUS, DIFFERENTIAL EQUATION AND TRANSFORMS

Sl. No.	Subject Learning Outcomes or Course Outcomes
	On completion of course the students will be able to:

1	Distinguish between linear, partial and ordinary differential equations. State the basic existence theorem for 1st order ODE's and use the theorem to determine a solution interval
2	Recognize and solve a non homogeneous differential equation. Find particular solutions to initial value problems.
3	Find the Fourier series representation of a function of one variable.
4	Knowledge in the Technic, methodology of solving Partial Differential Equations. A basic understanding in the Transforms which are useful in solving engineering problems.
5	At the end of the course students will have acquired basic knowledge of differential equations and methods of solving them and their use in analyzing typical mechanical or electrical systems.

**COURSE OBJECTIVES AND COURSE OUTCOME FOR  
HUN 102: PROFESSIONAL COMMUNICATION**

Sl. No.	Subject Learning Outcomes or Course Outcomes
	<b>On completion of course the students will be able to:</b>
1	To appreciate different elements involved in design and to apply them when they called for.
2	Aware of product centred and user centred aspects that makes in the design process.
3	To be aware of different stages in design process and results of incorporating other fields with engineering stream
4	Understand different stages in manufacturing of a designed product

**COURSE OBJECTIVES AND COURSE OUTCOME FOR  
EST102: PROGRAMMING IN C**

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
<b>1</b>	An ability to apply knowledge of mathematics, science, and engineering.
<b>2</b>	An ability to design and conduct experiments, as well as to analyze and interpret data.
<b>3</b>	An ability to identify, formulate, and solve engineering problems
<b>4</b>	Understanding of professional and ethical responsibility
<b>5</b>	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
<b>6</b>	A recognition of the need for, and an ability to engage in life-long learning

**S4 EEE (2020-2024 Batch)**

<b>Sl no</b>	<b>Course code</b>	<b>Subject name</b>	<b>Staff Handled</b>
<b>1</b>	MAT204	Probability, Random Process And Numerical Methods	Mrs AMBILIMOL V P
<b>2</b>	EET202	DC MACHINES AND TRANSFORMERS	Mr ARJUN MOHANLAL
<b>3</b>	EET204	ELECTROMAGNETIC THEORY	Mr AMJITH S
<b>4</b>	EET206	DIGITAL ELECTRONICS	Mrs SAMITHA T
<b>5</b>	HUT200	Professional Ethics	Ponnambili S
<b>6</b>	MCN202	Constitution Of India	Mr KEVIN SEBASTIAN
<b>7</b>	EEL202	ELECTRICAL MACHINES LAB I	Mr ARJUN MOHANLAL
<b>8</b>	EEL204	DIGITAL ELECTRONICS LAB	Mrs ARATHI BABU

**MAT 204 Probability, Random Processes and Numerical methods**

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
<b>1</b>	Understand the concept, properties and important models of discrete random variables and, using them, analyse suitable random phenomena.
<b>2</b>	Understand the concept, properties and important models of continuous random variables and, using them, analyse suitable random phenomena.

3	Analyse random processes using autocorrelation, power spectrum and Poisson process model as appropriate.
4	Compute roots of equations, evaluate definite integrals and perform interpolation on given numerical data using standard numerical techniques
5	Apply standard numerical techniques for solving systems of equations, fitting curves on given numerical data and solving ordinary differential equations.

EET202  
DC MACHINES AND TRANSFORMERS

Sl.No.	Course Outcomes
<b>On completion of the course the student will be able to</b>	
1.	Design analog signal processing circuits using diodes and first order RC circuit
2	Analyse basic amplifiers using BJT and MOSFET
3	Apply the principle of oscillator and regulated power supply circuits.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR**

EET204 ELECTROMAGNETIC THEORY

Sl. No.	Subject Learning Outcomes or Course Outcomes
<b>On completion of course the students will be able to:</b>	
1	Apply properties of signals and systems to classify them
2	Represent signals with the help of series and transforms
	Describe orthogonality of signals and convolution integral.
4	Apply transfer function to compute the LTI response to input signals.
5	Apply sampling theorem to discretize continuous time signals

EET 206 DIGITAL ELECTRONICS S

<b>Sl. No.</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
	<b>On completion of course the students will be able to:</b>
1	Explain the functional units, I/O and memory management w.r.t a typical computer architecture.
2	Distinguish between microprocessor and microcontroller.
3	Develop simple programs using assembly language programming.
4	Interface 8051 microcontroller with peripheral devices using ALP/Embedded C
5	Familiarize system software and Advanced RISC Machine Architecture.



## COURSE OBJECTIVES AND COURSE OUTCOMES FOR

### HUT 200 Professional Ethics

Sl. No.	Subject Learning Outcomes or Course Outcomes
	On completion of course the students will be able to:
1	Understand the core values that shape the ethical behaviour of a professional.
2	Adopt a good character and follow an ethical life.
3	Explain the role and responsibility in technological development by keeping personal ethics and legal ethics.
4	Solve moral and ethical problems through exploration and assessment by established experiments.
5	Apply the knowledge of human values and social values to contemporary ethical values and global issues.

## COURSE OBJECTIVE AND COURSE OUTCOME FOR

### MCN202 CONSTITUTION OF INDIA

Sl no	Course Outcome
	On completion of course the student will be able to
1	Explain the background of the present constitution of India and features.
2	Utilize the fundamental rights and duties.
3	Understand the working of the union executive, parliament and judiciary.
4	Understand the working of the state executive, legislature and judiciary.
5	Utilize the special provisions and statutory institutions.

6	Show national and patriotic spirit as responsible citizens of the country
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**COURSE OBJECTIVE AND COURSE OUTCOME FOR**

EEL202

ELECTRICAL MACHINES LAB I

<b>SI NO:</b>	<b>COURSE OUTCOMES</b>
<b>1</b>	Design and demonstrate the functioning of basic analog circuits using discrete components.
<b>2</b>	Design and simulate the functioning of basic analog circuits using simulation tools.
<b>3</b>	Function effectively as an individual and in a team to accomplish the given task.

**COURSE OBJECTIVE AND COURSE OUTCOME FOR**

EEL204

DIGITAL ELECTRONICS LAB

<b>SI NO:</b>	<b>COURSE OUTCOMES</b>
1	Write an Assembly language program/Embedded C program for performing data manipulation.

2	Develop ALP/Embedded C Programs to interface microcontroller with peripherals
3	Study of Flip Flops, synchronous and asynchronous counters
4	Perform programming/interfacing experiments with IDE for modern microcontrollers.

### S6 EEE

#### S6 EEE (2019-2023 Batch)

Sl no	Course code	Subject name	Staff handled
1	EET302	LINEAR CONTROL SYSTEMS	Mrs PONNAMBILI S
2	EET304	POWER SYSTEMS II	Ms LAKSHMIPRIYA K J
3	EET306	POWER ELECTRONICS	Mr RAHUL P RAJ
4	EET322	RENEWABLE ENERGY SYSTEMS	Mr ARJUN MOHANLAL
5	HUT310	MANAGEMENT FOR ENGINEERS	Mrs SONY SETHUKUMAR
6	EET308	COMPREHENSIVE COURSE WORK	Mr RAHUL P RAJ
7	EEL332	POWER SYSTEMS LAB	Ms LAKSHMIPRIYA K J
8	EEL334	POWER ELECTRONICS LAB	Mr AMJITH S

EET302

LINEAR CONTROL SYSTEMS

SI NO:	<b>COURSE OUTCOMES</b>
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1	Illustrate the Digital representation of analog source
2	Compare the performance of various Digital Pulse Modulation Schemes
3	Construct signal space representation of signal using Gram Schmidt orthonormalisation procedure
4	Compare the error probability for different digital modulation schemes like BPSK, BFSK, QPSK etc.
5	Understand various Diversity Techniques

EET304

POWER SYSTEMS II

<b>SI NO:</b>	<b>COURSE OUTCOMES</b>
1	The students will be able to design and analyse various MOSFET and CMOS logic circuits.

EET306

POWER ELECTRONICS

<b>SI NO:</b>	<b>COURSE OUTCOMES</b>
1	The basic working of antennas
2	Various antennas, arrays and radiation patterns of antennas
3	Various techniques involved in various antenna parameter measurements
4	The propagation of radio waves in the atmosphere.

EET322

RENEWABLE ENERGY SYSTEMS

<b>SI NO:</b>	<b>COURSE OUTCOMES</b>
1	Understand the basics of an embedded system
2	Develop program for an embedded system.
3	

	Design, implement and test an embedded system
4	

HUT310

MANAGEMENT FOR ENGINEERS

<b>SI NO:</b>	<b>COURSE OUTCOMES</b>
1	A thorough understanding of the features of OOP like class construction, polymorphism and inheritance of C++ and Java.
2	An understanding of advanced features of C++ such as templates, abstract classes and virtual functions
3	

	Knowledge of advanced features of Java such as multithreading, packages and error management.
4	Skills in designing android application development

EET308

COMPREHENSIVE COURSE WORK

<b>SI NO:</b>	<b>COURSE OUTCOMES</b>
1	Learn the basic elements of image processing and various image transforms.
2	Discuss spatial domain methods and frequency domain methods of image enhancement and degradation model for restoration..
3	Learn the lossless and lossy compression, point, line and edge detection, descriptors..
4	Discuss different morphological operations.

EEL332

POWER SYSTEMS LAB

<b>SI NO:</b>	<b>COURSE OUTCOMES</b>
1	The students will be able to understand the basic concepts of circuits used in communication systems.

EEL334

POWER ELECTRONICS LAB

<b>SI NO:</b>	<b>COURSE OUTCOMES</b>
1	Program Micro controllers.
2	Interface various peripheral devices to Micro controller.
3	Function effectively as an individual and in a team to accomplish the given task.



## S8 EEE

### S8 EEE (2018-2022 Batch)

Sl no	Course code	Subject name	Staff handled
1	EE402	SPECIAL ELECTRIC MACHINES	Mr ARJUN MOHANLAL
2	EE404	INDUSTRIAL INSTRUMENTATION & AUTOMATION	Mr RAHUL P RAJ
3	EE474	ENERGY MANAGEMENT AND AUDITING	Mrs SEETHU VIJAYAN
4	CE482	ENVIRONMENTAL IMPACT ASSESSMENT	Mrs SAMITHA T
5	EE492	PROJECT	Mr ARJUN MOHANLAL

### EE402 SPECIAL ELECTRIC MACHINES

SI NO:	COURSE OUTCOMES
1	The students will be able to understand basic concepts of nanoelectronic devices and nano technology.

### EE404 INDUSTRIAL INSTRUMENTATION & AUTOMATION

<b>SI NO:</b>	<b>COURSE OUTCOMES</b>
1	The students will be able to understand the basics and technology of advanced communication system

EE474

ENERGY MANAGEMENT AND AUDITING

<b>SI NO:</b>	<b>COURSE OUTCOMES</b>
1	Identify the sources of power dissipation in digital IC systems
2	Understand the impact of power on system performance and reliability
3	Understand leakage sources and reduction techniques
4	Recognise advanced issues in VLSI systems, specific to the deep-submicron silicon technologies

### **CE 482 ENVIRONMENTAL IMPACT ASSESMENT**

<b>SI NO:</b>	<b>COURSE OBJECTIVE</b>	<b>COURSE OUTCOMES</b>
1	To study the various types of environmental pollution	To have a basic knowledge of various pollution sources and their impacts
2	To study the impact due to various types of pollutants and their assessment techniques	

## EE492 PROJECT

SI NO:	COURSE OUTCOMES
1	Think innovatively on the development of components, products, processes or technologies in the engineering field
2	Apply knowledge gained in solving real life engineering problems