



**Course Level Content Beyond Syllabus**  
**Assessment Year 2022-2023**

Sl. No.	Course Name	Gap	Action Taken
1.	Cryptography	Implementation of Cryptography algorithms	Implementation of Miller Rabin Algorithm
2.	Satellite Communication	Remote Sensing applications	Application of Satellite in Remote sensing
3.	Digital Image Processing	Implementation of Filters using modern tools	Design of Filters for Image Processing Applications
4.	Multimedia Communication	Implementation of Compression Techniques	Implementation of Compression Techniques Using any programming language.
5.	Digital Signal Processing	DSP Applications	DSP and its Applications
6.	VLSI Design	Current trends in VLSI Design	High performance VLSI Design Concepts
7.	Verilog HDL	Hardware design using Verilog	Hardware modelling using Verilog
8.		Design of digital systems using Finite state machine	Digital design using Finite state machine
9.		Design of digital systems using Finite state machine	Digital design using Finite state machine
10.	Information Theory Coding	Simulation of ITC Algorithms	Simulation of ITC Algorithms using MATLAB
11.	Electromagnetic Waves	Simulations of Electromagnetics	MATLAB EXERCISES IN ELECTROMAGNETICS
12.	Technological Innovation Management and Entrepreneurship	Case Study	IOT Business Models
13.	Principles of Communication Systems	Simulation of Modulation and Demodulation Techniques	Simulation of Modulation and Demodulation Techniques using MATLAB
14.	Digital System Design using Verilog	Mixed Language Programming	Knowledge of VHDL, mixed language and mixed style descriptions
15.	Analog Electronics Circuits	Simulation of Analog Electronic Circuits	Simulation of Analog Electronic Circuits using Multisim
16.	Basic Signal Processing	Concepts of Fourier Series	Study and Analysis of discrete time signal
17.	Microwave and Antenna	Concepts of modes of wave propagation in Waveguides	Study of TM and TE mode of Propagation
18.	Wireless	Implementation of OFDM	Implementation of OFDM with FFT

	Communication	using modern tools	based for Oversampling
19.	Network Security	Concept of Email Security using modern tools	Firewall Configuration and Importance of email security
20.		Concept of Email Security	Email Security
21.	Circuits and Controls	Simulation of Networks	Simulation of Networks using TINA TI
22.	Digital Signal Processing	Implementation of filters using DSP Processor	To verify the filtering operation using DSK6713 processor
23.	Embeddedd System	Concept of ARM Microcontroller features in IoT Applications	ARM Microcontroller features in IoT Applications
24.	Communication Theory	Simulation of Communication System	Simulation of Communication System Concepts
25.	Digital Communications	Practical Implementation of MIMO	Implementation of MIMO

### Academic Year 2021-2022

Sl. No.	Course Name	Gap	Action Taken
1.	VLSI Design	High performance VLSI Design Concepts	High performance VLSI Design Concepts
2.	Digital Signal Processing	Design of Filters	Design and Implementation of Chebyshev filters
3.	Technological Innovation Management and Entrepreneurship	Case Study	Construction of Business Models
4.	Electromagnetic waves	Simulations of Electromagnetic	MATLAB EXERCISES IN ELECTROMAGNETICS
5.	Power Electronics and Instrumentation	Permanent Magnet Moving Coil	Working of PMMC
6.	Verilog HDL	System design	System design using FSM
7.	Python Programming	Machine Learning Applications	Implementation of machine learning applications using Python
8.	Principles of Communication Systems	Simulation of Modulation and Demodulation Techniques	Simulation of Modulation and Demodulation Techniques using MATLAB
9.	Information Theory Coding	Simulation of ITC Algorithms	Simulation of ITC Algorithms using MATLAB
10.	Image Processing	Image Enhancement Techniques	Simulation of various image enhancement techniques using MATLAB

11.	Network Analysis	Simulation of Networks using TINATI	Simulation of Networks using TiNATi
12.	Digital System Design	Implementation of Digital system on FPGA	Design and Implementation of combinational circuits on FPGA
13.	Power Electronics	Simulation of Power Electronics Circuits	Power Electronic Circuits Simulation, real time implementation and application
14.	Operating Systems	Scheduling Algorithms	Awareness of Scheduling Algorithms
15.	Wireless Communication	Analysis of Maximal ratio combination Techniques	Implementation and study analysis of Maximal ratio combination techniques
16.	Artificial Neural Networks	Implementation of ANN Algorithms	Demonstration of codes using PYTHON
17.	Python Programming	Tool usage for python codes	Demonstration of codes using IDLE
18.	Embedded Systems	Recent Trends in Embedded Systems	IoT and Embedded Systems
19.	Microwave Antenna	High gain Amplifiers for Microwave Frequencies	Klystron Amplifier
20.	Engineering statistics and Linear Algebra	Modern Tool usage for ESLA Concepts	Simulation of ESLA concepts using MATLAB
21.	Signals and Systems	Higher order Difference equation solutions	Solution to difference equation using time domain and Z domain
22.	Control Systems	Modern Tool usage for Control systems Concepts	Simulation of control systems using MATLAB
23.	Analog Circuits	Practical applications of OPAMP	Demonstration of waveform generation circuits using Tina-TI simulator
24.	Microcontroller	C Language Constructs for Embedded Applications	Bridge class on use of C Language constructs in Embedded C and Project development using Keil IDE
25.	Multimedia Communication	Simulation of Image Processing Techniques	Simulation on Compression techniques using MATLAB
26.	Cryptography	Simulation of cryptosystems	Simulation of public key cryptosystems using RSA calculator and application
27.	Electronic Devices	Fabrication Techniques	Advanced Fabrication Techniques

**Academic Year 2020-2021**

<b>Sl. No.</b>	<b>Course Name</b>	<b>Gap</b>	<b>Action Taken</b>
1.	Power Electronics and Instrumentation	Permanent Magnet Moving Coil	Working of PMMC
2.	Power Electronics and Instrumentation	Simulation of Power Electronics Circuits	Power Electronic Circuits Simulation, real time implementation and application
3.	Digital System Design	Implementation of Digital system on FPGA	Design and Implementation of combinational circuits on FPGA
4.	Electronics Devices	Fabrication Techniques	Advanced Fabrication techniques
5.	Technological Innovation Management and Entrepreneurship	Case Study	Construction of Business Models
6.	Principles of Communication System	Simulation of Modulation and Demodulation Techniques	Simulation of Modulation and Demodulation Techniques using MATLAB
7.	Digital Signal Processing	Simulation of DSP Algorithms	Simulation of DSP Algorithm using MATLAB
8.	Electromagnetic wave	Simulations of Electromagnetic	MATLAB EXERCISES IN ELECTROMAGNETICS
9.	Information Theory Coding	Simulation of ITC algorithm using MATLAB	Simulation of ITC algorithm using MATLAB
10.	Wireless Combination	Analysis of Maximal ratio combination Techniques	Implementation and study analysis of Maximal ratio combination techniques

11.	Analog Circuits	Practical applications of OPAMP	Demonstration of waveform generation circuits using Tina-TI simulator
12.	Python Programming	Tool usage for python codes	Demonstration of codes using IDLE
13.	Embedded System	Recent Trends in Embedded Systems	IoT and Embedded Systems
14.	Microcontroller	Pipelining and hazards	RISC Instruction Pipeline and its Hazards
15.	Signals and Systems	Higher order Difference equation solutions	Solution to difference equation using time domain and Z domain
16.	Engineering statistics and Linear Algebra	Modern Tool usage for ESLA Concepts	Simulation of ESLA concepts using MATLAB
17.	Control System	Modern Tool usage for Control systems Concepts	Simulation of control systems using MATLAB
18.	Network Analysis	Simulation of Networks	Simulation of Networks using TINATI
19.	Verilog HDL	System design	System design using FSM

**Academic Year 2019-2020**

<b>Sl. No.</b>	<b>Course Name</b>	<b>Gap</b>	<b>Action Taken</b>
1.	Digital System Design	Demonstration of BCD Decoders and Encoders	Demonstration of BCD decoders and Encoders
2.	Digital Signal Processing	Simulation of DSP Algorithms using MATLAB	Simulation of DSP Algorithm using MATLAB
3.	Power Electronics	Power Electronics Circuit Simulation using MATLAB/Simulink	Power Electronics Circuit Simulation using MATLAB/Simulink
4.	Satellite Communication	Recent Advances in Satellite Communication, Issues and Challenges	Recent Advances in Satellite Communication, Issues & Challenges

5.	Digital Image Processing	Demonstration of Basic Operations on Images using MATLAB	Demonstration of Basic operations on Images using MATLAB
6.	Power Electronics & Instrumentation	Over Current and under Voltage Protection Schemes	Over current and under voltage protection schemes
7.	Computer Organization and Architecture	Memory Utilization Analysis in Android Mobile using System Analyzer App	Memory utilization analysis in Android Mobile using system Analyzer app
8.	Programming in C++	Simulation of Airline Reservation System	Simulation of Airline reservations system
9.	RADAR and Microwaves	Microstrip Patch Antennas for Broad Band Indoor Wireless Systems	Micro Strip Patch antennas for Broadband indoor wireless systems
10.	Information Theory and Coding	Simulation of ITC Algorithms using MATLAB	Simulation of ITC algorithm using MATLAB
11.	Programming in C++	Implementation of Banking application using OOPs Concept	Implementation of Banking application using oops concept
12.	Network Analysis	Simulation of Networks	Simulation of Networks using TINATI
13.	Verilog HDI	User Defined Primitives	User defined primitives in Verilog
14.	Electronics Devices	Advanced Fabrication Techniques	Advanced Fabrication techniques
15.	Basic Electronics	Introduction to Multisim & Virtual Lab - Simulation of Analog & Digital Circuits	Introduction to Multisim & Virtual Lab - Simulation of Analog & Digital Circuits
16.	Wireless Communication	Analysis of Maximal ratio combination Techniques	Implementation and study analysis of Maximal ratio combination techniques
17.	Digital Communication	Simulation of Digital Modulation Techniques	Comparison of Various Digital Modulation Techniques and their Applications using MATLAB
18.	Control System	Simulation of second order Control System	MATLAB Code implementation for second order system
19.	Signals and System	Simulation of Signals using MATLAB	Simulation of Signals using MATLAB
20.	Microcontroller	Pipelining Concepts	RISC Instruction Pipeline and its Hazards

21.	VLSI Design	Simulation of Digital Circuits	Simulation of CMOS circuits using DSch and Microwind
22.	Analog Circuits	Simulation of waveform Generation Circuits	Demonstration of waveform generation circuits using Tina-TI simulator
23.	ARM Microcontroller	Bus Architecture for Embedded System	AMBA Bus - A Platform for SOC design

**Program Level Activities:****AY 2022-2023:**

<b>Sl. No.</b>	<b>Program level Gap identified</b>	<b>Action Taken</b>	<b>Date- Month- Year</b>	<b>Resource Person</b>
1.	Perform analysis and interpretation of results using research methods. (PO4)	Applications of Internet of Things (Technical Talk)	22/02/2023	Karthikeyan S Technical Head, IOBiT Solution India Pvt. Ltd.
	Impact of engineering solutions in societal and environmental domains. (PO7)			
2.	Perform analysis and interpretation of results using research methods. (PO4)	Importance of Upskilling and Entrepreneurship (Technical Talk)	11/02/2023	Mr. T S SARANG Co-founder, M/S Inovact Private LTD
	Impact of engineering solutions in societal and environmental domains. (PO7)			
3.	Perform analysis and interpretation of results using research methods. (PO4)	PCB Design  (Workshop)	21/02//2023	Mr. T S SARANG  Co-founder, M/S  Inovact Private  LTD
	Impact of engineering solutions in societal and environmental domains. (PO7)			
4.	Perform analysis and interpretation of results using research methods. (PO4)	Cloud Computing (Workshop)	02/03//2023 to 04/03//2023	Mr. Ankur Mishra Master Trainer, FICE
	Impact of engineering solutions in societal and environmental domains. (PO7)			
5.	Impact of engineering solutions in societal and environmental domains. (PO7)	The Blueprint for Success: Strategies for Career Development and Placement Opportunities (Technical Talk)	12/04/2023	Ajay Murdeswar Performance Marketing expert, CareerLabs Technologies
6.	Perform analysis and interpretation of results using research methods. (PO4)	Career Opportunities in Core Companies (Technical Talk)	23/12/2022	Mr. Abhilash Krishna Physical Design CAD Engineer
	Impact of engineering solutions in societal and			



	environmental domains. (PO7)			
7.	Perform analysis and interpretation of results using research methods. (PO4)	Hardware Security and Logic Locking (Workshop)	02/06/2023 to 03/06/2023	Mr. Vivekananda G PhD Scholar, IIT Guwahati
	Impact of engineering solutions in societal and environmental domains. (PO7)			
8.	Perform analysis and interpretation of results using research methods. (PO4)	Cyber Security (Technical Talk)	19-11-2022	FICE_Vodafone
	Impact of engineering solutions in societal and environmental domains. (PO7)			
9.	Perform analysis and interpretation of results using research methods. (PO4)	Python Programming and Data Analytics (Workshop)	11th to 15th October 2022	FICE, Vodafone
	Impact of engineering solutions in societal and environmental domains. (PO7)			
10.	Perform analysis and interpretation of results using research methods. (PO4)	India's Indigenous VEGA Processor and Ecosystem (Workshop)	20th & 21st October 2022	Scientist F, Hardware Design Group, C-DAC, Trivandrum
	Impact of engineering solutions in societal and environmental domains. (PO7)			
11.	Perform analysis and interpretation of results using research methods. (PO4)	Python Coding with Application Projects and Solutions(workshop)	18-10-2022 to 20-10-2022	Mohan shamanna Founder & Mentor, INDOSKILL, Bengaluru.
	Impact of engineering solutions in societal and environmental domains. (PO7)			

**Academic Year 2020-2021**

<b>Sl. No</b>	<b>Gap</b>	<b>Action Taken</b>	<b>Date- Month- Year</b>	<b>Resource Person with Designation</b>
1.	Design solutions for complex engineering problems, Perform analysis and interpretation of results using research methods, Assess societal, health and legal issues, Impact of engineering solutions in societal and environmental domains, Function effectively as an individual and team member to provide solutions	The world of Circuit Simulation (Workshop)	04/07/2020	Dr. Pramod S , Research, Uppsala University, Sweden
2.	Design solutions for complex engineering problems, Perform analysis and interpretation of results using research methods, Assess societal, health and legal issues, Prepare and acquire ability to engage in lifelong learning considering technological change	AI based Chatbot creation and hosting (Workshop)	18/09/2020	Connecting Dream Foundation - implementing partner for Vodafone University Engagement Initiative Programme
3.	Design solutions for complex engineering problems, Assess societal, health and legal issues, Impact of engineering solutions in societal and environmental domains	NLP with python (Workshop)	19/09/2020	Connecting Dream Foundation - implementing partner for Vodafone University Engagement Initiative Programme
4.	Perform analysis and interpretation of results using research methods, Assess societal, health and legal issues, Prepare and acquire ability to engage in lifelong learning considering technological change	Data analysis for e-governance (Workshop)	24/09/2020	Connecting Dream Foundation - implementing partner for Vodafone University Engagement Initiative Programme
5.	Assess societal, Impact of engineering solutions in societal and environmental domains, health and legal	Deep learning applications, market trends and opportunities	01/10/2020	Connecting Dream Foundation - implementing partner for

	issues, Prepare and acquire ability to engage in independent and lifelong learning	(Workshop)		Vodafone University Engagement Initiative Programme
6.	Professional ethics and responsibilities, Function effectively as an individual and team member to provide solutions, Prepare and acquire ability to engage in independent and lifelong learning	How to Crack Top Rated Placements, Higher Education, Scholarship (Seminar)	20/10/2020	P N Santosh CEO & Founder - CareerLabs, Founding Member-BYJU'S, Ex-ISB, Ex McKinsey. Abhishek Gupta Byju's-National Eminent Speaker, Founding Member-CareerLabs
7.	Design solutions for complex engineering problems, Perform analysis and interpretation of results using research methods,	Design Thinking (Seminar)	4/12/2020	Prof. Subrat Kar Professor, Electrical Engg +Bharti School of Telecom. Tech and Management & Head, SENSE at Delhi
8.	Commit to Professional ethics and responsibilities, Function effectively as an individual and team member to provide solutions, Prepare and acquire ability to engage in independent and lifelong learning	Entrepreneurial Leadership (seminar)	30/12/2020	Dr Padmakshi Lokesh , CEO and Cofounder -Smiles in milez
9.	Function effectively as an individual and team member to provide solutions	Everyday Wellness With Yoga & Meditation for Youth (Seminar)	27/02/2021	Ms. Namita Bohara Manager, Aditya Birla Group and Art Of Living Faculty, Mumbai
10.	Design solutions for complex engineering problems, Perform analysis and interpretation of results using research methods	Importance of Mathematics in Electrical Communication Engineering (Technical Talk)	20/03/2021	Dr.Karthik Upadhyia Senior Specialist in Radio Research, Finland
11.	Commit to Professional ethics and responsibilities, Function effectively as an individual and team member to provide	Internship, Placement. Career Planning for Engineering Students (Seminar)	15/05/2021	Mr.Aditya S K CRO,and Director, Tequed Labs

	solutions, Prepare and acquire ability to engage in independent and lifelong learning			
12.	Design solutions for complex engineering problems, Perform analysis and interpretation of results using research methods, Function effectively as an individual and team member to provide solutions, Prepare and acquire ability to engage in independent and lifelong learning	Need for System Verilog, Verification Tools, Trends and opportunities in Industry (Technical Talk)	15/05/2021	Mr. Aditya Rangan Senior Engineer Open-Silicon Research Pvt. Ltd. (Sifive)
13.	Design solutions for complex engineering problems, Perform analysis and interpretation of results using research methods, Assess societal, health and legal issues,	Data Science Innovation (Seminar)	29/05/2021	Mr. Chetan Shetty Lead Data Scientist HCLTechnology Bengaluru
14.	Commit to Professional ethics and responsibilities, Prepare and acquire ability to engage in independent and lifelong learning	Career Guidance: Placement & Opportunities (Seminar)	19/06/2021	Chaitra LN Automation Engineer, Robert Bosch Engineering and Business Solutions(RBEI)
15.	Design solutions for complex engineering problems, Perform analysis and interpretation of results using research methods, Assess societal, health and legal issues, Impact of engineering solutions in societal and environmental domains	CAR 2 CAR Communication (Seminar)	20/6/2021	Mr.Sunil Gowda , Software Eneineering

### Academic Year : 2019-20

Sl. No.	Gap	Action Taken	Date- Month- Year	Resource Person with Designation
1.	Assess societal, health and legal issues, Impact of engineering solutions in societal and environmental domains,	Guest lecture - How to plan your engineering education for a professionally rewarding career?	28/08/2019	Dr.John Jose,Assistant Professor, I IT Guwahati,Assam

	Prepare and acquire ability to engage in lifelong learning considering technological change			
2.	Perform analysis and interpretation of results using research methods, Function effectively as an individual and team member to provide solutions , Prepare and acquire ability to engage in independent and lifelong learning	Raspberry Pi and IoT Applications	19/10/2019	Mr. Chetan Adhikari Y, IT Consultant, TATA Consultancy Services and Bengaluru
3.	Perform analysis and interpretation of results using research methods, Prepare and acquire ability to engage in independent and lifelong learning	Overview on implementation of IoT applications Raspberry Pi and IoT Applications	31/10/2019	Mr. Shyam Adikary and Mr. Promod Srivastava, Digital Transformation Consultancy Bengaluru
4.	Assess societal, Impact of engineering solutions in societal and environmental domains health and legal issues,	Data Science Innovation	13/6/2020	Mr Chetan Shetty, Lead Data Scientist, HCL Technologies, Bengaluru
5.	Design solutions for complex engineering problems	The world of Circuit Simulation	04/07/2020	Dr. Pramod K B Rangaiah, Researcher, Department of Engineering Sciences, Uppsala University, Sweden.