

AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER

DEPARTMENT OF ELECTRONICS ENGINEERING

COURSE OUTCOMES (CO)

BE 2015 Course

VLSI Design (404201), BE-Sem-VII, 2020-21

After successfully completing the course students will be able to,

Co. No.	Description	Bloom's Taxonomy Level
C401.1	Describe the Fundamentals of CMOS Technology in Digital Domain & Implement CMOS digital logic design for various functions.	1,3
C401.2	Develop HDL code to make model of digital circuit in Various Types of descriptions.	6
C401.3	Describe knowledge about Basics of memory chip Design and Explain knowledge about RAM and DRAM Design.	1,2
C401.4	Describe the concepts of Physical design Process such as floorplanning, placement and routing.	2
C401.5	Develop digital circuit using PLD & FPGA and Understand the importance of testability in chip design.	6,2
C401.6	Apply the Lambda based design rules for subsystem design.	3

Advanced Power Electronics (404202), BE- Sem-VII, 2020-2021

After successfully completing the course students will be able to,

Co. No.	Description	Bloom's Taxonomy Level
C402.1	Understand operation and implementation of dual converters and power factor improvement techniques for controlled rectifiers.	1,2
C402.2	Understand operation and implementation of Multilevel inverters, cycloconverters	1,2
C402.3	Select and Design a suitable power converter to meet the demand of DC drive system.	3,6
C402.4	Select and Design a suitable power converter to meet the demand of 3 phase inductor motor drive.	3,6
C402.5	Understand working of BLDC, Stepper, and Servo drive system. Analyze and Select a suitable motor for different applications	1,2,3
C402.6	Understand implementation of Solar and Wind Power System	1,2

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COURSE OUTCOMES (CO)

BE 2015 Course

Electronics System Design (404203), BE-Sem-VII, 2020-21

After successfully completing the course students will be able to,

Co. No.	Description	Bloom's Taxonomy Level
C403.1	Explain various stages of product design & apply various concept to evaluate the product.	2,3,5
C403.2	Describe various signal conditioning circuit and discuss their error budget analysis .	1,2,4
C403.3	Explain interfacing of various peripheral to microcontroller & its selection criteria for particular application. Also compare buses/protocol used in electronic product.	1,2
C403.4	Discuss various approaches for development of application software for electronic product and various tools/techniques required for testing & debugging.	2
C403.5	Discuss PCB design practices for analog & mixed signal circuits. Also explain EMI/EMC testing standards and compliance for PCB design	2
C403.6	Interpret the need of environmental testing & propose different testing tools for fault finding in electronic products.	3

Internet of Things (404204), BE-Sem-VII, 2020-21

After successfully completing the course students will be able to,

Co. No.	Description	Bloom's Taxonomy Level
C404.1	Explain the emerging trends in IoT, Define technical building blocks in IoT along with physical and Logical design of IoT, Illustrate IoT protocols, Describe IoT enabling technologies, Diagnose IoT security and Privacy, Develop application based on IoT.	1,2,3,6
C404.2	Describe SCADA, RFID, IEEE802.15.4, Bacnet, Modbus, HART, Zigbee Protocol, discuss the security requirements and illustrate secure model for IoT.	2,3
C404.3	Explain the basic components of WSN along with features and architecture of cloud computing with its types, Develop application based on WSN.	2,6
C404.4	Explain Arduino and Raspberry Pi along with its board and Programming Environment, Compose simple assignment using Arduino and Raspberry Pi, Analyze data using IoT Platform	2,4,6
C404.5	Describe Big Data, Data Analytics and Hadoop Technology, Estimate prototyping with any development board.	2,3
C404.6	Discuss modern trends in IoT, Explain data management and API, Develop case studies based on Real life/Thematic areas.	2,6

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COURSE OUTCOMES (CO)

BE 2015 Course

Mobile Communication (404205), BE-Sem-VII, 2020-21

After successfully completing the course students will be able to,

Co. No.	Description	Bloom's Taxonomy Level
C405.1	Students can summarize various generations of mobile communications.	2
C405.2	Illustrate the fundamentals of cellular system & radio propagation.	3
C405.3	Design mobile communication system by appropriately selecting necessary techniques.	6
C405.4	Compare the GSM mobile communication standard, its architecture, logical channels, advantages and limitations.	4
C405.5	Analyse of 3G and 4G mobile standards and their comparison .	4
C405.6	Define different wireless networking & communication systems & standards.	1

Project Stage I (404208) , BE- Sem- VII, 2020-21

After successfully completing the course students will be able to,

Co. No.	Description	Bloom's Taxonomy Level
408.1	Conduct literature search to identify and formulate the engineering problem	2
408.2	Engage in independent study and apply the mathematical, science, engineering concepts and management principles necessary to solve the identified engineering problem	3,4
408.3	Identify the community that shall benefit through the solution to the identified engineering problem and also demonstrate concern for environment	2
408.4	Select the engineering tools/components for solving the identified engineering problem	3
408.5	Engage in effective written communication through the project report, engage in effective oral communication through presentation of the project work	6
408.6	Perform in the team, contribute to the team and mentor/lead the team	6

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COURSE OUTCOMES (CO)

BE 2015 Course

Computer Network & Security (404209), BE-Sem-VIII, 2020-21

After successfully completing the course students will be able to,

Co. No.	Description	Bloom's Taxonomy Level
C409.1	Understanding of Computer Fundamental, Identify Network Topology, Figure & Explanation of Network model	1, 2, 4,
C409.2	Design , implement, and analyze simple computer networks.	4,5,6
C409.3	Identify , formulate, and solve network engineering problems	1,3
C409.4	Use techniques, skills, and modern networking tools to analyze for engineering Practice.	4
C409.5	Name of Application & Protocol, Illustrate different services to network users	1, 3
C409.6	Describe a basic knowledge of cryptography and network security.	1

Process Instrumentation(404210), BE-Sem-VIII, 2020-21

After successfully completing the course students will be able to,

Co. No.	Description	Bloom's Taxonomy Level
C410.1	Describe types of processes, identify time constant, dead time and dynamic elements for a given process control loop.	1,2,3
C410.2	Design PID Controllers to achieve desired performance for various processes.	6
C410.3	Compare different PID controller tuning methods, estimate tuning parameters and examine the system response.	2,4
C410.4	Compare advanced control schemes	2
C410.5	Analyze multivariable systems using block diagram analysis technique.	4
C410.6	Define the process control design problem and understand the steps in design process.	1,2

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COURSE OUTCOMES (CO)

BE 2015 Course

Audio Video Engineering (404211), BE- Sem- VIII, 2020-21

After successfully completing the course students will be able to,

Co. No.	Description	Bloom's Taxonomy Level
C411.1	Understand the concept of basic television signal processing and Describe the analysis and synthesis of TV Pictures & Composite Video Signal.	2,1
C411.2	Identify globally accepted colour TV standards and its compatibility.	2
C411.3	Classify various advanced Television systems & standards and Describe the working principles and applications of latest display like LCD, LED, OLED and Plasma.	2,1
C411.4	Describe the fundamentals of digital television systems (DTV) its signals, parameters and Distinguish them with High definition television systems (HDTV).	1,2
C411.5	Describe fundamentals of Studio acoustics, P.A. system and special types of Speakers/Microphones units used in audio video engineering.	1
C411.6	Classify audio-video recording and reproduction techniques and Demonstrate the need of audio and video compression techniques in real life.	2,2

Optical & Microwave Communication (404211C), BE- Sem- VIII, 2020-21

After successfully completing the course students will be able to,

Co. No.	Description	Bloom's Taxonomy Level
411C.1	Describe the fundamentals of fiber optic cables and Optical Communication.	1
411C.2	Understand advantages and applications of optical communication with optical sources and detectors..	2
411C.3	Demonstrate the knowledge to identify different optical devices with their operating principle.	1,2
411C.4	Describe the fundamentals of microwave communication and analyze microwave network.	1,4
411C.5	Demonstrate the knowledge to formulate microwave communication problem for synthesis and design Microwave sources with their operating principle..	2,3
411C.6	To analyze and design application of microwave communication system with their operating principle.	4,6

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COURSE OUTCOMES (CO)

BE 2015 Course

Wireless Sensor Network (404212), BE-Sem-VIII,2020-21

After successfully completing the course students will be able to,

Co. No.	Description	Bloom's Taxonomy Level
C412.1	Explain various concepts and terminologies used in WSN.	2
C412.2	Describe importance and use of radio communication and link management in WSN.	2
C412.3	Describe various wireless standards, explain protocols associated with WSN.	1,2
C412.4	Describe the importance of localization, illustrate routing techniques used in WSN.	2,3
C412.5	Understand techniques of data aggregation, explain importance of security in WSN.	2,
C412.6	Design and deploy WSN application, identify the issues involved in design and deployment of WSN.	2,6

Project Stage II (404215), BE- Sem- VIII, 2020-21

After successfully completing the course students will be able to,

Co. No.	Description	Bloom's Taxonomy Level
415.1	Engage in independent study and apply the mathematical, science, engineering concepts and management principles necessary to solve the identified engineering problem	3,4
415.2	Apply the identified concepts and engineering tools to arrive at design solution(s) for the identified engineering problem	6
415.3	Analyze and interpret results of experiments conducted on the designed solution(s) to arrive at valid conclusions	4
415.4	Engage in effective written communication through the project report, research paper, poster presentation and engage in effective oral communication through presentation of the project work.	6
415.5	Perform in the team, contribute to the team and mentor/lead the team	6
415.6	Abide by the norms of professional ethics	5