AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER

DEPARTMENT OF ELECTRONICS ENGINEERING

COURSE OUTCOMES (CO)

BE 2015 COURSE

VLSI Design (404201), BE-Sem-VII

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

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 **evalua**te 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

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 & **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

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

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

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

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

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

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

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

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