SRI RAMAKRISHNA MISSION VIDYALAYA COLLEGE OF ARTS AND SCIENCE
(AUTONOMOUS), COIMBATORE - 641 020
B.Sc PROGRAMME IN ELECTRONICS AND COMMUNICATION SYSTEMS

Program Educational Objectives

The Department of Electronics has developed and maintained a well-defined set of Educational objectives and desired program outcomes. Educational objectives of the program cater to the requirements of the stakeholders such as students, parents, employers, alumni, faculty etc. The program educational objectives are as follows:

PEO1: Provide to graduates with a strong foundation in mathematics and science fundamentals. Also to enable them to devise and deliver efficient solutions to challenging problems in the field of Electronics and Communications Systems allied disciplines.

PEO2: Impart analytic and thinking skills of students to develop initiatives and innovative ideas for R&D, Industry and social requirements.

PEO3: Provide to sound theoretical and practical knowledge in the field of Electronics and Communications Systems. Professional and industrial skills to enable students to contribute to the well being of society with a global outlook

PEO4: Inculcate qualities of teamwork as well as social, interpersonal, leadership skills and an ability to adapt to evolving professional environments in the domains of Science and Engineering.

PEO5: Motivate to graduates to become good human beings and responsible citizens for the overall welfare of the society.

Program Outcomes

- Ability to apply the knowledge of mathematics and science to develop real time systems
- Ability to design and conduct experiments / practical's
- An ability to function on multidisciplinary teams
- An ability to communicate effectively and engage in lifelong learning
- Student recognize the need for continuing professional development, ethical, legal, social issues and responsibilities

Program Specific Outcomes

- Ability to design a System, Component or Process to meet desired needs with in realistic constraints
- Ability to Identify, Formulate & Solve problems in the area of Electronics and Communication Systems.
- A broad education necessary to understand the impact of engineering solutions in a Global, Economic, Environmental and Societal context.

- An ability to use the techniques, skills, and modern engineering tools necessary for Engineering practice.

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core - 1: Circuit and Network Analysis **Course Code :** 20UEC1C01
Year : First Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	An ability to combine acquired knowledge and skills in mathematics and circuit analysis to analyse electrical circuits.	K2,K3&K4
CO2	An ability to use basic circuit theory to solve problems in electronics and analyse and design simple circuits	K1,K3&K2
CO3	An ability to use laboratory equipment such as volt meter, ampere meter, oscilloscope and signal generator	K1&K2
CO4	An ability to use acquired laboratory knowledge for the practical analysis of circuit systems	K1&K2
CO5	An ability to use state of the art tools and development circuit boards	K1&K2

K1 -Remember; K2 - understand; K3 - Apply; K4 -Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	L	M	L		S	S	M	S
CO2	S	S	L	M	L		S	S	M	S
CO3	M	S	L	M	L		S	S	S	L
CO4	S	M	L	M	L		S	S	S	M
CO5	L	M	L	M	L		S	S	L	L

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core - 2: Semiconductor Devices -I **Course Code** 20UEC1C02
Year : First Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	An ability to utilize semiconductor models to analyze carrier densities and carrier transport	K1&K4

CO2	An ability to understand and utilize the basic governing equations to analyze semiconductor	K2&K4
CO3	An ability to understand and analyze the inner working of semiconductor P-N Junctiondiodes, Schottky barrier diodes and new semiconductor devices.	K2&K4

K1 – Remember; K2– understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	M	L	M	M		M	S	M	M
CO2	S	M	L	M	M		M	S	L	M
CO3	S	M	L	S	L		S	M	M	Ls

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core - 3: Electronic Circuits **Course Code :** 20UEC2C03
Year : First Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Design Filter Circuits.	K2
CO2	Classify the Amplifiers	K1
CO3	Design oscillator based on the applications.	K2&K3
CO4	design and make use of multivibrator circuits.	K3

K1 – Remember; K2– understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M	L		S	S	M	S
CO2	M	M	L	L	L		M	M	L	M
CO3	S	S	M	L	L		S	S	M	M
CO4	S	M	M	L	L		S	S	M	M

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core - 4: Semiconductor Devices - II **Course Code :** 20UEC2C04
Year : First Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Understand the concept of FET and Transistor	K1
CO2	An ability to understand and utilize the concept of Power electronics	K2
CO3	An ability to understand and analyze the inner optoelectronic devices.	K2&K4

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M	L		S	S	M	M
CO2	S	S	M	L	L		M	M	L	M
CO3	M	M	M	L	L		M	M	M	M

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core Practical-1: Circuit and Network Analysis **Course Code :** 20UEC2CP1
Year : First Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Use basic laboratory equipment and techniques to measure electrical quantities using laboratory test equipment such as multimeters, power supplies, signal generators, and oscilloscopes.	K1
CO2	Explain the concept of circuit laws and network theorems and apply them to laboratory measurements	K2&K3

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	S	M	L	L		M	S	M	M
CO2	S	S	L	L	L		S	S	M	M

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core Practical-2: Semiconductor Devices **Course Code :** 20UEC2CP2
Year : First Year **Semester : II**

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Apply concepts of semiconductor devices to design and analyze circuits.	K2,K3&K4
CO2	Apply fundamentals of semiconductor devices in electronics projects and use computer tools in circuit design, evaluation and analysis	K3&K4

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	M	M	L	L		S	S	M	M
CO2	S	S	M	L	L		M	M	L	M

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core - 5: Electronic Instruments **Course Code :** 20UEC3C05
Year : Second Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Acquire the knowledge of various bridges and applications	K1
CO2	Acquire the knowledge of different analysers	K2
CO3	Acquire the knowledge of traducers and its applications	K1&K4

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	L	L	L		M	M	M	M
CO2	S	M	M	L	L		S	L	L	M
CO3	S	M	M	L	L		M	M	M	M

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core - 6: Digital Electronics **Course Code :** 20UEC3C06
Year : Second Year **Semester : III**
Hours/Week : 4 **Credit : 4**

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Realize different logic gates and analyzing the outputs.	K1&K2
CO2	Demonstrate the knowledge of Boolean algebra including algebraic manipulation/simplification and application of DeMorgan's theorems and Karnaugh mapreduction method.	K2&K3
CO3	Analyze and design the combinational and sequential logic circuits.	K4

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	L	L		S	S	M	M
CO2	S	S	M	L	L		S	M	M	L
CO3	S	S	M	L	L		S	S	M	M

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core - 7: Principles of Communication Systems **Course Code :** 20UEC3C07
Year : Second Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Acquire the knowledge of the basic building blocks of communication systems.	K1
CO2	Analyze the performance of amplitude modulation techniques.	K4
CO3	Demonstrate Balance Modulator.	K3
CO4	Ability constructed to AM transmitter and FM transmitter.	K2&K3

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	L	L		S	M	M	M
CO2	S	S	M	L	L		S	S	M	M
CO3	M	S	M	M	M		S	M	M	L
CO4	S	S	S	M	M		S	M	M	M

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Allied-3: Programming in C Course Code: 20UEC3AL3
Year : Second Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Acquire the working of knowledge of computers and programming.	K1&K2
CO2	Ability to write do and loop algorithms.	K3
CO3	Illustrate the representation of arrays, strings and usage of string operations.	K2&K3
CO4	Acquire Knowledge of pointers and dynamic memory allocation.	K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	L	M		S	M	M	S
CO2	S	S	M	L	L		S	S	M	M
CO3	M	M	L	L	L		M	S	L	M
CO4	S	M	M	M	L		M	L	M	M

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core 8: 8085 Microprocessor &Interfacing Course Code : 20UEC4C08
Year : Second Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Understand the Architecture of microprocessor.	K1&K2
CO2	Learn the various instructions of 8085.	K1
CO3	Knowledge of writing assembly language programming.	K2&K3
CO4	Learn the concept of interfacing.	K2
CO5	Ability to design small control system devices.	K4

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	L	M		S	S	M	M
CO2	S	S	M	M	L		M	S	L	M
CO3	S	S	M	M	M		S	S	M	M
CO4	S	S	M	L	L		S	M	M	M
CO5	S	S	L	L	L		S	S	M	L

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core - 9: Antenna & Wave Propagation **Course Code :** 20UEC4C09
Year : Second Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Acquire the knowledge of electromagnetic waves	K1&K2
CO2	Acquire the knowledge of antennas	K2
CO3	Acquire the knowledge of radar	K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	L	L	L		M	M	L	L

CO2	S	M	M	L	L		S	M	M	M
CO3	M	M	M	L	L		M	M	L	M

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Allied-4: - Object Oriented Programming with C++ Course Code : 20UEC4AL4

Year : Second Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Differentiate between structures oriented programming and object oriented programming	K1&K2
CO2	Use of object oriented programming language like C++ and associated libraries to developobject oriented programs	K2
CO3	Understand and apply various object oriented features like inheritance, data abstraction.	K3

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	L	L		S	M	M	M
CO2	S	S	M	M	L		S	M	M	L
CO3	M	M	M	L	L		M	M	L	L

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core Practical-3: Electronic Circuits Course Code : 20UEC4CP3
Year : Second Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Design rectification and filter circuits.	K1&K2
CO2	Design Regulated power supply and amplifier circuits.	K2
CO3	Design and construct all multivibrator circuits.	K3

CO4	Apply the principle of oscillator in designing various oscillator circuits.	K3

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M	L		S	S	L	M
CO2	S	S	M	L	L		S	M	M	L
CO3	S	S	M	L	L		M	M	L	L
CO4	S	M	M	M	L		S	S	M	L

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core Practical-4: Digital Electronics **Course**
Code : 20UEC4CP4
Year : Second Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Verify the logic gates &Demorgan's theorem.	K1&K2
CO2	Convert the binary and gray code.	K2
CO3	Design adder and Subtractor circuits.	K3
CO4	Construct encoder and decoder circuit.	K3

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M	L		S	S	M	M
CO2	M	M	L	M	L		M	M	L	L
CO3	S	S	M	M	L		S	M	L	M
CO4	S	S	M	L	L		S	M	M	M

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core Practical-5: Electronic Communication Course Code : 20UEC4CP5
Year : Second Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Learn the concept of Modulation techniques.	K1
CO2	Understand the knowledge of radio receiver.	K1&K2
CO3	Understand the digital modulation techniques.	K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	L	L	L		M	M	L	M
CO2	M	M	M	M	L		S	M	M	L
CO3	M	M	M	L	L		M	M	L	L

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Allied Practical-1: Computer Programming in C & C++ Course Code : 20UEC4AP1
Year : Second Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	An understanding of basic programming concepts.	K1&K2
CO2	An ability to write simple programs using control structures, arrays and functions.	K3
CO3	An ability to implement simple programs using pointers and file concepts.	K3

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4

CO1	S	S	M	M	L		S	M	M	M
CO2	S	M	M	L	L		S	S	M	L
CO3	S	S	M	M	L		S	M	M	L

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core 10: Bio Medical Instrumentation **Course Code :** 20UEC5C10

Year : Third Year

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Acquire the knowledge of human anatomy.	K1
CO2	Learn the various electrodes.	K2
CO3	Acquire the Knowledge of recording systems of various medical equipments.	K2
CO4	Learn the concept of diathermy.	K3

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	M	L		M	M	L	L
CO2	M	M	M	L	L		M	M	M	L
CO3	S	M	M	M	L		M	M	L	L
CO4	S	M	M	M	M		M	M	L	L

S-Strong; M-Medium; L-Low

Programme : B.Sc. Electronics and Communication Systems
Course Title : Core 11: 8051Microcontroller&Its Applications **Course Code :** 20UEC5C11

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Apply knowledge to demonstrate the hardware interfaces	K1,K2&K3
CO2	Acquire the knowledge of programming	K1 &K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M	M		S	S	M	M
CO2	M	M	M	L	L		S	S	M	M

S-Strong; M-Medium; L-L

Programme : B.Sc. Electronics and Communication Systems

Course Title : Core - 14: Embedded System Design **Course Code :** 20UEC5C12
Year : Third Year **Semester : V**
Hours/Week : 4 **Credit : 4**

Course Title : Core - 12: Linear IC's &Its Applications **Course Code :** 20UEC5C12

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Acquire the knowledge to construct amplifiers using operational amplifier	K2&K3
CO2	Ability to design of oscillators	K4
CO3	Acquire the knowledge of basic application using op-amp	K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	L	L		S	M	M	M
CO2	S	S	L	L	L		S	L	M	M
CO3	M	M	M	L	L		M	M	L	M

S-Strong; M-Medium; L-Low

Course Title : Core - 14: Embedded System Design **Course Code :** 20UEC6C14

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Acquire the knowledge of principles in embedded systems	K1&K2
CO2	Acquire the knowledge of RTOS	K1&K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	M	M	M	L		M	M	L	L
CO2	S	S	M	M	L		S	L	L	M

S-Strong; M-Medium; L-Low

Course Title : Core - 15: Optical Fibre Communication **Course Code :**20UEC6C15

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Acquire the knowledge of construction and design of optical fiber.	K1,K2 &K3
CO2	Acquire the knowledge of fabrication techniques	K2
CO3	Learn the concept of couplers and various losses	K1&K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M	L		S	S	M	M
CO2	M	M	M	L	L		M	M	M	M
CO3	M	M	L	L	L		M	M	L	L

S-Strong; M-Medium; L-Low

Course Title : Core-16: Industrial and Power Electronics **Course Code :** 20UEC6C16

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Acquire the knowledge to construct inverters, converters etc	K2&K3

CO2	Acquire the knowledge of welding	K2
CO3	Acquire the knowledge of robotic systems	K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	L	L		S	S	M	M
CO2	S	S	M	M	L		M	M	L	L
CO3	S	S	M	M	M		S	S	M	M

S-Strong; M-Medium; L-Low

Course Title : Core Practical-6: Linear IC's & Instrumentation Course Code : 20UEC6CP6

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	acquire the knowledge of basic application using op-amp	K1
CO2	acquire the knowledge to construct amplifiers using operational amplifier	K2 & K3
CO3	design oscillators	K4

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	L	L		S	M	M	M
CO2	M	M	L	L	L		S	L	M	M
CO3	S	S	M	L	L		S	M	L	M

S-Strong; M-Medium; L-Low

Course Title : Core Practical-7: Microprocessor & Microcontroller Course Code : 20UEC6CP7

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Gain knowledge of arithmetic Programming of 8085 and 8051	K1
CO2	Differentiate Microprocessor and Controller architecture	K2&K3
CO3	Applythe Concept of interfacing	K3

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M	L		S	M	M	L
CO2	M	M	L	L	L		M	M	L	M
CO3	S	M	M	M	L		S	M	M	M

S-Strong; M-Medium; L-Low

Course Title : Elective-I: PCB Design & Fabrication Course Code :20UEC4EA1

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Ability to design simple PCB.	K1,K2
CO2	Acquire the Knowledge of film preparation in dark room.	K2
CO3	Ability to make simple soldering.	K2&K3

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	S	S	M	M		S	M	M	M
CO2	S	M	M	M	L		M	M	L	M

CO3	S	S	M	M	L		S	M	M	M

S-Strong; M-Medium; L-Low

Course Title :Elective-I: Mobile & Cellular Communication Course Code : 20UEC4EB1

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Discuss cellular radio concepts.	K1&K2
CO2	To have knowledge of the mobile system specifications.	K1&K2
CO3	Classify frequency and handoff management techniques in Mobile Communication.	K2
CO4	Outline cellular mobile communication standards.	K3
CO5	Analyze various methodologies to improve the cellular capacity	K4

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	M	L	L	L		S	M	M	M
CO2	S	S	M	L	L		S	M	L	M
CO3	S	M	M	M	L		M	M	M	L
CO4	M	M	M	L	L		M	L	M	L
CO5	S	S	M	M	L		S	M	L	M

S-Strong; M-Medium; L-Low

Course Title : Elective-I: PC Hardware Fundamentals Course Code :20UEC4EC1

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Acquire the knowledge of personal computer	K1

CO2	Ability to assemble the PC	K2&K3
CO3	Acquire the knowledge of installation and troubleshooting.	K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	L	L		M	M	L	M
CO2	S	S	M	M	L		S	M	M	L
CO3	S	M	M	M	M		S	M	L	M

S-Strong; M-Medium; L-Low

Course Title : Elective-II: Robotics and Automation Course Code :20UEC5EA2

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Learn the concept robotic system	K1
CO2	Acquire the knowledge of PLC	K2
CO3	Acquire the knowledge of computer numerical control	K2&K3

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	L	L		M	M	L	M
CO2	M	M	M	L	M		S	M	M	L
CO3	M	M	L	M	L		S	M	M	M

S-Strong; M-Medium; L-Low

Course Title : Elective-II: Arduino and Internet of Things Course Code :20UEC5EB2

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Understandthe structure of Arduino boardsandprogrammingconcepts.	K2

CO2	Describe the functionof Arduino UNO andinterfacingconcepts.	K1&K2
CO3	Understand the basicprinciples,requirements,functionsand system architecture ofIoT.	K2
CO4	Understand Prototype embedded devicesforIoT and M2M,embedded platformsand design software forIoTapplications	K3
CO5	Analyze the functioning of IoT applications in smart premises,connected car, environmentmonitoringandagriculture throughquantitative case studies	K4

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	L	M		S	M	M	L
CO2	M	M	L	M	L		S	M	M	L
CO3	M	M	M	L	L		M	M	L	L
CO4	M	L	M	L	L		M	L	M	L
CO5	S	M	M	L	M		S	M	M	L

S-Strong; M-Medium; L-Low

Course Title : Elective-II: Network Communications Course Code :20UEC5EC2

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Acquire the knowledge of network layers.	K1&K2
CO2	Acquire the knowledge of network protocols.	K2
CO3	Acquire the knowledge to analyze LAN.	K4

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	M	M	M	L		S	M	M	L
CO2	M	M	M	L	M		M	M	L	L
CO3	S	M	M	M	L		S	M	M	M

S-Strong; M-Medium; L-Low

Course Title : Elective-III: Automotive Electronics Course Code :20UEC6EA3

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Understand the need and basics of automotive instrumentation	K1&K2
CO2	Design and working principles of various automotive techniques knowing the working principle of automotive braking and traction systems	K3
CO3	Design of engine management systems	K3

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	L	M		M	L	M	L
CO2	S	M	M	L	L		S	M	M	L
CO3	S	M	M	M	L		S	M	L	M

S-Strong; M-Medium; L-Low

Course Title : Elective-III: VLSI Design and VHDL Course Code :20UEC6EB3

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Describe the capabilities of the VHDL language, its concepts, syntax.	K1&K2
CO2	Understand the different method of VHDL programming	K2
CO3	Design the digital building blocks like combinational logic circuits, sequential logic circuits using VHDL	K3
CO4	Realize importance of HDL in logic circuit design	K2
CO5	Understand the programmable logic architectures and circuits	K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4

CO1	M	M	M	L	L		M	M	M	L
CO2	S	M	M	L	L		M	M	L	M
CO3	S	M	M	L	M		S	M	L	M
CO4	M	M	M	L	L		M	L	M	L
CO5	M	M	M	L	M		M	L	L	M

S-Strong; M-Medium; L-Low

Course Title : Elective-III: Digital Signal Processing Course Code :20UEC6EC3

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Apply DFT for the analysis of digital signals & systems	K2&K3
CO2	Design IIR and FIR filters	K3
CO3	Acquire the knowledge of programmable DSPs	K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	S	M	M	L	L		S	M	M	M
CO2	M	S	M	M	L		S	M	M	M
CO3	M	M	M	L	M		M	M	L	M

S-Strong; M-Medium; L-Low

Course Title : NME-1: PC Hardware Fundamentals Course Code :20UEC6ED3

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Acquire the Knowledge of personal computer.	K1
CO2	Ability to assemble the PC.	K2&K3
CO3	Acquire the Knowledge of PC installation and troubleshooting.	K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	L	M		M	M	L	M
CO2	S	M	M	M	L		S	M	M	L
CO3	S	M	M	L	M		S	M	M	L

S-Strong; M-Medium; L-Low

Course Title :NME-2: Maintenance of Domestic Appliances Course Code :20UEC4NM2

COURSE OUTCOMES

After learning the course, the students will be able to

CO1	Ability to identify AC and DC sources	K2&K3
CO2	Acquire the knowledge of Earthing system.	K1
CO3	Acquire the knowledge of indicating system.	K2
CO4	Acquire the knowledge of Audio and Video Systems.	K2

K1 – Remember; K2 – understand; K3 – Apply; K4 –Analyze

MAPPING

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	L	M		M	M	L	M
CO2	S	M	M	M	L		M	L	M	L
CO3	M	M	L	M	L		M	M	L	L
CO4	M	M	L	M	M		M	M	M	L

S-Strong; M-Medium; L-Low

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