SRM TRP ENGINEERING COLLEGE

Approved by AICTE, Affiliated to Anna University

SRM Nagar, Irungalur, Tiruchirappalli – 621 105, Tamil Nadu, India

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ME- VLSI DESIGN

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOME

R-2021

Department of Electronics and Communication Engineering

Vision of the Institution

To carve the youth as dynamic, competent, valued, and knowledgeable Technocrats, who shall lead the nation to a better future.

Mission of the Institution

M1: To inculcate the academic excellence in engineering education to create talented professionals

M2: To promote research in basic sciences and applied engineering among faculty and students to fulfill the societal expectation

M3: To Enhance the Holistic development of the students through meaningful interaction with industry and academia

M4: To foster the students on par with sustainable development goals thereby contributing to the process of nation building

M5: To nurture and retain conducive lifelong learning environment towards professional excellence

Vision of the Department

To be a globally recognized centre for education and research in the field of electronics and communication engineering, by indulging students with their technological innovation to serve the society.

Mission of the Department

M1:   To provide students with an excellent education in core and associated disciplines of Electronics and Communication Engineering

M2:   To incite passion for excellence in emerging research areas among faculty and students.

M3:   To establish a bridge between academia and industry by incorporating employable skills among students.

M4:   To enrich the Students with Broad Intellectual Spectra Pertaining to the Sustainable Development Goals

M5:   To cultivate a passion for lifelong learning in technocrats to succeed in their chosen field.

Program Educational Objectives (PEOs)

PEO1: To critically analyze and understand the principles involved in the designing and testing of electronic circuits relevant to industry and society.

PEO2: To appreciate the concepts in the working of electronic circuits.

PEO3: To take up socially relevant and challenging projects and to provide Innovative solutions through research for the benefit of the society with latest hardware & software related to VLSI and also to develop the capacity to protect Intellectual Property.

PEO4: To Progress and Develop with Ethics and Communicate effectively.

Program Outcomes (POs)

The students after successful completion of the program will acquire:

PO1: An ability to independently carry out research/investigation and development work to solve practical problems

PO2: An ability to write and present a substantial technical report/document

PO3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PO4: Understand the fundamentals involved in the Designing and Testing of electronic circuits in the VLSI domain.

PO5: Provide solutions through research to socially relevant issues for modern Electronic Design Automation (EDA) tools with knowledge, techniques, and skills and for the benefit of the society.

PO6: Interact effectively with the technical experts in industry and society.

CO Mapping with POs - I to IV SEMESTER

Course code	Course title	PO1	PO2	PO3	PO4	PO5	PO6
VL4153	Graph Theory and Optimization Techniques	2	0	1	1	0	1
RM4151	Research Methodology and IPR	2	2	0	0	2	0
VL4151	Analog IC Design	1	1	2	1	2	0
VL4152	Digital CMOS VLSI Design	1	0	1.4	1	0	0
AP4152	Advanced Digital System Design	1	0	1	1	1.2	0
AP4153	Semiconductor Devices and Modeling	2	0	1.4	1	2	0
AX4091	English for Research Paper Writing	1	3	0	0	2	0
VL4111	FPGA Laboratory	1	1	1	1	1	1
VL4112	Analog IC Design Laboratory	1	1	1	1	1	1
VL4251	Design for Verification using UVM	1	0	1	1	2	1
VL4291	Low Power VLSI Design	1.6	0	2	2.4	2.2	0
VL4292	RFIC Design	1.6	0	2	2.2	2	0
VL4252	VLSI Testing	1.6	0	2	2.4	2.4	1
VE4152	Embedded System Design	1	0	2	2	3	1

AP4095	Signal Integrity for High Speed Design	1	0	2	2.2	1	0
VL4211	Verification using UVM Laboratory	1	3	1	1	1	3
VL4212	Term Paper Writing and Seminar	1	1	1	1	1	1
VL4351	VLSI Signal Processing	1	0	2	2	1	0
VL4092	Soft Computing and Optimization Techniques	1	0	2	1	2	0
DS4151	Digital Image and Video Processing	3	0	2	2	2	2
OBA433	Intellectual Property Rights	1.6	1	0	2	0	1

Course Code / Title	VL4153/ Graph Theory and Optimization Techniques
Semester	I
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4153.1	apply graph ideas is solving connectivity related problems	L3AP
VL4153.2	apply fundamental graph algorithms to solve certain optimization problems	L3AP
VL4153.3	formulate and construct mathematical models for linear programming problems and solve the transportation and assignment problems.	L6CR
VL4153.4	model various real life situations as optimization problems and effect their solution through Non-linear programming.	L3AP
VL4153.5	apply simulation modeling techniques to problems drawn from industry management and other engineering fields	L3AP

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4153.1	2	0	1	1	0	0
VL4153.2	2	0	1	1	0	0
VL4153.3	2	0	1	1	0	0
VL4153.4	2	0	1	1	0	0
VL4153.5	2	0	1	1	0	0

1	Slight	2	Moderate	3	Substantial

Course Code / Title	RM4151/ Research Methodology and IPR
Semester	I
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
RM4151.1	Understand the research process and design.	L2UN
RM4151.2	Understand different data collection, sampling methods and sources.	L2UN
RM4151.3	Prepare a well-structured research paper and scientific presentations	L2UN
RM4151.4	Explore on various IPR components and process of filing.	L4AN
RM4151.5	Understand the adequate knowledge on patent and rights	L2UN

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
RM4151.1	3	2	0	0	2	0
RM4151.2	3	3	0	0	1	0
RM4151.3	2	3	0	0	1	0
RM4151.4	1	1	0	0	3	0
RM4151.5	1	1	0	0	3	0
RM4151	2	2	0	0	2	0

1	Slight	**2**	Moderate	**3**	Substantial

Course Code / Title	VL4151/ Analog IC Design
Semester	I
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4151.1	design amplifiers to meet user specifications	L6CR
VL4151.2	analyze the frequency and noise performance of amplifiers	L4AN
VL4151.3	design and analyses feedback amplifiers and one stage op amps	L6CR
VL4151.4	design and analyses two stage op amps	L6CR
VL4151.5	design and analyses current mirrors and current sinks with mos devices	L6CR

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4151.1	1	1	2	1	0	0
VL4151.2	1	0	2	1	0	0
VL4151.3	1	0	2	1	2	0
VL4151.4	1	0	2	1	2	0
VL4151.5	1	0	2	1	2	0
VL4151	1	1	2	1	2	0

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VL4152/ DIGITAL CMOS VLSI DESIGN
Semester	I
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4152.1	use mathematical methods and circuit analysis models in analysis of CMOS digital	L3AP
VL4152.2	create models of moderately sized static CMOS combinational circuits that realize specified digital functions and to optimize combinational circuit delay using RC delay models and logical effort	L6CR
VL4152.3	design sequential logic at the transistor level and compare the tradeoffs of sequencing elements including flip-flops, transparent latches	L6CR
VL4152.4	understand design methodology of arithmetic building blocks	L2UN
VL4152.5	design functional units including ROM and SRAM	L6CR

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4152.1	1	0	1	1	0	0
VL4152.2	1	0	2	1	0	0
VL4152.3	1	0	1	1	0	0
VL4152.4	1	0	2	1	0	0
VL4152.5	1	0	1	1	0	0
VL4152	1	0	1.4	1	0	0

1	Slight	2	Moderate	3	Substantial

Course Code / Title	AP4152/ ADVANCED DIGITAL SYSTEM DESIGN
Semester	I
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
AP4152.1	analyze and design synchronous sequential circuits.	L4AN
AP4152.2	analyze hazards and design asynchronous sequential circuits	L4AN
AP4152.3	knowledge on the testing procedure for combinational circuit and PLA	L3AP
AP4152.4	design PLD and ROM.	L6CR
AP4152.5	design and use programming tools for implementing digital circuits of industry standards.	L6CR

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
AP4152.1	1	0	1	1	1	0
AP4152.2	1	0	1	1	1	0
AP4152.3	1	0	1	1	1	0
AP4152.4	1	0	1	1	2	0
AP4152.5	1	0	1	1	1	0
AP4152	1	0	1	1	1.2	0

1	Slight	2	Moderate	3	Substantial

Course Code / Title	AP4153/ SEMICONDUCTOR DEVICES AND MODELING
Semester	I
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
AP4153.1	explore the properties of MOS capacitors.	L1RE
AP4153.2	analyze the various characteristics of MOSFET devices	L4AN
AP4153.3	describe the various CMOS design parameters and their impact on performance of the device	L4AN
AP4153.4	discuss the device level characteristics of BJT transistors.	L4AN
AP4153.5	identify the suitable mathematical technique for simulation.	L3AP

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
AP4153.1	2	0	1	1	0	0
AP4153.2	2	0	1	1	0	0
AP4153.3	2	0	2	1	0	0
AP4153.4	2	0	1	1	0	0
AP4153.5	2	0	2	1	2	0
AP4153	2	0	1.4	1	2	0

1	Slight	2	Moderate	3	Substantial

Course Code / Title	AX4091/ English for Research Paper Writing
Semester	I
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
AX4091.1	understand that how to improve your writing skills and level of readability	L2UN
AX4091.2	learn about what to write in each section	L1RE
AX4091.3	understand the skills needed when writing a Title	L2UN
AX4091.4	understand the skills needed when writing the Conclusion	L2UN
AX4091.5	ensure the good quality of paper at very first-time submission	L2UN

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
AX4091.1	1	3	0	0	2	0
AX4091.2	1	3	0	0	2	0
AX4091.3	1	3	0	0	2	0
AX4091.4	1	3	0	0	2	0
AX4091.5	1	3	0	0	2	0
AX4091	1	3	0	0	2	0

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VL4111/FPGA Laboratory
Semester	I
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4111.1	understand and use the System Verilog RTL design and synthesis features,	L2UN
VL4111.2	appreciate and apply the System Verilog verification features, including classes, constrained random stimulus, coverage, strings, queues and dynamic arrays, and learn how to utilize these features for more effective and efficient verification	L3AP
VL4111.3	do the implementation of higher level of abstraction to design and verification	L3AP
VL4111.4	develop Verilog test environments of significant capability and complexity.	L3AP
VL4111.5	integrate scoreboards, multichannel sequencers and Register Models	L4AN

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4111.1	1	1	1	1	1	1
VL4111.2	1	1	1	1	1	1
VL4111.3	1	1	1	1	1	1
VL4111.4	1	1	1	1	1	1
VL4111.5	1	1	1	1	1	1
VL4111	1	1	1	1	1	1

1	Slight	**2**	Moderate	**3**	Substantial

Course Code / Title	VL4112/ Analog IC Design Laboratory
Semester	I
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4112.1	design digital and analog Circuit using CMOS given a design specification.	L6CR
VL4112.2	design and carry out time domain and frequency domain simulations of simple analog building blocks, study the pole zero behaviors and compute the nput/output impedance	L6CR
VL4112.3	use EDA tools for Circuit Design	L3AP

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4112.1	1	1	1	1	1	1
VL4112.2	1	1	1	1	1	1
VL4112.3	1	1	1	1	1	1
VL4112.4	1	1	1	1	1	1
VL4112.5	1	1	1	1	1	1
VL4112	1	1	1	1	1	1

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VL4251/ Design for Verification using UVM
Semester	II
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4251.1	understand the basic concepts of two methodologies UVM	L2UN
VL4251.2	build actual verification components.	L3AP
VL4251.3	generate the register layer classes	L3AP
VL4251.4	code test benches using UVM.	L4AN
VL4251.5	understand advanced peripheral bus testbenches	L2UN

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4251.1	1	0	1	1	2	0
VL4251.2	1	0	1	1	2	0
VL4251.3	1	0	1	1	2	0
VL4251.4	1	0	1	1	2	1
VL4251.5	1	0	1	1	2	1
VL4251	1	0	1	1	2	1

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VL4291/ Low Power VLSI Design
Semester	II
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4291.1	find the power dissipation of MOS circuits	L1RE
VL4291.2	design and analyze various MOS logic circuits	L6CR
VL4291.3	apply low power techniques for low power dissipation	L3AP
VL4291.4	estimate the power dissipation of ICs	L6CR
VL4291.5	develop algorithms to reduce power dissipation by software.	L6CR

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4291.1	2	0	2	3	2	0
VL4291.2	2	0	2	2	2	0
VL4291.3	1	0	2	2	2	0
VL4291.4	1	0	2	3	2	0
VL4291.5	2	0	2	2	3	0
VL4291	1.6	0	2	2.4	2.2	0

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VL4292/ RFIC Design
Semester	II
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4292.1	understand the principles of operation of an RF receiver front end	L2UN
VL4292.2	design and apply constraints for LNAs, Mixers and frequency synthesizers	L6CR
VL4292.3	analyze and design mixers	L4AN
VL4292.4	design different types of oscillators and perform noise analysis	L6CR
VL4292.5	design PLL and frequency synthesizer	L6CR

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4292.1	2	0	2	2	2	0
VL4292.2	2	0	2	2	2	0
VL4292.3	1	0	2	2	2	0
VL4292.4	1	0	2	3	2	0
VL4292.5	2	0	2	2	2	0
VL4292	1.6	0	2	2.2	2	0

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VL4252/VLSI Testing
Semester	II
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4252.1	understand VLSI Testing Process	L2UN
VL4252.2	develop Logic Simulation and Fault Simulation	L6CR
VL4252.3	develop Test for Combinational and Sequential Circuits	L6CR
VL4252.4	understand the Design for Testability	L2UN
VL4252.5	perform Fault Diagnosis.	L3AP

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4252.1	2	0	2	3	3	1
VL4252.2	2	0	2	2	3	1
VL4252.3	1	0	2	2	3	1
VL4252.4	1	0	2	3	2	1
VL4252.5	2	0	2	2	1	1
VL4252	1.6	0	2	2.4	2.4	1

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VE4152/ Embedded System Design
Semester	II
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VE4152.1	knowledge of different protocols	L1RE
VE4152.2	apply state machine techniques and design process models.	L3AP
VE4152.3	apply knowledge of embedded sotware development tools and RTOS	L3AP
VE4152.4	apply networking principles in embedded devices.	L3AP
VE4152.5	design suitable embedded systems for real world applications	L6CR

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VE4152.1	1	0	2	2	3	1
VE4152.2	1	0	2	2	3	1
VE4152.3	1	0	2	2	3	1
VE4152.4	1	0	2	2	3	1
VE4152.5	1	0	2	2	3	1
VE4152	1	0	2	2	3	1

1	Slight	**2**	Moderate	**3**	Substantial

Course Code / Title	AP4095/ Signal Integrity for High Speed Design
Semester	II
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
AP4095.1	identify sources affecting the speed of digital circuits.	L3AP
AP4095.2	identify methods to improve the signal transmission characteristics	L3AP
AP4095.3	characterize and model multiconductor transmission line	L4AN
AP4095.4	analyses clock distribution system and understand its design parameters	L4AN
AP4095.5	analyses nonideal effects of transmission line	L4AN

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
AP4095.1	1	0	2	3	1	0
AP4095.2	1	0	2	3	1	0
AP4095.3	1	0	2	3	1	0
AP4095.4	1	0	2	1	1	0
AP4095.5	1	0	2	1	1	0
AP4095	1	0	2	2.2	1	0

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VL4211/ Verification using UVM Laboratory
Semester	II
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4211.1	understand the features and capabilities of the UVM class library for system	L2UN
VL4211.2	combine multiple UVCs into a complete verification environment	L6CR
VL4211.3	create and configure reusable, scalable, and robust UVM verification components (UVCs)	L6CR
VL4211.4	create a UVM test bench structure using the UVM library base classes and the UVM factory	L6CR
VL4211.5	develop a register model for your DUT and use the model for initialization and accessing DUT registers	L6CR

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4211.1	1	3	1	1	1	3
VL4211.2	1	3	1	1	1	3
VL4211.3	1	3	1	1	1	3
VL4211.4	1	3	1	1	1	3
VL4211.5	1	3	1	1	1	3
VL4211	1	3	1	1	1	3

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VL4212 /Term Paper Writing and Seminar
Semester	II
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4212.1	develop their scientific and technical reading	L6CR
VL4212.2	understand and construct research articles	L2UN
VL4212.3	obtain information from a variety of sources	L1RE

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4212.1	1	1	1	1	1	1
VL4212.2	1	1	1	1	1	1
VL4212.3	1	1	1	1	1	1
VL4212	1	1	1	1	1	1

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VL4351/ VLSI Signal Processing
Semester	III
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4351.1	determine the parameters influencing the efficiency of DSP architectures and	L5EV
VL4351.2	analyze and modify the design equations leading to efficient DSP architectures for transforms apply low power techniques for low power dissipation	L4AN
VL4351.3	speed up convolution process and develop fast and area efficient IIR structures	L4AN
VL4351.4	develop fast and area efficient multiplier architectures	L4AN
VL4351.5	reduce multiplications and build fast hardware for synchronous digital systems	L4AN

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4351.1	1	0	2	2	1	0
VL4351.2	1	0	2	2	1	0
VL4351.3	1	0	2	2	1	0
VL4351.4	1	0	2	2	1	0
VL4351.5	1	0	2	2	1	0
VL4351	1	0	2	2	1	0

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VL4092/Soft Computing and Optimization Techniques
Semester	III
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4092.1	develop application on different soft computing techniques like Fuzzy, GA and	L4AN
VL4092.2	implement Neuro-Fuzzy and Neuro-Fuzz-GA expert system.	L4AN
VL4092.3	implement machine learning through Neural networks.	L4AN
VL4092.4	model Neuro Fuzzy system for clustering and classification.	L3AP
VL4092.5	use the optimization techniques to solve the real world problems	L3AP

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4092.1	1	0	2	1	2	0
VL4092.2	1	0	2	1	2	0
VL4092.3	1	0	2	1	2	0
VL4092.4	1	0	2	1	2	0
VL4092.5	1	0	2	1	0	0
VL4092	1	0	2	1	2	0

1	Slight	2	Moderate	3	Substantial

Course Code / Title	DS4151/ Digital Image and Video Processing
Semester	III
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
DS4151.1	analyze the digital image, representation of digital image and digital images in transform Domain.	L4AN
DS4151.2	analyze the detection of point, line and edges in images and understand the redundancy in images, various image compression techniques.	L4AN
DS4151.3	analyze the video technology from analog color TV systems to digital video systems, how video signal is sampled and filtering operations in video rocessing.	L4AN
DS4151.4	obtain knowledge in general methodologies for 2D motion estimation, various coding used in video processing.	L3AP
DS4151.5	design image and video processing systems.	L6CR

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
DS4151.1	3	0	2	2	2	2
DS4151.2	3	0	2	2	2	2
DS4151.3	3	0	2	2	2	2
DS4151.4	3	0	2	2	2	2
DS4151.5	3	0	2	2	2	2
DS4151	3	0	2	2	2	2

1	Slight	2	Moderate	3	Substantial

Course Code / Title	OBA433/ Intellectual Property Rights
Semester	III
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
OBA433.1	understanding of intellectual property and appreciation of the need to protect it	L2UN
OBA433.2	aware about the process of patenting	L1RE
OBA433.3	understanding of the statutes related to IPR	L2UN
OBA433.4	apply strategies to protect intellectual property	L3AP
OBA433.5	apply models for making strategic decisions related to IPR	L3AP

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
OBA433.1	2	0	0	0	0	1
OBA433.2	1	0	0	2	0	0
OBA433.3	2	1	0	0	0	1
OBA433.4	1	0	0	2	0	0
OBA433.5	2	0	0	0	0	1
OBA433	1.6	1	0	2	0	1

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VL4311/Project Work I
Semester	III
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4311.1	Formulate and analyze problem / create a new product/ process	L4AN
VL4311.2	Design and conduct experiments to find solution	L6CR
VL4311.3	Analyze the results and provide solution for the identified problem, prepare project report and make presentation.	L4AN

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4311.1	3	3	3	3	3	3
VL4311.2	3	3	3	3	3	3
VL4311.3	3	3	3	3	3	3
VL4311	3	3	3	3	3	3

1	Slight	2	Moderate	3	Substantial

Course Code / Title	VL4411/Project Work II
Semester	IV
Regulation	2021

Course code	Course Outcome	Blooms Taxonomy Level
Students will be able to		
VL4411.1	Formulate and analyze problem / create a new product/ process	L4AN
VL4411.2	Design and conduct experiments to find solution	L6CR
VL4411.3	Analyze the results and provide solution for the identified problem, prepare project report and make presentation.	L4AN

CO-PO matrices

Course Code	PO1	PO2	PO3	PO4	PO5	PO6
VL4411.1	3	3	3	3	3	3
VL4411.2	3	3	3	3	3	3
VL4411.3	3	3	3	3	3	3
VL4411	3	3	3	3	3	3

1	Slight	2	Moderate	3	Substantial