



**Program Outcomes**

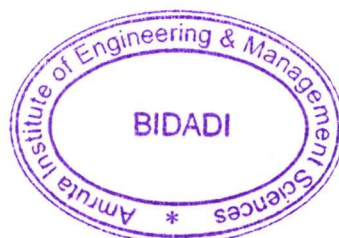
Department: ECE

**List of Programme Outcomes**

**ECE students will be able to:**

1. **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an Engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The Engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

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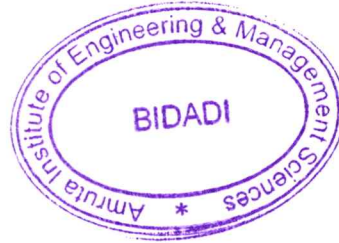


**10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.

**11. Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in dependent and life-long learning in the broadest context of technological change.

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**Program Specific Outcomes**

Department: ECE

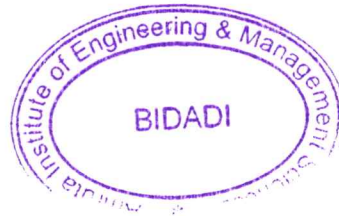
**List of Program Specific Outcomes**

**ECE students will be able to:**

1. Solve the Engineering problems of Electronics & Communication Engineering in VLSI design, Embedded Systems, Communication Engineering
2. Demonstrate programming skills using assembly and high-level languages to solve Electronics and Communication Engineering problems.
3. Demonstrate proficiency in use of software and hardware required in real life applications.

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### Program Educational Objectives

Department: ECE

#### List of Program Educational Objectives

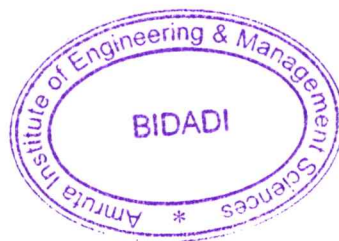
1. Possessing strong educational background in Science, Mathematics and Electronics & Communication Engineering for pursuing successful career in emerging technologies.
2. Developing design competency in the field of Electronics & Communication Engineering to provide cost effective and eco-friendly engineering solutions.
3. Graduates develop innovative ideas and creating capability to function in multi-disciplinary environment.
4. Adapting new ideas and technologies as a life-long learner.
5. Graduates exhibit high professional ethics with human values, dynamic leadership qualities, effective communication skills and social responsibilities.

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## COURSE OUTCOMES

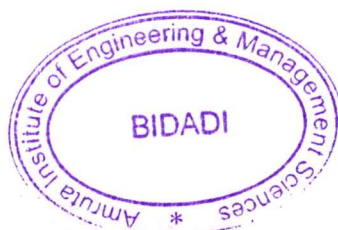
### ELECTRONICS AND COMMUNICATION ENGINEERING (ECE)

#### DEPARTMENT OF ECE

#### I Semester (2022 Scheme)

Course Name	Course Code	Course Outcomes	Statement
Mathematics-I	BMATE101	CO1	Apply the knowledge of calculus to solve problems related to polar curves and learn the notion of partial differentiation to compute rate of change of multivariate functions
		CO2	Analyze the solution of linear and nonlinear ordinary differential equations
		CO3	Apply the concept of change of order of integration and variables to evaluate multiple integrals and their usage in computing area and volume
		CO4	Make use of matrix theory for solving the system of linear equations and compute eigenvalues and eigenvectors
		CO5	Familiarize with modern mathematical tools namely MATHEMATICA/ MATLAB/ PYTHON/SCILAB
Applied Physics	BPHYE102	CO1	Describe the fundamental principles of the Quantum Mechanics and the essentials of Photonics.
		CO2	Elucidate the concepts of conductors, dielectrics and superconductivity
		CO3	Discuss the fundamentals of vector calculus and their applications in

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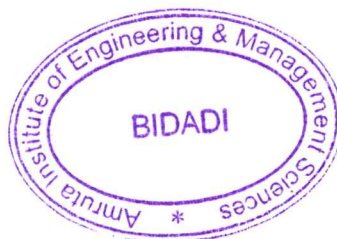
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			Maxwell's Equations and EM waves.
		CO4	Summarize the properties of semiconductors and the working principles of semiconductor devices
		CO5	Practice working in groups to conduct experiments in physics and perform precise and honest measurements
Basic Electronics	BBEE103	CO1	Develop the basic knowledge on construction, operation and characteristics of semiconductor devices.
		CO2	Apply the acquired knowledge to construct small scale circuits consisting of semiconductor devices
		CO3	Develop competence knowledge to construct basic digital circuit by make use of basic gate and its function.
		CO4	Construct the conceptual blocks for basic communication system
		CO5	Apply the knowledge of various transducers principle in sensor system.
Introduction to Electronics Engineering	BESCK104C	CO1	Develop the basic knowledge on construction, operation and characteristics of semiconductor devices.
		CO2	Apply the acquired knowledge to construct small scale circuits consisting of semiconductor devices
		CO3	Develop competence knowledge to construct basic digital circuit by make use of basic gate and its function.
		CO4	Construct the conceptual blocks for basic

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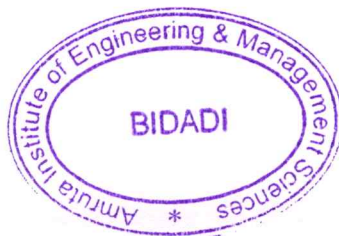
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			communication system
		CO5	Apply the knowledge of various transducers principle in sensor system.
Introduction to Internet of Things (IOT) Management	BETCK105H	CO1	Describe the evolution of IoT, IoT networking components, and addressing strategies in IoT.
		CO2	Classify various sensing devices and actuator types.
		CO3	Demonstrate the processing in IoT.
		CO4	Explain Associated IOT Technologies
		CO5	Illustrate architecture of IOT Applications
Communicative English	BENGK106	CO1	Understand and apply the Fundamentals of Communication Skills in their communication skills.
		CO2	Identify the nuances of phonetics, intonation and enhance pronunciation skills.
		CO3	To impart basic English grammar and essentials of language skills as per present requirement.
		CO4	Understand and use all types of English vocabulary and language proficiency.
		CO5	Adopt the Techniques of Information Transfer through presentation.
Samskrutika Kannada/ Balake Kannada	BKSKK107/ BKBKK107	CO1	To understand the necessity of learning of local language for comfortable life...
		CO2	To speak, read and write Kannada language as per requirement
		CO3	To communicate (converse) in Kannada

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			language in their daily life with Kannada speakers.
		CO4	To Listen and understand the Kannada language properly
		CO5	To speak in polite conversation.
Innovation and Design Thinking	BIDTK158	CO1	Appreciate various design process
		CO2	Generate and develop design ideas through different technique
		CO3	Identify the significance of reverse Engineering to Understand products
		CO4	Draw technical drawing for design ideas

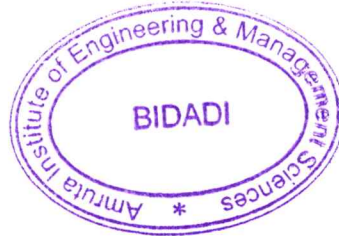
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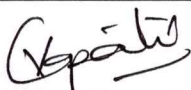


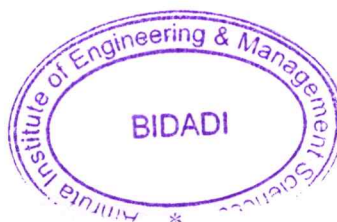


**COURSE OUTCOMES**  
**ELECTRONICS AND COMMUNICATION ENGINEERING (ECE)**  
**DEPARTMENT OF ECE**

**II Semester (2022 Scheme)**

Course Name	Course Code	Course Outcomes	Statement
Mathematics-II	BMATE201	CO1	Understand the applications of vector calculus refer to solenoidal, irrotational vectors, line integral and surface integral.
		CO2	Demonstrate the idea of Linear dependence and independence of sets in the vector space, and linear transformation
		CO3	To understand the concept of Laplace transform and to solve initial value problems.
		CO4	Apply the knowledge of numerical methods in solving physical and engineering phenomena.
		CO5	Familiarize with modern mathematical tools namely MATHEMATICA/ MATLAB/ PYTHON/SCILAB
Chemistry	BCHEE202	CO1	Identify the terms and applications processes involved in scientific and engineering
		CO2	Explain the phenomena of chemistry to describe the methods of engineering processes
		CO3	Solve the problems in chemistry that are pertinent in engineering applications
		CO4	Apply the basic concepts of chemistry to explain the chemical properties and processes
		CO5	Analyze properties and multi-disciplinary situations
Computer-Aided	BCEDK203	CO1	Draw and communicate the objects with definite shape and dimensions

  
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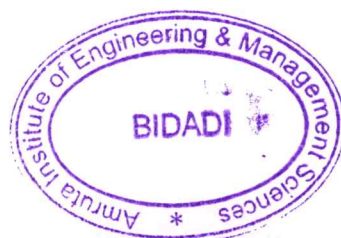
  
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Engineering Drawing		CO2	Recognize and draw the shape and size of objects through different views
		CO3	Develop the lateral surfaces of the object
		CO4	Create a Drawing views using CAD software
		CO5	Identify the interdisciplinary engineering components or systems through its graphical representation
Introduction to Electrical Engineering	BESCK20 2B	CO1	Understand the concepts of various energy sources and Electric circuits.
		CO2	Apply the basic Electrical laws to solve circuits.
		CO3	Discuss the construction and operation of various Electrical Machines.
		CO4	Identify suitable Electrical machine for practical implementation.
		CO5	Explain the concepts of electric power transmission and distribution, electricity billing, circuit protective devices and personal safety measures.
Introduction to Python Programming	BPLCK20 5B	CO1	Demonstrate proficiency in handling loops and creation of functions
		CO2	Identify the methods to create and manipulate lists, tuples and dictionaries.
		CO3	Develop programs for string processing and file organization
		CO4	Interpret the concepts of Object-Oriented Programming as used in Python.
Professional Writing Skills in English	BPWKS2 06	CO1	To understand and identify the Common Errors in Writing and Speaking.
		CO2	To Achieve better technical writing and Presentation skills.
		CO3	To read technical proposals properly and make them to Write good technical reports.
		CO4	Acquire Employment and Workplace communication skills.
		CO5	To learn about Techniques of Information Transfer through

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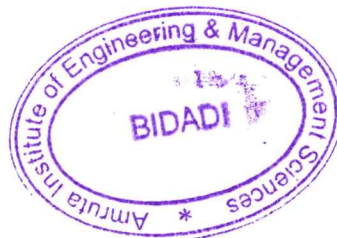
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			presentation in different level.
Indian Constitution	BICOK20 7	CO1	Analyze the basic structure of Indian Constitution.
		CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
		CO3	Know about our Union Government, political structure & codes, procedures.
		CO4	Understand our State Executive & Elections system of India.
		CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution
Scientific Foundations of Health	BSFHK25 8	CO1	To understand and analyze about Health and wellness (and its Beliefs) & It's balance for positive mindset
		CO2	Develop the healthy lifestyles for good health for their better future.
		CO3	Build a Healthy and caring relationships to meet the requirements of good/social/positive life.
		CO4	To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future.
		CO5	Prevent and fight against harmful diseases for good health through positive mindset.

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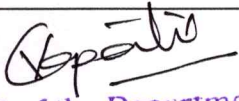
**COURSE OUTCOMES**

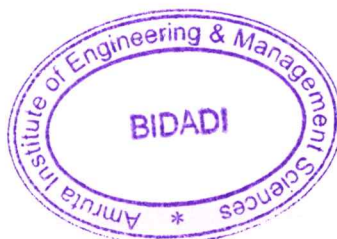
**ELECTRONICS AND COMMUNICATION ENGINEERING (ECE)**

**DEPARTMENT OF ECE**

**III Semester (2022 Scheme)**

Course Name	Course Code	Course Outcome	Statement
<b>AV Mathematics-III for EC Engineering</b>	<b>BMATEC301</b>	CO1	Demonstrate the Fourier series to study the behavior of periodic functions and their applications in system communications, digital signal processing, and field theory.
		CO2	To use Fourier transforms to analyze problems involving continuous-time signals
		CO3	To apply Z-Transform techniques to solve difference equations
		CO4	Understand that physical systems can be described by differential equations and solve such equations
		CO5	Make use of correlation and regression analysis to fit a suitable mathematical model for statistical data.
<b>Digital System Design using Verilog</b>	<b>BEC302</b>	CO1	Simplify Boolean functions using K-map and Quine-McCluskey minimization technique.
		CO2	Analyze and design for combinational logic circuits.
		CO3	Analyze the concepts of Flip Flops (SR, D, T and JK) and to design the synchronous sequential circuits using Flip Flops.
		CO4	Model Combinational circuits (adders, subtractors, multiplexers) and sequential circuits using Verilog descriptions.
<b>Electronic Principles and Circuits</b>	<b>BEC303</b>	CO1	Understand the characteristics of BJTs and FETs for switching and amplifier circuits.
		CO2	Design and analyze amplifiers and oscillators with different circuit configurations and biasing conditions.
		CO3	Understand the feedback topologies and approximations in the design of amplifiers and oscillators.

  
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		CO4	Design of circuits using linear ICs for wide range applications such as ADC, DAC, filters and timers.
		CO5	Understand the power electronic device components and its functions for basic power electronic circuits.
Network Analysis	BEC304	CO1	Determine currents and voltages using source transformation/ source shifting/ mesh/nodal analysis and reduce given network using star delta transformation.
		CO2	Solve problems by applying Network Theorems and electrical laws to reduce circuit complexities and to arrive at feasible solutions.
		CO3	Analyse the circuit parameters during switching transients and apply Laplace transform to solve the given network
		CO4	Evaluate the frequency response for resonant circuits and the network parameters for two port networks
Analog and Digital Systems Design Laboratory	BECL305	CO1	Design and analyze the BJT/FET amplifier and oscillator circuits.
		CO2	Design and test Opamp circuits to realize the mathematical computations, DAC and precision rectifiers.
		CO3	Design and test the combinational logic circuits for the given specifications.
		CO4	Test the sequential logic circuits for the given functionality.
		CO5	Demonstrate the basic circuit experiments using 555 timer.
MATLAB Programming	BEC358B	CO1	Understand object-oriented programming concepts, and apply them in solving problems.
		CO2	To create, debug and run simple C++ programs.
		CO3	Introduce the concepts of functions, friend functions, inheritance, polymorphism and function overloading.
		CO4	Introduce the concepts of exception handling and multithreading.

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**COURSE OUTCOMES**

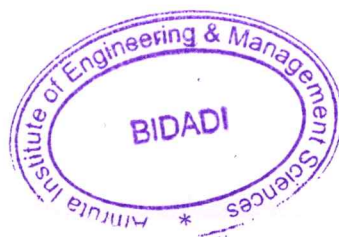
**ELECTRONICS AND COMMUNICATION ENGINEERING (ECE)**

**DEPARTMENT OF ECE**

<b>IV Semester (2022 Scheme)</b>			
<b>Course Name</b>	<b>Course Code</b>	<b>Course Outcome</b>	<b>Statement</b>
<b>ELECTROMAGNETIC THEORY</b>	<b>BEC401</b>	CO1	Evaluate problems on electrostatic force, electric field due to point, linear, volume charges by applying conventional methods and charge in a volume.
		CO2	Apply Gauss law to evaluate Electric fields due to different charge distributions and Volume Charge distribution by using Divergence Theorem.
		CO3	Determine potential and energy with respect to point charge and capacitance using Laplace equation and Apply Biot-Savart's and Ampere's laws for evaluating Magnetic field for different current configurations
		CO4	Calculate magnetic force, potential energy and Magnetization with respect to magnetic materials and voltage induced in electric circuits.
		CO5	Apply Maxwell's equations for time varying fields, EM waves in free space and conductors and Evaluate power associated with EM waves using Poynting theorem
<b>PRINCIPLES OF COMMUNICATION SYSTEMS</b>	<b>BEC402</b>	CO1	Understand the principles of analog communication systems and noise modelling.
		CO2	Identify the schemes for analog modulation and demodulation and compare their performance.
		CO3	Design of PCM systems through the processes sampling, quantization and encoding.
		CO4	Describe the ideal condition, practical considerations of the signal representation for baseband transmission of digital signals.
		CO5	Identify and associate the random variables and random process in Communication system design.
<b>Control Systems</b>	<b>BEC403</b>	CO1	Deduce transfer function of a given physical system, from differential equation representation or Block Diagram representation and SFG representation.

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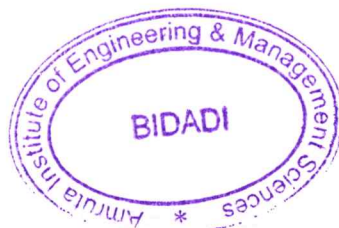
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		CO2	Calculate time response specifications and analyse the stability of the system.
		CO3	Draw and analyse the effect of gain on system behaviour using root loci.
		CO4	Perform frequency response Analysis and find the stability of the system.
		CO5	Represent State model of the system and find the time response of the system
<b>Communication Laboratory</b>	<b>BECL40 4</b>	CO1	Illustrate the AM generation and detection using suitable electronic circuits.
		CO2	Design of FM circuits for modulation, demodulation and noise suppression.
		CO3	Design and test the sampling, Multiplexing and pulse modulation techniques using electronic hardware.
		CO4	Design and demonstrate the electronic circuits used for RF transmitters and receivers.
<b>MICROCONTROLLERS</b>	<b>BEC405 A</b>	CO1	Describe the difference between Microprocessor and Microcontroller, Types of Processor Architectures and Architecture of 8051 Microcontroller.
		CO2	Discuss the types of 8051 Microcontroller Addressing modes & Instructions with Assembly Language Programs.
		CO3	Explain the programming operation of Timers/Counters and Serial port of 8051 Microcontroller.
		CO4	Illustrate the Interrupt Structure of 8051 Microcontroller & its programming.
		CO5	Develop C programs to interface I/O devices with 8051 Microcontroller.
<b>Microcontrollers Lab</b>	<b>BECL45 6A</b>	CO1	Write a Assembly Language / C programs in 8051 for solving simple problems that manipulate input data using different instructions.
		CO2	Develop Testing and experimental procedures on 8051 Microcontroller, Analyze their operation under different cases
		CO3	Develop programs for 8051 Microcontroller to implement real world problems.
		CO4	Develop Microcontroller applications using external hardware interface.
<b>BIOLOGY FOR</b>	<b>BBOK4</b>	CO1	Elucidate the basic biological concepts via relevant

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<b>ENGINEERS</b>	<b>07</b>		industrial applications and case studies.
		CO2	Evaluate the principles of design and development, for exploring novel bioengineering projects.
		CO3	Corroborate the concepts of biomimetics for specific requirements.
		CO4	Think critically towards exploring innovative biobased solutions for socially relevant problems.
<b>Universal Human Values</b>	<b>BUHK4 08</b>	CO1	They would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
		CO2	They would have better critical ability.
		CO3	They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).
		CO4	It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.
<b>Physical Education (Sports and Athletics)-II</b>	<b>BPEK45 9</b>	CO1	Understand the ethics and moral Values in sports and athletics
		CO2	Perform in the selected sports or athletics of student's choice
		CO3	Understand the roles and responsibilities of organization and administration of sports and games.

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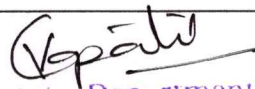
## COURSE OUTCOMES

### ELECTRONICS AND COMMUNICATION ENGINEERING (ECE)

#### DEPARTMENT OF ECE

#### V Semester (2021 Scheme)

Course Name	Course Code	Course Outcomes	Statement
Digital Communication	21EC51	CO1	Analyze different digital modulation techniques and choose the appropriate modulation technique for the given specifications
		CO2	Test and validate symbol processing and performance parameters at the receiver under ideal and corrupted bandlimited channels.
		CO3	Differentiate various spread spectrum schemes and compute the performance parameters of communication system
		CO4	Apply the fundamentals of information theory and perform source coding for given message
		CO5	Apply different encoding and decoding techniques with error Detection and Correction.
Computer Organization & ARM Microcontrollers	21EC52	CO1	Explain the basic organization of a computer system.
		CO2	Demonstrate functioning of different sub systems, such as processor, Input/output, and memory.
		CO3	Describe the architectural features and instructions of 32-bit microcontroller ARM Cortex M3.
		CO4	Apply the knowledge gained for

  
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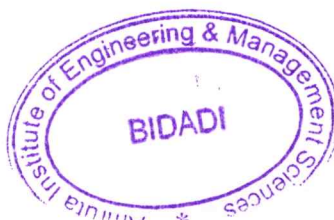
  
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			Programming ARM Cortex M3 for different applications.
Computer Communication Networks	21EC53	CO1	Understand the concepts of networking thoroughly.
		CO2	Identify the protocols and services of different layers.
		CO3	Distinguish the basic network configurations and standards associated with each network.
		CO4	Discuss and analyze the various applications that can be implemented on networks.
Electromagnetic Waves	21EC54	CO1	Evaluate problems on electrostatic force, electric field due to point, linear, volume charges by applying conventional methods and charge in a volume.
		CO2	Apply Gauss law to evaluate Electric fields due to different charge distributions and Volume Charge distribution by using Divergence Theorem.
		CO3	Determine potential and energy with respect to point charge and capacitance using Laplace equation and Apply Biot-Savart's and Ampere's laws for evaluating Magnetic field for different current configurations
		CO4	Calculate magnetic force, potential energy and Magnetization with respect to magnetic materials and voltage induced in electric circuits.
		CO5	Apply Maxwell's equations for time varying fields, EM waves in free space and conductors and Evaluate power associated with EM waves using Poynting theorem

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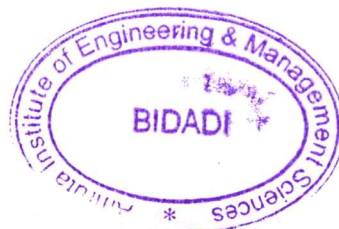
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Communication Lab II	21ECL55	CO1	Design and test the digital modulation circuits and display the waveforms.
		CO2	To Implement the source coding algorithm using C/C++/ MATLAB code.
		CO3	To Implement the Error Control coding algorithms using C/C++/ MATLAB code.
		CO4	Illustrate the operations of networking concepts and protocols using C programming and network simulators.
Research Methodology & Intellectual Property Rights	21EC56	CO1	To know the meaning of engineering research.
		CO2	To know the procedure of Literature Review and Technical Reading.
		CO3	To know the fundamentals of patent laws and drafting procedure.
		CO4	Understanding the copyright laws and subject matters of copyrights and designs
		CO5	Understanding the basic principle of design rights
Environmental Studies	21CIV57	CO1	Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale.
		CO2	Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.
		CO3	Demonstrate ecology knowledge of a complex relationship between biotic and a biotic component.
		CO4	Apply their ecological knowledge to

  
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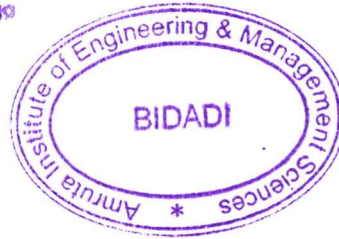
  
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			illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.
IoT (Internet of Things) Lab	21EC581	CO1	Understand internet of Things and its
		CO2	Interface I/O devices, sensors & communication modules
		CO3	Remotely monitor data and control devices
		CO4	Develop real life IoT based projects

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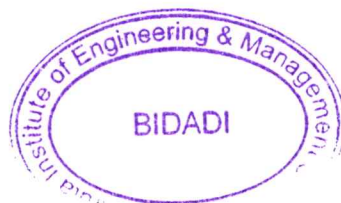
**COURSE OUTCOMES**

**ELECTRONICS AND COMMUNICATION ENGINEERING (ECE)**

**DEPARTMENT OF ECE**

<b>VI Semester (2021 Scheme)</b>			
<b>Course Name</b>	<b>Course Code</b>	<b>Course Outcomes</b>	<b>Statement</b>
Technological Innovation Management and Entrepreneurship	21EC61	CO1	Understand the fundamental concepts of Management and its functions.
		CO2	Understand the different functions to be performed by managers/Entrepreneur
		CO3	Understand the social responsibilities of a Business.
		CO4	Understand the Concepts of Entrepreneurship and to identify Business opportunities
		CO5	Understand the components in developing a business plan and awareness about various sources of funding and Institutions supporting Entrepreneur.
Microwave Theory and Antennas	21EC62	CO1	Describe the use and advantages of microwave transmission
		CO2	Analyze various parameters related to transmission lines
		CO3	Identify microwave devices for several applications.
		CO4	Analyze various antenna parameters and their significance in building the RF system.
		CO5	Identify various antenna configurations for suitable applications.
VLSI Design and Testing	21EC63	CO1	Demonstrate understanding of MOS transistor theory, CMOS fabrication flow and technology

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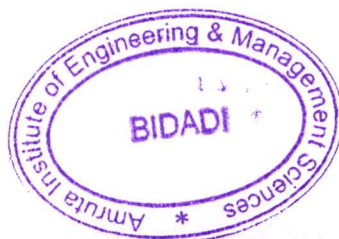


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			scaling.
		CO2	Draw the basic gates using the stick and layout diagram with the knowledge of physical design aspects.
		CO3	Interpret memory elements along with timing considerations
		CO4	Interpret testing and testability issues in combinational logic design.
		CO5	Interpret testing and testability issues in combinational logic design
Python Programming	21EC643	CO1	To acquire programming skills in Python.
		CO2	To demonstrate data structure representation using Python
		CO3	To develop the skill of pattern matching and files in Python
		CO4	To acquire Object Oriented Skills in Python
		CO5	To develop the ability to write database applications in Python
Introduction to Data Structures	21CS651	CO1	Express the fundamentals of static and dynamic data structure.
		CO2	Summarize the various types of data structure with their operations.
		CO3	Interpret various searching and sorting techniques.
		CO4	Choose appropriate data structure in problem solving.
		CO5	Develop all data structures in a high-level language for problem solving
VLSI Laboratory	21ECL66	CO1	Design and simulate combinational and sequential digital circuits using Verilog HDL.

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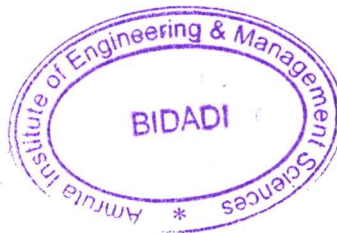


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		CO2	Understand the synthesis process of digital circuits using EDA tool.
		CO3	Perform ASIC design flow and understand the process of synthesis, synthesis constraints and evaluating the synthesis reports to obtain optimum gate level netlist.
		CO4	Design and simulate basic CMOS circuits like inverter, common source amplifier, differential amplifier, SRAM.
		CO5	Perform RTL_GDSII flow and understand the stages in ASIC design.
Societal Internship	21INT68	CO1	Urbanization is increasing on a global scale; and yet, half the world's population still resides in rural areas and is devoid of many things that urban population enjoy. Rural internship, is a work-based activity in which students will have a chance to solve/reduce the problems of the rural place for better living. As proposed under

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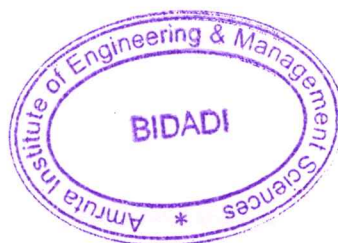
## COURSE OUTCOMES

### ELECTRONICS AND COMMUNICATION ENGINEERING (ECE)

#### DEPARTMENT OF ECE

VII Semester (2018Scheme)			
Course Name	Course Code	Course Outcomes	Statement
Computer Network	18EC71	CO1	Understand the concepts of networking.
		CO2	Describe the various networking architectures.
		CO3	Identify the protocols and services of different layers.
		CO4	Distinguish the basic network configurations and standards associated with each network.
		CO5	Analyze simple network and measurement of its parameters.
Digital Communication	18EC72	CO1	Demonstrate understanding of MOS transistor theory, CMOS fabrication flow and technology scaling.
		CO2	Draw the basic gates using the stick and layout diagrams with the knowledge of physical design aspects.
		CO3	Demonstrate ability to design Combinational, sequential and dynamic logic circuits as per the requirements.
		CO4	Interpret Memory elements along with timing considerations.
		CO5	Interpret testing and testability issues in VLSI Design
Real Time Systems	18EC731	CO1	Explain the fundamentals of Real time systems and its classifications.
		CO2	Understand the concepts of computer control

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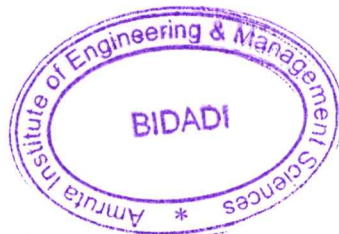
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			and the suitable computer hardware requirements for real-time applications.
		CO3	Describe the operating system concepts and techniques required for real time systems
		CO4	Develop the software algorithms using suitable languages to meet Realtime applications.
		CO5	Apply suitable methodologies to design and develop Real-Time Systems.
Multimedia Communication System	18EC743	CO1	Understand basics of different multimedia networks and applications.
		CO2	Understand different compression techniques to compress audio and video.
		CO3	Describe multimedia Communication across Networks.
		CO4	Analyze different media types to represent them in digital form.
		CO5	Compress different types of text and images using different compression techniques.
Energy And Environment	18ME751	CO1	Summarize the basic concepts of energy, its distribution and general Scenario.
		CO2	Explain different energy storage systems, energy management, audit and economic analysis.
		CO3	Summarize the environment eco system and its need for awareness.
		CO4	Identify the various types of environment pollution and their effects.
		CO5	Discuss the social issues of the environment with associated acts.

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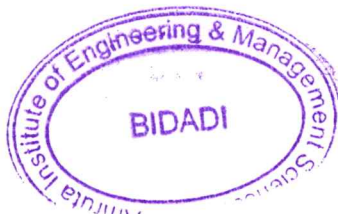
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Environment Protection Management	18CV753	CO1	Appreciate the elements of Corporate Environmental Management systems complying to international environmental management system standards.
		CO2	Lead pollution prevention assessment team and implement waste minimization options.
		CO3	Develop, Implement, maintain and Audit Environmental Management systems for Organizations.
Computer Network Lab	18ECL76	CO1	Learn to write TCL script, understand linking of nodes, agents, and to connect application protocol on them,
		CO2	Develop wired and wireless topology along with featured of NS2 like using X graph, NAM.
		CO3	AWK command is used to extract features from the trace file.
		CO4	Understand the concepts of routing mechanisms, network interfaces, and design/performance of throughput, delay and jitter issues in local area networks and wide area networks.
		CO5	To be familiar with wireless networking
VLSI LAB	18ECL77	CO1	Design and simulate combinational and sequential digital circuits using Verilog HDL
		CO2	Understand the Synthesis process of digital
		CO3	Perform ASIC design flow and understand the
		CO4	Design and simulate basic CMOS circuits like inverter, common source amplifier and differential amplifiers.

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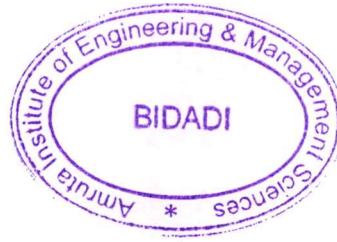
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		CO5	Perform RTL-GDSII flow and understand the stages in ASIC design.
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## COURSE OUTCOMES

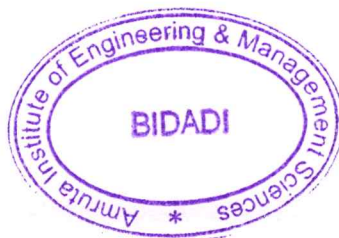
### ELECTRONICS AND COMMUNICATION ENGINEERING (ECE)

#### DEPARTMENT OF ECE

VIII Semester (2018Scheme)			
Course Name	Course Code	Course Outcomes	Statement
Wireless And Cellular Communication	18EC81	CO1	Understand basics of different multimedia networks and applications.
		CO2	Understand different compression techniques to compress audio and video.
		CO3	Describe multimedia Communication across Networks.
		CO4	Analyze different media types to represent them in digital form.
		CO5	Compress different types of text and images using different compression techniques.
Network Security	18EC821	CO1	Explain network security services and mechanisms and explain security concepts
		CO2	Understand the concept of Transport Level Security and Secure Socket Layer
		CO3	Explain Security concerns in Internet Protocol security
		CO4	Explain Intruders, Intrusion detection and Malicious Software
		CO5	Describe Firewalls, Firewall Characteristics, Biasing and Configuration
Project Work Phase I/II	18ECP78 /83	CO1	Ability to Demonstrate a sound technical knowledge of their selected project topic.
		CO2	Ability to Undertake problem identification, formulation and solution

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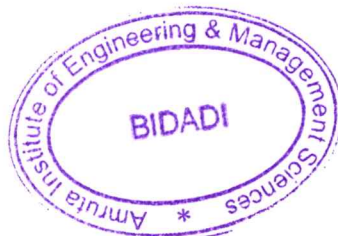
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		CO3	Ability to Design engineering solutions to complex problems utilizing a systems approach
		CO4	Ability to Conduct an engineering project
		CO5	Communicate with engineers and the community at large in written an oral forms and Demonstrate the knowledge, skills and attitudes of a professional engineer.
Technical Seminar	18ECS84	CO1	Identify recent technical topics from interested domains.
		CO2	Analyze the applicability of modern software tools and technology.
		CO3	Develop Presentation and Communication skills.
		CO4	Develop Technical report preparation skills.
Internship / Professional Practice	18ECI85	CO1	Understanding the modern tools used in the field of Electronics and Communication engineering for product development.
		CO2	Demonstrate ethical conduct and professional accountability while working in a team for the benefit of society.
		CO3	Understand the resources requirement and planning to facilitate the project success.
		CO3	AWK command is used to extract features from the trace file.
		CO4	Understand the concepts of routing mechanisms, network interfaces, and
		CO5	To be familiar with wireless networking
		CO4	Design and simulate basic CMOS circuits like inverter, common source amplifier and

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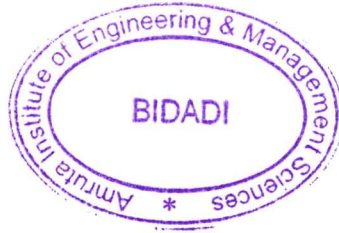
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		CO5	Perform RTL-GDSII flow and understand the stages in ASIC design.
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