

COURSE OUTCOMES FOR THE ACADEMIC YEAR (2018-2019)
ELECTRONICS & COMMUNICATION ENGINEERING
II YEAR I & II SEMESTER

1. EC201-MATHEMATICS –III

CO	Statement
EC201.1	Identify Bessel equation and Legendre equation and solve them under special conditions with the help of series solutions method.
EC201.2	Also recurrence relations and orthogonality properties of Bessel and Legendre polynomials.
EC201.3	Analyze the complex functions with reference to their analyticity, Integration using Cauchy's integral theorem.
EC201.4	Find the Taylor's and Laurent series expansion of complex functions.
EC201.5	The conformal transformations of complex functions can be dealt with ease.

2. EC202- ELECTRONIC DEVICES AND CIRCUITS

CO	Statement
EC202.1	Understand and analyze the different types of diodes, operation and its characteristics.
EC202.2	Understand the designing of Rectifiers & Filters.
EC202.3	Understand the construction, Characteristics & specification of BJT along with its Hybrid model.
EC202.4	Design biasing circuits using diodes and transistors.
EC202.5	Understand the construction & principle of FET and FET amplifiers.

3. EC203- SIGNALS AND SYSTEMS

CO	Statement
EC203.1	Identify & analyze different types of signals and systems properties that are commonly used in engineering.
EC203.2	Differentiate the Fourier series and transform in terms of applicable time functions and the resulting spectral properties required for the further study and design of basic communication system.
EC203.3	Explain and differentiate the properties of continuous-time and discrete-time Linear Time Invariant (LTI) systems.
EC203.4	Concepts of auto correlation and cross correlation and power Density Spectrum.
EC203.5	Apply the Laplace Transform and Z transform to the calculation of time responses of LTI systems.

4. EC204- PROBABILITY THEORY AND STOCHASTIC PROCESSES

CO	Statement
EC204.1	Simple probabilities using an appropriate sample space.
EC204.2	Simple probabilities and expectations from probability density functions (pdfs).
EC204.3	Likelihood ratio tests from pdfs for statistical engineering problems.
EC204.4	Least -square & maximum likelihood estimators for engineering problems.
EC204.5	Mean and covariance functions for simple random processes.

5. EC205- ELECTRICAL TECHNOLOGY

CO	Statements
EC205.1	Be able to do the transient analysis of the first & second order circuits.
EC205.2	Be able to understand the concepts of two port networks, conversion, reciprocity, symmetry etc.
EC205.3	Understand and analyze different type of filters & attenuators.
EC205.4	Be able to analyze and draw the locus diagrams of various circuits studied.
EC205.5	Be able to understand the operation of DC machines with which they will be able to apply the concepts to the real world problems.

6. EC206- MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS

CO	Statement
EC206.1	Able to set objectives for the firm & to analyze Demand
EC206.2	Analyze Production, Cost, BEP Investment, and Market & set the prices for maximization of profits.
EC206.3	Able to start enterprise & estimate sources of capital and their implication to the business.
EC206.4	To provide knowledge on the principles of financial and management accounts as applicable to real life business situations by determining profits, assets, liabilities & performance of a firm through simple problems.
EC206.5	Provide knowledge to assess the financial strengths and weaknesses of a firm through Ratio Analysis.

7. EC207- ELECTRONIC DEVICES AND CIRCUITS LAB

CO	Statement
EC207.1	To analyze voltage and current characteristics of semiconductor circuits and devices.
EC207.2	To design & analyze rectifiers with & without filters.
EC207.3	Analyze and realize the characteristics of various Diodes and Transistors.
EC207.4	Design, Analysis, Implementation and testing of amplifiers using BJT.
EC207.5	Design, Analysis, Implementation and testing of Transistorized Voltage regulators.

8. EC208- BASIC SIMULATION LAB

CO	Statement
EC208.1	Understand & simulate generation of basic waveforms and general operations in linear time invariant systems.
EC208.2	Understands the Concept of auto correlation, cross correlation and Convolution of given signal/ sequence and simulate it accordingly.
EC208.3	Develop a precise understanding of various transforms in and its applications in signal processing areas.
EC208.4	Better understanding of the concepts of PDF, PSD, and MSV etc practically.
EC208.5	Gain comprehensive understanding about filter design.

9. EC209-FRENCH

CO	Statement
EC209.1	The student will be in a position to speak in French, Which is the second most widely learned foreign language after English, and the ninth most widely spoken language in the world. French is also the only language, alongside English, that is taught in every country in the world.
EC209.2	The Student will get the ability to speak French is an advantage on the international job market.
EC209.3	Students with a good level of French are eligible for French government scholarships to enroll in postgraduate courses in France in any discipline and qualify for internationally recognized French degrees.

10. EC210- CONTROL SYSTEMS

CO	Statement
EC210.1	A thorough knowledge on open loop and closed loop control systems, concept of feedback in control systems.
EC210.2	Transfer function representation through block diagram algebra and signal flow graphs.
EC210.3	Time response analysis of different ordered systems through their characteristic Equation.
EC210.4	Time domain specifications, stability analysis of control systems in s-domain through R-H criteria
EC210.5	Root locus techniques, frequency response analysis through Bode diagrams, Nyquist, Polar plots

11. EC211- PULSE AND DIGITAL CIRCUITS

CO	Statement
EC211.1	Understand the applications of diode as linear wave shaping circuits integrator, differentiator, Attenuators.
EC211.2	Understand the applications of diode as non -linear wave shaping circuits Clippers & Clampers.
EC211.3	Understand concept of transistor as switch & design of different types of Multivibrators.
EC211.4	Understands the concept of Voltage & current Time base generators.
EC211.5	Basic operating principle of sampling gates. Realizing logic gates using diodes and transistors.

12. EC212- ELECTRONIC CIRCUIT ANALYSIS

CO	Statement
EC212.1	Design and Analyze the characteristics of Single & Multistage Amplifiers using BJT & FET
EC212.2	Analyze different types of BJT amplifiers, operation, characteristics and frequency response.
EC212.3	Design circuits like amplifiers, oscillators using the transistors and diodes.
EC212.4	Understand the operation of different types of Large signal Amplifiers and their role in communication system.
EC212.5	Understand the operation of different types Tuned Amplifiers.

13. EC213- ELECTROMAGNETIC THEORY AND TRANSMISSION LINES

CO	Statement
EC213.1	To acquire understanding and ability to analyze static electric and magnetic fields, time-varying electric and magnetic fields, wave propagation in different types of media.
EC213.2	To have knowledge of, physical interpretation and ability to apply Maxwell's equations to determine field waves, potential waves, energy and charge conservation conditions.
EC213.3	Understand how EM waves will propagate in free space and their characteristics at the boundary between media.
EC213.4	Analyze electromagnetic wave propagation and attenuation in various medium and propagation through boundaries between media.
EC213.5	To have acquired techniques for the measurement of basic transmission line parameters, such as the reflection coefficient, standing wave ratio, and impedance.

14. EC214-SWITCHING THEORY AND LOGIC DESIGN

CO	Statement
EC214.1	Be able to manipulate numeric information in different forms, e.g. different bases, signed integers, various codes such as ASCII, Gray, and BCD.
EC214.2	Be able to manipulate simple Boolean expressions using the theorems and postulates of Boolean algebra and to minimize combinational functions.
EC214.3	Be able to design and analyze small combinational circuits and to use standard combinational functions/building blocks to build larger more complex circuits.
EC214.4	Be able to design and analyze small sequential circuits and devices and to use standard sequential functions/building blocks to build larger more complex circuits.
EC214.5	Analyze Synchronous sequential circuits using State diagram, Finite state machine. Design Asynchronous & Synchronous counters.

15. EC215-DATA BASE SYSTEMS

CO	Statement
EC215.1	Demonstrate the basic elements of a relational database management system
EC215.2	Understand the ER models Objects, Attributes, Types & Design issues.
EC215.3	Understand the relational operations & basic overview of Structured Query Language.
EC215.4	Understand the basic concept of Normalization & Normal Forms.
EC215.5	Understands the basic concepts of Transaction & Recovery.

16. EC216- ELECTRONIC CIRCUITS & PULSE CIRCUITS LAB

CO	Statement
EC216.1	Have the ability to design and analyze circuits using the analog building blocks like diodes, BJT, FET etc for performing various functions.
EC216.2	Be able to make a qualitative analysis and design simple models of circuits using hardware and software tools.
EC216.3	Design, Analysis, Implementation and testing of Linear & Non-Linear wave shaping circuits using Diodes.
EC216.4	Design; analyze the implementation of pulse generating circuits such as multivibrators which are used in future in designing some communication system modules.
EC216.5	Designing of Single stage & multiple Stage Amplifiers & Power Amplifiers.

17. EC217- ELECTRICAL TECHNOLOGY LAB

CO	Statement
EC217.1	Design electric circuits to verify the basic KVL & KCL.
EC217.2	Design electric circuits to determine different parameters of two port networks.
EC217.3	Analyze electric circuits using Network Theorems.
EC217.4	Evaluate the efficiency of the machine & generators by analyzing test results.
EC217.5	Have the practical ideas about the Electrical Circuits and Machines.

18. EC218- GENDER SENSITIZATION

CO	Statement
EC218.1	Students will have developed a better understanding of important issues related to gender in contemporary India.
EC218.2	Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film.
EC218.3	Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.
EC218.4	Students will acquire insight into the gendered division of labour and its relation to politics and economics.
EC218.5	Men and Women students and professionals will be better equipped to work and live together as equals.

III YEAR I & II SEMESTER

1. EC301- IC APPLICATIONS

CO	Statement
EC301.1	Have a thorough understanding of operational amplifiers with linear integrated circuits.
EC301.2	Have a thorough understanding of the different families of Digital integrated circuits and their characteristics and be able to design circuits using IC555 timer and IC565 PLL for various applications.
EC301.3	Be able to design circuits using operational amplifiers for various applications like ADCs and DACs.
EC301.4	Also be able to design circuits using the Digital Integrated Circuit ICs for various applications.
EC301.5	Be familiarized with Sequential Logic IC's and memories.

2. EC302- ANALOG COMMUNICATIONS

CO	Statement
EC302.1	Have broad idea on the fundamentals of communication systems and comprehensive description of telecommunication system.
EC302.2	Be able to give mathematical and theoretical description of linear(amplitude) modulation
EC302.3	Be able to give mathematical and theoretical description of angle modulation.
EC302.4	Be able to analyze and compare the performance of the modulation techniques using SNR as a parameter and can work on improvising the techniques.
EC302.5	Be able to relate the concepts of modulation and demodulation in radio transmitter and receiver. Have a basic understanding of pulse modulation techniques.

3. EC303- COMPUTER ORGANIZATION & OPERATING SYSTEMS

CO	Statement
EC303.1	Basic structure of a digital computer & Arithmetic operations of binary number system.
EC303.2	The organization of the Control Unit, Arithmetic and Logical Unit, Memory Unit and the I/O unit.
EC303.3	Operating system functions, types, system calls.
EC303.4	Memory management techniques and dead lock avoidance.
EC303.5	Operating systems file system and implementation and its interface.

4. EC304- DIGITAL DESIGN THROUGH VERILOG

CO	Statement
EC304.1	Describe Verilog HDL & Design Digital circuits.
EC304.2	Write behavior model of digital circuits.
EC304.3	Write RTL models of digital circuits & verify behavior.
EC304.4	Describe standard Cell Libraries and FPGAs.
EC304.5	Synthesize RTL models to standard cell libraries and FPGAs.

5. EC305- DIGITAL SYSTEM DESIGN

CO	Statement
EC305.1	Develop a digital logic & apply it to solve real time problems
EC305.2	Analyze, design & implement combinational circuits.
EC305.3	Analyze, design & implement sequential circuits.
EC305.4	Analyze a digital system using PLD's and identify faults in circuits by applying different Algorithms.
EC305.5	Design SM charts for simple applications.

6. EC306- JAVA PROGRAMMING

CO	Statement
EC306.1	Understand object oriented concepts through which robust, secured and reusable software can be developed.
EC306.2	Understand object oriented principles like abstraction, encapsulation, inheritance, and polymorphism and also fundamentals of object-oriented programming in Java, including objects, classes, and interfaces.
EC306.3	Learn the Knowledge in Packages, Exception handling, Multithreading.
EC306.4	Explore AWT and Applets to create GUI applications.
EC306.5	Learn the potential benefits of object-oriented programming for solving complex problems efficiently.

7. EC307- IC APPLICATIONS & HDL SIMULATION LAB

CO	Statement
EC307.1	Design, Analysis, Implementation and testing of logic gates, combinational circuits, flip-flops, registers and counters
EC307.2	To demonstrate basic engineering practices and conduct experiments using basic operational amplifiers.
EC307.3	Test, measure and provide valid conclusions on oscillator and amplifier design using op-amps and other linear integrated circuits.
EC307.4	Apply the knowledge of theoretical & practical aspects of transistor circuits to meet desired needs within realistic constraints.
EC307.5	Be able to make a qualitative analysis and design simple models of circuits using hardware and software tools.

8. EC308- ANALOG COMMUNICATIONS LAB

CO	Statement
EC308.1	Design, test and analyze different amplitude modulation & demodulation circuits(AM, DSBSC, SSB) used in communication system & simulate.
EC308.2	Design, test and analyze Frequency modulation & demodulation circuits & simulate.
EC308.3	Spectrum Analysis of amplitude & angle modulation using simulation.
EC308.4	Analyze the Implementation of different analog Pulse modulation techniques.
EC308.5	Design & analyze different circuits used in communication system (AGC, Pre & De emphasis).

9. EC309- TECHNICAL COMMUNICATIONS & SOFT SKILLS LAB

CO	Statement
EC309.1	The student will become proficient in LSRW skills.
EC309.2	They develop formal LSRW skills approach to different situations.
EC309.3	They hone professional ethics and learn to be proficient formally.

10. EC310- DIGITAL COMMUNICATIONS

CO	Statement
EC310.1	Analyze different digital pulse modulation techniques.
EC310.2	Give mathematical and theoretical description of different digital modulation techniques.
EC310.3	Design optimum receivers for digital modulation techniques and Analyze the error performance of digital modulation techniques studied using probability.
EC310.4	Understand concepts of Information theory & Channel Capacity.
EC310.5	Know about different error detecting and error correcting codes like block codes, cyclic codes and convolution codes.

11. EC311- MICROPROCESSORS AND MICROCONTROLLERS

CO	Statement
EC311.1	Understand architecture and operations of a microprocessor system in depth
EC311.2	Demonstrate programming proficiency using the various addressing modes and data transfer instructions of the microprocessor
EC311.3	Analyze, specify, design, write and test assembly language programs of moderate complexity
EC311.4	Perform the detailed hardware design of a microprocessor system, and program the microprocessor using suitable techniques and software tools to interface the processor to external devices.
EC311.5	Understand the fundamentals of 8051 microcontrollers, Design and interface the different peripheral device to the microcontroller.

12. EC312- DIGITAL SIGNAL PROCESSING

CO	Statement
EC312.1	Perform time, frequency and Z-Transform analysis on signals and LTI systems and study the properties like stability, causality, time-invariance and etc.
EC312.2	Analyze and implement digital systems using the Discrete Fourier Transform and Fast Fourier Transform (FFT) techniques and use Z transforms to analyze a digital system finding the region of convergence
EC312.3	Design and understand simple finite impulse response filters and infinite impulse response filters
EC312.4	Relate the course of study to the fields such as speech processing, audio signal processing and use MATLAB as a tool for DSP system analysis and design
EC312.5	Understand the tradeoff between normal and multi rate DSP techniques and finite word length effects

13. EC313- ANTENNAS AND WAVE PROPAGATION

CO	Statement
EC313.1	Aware of antenna parameter considerations.
EC313.2	Capable to analyze the designed antenna and field evaluation under various conditions and formulate the electric as well as magnetic fields equation set for far field and near field conditions.
EC313.3	Understand the array system of different antennas and field analysis under application of different currents to the individual antenna elements.
EC313.4	Understand the operation of fundamental antennas and their operation methodology in practice.
EC313.5	Design a lens structure and also the bench set up for antenna parameter measurement of testing for their effectiveness and knowledge about the means of propagation of electromagnetic waves.

14. EC314- ELECTRONIC MEASUREMENTS AND INSTRUMENTATION

CO	Statement
EC314.1	Understand the basic concepts of Instrumentation, measurement errors and accuracy.
EC314.2	Construct and design various measuring devices and circuits.
EC314.3	Suggest the kind of instrument suitable for typical measurement using different tests and Understand CRO and DSO.
EC314.4	Measure different physical parameters using different transducers and gain experience in interpreting technical specifications and selecting sensors and transducers for a given application.
EC314.5	Apply the principles and practice for instrument design and develop for real world problems.

15. EC315- DATABASE MANAGEMENT SYSTEM

CO	Statement
EC315.1	Define ER model for mini and main projects & develop RDBMS relation schemas from ER diagrams.
EC315.2	Understand the relational operations & basic overview of Structured Query Language.
EC315.3	Understand the basic concept of Normalization & Normal Forms.
EC315.4	Understands the basic concepts of Transaction & Recovery.
EC315.5	Develop concurrent queries and optimize them using queries manually.

16. EC316- MICROPROCESSORS AND MICROCONTROLLERS LAB

CO	Statement
EC316.1	Develop & execute various arithmetic, logical, String manipulation assembly language programs on 8086.
EC316.2	Interface 8086 with different peripheral devices.
EC316.3	Analyze & execute simple programs on 8051 micro controller
EC316.4	Apply the concepts in interfacing the external devices to the processor and controllers according to the user requirements to create novel products and solutions for the real time problems
EC316.5	Work in an industrial environment with a lifelong learning needed in embedded and real time system design.

17. EC317- DIGITAL SIGNAL PROCESSING LAB

CO	Statement
EC317.1	Generate & Perform different operations on discrete time signals and systems.
EC317.2	Analyze and implement digital systems using the Discrete Fourier Transform and Fast Fourier Transform (FFT) techniques using MATLAB and signal processing toolboxes.
EC317.3	Use Z transforms to analyze a digital system finding the region of convergence using MATLAB and signal processing toolboxes.
EC317.4	Design and Implement digital FIR and IIR filters.
EC317.5	Design Up converter, Down converter & Sample rate converter.

IV YEAR I & II SEMESTER

1. EC401- VLSI DESIGN

CO	Statement
EC401.1	Acquire qualitative knowledge about the fabrication process of integrated circuit using MOS transistors.
EC401.2	Draw the layout of any logic circuit which helps to understand and estimate parasitic of any logic circuit.
EC401.3	Provide design concepts required to design building blocks of data path using gates.
EC401.4	Design simple logic circuit using PLA, PAL, FPGA and CPLD.
EC401.5	Understand different types of faults that can occur in a system and learn the concept of testing and adding extra hardware to improve testability of system.

2. EC402- MICROWAVE ENGINEERING

CO	Statement
EC402.1	Understand the basic properties and application areas of microwaves.
EC402.2	Analyze the transmission lines, analyze the waveguides, and analyze the microwave networks.
EC402.3	Be able to analyze methods to determine circuit properties of passive/active microwave devices.
EC402.4	Be able to model and study of characteristics of a microwave circuit or system.
EC402.5	Can set up a microwave bench for measuring microwave parameters.

3. EC403- CELLULAR AND MOBILE COMMUNICATIONS

CO	Statement
EC403.1	Understand impairments due to multipath fading channel.
EC403.2	Understand the fundamental techniques to overcome the different fading effects.
EC403.3	Understand co-channel and non co-channel interferences.
EC403.4	Familiarize with cell coverage/signal and traffic, diversity techniques and mobile antennas.
EC403.5	Understand the frequency management, channel assignment and types of handoffs.

4. EC404- COMPUTER NETWORKS

CO	Statement
EC404.1	Explain the hierarchical, layered structure of typical network architecture.
EC404.2	Understand & analyze the different layers of the OSI model and compare it with TCP/IP model.
EC404.3	Explore various protocols like Data link layer protocols, multiple access protocols and Routing algorithms.
EC404.4	Understand the concepts of Internetworking, different Internet transport protocols and World Wide Web.
EC404.5	Administrate a network and flow of information. Can also relate to the concepts of network security.

5. EC405- EMBEDDED SYSTEMS DESIGN

CO	Statement
EC405.1	Understand the basics of Embedded Systems and its application areas.
EC405.2	Understand the embedded firmware design approaches and Embedded C programming.
EC405.3	Understand types of memory and interfacing to external world.
EC405.4	Understand the basics of OS & Real Time Operation Systems (RTOS).
EC405.5	Understand the basics of Onboard and external communication interfaces.

6. EC406- DIGITAL IMAGE PROCESSING

CO	Statement
EC406.1	Have an appreciation of the fundamentals of Digital image processing including the topics of filtering, transforms and morphology, and image analysis and compression.
EC406.2	Be able to implement basic image processing algorithms in MATLAB.
EC406.3	Have the skill base necessary to further explore advance topics of Digital Image Processing.
EC406.4	Be in a position to make a positive professional contribution in the field of Digital Image Processing.
EC406.5	Have a clear impression of the breadth and practical scope of digital image processing and have arrived at a level of understanding that is the foundation for most of the work currently under way in this field.

7. EC407- e-CAD & VLSI LAB

CO	Statement
EC407.1	Design different types of logic gates using CMOS inverter and analyze their transfer characteristics.
EC407.2	Provide design concepts required to design building blocks of data path using gates and digital circuits using Xilinx and FPGA kits.
EC407.3	Design simple memories using MOS transistors and can understand design of large memories.
EC407.4	Design & simulation of different digital devices using the front end tools.
EC407.5	Designing of ALU to perform arithmetic & logical operations.

8. EC408- MICROWAVE ENGINEERING AND DIGITAL COMMUNICATIONS LAB

CO	Statement
EC408.1	Apply analysis methods to determine circuit properties of passive/active microwave devices
EC408.2	Set up a microwave bench for measuring microwave parameters.
EC408.3	Analyze the characteristics of microwave tubes and compare them
EC408.4	Understand and analyze the different types of digital pulse modulation techniques and their application like TDM
EC408.5	Understand and analyze the different types of digital modulation techniques.

9. EC409- RADAR SYSTEMS

CO	Statement
EC409.1	Demonstrate an understanding of the factors affecting the radar performance using Radar Range Equation
EC409.2	Analyze the principle of FM-CW radar and apply it in FM-CW Altimeter.
EC409.3	Differentiate between a MTI Radar and a Pulse Doppler Radar based on their working principle
EC409.4	Demonstrate an understanding of the importance of Matched Filter Receivers in Radars
EC409.5	Familiarize with the different types of Radar Displays and their application in real time scenario

10. EC410- WIRELESS COMMUNICATIONS AND NETWORKS

CO	Statement
EC410.1	Have a fundamental understanding of the Wireless communication, networks & layered architecture.
EC410.2	Understand the processes happening in Mobile radio propagation.
EC410.3	Have a good knowledge about the different LAN networks.
EC410.4	Understand the basic principles of GSM, Wireless ATM & HIPERLAN.
EC410.5	Be familiar with some of the existing and emerging wireless standards and present them.

11. EC411- MINI PROJECT

CO	Statement
EC411.1	Select a suitable project making use of the technical and engineering knowledge gained from previous courses with the awareness of impact of technology on the society and their ethical responsibilities.
EC411.2	Collect and disseminate information related to selected project.
EC411.3	Form a team and distribute the work among them.
EC411.4	Understand, Plan and execute a Mini Project with team, using necessary literature survey.
EC411.5	Design and Implementation of electronic system using appropriate hardware, software. Troubleshooting techniques & prepare technical report based on the Mini Project.

12. EC412- TECHNICAL SEMINAR

CO	Statement
EC412.1	An ability to write technical documents and give oral presentations related to the work completed and improves personality development and communication skills.
EC412.2	Train the students to approach ethically any multidisciplinary engineering challenges with economic, environmental and social contexts and to set them for future recruitment by potential employers.
EC412.3	Identify and apply appropriate well-rehearsed note-taking interactive and time-management strategies to their academic studies.
EC412.4	Develop audience-centered presentations meeting concrete professional objectives and integrating ethical and legal visual aids.
EC412.5	Identify and critically evaluate the quality of claims, explanation, support, and delivery in public and professional discourse, and understand the factors influencing a speaker's credibility.

13. EC413- MAJOR PROJECT

CO	Statement
EC413.1	Select a suitable project making use of the technical and engineering knowledge gained from previous courses with the awareness of impact of technology on the society and their ethical responsibilities.
EC413.2	Collect and disseminate information related to selected project. Identify and work with the modern tools required for the implementation of the project.
EC413.3	Form a team and distribute the work among them. Communicate technical and general information by means of oral as well as written presentation skills with professionalism.
EC413.4	Refine and complete the selected project making use of the technical and engineering knowledge which meets the expected outcome.
EC413.5	Acquire problem solving, system integration, project management and documentation skills.