GR14 COURSE OUTCOMES
ECE BOS

S. No.	Category	Course Code	Course Title	BOS
1	ES	GR14A1019	Fundamentals of Electronics Engineering	ECE
2	ES	GR14A2043	Digital Electronics	ECE
3	ES	GR14A2047	Electrical Circuits	ECE
4	ES	GR14A2048	Electronic Circuit Analysis	ECE
5	ES	GR14A2049	Signals and Systems	ECE
6	ES	GR14A2051	Electronic Circuit Analysis Lab	ECE
7	ES	GR14A2052	Signals and Systems Lab	ECE
8	ES	GR14A2053	Digital Electronics Lab	ECE
9	ES	GR14A2054	Electromagnetic Theory and Transmission Lines	ECE
10	ES	GR14A2055	Microcontrollers	ECE
11	ES	GR14A2056	Analog Communications	ECE
12	ES	GR14A2057	Analog Electronics	ECE
13	ES	GR14A2059	Microcontrollers Lab	ECE
14	ES	GR14A2060	Analog Communications Lab	ECE
15	ES	GR14A2061	Analog Electronics Lab	ECE
16	ES	GR14A3041	Digital Communication	ECE
17	ES	GR14A3042	Antennas and Wave Propagation	ECE
18	ES	GR14A3043	VLSI Design	ECE
19	ES	GR14A3044	VLSI Design Lab	ECE
20	ES	GR14A3045	Digital Communication Lab	ECE
21	ES	GR14A3046	Digital Signal Processing	ECE
22	ES	GR14A3048	Electronic Measurements and Instrumentation	ECE
23	ES	GR14A3049	Digital Signal Processing Lab	ECE
24	ES	GR14A3070	Embedded Systems	ECE
25	ES	GR14A3103	Linear Control Systems	ECE
26	ES	GR14A4059	Microwave Engineering	ECE
27	ES	GR14A4060	Cellular and Mobile Communications	ECE
28	ES	GR14A4061	Optical Communications	ECE
29	ES	GR14A4062	Multimedia and Signal Coding	ECE
30	ES	GR14A4063	Wireless Communication and Networks	ECE
31	ES	GR14A4064	Digital Design through Verilog HDL	ECE
32	ES	GR14A4066	Microwave Engineering Lab	ECE
33	ES	GR14A4067	Communication Protocols Lab	ECE
34	ES	GR14A4068	Embedded Systems Lab	ECE
35	ES	GR14A4069	Digital Image Processing	ECE
36	ES	GR14A4070	Radar Systems	ECE
37	ES	GR14A4071	Electronic Navigation Systems	ECE
38	ES	GR14A4072	Digital Signal Processors and Architectures	ECE
39	ES	GR14A4075	Satellite Communications	ECE
40	ES	GR14A4076	Digital Image Processing Lab	ECE

| 41 | ES | GR14A4073 | Cellular Mobile Application Development | ECE |

1. Fundamentals of Electronics Engineering
Course Code: GR14A1019
Course Outcomes: At the end of the course student will be able to

1. Comprehend the fundamentals of construction of the semiconducting material, fabrication of elements, working principles and operation of semiconductors.

2. Analyze the concept with the working principles of forward and reverse bias characteristics.

3. Demonstrate the basic skills in design and analysis of filter circuits, biasing circuits.

4. Discriminate the principle, construction and operation of BJTs, FETs and MOSFETs.

5. Interpret the different techniques for FET and MOSFET circuit designs.

6. Interpret the performance and analysis-volt amp characteristics of BJT and FET amplifiers.

7. Analyze the small signal low frequency Transistor amplifiers using h-parameters

2. Digital Electronics
Course Code: GR14A2043
Course Outcomes:

1. Aware of theory of Boolean Algebra & the underlying features of various number systems.
2. Use the concepts of Boolean Algebra for the analysis & design of various combinational & sequential logic circuits.
3. Design various logic gates starting from simple ordinary gates to complex programmable logic devices & arrays.
4. Explain the concepts of VHD Language
5. Analyze the various coding schemes are the part of the digital circuit design
6. Analyze the sequential logic circuits design both in synchronous and asynchronous modes for various complex logic and switching devices.
7. Design of various circuits with the help of VHDL Coding techniques

3. Electrical Circuits
Course Code: GR14A2047
Course Outcomes:

1. Comprehend the mathematical expression for voltages and currents in RL, RC and RLC circuits to find the transient response of inductor and capacitor in dc circuits.

2. Analyze the concept with working principles of linear constant coefficient differential equations with the help of Laplace transforms.
3. Know the basic skills of an ac circuits with independent/dependent voltage current sources by drawing impedance/admittance diagrams or using various laws/ techniques like source conversion
4. Acquaint with AC circuits in the frequency domain and compute transient response for first and second order circuits.
5. Discriminate the concepts like cut-set, tie-set, pole zero parameters and stability analysis
6. Interpret the pole zero network functions, transfer and driving point functions
7. Create the two-port network parameters, conversion between parameters,
8. Interconnection of two port networks.

4. Electronic Circuit Analysis
Course Code: GR14A2048
Course Outcomes:

1. Comprehend the fundamental concepts in feedback amplifier circuits.
2. Analyze the oscillators design, frequency responses calculations with the help of mathematical expressions.
3. Describe the various cascade amplifier circuits using BJT and FET models
4. Apply the h-parameter model to power amplifiers circuit design
5. Discriminate the concepts quality factor, form-factor in small signal tuned amplifier analysis and design.
6. Interpret the tuned amplifiers and tuned cascaded networks functionality
7. Create the circuit design analysis, testing and utilization of the circuits in various levels.

5. Signals and Systems
Course Code: GR14A2049
Course Outcomes:

1. Defines the fundamentals of mathematical models and analyze deterministic CT signals and systems
2. Analyze the concepts in assess the effect of LTI systems on signals passing through them in frequency and time domains
3. Demonstrates an appreciate effect of sampling in continuous-time signals and explain the application of sampling theorem in signal processing
4. Acquaint with mathematically represent of discrete-time (DT) signals
5. Discriminate the Fourier, Laplace and Z-transforms as appropriate for various signals and systems
6. Interpret to analyze the importance of various transformation techniques in signal processing.

7. Create the terms mean, variance, mean squared error, random process and orthogonality functions

6. Electronic Circuit Analysis Lab
Course Code: GR14A2051
Course Outcomes:

1. Comprehend the fundamentals of multistage amplifiers, feedback, power amplifiers and oscillator circuits
2. Analyze the circuit design process and simulate the common base, common emitter and common collector amplifier circuits
3. Know the origin of failure of a circuit when it is in an application
4. Acquaint with the design and simulate the RC coupled and Cascade amplifier circuits
5. Discriminate the design and simulate various oscillator circuits
6. Interpret to design and simulate Darlington pair,
7. Create the design and simulate the cascade, class A power amplifier circuits, and single tuned voltage amplifier circuits

7. Signals and Systems Lab
Course Code: GR14A2052
Course Outcomes:

1. Comprehend the fundamentals to explain the classification of signals and systems
2. Analyze the concepts to simulate the Fourier series, Fourier transform in singles and systems
3. Know the behavior of LTI system with matlab simulation environment
4. Acquaint with sampling of signals with matlab
5. Discriminate in writing the code for convolution response
6. Interpret to write code and analyze the graphical representation of gibbs phenomenon in signals and systems
7. Create in writing the code for simulation and synthesis of Laplace transforms

8. Digital Electronics Lab
Course Code: GR14A2053
Course Outcomes:

1. Study the theory of Boolean algebra and to study representation of switching functions through various experiments.

2. Perform the combinational logic design of various logic and switching devices and validate the outputs
3. Perform the sequential logic circuits design both in synchronous and Asynchronous modes for various complex logic and switching devices and validate the outputs
4. Design and validate the counters and registers for synchronous and asynchronous circuits
5. Design the combinational logic circuits using VHDL programming syntaxes.
6. Design the sequential circuits using VHDL programming syntaxes.
7. Describe the various VHDL programming concepts

9. Electromagnetic Theory and Transmission Lines
Course Code: GR14A2054
Course Outcomes:

1. Define and describe Electromagnetic field quantities mathematically/graphically in words.
2. Solve simple problems involving EM fields.
3. Explain important deductions maid from Maxwell's equations.
4. Analyze and solve problems of EM wave propagation in unbounded media
5. Analyze and solve problems of EM wave propagation along transmission lines.
6. Solve transmission line problems using Smith chart.
7. Derive propagation characteristics of EM waves in parallel plates wave guides

10. Microcontrollers
Course Code: GR14A2055
Course Outcomes:

1. Compare the functionally and architectures of microprocessors and microcontrollers
2. Analyze assembly language programming techniques
3. Explain the implementation of 8051 instruction set
4. Analyze assembly language programming concepts
5. Acquainted with design of microcontrollers
6. Interface various devices with microcontrollers
7. Design various programs to run several applications

11. Analog Communications
Course Code: GR14A2056

GR14 COURSE OUTCOMES

ECE BOS

Course Outcomes:

1. Analysis and design of various modulation and demodulation techniques.
2. Analyze and demonstrate a good background in analyzing the block diagram of communication system.
3. Illustrates how the mathematical concepts bend the analog communication process
4. Acquaint with formulate the frequency modulation and angle modulation signals
5. Discriminate the design skills to illustrate the electronic component and method to implement different communication systems.
6. Interpret with differentiate types of transmitters and receivers used for particular application.
7. Create the spectrum and noise performance of particular communication system.

12.   Analog Electronics

Course Code: GR14A2057

Course Outcomes:

1. Explain the basic concepts of linear and non linear wave shaping circuits
2. Analyze the working principles of clippers and clappers
3. Describe and compare the Bi-stable, Mono-stable and Astable circuits and its applications
4. Design various multivibrators from the given constraints
5. Explain the ideal and practical Op-Amp characteristics
6. Perform the various Op-Amp circuits in different applications
7. Compare the negative and positive feedback amplifiers

13.   Microcontrollers Lab

Course Code: GR14A2059

Course Outcomes:

1. Comprehend the fundamentals in programming for microcontrollers
2. Analyze the code and build simple real time applications using microcontrollers
3. Know the skill to write, upload the programs on LED patterns, Switches and LEDs
4. Compile and compose the programs on LED patterns, Switches and LEDs
5. Describe the LCD and UART based programs
6. Interpret with various applications using TRIAC, ADC and DAC
7. Discriminate the Control based programs
8. Interpret with RF 433 MHz, Bluetooth and ZigBee transmitter and Receiver

GR14 COURSE OUTCOMES
ECE BOS

14. Analog Communications Lab
Course Code: GR14A2060
Course Outcomes:

1. Comprehend the fundamentals in explain the functionality of modulation and demodulation environment

2. Analyze the concepts, write and simulate the concepts of AM and AM-Demodulation process in Communication.

3. Know the origin and simulation of FM and FM-Demodulation process in communication

4. Acquaint with AM and FM basic functionalities
5. Discriminate the AM and FM functionalities
6. Interpret with various angle modulation and demodulation systems

7. Create the writing and simulation environments in PWM, PPM, Mixer and ring modulation

15. Analog Electronics Lab
Course Code: GR14A2061
Course Outcomes:

1. Analyze and select analog devices using circuit specifications based on circuit requirements.
2. Conduct experiments on different types of multivibrators.
3. Design Digital to Analog Converters (DAC).
4. Design pulse stretcher and square wave generating circuits.
5. Design oscillators and function generator circuits.
6. Identify the positive and negative feedback circuits.
7. Discriminate the design of simple circuits like summers, subtractors and multivibrators using op-amp.

16. Digital Communication
Course Code: GR14A3041
Course Outcomes:

1. Classification of digital modulation techniques.
2. Communications with a focus on modern digital communications theory and systems.

3. Explains the spread spectrum techniques.
4. Apply the underlying methods for up-to-date examples of real world systems.
5. Demonstrate the error detection and error correction in linear convolution codes.
6. Emphasize on modern digital data transmission concepts and optimization of receivers.
7. Build a basis for subsequent related courses such as wireless, cellular and mobile communications.

17. Antennas and Wave Propagation
Course Code: GR14A3042
Course Outcomes:

1. Know the fundamentals of Antennas.
2. Illustrate the different types of arrays and their radiation patterns.
3. Analyze a complete radio system, from the Transmitter to the Receiver end with reference to antenna.
4. Quantify the fields radiated by various types of antennas
5. Design wire antennas, loop antennas, reflector antennas, lens antennas, horn antennas and micro strip antennas
6. Analyze antenna measurements to assess antenna's performance
7. Know the concept of radio wave propagation.

18. VLSI Design
Course Code: GR14A3043
Course Outcomes:

1. Differentiate between IC families and their manufacturing processes.
2. Analyze and model the MOS transistor circuit, down to physical level considering parasitic components.
3. Analyze and implement various CMOS subsystems at gate level and transistor level.
4. Compare the various parameters used in fabrication process
5. Describe the various operations like stick and layout diagrams of VLSI
6. Implement designs using various programmable devices.
7. Know the testing of ICs and design IC s with testability features.

19. VLSI Design Lab
Course Code: GR14A3044
Course Outcomes:

1. Apply switching theory to the solution of logic design problems.

2. Know the logical properties of flip-flops and how to design counters, adders, sequence detectors and similar circuits.
3. Program various digital circuits in different models using Verilog.
4. Learn the work flow of mentor graphic tools for digital design.
5. Draw layouts using Cadence/Mentor Graphics/Synopsys CAD tools.
6. Have the knowledge and experience to design using HDL languages like Verilog and able to transfer and interpret the design results on FPGA kits
7. Do transistor level design and layout

20. Digital Communication Lab
Course Code: GR14A3045
Course Outcomes:

1. Develop any real application using digital modulation techniques.
2. Develop time division multiplexing concepts in real applications.
3. Measures the bandwidth of various modulation techniques and observes the output waveforms.
4. Demonstrate a good background in analyzing the block diagram of communication systems.
5. Use appropriate design skills to illustrate design skills to illustrate electronic components & method to implement different communication circuits &systems
6. Emphasize on sampling modeling, techniques, signal constellations.
7. Study the spectral characteristics of PAM and QAM

21. Digital Signal Processing
Course Code: GR14A3046
Course Outcomes:

1. Analyze and process signals in the discrete domain
2. Design filters to suit specific requirements for specific applications
3. Perform statistical analysis and inferences on various types of signals
4. Design multi rate signal processing of signals through systems.
5. Analyze binary fixed point and floating-point representation of numbers and arithmetic operations
6. Design and apply digital signal processing techniques to design discrete time systems and digital filters
7. Compile and solve the digital signal processing problems using MAT lab.

22. Electronic Measurements and Instrumentation

GR14 COURSE OUTCOMES
ECE BOS

Course Code: GR14A3048
Course Outcomes:

1. Describe the fundamental concepts and principles of instrumentation.
2. Learn principle of operation, working of different electronic instruments like digital multi meter, vector voltmeter.
3. Learn the functioning, specification, and applications of signal analyzing instruments.
4. Know the purpose of various electronic circuits, ,systems and how to design them, and how those are useful in real time
5. An ability to work in industry with good skill.
6. Measure various parameters using proper instruments without errors
7. Define importance of electronic instrumentation and measurements in the real world

23. Digital Signal Processing Lab
Course Code: GR14A3049
Course Outcomes:

1. Apply knowledge of digital filter design for various applications.
2. Analyze various signals in transform domain
3. Apply MultiMate concepts in different areas
4. Perform real time experiments on processors such as audio and speech processing.
5. Work with MATLAB functions
6. Enable students to analyze and design different signals & filters using MATLAB
7. Provide the basic knowledge of trainer kit TMS320C6713 DSP Processors.

24. Embedded Systems
Course Code: GR14A3070
Course Outcomes:

1. Learn assembly language programming & embedded C.
2. Learn and design embedded systems and real-time systems
3. Define the unique design problems and challenges of real-time systems • Program an embedded system
4. Identify the unique characteristics of real-time operating systems and evaluate the need for real-time operating system.
5. Explain the general structure of a real-time system
6. Know and use RTOS to build an embedded real-time system.
7. Gain knowledge and skills necessary to design and develop embedded applications based on real-time operating systems.

GR14 COURSE OUTCOMES
ECE BOS

25.   Linear Control Systems
Course Code: GR14A3103
Course Outcomes:

1. Analyze and improve the system performance by selecting a suitable controller and a compensator for a specific application
2. Represent the mathematical model of a system.
3. Analyze the stability of the system.
4. Design a system, component, or process to meet desired needs.
5. Identify, formulate, and solve engineering problems
6. Analyze various time domain and frequency domain techniques to assess the system performance
7. Apply various control strategies to different applications (example: Power systems, electrical drives etc…)

26.   Microwave Engineering
Course Code: GR14A4059
Course Outcomes:

1. Integrating a wide range of Microwave components into one design oriented frame work
2. Design and solve real world problems
3. Characterize microwave devices in terms of the directionality of communication.
4. Use a microwave test bench in analyzing various types of microwave measurements.
5. Measure the various parameters in microwave engineering.
6. An in-depth knowledge of applying the concepts on real time applications
7. Design & analyze the micro wave integrated circuits.

27.   Cellular and Mobile Communications
Course Code: GR14A4060
Course Outcomes:

1. Design and analyze Basic Cellular System
2. Know of frequency reuse and Co-channel Interference and different methods of cell splitting and sectoring.
3. Measure the real time Co-Channel Interference.
4. Apply the different methods of Handoff mechanisms
5. Research work with good engineering breadth so as to analyze the accessing techniques for cellular and mobile communications.

6. Explore the implementing of these wireless technologies in cellular and mobile communications.
7. An in-depth knowledge of applying the concepts on real time applications

28.   Optical Communications

Course Code: GR14A4061

Course Outcomes:

1. Know the propagation of light in optical fiber and an in-depth knowledge of applying the concepts on real time applications.
2. Learn the principles governing optical sources and amplifiers used in optical communications.
3. Design optical communication systems to serve a defined purpose.
4. Analyze optical systems for performance and utility.
5. Critically review and summarize modern topics in optical communications.
6. Design the optical fiber link.
7. Explain operation of different fiber techniques.

29.   Multimedia and Signal Coding

Course Code: GR14A4062

Course Outcomes:

1. Know the Multimedia concepts.
2. Learn about image/graphics data types and file formats
3. Illustrates the video concepts like analog and digital video
4. Learn about the different types of compression algorithms KLT, DCT and Wavelet based codings.
5. Know the different types of compression techniques.
6. Identify the different types of audio compression techniques and algorithms like MPEG1, MPEG2, MPEG-2 AAC and MPEG-4.
7. Identify the image compression standards like JPEG, JPEG2000.

30.   Wireless Communication and Networks

Course Code: GR14A4063

Course Outcomes:

1. Become familiar with security risks threatening computer networks.
2. Code the binary into a digital signals pattern which has less baseline wandering and less DC components, and can also decide which type of network is suitable based on the application requirement.
3. Design backbone networks, virtual LANs and wireless WANs.
4. Design the Multiple access techniques for wireless communication

5. Know the Different Mobile Data Networks, Blue Tooth and Mobile ip and wireless access protocol
6. Learn the Wireless LAN Technology and Wireless data services
7. An in-depth knowledge of applying the concepts on real time applications

31. Digital Design through Verilog HDL
Course Code: GR14A4064
Course Outcomes:

1. Describe Verilog hardware description, languages (HDL).
2. Write Behavioral models of digital circuits.
3. Write Register Transfer Level (RTL) models of Digital Circuits.
4. Verify Behavioral and RTL models.
5. Describe standard cell libraries and FPGAs
6. Synthesize RTL models to standard cell libraries and FPGAs
7. Implement RTL models on FPGAs and Testing and Verification

32. Microwave Engineering Lab
Course Code: GR14A4066
Course Outcomes:

1. Design test bench for measurement of various microwave parameters.
2. Analyze various characteristics of microwave junctions and design of microwave communication links.
3. Integrating a wide range of Microwave components into one design oriented frame work
4. Design and solve real world problems
5. Use a microwave test bench in analyzing various types of microwave measurements.
6. Measure the various parameters in microwave engineering.
7. Design & analyze the micro wave integrated circuits.

33. Communication Protocols Lab
Course Code: GR14A4067
Course Outcomes:

1. Identify and describe the functions of basic components required to build data communication networks, both local area and wide area;
2. Describe the process of converting information from its original form, to a form that can be transmitted through data networks;
3. Discuss how different types of transmission media are affected by their physical characteristics and the role that multiplexing plays in data networks;

4. Describe specific processes and functions that apply to a layered network model, with specific reference to the OSI reference model and TCP/IP;
5. Subnet a network using multi-level sub netting and provide a sub netted IP design based on a given topology or business profile;
6. Describe the process by which distance vector and link state routing protocols update information within a network;
7. Know the importance of DNS within the Internet; and understand the emerging issues for IT as it relates to networks and IT Infrastructure such as cloud and grid computing, and securing networks.

34.   Embedded Systems Lab
Course Code: GR14A4068
Course Outcomes:

1. Develop programs to add numbers in various number system representation
2. Examine the I/O port operation using a simulator.
3. Develop a program to transfer and receive data from/to a PC serially.
4. Learn assembly language programming & embedded C.
5. Familiarize with programming and interfacing microcontrollers to various devices.
6. Build various applications using microcontrollers.
7. Develop a program to use a software delay to toggle an LED on the evaluation board and ADC & sample sequencer

35.   Digital Image Processing
Course Code: GR14A4069
Course Outcomes:

1. Apply to current technologies and issues that are specific to image processing systems.
2. Know how images are formed, sampled, quantized and represented digitally.
3. Leverage the student's knowledge of image processing to a practical system.
4. Compress the Digital image which is required for storage and transmission of digital images.
5. Identify transform-domain representation of images (Fourier, DCT, Haar, WHT)
6. Learn the morphological processing and wavelet transforms
7. Know the principles of image compression, enhancement and restoration and segmentation

36.   Radar Systems
Course Code: GR14A4070

GR14 COURSE OUTCOMES
ECE BOS

Course Outcomes:

1. Demonstrate an understanding of the factors affecting the radar performance using Radar Range Equation.
2. Analyze the principle of FM-CW radar and apply it in FM- CW Altimeter.
3. Differentiate between a MTI Radar and a Pulse Doppler Radar based on their working principle.
4. Demonstrate an understanding of the importance of Matched Filter Receivers in Radars.
5. Familiarize with the different types of Radar Displays and their application in real time scenario
6. Know the suitable measurement methodologies to characterize and verify the performance of radar systems
7. Design radar systems and to undertake measurements to characterize and verify the performance of radar systems

37.   Electronic Navigation Systems
Course Code: GR14A4071
Course Outcomes:

1. Learn and analyze radar Systems
2. Analyse radar signal processing
3. Appreciate the wide range of applications of radar Systems
4. Know Target detection and tracking using radar systems
5. Identify various electronic counter measures(ECM)
6. Learn various electronic navigation systems
7. Design simulation experiments related to radar systems and radar signal processing

38.   Digital Signal Processors and Architectures
Course Code: GR14A4072
Course Outcomes:

1. Learn to represent real world signals in digital format and understand transform-domain (Fourier and z-transforms) representation of the signals;
2. Know to apply the linear systems approach to signal processing problems using high-level programming language;
3. Learn the basic architecture of microprocessors and digital signal processors;
4. Learn to implement linear filters in real-time DSP chips;
5. Introduce applications of linear filters and their real-time implementation challenges.
6. Provide the basic knowledge of different DSP Processors.

7. Interfacing Memory and I/O Peripherals to different Programmable DSP Devices

39.   Satellite Communications

Course Code: GR14A4075

Course Outcomes:

1. Learn the communication satellite mechanics
2. Know about the satellite internal sub systems for communication applications
3. Design the power budget for satellite links
4. Know about the principles of GPS
5. Identify the various constellations of satellite and their applications
6. Learn the Low earth orbit and geo-stationary satellite systems
7. Know the Earth station technology and Satellite navigation & the global positioning system

40.   Digital Image Processing Lab

Course Code: GR14A4076

Course Outcomes:

1. Process images using techniques of smoothing, sharpening, histogram processing, and filtering,
2. Explain sampling and quantization processes in obtaining digital images from continuously sensed data,
3. Enhance digital images using filtering techniques in the spatial domain,
4. Enhance digital images using filtering techniques in the frequency domain,
5. Restore images in the presence of only noise through filtering techniques,
6. Explain most commonly applied color models and their use in basic color image processing,
7. Familiarize with Mat lab and image processing toolbox.

41.   Cellular Mobile Application Development

Course Code: GR14A4073

Prerequisites:

1. Experience in digital arts or a related field, and/or knowledge of coding using object-oriented languages.
2. Strength of a statement of purpose, including a description of individual preparation, interests, and goals consistent with the program.
3. Although a college degree is not required, applicants with this profile will receive preference for admission when program capacity is limited.

GR14 COURSE OUTCOMES
ECE BOS

Course Objectives:

A student passing this module should be able to:

1. Understand and apply the key technological principles and methods for delivering and maintaining mobile applications,

2. Evaluate and contrast requirements for mobile platforms to establish appropriate strategies for development and deployment,

3. Develop and apply current standard-compliant scripting/programming techniques for the successful deployment of mobile applications targeting a variety of platforms,

4. Carry out appropriate formative and summative evaluation and testing utilising a range of mobile platforms,

5. Interpret a scenario, plan, design and develop a prototype hybrid and native mobile application,

6. Investigate the leading edge developments in mobile application development and use these to inform the design process.

Course Outcomes:

By the conclusion of this course, students will be able to:

- Describe those aspects of mobile programming that make it unique from programming for other platforms,
- Critique mobile applications on their design pros and cons,
- Utilize rapid prototyping techniques to design and develop sophisticated mobile interfaces,
- Program mobile applications for the Android operating system that use basic and advanced phone features, and
- Deploy applications to the Android marketplace for distribution.
- Students will have created an innovative and robust mobile application that will be valuable addition to their programming portfolio