BS in Electrical Engineering Flowchart

College of Engineering & Information Tecnology (CEIT)

Year 1	EMTH 100 Calculus I (3-0-3)	GPHY 100 General Physics I* (2-3-3)	ENGL 100 English I (3-0-3)	GECE 100 Chemistry I (3-0-3)	ENIN 100 Engg Innovation (3-0-3)			15
	EMTH 150 Calculus II (3-0-3)	GPHY 150 General Physics II* (2-3-3)	ENGL 105 English II (3-0-3)	HSS Req (3-0-3)	ENAP 150 Comp Algor. & Prog* (2-3-3)			15
S1					GISL 100/105 Islamic Thght (A)/E (3-0-3)			3
Year 2	EMTH 200 Calculus III (3-0-3)	EMTH 250 ADV MATH I (3-0-3)		ENMA 200 Matlab (0-3-1)	ENDD 200 Digital Logic Design* (3-3-4)	ENEC 200 Electric Circuits I* (3-3-4)		15
	BMNG 200 Mgmt & Org Behavior (3-0-3)	EMTH 260 ADV MATH II (3-0-3)	GCMM 105 Comm Skills (3-0-3)		ENEL 250 Electronics I* (3-3-4)	ENEC 250 Electric Circuits II (3-0-3)		16
S2	GUAS 100 UAE Society (3-0-3)							3
Year 3		ENSS 300 Signals & Systems (2-3-3)	ENPR 300 Prob & Rand. Proc. (3-0-3)	ENMP 300 Micro - P* (3-3-4)	ENEL 300 Electronics II* (2-3-3)	ENMG 300 ElectroMag. (3-0-3)		16
	ENEE 300 Engineering Economics (3-0-3)	BBUS 350 Business & Society (Ethics) (3-0-3)	ENCS 300 Comm Systems* (3-3-4)	EECS 300 Control Systems (3-0-3)	ENDP 350 Digital Signal Processing (3-0-3)			16
S3	Graduate Trainee (GT) / Learn Earn And Progress (LEAP) Program							1
Year 4		CEDC 400 Digital Comm (3-0-3)	CECN 400 Comm Networks (2-3-3)	Technical Elective 1 (3-0-3)	Technical Elective 2 (3-0-3)	ENPR 401 Graduation Project -1		15
		CEIC 400 IT & Coding (3-0-3)	CEAP 400 Antenna & Propagation (3-0-3)	Technical Elective 3 (3-0-3)	Technical Elective 4 (3-0-3)	ENPR 402 Graduation Project -2		15
Total No of Credits								130

General Education			
	Math Requirement	15 Credits	36 Credits
	EnglishRequirement	9 Credits	
	Science Requirement	9 Credits	
	Humanities & Social Science	3 Credits	
	Cultural Requirement	6 Credits	
	Supporting CE	12 Credits	
	Communication Engg Core	64 Credits	
	Technical Elective	12 Credits	
	Total	**130 Credits**	

Humanities and Social Science Requirements

GCEX 100	Career Exploration
GEDU 100	Education & the Future
GLAW 100	Law & Society
GPSY 100	Psychology & Society
GCII 100	Contemporary Intl Issues
GCUS 100	Cult. & Society - Thai Society
GCUS 100	Cult. & Society - Chinese Society

Technical Electives

CEOC 400	Optical communications
CEWC 400	Wireless Communication
ENES 400	Embedded Systems
CESC 400	Satelite Communication
ENCE 400	ST in Comms & Electronics
ENAI 400	Audio & Image Processing

Graduate Trainee (GT) / Learn Earn And Progress (LEAP) Program**	**Summer Block**	≥ 90 Credits

Notes & Comments:

* Lab Based Courses

** Students must be in good academic standing. The students must successfully finish: ENIN 100, BMNG 200, ENDD 250, ENEC 200 (ENEL 300 - desirable) before starting the first GT/LEAP.

Course Code	Course Name	Course Description	CH
EMTH 100	CALCULUS I FOR ENGINEERING	This is the first in a three-course sequence in Calculus intended for students majoring in engineering. It emphasizes on techniques and the understanding of concepts, and using them to solve physical problems. The course covers functions, limits, continuity, the derivative, rule of differentiation, applications of the derivative, definite integrals, and indefinite integrals. (C or better in Basic Math, or three years of high school mathematics and a score of at least 75%).	3
EMTH 150	CALCULUS II FOR ENGINEERING	This is the second in the three-course sequence in Calculus intended for students majoring in engineering. It emphasizes the understanding of concepts, and using them to solve physical problems. The course covers techniques of integration including integration by parts, partial fractions, improper integrals, applications of integration, sequence and series, convergence and divergence of series and parametric curves and equations. Basic matrix algebra.	3
EMTH 200	CALCULUS III FOR ENGINEERING	This is the third in the three-course sequence in Calculus intended for students majoring in engineering. The distinct feature of this course is its focus on the multi-dimensional analysis, as opposed to one-dimensional analysis covered in EMTH 100 (Calculus I) and EMTH 150 (Calculus II). This course is a study of the calculus of functions (two or more variables), also including a study of vectors, vector-valued functions and their derivatives. Other topics covered include limits, partial derivatives, multiple integrals, Stokes' Theorem, Green's Theorem, the Divergence Theorem, and applications in physics.	3
EMTH 250	ADVANCE MATH I FOR ENGINEERING	This course introduces ordinary differential equations with a focus on the solution techniques for first order equations, higher order homogeneous and non-homogeneous linear equations with constant coefficients, linear and almost linear systems, and Laplace transforms. The course also covers basic topics of linear algebra, including linear systems, basic properties of matrices, vector spaces, and eigenvalues and eigenvectors.	3
EMTH 260	ADVANCED MATH II FOR ENGINEERING	This is the second and final course in the two-course sequence in Advanced Mathematics intended for students majoring in engineering. Complex numbers and variables. Analytic functions: Taylor's Series and MacLauren Series. Singularities of complex functions. Elements of Residue theory. Fourier series. Fourier transform its properties and its inverse. Z-transform and properties, inverse Z-transform. Introduction to linear PDEs.	3
GECE 100	GENERAL CHEMISTRY I	General Chemistry I at UD provides students with an introduction to chemistry, targeting students who have not had an advanced chemistry course in high school at the same time used to fulfill part of the requirement in the Natural Sciences category. Students will develop specific chemical concepts that will be discussed within the context of a variety of chemistry related applications. Topics covered include but not limited to measurement and units, matter and energy, stoichiometry and chemical equations, gases, thermochemistry, electronic structure of atoms, periodic trends, molecular bonding and structure, intermolecular forces, solution chemistry, equilibrium, oxidation-reduction reactions, and nuclear chemistry.	3
GPHY 100	GENERAL PHYSICS I	This will be an introductory but intense course in calculus-based physics focusing on linear and rotational dynamics and aspects of waves. The course kicks off with Newton's laws of motion, how to apply Newton's laws to systems that undergo translational, rotational, and vibrational motion. The goal will be to understand and apply the fundamental concepts involved. All physical sciences and engineering is based upon the foundation of mechanics and students will gain an appreciation of the basic underlying principles used and experience an increase in analytical ability that will carry over to whatever discipline he or she chooses to pursue.	3
GPHY 150	GENERAL PHYSICS II	This course is a continuation of GPHY-100, General Physics I. Calculus-based introduction to classical electricity and magnetism, including such topics as, electric charge and electric fields, Gauss's law, electric potential, capacitance, current, resistance, and circuits, DC circuits, Ampere's law, magnetic fields, and fields due to currents, induction and inductance, magnetism of matter, Maxwell's equations, and electromagnetic oscillations. The course is taught in a lecture/workshop format that integrates the material traditionally found in separate lecture and laboratory courses.	3
ENIN 100	ENGINEERING INNOVATIONS	Engineering Innovations is an exciting college-entry level course for motivated high school students with an aptitude in math and science and an interest in (or curiosity about) engineering. The course introduces students to the concepts of innovative thinking and innovation practices and. uses lectures, case studies, team exercises, the Spotlight on Innovation, and guest speakers to teach valuable life skills in innovative thought and action. Students study the vital role engineers play in problem-solving and in the innovation process, and take action by applying lessons learned in engineering careers that range from starting entrepreneurial ventures to executing R&D engineering-related projects to leading multinational companies. Students also have the opportunity to earn University of Dubai (UD) credits.	3

BMNG 200	MANAGEMENT & ORGANIZATIONAL BEHAVIOUR	The purpose of this course is to discuss to the nature of management practices in relation to UAE organizations. The course develops an understanding of the behavior of people within UAE organizations and the significance of managing this behavior in to-days business environment. The coverage includes the internal nature of organizations from a theoretical and practical point of view.	3
ENEE 300	ENGINEERING ECONOMICS	This course emphasizes the strong correlation between engineering design and manufacturing of products/systems and the economic issues they involve. The basic concepts of the time value of money and economic equivalence is applied throughout the course. Each engineering problem/project progressively incorporates different cash flows, the cost of funds, capital, operational and maintenance costs, salvage value, depreciation, amortization, and taxation. Students learn to apply different economic analysis methods – like present worth, annual-equivalent worth, rate-of-return, life-cycle cost, cost/benefit etc. – in evaluating the economic viability of a project, as well as the comparison of mutually exclusive alternatives. The course also introduces concepts of replacement decisions, capital-budgeting decisions, and project risk and uncertainty, and exposes students to specific issues of economic analysis of the private sector versus the public sector. Applications to a variety of engineering fields' actual cases are stressed throughout the course.	3
BBUS 350	BUSINESSS & SOCIETY	The purpose of this course is to understand the symbiotic relationship between business and society in terms of the moral and ethical dimensions of the power placed in the hands of owners and managers, confront and analyze complex dilemmas related to social context of business	3
ENGL 100	ENGLISH I	The purpose of this course is to further develop the ability of students to read and write English. It aims to enlarge their vocabularies, enrich their knowledge of ways to express ideas and reduce the number of mistakes that students make when writing English. It also teaches principles of organization used in essays and other written documents in English.	3
ENGL 105	ENGLISH II	The purpose of this course is to enlarge your general and academic English vocabulary, and increase your knowledge of words, concepts and expressions related to business and information technology. The course will also develop your skills in understanding and analyzing documents written in English and your skills in paraphrasing, summarizing and responding (in writing, at an intermediate/upper-intermediate level) to documents written in English and further improve your writing in English.	3
GCMM 105	COMMUNICATION SKILLS	The purpose of this course is to present an overview of the foundations of human communication, with particular emphasis on the principles and practices necessary to establish and maintain effective professional and business relationships. The course covers the elements, principles and goals of communication. It deals with developing the skills of interpersonal, small group and public communication in the workplace.	3
GISL 100/105	ISLAMIC THOUGHT (ARABIC/ENGLISH)	The purpose of this course is to provide the student with the necessary knowledge and information of the historical context of Islam: its pillars ,pillars of faith ,sources of legislation , ethics and values .Moreover, the course highlights the issue of economy in Islam and its applications and to what extent it can coexist with contemporary economic theories. The course will also aim at enabling the student to analyze the issues of rationality, critical thinking, science and their status in Islam. It will call the student to discuss and understand how Islam handles contemporary issues like: business and economics, human rights, globalization, terrorism, and the environment.	3
GUAS 100	UAE STUDIES	The purpose of this course is to provide the student with knowledge and information about the geography and history of the UAE as well as its culture, tribes, family structure, marriage and social life. It also aims at enabling the students to analyze its reform and understand the modern government strategies and the political structure of the UAE. In addition it aims at analyzing other arias like women, education, health care and social development in the UAE.	3
ENAP 150	COMPUTER ALGORITHMS AND PROGRAMMING	The course deals with the core ideas and skills required while programming and how to take an initial idea for an application, understand it and how to break it apart into the right pieces so that one can know what code to write for each piece. This course starts off with the fundamentals - problem solving and analysis, the basic syntax of a programming language and then how to write some code. It introduces the principles of procedural programming, data types, control structures, data structures and functions, data representation on the machine level. Various problems are considered to be solved using structured programming language.	3
ENEC 200	ELECTRIC CIRCUITS I	This course serves as an introduction to the principles of electrical engineering, starting from the basic concepts of voltage and current and circuit elements of resistors, capacitors, and inductors. Basics of DC circuit analysis are taught using Kirchhoff's voltage and current laws with Thevenin and Norton equivalents. Circuit analysis is taught using Kirchhoff's voltage and current laws with Thevenin and Norton equivalents. Circuits with ideal op-amps, Inductance and capacitance are introduced and the transient response of RL, RC and RLC circuits to step inputs is established. Practical aspects of the properties of passive devices and batteries are discussed, as are the characteristics of battery-powered circuitry. The laboratory component incorporates use of both computer and manually controlled instrumentation including power supplies, signal generators and oscilloscopes to reinforce concepts discussed in class as well as circuit design and simulation software.	4

ENDD 200	DIGITAL LOGIC DESIGN	This course introduces the student to the basic components and methodologies used in digital systems design. To provide a thorough background, at the introductory level, of the logical (mathematical) and electrical basis for digital system design. Major building blocks for designing digital systems will be examined and used which include gates, MUXes, DEMUXes, decoders, encoders, comparators, various arithmetic blocks, flip-flops, counters, registers, RAMs/ROMs, PLDs and FPGAs. This course is the gateway to all other digital system courses in the program.	4
ENMA 200	MATLAB	This course introduces the students to Matlab so that they can write M.files for solving a variety of Engineering Problems. The lab covers the following topics: - Concepts: Data types, loops, arrays, character strings, logical operations, complex numbers, matrices, polynomials, numerical analysis, functions - M.Files: Programming and debugging - Plotting: 2D, 3D, curve fitting and exporting graphical files - Toolboxes: Importing and exporting audio and image files - Graphical User Interface: dialogue boxes, capturing mouse actions	1
ENEC 250	ELECTRIC CIRCUITS II	This course serves the continuation of the Circuits I course. Circuits with ideal op-amps, Inductance and capacitance are introduced and the transient response of RL, RC and RLC circuits to step inputs is established. This course also covers the fundamentals of AC circuit analysis starting with the study of sinusoidal steady-state solutions for circuits in the time domain. The complex plane is introduced along with the concepts of complex exponential functions, phasors, impedances and admittances. Nodal, loop and mesh methods of analysis as well as Thevenin and related theorems are applied to the complex plane. The concept of complex power is developed. The analysis of mutual induction as applied to coupled-coils. Linear, ideal and non-ideal transformers are introduced. Complex frequency analysis is introduced to enable discussion of transfer functions, frequency dependent behavior, Bode plots, resonance phenomenon and simple filter circuits. Two-port network theory is developed and applied to circuits and interconnections.	3
ENEL 250	ELECTRONICS I	This course focuses on the operation, modeling and analysis of basic electronic components such as diodes, Bipolar Junction Transistors BJT's, Field-Effect Transistors (FET's). Amplifier configurations. Small signal modeling of BJTs and FETs. Analysis of BJTs and FETs amplifier circuits. The design and characteristics of digital inverters. Operational amplifiers: principles and applications. The laboratory experiments associated with this course involve circuit simulations using EDA tools and measurement.	4
ENMG 300	ELECTROMAGNETICS	The course provides the foundations of Electromagnetics EM fields, static and time varying, and a study of propagation, reflection and transmissions of electromagnetic waves in unbounded regions and in transmission lines. Maxwell's equations, the wave equation, Poynting theorem, boundary conditions and transmission line equations are explained. Modes of EM propagation in homogeneous waveguides such as Transverse Electric and Magnetic TEM, Transverse Electric TE, and Transverse Magnetic TM are discussed. Modern applications of electromagnetics are broad and include electromagnetic phenomena, including wireless and optical communications are introduced.	3
ENSS 300	SIGNALS & SYSTEMS	This course helps the student develop one of the key abilities of an engineer - system-level thinking. In particular, students will see how the math and physics they have learned in other courses help them understand rather complex systems that occur in engineering (with applications to communication systems, biomedical imaging, control, and robotics). ENPR 300 (Probability and Random Processes) is not required for this course and gives a complementary set of tools needed for advanced material, especially in the areas of communications and signal processing. It's assumed that students have familiarity with lower division physics and circuits since these are the source of many examples as they are introduced to the idea of signal and system analysis and characterization in time and frequency domain. Also to provide foundation of signal and system concepts to areas like communication, control and comprehend applications of signal processing in communication systems.	3
EECS 300	CONTROL SYSTEMS	This course is intended to introduce students to the concepts and techniques of classical control and to briefly introduce some concepts of modern control and discrete-time. The main goal is to study the concept of time response and frequency response of the system and to teach the basics of stability analysis of the system. Students will become familiar with analytical methods and will be exposed extensively to the use of computers for analysis and design of control systems.	3
ENPR 300	PROBABILITY AND RANDOM PROCESS	In this course the student is introduced to random variables and stochastic processes. This course provides students in the area of communication theory, computer networks, signal/image processing, control theory, and other related disciplines with a solid background in probability and random processes. Topics covered are probability theory, conditional probability and Bayes theorem, discrete and continuous random variables, distribution and density functions, moments and characteristic functions, functions of one and several random variables, Gaussian random	3

		variables and the central limit theorem, estimation theory , random processes, stationarity and ergodicity, auto correlation, cross-correlation and power spectrum density.	
ENCS 300	COMMUNICATION SYSTEMS	This course introduces the fundamentals of basic communication system. The first portion of the class will cover topics in analog communication. Beginning with basic Fourier transform properties, techniques for analog modulation and demodulation will be developed. Various modulation and demodulation techniques used in analog communication, noise handling and multiplexing. Insights to these problems will be uncovered along the way.	4
ENEL 300	ELECTRONICS II	This is the second course in a three-course sequence in analog and digital electronic circuit analysis and design. Having attained basic knowledge of electronic devices like diodes, transistors, FET's and elementary circuits, this course will enable the students to learn about the use of transistors in analog circuits like power amplifier, multistage amplifier etc. The laboratory experiments associated with this course involve circuit simulations using Spice and measurement.	3
ENMP 300	MICROPROCESSORS FUNDAMENTALS	Studies of architecture, operation, programming, and application of microprocessor systems. The topics include microprocessor architecture families; assembly language programming; exceptions and interrupts; general-purpose input/output; timer function; memory and address decoding; analog input/output; and serial data communications.	4
ENDP 350	DIGITAL SIGNAL PROCESSING	This course deals with the digital processing of signals in time and frequency domains. The course covers the following topics:o Basic Concepts: Sampling, aliasing, quantizationo Digital Filters: Difference equations, impulse and step responses, frequency response, z-plane zeros and poleso FIR Filters: Design and analysis, linear phase characteristics, realizationso IIR Filters: Butterworth, Chebyshev, Elliptic, realizations, stability, transient analysiso Complex Filters: FIR, IIR, realizationso State Space Analysis: State space equations, state space parameterso Fourier Analysis: DFT, FFT DCT, spectrum, spectrograph, cepstrumo Fourier Processing: Block diagram, Signal segmentation, overlappingo DSP Implementation: DSP chips, integer and floating point processors, errors, parallel processingo DSP Applications: Communications, audio, image	3
CECN 400	COMMUNICATION NETWORKS	This course focuses on theory behind the computer networks. It discusses how local area networks, to the wide area networks and global Internet, are built. The use of computers to share information and communicate with one another is explained. The concept of networking layers is fully analyzed and discussed. A computer communication (or network) protocols are explained. Application layer protocols such as Domain Name System, e-mail protocols, and the Hypertext Transfer Protocol are explained. The learning of transport layer protocols, including the Transmission Control Protocol (TCP) and the User Datagram Protocol (UDP). The study of network layer Internet Protocol (IP) and packet routing protocols. A discussion of link layer protocols in addition to voice and video protocols, network security, and cloud computing	3
CEAP 400	ANTENNAS AND PROPAGATION	Antenna fundamentals, Radiation from a short current dipole, Far field approximation, Radiation pattern, Radiation resistance. Radiation integral approach, dipole and monopole antennas, Image techniques, Antenna arrays, Broadside and end-fire arrays, Pattern multiplication, Pattern synthesis, Binomial and Chebyshev arrays, Aperture antennas, Fourier transform method, Field equivalence principle, Sky-wave and space-wave propagation, line-of-sight microwave links.	3
CEDC 400	DIGITAL COMMUNICATIONS	The course provides basic principles of the analysis and design of modern digital communication systems. Topics include baseband transmission, bandpass modulation and demodulation techniques, link budget analysis, optimum receiver design and performance of digital communication systems in the presence of noise.	3
CEIC 400	INFORMATION THEORY AND CODING	This course covers information theory and coding within the context of modern digital communications applications. We begin with a directed review of probability and digital modulation schemes. We then introduce: Information – Entropy, Information rate, classification of codes, Kraft McMillan inequality, Source coding theorem, Shannon-Fano coding, Huffman coding, Extended Huffman coding - Joint and conditional entropies, Mutual information - Discrete memoryless channels – BSC, BEC – Channel capacity, Shannon limit.	3
ENPR 401/402	GRADUATION PROJECT	ENPR 401/402 Graduation Project is a two-semester design course oriented to the solution of engineering problems. The mission is to enhance engineering education through a graduation project experience that integrates engineering theory, principles and processes within a collaborative environment. Working in multidisciplinary teams and following an engineering design process, students will assess customer needs and engineering specifications, evaluate concepts, resolve major technical hurdles, and employ rigorous engineering principles to design a prototype which is fully tested and documented. The process for the team assignments/formation will combine the interests and a balance of the team academic performance. Each team will have 3-4 members. Hence, it starts by filling a standard form and indicating the student's project preferences. This should be done by the end of week 1. The results and the formation of the teams will be announced by the middle of week 2.	6

ENES 400	EMBEDDED SYSTEMS	The purpose of this course is to expose students to both the fundamentals of hardware and firmware design of a digital embedded system. It focuses on the boundary between hardware and software operations. Students will learn about a computer system from various abstraction levels from the digital logic gates to software applications. Topics include - Fundamental design techniques & concepts of embedded systems, architecture and programming of embedded processors, basic services provided by real-time operating system ("RTOS") kernels, design and development of code and application software, interfacing, device drivers and input/output devices, applications of embedded systems in consumer electronics, automotive, aerospace, mobile, digital control and other real time systems. Thus this course will provide a solid foundation in computer systems architecture. Depending on the interests of the students, other topics may be covered.	3
CEOC 400	OPTICAL COMMUNICATIONS	This course has been designed to demonstrate the elements that drive the growth in optical communication systems. Students thus begin with a foundation and working principles of modern photonics concepts/terminology, major opto-electronic devices/components, optical fiber wave guiding, fiber transmission characteristics, optical communication systems, and device measurement/handling. Detailed coverage of important optical fiber and free space networks for future communication applications and the integration of both the facilitating technologies and the networks that result, are being considered. Specialist knowledge of the strategies and techniques involved in the design and implementation of optical communication systems is also being aimed at through this course.	3
CESC 400	SATELLITE COMMUNICATIONS	The course is intended to lay the foundations for more advanced studies in satellite communication systems. It examines satellite communication with emphasis on current satellite systems and their link budgets. Topic will include overview of satellite services, orbital mechanics, transmission losses, the link budget power equation, system noise, carrier to noise ratio, the combined uplink and downlink C/N, possible modes of interference, interference between the different satellite circuits, satellite access techniques.	3
CEWC 400	WIRELESS COMMUNICATIONS	This course introduces the fundamentals of communications in the wireless domain and provides an overview of current and emerging wireless communications networks. Fundamental techniques in design and operation of the first, second, and third generation of wireless cellular networks are looked into, including medium access techniques, error control techniques, radio propagation models, power control, handoff, common air protocols (AMPS, IS-95, IS-136, GSM, GPRS, EDGE, WCDMA, UMTS, HSPA, LTE etc.), radio resource and network management. Future wireless networks, mobile SDN WLAN, WiMAX, wireless local area networks (IEEE 802.11), wireless sensor networks for the Smart Grid and Bluetooth LANs, and Ad hock Sensor Networks are discussed if time permits. Students also become familiar with antennas and propagation, spread spectrum, error control and coding through the course.	3
ENAI 400	AUDIO AND IMAGE PROCESSING	This course deals with the digital processing of audio and image signals in time and frequency domains. The course covers the following topics: - Audio Concepts: audio transducers, analogue and digital audio signals, oversampling techniques, storage media - Audio Analysis: time and frequency domain, spectrograph - Audio Filtering: noise enhancement, special audio effects, echo, reverberation - Image Concepts: capturing devices, output devices, display systems, printers - Image Representation: spatial domain analysis, RGB, CMYK and Ycbcr, frequency domain analysis, 2D FFT and DCT - Image Interpolation: bilinear, bicubic, image assessment techniques - 2D Filtering: FIR filters, smoothing and sharpening filters, edge detectors, median filters - Image Enhancement: Brightness and contrast improvement, color adjustment, noise smoothing - Image Restoration: image degradation, additive and multiplicative noise, Wiener filters, blurring, inverse filtering - Image Segmentations: point and line algorithms, thresholding, growing techniques - Image watermarking: robust and fragile watermarking, transform domain techniques	3
Graduate Trainee (GT)/ Learn Earn and Progress (LEAP) Program		The University of Dubai (UD) considers internship as one of the most important channels that brings together the college, the students, and the job market. Internship is the most valuable means to integrate the academic theoretical environment to real life practice through applied project work.	1
Humanities & Social Science Requirement		1 out of 6 courses proposed	3