MMU FAIE Course Catalog (Cleaned for HIVE)

Reformatted course cards extracted from the provided PDF for easier search, advising, and embedding.

Included fields (when detected): credits, prerequisites, objective, assessment, contact hours, and key contents.

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AAP6126 — Industrial Training

Credits: 6 **Prerequisites:** None detected

Objective: To expose students to the real working environment and get acquainted with the organization structure, business operations and administrative functions. To have hands-on experience in the related fields so that they can relate and reinforce what they have learnt from university. To foster cooperation and to develop syn…

Assessment: Performance assessed by company supervisor: 20%, Logbook assessed by company supervisor: 20%, Lecturer's Visit: 20%, Oral Presentation: 20%, Report: 20% Course Upon passing ALL the 5 assessment components (logbook, company

Contact hours: 90 hours (lectures, tutorials and laboratory experiments)

Key contents: supervisor's assessment, lecturer's visit, presentation, report) separately, the student will accumulate six credit hours. Course Learning CLO1 – Express technical experience and solutions in written or oral forms

Original PDF page(s): 2

AAP6136 — Final Year Project 1

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with opportunity to conduct independent research and develop practical engineering solutions.

Assessment: Project Progress: 30%, Project Report: 40%, Presentation: 30% Laboratory: Project development labs and facilities Course Project planning, literature review, research methodology, project

Contact hours: 90 hours (project work and supervision)

Key contents: execution, data analysis, documentation, technical writing, project presentation. Course Learning CO1 – Plan and conduct engineering research (cognitive – creating, level

Original PDF page(s): 48, 49

AAP6146 — Final Year Project 2

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with opportunity to complete independent research and develop practical engineering solutions.

Original PDF page(s): 49

ACE6113 — Computer and Program Design

Credits: 3 **Prerequisites:** None detected

Objective: To introduce the students to computing and teach them some basic programming skills.

Assessment: Test/Quiz: 20%, Programming Assignment: 30%, Final Examination: 50% Laboratory: Practical programming exercises in computer labs Course Fundamental algorithms, sorting and searching algorithms, data structures

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: including arrays, linked lists, stacks, queues, trees, graphs, and hash tables. Algorithm analysis and complexity.

Original PDF page(s): 2, 3, 4, 5, 8, 10, 11

ACE6123 — Algorithms and Data Structures

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with comprehensive knowledge of algorithms and data structures used in computer programming and software development.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: AI development and experimentation labs Course AI fundamentals, knowledge representation, search algorithms, expert

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: systems, natural language processing, computer vision, AI applications and tools. Course Learning CO1 – Understand AI concepts and techniques (cognitive – understanding,

Original PDF page(s): 3, 11, 14

ACE6133 — Computer Organization and Architecture

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with understanding of computer organization, architecture, and design principles at different levels of abstraction.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Microcontroller programming and hardware interfacing labs Course Microprocessor architecture, microcontroller programming, assembly

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: language, interrupt handling, timer and counter operations, analog-to-digital conversion, serial communication. Course Learning CO1 – Understand microcontroller and microprocessor architecture

Original PDF page(s): 4, 6, 9, 15

ACE6143 — Data Communications and Networking

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with comprehensive knowledge of data communications, networking protocols, and network architecture.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Cybersecurity tools and penetration testing labs Course Security fundamentals, cryptography, network security, application

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: security, access control, authentication and authorization, security management, incident response.

Original PDF page(s): 4, 5, 9

ACE6153 — Operating Systems

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with comprehensive understanding of operating systems design, implementation, and management.

Assessment: Test/Quiz: 20%, Project: 30%, Final Examination: 50% Laboratory: Cloud computing platform labs Course Cloud computing fundamentals, cloud service models (IaaS, PaaS, SaaS),

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: cloud deployment models, virtualization, cloud platforms (AWS, Azure, Google Cloud), cloud security, cloud applications. Course Learning CO1 – Understand cloud computing concepts and architecture (cognitive –

Original PDF page(s): 5, 16, 17

ACE6163 — Microcontroller and Microprocessor Systems

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with practical knowledge of microcontroller and microprocessor systems design and programming.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Advanced microprocessor design and simulation labs

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: actuators, wireless communication protocols, IoT platforms, cloud integration, IoT applications and security. Course Learning CO1 – Understand embedded systems and IoT concepts (cognitive –

Original PDF page(s): 6, 7, 13

ACE6173 — Software Engineering

Credits: 3 **Prerequisites:** None detected

Objective: To provide the students with an understanding of theoretical and practical foundation of software engineering.

Assessment: Tutorial/Assignment: 20%, Test/Quiz: 20%, Final Examination: 60% Course Principles of software engineering. Software life cycle. Introduction.

Contact hours: 48 hours (lectures & tutorials)

Key contents: Requirements and Specification. Software Design. Verification and Validation. Project Management. Course Learning CO1 – Differentiate the various software engineering development lifecycle

Original PDF page(s): 6, 7

ACE6183 — Advanced Microprocessors

Credits: 3 **Prerequisites:** None detected

Objective: To provide advanced knowledge of microprocessor design, architecture, and optimization techniques.

Original PDF page(s): 7

ACE6193 — Object Oriented Programming with C++

Credits: 3 **Prerequisites:** None detected

Objective: To teach students object-oriented programming concepts and practical implementation using C++.

Original PDF page(s): 8

ACE6203 — Digital Computer Design

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of digital computer design principles and implementation.

Original PDF page(s): 8, 9

ACE6213 — CyberSecurity

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with comprehensive knowledge of cybersecurity principles, threats, and defense mechanisms.

Original PDF page(s): 9

ACE6223 — Multimedia Technology and Applications

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of multimedia technologies, applications, and development.

Assessment: Test/Quiz: 20%, Project: 30%, Final Examination: 50% Laboratory: Image and video processing labs Course Image fundamentals, image enhancement, image restoration, image

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: compression, image segmentation, feature extraction, video processing, video compression, applications. Course Learning CO1 – Understand image and video processing concepts (cognitive –

Original PDF page(s): 10, 12

ACE6233 — Artificial Intelligence Systems and Applications

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of artificial intelligence concepts, techniques, and applications.

Assessment: Test/Quiz: 20%, Project: 30%, Final Examination: 50% Laboratory: Machine learning development and experimentation labs Course Machine learning fundamentals, supervised learning, unsupervised

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: learning, reinforcement learning, neural networks, feature engineering, model evaluation, ML applications and tools.

Original PDF page(s): 10, 11, 15

ACE6243 — Java Technology

Credits: 3 **Prerequisites:** None detected

Objective: To teach students Java programming language and development using enterprise technologies.

Assessment: Test/Quiz: 20%, Design Project: 30%, Final Examination: 50% Laboratory: Advanced Java design labs Course Design patterns, SOLID principles, architectural patterns, refactoring,

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: testing and debugging, performance optimization, advanced Java features, enterprise design patterns.

Original PDF page(s): 11, 13

ACE6253 — Digital Image and Video Processing

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of digital image and video processing techniques and applications.

Original PDF page(s): 12

ACE6263 — Embedded IoT Systems and Applications

Credits: - **Prerequisites:** None detected

Original PDF page(s): 12

ACE6273 — Advanced Object-Oriented Design with Java

Credits: 3 **Prerequisites:** None detected

Objective: To teach students advanced object-oriented design patterns and principles using Java.

Original PDF page(s): 13

ACE6283 — Database Systems

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with comprehensive knowledge of database design, implementation, and management.

Original PDF page(s): 14

ACE6293 — Advanced Computer Architecture and Parallel Computing

Credits: 3 **Prerequisites:** None detected

Objective: To provide advanced knowledge of computer architecture and parallel computing systems.

Original PDF page(s): 14, 15

ACE6313 — Machine Learning Concepts and Technologies

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with comprehensive knowledge of machine learning concepts, algorithms, and applications.

Assessment: Test/Quiz: 20%, Project: 30%, Final Examination: 50% Laboratory: Deep learning and AI development labs Course Deep neural networks, convolutional neural networks, recurrent neural

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: networks, transformers, generative models (GANs, VAE), large language models, transfer learning, AI ethics. Course Learning CO1 – Understand deep learning architectures (cognitive – understanding,

Original PDF page(s): 15, 17

ACE6323 — Cloud Computing

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of cloud computing technologies, platforms, and applications.

Original PDF page(s): 16

ACE6333 — Deep Learning and Generative AI Technology

Credits: 3 **Prerequisites:** None detected

Original PDF page(s): 16

ACE6343 — System Administration

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with practical knowledge of system administration and management.

Original PDF page(s): 17

AEE6113 — Electronics I

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with fundamental knowledge of electronic devices and circuits.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Advanced electronics circuits labs

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: circuits, flip-flops, counters, shift registers, memory circuits, digital system design. Course Learning CO1 – Understand digital logic and circuits (cognitive – understanding,

Original PDF page(s): 30, 31, 34

AEE6123 — Electronics II

Credits: 3 **Prerequisites:** None detected

Objective: To provide advanced knowledge of electronic circuits and systems.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Power electronics circuits and applications labs Course Power semiconductor devices, converters (AC-DC, DC-DC, DC-AC), PWM

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: techniques, control circuits, thermal management, reliability, industrial applications. Course Learning CO1 – Understand power electronic devices (cognitive – understanding,

Original PDF page(s): 30, 32

AEE6133 — Electronics III

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of digital electronics and logic circuits.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Telecommunications systems labs Course Analog and digital communication, modulation techniques, multiplexing,

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: transmission media, telephone systems, wireless communications, satellite communications, network basics.

Original PDF page(s): 31, 32

AEE6143 — Power Electronics

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of power electronic devices and applications.

Original PDF page(s): 32

AEE6153 — Telecommunications

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of telecommunications systems and technologies.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Telecommunications systems labs Course Analog communications, modulation techniques (AM, FM, PM),

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: demodulation, noise analysis, bandwidth and capacity, transmission systems, analog telephone systems.

Original PDF page(s): 32, 34

AEE6163 — Signal Processing

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of signal processing techniques and applications.

Original PDF page(s): 33

AEE6173 — Microelectronics

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of microelectronic devices and integrated circuits.

Original PDF page(s): 33, 34

AHS6113 — Technical Communication

Credits: - **Prerequisites:** None detected

Original PDF page(s): 45

AHS6123 — Professional Ethics and Responsibility

Credits: 2 **Prerequisites:** None detected

Objective: To provide students with knowledge of professional ethics and responsibility in engineering.

Assessment: Case Study Analysis: 40%, Reflection Paper: 30%, Final Examination: 30% Course Engineering ethics, professional responsibility, codes of ethics, ethical

Contact hours: 32 hours (lectures and tutorials)

Key contents: decision-making, social and environmental responsibility, intellectual property, professional conduct. Course Learning CO1 – Understand engineering ethics and professional responsibility

Original PDF page(s): 46

AHS6133 — Entrepreneurship and Innovation

Credits: 2 **Prerequisites:** None detected

Objective: To provide students with knowledge of entrepreneurship and innovation in technology.

Assessment: Business Plan: 40%, Presentation: 30%, Final Examination: 30% Course Entrepreneurship fundamentals, business planning, innovation

Contact hours: 32 hours (lectures and tutorials)

Key contents: management, technology commercialization, startup ecosystems, intellectual property, venture capital, business models. Course Learning CO1 – Understand entrepreneurship and innovation concepts (cognitive –

Original PDF page(s): 47

AHS6143 — Project Management

Credits: 2 **Prerequisites:** None detected

Objective: To provide students with knowledge of project management principles and practices.

Assessment: Project Plan: 40%, Team Work: 30%, Final Examination: 30%

Contact hours: 32 hours (lectures and tutorials)

Original PDF page(s): 47

AHS6153 — Environmental Sustainability

Credits: 2 **Prerequisites:** None detected

Objective: To provide students with knowledge of environmental sustainability in engineering.

Assessment: Sustainability Report: 40%, Presentation: 30%, Final Examination: 30% Course Sustainability fundamentals, environmental impact assessment, green

Contact hours: 32 hours (lectures and tutorials)

Key contents: engineering, renewable energy, waste management, life cycle assessment, sustainable development, corporate social responsibility. Course Learning CO1 – Understand sustainability concepts and principles (cognitive –

Original PDF page(s): 48

ALE6113 — Circuit Theory

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with fundamental knowledge of electrical circuit analysis and theory.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Circuit analysis and measurement labs Course Basic circuit elements, Kirchhoff's laws, nodal and mesh analysis, circuit

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: theorems, transient analysis, AC circuit analysis, frequency response, power analysis. Course Learning CO1 – Analyze electrical circuits using fundamental laws (cognitive –

Original PDF page(s): 18, 19, 20, 21, 30

ALE6123 — Field Theory

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of electromagnetic field theory and applications.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Electromagnetic field simulation and measurement labs Course Vector analysis, electric fields, magnetic fields, Maxwell's equations, wave

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: propagation, transmission lines, antenna theory, electromagnetic applications. Course Learning CO1 – Understand electromagnetic field concepts (cognitive –

Original PDF page(s): 18, 19

ALE6133 — Instrumentation and Measurement Techniques

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with practical knowledge of electrical instrumentation and measurement techniques.

Original PDF page(s): 19

ALE6143 — Introduction to Machines and Power Systems

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with introduction to electrical machines and power systems.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Switchgear and protection systems labs Course Switchgear types and operation, protection principles, protective relays,

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: circuit breakers, fuses, grounding systems, protection coordination, testing and maintenance. Course Learning CO1 – Understand switchgear and protection principles (cognitive –

Original PDF page(s): 20, 22, 23, 24

ALE6153 — Circuits and Signals

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of circuit analysis and signal processing.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Control systems design and simulation labs Course Control system fundamentals, transfer functions, system modeling,

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: feedback control, stability analysis, root locus, frequency response, controller design, digital control.

Original PDF page(s): 20, 21, 33

ALE6163 — Control Theory

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of control systems design and analysis.

Original PDF page(s): 21

ALE6173 — Switchgear and Protection

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of electrical switchgear and protection systems.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: High voltage testing and measurement labs Course High voltage generation, breakdown phenomena, insulation systems,

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: surge protection, testing techniques, high voltage equipment, safety procedures, applications. Course Learning CO1 – Understand high voltage phenomena (cognitive – understanding,

Original PDF page(s): 22, 27

ALE6213 — Energy Conversion I

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of energy conversion processes and devices.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Advanced energy conversion labs Course Advanced machine analysis, power electronics for energy conversion,

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: renewable energy systems, energy storage, power quality, efficiency optimization, smart grids.

Original PDF page(s): 22, 23, 26, 28, 29

ALE6223 — Energy Conversion II

Credits: 3 **Prerequisites:** None detected

Objective: To provide advanced knowledge of energy conversion and power generation systems.

Original PDF page(s): 23

ALE6233 — Power Transmission and Distribution

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of power transmission and distribution systems.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Power system analysis and simulation labs Course Power system modeling, load flow analysis, fault analysis, transient

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: stability, small signal stability, power system dynamics, control systems, simulation tools.

Original PDF page(s): 24, 25

ALE6243 — Electrical Engineering Materials

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of electrical engineering materials and their properties.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Materials characterization and testing labs Course Atomic structure, crystal structures, electrical properties of materials,

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: conductors, semiconductors, insulators, magnetic materials, dielectric materials, superconductors. Course Learning CO1 – Understand material properties and structure (cognitive –

Original PDF page(s): 24, 25

ALE6253 — Power System Analysis

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of power system analysis and operation.

Original PDF page(s): 25, 28

ALE6263 — Electrical Drive

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of electrical drive systems and motor control.

Original PDF page(s): 26

ALE6273 — Electric Power Utilization and Installation

Credits: 3 **Prerequisites:** None detected

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Power installation and utilization labs Course Electrical wiring, cable sizing, load calculations, power factor correction,

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: energy management, installation codes and standards, safety systems, maintenance. Course Learning CO1 – Understand electrical installation principles (cognitive –

Original PDF page(s): 26, 27

ALE6283 — High Voltage Engineering

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of high voltage systems and engineering.

Original PDF page(s): 27

ALE6293 — Power Stations

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of power generation stations and systems.

Original PDF page(s): 28

ALE6303 — Power System Operation and Control

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of power system operation, control, and management.

Original PDF page(s): 28

ALE6313 — Renewable Energy Technology

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of renewable energy technologies and systems.

Original PDF page(s): 29

AMT6113 — Engineering Mathematics 1

Credits: - **Prerequisites:** None detected

Assessment: Tests/Quizzes: 40%, Final Examination: 60% Course Multivariable Calculus: Partial derivatives, multiple integrals, vector

Contact hours: 48 hours (Lecture Hours = 35 and Supervised Tutorial Hours = 13)

Key contents: calculus. Differential Equations: First-order and second-order ODEs, systems of ODEs. Linear Algebra: Matrices, determinants, eigenvalues, eigenvectors.

Original PDF page(s): 41, 42, 44

AMT6123 — Engineering Mathematics 2

Credits: 3 **Prerequisites:** None detected

Objective: To provide various mathematical concepts and analysis methods in multivariable calculus, differential equations, and linear algebra in the engineering context.

Assessment: Tests/Quizzes: 40%, Final Examination: 60% Course Numerical Methods: Root finding, interpolation, numerical integration and

Contact hours: 48 hours (Lecture Hours = 35 and Supervised Tutorial Hours = 13)

Key contents: differentiation, solving ODEs numerically. Optimization: Linear and nonlinear optimization. Statistics: Descriptive statistics, hypothesis testing, regression analysis. Course Learning CO1 – Apply numerical methods to solve mathematical problems

Original PDF page(s): 42, 43, 45

AMT6133 — Engineering Mathematics 3

Credits: 3 **Prerequisites:** None detected

Objective: To provide various mathematical concepts and analysis methods in numerical methods, optimization, and statistics in the engineering context.

Original PDF page(s): 43

AMT6143 — Discrete Mathematics

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of discrete mathematics concepts and applications.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Discrete mathematics applications labs Course Set theory, logic, relations and functions, combinatorics, graph theory,

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: trees, Boolean algebra, formal languages, computability. Course Learning CO1 – Understand discrete mathematics concepts (cognitive –

Original PDF page(s): 44

AMT6153 — Probability and Statistics

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with comprehensive knowledge of probability theory and statistical methods.

Original PDF page(s): 44

AMT6163 — Numerical Analysis

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of numerical analysis methods and algorithms.

Original PDF page(s): 45

ANT6113 — Nanotechnology Fundamentals

Credits: - **Prerequisites:** None detected

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Nanomaterials synthesis and characterization labs Course Carbon nanotubes, graphene, nanoparticles, quantum dots, nanofibers,

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: nanocomposites, synthesis methods, structural properties, functional properties, applications.

Original PDF page(s): 37, 38, 39, 40, 41

ANT6123 — Nanomaterials and Nanostructures

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of nanomaterials and nanostructure design.

Original PDF page(s): 38

ANT6133 — Nanoelectronics

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of nanoelectronic devices and systems.

Original PDF page(s): 39

ANT6143 — Nanophotonics

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of nanophotonics and optical nanostructures.

Original PDF page(s): 39, 40

ANT6153 — Nano-Biotechnology

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of nano-biotechnology applications.

Original PDF page(s): 40

ANT6163 — Nanosensors and Nanodevices

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of nanosensors and nanodevices.

Original PDF page(s): 41

ATE6113 — Telecommunications I

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with fundamental knowledge of telecommunications systems.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Digital telecommunications labs Course Digital communications, digital modulation, line coding, error detection and

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: correction, digital transmission, digital telephone systems, PCM, data communications. Course Learning CO1 – Understand digital communication systems (cognitive –

Original PDF page(s): 34, 35

ATE6123 — Telecommunications II

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of digital telecommunications systems.

Assessment: Test/Quiz: 20%, Assignment: 30%, Final Examination: 50% Laboratory: Wireless communications systems labs Course Wireless propagation, fading channels, cellular systems, multiple access

Contact hours: 44 hours (lectures, tutorials and laboratory experiments)

Key contents: techniques, 4G/5G technologies, wireless security, antenna systems, spectrum management. Course Learning CO1 – Understand wireless communication systems (cognitive –

Original PDF page(s): 35, 36, 37

ATE6133 — Wireless Communications

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of wireless communication systems and technologies.

Original PDF page(s): 35, 36

ATE6143 — Optical Communications

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of optical communication systems.

Original PDF page(s): 36

ATE6153 — Satellite Communications

Credits: 3 **Prerequisites:** None detected

Objective: To provide students with knowledge of satellite communication systems.

Original PDF page(s): 37