

SEMESTER 1

MTH101 Mathematics I (course type: required) (4 Credits, 5 ECTS)

Course Objective: This course aims to give fundamentals of Calculus to students.

Course Content: Functions, limits and continuity. Derivatives. Mean value theorem.

Sketching graphs. Definite integrals, infinite integrals (antiderivatives). Logarithmic, exponential, trigonometric and inverse trigonometric functions and their derivatives.

L'Hospital's rule. Techniques of integration. Applications of the definite integral, improper integrals.

PHY101 Physics I (course type: required) (4 Credits, 5 ECTS)

Course Objective: This course aims to introduce students about general physics.

Course Content: Measurement, vectors, kinematics, force, mass. Newton's laws, applications of Newton's laws. Work and kinetic energy. Conservation of linear momentum. Impulse, collisions, rotation, moments of inertia. Torque, angular momentum, conservation of angular momentum, static equilibrium.

CHM101 G. Chemistry (course type: required) (4 Credits, 5 ECTS)

Course Objective: The aim of this course is to give fundamentals of Chemistry to engineering students.

Course Content: A basic course with emphasizing the metric system. Introduction to atomic theory, stoichiometry. The structural and physical properties of matter. Periodic relationship among elements and periodic table. Gaseous state. Thermo-chemistry. Energy and enthalpy. Electronic structure of atoms. Chemical bonding.

MTH113 Linear Algebra (course type: required) (3 Credits, 5 ECTS)

Course Objective: This course aims to give details of Linear Algebra to students.

Course Content: This course aims to give details of Linear Algebra to students. Matrices and Systems of Equations, Determinants, Vector Spaces, Linear Transformations, Orthogonality, Eigenvalues, Numerical Linear Algebra will be thought during the semester.

All102 Programming and Problem Solving (course type: required) (4 Credits, 5 ECTS)

Course Objective: This course provides an introduction to fundamental concepts of programming and use of built-in data structures in solving problems using the Python general-purpose programming language.

Course Content: In this course, students study how write user-defined functions using iteration as well as recursion in Python. This course also stresses the importance of programming tools such as programming editors and debuggers. The students are expected to work within a GNU/Linux environment. The course provides a basic introduction into object-oriented programming.

ENG101 English I (course type: required) (2 Credits, 3 ECTS)

Course Objective:

Designed for English-medium departments, ENG101 develops students' ability to understand and respond to everyday dialogues and contexts in English-speaking environments. Meaning and communication are prioritized; grammar supports communication. Content is supported with visual, audio, and written materials and tailored to each topic. ENG101 targets A1 (CEFR).

Course Content: 1. Introducing oneself 2. Giving personal information 3. Giving personal information 4. Talking about objects 5. Talking about family 6. Describing and discussing buildings and furniture 7. Talking about timetables/schedules 8. Talking about daily routines 9. Talking about daily routines 10. Ability 11. Asking for and giving directions 12. Talking about food and quantities.

SEMESTER 2

MTH102 Mathematics II (course type: required) (4 Credits, 6 ECTS)

Course objective: This course aims to give advances of Calculus to students.

Course Content: Plane and polar co-ordinates, area in polar co-ordinates, arc length of curves. Limit, continuity and differentiability of function of several variables, extreme

values, method of Lagrange multipliers. Double integral, triple integral with applications. Line integrals, Green's theorem. Sequences, infinite series, power series, Taylor's series. Complex numbers.

Prerequisite: MTH101

PHY102 Physics II (course type: required) (4 Credits, 6 ECTS)

Course objective: This course aims to introduce students about electricity.

Course Content: Electrical charges. Coulomb's law. Electrical fields. Gauss's law.

Electrical potential. Capacitance and dielectrics. Current and resistance. Direct current circuits. Magnetic fields. Sources of the magnetic field. Faraday's law of induction.

Inductance and inductors.

Prerequisite: PHY101

All104 Discrete Structures (course type: required) (3 Credits, 5 ECTS)

Course objective: This course aims to introduce students about discrete structures.

Course Content: Sets and Logic, Proofs, Functions, Sequences and Relations, Algorithms, Introduction to Number Theory, Counting Methods and the Pigeonhole Principle, Recurrence Relations, Graph Theory, Trees, Network Models, Boolean Algebras and Combinatorial Circuits, Automata, Grammars and Languages, Computational Geometry.

All108 Object-Oriented Programming (course type: required) (3 Credits, 6 ECTS)

Course objective: This course provides an in-depth discussion of object-oriented programming and how object-oriented programming can be used in solving real-life problems.

Course Content: This course requires a more advanced use of programming tools (mainly editors and debuggers) that were introduced in All102 (Programming and Problem Solving). This course uses Python 3 to teach the fundamental concepts of object-oriented programming. The students are expected to work within a GNU/Linux environment. The course builds upon the knowledge of All102 and All20 and is the third course in line that uses Python as programming language.

Prerequisite: All102

ENG102 English II (course type: required) (2 Credits, 3 ECTS)

Course objective: ENG 102 for English Departments aims to develop students' awareness of the language used in everyday life situations as well as the vocabulary items used in different topics. The course has been designed to show the students communicatively useful expressions in their immediate environment. Understanding how the language is used to maintain communication or convey meaning in specific situations is prior to how the structures are put together to form the language. The aim is to expose students to some basic functions in some specific situations and topics at A2/B1 level of the CEFR so that the students can easily communicate with the foreign people in their immediate environment and develop their ability to comprehend oral English.

Course Content: 1. Health Matters 2. Health Matters 3. Restaurant Problems- Complaints and responses 4. Talking about Computer Problems 5. Reporting the News and the Weather 6. Reporting the News and the Weather 7. Product Problems- Complaints at the store 8. Talking about the future possibilities 9. Talking about the future possibilities 10. Health Problems and Herbs 11. Health Problems and Herbs 12. Job qualifications and Working Conditions.

Prerequisite: ENG101

CAR100 Career Planning (course type: required) (0 Credits, 2 ECTS)

Course Objective: To introduce students to career methods that will help them adapt to the rapidly changing economic, social, cultural, ethical and legal conditions of the business world and to gain the ability to adapt them to their own lives.

Course Content: Introduction to the Course, Career Concept and Career Stages, Expectations of the Business World from New Graduates, Career Management and Career Management Models in Organizations, Individual Career Planning and Goal Setting, Job Search Techniques, Individual Career Planning and Applications: Cover

Letter and CV Writing, Basic Communication Skills, Individual Career Planning Practices: Preparing for the Interview, Interview Techniques, Orientation and Introduction to Working Life, Lifelong Learning.

GEC351 21 Century Skills (course type: required) (0 Credits, 2 ECTS)

Course Objective: The 21st Century Skills course aims to help students develop essential thinking skills such as critical, creative, and philosophical thinking, problem-solving, lifelong learning, and effective learning strategies. In addition, it equips students with social skills such as effective communication, teamwork, intercultural interaction, and diversity management. By fostering digital literacy, media awareness, information management, and basic statistical knowledge, the course supports students in becoming active and conscious individuals in digital environments. While promoting personal growth through self-awareness, emotional intelligence, flexibility, and time management as self-management skills, it also cultivates a sense of social responsibility through topics such as sustainability, ethical leadership, and global citizenship. Finally, by providing practical life skills such as entrepreneurship, financial literacy, stress management, and creative presentation skills, the course aims to equip students with competencies they can apply in real life.

Course Content: Fundamental thinking and learning skills; concepts of critical and creative thinking; core problem-solving concepts and processes; principles of lifelong learning; logical reasoning; effective learning strategies; components of core thinking skills; methods of philosophical thought; communication and collaboration skills; fundamentals of effective communication and cooperation; basics of intercultural communication; elements shaping communication across cultures; importance of effective communication in collaboration; appropriate techniques for group work; strategies for intercultural interaction; communication problems and solutions in teamwork; innovative communication strategies supporting diversity management; strategies to enhance communication and collaboration in teams; digital literacy and media competencies; information management; basic statistical terms; purposes of digital media tools; interpretation of statistical data; digital tools and platforms; reliability and quality of digital content and sources; creation of original media content;

cybersecurity; ethical and philosophical reflections with self-management and cognitive flexibility; time-management strategies; factors of individual and environmental adaptation; components of emotional intelligence; prioritization techniques; resilience in various situations; coping strategies for stress and change; ethics; personality profiles and the impact of emotional intelligence on success; an individual adaptation strategy for stressful situations; empathy-based communication; time management across academic, social, and personal goals; social responsibility and global citizenship; sustainability and environmental awareness; principles of ethical leadership; links between global issues (e.g., climate change, inequality) and social responsibility; relationship between social responsibility projects and sustainability; raising universal awareness; applied life skills; basic entrepreneurship concepts; financial literacy terms; stages of project management.

SEMESTER 3

All001 Logic Design (course type: required) (4 Credits, 6 ECTS)

Course objective: The aim of this course is to give the basics of Digital Logic Systems.

Course Content: Digital Systems and Information, Combinational Logic Circuits, Combinational Logic Design, Arithmetic Functions and HDLs, Sequential Circuits, Selected Design Topics, Registers and Register Transfers, Memory Basics, Computer Design Basics, Instruction Set Architecture, RISC and CISC Processors, Input-Output and Communication, Memory Systems.

Prerequisite: All104

All201 Data Structures and Algorithms (course type: required) (4 Credits, 6 ECTS)

Course Objective: This course comprises an introductory exploration into the design and implementation of Abstract Data Types (ADTs) along with the study of algorithm design and complexity analysis.

Course Content: Even though the discussions during lectures about ADTs are language independent, this course uses Python, a very high-level general programming language, to implement these ideas using object-oriented programming. This class starts with a brief introduction to object-oriented programming.

Prerequisite: All102

AIE201 AI Principles and Techniques (course type: required) (3 Credits, 3 ECTS)

Course Objective: Upon completion of this course, students will be able to understand the foundational principles of artificial intelligence and how they are applied to solve complex real-world problems such as web search, speech recognition, and autonomous driving. Students will learn the rigorous mathematical tools required to tackle these challenges and will gain hands-on experience by implementing some of these AI systems.

Course Content: What do web search, speech recognition, face recognition, machine translation, autonomous driving, and automatic scheduling have in common? These are all complex real-world problems, and the goal of artificial intelligence (AI) is to tackle these with rigorous mathematical tools. In this course, students will learn the foundational principles that drive these applications and practice implementing some of these systems.

Prerequisites: AII102, AII104

MTH201 Differential Equations (course type: required) (4 Credits, 6 ECTS)

Course objective: Introducing first, second and higher order differential equations, and the methods of solving these equations. Emphasizing the important of differential equations and its engineering application. Introducing the Laplace transform and its applications in solving differential equations and other engineering applications. Introducing the series method in solving differential equations.

Course Content: Ordinary and partial differential equations. Explicit solutions, Implicit Solution. First-order differential equations, separable, homogenous differential equations, exact differential equations. Ordinary linear differential equations. Bernoulli differential equations. Cauchy differential equations. High-order ordinary differential equations. Introduction to Laplace transforms. Introduction to series method for solving differential equations.

Prerequisite: MTH102

All007 Multimedia Systems (course type: required) (3 Credits, 5 ECTS)

Course objective: The aim of this course is to introduce students about the Multimedia Systems.

Course Content: Introduction to Computer Science and Media Computation, Introduction to Programming in Python, Modifying Pictures Using Loops, Modifying Pixels in a Range, Advanced Picture Techniques, Modifying Sounds Using Loops, Modifying Samples in a Range, Making Sounds by Combining Pieces, Building Bigger Programs, Creating and Modifying Text, Advanced Text Techniques: Web and Information, Making Text for the Web, Creating and Modifying Movies, Speed, Functional Programming, Object-Oriented Programming will be thought during the semester.

Prerequisite: All102

AIT103 Atatürk Principles and Reforms I (course type: only for Foreign Students) (2 Credits, 2 ECTS)

Course Objective: This course is focusing on the early dynamics of the Ottoman Empire (including social, economic, political, institutional and cultural) and examines the historical background of the Republic of Turkey. The main aim of the course is to scrutinize the political dynamics and modernization attempts of the Ottoman state analyzed comprehensively. By doing so, basic concepts of History of Revolution, World and Ottoman Empire at the Beginning of the 20th Century, The Last Period of the Ottoman State, The First World War, The Preparatory Period of the National Struggle are the main topics that are focused in the classes.

Course Content: A Concise Political History of Ottoman Empire 1300-1914 Decline and the Ottoman Modernization Ottoman State and Society in Classical Period The organization of National Resistance Movement: The Circular of Amasya The Congresses of Erzurum and Sivas Invasions, Mustafa Kemal and National Resistance Movement Ottoman Empire in the First World War I Armistice of Mudros The Treaty of Sevres and the National Liberation War against the Armenians and Greeks The Armistice of Mudanya and the Peace Treaty of Lausanne.

Prerequisite: --

YIT101 Turkish for Foreigners I (course type: only for Foreign Students) (2 Credits, 2 ECTS)

Course Objective: Designed for students with little to no prior knowledge of Turkish grammar and vocabulary. A compulsory course for learners of Turkish as a foreign language. Students follow online videos via UZEBİM. Topics range from the Turkish alphabet to the present simple and present continuous tenses.

Course Content: Introduction to the course; Turkish alphabet and phonology; forming plurals in Turkish; forming yes–no questions; building sentences with the “var/yok” (there is/there isn’t) structure; possessive suffixes; use of personal pronouns; numbers and asking questions about numbers; case endings (noun cases) in Turkish; where and how to use the present continuous and simple present tenses.

SEMESTER 4

AI1202 Database Management Systems (course type: required) (4 Credits, 5 ECTS)

Course Objective: This course comprises an introductory exploration into the design and implementation of database systems.

Course Content: Introduction to Databases, Relational Data Model and SQL, Conceptual Modeling and Database Design, Models, Database Programming Techniques, Database Normalization Theory, File Structures-Indexing and Hashing, Query Processing-Optimization and Database Tuning, Transaction Processing-Concurrency Control and Recovery, Security and Distribution, Advanced Database Models-Systems and Applications.

Prerequisite: AI1201

AI1206 Reasoning and Agents in AI (course type: required) (4 Credits, 7 ECTS)

Course Objective: The aim of this course is to teach students how to design intelligent agents capable of perceiving their environment and making decisions. It focuses on applying advanced techniques in knowledge representation, reasoning, and planning to solve real-world problems, with a strong emphasis on managing uncertainty.

Course Content: This course focuses on approaches relating to representation,

reasoning and planning for solving real world inference. The course illustrates the importance of (i) using a smart representation of knowledge such that it is conducive to efficient reasoning, and (ii) the need for exploiting task constraints for intelligent search and planning. The notion of representing action, space and time is formalized in the context of agents capable of sensing the environment and taking actions that affect the current state. There is also a strong emphasis on the ability to deal with uncertain data in real world scenarios.

Prerequisite: AIE201

MTH251 Probability and Statistics (course type: required) (3 Credits, 6 ECTS)

Course objective: The aim of this course is to give details of probability to engineering students.

Course Content: Statistics, Data and Statistical Thinking, Methods for Describing Sets of Data, Probability, Random Variables and Probability Distributions, Inferences Based on Samples, Design of Experiments and Analysis of Variance, Categorical Data Analysis, Simple Linear Regression, Multiple Regression and Model Building, Methods for Quality Improvement: Statistical Process Control, Time Series, Nonparametric Statistics.

Prerequisite: MTH113

AIE299 Summer Practice I (Course type: required) (0 Credits, 6 ECTS)

Course objective: This course provides real working life experience for students.

Students will be able to apply their theoretical knowledge into practice.

Course content: A minimum of 40 working days for this practice is required in a manufacturing or service organization. This one can involve 20 working days minimum.

Prerequisite: --

CHC100 Cyprus History and Culture (Course type: elective) (0 Credits, 2 ECTS)

Course Objective: Being able to comparatively analyse the variable dynamics of Cyprus across the ages also brings with it an understanding of the dynamics of the Mediterranean basin. Having information about the island of Cyprus and the Mediterranean culture provides us with an opportunity to understand and describe the

states established in the Mediterranean, the religious communities operating there, and the socio-cultural interactions between people. This course offers the opportunity to examine in depth the social, economic and cultural dynamics of Cyprus, which acts as a bridge between East and West.

Course Content: General information about the history and culture of Cyprus; Zoology and Botany; Social and cultural life in the First Age and the Middle Ages; The social and cultural heritage of the island during the Ottoman period; History of Art; Religion and Culture; British Colonial Period; Cyprus Education History; political events from 1950 to 1974; The national struggle of Turkish Cypriots for existence and freedom; The establishment of the TRNC and social structure.

YIT102 Turkish for Foreigners II (course type: only for Foreign Students) (2 Credits, 2 ECTS)

Course Objective: Designed for students with little to no prior knowledge of Turkish grammar and vocabulary. A compulsory course for learners of Turkish as a foreign language. Students follow online videos via UZEBİM. Topics range from the Turkish alphabet to the present simple and present continuous tenses.

Course Content: Introduction to the course; Turkish alphabet and phonology; forming plurals in Turkish; forming yes–no questions; building sentences with the “var/yok” (there is/there isn’t) structure; possessive suffixes; use of personal pronouns; numbers and asking questions about numbers; case endings (noun cases) in Turkish; where and how to use the present continuous and simple present tenses.

Prerequisite: YIT101

SEMESTER 5

AIE204 Neural Computation (course type: required) (3 Credits, 4 ECTS)

Course Objective: This course aims to examine the computational principles of the nervous system from a bottom-up perspective. Students will apply numerical modeling and non-linear dynamics to analyze neural functions and understand the challenges of modeling complex biological systems.

Course Content: In this course the computations carried out by the nervous system will

be studied. Unlike most courses and artificial intelligence, a bottom-up approach will be taken. Apart from learning about the brain, numerical modelling of differential equations, non-linear dynamics, current neurobiological research and pitfalls in modelling real-world systems will be thought during the semester.

Prerequisite: MTH201

All302 Operating Systems (course type: required) (3 Credits, 6 ECTS)

Course Objective: The aim of this course is to give details of operating systems and how they work to students.

Course Content: Principles of operating systems. Memory management.

Multiprocessing. Virtual memory concepts. Memory protection. Scheduling. Process management. Time-slicing and priorities, deadlocks and process synchronization.

Peripheral control. Filing system management. Resource control and monitoring. Linux and Windows Operating Systems.

Prerequisite: All108, All202

AIE301 Pattern Recognition (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: This course introduces the fundamental principles of statistical pattern recognition. Students will learn to apply algorithms for dimensionality reduction, clustering, and classification to analyze and interpret complex, multi-dimensional data from various real-world applications.

Course Content: A pattern recognition system can be designed based on a number of different approaches: (i) template matching, (ii) geometric (statistical) methods, (iii) structural (syntactic) methods, and (iv) neural (deep) networks. This course will introduce the fundamentals of statistical pattern recognition with examples from several application areas. The course will cover techniques for visualizing and analyzing multi-dimensional data along with algorithms for projection, dimensionality reduction, clustering and classification.

Prerequisite: AIE201

ENG201 Oral Communication Skills (course type: required) (3 Credits, 3 ECTS)

Course Objective: The aim of the course is to provide techniques for dealing with academic prose.

Course Content: Definition of Technical Communication, Profiling Audiences, The Technical Communication Process, Technical Communication Style, Researching, Designing Pages, Using Visual Aids, Summarizing, Defining, Describing, Sets of Instructions, Memorandums and Informal Reports, Developing Websites, Formal Reports, Recommendation and Feasibility Reports, Proposals, User Manuals, Oral Presentations, Letters, Job Application Materials.

Prerequisite: ENG102

AIE303 Natural Language Processing (Course type: elective) (3 Credits, 3 ECTS)

Course Objective: This course provides a comprehensive introduction to the core tasks and algorithms in Natural Language Processing. Students will learn to implement and evaluate statistical and neural network-based models that automatically process, understand, and generate human language by training on large text corpora.

Course Content: The intent of the course is to present a fairly broad graduate-level introduction to Natural Language Processing (NLP, a.k.a. computational linguistics), the study of computing systems that can process, understand, or communicate in human language. The primary focus of the course will be on understanding various NLP tasks, algorithms for effectively solving these problems, and methods for evaluating their performance. There will be a focus on statistical and neural-network learning algorithms that train on (annotated) text corpora to automatically acquire the knowledge needed to perform the task.

Prerequisite: -

AIH439 Occupational Health and Safety I (course type: required) (2 Credits, 4 ECTS)

Course Objective: The aim of the course is to introduce students about safety applications in real life practices.

Course Content: Occupational Health and Historical Development of Safety, Occupational Health and Purpose and Importance of Safety, Occupational Health and

Safety Concepts in the area, Overview of the Occupational Health and Safety, work accidents, occupational diseases, to be taken against the Work Accidents and Occupational Diseases precautions, accidents at work and Costs arising from occupational diseases.

Prerequisite: --

All427 Management for Engineers (course type: required) (3 Credits, 5 ECTS)

Course Objective: Discuss principles of management, discuss functions of managers, discuss organization and environment, discuss marketing, production and personnel management, discuss marketing control, discuss accounting and financial reports, discuss budgeting and overall control.

Course Content: Principles of management. Functions of managers. Organization and environment. Marketing management. Production management. Personnel management. Managerial control. Accounting and financial reports. Budgeting and overall control.

Prerequisite: --

SEMESTER 6

AIE302 Introduction to Machine Learning (Course type: elective) (4 Credits, 7 ECTS)

Course Objective: This course provides a broad introduction to the fundamental concepts and algorithms of machine learning. Students will learn to implement and analyze key supervised, unsupervised, and reinforcement learning techniques and apply them to solve real-world problems in areas such as data mining, robotic control, and bioinformatics.

Course Content: This course provides a broad introduction to machine learning and statistical pattern recognition. Topics include: supervised learning (generative/discriminative learning, parametric/non-parametric learning, neural networks, support vector machines); unsupervised learning (clustering, dimensionality reduction, kernel methods); learning theory (bias/variance tradeoffs, practical advice); reinforcement learning and adaptive control. The course will also discuss recent applications of machine learning, such as to robotic control, data mining, autonomous

navigation, bioinformatics, speech recognition, and text and web data processing.

Prerequisite: MTH251

AIE303 Data Communication and Networking (course type: required) (4 Credits, 5 ECTS)

Course Objective: The aim of this course is to give details of computer networking and data communications. Students will learn the fundamentals of network architecture, protocols, and security, enabling them to understand the design, implementation, and management of modern communication systems.

Course Content: Introduction to Computer Networks and Data Communications, Fundamentals of Data and Signals, Conducted and Wireless Media, Making Connections, Making Connections Efficient, Errors, Error Detection and Error Control, Local Area Networks, Introduction to Metropolitan Area Networks and Wide Area Networks, The Internet, Voice and Data Delivery Networks, Network Security, Network Design and Management subjects will be covered during the semester.

Prerequisite: AII001

AIE304 Learning in Humans (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: This course aims to: Provide an in-depth understanding of how human learning occurs at neurological, cognitive, and behavioral levels. Explore the interaction between human learning and artificial intelligence, highlighting key AI learning models. Examine brain structures and their roles in learning, including neuroplasticity and memory formation

Course Content: Components of Human Learning, Basic Principles of Neuroscience, Brain Regions and Their Role in Learning, Introduction to Cognitive Psychology, Relationship Between Memory and Learning, Neuroplasticity and Lifelong Learning, Learning in Humans and Artificial Systems, Biological vs. Artificial Neurons: Structure, Function, and Key Differences, Integration of Human Learning Models into AI Applications Comparison of Human and Artificial Intelligence Learning.

Prerequisite: --

AIE306 Deep Learning (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: The aim of this course is to equip students with the ability to design, implement, and apply various deep learning architectures, such as convolutional and recurrent networks, to solve complex problems in fields like computer vision and speech recognition.

Course Content: This course is an introduction to deep learning; a branch of machine learning concerned with the development and application of modern neural networks. basic neural networks, convolutional and recurrent network structures, deep unsupervised and reinforcement learning, and applications to problem domains like speech recognition and computer vision subjects will be covered.

Prerequisite: AIE204

AI440 Occupational Health and Safety II (course type: required) (3 Credits, 2 ECTS)

Course Objective: Students will learn to identify workplace hazards, analyze the causes and costs of work-related accidents and diseases, and understand the essential precautions for maintaining a safe work environment.

Course Content: The aim of the course is to introduce students about safety applications in real life practices. Occupational Health and Historical Development of Safety, Occupational Health and Purpose and Importance of Safety, Occupational Health and Safety Concepts in the area, Overview of the Occupational Health and Safety, work accidents, occupational diseases, to be taken against the Work Accidents and Occupational Diseases precautions, accidents at work and Costs arising from occupational diseases.

Prerequisite: AI439

AIE399 Summer Practice II (Course type: required) (0 Credits, 6 ECTS)

Course Objective: This course provides real working life experience for students. Students will be able to apply their theoretical knowledge into practice.

Course Content: A minimum of 40 working days for this practice is required in a manufacturing or service organization. (This one can involve 20 working days minimum.)

SEMESTER 7

AIE401 Introduction to Robotics (Course type: elective) (3 Credits, 7 ECTS)

Course Objective: Students will learn the principles of manipulator kinematics, dynamics, and trajectory planning, and will be introduced to essential components such as actuators, sensors, and vision systems, along with the basics of robot control and programming.

Course Content: The aim of this course is to introduce the student about the basic components of Robotics. The subjects that will be covered during the semester are: Basic components of robot systems; coordinate frames, homogeneous transformations, kinematics for manipulator, inverse kinematics; manipulator dynamics, Jacobians: velocities and static forces, trajectory planning, Actuators, Sensors, Vision, Fuzzy logic control of manipulator and robotic programming.

Prerequisite: --

AIE403 Computer Vision (Course type: elective) (3 Credits, 7 ECTS)

Course Objective: The aim of this course is to teach students the fundamental principles of robotics, including manipulator kinematics, dynamics, and trajectory planning. The course also introduces essential components such as actuators, sensors, and vision systems, along with the basics of robot control and programming.

Course Content: This course provides an introduction to computer vision, including fundamentals of image formation, camera imaging geometry, feature detection and matching, stereo, motion estimation and tracking, image classification, scene understanding, and deep learning with neural networks.

Prerequisite: --

AIE491 Senior Project I (Course type: required) (3 Credits, 6 ECTS)

Course Objective: The aim of the course is to give senior design experience to students.

Course Content: This course is the first part of design project. The senior design project can be a software or a networking project under the supervision of a faculty member.

Oral presentations and written reports are required.

Prerequisite: --

SEMESTER 8

AIE429 Engineering Ethics (course type: required) (3 Credits, 6 ECTS)

Course Objective: The aim of the course is to provide knowledge about engineering ethics.

Course Content: An Overview of Ethics, Ethics for IT Professionals, Computer and Internet Crime, Privacy, Freedom of Expression, Intellectual Property, Software Development, The Impact of Information Technology on the Quality of Life, Social Networking, Ethics of IT Organizations.

Prerequisite: --

AIE492 Senior Project II (Course type: required) (4 Credits, 7 ECTS)

Course Objective: The aim of the course is to give senior design experience to students.

Course Content: Students continue the project they started in ISE491 course. Oral presentation and written reports are required.

Prerequisite: AIE491

AIE402 Speech Processing (Course type: elective) (3 Credits, 7 ECTS)

Course Objective: This course provides a practical and theoretical understanding of computer-based speech processing. Students will gain hands-on experience by building working speech recognition systems, creating their own synthetic voices, and developing complete telephone spoken dialog systems.

Course Content: Speech Processing offers a practical and theoretical understanding of how human speech can be processed by computers. It covers speech recognition, speech synthesis and spoken dialog systems. The course involves practical where the student will build working speech recognition systems, build their own synthetic voice and build a complete telephone spoken dialog system.

Prerequisite: AIE303

TECHNICAL ELECTIVE COURSES

AIE411 Advanced Data Analysis (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: The objective of this course is to equip students with the theoretical

knowledge and practical skills to perform advanced multivariate data analysis. Upon completion, students will be able to interpret complex data, critically evaluate scholarly research, and apply sophisticated analytical techniques to draw informed, evidence-based conclusions in their own projects.

Course Content: Introduction to Multivariate Data: Exploring and visualizing multi-dimensional datasets. Dimensionality Reduction Techniques: Principal Component Analysis (PCA) and Factor Analysis. Clustering Methods: Hierarchical and non-hierarchical techniques (e.g., K-Means) for identifying natural groupings in data. Classification and Discrimination: Methods such as Discriminant Analysis for separating groups. Multivariate Analysis of Variance (MANOVA): Analyzing differences between groups across multiple dependent variables. Practical Application: Hands-on analysis of real-world datasets using statistical software (e.g., R, Python), with a strong focus on interpreting and communicating results.

Prerequisite: MTH251

AIE412 Information Retrieval and Web Search (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: The primary objective of this course is to provide students with a thorough understanding of the core principles of Information Retrieval (IR) and their application in modern web search engines. Upon completion, students will be proficient in designing, implementing, and evaluating the key components of an IR system.

Course Content: Introduction to Information Retrieval: Core concepts and the architecture of a search engine. Structured vs. unstructured data. Data Collection and Processing: Web Crawling techniques. Text Preprocessing: Tokenization, stop-word removal, and stemming. Indexing: The Inverted Index data structure. Index construction and compression techniques. Information Retrieval Models: The Boolean model. The Vector Space Model and TF-IDF weighting. Probabilistic models, Web Search and Link Analysis: Characteristics of the web (scale, dynamic nature). Link Analysis and the PageRank algorithm. Performance Evaluation: Metrics for evaluating search quality: Precision, Recall, F-measure, MAP, and nDCG.

Prerequisite: --

AIE413 Human-Robot Interaction (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: This course will focus on the emerging field of Human-Robot Interaction (HRI). This multidisciplinary research area draws primarily from: robotics, AI, human-computer interaction, and cognitive psychology. The primary goal of HRI is to enable robots to successfully interact with humans.

Course Content: This course will cover a variety of topics related to social intelligence: learning, teamwork, planning, dialog, emotion, embodied intelligence, among others. For each topic, readings and lectures will cover (1) what's known about how this ability arises in human intelligence, and (2) state-of-the-art approaches to building computational systems with this type of social intelligence. Assignments will be a combination of readings, discussions, team problem solving sessions, and a team final project involving the implementation of a Human-Robot Interaction system.

Prerequisite: --

AIE414 Deep Reinforcement Learning and Control (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: Students will learn to leverage reinforcement signals, expert demonstrations, and intrinsic curiosity to train agents, with a particular focus on integrating high-dimensional sensory inputs like vision for robotic control.

Course Content: Foundations of Reinforcement Learning, Deep Q-Learning and Value-Based Methods, Policy Gradient and Actor-Critic Methods, Integrating High-

Dimensional Sensory Input: Using Convolutional Neural Networks (CNNs) to process visual data and learn control policies directly from pixels ("pixels to actions"), Advanced Learning Paradigms.

Prerequisite: AIE306

AIE415 Mobile Robot Programming (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: This course is an extensive hands-on introduction to the concepts and basic algorithms needed to make a mobile robot function reliably and effectively. This is a lab course with emphasis on hands-on learning. Students will get experience in this course in addition to some theory. Lectures are focused on the content of the next lab.

There is a sequence of labs and they build on each other. The course will culminate with an individually implemented project. Students will also be introduced to the basics of doing research in this course.

Course Content: Introduction to Mobile Robotics: Core concepts, robot architecture, and programming environments (e.g., Robot Operating System - ROS). Robot Locomotion and Control: Implementing control for various drive systems. Sensors and Perception: Interfacing with and processing data from sensors such as wheel encoders, IMUs, and range finders. Fundamental Algorithms: Practical implementation of algorithms for localization, navigation, and obstacle avoidance. State Machines and Behavior-Based Control: Designing and implementing robot behaviors. System Integration: Combining individual components into a cohesive and functional robotic system.

Prerequisite: --

AIE416 Autonomous Agents (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: The course aims to provide students with a thorough understanding of the design principles for autonomous systems, encompassing both robotic and software agents. It also gives students the opportunity to apply their knowledge in practice through the construction of a simple autonomous robot.

Course Content: Introduction to Autonomous Agents, Agent Architectures, Sensing and Perception for Autonomy, Fundamentals of robotic sensors, Action and Control, Multi-Agent Systems (MAS),

Prerequisite: AIE206

AIE417 Introduction to Quantum Computing (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: The objective of this course is to provide a foundational introduction to the principles of quantum computing. Upon completion, students will understand the paradigm shift from classical to quantum computation, grasp core quantum mechanical concepts such as superposition and entanglement, and comprehend how these principles are harnessed via qubits.

Course Content: From Classical to Quantum Computation, Fundamentals of Quantum

Mechanics, Quantum Circuits, Fundamental Quantum Algorithms, Applications and Implications.

Prerequisite: --

AIE418 Computer Animation & Visualization (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: This course provides a comprehensive introduction to the principles of interactive computer graphics, animation, and visualization. Students will learn to apply fundamental techniques in geometric modeling, rendering, and animation, and will explore advanced topics such as virtual reality and other recent developments in the field.

Course Content: Principles of interactive computer graphics, fundamental techniques in graphics, graphic systems, graphic communication, geometric modeling, rendering, computer animation, visualization and virtual reality and other recent developments in computer graphics subjects will be covered during the semester.

Prerequisite: --

AIE419 Algorithmic Game Theory and its Applications (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: This course introduces the key principles of algorithmic game theory, focusing on the intersection of computer science and economics. Students will learn to design and analyze computationally efficient auctions and mechanisms, evaluate the impact of selfish behavior on systems using concepts like the "price of anarchy," and apply algorithmic techniques to compute equilibria.

Course Content: Auction Theory and Mechanism Design, Efficiency of Equilibria and the Price of Anarchy, Algorithms for Computing Equilibria Matching Markets: Studying algorithms for finding stable and efficient matchings in two-sided markets, Applications and Case Studies: Applying game-theoretic models to understand and solve problems in network security, wireless spectrum allocation, and other modern contexts.

Prerequisite: --

AIE420 Fuzzy Systems (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: The objective of this course is to provide a comprehensive introduction to the principles of fuzzy logic and its application in intelligent systems. Students will learn to design and analyze fuzzy inference systems and will explore how to integrate them with other computational intelligence techniques, such as neural networks and genetic algorithms, to solve complex regression and optimization problems.

Course Content: Fuzzy set theory, rules, reasoning and inference systems. Regression and optimization, derivative-based optimization – genetic algorithms, simulated annealing, Neural Networks, adaptive networks.

Prerequisite: AIE204

AI415 Decision Making (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: The core objectives of the course are to enhance students' decision-making capabilities by teaching them to characterize risk, uncertainty, and opportunity, and quantify goals. The course aims to equip students with critical thinking, creative problem-solving skills, and specific tools, including decision tree models, for effective multi-goal and staged decision-making. A key goal is to develop insight into both independent and collaborative decision-making processes, ultimately fostering confidence in making choices that yield optimal results in an innovative work environment.

Course Content: The course provides an introduction to the decision-making process and thoroughly covers decision making under uncertainty and risk, examining Utility theory and Risk aversion. Key quantitative and structural topics include Decision Trees, Multiple regression models, Exponential smoothing, Linear regression model and correlation, and Time series analysis. Further content addresses Queuing theory, Decision making under conflict, Group decision making, Forecast accuracy, and Non-linear models for forecasting.

All419 Image processing (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: The aim of this course is to introduce students to the fundamental techniques, concepts, and methods of image processing and image analysis. Students will learn the entire pipeline, from how an image is acquired to the processes of enhancing it, analyzing it, and extracting meaningful information such as objects and features.

Course Content: Imaging sensors and their principles, how images are digitally represented, stored, and compressed. Techniques for noise reduction and improving image clarity through contrast manipulation, histogram equalization, and edge highlighting. Mathematical techniques for image processing, including two-dimensional Fourier transforms, wavelets, and convolution. Methods for partitioning an image into meaningful regions (e.g., object and background) using techniques like thresholding. Morphological Operations. Feature Extraction. Object Recognition and Tracking.

Prerequisite: --

All461 Generative Fundamentals of Generative Artificial Intelligence (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: This course introduces the fundamental concepts and modern applications of generative artificial intelligence. Students will gain an understanding of how generative models work, explore their mathematical foundations, and learn to apply them in diverse fields such as image, text, and audio generation. The course aims to develop both theoretical knowledge and practical skills for designing and evaluating generative AI systems.

Course Content:

Overview of generative AI and its historical development. Probabilistic modeling and key mathematical foundations. Generative Adversarial Networks (GANs) and their variants. Variational Autoencoders (VAEs). Diffusion models and recent advancements. Applications in natural language processing, computer vision, and creative industries. Ethical considerations, societal impact, and responsible use of generative AI. Hands-on laboratory sessions with modern frameworks and tools.

AIE457 AI and Cloud Computing (Course type: elective) (3 Credits)

Course Objective:

This course aims to provide students with a solid understanding of cloud computing, including its architecture, core concepts, principles, models, techniques, and current practices. It also raises awareness of security and privacy issues in cloud environments. Through hands-on assignments, students will gain practical experience with cloud technologies such as virtual resources, application platforms, MapReduce, and cloud data stores.

Course Content:

The course will cover topics such as the history and principles of cloud computing, service models (IaaS, PaaS, SaaS, and Everything as a Service), major cloud platforms (Amazon, Google, Microsoft, etc.), virtualization technologies, cloud applications and multi-tenancy, MapReduce and Hadoop, cloud data management (including the CAP Theorem and cloud storage), and cloud security.

AI458 Artificial Intelligence and Internet of Things (Course type: elective) (3 Credits, 5 ECTS)

Course Objective: By the end of this course, students will have a solid understanding of the fundamental

principles and concepts of the Artificial Intelligence of Things (AIoT). They will be able to critically evaluate and compare different smart computing paradigms, particularly within the context of IoT, and analyze existing AIoT applications in terms of performance, scalability, and efficiency. Furthermore, students will be equipped to design and propose innovative AIoT solutions, addressing various topics such as geo-positioning, mobile applications, data management, edge-device deployment, energy efficiency, network modeling and simulations, and fault-tolerance.

Course Content: This course covers a wide range of topics related to the Artificial Intelligence of Things

(AIoT). It begins with an introduction to the role of AI in modern systems and then explores key AIoT design factors, including coverage, connectivity, lifetime, energy consumption, reliability, and delay. Students will examine node and network architectures in AIoT and propose their term-project topics, followed by project

milestones and background presentations. The course further addresses AIoT deployments, comparing random and deterministic approaches as well as grid-based and non-grid-based deployments. Students will learn intelligent data dissemination and management approaches through simulations, and analyze routing strategies, including data-centric versus ID-centric routing and in-network data aggregation. Node and access point failures will be modeled and analyzed, alongside strategies for maintaining sustainable AIoT networks under constraints such as limited energy, mobility, and harsh operational conditions. The course also covers localization techniques, network topologies, and fault-tolerance methods. Throughout the semester, students will engage in project comparisons, analyses, and assignments designed to apply these concepts in practical AIoT scenarios.

8.2. Common Compulsory Courses Offered University-wide

ENG101 English I (course type: required) (2 Credits, 3 ECTS)

Course Objective:

Designed for English-medium departments, ENG101 develops students' ability to understand and respond to everyday dialogues and contexts in English-speaking environments. Meaning and communication are prioritized; grammar supports communication. Content is supported with visual, audio, and written materials and tailored to each topic. ENG101 targets A1 (CEFR).

Course Content: 1. Introducing oneself 2. Giving personal information 3. Giving personal information 4. Talking about objects 5. Talking about family 6. Describing and discussing buildings and furniture 7. Talking about timetables/schedules 8. Talking about daily routines 9. Talking about daily routines 10. Ability 11. Asking for and giving directions 12. Talking about food and quantities.

ENG102 English II (course type: required) (2 Credits, 3 ECTS)

Course objective: ENG 102 for English Departments aims to develop students' awareness of the language used in everyday life situations as well as the vocabulary items used in different topics. The course has been designed to show the students

communicatively useful expressions in their immediate environment. Understanding how the language is used to maintain communication or convey meaning in specific situations is prior to how the structures are put together to form the language. The aim is to expose students to some basic functions in some specific situations and topics at A2/B1 level of the CEFR so that the students can easily communicate with the foreign people in their immediate environment and develop their ability to comprehend oral English. Course Content: 1. Health Matters 2. Health Matters 3. Restaurant Problems- Complaints and responses 4. Talking about Computer Problems 5. Reporting the News and the Weather 6. Reporting the News and the Weather 7. Product Problems- Complaints at the store 8. Talking about the future possibilities 9. Talking about the future possibilities 10. Health Problems and Herbs 11. Health Problems and Herbs 12. Job qualifications and Working Conditions.

Prerequisite: ENG101

YIT101 Turkish for Foreigners I (course type: only for Foreign Students) (2 Credits, 2 ECTS)

Course Objective: Designed for students with little to no prior knowledge of Turkish grammar and vocabulary. A compulsory course for learners of Turkish as a foreign language. Students follow online videos via UZEBİM. Topics range from the Turkish alphabet to the present simple and present continuous tenses.

Course Content: Introduction to the course; Turkish alphabet and phonology; forming plurals in Turkish; forming yes–no questions; building sentences with the “var/yok” (there is/there isn’t) structure; possessive suffixes; use of personal pronouns; numbers and asking questions about numbers; case endings (noun cases) in Turkish; where and how to use the present continuous and simple present tenses.

YIT102 Turkish for Foreigners II (course type: only for Foreign Students) (2 Credits, 2 ECTS)

Course Objective: Designed for students with little to no prior knowledge of Turkish grammar and vocabulary. A compulsory course for learners of Turkish as a foreign language. Students follow online videos via UZEBİM. Topics range from the Turkish

alphabet to the present simple and present continuous tenses.

Course Content: Introduction to the course; Turkish alphabet and phonology; forming plurals in Turkish; forming yes–no questions; building sentences with the “var/yok” (there is/there isn’t) structure; possessive suffixes; use of personal pronouns; numbers and asking questions about numbers; case endings (noun cases) in Turkish; where and how to use the present continuous and simple present tenses.

Prerequisite: YIT101

AIT103 Atatürk Principles and Reforms I (course type: only for Foreign Students) (2 Credits, 2 ECTS)

Course Objective: This course is focusing on the early dynamics of the Ottoman Empire (including social, economic, political, institutional and cultural) and examines the historical background of the Republic of Turkey. The main aim of the course is to scrutinize the political dynamics and modernization attempts of the Ottoman state analyzed comprehensively. By doing so, basic concepts of History of Revolution, World and Ottoman Empire at the Beginning of the 20th Century, The Last Period of the Ottoman State, The First World War, The Preparatory Period of the National Struggle are the main topics that are focused in the classes.

Course Content: A Concise Political History of Ottoman Empire 1300-1914 Decline and the Ottoman Modernization Ottoman State and Society in Classical Period The organization of National Resistance Movement: The Circular of Amasya The Congresses of Erzurum and Sivas Invasions, Mustafa Kemal and National Resistance Movement Ottoman Empire in the First World War I Armistice of Mudros The Treaty of Sevres and the National Liberation War against the Armenians and Greeks The Armistice of Mudanya and the Peace Treaty of Lausanne.

Prerequisite: --

AIT104 Atatürk’s Principles and Reforms for Foreign Students II (course type: only for Foreign Students) (2 Credits, 2 ECTS)

Course Objective: It aims to let the student who attends the AİT 104 courses to acquire the ability of classification, description, explanation, analysis of the current social and

individual problems in Turkey by taking rationality and science, norms of modernity into account with respect to the Kemalist thought and the Turkish Revolution.

Course Content: Discussion on "revolution", "Evolution" and the great revolutions in history. Transformation in the Political system: From a Sultanate to Republic
Transformation in education and cultural life. Unsuccessful attempts for multi-party system and consolidation of the Single Party Regime. Atatürkçülük/Kemalizm and the 6 principles of Ataturk, Nationalism, Secularism-Laicism, Populism • Sheikh Said
Rebellion: Kurdish Nationalism or A Reaction to Secular policies of the new regime
Turkey During the Second World War. Turkey and the League of Nations Turkey in the Regional Organizations. Turkish Foreign Policy and the Foreign Policy Issues Statism, Republicanism, Revolutionism.

Prerequisite: AIT103

CAM100 Campus Orientation (course type: required) (0 Credits, 2 ECTS)

Course Objective: Organized so that students can get to know university life better, this course consists of various activities aimed at gaining the identity of being a Near Easterner and adapting to university life more easily.

Course Content: Near East University history and general information; information on faculties; counseling and academic processes; digital/distance learning and use of UZEBIM; information access and management; information on common and elective courses taken throughout the campus; creating a work schedule and developing academic study habits; academic ethics and scientific approach; social life and the Dean of Students; health management and Hospital services; Cyprus culture and adaptation to the island; scientific research and activities; quantification and consideration; communication skills and human relations management.

CAR100 Career Planning (course type: required) (0 Credits, 2 ECTS)

Course Objective: To introduce students to career methods that will help them adapt to the rapidly changing economic, social, cultural, ethical and legal conditions of the business world and to gain the ability to adapt them to their own lives.

Course Content: Introduction to the Course, Career Concept and Career Stages, Expectations of the Business World from New Graduates, Career Management and Career Management Models in Organizations, Individual Career Planning and Goal Setting, Job Search Techniques, Individual Career Planning and Applications: Cover Letter and CV Writing, Basic Communication Skills, Individual Career Planning Practices: Preparing for the Interview, Interview Techniques, Orientation and Introduction to Working Life, Lifelong Learning.

CHC100 Cyprus History and Culture (Course type: elective) (0 Credits, 2 ECTS)

Course Objective: Being able to comparatively analyse the variable dynamics of Cyprus across the ages also brings with it an understanding of the dynamics of the Mediterranean basin. Having information about the island of Cyprus and the Mediterranean culture provides us with an opportunity to understand and describe the states established in the Mediterranean, the religious communities operating there, and the socio-cultural interactions between people. This course offers the opportunity to examine in depth the social, economic and cultural dynamics of Cyprus, which acts as a bridge between East and West.

Course Content: General information about the history and culture of Cyprus; Zoology and Botany; Social and cultural life in the First Age and the Middle Ages; The social and cultural heritage of the island during the Ottoman period; History of Art; Religion and Culture; British Colonial Period; Cyprus Education History; political events from 1950 to 1974; The national struggle of Turkish Cypriots for existence and freedom; The establishment of the TRNC and social structure.

GEC351 21 Century Skills (course type: required) (0 Credits, 2 ECTS)

Course Objective: The 21st Century Skills course aims to help students develop essential thinking skills such as critical, creative, and philosophical thinking, problem-solving, lifelong learning, and effective learning strategies. In addition, it equips students with social skills such as effective communication, teamwork, intercultural interaction, and diversity management. By fostering digital literacy, media awareness, information management, and basic statistical knowledge, the course supports students in becoming

active and conscious individuals in digital environments. While promoting personal growth through self-awareness, emotional intelligence, flexibility, and time management as self-management skills, it also cultivates a sense of social responsibility through topics such as sustainability, ethical leadership, and global citizenship. Finally, by providing practical life skills such as entrepreneurship, financial literacy, stress management, and creative presentation skills, the course aims to equip students with competencies they can apply in real life.

Course Content: Fundamental thinking and learning skills; concepts of critical and creative thinking; core problem-solving concepts and processes; principles of lifelong learning; logical reasoning; effective learning strategies; components of core thinking skills; methods of philosophical thought; communication and collaboration skills; fundamentals of effective communication and cooperation; basics of intercultural communication; elements shaping communication across cultures; importance of effective communication in collaboration; appropriate techniques for group work; strategies for intercultural interaction; communication problems and solutions in teamwork; innovative communication strategies supporting diversity management; strategies to enhance communication and collaboration in teams; digital literacy and media competencies; information management; basic statistical terms; purposes of digital media tools; interpretation of statistical data; digital tools and platforms; reliability and quality of digital content and sources; creation of original media content; cybersecurity; ethical and philosophical reflections with self-management and cognitive flexibility; time-management strategies; factors of individual and environmental adaptation; components of emotional intelligence; prioritization techniques; resilience in various situations; coping strategies for stress and change; ethics; personality profiles and the impact of emotional intelligence on success; an individual adaptation strategy for stressful situations; empathy-based communication; time management across academic, social, and personal goals; social responsibility and global citizenship; sustainability and environmental awareness; principles of ethical leadership; links between global issues (e.g., climate change, inequality) and social responsibility; relationship between social responsibility projects and sustainability; raising universal

awareness; applied life skills; basic entrepreneurship concepts; financial literacy terms;
stages of project mana