

COURSE DETAILS

10103 Life Skills

(6 credits)

Objectives

1. To gain skills in communication, acquiring common knowledge, and using technology in everyday life.
2. To gain skills in thinking, analyzing and problem-solving in various situations.
3. To develop oneself in the areas of morality, ethics and human relations.

Course Description

To gain necessary life skills in society such as a hunger for knowledge, how to gain knowledge and continuously seek further self-development; be able to use technology efficiently; apply reasoning, analytical thinking, problem-solving, and negotiation skills; learn the principles of self-management, emotional control, and stress management; to develop oneself to have morality, ethics, proper human relationships, manners and etiquette.

10111 English for Communication

(6 credits)

Objectives

1. To be able to use English as a means for communication.
2. To study structures, vocabulary and important English idioms.
3. To equip students with skills in listening, speaking, reading and writing in English for accuracy and appropriateness in various situations

Course Description

Structure, vocabulary and English idioms used in listening, speaking, reading and writing English for communication.

10121 Human Civilization

(6 credits)

Objectives

1. To have knowledge on Eastern and Western civilization in terms of politics, economy, and society.
2. To understand human civilization in the past which is fundamental of the current civilization.
3. To realize and appreciate the values of human civilization.

Course Description

Knowledge on Eastern and Western civilization human has created in terms of politics, economy, society, wisdom, arts, as well as science and technology.

10131 Human Society

(6 credits)

Objectives

1. To understand the existence of human community and society.
2. To understand the political, legal, economic and social mechanisms affecting an organization of human society.
3. To promote the responsibility to the society and nation.

Course Description

Basic characteristics of being human; cohesion into communities and societies; human distribution and settlements; the components of society; human behavior in society; political, legal, economic and social mechanisms affecting the organization of human society; social problems and methods to solve them; promotion of a good society.

10141 Science, Technology and Environment for Life**(6 credits)*****Objectives***

1. To gain knowledge about the concepts, rules and development of science and technology, and how they influence of thought and human livelihood.
2. To gain knowledge about the evolution of living things and human beings.
3. To understand the relationship between humans, the environment, and the effects of science and technology on the environment.
4. To gain knowledge of the applications of science, technology, and mathematics in daily life.
5. To enhance scientific thinking and awareness of the need for environmental preservation.

Course Description

Concepts, theories, critical thinking, rules and development of science and technology; natural history concerning human beings; the parts of the human body; humans and the environment; hygiene and nutrition; the application of science, technology, and mathematics in everyday life.

10151 Thai Studies**(6 credits)*****Objectives***

1. To learn about Thailand's history, society, language and culture.
2. To be able to apply the course knowledge to daily life.
3. To understand and take pride in what it means to be Thai.

Course Description

Knowledge about Thai in terms of history, settlement, politics, economy, culture, religion and ritual, language and literature, arts and culture.

10152 Thailand and the World Community**(6 credits)*****Objectives***

1. To be able to gain knowledge on situations, trends and characteristics of economic, social and political relations and changes in the world community which affect Thailand.
2. To gain knowledge on the status of Thailand in the world community.
3. To be able to analyze the problem as a result of globalization in various aspects including political, economical, social and culture and impact on moral and ethic.

Course Description

Status of Thailand in social world; dynamic of social changes which affecting Thailand; problems and causes of problems arising as a result of globalization which cause the awareness, knowledge and understanding of the situation; be able to analyze the cause of problem and the impact of Thai society in various aspect including political, economic, social, moral and ethical.

96101 Introduction to Computer**(6 credits)*****Objectives***

1. To have knowledge about the basic principles of computer hardware and software.
2. To have knowledge about principles of computer processing and can use computers to help perform various tasks appropriately.
3. To have knowledge about the introduction to computer programming and information system development.
4. To have knowledge and understanding about computer security, morality, ethics and professional code of computer.

Course Description

Basic knowledge about computers, number system and Unicode, components and procedures of computer, characteristics of data and files, system software and application software, principles and procedures of computer-based processing, basic knowledge of computer programming and information system development, computer security, morality, ethics and professional ethics.

96102 Mathematics and Statistics for Science and Technology**(6 credits)****Objectives**

1. To understand mathematics as it is a key factor to understand the various subjects in science and technology.
2. To understand statistics and apply knowledge in understanding the various subjects in science and technology.

Course Description

Logic; Sets; real number systems; geometry analysis; relations and functions; sequences and series; algebraic function; transcendental function; matrix; determinants; vector; derivative; integral; Permutation and Combination; possibility; basic knowledge on statistics and Descriptive Statistics; distribution; random variables; introduction to parametric statistics and nonparametric statistics; correlation analysis; Simple Linear Regression; and application of mathematics and science and technology statistics.

96304 Data Communications and Networking**(6 credits)****Objectives**

1. To acquire knowledge of data communication and principles of data.
2. To understand principle and concept of data communications in various types.
3. To be able to use computer networking term as data communication tool.

Course Description

Basic concept of data communications; Hardware for communication; media and communication equipment; Data transmission and protocol; Software of data communications; wireless communications; knowledge of basic networking; Local area networking; Wide area networking; Metropolitan area networking; other networking; Internet, Intranet, Extranet system; network system management and security of data for data communication in business.

96305 Information Technology in Commercial Business**(6 credits)****Objectives**

1. To understand general roles of information technology for perform of operation in the organization.
2. To understand and apply information technology for benefits of operation in business.

Course Description

The role of information technology within business organizations in business commercial, control, operation and planning; the concept of application of information technology in staff performance in practical positions for various business including trading, services and wholesale business; guidelines for the use of information technology in business in accounting, staff, purchasing and production; The role of information systems in assisting senior executives in making tactic and strategy and application of information technology in developing new business for competitive advantages.

96404 Computer Systems Auditing and Internal Control**(6 credits)*****Objectives***

1. To acquire knowledge of types and scopes of computer systems auditing and control.
2. To acquire knowledge of roles and impacts of computer systems auditing and internal control.
3. To understand effective techniques of computer systems auditing and internal control.
4. To create concept of auditing systems through computer.
5. To acquire knowledge and competency on effective planning, control, monitoring and auditing of computer systems.

Course Description

Types and scopes of computer systems auditing and internal control; impacts of computer systems on auditing and internal control; effective internal control methodologies; management control; system development control; computer systems control; computer system security control; auditing methodologies; methods and techniques of security standard auditing in computer systems; computerized auditing system development; methods of corruption prevention and methods of damage prevention from computer; staff preparation and development and case studies.

96407 Information Systems Development**(6 credits)*****Objectives***

1. To acquire knowledge of information systems development.
2. To be able to apply principles, theories and techniques of information systems development in business into practice effectively.
3. To acquire knowledge of planning, control, monitoring and auditing of information system developed.

Course Description

Business data computer processing; information system development cycle; analysis and design of object oriented system; feasibility study; methodologies and techniques for information system analysis, cost analysis and data needs assessment; methodologies and techniques for information system design; techniques for prototyping; guideline in program development and testing, documentation, information system installation and maintenance; monitoring, and evaluation information system.

96408 Database System Management**(6 credits)*****Objectives***

1. To acquire knowledge of data, information and database system.
2. To gain skills in database management effectively and appropriately.
3. To acquire competency on administration and database management effectively.

Course Description

Concepts of database system; database system security; database system characteristics and structures; characteristics and relationship of data; logical and physical structures of data; characteristics of data and information; data and information manipulation methods; data dictionary; case studies and simulations related to the application of database systems.

96411 Information System and Knowledge Management**(6 credits)*****Objectives***

1. To acquire knowledge of information system in level management.
2. To acquire knowledge of policy formulation, planning, strategic administration and management in information system.

3. To acquire knowledge and understating about organization, knowledge management process, development of knowledge management system and learning organization.
4. To create concept of modern technology application to information and knowledge management.

Course Description

Definition, evolution and role of information system in organization; type of information system in business; policy formulation; application of planning, analysis and control in business information system and strategic information system; information system evaluation; case studies in business information system and strategic information system; general concept of knowledge, knowledge type, knowledge management process; analysis, design and development of knowledge management system; learning organization; application or case studies of knowledge management.

96412 Information Technology Project Management

(6 credits)

Objectives

1. To acquire knowledge of project and project management in information technology.
2. To acquire knowledge of project management in resource, scope, quality and risk.
3. To acquire knowledge and understand about tool and techniques for project management.

Course Description

Definition of project; business cycle of project; basic knowledge of information technology project management; guideline for project management in resource, financial, time, and people; project scope management; project quality management; project risk management; project communication management; project procurement management; process, tools and techniques for information technology project management; case studies of information technology project management.

96413 Web Design and Development

(6 credits)

Objectives

1. To acquire knowledge of website and understand the benefits of web application in business.
2. To acquire knowledge of the principles, techniques and tools for web design and development.
3. To gain skills in web design and development effectively and appropriately to business.

Course Description

The structure of world wide web; services of service providers; principles, techniques and tools for web design and development; database system on web; Web programming; Web design with multimedia; Graphic and animation design; Application system on internet and world wide web.

96414 Computer Programming

(6 credits)

Objectives

1. To acquire basic knowledge of computer programming.
2. To gain knowledge and skill in process, methods, techniques and updated technology for computer programming.
3. To have understanding and competency on computer programming for business.

Course Description

Concept of Object-Oriented; Logic in Problem solving and algorithms; Object-oriented problem analysis; Principles of Object-oriented programming; Steps in Analysis planning; Flowchart by UML; Design, development, testing and program installation; Tools for program development; Document Preparation for Program manual.

96415 Business Intelligence Systems**(6 credits)*****Objectives***

1. To have knowledge about the basic principles of business intelligence.
2. To have knowledge about the management of big data in business.
3. To have knowledge and skill about the analytic and management of big data in business

Course Description

The meaning and component of business intelligence, business data warehouse, knowledge discovery in data warehouse, big data management, pattern analysis and discovery in big data, data warehouse architecture and development, data warehouse design for difference data structure, extract, transform and cleansing data, case study of business decision making models.

97101 General Studies in Printing**(6 credits)*****Objectives***

1. To acquire knowledge of history of printing and printing materials.
2. To understand basic principles of printing system.
3. To be able to explain techniques for effective printing system selection.
4. To understand nature and qualification of printing materials.
5. To acquire knowledge of printing, printing business and printing industry.

Course Description

Printing and evolution of printing from past to present; printing materials and printing ink; knowledge on printing processes from pre-printing process, on printing process including pre-press, printing by printing systems in printing principles, printing methods, printing plates, printer and after-press; information technology in printing industry; publishing business and printing business; printing management; Thai printing industry; laws and regulations related to printing.

97103 General Studies in Packaging**(6 credits)*****Objectives***

1. To acquire knowledge and understanding on principles of packaging.
2. To acquire knowledge and understanding on type of packaging.
3. To acquire knowledge and understanding on process of packaging production.
4. To acquire knowledge and understanding on environment, law and regulations related to packaging.

Course Description

Principles of packaging; type of packaging based on paper, plastic, metal and glass; structure characteristics of packaging; packaging production process from packaging development in structure design, graphic design, printing, forming, liquid and dry packing, envelopment, delivered unit in distribution; impact of packaging on environment; laws and regulations related to packaging.

97210 Applied Mathematics for Industrial Technology**(6 credits)*****Objectives***

1. To acquire knowledge on applied mathematics in industrial technology.
2. To be able to apply knowledge to other industrial technology modules.
3. To be able to apply knowledge in applied mathematics for study in other courses in industrial technology.

Course Description

Functions, limits and continuity of functions of one-variable; Complex numbers; Derivatives, Integral and its applications; Infinite series and convergence; Fourier series; Analytic geometry in a space; Multivariable functions; Partial derivatives of multivariable functions; Double integral; Triple integral; First-order ordinary differential equations; Higher-order linear ordinary differential equations; Introduction to numerical methods.

97214 Printing and Packaging Materials**(6 credits)****Objectives**

1. To acquire knowledge of printing and packaging materials.
2. To be able in using printing and packaging material as needs.
3. To acquire knowledge of the qualification of materials for printing and packaging.
4. To have ability to analyze the problem of printing and packaging materials.

Course Description

Knowledge about elements, category, standard, production processes, qualification of materials for printing and packaging such as mold, printing materials, inks, materials after printed job and other materials for printing and packaging, knowledge in select the kind of printing and packaging materials matching with the need of usage, problem analysis and solving approach in printing and packaging materials.

97215 Science and Technology in Printing and Packaging**(6 credits)****Objectives**

1. To acquire knowledge of science and technology of printing and packaging.
2. To be able to apply the knowledge of science and technology into printing and packaging.
3. To acquire knowledge of the environmental factors that affects the printing and packaging.

Course Description

Basic knowledge in science and technology about printing and packaging, chemical knowledge, photocell chemical, lights, mechanics, electronics, biology and printing and packaging technology, science image and printing application and the impact of the printing and packaging industry on the environment and pollution treatment process.

97216 Printing Process Technology**(6 credits)****Objectives**

1. To acquire knowledge and understanding about the technology of printing processes and systems.
2. To be able to analyze and solving the problem in printing system.

Course Description

Knowledge of the principle of printing, technical printing, printing technology processes, of embossed printing surface i.e. letterpress printing and flexography, printing surface process i.e. photolithographic offset printing, process of printing deep surface i.e. intaglio printing, gravel printing, and pad printing, stencil surface printing processes and silkscreen printing, no press printing process i.e. ink jet printing, electro photography printing and thermal printing as well as printer technology and problem in printing process with solving approach included practical training.

97217 Basic Mechanical Engineering for Industrial Technology**(6 credits)****Objectives**

1. To acquire knowledge of the general principles in mechanical engineering related to industrial technology.
2. To be able to apply knowledge to other industrial technology modules.
3. To acquire knowledge of fluid mechanics related to industrial technology.

4. To acquire knowledge of principles of heat and thermodynamics related to industrial technology.

Course Description

General principles of mechanical engineering related to industrial technology; Engineering mechanics, statics, dynamics, mechanics of machinery; Mechanical vibrations; Fluid mechanics and fluid machinery; Principles of heat and thermodynamics; Heat transfer; Introduction to refrigeration and air conditioning.

97218 Operation Managements and Entrepreneurships

(6 credits)

Objectives

1. To acquire knowledge of operation managements.
2. To acquire knowledge of entrepreneurships.

Course Description

The principles of operation management and entrepreneurships; Exploring key concepts such as managing people; Marketing analysis and product development; Plant location; Plant layout; Production planning; Production management; Human resource management; Sale and marketing management; Warehouse management; Cost management, Business opportunities; Sale forecasting; Business plan and business feasibility study; Product strategies; Promotion and marketing activities; Funding and financial management operations.

97219 Industrial Materials and Manufacturing Process

(6 credits)

Objectives

1. To acquire the basic principles of properties and industrial applications of material selections.
2. To acquire the principles of material fabrication processes.
3. To acquire the principles of engineering drawing.

Course Description

Engineering materials properties; Materials selection; Manufacturing methods: extrusion, forming, material machining, welding, heat processing, polishing, washing, coating and coloring; Principles of engineering drawing: drafting, parts, assembly; Tolerance for assembly.

97314 Technology for Production Planning and Control in Industry

(6 credits)

Objectives

1. To acquire knowledge of flexible manufacturing system.
2. To be able in applying and using material planning system.
3. To be able to make decisions about manufacturing resource planning.
4. To acquire knowledge of principle and application of artificial intelligence.
5. To acquire knowledge of principle of manufacturing technology management.

Course Description

The adoption of manufacturing automation technology into planning and production control included the flexible production system, material planning system, material planning in manufacturing, as well as study in artificial intelligence industry and technology management.

97315 Tools and Machines for Manufacturing Process

(6 credits)

Objectives

1. To acquire the basic of hand tools in manufacturing industry.
2. To acquire the basic of machines in manufacturing industry.
3. To acquire the principles of measurements in the manufacturing industry.
4. To acquire the principles of mold technology.

Course Description

General basics of cutting tools; Metal machining; Cutting force; Temperature of scrap metals and bleeds; Characteristics of scrap metals; Wears; Corrosions; Resolutions; Principle of Measurements and error analysis; Lubrication and cooling of machine tools; Tool parts analysis according to the specified function; Strength of materials and mechanical properties of engineering materials; Materials Selection; Surface quality; Mold technology; Mold forming method; Casting; Surface coatings; Improving the properties of molded materials; Polishing; Practical workshop.

97316 Technology for Product and Process Design in Industry**(6 credits)****Objectives**

1. To understand CAD.
2. To understand the principle of grouping technology.
3. To understand the principle and use computer in production planning.
4. To understand the principle process of CAM.
5. To understand and using robot in the manufacturing.
6. To understand the principle of the material and parts automation conveyor.

Course Description

Production design technology, manufacturing process and technology in manufacturing automation, CAD and processes, grouping technology, CAM, robot and automation conveyor.

97317 Information Systems and Automation in Industry**(6 credits)****Objectives**

1. To acquire the principles and able to select industry information technology.
2. To acquire the principles and able to select the automation manufacturing.

Course Description

Overall concepts of manufacturing technology in industry 4.0; Structure of IT and industry IT management, Tools and programs for developing information systems; Communication technology and data network; Big-data analysis in manufacturing systems; Security systems; Industry IT maintenance; Overview of automation systems; Automatic control technology in industry; Artificial intelligence (AI); Virtual reality (VR); Basics of instrumentation and its applications; Industrial measurements; Sensors and transducers; Actuators and communication devices in automatic control systems; Apply of the using micro-computer in manufacturing control; Programmable logic control (PLC) and basic programming; Basics of Industrial robots.

97318 Printing and Packaging Design**(6 credits)****Objectives**

1. Knowledge and understanding in principle of design.
2. Knowledge and understanding printing and packaging design and development process.
3. Knowledge and understanding publication and packaging design.

Course Description

Principle of design, design in printing related with printing system, font design, graphic, color, design for general publication and packaging, packaging structure design, process of development and design in printing and packaging, related factors in printing and packaging design, development of packaging module, packaging design i.e. box, bottle, envelope, bag, can, tube, cab, tray, card holder, and product label, principle of food storage design, consumer goods package, medical and cosmetic packages, green package, packaging law and regulation included practical training.

97403 Pre-press Technology**(6 credits)*****Objectives***

1. To acquire knowledge of the job before printing from original preparation to forming mold.
2. To acquire knowledge of techniques and methods before proceeding the print.
3. To be able to analyze and determine the cause of problems and solve them before proceeding the print.

Course Description

Knowledge about technology before proceeding digital printing, publication design, font, message management, image capture, image creation and photo retouch, color weight, color printed, page layout, work on the original before proceeding the digital print, print results, making proofs, forming convex mold surface, horizontal, deep surface, fret fabric, quality control with standard production before proceeding the print and quality control with color management system as well as practical training.

97407 Printing Production Management and Quality Control**(6 credits)*****Objectives***

1. To acquire knowledge of production management production planning.
2. To acquire knowledge of monitoring and quality control of printing jobs.

Course Description

Knowledge about management of production organization, machinery and knowledge of printing equipment as well as knowledge in maintenance and safety workplace, factory layout, production planning, production scheduling, monitoring and quality control with standardization.

97410 Printing Business Management**(6 credits)*****Objective***

To acquire knowledge of management areas in order to operate business as well as apply of information technology into printing business management.

Course Description

Knowledge about printing business management, business plan, organization management, human resource management, marketing management, managerial accounting, financial management, production management, quality control, material management, environmental management, safety, and power, information technology system for management, printing costs and price estimation, law, rules and regulations, research and development as well as e-commerce, logistics management and supply chain management.

97418 Safety, Occupational Health and Environment in Industry**(6 credits)*****Objectives***

1. To understand the meaning, important and element of security, occupational health and industry environment.
2. To be able to present measures management and safety environment and workplace control.
3. To be able to manage dangerous chemical and dangerous goods, risk assessment and planning for emergencies and fire.
4. To be able to manage and control industrial pollution and prevent environmental impact to communities surrounding the plant.

Course Description

Meaning, important, and element of safety, occupational health and environment in the industry, manage and control dangerous from environment factors affecting the safety and health of employee in factory as well as prevent environmental impact to communities surrounding the plant, awareness, evaluation and

environmental control, cause of accident, loss from accident and accident control, dangerous chemical and dangerous goods management, risk assessment, planning for emergencies and fire, type and sources of industrial pollution, management and control of industrial pollution.

97419 Industrial Management Standards and Industrial Standards

(6 credits)

Objectives

1. To acquire knowledge and understanding about quality control system.
2. To acquire knowledge of industrial management standards.
3. To acquire knowledge of industrial standards.
4. To be able to apply the knowledge of standard management and industrial standards into production.

Course Description

Ideas about quality system, sampling and control chart, modern quality management system which covers quality control management system where everyone participates, international standards in the industry, standard systems management products and services, environmental standards, product specifications and performance standards, system calibration process, standard laboratory and systems integration industry standards.

97420 Logistics and Supply Chain Management for Industry

(6 credits)

Objectives

1. To acquire knowledge and understanding about Logistics.
2. To acquire knowledge and understanding about Supply chain.
3. Ability to apply logistics and supply chain management into the industrial management.

Course Description

The concept of logistics management, Material requirement planning, distribution, Center of gravity, cargo handling, cargo movement equipment and transportation models.

The concept of supply chain management, supply chain network, decision making in supply chain, inventory management, demand management and supply of raw material and prices, cooperative between organization in supply chain increasing efficiency, apply logistics and supply chain management in the industry.

97421 Professional Experience in Manufacturing Technology

(6 credits)

Objectives

1. Ability to apply the knowledge into practices.
2. Understanding and performing the principle of teamwork.
3. Improvement of leadership, human relationship, decisions making, morality and ethics.
4. Understanding and concern on manufacturing technology professional ethics.

Course Description

Professional practice and ethics related to the manufacturing industry, law and regulations related to professional practice, taking advantage of the technique and knowledge of the industry that a student has studied the industry, ethics, professional production technology industry, activities related to the development of a moral, ethical and effective leadership.

97423 Plant Layout and Work Study in Industry

(6 credits)

Objectives

1. To acquire knowledge and understanding in factory layout and flow of materials in the factory, able to design factory layout.
2. To acquire knowledge and understanding about work study and set up standardization.

Course Description

Conveyer equipment in the factory, system management in the factory such as light and sound, equipment and tools layout, flow of material in the factory, factory layout, ergonomic, flow chart, theory and practice in work study for standardization and standard lead time.

97424 Strategic Management of Operational Systems in Industry**(6 credits)****Objectives**

1. To acquire knowledge and understanding about production strategic planning in various processes.
2. To be able to use technical forecast in demand for production planning.
3. To be able to use strategic in planning and control of inventory efficient.
4. To be able to use strategic in planning and appropriate performance control.

Course Description

Study in strategic management of operational systems in industry, continuous production, using demand forecasting techniques, performance planning and control.

97426 Applied Electrical and Computer Engineering**(6 credits)****Objectives**

1. To acquire the basic principles of electrical and computer engineering.
2. To acquire the principles of direct/alternating current and electromechanical devices in industrial technology.
3. To acquire the principles of digital systems, embedded computer systems, connection devices and interfaces.

Course Description

The basic principles of electrical engineering; Basics of electric circuits, Electromagnetic wave; Transformers; Electronics circuits; Op-amp circuits; Basics of Semiconductor devices; Electro-mechanical machines; The basic principles of computer engineering; Digital systems; Basics of embedded computer systems; connections; Interfaces; Real-time systems.

97431 Packaging Converting Technology**(6 credits)****Objectives**

1. To acquire knowledge and understanding about packaging converting machine.
2. To acquire knowledge and understanding about packaging converting process.
3. To acquire knowledge and understanding about packaging converting technology.
4. To acquire knowledge and understanding about testing the usage of packaging competency.

Course Description

Type of packaging converting, packaging converting machine, paper packaging machinery, plastic packaging, metal packaging, glass containers, technology involved in packaging converting, competency test for packaging as well as practical training.

97432 Professional Experience in Printing and Packaging Technology**(6 credits)****Objectives**

1. To gain professional experiences and skills in printing and packaging.
2. To improve professional skills and experiences in printing and packaging.
3. To improve leadership skills, human relationship, decision making ability with moral and ethic.
4. To have understanding and concern about professional printing and packaging ethic.

Course Description

Knowledge about the structure of the printing and packaging industry, professional printing and packaging industry covering the production, distribution, research and development, case study in professional printing and packaging, self-development and development activities related to printing and packaging, ability in management, and effective leadership, skills, professional ethics, and group activities to develop a relationship with moral and ethics.

97433 Industrial Feasibility Study and Project Management**(6 credits)****Objectives**

1. To acquire the knowledge of the feasibility study in industrial project.
2. To acquire the knowledge of location of industry, development and competitiveness of the industry.
3. To acquire the knowledge of project management according to engineering economics.

Course Description

Principles and methods of project analysis and project investment valuation; Project evaluation and feasibility in terms of marketing, production technology, labor, economics, finance and law; Trends analysis in changes of industrial production technology resulting from economic, social and technological developments of various countries. Development and competitiveness building of the industry Project management according to engineering economics principles.

97434 Post-Press Technology**(6 credits)****Objectives**

1. To acquire knowledge of post-press technology.
2. To acquire knowledge of quality control and trouble-shooting in post-press work.
3. To acquire knowledge of packing technology and printed product delivery.

Course Description

Knowledge about post-press work, finishing and converting of printed substrate to comply to using purposes. Relationship of post-press work to prepress work and press work. Various post-press technologies such as surface coating, lamination, hot stamping, embossing and debossing, cutting, folding, perforating, die-cutting, soft cover and hard cover book binding, and other related post-press technologies. Quality control and trouble-shooting in post-press work. Packing technology for printed products. Warehousing and logistics for printed products. Practical training in post-press technology.

99201 Science for Information and Communication Technology**(6 credits)****Objectives**

1. To acquire basic knowledge of science.
2. To apply knowledge on information and communication technology.

Course Description

Introduction to science; chemistry, physics, mechanics, electronics, computer and technology related to information and communication technology

99202 Data Analysis**(6 credits)****Objectives**

1. To acquire basic knowledge of data.
2. To be able to analyze and process data in the area of information technology.

Course Description

Concepts about data, data elements, data collection, data visualization, graph theory, statistical methods for data science, quantitative and qualitative data analysis in digital formats, calculation and display data in various forms, data analysis and processing, and using modern tools and algorithms in business data analysis.

99301 Web Services Technology and Applications**(6 credits)****Objectives**

1. To understand concepts and objectives of web services.
2. To apply web services to information systems.

Course Description

Concepts and purpose of web services including architecture, processes, protocols and services development using web services technology and examples of applications using web services technology.

99312 Mathematics for Information and Communication Technology**(6 credits)****Objectives**

1. To understand principles of mathematics related to information and communication technology.
2. To apply knowledge of mathematics to study information and communication technology courses.

Course Description

Fundamental concepts in mathematics that are potentially useful in information and communication technology including set theory; functions and sequences; counting; logic and induction; proof techniques; trees and Boolean algebra.

99313 Wireless Communications and Networks**(6 credits)****Objectives**

1. To understand principles of wireless communication and networking.
2. To understand wireless network communication technology.
3. To nurture ideas about the application of wireless communications in both the present and the future communications.

Course Description

Basic principles and theories of wireless communication, processing on mobile devices, access control of wireless communication and various types of wireless networks, system architecture, resources support and managing wireless networks, retrieval when failure occurs and wireless network applications and mobile computing.

99314 Data Structures and Algorithms**(6 credits)****Objectives**

1. To acquire basic knowledge of data structures for data management.
2. To study algorithms for data structure management.

Course Description

Introduction to data structures and algorithms for effective data management; linear and nonlinear data structures consisting of stack, queue, linked list, tree and graph structures; algorithms used for data structure management; data searching and data sorting; Reverse algorithm and the analysis of algorithms.

99315 Computer Architecture and Operation Systems**(6 credits)****Objectives**

1. To study the architecture of computer systems.
2. To study the operating system of computer and mobile.

Course Description

Architecture of computer systems; BUS systems, memory systems, memory hierarchy, cache memory, overlapping and parallel memory, virtual memory, high-speed computer arithmetic and parallel architecture; types of computer and mobile operating systems, functions in implementation and system management; multitasking, synchronization; processes in a crisis; semaphore; queuing; data buffer; congestion; process management; memory unit management; equipment management; file management and system security.

99316 Object Oriented Analysis and Design**(6 credits)****Objectives**

1. To gain knowledge about the analysis and design of object-oriented systems.
2. To be able to apply principles, theories and techniques in the analysis and design of object-oriented systems into practice appropriately.
3. To be able to plan, control, monitor and evaluate the information system developed by object-oriented processes.

Course Description

The cycle of system development, concepts of object-oriented technology, principles of system development in general. Principles of using visual language for UML design. System analysis procedure and model of requirements, use case diagram, abstract analysis. Analytical modeling concept, object-oriented design guidelines, class designing and the relationship between classes and objects. Creating a program with a case tool. The concept of testing in accordance with the requirements of the use case diagram.

99319 Web and Mobile Interaction Design**(6 credits)****Objectives**

1. To understand the principles of interaction design in both web and mobile forms.
2. To apply the principles and theories of interaction design in the appropriate practice by taking into account the user needs.

Course Description

Interactive system design on mobile devices that follows the principles of human-computer interaction and the theoretical model of motion and perception, learning about user-centered design and user behavior, creating content, development of graphical user interfaces, user interaction using interactive media and interacting with information in the system, sending content in multi channels and using location-based, including information exchange among members of the online social groups.

99321 Applied Information and Communication Technology for Elder**(6 credits)****Objectives**

1. To study about the information and communication technology for elder.
2. To study about applied the information and communication technology for elder on daily life.

Course Description

General knowledge about the information and communication technology for elder, and applied the information and communication technology for elder on daily life.

99402 Computer Security Management**(6 credits)****Objectives**

1. To understand computer security system concepts.
2. To understand computer system security law.
3. To encourage consideration of technology's implementation in network control and intrusion prevention.

Course Description

Security concept in computer systems; problems caused by the actions of people and those caused by the system; framework for security management and system access control; technology and equipment for computer network system control, intrusion prevention, biological control, protection software; encryption and decryption; personal and public key and digital signature; Legal and ethical issues related; trends and implementations in computer system security.

99409 Professional Experience in Information and Communication Technology (6 credits)**Objectives**

1. To apply principles, theories and techniques of information and communication technology into appropriate practice.
2. To be able to plan and coordinate in the field of information and communication technology effectively.
3. To enhance problem analysis and decision-making ability in the information and communication technology profession.

Course Description

Implementation of principles, theories and techniques in information and communication technology; use of case studies and simulation practice in projects; planning and coordination in information and communication technology; analysis and problem solving; apply information and communication technology in business case; key success factors in information and communication technology implementation; Understanding the potential and impact of information and communication technology on the organization and society; professional ethics of information and communication technology; knowledge of laws related to the information and communication technology professionals.

99410 Telecommunication System Design and Management (6 credits)**Objectives**

1. To understand basic processes of analysis, design and development in telecommunication system.
2. To be able to analyze system needs and conduct feasibility studies of telecommunication system.
3. To understand basic concept of cloud computing.

Course Description

Basic theories of techniques, tools, cycles and methods in analysis, design and development in telecommunication system; system needs analysis; feasibility studies; structure analysis, logical design and general system presentation; basic concepts of cloud computing, characteristics and types of cloud computing; technologies based virtualization; cloud management; cloud services; and applying tools and software related to cloud.

99412 Network Principles and Administration (6 credits)**Objectives**

1. To provide knowledge of communication networks
2. To analyse planning to expand and use network most usefully.
3. To provide knowledge of network maintenance and network data security.
4. To instill concepts of information service and trends in network administration technology.

Course Description

Communication networks; network media; traffic calculation; planning to expand and use the network most usefully; network system standards; remote network maintenance; nodes and clusters, controllers, multiplexing, FDM, TDM, intelligence multiplexer equipment; security of network data; network implementations and maintenance; ISDN network information services; ad-hoc communication networks and trends in network service.

99414 Multimedia Technology**(6 credits)*****Objectives***

1. To provide knowledge and understanding of multimedia supported technology.
2. To provide knowledge and understanding of the physical quality of multimedia for information and communication systems.
3. To instill concepts of multimedia implementation on network.

Course Description

Operating system technology network protocol and tools for program development supporting various types of multimedia such as sound, music, speech and computer graphics; physical and perceptual quality of multimedia types as well as data processing files and compiling; synthesis, production and implementation of media for replay; standards, and important methods of compression as well as techniques for working time specification and real-time communication for network multimedia; multimedia file system and multimedia database.

99415 Software Engineering**(6 credits)*****Objectives***

1. To provide basic knowledge of procedures for software management.
2. To provide understanding of techniques for software management.
3. To implement principles of software management.

Course Description

Introduction to software engineering; study of software development project planning; methods of needs analysis; software architecture; basic software design; software development and implementation; software quality inspection; techniques and strategies for software testing; software maintenance and examples of software management.

99419 Cyber Security**(6 credits)*****Objectives***

1. To have basic knowledge about cyber security.
2. To create ideas for planning and managing the cyber security system.
3. To have knowledge and understanding about cyber security in law and ethics.
4. To be able to apply knowledge to set security policies.

Course Description

Basic knowledge about cyber security and fundamentals of network knowledge for security management. Security of the World Wide Web and email security, security on the cloud, security on mobile devices and security on the IOT network. Security on VOIP and unified communication. Threats and prevention, cyber security in law and ethics, security policy and standards techniques and laws for data analysis and digital events for investigation and detect and prevent computer crime.

99420 Web Programming**(6 credits)**

1. To have knowledge about principles, techniques and tools for designing and programming on the web.
2. To have skills in designing and programming to work on the web efficiently and suitable for the nature of the business.

Course Description

Internet technology and internet media application and development of related software including the network infrastructure necessary for web design and construction. Web server management mechanism, scripting for server access. CGI programming and dynamic webpage, creation module on server, communication with the database and setting up a website performance tuning and safety. Website maintenance methods and website administration methods, and browser side programming, and server side.

99421 Object Oriented Programming**(6 credits)****Objectives**

1. To be able apply knowledge and understanding about object-oriented programming in basic and advanced programming.
2. To be able learn the patterns and problems of current programs.
3. To be able develop various skills, thinking processes and techniques in programming.

Course Description

Knowledge of object-oriented programming, data structure programming, algorithms, working with data files, error handling, trading program, graphic programming, design and program in the user interface, network and database programming, case studies.

99422 Advanced Programming on Mobile**(6 credits)****Objectives**

1. To apply knowledge and understanding of object-oriented programming in mobile application programming.
2. To analyze problems and patterns of mobile applications.
3. To develop various thinking process skills and techniques in mobile application programming.

Course Description

Introduction to mobile application development, infrastructure of mobile devices, mobile devices platforms, data storage of mobile devices, mobile location management, mobile application development tools, user interface design on mobile devices, mobile application development on mobile operating systems, evaluating mobile applications and browsers, and case studies of mobile application development on mobile operating systems.

99429 Professional Experience in Computer Science**(6 credits)****Objectives**

1. To able apply various theories, principles and techniques in computer science and practice appropriately.
2. To able plan and coordinate in computer science effectively.
3. To enhance problem analysis and decision-making ability in the academic profession computer.

Course Description

Application of principles, theories and techniques in applied computer science, use of case studies and simulations in project preparation, planning and coordinating in information and communication technology , analysis and problem solving ,application of computer science in case studies, determination of success factors in the application of computer science, understanding the impact and impact of computer science on organizations and societies, professional ethics in information and communication technology, knowledge of laws related to the information and communication technology profession.