

COURSE DETAILS

10103 Life Skills

(6 credits)

Course Learning Outcomes

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)

Course Learning Outcomes

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)

Course Learning Outcomes

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)

Course Learning Outcomes

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)*****Course Learning Outcomes***

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)*****Course Learning Outcomes***

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.

96102 Mathematics and Statistics for Science and Technology**(6 credits)*****Course Learning Outcomes***

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)*****Course Learning Outcomes***

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 tem 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.

96407 Information Systems Development**(6 credits)****Course Learning Outcomes**

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)****Course Learning Outcomes**

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)****Course Learning Outcomes**

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)

Course Learning Outcomes

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.

96414 Computer Programming

(6 credits)

Course Learning Outcomes

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)

Course Learning Outcomes

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.

99201 Science for Information and Communication Technology

(6 credits)

Course Learning Outcomes

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)*****Course Learning Outcomes***

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, 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.

99203 Mathematics for Computer Science**(6 credits)*****Course Learning Outcomes***

1. To understand the principles of mathematics related to computer science.
2. To be able to apply knowledge of mathematics to study the content in various courses in computer science.

Course Description

Basic concepts of mathematical theories related to computer science, set theory, functions and sequences, counting, logic and induction, relation, proof techniques, graphs, trees, and Boolean algebra.

99204 Statistics for Data Science**(6 credits)*****Course Learning Outcomes***

1. To have the knowledge of statistics necessary in the field of data science.
2. To have knowledge of the principles of using statistical values to predict outcomes.
3. To develop skills in using statistical values in experimental design and problem solving in business data analysis.

Course Description

Basic Probability, probability distributions for continuous and discrete random variables, distribution of sample units, global limit theorem, normal distribution, statistical tests for mean vectors and covariance matrices, applying statistical values to machine learning model, relationship between decision models and statistical values, measuring the performance of machine learning with statistical values, definition of statistical values resulting from data analysis.

99205 Principle of Data Science and Data Visualization**(6 credits)*****Course Learning Outcomes***

1. To be knowledgeable about data science.
2. To be able to analyze and process data in the area of data science.
3. To realize the use of data and the application of relevant theories to interpreting and finding the meaning from business datasets.

Course Description

Basic concepts about data, data elements, data collection, data visualization, tools for rendering data into graphs and charts, statistical methods for data science, quantitative and qualitative data analysis in digital formats, calculation and display data in various forms, and using tools and algorithms to analyze business data.

99301 Web Services Technology and Applications**(6 credits)*****Course Learning Outcomes***

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.

99311 Office Automation System and Electronic Commerce**(6 credits)*****Course Learning Outcomes***

1. To understand office automation systems and data management in organizations.
2. To understand concepts of electronic commerce procedures.
3. To apply knowledge to web development for electronic commerce.

Course Description

Office systems and appropriate organization management; the application of new technology related to data processing, data collection and data application; databases and data analysis; Integrated office systems; basic knowledge and trends in electronic business, electronic systems, data security, electronic system strategies, application strategies, deployment strategies; planning; development and applications of electronic business systems.

99313 Wireless Communications and Networks**(6 credits)*****Course Learning Outcomes***

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)*****Course Learning Outcomes***

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)*****Course Learning Outcomes***

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)****Course Learning Outcomes**

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

Introduction to object-oriented system analysis and design. Object oriented concept, abstract analysis, object oriented system development process. Principles of using visual language for UML design. Object-Oriented Systems Analysis, Use Case, Class Diagrams, Object-Oriented Systems Design, Interaction Diagram, State Diagram and Activity Diagram. System testing concepts, System design with case tools. A Case study of system management and system tracking and its architecture.

99319 Web and Mobile Interaction Design**(6 credits)****Course Learning Outcomes**

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

Designing web and mobile interactive systems based on the principles of human-computer interaction and the theoretical models of motion and perception. Learning about user experience and user interface design taking into account user behavior. Content creation and the development of graphical user interfaces, user interaction using interactive media and data interaction with the system. Multi-channel content delivery and location-based content delivery, including information exchange between members of social networking groups.

99321 Applied Information and Communication Technology for Elder**(6 credits)****Course Learning Outcomes**

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.

99322 Digital Organization and Management**(6 credits)*****Course Learning Outcomes***

1. To have knowledge about the concept and characteristic of the digital organization.
2. To have knowledge about the principle and design methodology of the digital organization within the digital technology.
3. To have the concepts about the development and transformation of business process to modern and disruptive technology.

Course Description

The important of digital technology within business process, pattern, type, role and activity of digital technology within business process, the development direction of digital organization, employment, work process and information system, the principle and design methodology of the digital organization, tools for the digital organization development, the good governance and good business administration, the transformation of business process to modern and disruptive technology.

99323 Computer Programming for Data Science**(6 credits)*****Course Learning Outcomes***

1. To build a concept of computer programming for data science.
2. To have knowledge of programming principles in data analysis and prediction.
3. To build skills in programming with statistical data sets.

Course Description

Analysis of mathematical data for computer programming to analyze statistical data. Computer languages and tools used for data analysis. Structure of function programming, control, looping, variables and statistical data sets, matrix, list data and data frames. Application of programming patterns and techniques to prepare datasets in data analysis. Building decision making model, result interpretation and displaying data in different formats.

99402 Computer Security Management**(6 credits)*****Course Learning Outcomes***

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)*****Course Learning Outcomes***

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)

Course Learning Outcomes

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)

Course Learning Outcomes

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)

Course Learning Outcomes

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)*****Course Learning Outcomes***

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)*****Course Learning Outcomes***

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

Introduction to Cybersecurity, Basic security levels and procedures, Network Knowledge for Security Management, Web Security, Database Security and Cloud Security, Mobile Security IoT Security, Threats and defenses Cybersecurity in terms of legal and ethics, Security Policy and Standards, Techniques and Laws for analyzing digital data and incidents for investigation, Computer Crimes Detection and prevention.

99420 Web Programming**(6 credits)*****Course Learning Outcomes***

1. To obtain knowledge of principles, techniques, languages and tools for developing web applications.
2. To have skills to develop web applications effectively 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)*****Course Learning Outcomes***

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)*****Course Learning Outcomes***

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.

99423 Big Data and Applications**(6 credits)*****Course Learning Outcomes***

1. To be knowledgeable about the nature of big data, working in data analytics with big data and applications.
2. To be knowledgeable about the data warehousing and data mining processes to extract knowledge to the business.
3. To build skills in implementing tools and designing data applications in terms of analysis or prediction to be useful for business decisions.

Course Description

Fundamental knowledge of big data, data warehouse architecture, data extraction, data transformation and data warehousing. Data mining process with big data, tools for data warehousing and data mining, cloud data processing. Big data analytics processes, big data processing architecture with Hadoop and MapReduce. Applying the knowledge gained from big data analytics to business management, and applying IoT tools with big data.

99424 Artificial Intelligence and Machine Learning**(6 credits)*****Course Learning Outcomes***

1. To understand Machine Learning Algorithms.
2. To gain knowledge of Artificial Intelligence Techniques.
3. To apply knowledge of Machine Learning to various applications.

Course Description

Introduction to Artificial Intelligence, Agents, Artificial Intelligence Techniques, Optimization, Application of Artificial Intelligence. Introduction to Supervised Learning Algorithm, Unsupervised Learning, Reinforcement Learning Algorithms. Introduction to Deep Learning, Image Processing, Audio and Speech Processing, Natural Language Processing, Application of Machine Learning.

99425 Professional Experience in Data Science**(6 credits)*****Course Learning Outcomes***

1. To develop a concept for data analysis and outcome forecasting in business decision-making.
2. To develop work experience in business data analysis.
3. To acquire expertise in corporate data analysis design, planning, and programming.

Course Description

A process where concepts, theories, and techniques are applied to data science projects. Employing case studies and simulations to address, analyze and solve problems using expertise of data science. Determining the success factors in problem solving. Understanding the tool's capabilities and the effect of each options. Ethics and social responsibility in data science work. Understanding of the laws that apply to the field of data science.

99429 Professional Experience in Computer Science**(6 credits)****Course Learning Outcomes**

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 digital 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 digital technology, knowledge of laws related to the digital technology profession.

Last updated: 18-July-2023