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.

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

Course Learning Outcomes

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.

71311 Food Production and Processing Technologies   **(6 credits)**

Course Learning Outcomes

1. To gain knowledge of food processing and preservation.

2. To gain knowledge and understanding food quality control system for food production and distribution.

3. To gain knowledge and understanding of tools, equipments, machines and packages used in food preservation and processing.

4. To gain knowledge and understanding of green technology in food processing.

5. To gain knowledge and understanding of food production planning.

Course Description

Food production planning and management: raw material supply, food production, food storage, food packaging, transportation; resource management, food quality control, food traceability.

Raw material preparation for food process, instruments and technology in food preservation and processing for community and industrial levels, innovation for food processing, effects of processing methods on food product quality, utilizing food waste from production, and green technology in food production.

71314 Food Product Development (6 credits)

Course Learning Outcomes

1. To gain and understanding research, information development, and concept in product development processes, including principles of food marketing for product development.
2. To gain and understanding research and product development processes.
3. To gain and understanding processes of product testing and evaluation.
4. To gain and understanding food law and regulation for food claim and customer protection.

Course Description

Concept and important of food product development; new product idea creating and screening; guideline on product development for value-added products, customer behaviors, development of food formula and processes for new product; selection of packaging materials; statistics in product development; shelf-life evaluation under actual storage conditions before releasing a product to market; product testing in market; intellectual properties, food label design, creating new value-added products associated with culture meanings.

94330   Agricultural Products and Processing Management (6 credits)

Course Learning Outcomes

1. In order to have knowledge and ability in managing agricultural products.
2. In order to have knowledge and ability in managing agricultural product processing.
3. In order to be able to apply knowledge in the management of agricultural products and processing.

Course Description

Concepts of agricultural products and processing management; adding value to agricultural products; harvesting and post-harvest management for cereal crops, horticultural crops, livestock and aquatic animals; processing to make food and non-food products; packaging; setting up an agricultural product factory; related investment and finance; production planning and raw materials management; factory operations; management of product, price, place and promotion for agricultural products; case studies in agricultural products and processing management.

94431 Agricultural Marketing Management (6 credits)

Course Learning Outcomes

1. To give students knowledge and understanding of marketing principles and marketing management in general.
2. To give students knowledge and understanding of the marketing system, agricultural products marketing management, and related policies and measures in Thailand and other countries.
3. To enable students to apply their knowledge to agricultural marketing management.

Course Description

Marketing concepts; the marketing system; roles and functions of marketing; the marketing process; general marketing management including marketing situation analysis, planning, market segmentation, targeting, and product positioning; marketing mix strategies for product, price, place and promotion; marketing operations and controls; Application of marketing concepts to agricultural marketing; the agricultural product marketing system; related institutions and organizations; marketing channels and margins; marketing of agricultural raw materials, semi-finished and finished products; agricultural market analysis agricultural product buyer behavior agricultural product marketing competition; policies and measures in Thailand and abroad; and ways to develop agricultural product marketing management.

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.

97101   General Studies in Printing   (6 credits)

Course Learning Outcomes

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)

Course Learning Outcomes

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)

Course Learning Outcomes

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   Material and Sustainable Packaging Management   (6 credits)

Course Learning Outcomes

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.

97217   Basic Mechanical Engineering for Industrial Technology   (6 credits)

Course Learning Outcomes

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)

Course Learning Outcomes

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)

Course Learning Outcomes

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.

97220 Management and Strategic Product Development (6 credits)

Course Learning Outcomes

1. To enable students to gain understanding in management and product strategy development.
2. To enable students to gain understanding in marketing process and market research.
3. To enable students to gain ability in managing contemporary marketing with new techniques.

Course Description

Product concept, product category, Marketing strategy of product and price defining to comply with product life cycle, New product development, Pricing for manufacturer and distributer, Marketing concept, Marketing role, Marketing process, market research, customer behavior, contemporary marketing, marketing environment, Customer relation in contemporary marketing, Marketing decision in product and distribution of contemporary marketing, Meaning of digital marketing, components and application, Growth of internet, Social media website, Digital marketing evaluation.

97221 Creative Thinking and Problem Solving in Industry (6 credits)

Course Learning Outcomes

1. To know and have the skills to create creativity in solving problems in the industry.
2. To apply management knowledge to solve industrial problems.

Course Description

Thinking process to solve troubleshooting, including setting industry goals through creative methods or adapting production processes to different markets. Think of a new way of solving the problem. Change the concept that is different from the old style and develop it in a better way. Analysis of differences between creativity, imagination, vision and strategy. And be able to integrate and synthesize creativity, imagination, vision, and the combined strategy with industry management knowledge will lead to the formulation of innovative and solving problems in the industry.

97222 Digital Transformation for Industry and Business (6 credits)

Course Learning Outcomes

1. To know the digital transformation process in business and industry.
2. To understand the process of digital transformation in business and industry.

Course Description

Strategies for Digital Transformation in Business and Industry. Optimizing production and operations with digital technology. Advanced production technology using digital technology. Digital systems support the production process such as cloud, machine learning, internet of things, robotics automation, artificial intelligence, virtual reality and simulation.

97314 Technology for Production Planning and Control in Industry   **(6 credits)**

Course Learning Outcomes

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)**

Course Learning Outcomes

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 bleads; 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)**

Course Learning Outcomes

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)**

Course Learning Outcomes

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)**

Course Learning Outcomes

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.

97320 Innovation Design Technology of Product and Packaging   **(6 credits)**

Course Learning Outcomes

1. To enable students to gain insight and understanding in product and packaging innovation.
2. To enable students to gain insight and understanding in product and packaging design.
3. To enable students to gain insight and understanding in product and packaging technology.

Course Description

Design thinking and Creative thinking, Industrial product design, Community product design, User experience design, Universal design and design for the elderly, Branding and product storytelling, Value creation, Digital technology for design, Modern packaging and innovation, Eco design, Logistics technology.

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

Course Learning Outcomes

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)**

Course Learning Outcomes

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)**

Course Learning Outcomes

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 Production Engineering   **(6 credits)**
Technology and Management

Course Learning Outcomes

1. Ability to contribute technical knowledge and engineering management experience to the industrial area.
2. Understanding and performing the principle of teamwork.
3. Improving the learner in leadership, human relationships, decisions making, morality and ethics.
4. Understanding and concerning with production technology and engineering management professional ethics.

Course Description

    Advanced application in professional practice relating to industrial technology and engineering management program has been provided to solve complex problems in industry and business. Also, the awareness of professional ethics and the concerning laws and regulations in professional practices have been required. Moreover, the students have learned in a group activity to develop effective leadership skills, human relationships abilities, decision-making techniques, and moral values.

97423 Plant Layout and Work Study in Industry   **(6 credits)**

    Course Learning Outcomes

     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.

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

    Course Learning Outcomes

     1. To acquire the principles of electrical and computer engineering.

     2. To acquire the principles of electronic devices and computer applications in industrial technology.

     3. To acquire the principles of the modern control system, embedded computers, peripheral and connected devices, and interface technologies.

    Course Description

    The principles of electrical engineering; basics of electrical circuits; direct and alternating currents, electromagnetic waves, transformers, electronics circuits, Op-amp circuits, basics of semiconductor devices, and electro-mechanical systems. The basic principles of computer engineering; are digitals, embedded computers, connections and Interfaces, and real-time systems. Energy management and case studies in power technologies, including industrial electric and computer systems.

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

    Course Learning Outcomes

     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 Packaging Technology and   **(6 credits)**
       Product Management

Course Learning Outcomes

1. To enable students to gain experience and skill in career of packaging technology and product management.
2. To enrich the skill and experience for in packaging technology and product management.
3. To enrich the leadership, human relation, decision making skill, together with moral and ethics of graduates.
4. To enable the understanding and awareness of professional ethics in packaging technology and product management.

Course Description

Knowledge of industrial structure in packaging technology and product management, Career in packaging industry and product management covering the production, distribution, research and development, case study in career path, self-development and business development in packaging technology and product management, Management ability, Leadership with efficiency, human relation, professional ethics, group activities to develop moral and ethics.

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

Course Learning Outcomes

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.

97436 Artificial Intelligence for Industry and Business   **(6 credits)**

Course Learning Outcomes

1. To understand artificial intelligence for utilization in business and industry.
2. To understand the principle of artificial intelligence for application to business and industry.

Course Description

The application of artificial intelligence for business and industry improvement. Analysis and estimation of problems and damage to production process machines. Prediction of preventive maintenance from machine usage information. Modeling production process parallel with actual production for analyzing production process and calculating the purchase of raw materials. Furthermore, Modeling can simulate events such as increase-decrease products in the production line, production control, machine learning systems, and industrial robots.

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.

Last updated: 18-July-2023