

## 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.

**10161 Thai for Communication****(6 credits)*****Objectives***

1. To be able to use Thai language as a tool for communication.
2. To improve language skill for communicate effectively and creatively.
3. To be able to use language in daily life and to pursuit of knowledge.

***Course Description***

Significance of language, idea and communication; the art of using word, sentence, idiom, phrase ; development of listening, speaking, reading and writing skills to communicate effectively and creatively; using Thai language in daily life to pursuit of knowledge and transfer knowledge.

**50101 Basic Science****(6 credits)*****Objectives***

1. To elucidate quantitative change by using mathematical basic knowledge.
2. To forecast causes and trends of phenomenal changes relating to matters and energy by using Physics knowledge.
3. To define atoms, molecules, and chemical reaction.
4. To explain biochemical processes in living organisms at molecular level.

***Course Description***

Mathematical and scientific knowledge for describing natural phenomena by mathematics application in order to elucidate quantitative change and solve scientific problems; principles of physics for describing energy models and physical change; principles of chemistry relating to fundamental atomic and molecular knowledge affecting various changes including biochemistry which causes molecular level change of living organisms and living processes.

**50102 Life Sciences****(6 credits)*****Objectives***

1. Describe basic knowledge of structure and functions of various body systems, microbes and parasites that affect human health.
2. Analyze the functions of various body systems under normal and pathological conditions.
3. Apply knowledge in professional practice in accordance with appropriate responsibilities.

***Course Description***

Structural basis of the human body composing of macro anatomy and microanatomy; physiology and various body systems; co-ordination and responses of various body systems under normal and pathological conditions including properties and importance of microbes and parasites that affect human health.

**50103 Statistics and Research in Health Sciences****(6 credits)*****Objectives***

1. To elucidate definition, concept, principles, and statistical analysis.
2. To be able to apply statistical knowledge in presenting data, estimation, and test of hypotheses, decision making, and research in health sciences.
3. To elucidate results of Thai and international health science research, as well as conduct basic research.

### ***Course Description***

General principles of statistics; basic mathematics; frequency distribution; measurement of central value, dispersion, probability, sampling techniques; test of hypotheses, correlation analysis; linear regression, vital statistics, and population indices; basic research principles and methodology; application of statistics and research in health sciences.

### **52203 Environmental Health**

**(6 credits)**

#### ***Objectives***

1. Describe the principles and methods of providing clean water and managing and controlling water pollution.
2. Describe principles and methods for managing and controlling air pollution and the nature of climate change.
3. Describe the principles and methods for managing noise pollution, vibration, and radiation.
4. Describe the principles and methods for managing solid waste, sewage, hazardous waste, infectious waste, and dangerous chemicals.
5. Describe the principles and methods for managing food sanitation, nuisance and health hazards at workplaces, and environmental health in emergencies.
6. Explain the concept of environmental health, health impact assessment, and the environmental health operations in Thailand.

#### ***Course Description***

Concept of environmental health; provision of clean water and water pollution management and control; air pollution control and management and climate change; management of noise pollution, vibration and radiation; management of solid waste, sewage, hazardous waste, infectious waste, and dangerous chemicals; management of food sanitation, nuisance and health hazards at workplaces, and environmental health in emergencies; health impact assessment, and the environmental health operations in Thailand.

### **52205 Public Health and Related Laws**

**(6 credits)**

#### ***Objectives***

1. Provide knowledge, understanding of Thailand public health. i.e., public health service system; public health history; public health problems; issues related to health; public health development; national health development plan, and important plans of Thailand public health.
2. Explain the philosophy and concepts of public health and concepts related to health and health development.
3. Explain the essence of the development plan and the evolution of Thailand public health, Thailand health system, and health insurance scheme.
4. Describe the principles and methods of public health operations, i.e., health promotion, disease prevention and control, medical care, and rehabilitation.
5. Describe important health problems that are found in the 21st century.
6. Explain legislations, i.e., Royal Acts, Royal Decrees, and Ministerial Regulations relating to public health operations and public health profession.
7. Apply knowledge in public health and related laws to be used in public health operations.

### ***Course Description***

Philosophy and concepts of public health, health and illness, global health, universal health, and quality of life; the essence of the development plan and the evolution of Thailand public health; its health system and health insurance scheme; principles and methods of public health operations concerning health promotion, disease prevention and control, medical care, and rehabilitation; important health problems that are found in the 21st century, including emerging and recurrent, cross-border infectious diseases, public health emergency; the relationship between public health and quality of life, social development and public health works; knowledge about legislations, i.e., Royal Acts, Royal Decrees, and Ministerial Regulations relating to public health operations including laws concerning health care facilities/institutions, health protection, disease control and prevention, and public health profession.

### **52302 Epidemiology and Disease Control**

**(6 credits)**

#### ***Objectives***

1. To understand natural occurrence of diseases.
2. To analyse and explain the distribution of diseases in community.
3. To diagnose public health problems.
4. To elucidate methods of surveillance and epidemiological investigation.
5. To analyze causes or factors related to disease etiology and health problems using epidemiological methods.
6. To apply epidemiological principles for disease prevention and control, including quality of life improvement at the family, community and organization levels.

#### ***Course Description***

Concepts of basic epidemiology; natural occurrence of diseases in ecology; characteristics and distribution of diseases classified by person, place and time; methods of diagnosing health problems in the communities, hospitals and workplaces; study of the causes of disease and factors affecting disease occurrence; investigation and surveillance of diseases; epidemiology and prevention and control of infectious, non-infectious, occupational diseases, and emerging diseases and recurrent diseases, as well as application of epidemiological knowledge in enhancing quality of life.

### **52304 Nutrition in Public Health**

**(6 credits)**

#### ***Objectives***

1. To elucidate concepts and principles in food and nutrition related to health.
2. To elucidate methods for evaluation and surveillance of nutrition in population groups.
3. To elucidate methods for planning, implementation and evaluation of nutrition programs to prevent and solve nutrition problems.
4. To elucidate nutrition knowledge applicable to health promotion, disease prevention and treatment for the individual, family and community.

#### ***Course Description***

Concepts and principles of food and nutrition related to health; nutrition assessment and surveillance; planning, implementation and evaluation of nutrition programs; application of nutrition knowledge to health promotion, disease prevention and treatment for the individual, family and community.

**52305 Occupational Health and Safety****(6 credits)*****Objectives***

1. To elucidate the definition, significance, components and concepts of occupational health and safety.
2. To elucidate methods of awareness raising, evaluation and control of the working environment.
3. To describe the relationships between toxicology and ergonomics in occupational health and safety.
4. To elucidate the causes of accidents and the negative consequences.
5. To elucidate the loss from accidents.
6. To elucidate the methods for preventing machinery and fire accidents.
7. To elucidate the methods of health and environmental surveillance.
8. To elucidate the methods of risk assessment.
9. To elucidate the standards of occupational health and safety management.

***Course Description***

Definitions, significance, components and concepts of occupational health and safety; awareness, evaluation and control of the working environment; toxicology and ergonomics; causes of accidents; losses from accidents; fire prevention; prevention of machine and electricity-related accidents; health and environmental surveillance; risk assessment; measures of occupational health and safety management system.

**52306 Community Work in Public Health****(6 credits)*****Objectives***

1. To elucidate the principles of community health development.
2. To elucidate how to promote community organization for health development.
3. To elucidate the principles of skill development for working in community.
4. To apply the principles of community participation for public health work.

***Course Description***

Concepts and principles of community participation and cooperation with governmental and private sectors; promotion of the role of community organizations in public health development; essential skills for community health work including leadership and community analysis; application of appropriate technology in the community and human relations for sustainable public health development.

**52312 Family Health in Public Health Work****(6 credits)*****Objectives***

1. Describe the relationship between health of individuals, families, and communities, and factors influencing health, the health of children, adolescents, adults, and the elderly.
2. Explain and apply the theory of holistic health care for families and individuals of various ages in providing services in both agency and community settings.
3. Explain guidelines for providing health advice and counseling, planning and health services for families and individuals of various ages, health services at home, school, workplace and community.
4. Apply the principles of family health services for good health of individuals, families and communities.
5. Explain the referral system for treatment.
6. Describe the concepts of health development and the influence of social, economic, political, technological changes, policy and health laws, and the health needs of people on health development.
7. Analyze problems, obstacles and trends in the development of health and family health services for communities and the country.

### ***Course Description***

Basic concepts of the relationships between health of individuals, families and communities; factors influencing the health of children, adolescents, adults, and the elderly; application of the theory of holistic health care for families and individuals of various ages in providing services in both agency and community settings regarding health promotion, disease prevention, medical treatment, and rehabilitation; skills in health advice and counseling; planning for health services, family planning, families and individuals of various ages; health services at home, school, workplace and in communities; and trends in the development of health and family health services of communities and country.

### **52313 Health Education and Health Promotion**

**(6 credits)**

#### ***Objectives***

1. Explain basic concepts and theories of health behavior, health education and health promotion.
2. Describe the principles and guidelines for planning of operations, its work processes, and evaluation of health education and health promotion.
3. Describe the principles and guidelines for health education and health promotion for various groups of people.
4. Explain guidelines for creating participation and partnerships with various sectors in health education and health promotion to solve health problems.
5. Describe concepts and methods of quality improvement in health education and health behavior surveillance.
6. Describe the processes in communicating and advocating health needs to community members and other professional personnel.
7. Describe the research process for the development of health education and health promotion.

#### ***Course Description***

Basic concepts and theories of health behavior, health education and health promotion; principles and guidelines for planning of operations, its work processes, and evaluation of health education and health promotion, principles and guidelines for health education and health promotion for various groups of people; guidelines for creating participation and partnerships with various sectors in health education and health promotion to solve health problems; concepts and methods of quality improvement in health education and health behavior surveillance; the processes in communicating and advocating health needs to community members and other professional personnel, the research process for the development of health education and health promotion.

### **52314 Communication and Non-Communication Diseases**

**(6 credits)**

#### ***Objectives***

1. Provide knowledge and understanding about epidemiology of communicable diseases, non-communicable diseases, emerging diseases and recurrent diseases.
2. Describe the causes, nature of the disease, diagnosis and treatment of communicable diseases, non-communicable diseases, emerging diseases, and common recurrent diseases in Thailand.
3. Provide knowledge and understanding about prevention and control of communicable diseases, non-communicable diseases, emerging diseases, and recurrent disease.

**Course Description**

Knowledge and understanding of epidemiology of communicable diseases, non-communicable diseases, emerging diseases and recurrent diseases; the causes, nature of the disease, diagnosis and treatment of communicable diseases, non-communicable diseases, emerging diseases, and common recurrent diseases in Thailand.

**52402 Professional Experience in Public Health****(6 credits)****Objectives**

1. To apply knowledge to solve community health problems, focusing on research studies, disease prevention and health promotion processes.
2. To promote leadership, human relationship, decision-making, team building, teamwork, morality, and ethics, especially the ethics of public health professionals.
3. To understand and have awareness of public health professional ethics.

**Course Description**

Practical application of public health concepts, principles, and research results; the use of case studies and simulations for analyzing public health situations and problems in upgrading the health level of the population; integration of public health knowledge and experiences for the development of public health professions; professional ethics in public health; group dynamics activities to nurture ethics, morals and leadership in students.

**52404 Physical Assessment, Basic Medical Care, Rehabilitation and Referral System (6 credits)****Objectives**

1. Interview, record patient history and provide primary physical examination correctly.
2. Identify specimens of patients to be delivered for laboratory examination and interpretation of the results correctly.
3. Diagnose symptoms and provide primary treatment as allowed by relevant laws.
4. Provide first aid and helping to patients in emergency situations correctly.
5. Provide care to patients and families for rehabilitation and prevention of complications, including referral of patients systematically for proper care.

**Course Description**

Interview, record patient history and provide primary physical examination; delivery of specimens of patients to be delivered to laboratory for diagnosis; provide primary treatment and emergency patient assistance to the extent specified by relevant laws; use of drugs and correct medication advices; referral of patients according to the system for proper care; provide care for rehabilitation and to prevent complications.

**52405 Practice on Basic Medical Care and Community-based Public Health****(6 credits)****Objectives**

1. Interview and record patient history correctly.
2. Provide physical examination to identify abnormalities correctly.
3. Diagnose diseases and provide medical care to patients according to the extent specified by relevant laws and regulations set by the Ministry of Public Health.
4. Provide guidance and alternatives for self-care to people, patients and families correctly.
5. Assess health conditions in the community and identify ways to solve community health problems.
6. Work as a team in the public health professions and different professional fields together with the community.
7. Combine academic skills with local wisdoms and culture for the development and promotion of community health.

### ***Course Description***

Interview and record patient history correctly; provide physical examination to identify abnormalities correctly; diagnose diseases and provide medical care to patients according to the extent specified by relevant laws and regulations; provide guidance and alternatives for self-care to people, patients and families; assess health conditions in the community and identify ways to solve community health problems; work as a team in the public health professions and different professional fields together with the community; combine academic skills with local wisdoms and culture for the development and promotion of community health.

### **52406 Health Administration and Health Informatics System**

**(6 credits)**

#### ***Objectives***

1. Describe the meaning, importance, concepts, theories, principles and processes of public health administration.
2. Conduct organizational planning, resource management and budgeting in public health administration.
3. Apply the administrative processes in the management of the public health service system that has been transferred to local governments.
4. Apply the administrative processes in communicating, coordinating, reporting of work performance, job control using forms and techniques for public health administration.
5. Apply the administrative processes in managing health information systems and technologies for administration and health services.
6. Apply concepts, theories and principles of health economics analysis in the development of health service systems in response to public health demands/supplies.

### ***Course Description***

Theories, principles and processes of public health administration; organizational planning; human resource management; commanding, coordinating, reporting of work performance and budgeting, job control; forms and techniques for public health administration; health Information systems; application of information technology for administration and trends in public health administration; application of economic concepts, principles and theories that affect public health and health in the management of public health development according to economic and social changes.

### **52407 Health Planning and Evaluation**

**(6 credits)**

#### ***Objectives***

1. Describe concepts and principles of public health planning.
2. Describe the processes of national health development planning and the evolution and planning of public health development in Thailand.
3. Classify factors that are necessary for the use of public health planning.
4. Explain how to analyze the situations based on public health information or planning needs in public health at the policy, strategic and operational levels.
5. Describe planning for improving public health practices to suit changing circumstances.
6. Explain community health planning.
7. Describe the principles of operations according to the defined public health plans.
8. Describe job controls, monitoring, and supervision of public health work.
9. Prepare reports, propose projects, and evaluate work plans/projects.

***Course Description***

Basic knowledge of public health planning, concepts, principles and processes of public health development planning in Thailand; factors used in public health planning; situation analysis; problems identification; setting of objectives, targets, and strategies of the public health development plan; public health project planning; planning for improving public health practices; community health planning; adjustment of public health plans when the situations change; principles of operation according to public health plans; job controls, monitoring, and supervision of public health work; and evaluation of public health plans/projects.

**54118 Science Laboratory****(6 credits)*****Objectives***

1. To gain knowledge and understanding of basic principles and basic significant scientific laboratory methods relating to occupational health and safety and environment including Physics, chemistry, biology, microbiology, and biochemistry.
2. To be able to apply basic significant scientific laboratory methods relating to occupational health and safety and environment including Physics, Chemistry, biology, microbiology, and biochemistry

***Course Description***

Principles, methods, and application of basic significant scientific laboratory methods relating to occupational health and safety and environment including Physics, chemistry, biology, microbiology, and biochemistry.

**54119 Statistics and Research in Occupational Health and Safety****(6 credits)*****Objectives***

1. To elucidate definitions, concepts, principles, and statistical operations.
2. To be able to apply statistical knowledge in data presentation, estimation, and hypothesis testing, decision and research conduction in occupational health and safety and health sciences.
3. To elucidate research results on occupational health and safety and health sciences in Thailand and abroad and basic research conduction.

***Course Description***

Fundamental mathematics and general statistics; frequency distribution; measurement of central tendency, and distribution measurement; probability, probability distribution, and random sampling, estimation and hypothesis testing; multiple correlation and regression equation; non-parametric; vital statistics and demographic indicators; fundamental principles of research and research process; application of statistics and research in occupational health and safety, and health sciences.

**54122 Laws Related to Public Health****(6 credits)*****Objectives***

1. To enable students to have knowledge and understanding of fundamental knowledge of laws, law evolution, law system, types, characteristics, and legislative process, and scope of law enforcement.
2. To elucidate critically fundamental principles of general knowledge of public health, environment, and forensic science laws.
3. To elucidate acts, decrees, and ministerial regulations relating to public health, environment, and forensic science operations.
4. To apply knowledge of relevant laws in public health, environment, and forensic science operations.

***Course Description***

Fundamental knowledge of laws, law evolution, law system, types, characteristics, legislative process, and scope of law enforcement; Fundamental knowledge of forensic science, general knowledge of public health, environment, and forensic science laws; acts, decrees and ministerial regulations relating to public health, environment, and forensic science operations; laws relating to public health profession; health service facility, disease control and prevention; health protection; environmental health; environmental health impact analysis.

**54123 Integrated Basic Life Sciences in Occupational Health and Safety (6 credits)*****Objectives***

1. To elucidate fundamental knowledge of body component and function of various systems.
2. To elucidate microorganisms and parasites affecting human health.
3. To analyze function of various systems in the body of both normal and pathological conditions.
4. To apply knowledge of basic life sciences in occupational and safety operations.

***Course Description***

Fundamental body structure comprising microanatomy and microanatomy; physiology of various systems in the body; co-ordination and response of various systems of both normal and pathological conditions as well as properties and significance of microorganisms and parasites affecting health; application of the knowledge in occupational and safety operations.

**54124 Health System and Epidemiology (6 credits)*****Objectives***

1. To elucidate general knowledge of health system and health service management system in Thailand.
2. To elucidate knowledge of health planning and policy, and health outcome evaluation.
3. To elucidate relationship between operations of various health systems and occupational health and safety works.
4. To elucidate fundamental knowledge on Epidemiology and be able to apply in occupational health and safety works.

***Course Description***

General knowledge of health system and health service management system in Thailand; health planning and policy; health outcome evaluation; relationship between operations of various health systems and occupational health and safety works; as well as fundamental knowledge on Epidemiology and application of Epidemiology methods in occupational health and safety works.

**54125 Measurement and Evaluation in Industrial Hygiene (6 credits)*****Objectives***

1. To elucidate principles of awareness of working environment affecting health.
2. To elucidate principles of working environment evaluation affecting health and limit values of substance exposure in working environment.
3. To elucidate principles and methods on measurement of noise, illumination, radiation, vibration, temperature, and atmospheric pressure, air sampling and analysis.
4. To evaluate working environment.

***Course Description***

General knowledge of industrial hygiene; awareness of characteristics and improper working environment which hazard towards operators' health; principles of exposure assessment in working environment affecting operators' health; limit values of substance exposure in working environment; industrial hygiene measurement instrument, principles and methods on measurement of noise, illumination, radiation, vibration, temperature, and atmospheric pressure; air sampling and chemical and biological analysis.

**54126 Health Promotion, Physical Assessment and Basic Medical Care****(6 credits)*****Objectives***

1. To elucidate concepts and theories on health education and behavioral science, communication, and community participation.
2. To elucidate planning, evaluation, and health behavior modification.
3. To elucidate health promotion, guidance and counselling health behaviors.
4. To elucidate assessment and basic treatment, caring of patients or people from adverse health impact.
5. To elucidate first aid, rehabilitation, and patient referral.

***Course Description***

Concepts and theories on health education and behavioral science communication, and community participation; analysis of health behaviors; planning, evaluation, and health behavior modification; health promotion; guidance and counselling health behaviors; as well as assessment and basic treatment; caring of patients or people from adverse health impact; first aid; rehabilitation; and patient referral

**54127 Fundamental of Occupational Health and Environmental Health****(6 credits)*****Objectives***

1. To elucidate principles and basic concepts of occupational health and environmental health works.
2. To acquire basic knowledge and understanding of work safety in industrial hygiene, toxicology, ergonomics, and occupational diseases.
3. To elucidate principles and concepts on management of occupational health and safety.
4. To acquire basic knowledge and understanding of clean water provision, pollution control of water, air, noise, vibration, and ray as well as solid wastes and sewages.
5. To elucidate principles and concepts on food and residential sanitation, management of nuisance and business that might be harmful to health; and environmental health management.

***Course Description***

Concepts of occupational health and environmental health; basic knowledge on work safety; industrial hygiene, toxicology, ergonomics, and occupational diseases; management of occupational health and safety; basic knowledge of clean water provision; pollution control of water, air, noise, vibration, and ray as well as solid wastes and sewages; food and residential sanitation; management of nuisance and business that might be harmful to health; and environmental health management works.

**54128 Industrial Hygiene Control Technology****(6 credits)*****Objectives***

1. To elucidate concepts and principles in prevention and control on industrial hygiene.
2. To elucidate principles and guidelines on design of ventilation system and air pollution treatment.
3. To elucidate principles and technology on indoor air quality control.
4. To elucidate principles and technology in hazard prevention and control of noise, light, ray, vibration, temperature, and atmospheric pressure.

5. To elucidate guidelines of working inspection and maintenance of working environmental control system, as well as management measure in control on industrial hygiene.

#### ***Course Description***

Concepts and principles in prevention and control on industrial hygiene; principles and engineering technology in industrial hygiene work; design of ventilation system; principles and technology on indoor air quality control; principles of air pollution treatment; efficiency and appropriateness of treatment system for various types of air pollution; principles and technology in hazard prevention and control of noise, light, ray, vibration, temperature, and atmospheric pressure; working inspection and maintenance of working environmental control system, as well as management measure in control on industrial hygiene.

### **54129 Basic Engineering for Occupational Health and Safety**

**(6 credits)**

#### ***Objectives***

1. To elucidate basic knowledge on engineering and specific knowledge of various fields of engineering.
2. To read various engineering drawing.
3. To apply specific knowledge of various fields of engineering in occupational health and safety works.

#### ***Course Description***

Basic knowledge on engineering; specific knowledge on civil engineering, mechanical engineering, electronic engineering, industrial engineering, and chemical engineering; reading of engineering drawing for applying in occupational health and safety works.

### **54130 Occupational Health and Safety Management Technology**

**(6 credits)**

#### ***Objectives***

1. To elucidate concepts of accident, investigation and analysis of accident, loss control, and propose accident prevention.
2. To use job safety analysis technique, provide safety operation procedure, and provide safety manual.
3. To be able to use occupational health and safety management technology prior to accident.
4. To be able to use occupational health and safety management technology during and after accident.
5. To be able to select and use personal protective equipment appropriately to hazards while working.
6. To provide training and develop safety work.
7. To elucidate principles of planning and provide occupational health and safety report.
8. To provide security information system, determine public relations method, and campaign of industrial safety.
9. To be able to assess and manage risk.

#### ***Course Description***

Concepts and theories of accident; investigation and analysis of accident; loss analysis; work safety technique; use of personal protective equipment; safety manual; safety sign; responsible duty of occupational health and safety; organizations safety policy; welfare provision; work information system and preparation of annual report on occupational health and safety; principles of risk assessment and management; management system on occupational health and safety, and various relevant management systems.

### **54131 Occupational Health, Safety and Environment Law and Standards**

**(6 credits)**

#### ***Objectives***

1. To acquire basic knowledge of laws and use of laws.
2. To acquire understanding of legal measures on occupational health and safety, working environment, and relevant laws in both Thailand and abroad.

3. To elucidate relevant organizations in management of law on occupational health and safety, and working environment in both Thailand and abroad.
4. To acquire knowledge and understanding regarding to international standards and relevant regulations on occupational health and safety, and working environment.
5. To be able to identify responsibilities of work safety officers in operation on occupational health and safety, and working environment as well as legal welfare provision.

#### ***Course Description***

Basic knowledge of laws and use of laws on occupational health and safety, working environment in Thailand and relevant laws; critical international laws and standards on occupational health and safety, and working environment; international standards and relevant regulations on occupational health and safety, and working environment as well as relevant organizations in management of law on occupational health and safety, and working environment in both Thailand and abroad; and responsibilities of legal work safety officers in operation on occupational health and safety, and working environment.

### **54132 Safety Engineering Technology**

**(6 credits)**

#### ***Objectives***

1. To elucidate principles of safety building design and plant layout.
2. To elucidate guidelines in maintenance for safety buildings.
3. To elucidate principles of working with machines and various equipment, and safe use of machines instead of manpower.
4. To elucidate principles of use and store of tools and working equipment.
5. To elucidate principles of storage of chemicals and hazardous substances, working with flammable substances, and fire protection.
6. To be able to preparation of emergency plan.
7. To be able to operate basic fire fighting.
8. To elucidate principles of safety in construction work and working in confined spaces.

#### ***Course Description***

Building design and plant layout; maintenance for safety buildings; safety working with machines; air pressure pipe system, boiler, air compressor, and use of machines instead of manpower; use and store of tools and working equipment; storage of chemicals and hazardous substances; working with flammable substances, and fire protection; preparation of emergency plan; safety in construction work and working in confined spaces.

### **54133 Toxicology and Preventive Medicine**

**(6 credits)**

#### ***Objectives***

1. To acquire knowledge and understanding of principles and toxicological methods.
2. To elucidate health risk assessment.
3. To acquire knowledge and understanding of preventive medicine.
4. To acquire knowledge and understanding of development of work performance.
5. To elucidate causes and symptoms of occupational diseases.
6. To elucidate guidelines for diagnosis of occupational diseases.
7. To elucidate planning for surveillance and prevention of occupational diseases.
8. To be able to apply knowledge on toxicology and preventive medicine in occupational health and safety works.

***Course Description***

Principles of toxicology; process of chemical toxicity, mechanism and body reaction while exposing toxic substances; principles of testing and determination of chemical standards in environment and human body; hazard index; analytical instruments on toxicology; critical and common used chemicals; and pollution from industrial and agricultural activities; and health risk assessment.

Knowledge of preventive medicine in development of work performance; study of body mechanism under condition affecting operators; causes and symptoms of occupational diseases; principles for basic diagnosis of occupational diseases; procedures for examination of occupational diseases; occupational health surveillance, and prevention of occupational diseases.

**54134 Ergonomics and Industrial Psychology****(6 credits)*****Objectives***

1. To elucidate body structural system, limitation, and relationships among human, machine, equipment, and working environment.
2. To elucidate concepts, principle, and methods of ergonomics, and industrial and organizational psychology.
3. To predict, search, and assess risk and impact from improper factors and working based on principles and methods of ergonomics, and industrial and organizational psychology.
4. To apply knowledge on ergonomics, and industrial and organizational psychology in preventive planning, controlling, and rectification of work problems, development, health promotion, and work efficiency.

***Course Description***

Human factor; body structural system; human proportional size; work physiology; ergonomics concepts and principles, survey, analysis, and assessment of ergonomics risk; prevention and solving ergonomics problems, relevant standards and laws; application of ergonomics principles in design, selection, or improvement of workplace; working condition; equipment and working manner, stress and fatigue from work; concepts of industrial and organizational psychology; assessment and psychological testing; principle and psychological methods in personnel recruitment and selection; training and job teaching for personal development; leader and work motivation; psychological knowledge application for preventing, developing, promoting health and work efficiency

**54135 Professional Experience in Occupational Health, Safety and Environment****(6 credits)*****Objectives***

1. To be able to use concepts and principles on occupational health and safety to appropriately apply in actual situations.
2. To elucidate roles and operations of professional safety officer at work.
3. To elucidate concepts and principles of creating and promoting good working atmosphere, creating human relations and teamwork.
4. To elucidate principles of co-ordination, job teaching, training, and supervision.
5. To elucidate professional ethics.
6. To be able to analyze situations and problems on occupational health and safety and working environment and prepare plans and projects on occupational health and safety.
7. To elucidate guidelines for applying occupational health and safety management system.

**Course Description**

Application of concepts and principles on occupational health and safety to practice; roles and operations of professional safety officers; creating and promoting good working atmosphere; creating human relations and teamwork; co-ordination, job teaching, training, and supervision; professional ethics; analysis of situations and problems on occupational health and safety and working environment and prepare plans and projects on occupational health and safety in workplace; preparation of plans and projects on occupational health and safety; application of occupational health and safety management system; provision of seminars/special problems on occupational health and safety.

**55302 Related Sciences in Thai Traditional Medicine****(6 credits)****Objectives**

1. To gain knowledge and understanding of structures and functions of various systems of the body based on the theories of Thai traditional medicine in a scientific manner.
2. To be able to use scientific theories in describing signs and symptoms of diseases or disorders as well as diagnosis, therapy, health promotion, disease control and prevention, and rehabilitation with Thai traditional medicine.
3. To be able to use scientific theories in describing other body of knowledge relating to Thai traditional medicine.

**Course Description**

Scientific body of knowledge describing rationale of Thai traditional medicine in diagnosis, therapy, health promotion, disease control and prevention, and rehabilitation.

**55303 Medical Sociology and Anthropology****(6 credits)****Objectives**

1. To understand social and cultural situations relating to human health care.
2. To gain knowledge and understanding of wisdom inheritance of Thai indigenous medicine.
3. To gain knowledge and understanding of the evolution of language usage and media in wisdom indigenous of Thai indigenous medicine.
4. To gain knowledge and understanding of international indigenous medicine as alternatives in health care.
5. To be able to apply knowledge of sociology and medical anthropology for wisdom conservation and promotion of Thai traditional medicine.

**Course Description**

Concepts of sociology and medical anthropology; health belief system; illness and health service utilization; behavioural models affecting illness and health-care culture; wisdom inheritance of Thai indigenous medicine; evolution of language usage and media in wisdom inheritance of foreign indigenous medicine as alternatives in health care; methods of wisdom conservation and promotion of Thai indigenous medicine through the application of sociological and anthropological principles.

**55305 Dhamanamai****(6 credits)****Objectives**

1. To gain knowledge and understanding principles and methods of applying dhamma (Buddhist teachings) in health promotion.
2. To be able to apply principles and methods of dhamanamai in primary health care.

3. To gain knowledge and understanding of methods of prenatal care, delivery care, and post-natal care based on dhamanamai principles.

***Course Description***

Concepts of dhamanamai or holistic health promotion focusing on physical, mental, social, and environmental health care; application of natural health care principle including physical care, life care, and mental care for health care in primary health care or basic health services and Thai traditional midwifery.

**55309 Ethics and Laws Related to Thai Traditional Medicine (6 credits)**

***Objectives***

1. To understand and pay attention to morality and ethics in practice of Thai traditional medicine.
2. To understand principles and legislative intent of laws relating to Thai traditional medicine.
3. To be able to apply critical contents of professional ethics and principles of laws relating to Thai traditional medicine appropriately to professional practice.

***Course Description***

Morality and ethics in Thai traditional medicine professional practice; basic knowledge of laws; laws relating to Thai traditional medicine in the practise of healing arts; consumer protection in relation to drugs, food, cosmetics, health-care facilities, toxic substances and narcotics; Act on Protection and Promotion of Thai Traditional Medicine Wisdom; and other laws relating to Thai traditional medicine professional practice.

**55322 Anatomy and Physiology (6 credits)**

***Objectives***

1. To gain basic knowledge relating to anatomy and physiology of various systems in a normal human body.
2. To gain basic knowledge relating to anatomy and physiology of various systems in a human body with pathological conditions.
3. To be able to make evaluation, provide first aid, and give advice for the prevention of diseases in various systems of human body.

***Course Description***

Study of anatomy and physiology of a human body in normal and pathological conditions; evaluating examination; first aid; and advisement for disease prevention of skeletal and joints as well as muscular, nervous, cardiovascular, respiratory, gastro-intestinal, urinary, reproductive, endocrine, and immune systems.

**55323 Pharmaceutical Botany (6 credits)**

***Objectives:***

1. To gain knowledge and understanding of the principle of plant taxonomy.
2. To gain knowledge and understanding of classification of plant parts.
3. To gain understanding of chemicals affecting the treatment of diseases.
4. To gain knowledge of cultivation and propagation of medicinal plants.
5. To gain knowledge of Thai and foreign traditional medicinal ingredients.
6. To gain knowledge and understanding of herbarium preparation

***Course Description***

Plant morphology, taxonomy, cultivation; propagation of medicinal plants; medicinal plants in primary health care; pharmaceutical phytochemistry; active ingredients of medicinal plants; herbarium, Thai and foreign traditional medicinal materials; crucial research information in pharmaceutical botany.

**55324 Practice in Pharmaceutical Botany and Thai Traditional Pharmacy (6 credits)*****Objectives***

1. To gain skills in plant classification and Thai and foreign traditional medicinal materials.
2. To gain skills of plant herbarium preparation and propagation of medicinal plants.
3. To gain skills in usage and maintenance of tools for medicine preparation.
4. To gain skills in preparation from medicinal materials in various forms and quality control of medicines.

***Course Description***

Practice in pharmaceutical botany; macro-identification of both fresh and dry plants; forest survey for studying medicinal plants; collection of medicinal plant samples; herbarium preparation; propagation of medicinal plants; usage and maintenance of tools for medicine preparation; quality control of medicines; preparation of pharmaceutical materials; art of medicine preparation in various forms; addition of colour, odour, and taste additives.

**55325 Thai Traditional Massage I (6 credits)*****Objectives***

1. To gain knowledge, understanding, and differentiation of principles and methods of Thai traditional massage.
2. To gain knowledge and understanding of basic theories of Thai traditional massage.
3. To gain knowledge and understanding of principles of health promotion and therapeutic massage.

***Course Description***

History of massage; anatomy and physiology for massage; basic theories of Thai traditional massage; principles and methods of royal and private Thai Traditional massage; folk wisdom; massage on various parts of the body; massage for health promotion; therapeutic massage.

**55326 Professional Experience in Thai Traditional Medicine (6 credits)*****Objectives***

1. To realize significance and gain skills in organizational and teamwork management.
2. To gain personality development appropriately to Thai traditional medicine practice.
3. To enhance morality and professional ethics appropriately for Thai traditional medicine practice.
4. To be able to apply the principles and knowledge of Thai traditional medicine for problem-solving in systematically integrated practice.

***Course Description***

Application of concepts, theories, and principles of organizational and teamwork management in Thai traditional medicine practice; enhancement of morality and professional ethics; usage of problem-solving process and systematically practical development according to specified activities in Thai traditional medicine knowledge integration.

**55327 Thai Traditional Midwifery (6 credits)*****Objectives***

1. To gain knowledge and understanding of anatomy and physiology of pregnancy.
2. To be able to apply the knowledge of Thai traditional midwifery in pregnancy diagnosis, normal delivery care, maternal and child care during pregnancy, before and after delivery.

***Course Description***

Anatomy and physiology of pregnancy; fertilization and pregnancy; pregnancy diagnosis; practices of pregnant women; care in normal birth according to Thai traditional medicine principles; antenatal care; postnatal care for the mother and newborn; culture and beliefs relating to childbirth; lying by the fire after childbirth; and mother's postpartum practices.

**55328 Thai Traditional Pharmacy I****(6 credits)*****Objectives***

1. To gain knowledge and understanding of Thai traditional pharmacy principles.
2. To gain knowledge and understanding of medicinal material principles.
3. To gain knowledge and understanding of medicinal characteristics.

***Course Description***

Ethics in pharmacy; four principles of pharmacy; usage of herbal medicines and herb-derived medicines; national list of essential medicines; list of household remedies; medicinal plants in primary health care; toxic medicinal plants; medicinal materials; medicinal characteristics; tastes of drug ingredients and primary tastes of formulated drugs; correlation between drug tastes and elements, seasons, age, and time.

**55329 Thai Traditional Massage II****(6 credits)*****Objectives***

1. To gain knowledge and understanding of principles and theories of therapeutic massage.
2. To be able to perform therapeutic massage on process or science of Thai traditional massage.
3. To be able to compare symptoms and diseases with those based on modern medicine or alternative medicine.

***Course Description***

Principles and theories of therapeutic massage, physical examination, diagnosis, causal analysis, comparison of symptoms and diseases with those based on modern medicine or alternative medicine; remedy; rehabilitation; advisement; patient referrals; usage of herbal medicines with massage.

**55330 Practice in Thai Traditional Massage****(6 credits)*****Objectives***

1. To gain skills in history taking, physical examination, evaluating examination, diagnosis, and therapy with science of Thai traditional massage.
2. To gain skills of disease prevention, rehabilitation, advisement, information record, and patient referrals, at a hospital and a health-care facility with Thai traditional medicine services.

***Course Description***

Practices of Thai traditional massage regarding history taking, physical examination, massage evaluation, diagnosis, therapy, disease prevention, rehabilitation, advisement, information recording, medical recording, and patient referrals, at a hospital and a health-care facility with Thai traditional medicine services.

**55331 Thai Traditional Therapy I****(6 credits)*****Objectives***

1. To gain knowledge and understanding of philosophy, concepts, and theories of Thai traditional medicine.
2. To gain knowledge and understanding of medical ethics and vocabulary in Thai traditional medicine.
3. To be able to apply knowledge and theories of Thai traditional medicine based on textbooks on Thai traditional medicine.

**Course Description**

Philosophy, concepts, and theories of Thai traditional medicine; medical ethics; knowledge and significant contents in textbooks on Thai traditional medicine; and relevant vocabulary.

**55332 Thai Traditional Therapy II****(6 credits)****Objectives**

1. To be able to combine and integrate knowledge from textbooks on Thai traditional medicine.
2. To understand principles of therapy with science of Thai traditional medicine.
3. To compare symptoms and diseases with those based on modern medicine or alternative medicine.

**Course Description**

Combination and integration of knowledge from textbooks on Thai traditional medicine; principles of therapy with science of Thai traditional medicine; physical examination, diagnosis, cause analysis, therapy, disease prevention, rehabilitation, advisement, patient referrals; and comparison of symptoms and diseases with those based on modern medicine or alternative medicine.

**55333 Practice in Thai Traditional Therapy****(6 credits)****Objectives**

1. To gain skills in history taking, physical examination, diagnosis, and therapy based on Thai traditional medicine principles.
2. To gain skills in disease prevention, rehabilitation, advisement, information recording, and patient referrals, at a hospital or a health-care facility with Thai traditional medicine services.

**Course Description**

Practice of Thai traditional therapy relating to history taking, physical examination, diagnosis, therapy, disease prevention, rehabilitation, advisement, information record, medical recording, and patient referrals, at a hospital and a health-care facility with Thai traditional medicine services.

**55334 Thai Traditional Pharmacy II****(6 credits)****Objectives**

1. To gain knowledge and understanding of the principles of groups of medicinal materials.
2. To gain knowledge and understanding of Pharmacy principles.
3. To gain knowledge and understanding of principles and methods for the production of Thai traditional drugs.

**Course Description**

Grouping of medicinal materials, especially based on the number of medicinal materials to be used in drug formulation as few, two or more, and many materials (*julapikat*, *pikatya*, and *mahapikat*), and special grouping; structure and analysis of Thai traditional drugs; systems of weights and measures; pharmaceutical principles; principles for preparation of high-quality drugs; preparation of less toxic drugs (calcination and detoxification); storage of prepared drugs; determination of drug expiration dates; tools for drug production and preparation; use of equipment or tools for drug preparation and storage; dispensing of Thai traditional drugs; management of Thai traditional drugstores; registration of Thai traditional drug recipes; principles and methods of Thai traditional drug production at industrial level; quality control of raw materials; quality control in the production process of finished Thai traditional drugs; laws relating to medicinal plants; research on Thai traditional pharmacy.