

Course Detail

Master of Science Program in Occupational Medicine and Occupational Health

Course Title:	Master of Science Program in Occupational Medicine and Occupational Health (International Program)
Master Degree:	Master of Science in Occupation Medicine and Occupational Health
Academic Institution:	Department of Community Medicine, Faculty of Medicine, Khon Kaen University
Duration:	2 years (August 2020 – July 2022)

Background and Rational:

Background

Worker's health is an important issue to support productivities of the countries. Only a small proportion of the global workforce has access to occupational health services for primary prevention and control of diseases and injuries caused or aggravated by work. The 60th World Health Assembly endorsed a Global Plan of Action on Workers' Health for 2008-2017 and urged WHO member states to devise national policies and plans for its implementation. Only one third of countries cover more than 30 percent of their workers with occupational health services. Policy and standard setting ministries lack capacity for enforcement and monitoring. One third of countries has no ministry of health staff dedicated to workers' health. While most countries have some human resources for health, academic training needs to be scaled up. Although half the countries have national workers' health profiles with data on occupational diseases, injuries, and legislation, information about communicable and noncommunicable diseases among workers and about lifestyle risks are the least covered topics. Most countries have national institutions carrying out research and training, but the distribution of such entities is uneven across country groups. Awareness about workers' health problems remains low, both in the media and among the general public. Workers' health issues feature in policies concerning management of chemicals, emergency preparedness and response, employment strategies, and vocational training. However, workers' health is seldom considered in policies regarding climate change, trade, economic development, poverty reduction, and general education. Although most countries had some strategies, standards, and targets for coverage of occupational health services, only one third covered more than 30% of their workers with such services. While ministries of health are traditionally strong in legislation, policy and standard setting for occupational health services, in most countries these ministries lacked sufficient capacity to deal with workplace inspection and monitoring of workers' health trends.

Human resources in occupational medicine and occupational health are limited, ministries of health had no staff dedicated to workers' health. Most countries had some human resources for occupational health. However, academic training in occupational medicine and occupational health needs to be scaled up at both undergraduate and postgraduate levels. As expected, mostly those in the low income group, human resources for occupational medicine and occupational health were not at all sufficient. Several countries reported that occupational health was not included in undergraduate training in medicine (10%), nursing (16%), public health (10%), engineering (19%), and physical science (31%). In those countries where occupational health was included in undergraduate training, this training was usually rated as "insufficient." Only in the Western Pacific Region were satisfied with the level of inclusion of occupational health in undergraduate training in medicine.

The proportion of countries with occupational health degree programs in medicine was highest in the European and American regions and lowest in the South-East Asian and African regions. As country incomes rose, so did the proportion of countries offering such programs. Therefore, several countries particularly, the developing countries need to build up occupational health and occupational medicine practice and that strengthening human resource capacity are a crucial issue.

Conducting postgraduate course Master degree in Occupational Medicine and Occupational Health will fill a gap of lacking human resources particularly occupational physicians, occupational health doctors, some occupational health professions in developing countries.

To conduct this Master program will definitely gain experience for the academic department and faculties as well as the instructors. At the end of the day, the reputation of the country. Following this, our department will be able to apply to be a collaborating center of some international agencies such as WHO.

Division of Occupational Medicine, Department of Community Medicine has incorporated well with various clinical specialties in the faculty and other public health and occupational health professions. There are 8 years of experience in conducting the Master degree in Occupational Medicine and the residency training program in Preventive Medicine (Occupational Medicine). Together with 15 years of experience in running a short course in occupational health and safety management for hospital personnel. The course produced 3059 health workers (from 640 hospitals across Thailand). In addition, in 2002, we hosted the short course in Occupational Epidemiology supported by International Agency Research on Cancer (IARC/WHO, Lyon-France) and there were participants from 5 countries. In 2017, our division hosted the International Conference on Occupational Health for Health Workers, it was organized by Scientific Committee on Occupational Health for Health Worker under International Commission of Occupational Health (ICOH). For the facilities, the faculty is well equipped with classrooms, audiovisuals, telecommunication, e-learning and other learning materials. In addition, the course director has set up and run the office of occupational health and safety for hospital and academic setting for 14 years. The division of Occupational Medicine has worked well with other departments such as the Dept of Medicine,

Otolaryngology, Orthopaedics, Surgery, Psychiatry, Toxicology and etc in both medical service, Master program and residency training. The department has three occupational medicine professions and one occupational health PhD degree together with PhD qualification in public health and epidemiology. Therefore our faculty and department contain several experts to run the Master program in Occupational Medicine and Occupational Health. In addition, such programs like this are very limited around Southeast of Asia and developing countries even middle to upper middle developing countries.

Objectives:

Main objectives

- (1) Thoroughly understanding of the principle of occupational medicine and occupational health, and applying the knowledge to research or working in advance professional.
- (2) Understanding of the principle and the theory of occupational medicine and occupational health as a multidisciplinary
- (3) Having the skill of occupational medicine and occupational health management and service, analyzing the working-age health problems research
- (4) Having positive attitude toward the prevention of health problems on the treatment and attitude to be the leader of occupational medicine and

occupational health with the skill to diagnose work-related or occupational diseases.
 (5) Having a good interpersonal skill especially with the multidisciplinary professionals and having the professional responsibility

Minor objectives

- (1) Having an ability to do the research or innovative academic project in occupational medicine and occupational health
- (2) Having an ability of analyzing, synthesizing, communicating, using the computer And information technology, and operating a modern management which lead to widespread knowledge development and application
- (3) Being an ethically academic professional and having leadership of promoting good manner in an academic and professional role

Course Synopsis and Methodology:

Study plan

Plan A Type A2 Total in the program 36 credits hours

Program Structure

Categories of Courses	Number of Credit Hours
	Plan A Type A2
1. Core Courses	-
2. Major Required Courses	18
3. Major Elective Courses	6
4. Thesis	12
Total credits in the program	36

Lists of Courses

Plan	Categories of Courses	Courses	Credits
Plan A Type A2	Major Required Courses	MD667742 Occupational Toxicology	2
		MD827101 Clinical Occupational Medicine	3
		MD827102 Research Methodology and Statistics in Occupational Health	3
		MD827103 Occupational Epidemiology	2
		MD827104 Occupational Hygiene and Risk Assessment	2
		MD827105 Occupational Health and Safety Management	2
		MD827106 Occupational Medicine in Occupational Health Service	2
		MD828891 Seminar in Occupational Medicine and Occupation Health I	1
		MD828892 Seminar in Occupational Medicine and Occupation Health II	1
	Total		18
	Major Elective Courses	MD827151 Integration of Occupational Health for Health Worker and Quality of Health Care Service	3
MD827152 Application of Health		3	

	Economics in Health Care Services	
	MD827153 Field Practice in Occupational Hygiene - Direct reading and Personal sampling	2
	MD827154 Standard and Legal Aspects in Occupational Health	2
	MD827155 Occupational Ergonomics	2
	MD827156 Occupational Mental Health	2
	MD827157 Clinical Preventive Medicine	2
	Total	6
Thesis	207 899 Thesis	12
	Total	12

Recommended Sequence

Year 1 / Semester 1	Credits
	Plan A Type A2
MD667742 Occupational Toxicology	2
MD827101 Clinical Occupational Medicine	3
MD827104 Occupational Hygiene and Health Risk Assessment	2
MD827105 Occupational Health and Safety Management	2
MD827106 Occupational Medicine in Occupational Health Service	2
MD828891 Seminar in Occupational Medicine and Occupation Health I	1
TOTAL ENROLL COURSE CREDIT	12
TOTAL CUMULATIVE COURSE CREDIT	12

Year 1 / Semester 2	Credits
	Plan A Type A2
MD827102 Research Methodology and Statistics in Occupational Health	3
MD827103 Occupational Epidemiology	2
MD827151 Integration of Occupational Health for Health Worker and Quality of Health Care Service	3
MD827154 Standard and Legal Aspects in Occupational Health	2
MD827155 Occupational Ergonomics	2
MD828892 Seminar in Occupational Medicine and Occupation Health II	1
MD827899 Thesis	2
TOTAL ENROLL COURSE CREDIT	14
TOTAL CUMULATIVE COURSE CREDIT	26

Year 2 / Semester 1	Credits
	Plan A Type A2
MD827899 Thesis	9
TOTAL ENROLL COURSE CREDIT	9
TOTAL CUMULATIVE COURSE CREDIT	35

Year 2 / Semester 2	Credits
	Plan A Type A2
MD827899 Thesis	1
TOTAL ENROLL COURSE CREDIT	1
TOTAL CUMULATIVE COURSE CREDIT	36

*Please note that the curriculum is subject to change as appropriate.

Thesis Master Plan

1	Research question, rationale, research title	January – February 2021
2	Literature review	January – April 2021
3	Proposal submission	April – June 2021
4	Ethical submission	June 2021
5	Data collection and analysis	June – October 2021
6	Manuscript submission	December 2021
7	Thesis defending	June 2022

Course Contents

Subjects	Credits	Course Contents
Compulsory		
MD667742 Occupational Toxicology	2(2-0-4)	Basic knowledge of toxicology such as toxicokinetics, signal transduction, cell death processes, genetic toxicology, carcinogenesis; organ toxicity such as liver, renal, cardiovascular system, respiratory system, immunological system, neurological system, reproductive system, skin, carcinogenicity; and toxic substances in occupational diseases such as pesticides, radioactive substances, heavy metals, volatile matter; use of toxicological data to establish occupational exposure limits (OELs); regulatory aspects (COSHH, CHIP regulations)
MD827101 Clinical Occupational Medicine	3(3-0-6)	Adverse impact from harmful exposures, work practice affects to health, skills of diagnosis of ill health, medical fitness for work, based on evidence base, main occupational diseases, occupational toxicology, occupational illness from chemical exposure; metal, toxic gas, solvents, dust, and pesticides, occupational respiratory and dermatologic diseases, occupational cancer and its control, health screening and surveillance, job transferring or

Subjects	Credits	Course Contents
		termination due to poor health or an ageing population and rehabilitation following ill health.
MD827102 Research Methodology and Statistics in Occupational Health	3(2-3-6)	Basic concepts in statistics, types of data and data presentation, descriptive statistics, basic probability, distribution theory, normal distribution, sampling theory, inferential statistics, analysis of categorical and continuous data, non-parametric tests, correlation and regression, and survival analysis, descriptive epidemiology, measures and comparisons of disease frequency, ecological studies, cross-sectional studies, prevalence studies, case-control studies, principles of screening, study design and questionnaires, qualitative research methods.
MD827103 Occupational Epidemiology	2(2-0-4)	Historical background, scope, purpose and advantage of epidemiology and occupational epidemiology, characterizing the workplace environment, general concepts of exposure and dose, classification of exposure, approach to exposure assessment, reliability and validity of exposure assessment, combining exposure data from multiple sources, overview of study designs related to occupational disorders, cohort studies, case control studies, cross-sectional studies, bias, exposure dose modeling, meta-analysis, applications of epidemiologic methods for epidemiological surveillance and investigation, appraisal in epidemiologic articles
MD827104 Occupational Hygiene and Health Risk Assessment	2(1-2-3)	Approaches to workplace risk assessment for physical, chemical and biological hazards, decision making on the extent of risk, collecting occupational exposure data and methods for selecting control measures (to protect health) and assessment of their effectiveness, type of health risk assessment, health risk assessment method, job-exposure matrix and environmental monitoring
MD827105 Occupational Health and Safety Management	2(1-2-3)	Fundamental of occupational health and safety management, occupational health and safety management system, occupational health and safety organization, tools for occupational health and safety management, safety analysis tools, occupational health and safety law and regulations, occupational health and safety standards, risk management, information technology for occupational health and safety management system, auditing occupational health and safety management systems, management of personal protective and emergency equipment, risk and loss control management, establishing a safety culture, information technology related to occupational health management, and nontechnical skills for management

Subjects	Credits	Course Contents
MD827106 Occupational Medicine in Occupational Health Service	2(1-3-4)	Principles of occupational health services, components of occupational health service, level of occupational health service, occupational health service activity, occupational medicine in occupational health service, fitness for work assessment, returning to work assessment, diagnosis approach for occupational diseases, design of medical surveillance program for specific work, design of workplace medical emergency preparedness and response, occupational health service for formal, informal and special workforces, occupational health services systems designed for workforce in agricultural; industrial; and services sectors, field studies in industrial workplaces, field epidemiology in workplace, occupational health service unit in health care setting, occupational medicine clinic, ethical issue in occupational health service, audit in occupational health service
Elective		
MD827151 Integration of Occupational Health for Health Worker and Quality of Health Care Setting	3(2-2-5)	Overview of occupational health for health care workers, epidemiology and health surveillance in health care workers, occupational health service for health care workers, occupational diseases or work-related diseases in health care workers, ergonomics for health care workers, occupational hygiene in hospital, hospital accreditation and occupational health, chemical safety in hospital, risk assessment in hospital, accident analysis in hospital, health promotion for health care workers, information management of occupational health for health care workers, research in occupational health for health care workers, occupational health for health care workers seminar
MD827152 Application of Health Economics in Healthcare Services	3(3-0-6)	Concept of application of health economics, objectives of economics analyses and evaluations of private and public health care services, cost analysis, unit cost and break even point analysis, measurement of productivity and effectiveness, measurement and evaluation of economics outcome, health care service analysis and evaluation using cost-benefit, advantage cost and cost-effectiveness, pros and cons of various analyses, data collection and analyses of economics data, data presentation and applications of economic evaluation results in Health policy
MD827153 Field Practice in IH - Direct reading and Personal sampling	2(1-2-3)	Instrument use and operation, calibration, chemical properties and exposure limits, instrument technology and operational theory, instrument selection, data interpretation and datalogging, sampling strategies in

Subjects	Credits	Course Contents
		incident response, instrument maintenance, instrument troubleshooting, personal sampling method, filters and personal pumps, sampling technique, sampling data analysis, use of personal sampling data in exposure assessment, correlation of environment sampling and biomarkers.
MD827154 Standard and Legal Aspects in Occupational Health	2(2-0-4)	International standard in occupational health and safety, influence of legal process in development of occupational health both nationally and internationally, occupational health and safety standards such as asbestos, food safety and hygiene, risk management and implementation of risk management systems, employment law including discrimination, disability law and ethic, fitness to work standards, factors contributing to the shaping of legal aspects, the regulation of environmental and consumer risk, UK USA EU and health and safety regulation
MD827155 Occupational Ergonomics	2(1-2-3)	Human physiological processes, muscle use and anthropometry, examination of work postures, workspace design and task analysis, activity-related soft tissue disorders, back injuries, factors covering shiftwork and fatigue , organizational and psychosocial aspects of work, risk assessment of low back injury, design for productivity, quality and safety, computer workstation evaluations, work stress, absenteeism, presenteeism and sleep, cost benefit analysis and return on investment.
MD827156 Occupational Mental Health	2(2-0-4)	Occupational hazards related to mental health, influence of psychosocial and other factors on the mental health of workers, organizationally and individually based approaches to assessment and intervention, selection and management issues relating to workers with mental health problems, workplace bully, violence and harassment, alcohol and drug abuse, post-traumatic stress disorder, employee assistance program, the current legal position on psychosocial hazards at work
MD827157 Clinical Preventive Medicine	2(2-0-4)	Principle of Clinical Preventive Medicine, factors effect on human health, basic clinical epidemiology, occupational epidemiology, outbreak investigation, basic public health, basic travelling medicine, basic aviation medicine, basic maritime medicine, basic psychosocial care, disease prevention, health promotion and vaccination
MD828891 Seminar in Occupational	1(1-0-2)	Analysis and criticize, methodology, results and assumption of published occupational medicine research articles, group discussion on occupational

Subjects	Credits	Course Contents
Medicine and Occupational Health I		diseases patients in terms of the causes, risk factors, diagnosis, investigation, treatment, prevention and health promotion, health risk communication and roles of occupational health professionals and occupational health doctors
MD828892 Seminar in Occupational Medicine and Occupational Health II	1(1-0-2)	Seminar and academic exchange of some original or systematic review articles from various occupational health or occupational medicine journals
MD827899 Thesis		Review of literature, construction of research question, proposal development, study of ethical consideration conducting of research , thesis writing and defense manuscript preparation

Graduation Conditions:

The thesis need to be completely published or accepted to be published in the national or international paper as following to the Publication Rules Announcement of Office of the Higher Education Commission or as following to the curriculum rules or grants provider conditions or full paper presentation and published in the proceedings, which the editors including professors or experts with doctoral degree or expert widely prestigious in the field, at least 25 percent of the expert must from other institutes and the articles in the proceedings must be from at least 3 other institutes which more than 25 percent in total. In case of Open Access journal, avoid the journal which is under the Graduated School standard.

Applicant Qualifications

1) Graduation bachelor degree in Doctor of Medicine, nursing science, occupational health and safety or other fields associated with GPA not less than 2.50

2) Already qualified to study in this course at the date of applying scholarship

3) Age not over 35 years old at the date of applying scholarship

4) At least 1 year professional working experience

5) Adequate English proficiency at least

- TOEFL (IBT) **60**

- TOEFL (CBT) **173**

- TOEFL (paper) **500**

- IELTS **5.5**

- CU-TEP **60**

6) For students who have commitment working in the company or organization after graduation would be first priority

Document Required

1) Application form with photo

2) Copy of ID card or passport

3) Academic transcript of Bachelor degree

4) English proficiency certificate

5) Document from company or organization mentioned about future career part after graduation (if applicable)

6) Other documents as necessary

TIPP application detail and Medical Report are available

<http://tica.thaigov.net/main/en/relation/75500-TIPP-Application-form.html>

Contact:

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*** Please remind that the application will complete when TICA receive the hard copy of the application form and other related documents through the Royal Thai Embassy/Permanent Mission of Thailand to the United Nations/Royal Thai Consulate – General accredited to eligible/territories.