



Program	M.Sc. (Tropical Medicine)	Degree Level	Master
Course Title	Epidemiological Concepts in Tropical Medicine	Faculty	Tropical Medicine
Course Code	TMID 548	Department	Interdepartmental

TQF 3: COURSE SPECIFICATION

SECTION 1: GENERAL INFORMATION

1. Course code and title

Thai วทสข ๕๔๔ วิทยาระเบียบวิธีวิจัย
English TMID 544 Research Methodology

2. Number of credits 2(2-0-4)

3. Program and type of the course

3.1 Program: Master of Science in Tropical Medicine
3.2 Type of the course: Required Course

4. Course Coordinator and Lecturers

4.1 Course Coordinator

Asst. Prof. Dr. Saranath Lawpoolsri Niyom
Department of Tropical Hygiene, Faculty of Tropical Medicine
e-mail: saranath.law@mahidol.ac.th

4.2 Lecturers

- 1) Assoc. Prof. Jaranit Kaewkungwal
 Department of Tropical Hygiene, Faculty of Tropical Medicine
 e-mail: jaranit.kae@mahidol.ac.th
- 2) Assoc. Prof. Waranya Wongwit
 Department of Social and Environmental Medicine, Faculty of Tropical Medicine
 e-mail: waranya.won@mahidol.ac.th
- 3) Assoc. Prof. Poom Adisakwattana
 Department of Helminthology, Faculty of Tropical Medicine
 e-mail: poom.adi@mahidol.ac.th



Program
Course Title
Course Code

M.Sc. (Tropical Medicine)
Epidemiological Concepts in Tropical Medicine
TMID 548

Degree Level
Faculty
Department

Master
Tropical Medicine
Interdepartmental

- 4) Asst. Prof. Saranath Lawpoolsri Niyom
Department of Tropical Hygiene, Faculty of Tropical Medicine
e-mail: saranath.law@mahidol.ac.th
- 5) Dr. Pimphen Chareon
Department of Tropical Hygiene, Faculty of Tropical Medicine
e-mail: pimphen.cha@mahidol.ac.th
- 6) Asst. Prof. Wirichada Pan-ngum
Department of Tropical Hygiene, Faculty of Tropical Medicine
e-mail: wirichada.pan@mahidol.ac.th
- 7) Asst. Prof. Ngamphol Soonthornworasiri
Department of Tropical Hygiene, Faculty of Tropical Medicine
e-mail: ngamphol.soo@mahidol.ac.th
- 8) Asst. Prof. Wang Nguitragool
Department of Molecular Tropical Medicine and Genetics
Faculty of Tropical Medicine
e-mail: wang.ngu@mahidol.ac.th
- 9) Dr. Suparat Phuanukoonnon
Department of Social and Environmental Medicine, Faculty of Tropical Medicine
e-mail: suparat.phu@mahidol.ac.th

5. Semester/Year

5.1 Semester

1 of each Academic Year

5.2 Number of participant:

Minimum 1, maximum 50

6. Pre-requisite course (s)

None

7. Co-requisites

None



Program M.Sc. (Tropical Medicine)
Course Title Epidemiological Concepts in Tropical Medicine
Course Code TMID 548

Degree Level
Faculty
Department

Master
Tropical Medicine
Interdepartmental

8. Venue

Faculty of Tropical Medicine, Mahidol University

9. Date of the most recent course specification made

June 2018



Program M.Sc. (Tropical Medicine)
Course Title Epidemiological Concepts in Tropical Medicine
Course Code TMID 548

Degree Level Master
Faculty Tropical Medicine
Department Interdepartmental

SECTION 2: COURSE GOALS AND COURSE OBJECTIVES

1. Course Goals

The course aims to train students with fundamental knowledge and skills in conducting Tropical Medicine research that can be applied to their future research.

2. Objectives of developing/revising this course

2.1 Course Objectives

- 1) Has though understanding in concepts and principle of research methodology.
- 2) Consistently apply knowledge in research methodology from published literatures to develop feasible and ethically sound research proposal.

2.2 Course-level Learning Outcomes: CLOs



At the end of the course, the students should be able to

CLO1: Formulate appropriate research question

CLO2: Conduct literature review related to research of interest

CLO3: Develop a research proposal with appropriate research methodology

CLO4: Work in team to accomplish assigned projects

CLO5: Communicate scientific information using appropriate information technology



Program
Course Title
Course Code

M.Sc. (Tropical Medicine)
Epidemiological Concepts in Tropical Medicine
TMID 548

Degree Level
Faculty
Department

Master
Tropical Medicine
Interdepartmental

2.3 Relationship between level of learning and PLOs

Table 1 PLOs responsible by the course

PLOs	Sub PLOs
PLO1 Demonstrate moral and ethical manner in knowledge acquisition and application	N/A
PLO2 Describe comprehensive knowledge of important tropical diseases	N/A
PLO3 Conduct research using proper scientific methods and information technology	N/A
PLO4 Apply knowledge and skills in social science, epidemiology or diagnosis of etiologic agents of tropical diseases	N/A
PLO5 Facilitate either as leader or follower to complete assignments	N/A
PLO6 Select appropriate technique to effectively communicate problem/research based information related to tropical medicine to community	N/A



Program M.Sc. (Tropical Medicine)
Course Title Epidemiological Concepts in Tropical Medicine
Course Code TMID 548

Degree Level Master
Faculty Tropical Medicine
Department Interdepartmental

Table 2 Relationship between CLOs and level of learning toward PLOs

Course Code: TMID 548	Program Learning Outcomes					
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1 Formulate appropriate research question		I	I/R	R		
CLO2 Conduct literature review related to research of interest		R/P				R/P
CLO3 Develop a research proposal with appropriate research methodology	R/P		R/P	P	R/P	
CLO4 Work in team to accomplish assigned projects					P	
CLO5 Communicate scientific information using appropriate information technology						R/P



Program M.Sc. (Tropical Medicine)
Course Title Epidemiological Concepts in Tropical Medicine
Course Code TMID 548

Degree Level Master
Faculty Tropical Medicine
Department Interdepartmental

SECTION 3: CHARACTERISTICS AND OPERATION

1. Course Description

(Thai) หลักการและเหตุผล คำถามวิจัย วัตถุประสงค์ หัวข้อวิจัย การออกแบบงานวิจัย การคำนวณขนาดตัวอย่าง การวิเคราะห์ข้อมูล จริยธรรมการวิจัยทางวิทยาศาสตร์การแพทย์และสังคมศาสตร์

(English) Formulation of rationale, research question, objectives and research title; Study design; Sample size calculation; Data analysis; Ethical issue in biomedical and social science researches

2. Number of hours per semester (Lecture/theory – Practice – Self-study)/semester

2 (2-0-4)

3. Methods and number of hours given to each student for consultancy and/or suggestion

Consultancy methods	Number of hours	Responsible person
Face-to-face consultation	1 hour/week	Asst. Prof. Saranath
Email consultation	2 hours/week	Asst. Prof. Saranath



Program M.Sc. (Tropical Medicine)
Course Title Epidemiological Concepts in Tropical Medicine
Course Code TMID 548

Degree Level Master
Faculty Tropical Medicine
Department Interdepartmental

SECTION 4: DEVELOPMENT OF STUDENT'S ACHIEVEMENT TOWARDS COURSE LEARNING OUTCOMES AND ASSESSMENT

1. Brief description of the expected knowledge and skills given to the students

CLO	Expected knowledge	Expected skills	
		Generic	Specific
CLO1	Epidemiology of Tropical Diseases Research Methodology	Systemic Thinking,	
CLO2	Epidemiology of Tropical Diseases	Systemic Thinking Knowledge and Information Acquisition	Critical Thinking
CLO3	Research Methodology Application of Epidemiological Methods Statistical Analysis Methods	Research Ethics awareness	Scientific Writing Skill
CLO4		Interpersonal Skill, Leadership Skill	
CLO5		Presentation Skill	



Program M.Sc. (Tropical Medicine)
Course Title Epidemiological Concepts in Tropical Medicine
Course Code TMID 548

Degree Level Master
Faculty Tropical Medicine
Department Interdepartmental

2. Teaching plan

Period	Topic	Number of hours			T/L activities and media	Instructor
		Lecture	Practice	Self-study		
1	Rationale, research question, objective and determination of research title, plan for literature review	2	0	4	Lecture, class discussion	Saranath
2	Student presentation I: Research title, objectives	3	0	6	Student presentation, class discussion	Saranath, Jaranit, Poom, Pimphen, Wirichada, Ngamphol
3	Student presentation II: Literature review	3	0	6	Student presentation, class discussion	Saranath, Jaranit, Poom, Pimphen, Wirichada, Ngamphol
4	Research Planning	1	0	2	Lecture, class discussion, examples	Saranath
5	Overview of study design for molecular study	1	0	2	Lecture, discussion	Wang
6	Overview of study design for social study	2	0	4	Lecture, discussion	Suparat



Program
Course Title
Course Code

M.Sc. (Tropical Medicine)
Epidemiological Concepts in Tropical Medicine
TMID 548

Degree Level
Faculty
Department

Master
Tropical Medicine
Interdepartmental

Period	Topic	Number of hours			T/L activities and media	Instructor
		Lecture	Practice	Self-study		
7	Student presentation III: Research planning	3	0	6	Student presentation, class discussion	Saranath, Jaranit, Poom, Pimphen, Wirichada, Ngamphol
8	Ethics issues in biomedical science and social science research	2	0	4	Lecture, class discussion, examples	Jaranit
9	Student presentation IV: Materials & Methods	6	0	12	Student presentation, class discussion	Saranath, Jaranit, Poom, Pimphen, Wirichada, Ngamphol
10	Writing EC submission proposal	1	0	2	Lecture, class discussion, examples	Saranath, Jaranit
11	Student proposal presentation	6	0	12	Student presentation, class discussion	Saranath, Jaranit, Poom, Pimphen, Wirichada, Ngamphol
Total		30	0	60		

3. Plan to assess students' learning achievement according to CLOs



Program
Course Title
Course Code

M.Sc. (Tropical Medicine)
Epidemiological Concepts in Tropical Medicine
TMID 548

Degree Level
Faculty
Department

Master
Tropical Medicine
Interdepartmental

2.1 Student assessment

a) Formative Assessment (Monitoring student progress)

In-class discussion

Checks for understanding

Daily instructor observations

b) Teaching strategies used to develop the knowledge and skills in Item 1 above, and how to assess the students' learning outcomes Summative Assessment

(1) Assessment Methods/Tools and Weight

CLO	Teaching/learning strategies	Assessment methods and weight	
		Assessment Methods/tools	%
CLO1	Formulate appropriate research question	Student presentation	5
		Written proposal	5
		Class participation	2
CLO2	Conduct literature review related to research of interest	Student presentation	10
		Written proposal	10
		Class participation	2
CLO3	Develop a research proposal with appropriate research methodology	Student presentation	20
		Written proposal	20
		Class participation	6
CLO4	Work in team to accomplish assigned projects	Student presentation	10
		Peer evaluation	5
CLO5	Communicate scientific information using appropriate information technology	Student presentation	10
		Written proposal	5
Total weight			100



Program
Course Title
Course Code

M.Sc. (Tropical Medicine)
Epidemiological Concepts in Tropical Medicine
TMID 548

Degree Level
Faculty
Department

Master
Tropical Medicine
Interdepartmental

(2) Grading

Score (100%)	Grade
80-100	A
70-79	B+
60-69	B
<60	C (Fail)

(3) Re-examination

Not Applicable

3. Student's appeal

In case of any doubt or uncertainty in the marks or grades of the student assessments, students can directly contact advisors, supervisors, lecturers or Program Director . In case that student would like to appeal the marks or grades, there are several processes this can be done. Students can appeal via website <http://www.tm.mahidol.ac.th/eng/dean.php>, suggestion box, email or submit the Appeal Form to Program Director , Deputy Dean for Education, Dean of Faculty of Tropical Medicine, or Dean of Faculty of Graduate Studies.



Program	M.Sc. (Tropical Medicine)	Degree Level	Master
Course Title	Epidemiological Concepts in Tropical Medicine	Faculty	Tropical Medicine
Course Code	TMID 548	Department	Interdepartmental

SECTION 5: FACILITIES AND INFRASTRUCTURE

1. Required Texts

- 1) Gordis L. Epidemiology, 4th edition. Philadelphia, PA: W.B. Saunders Company; 2009
- 2) Greenberg R. Medical Epidemiology 3rd edition. Columbus, OH: The McGraw-Hill Companies; 2001
- 3) Hulley SB, Newman TB, Cummings SR. Designing clinical Research. 3rd edition. Philadelphia: Lippincott Williams&Wilkins; 2007

2. Suggested Materials

- 1) Rothman K, Greenland S, Lash T. Modern Epidemiology 3rd edition. Philadelphia, PA: Lippincott Williams&Wulkins; 2008
- 2) Wassertheil-Smoller S. Biostatistics and Epidemiology 3rd edition: A Primer for Health Professionals. New York: Springer-Verlag; 2004

3. Other

Scientific journal, website e.g. Pubmed, e-database, CITI program



Program	M.Sc. (Tropical Medicine)	Degree Level	Master
Course Title	Epidemiological Concepts in Tropical Medicine	Faculty	Tropical Medicine
Course Code	TMID 548	Department	Interdepartmental

SECTION 6: COURSE'S EVALUATION AND IMPROVEMENT

1. Student's evaluation towards the effectiveness of the course

- 1) Observation of students on class participation, class discussion
- 2) Evaluation of lecturer regarding teaching performance

2. Assessment of teaching strategy

- 1) Observe participation between lecturers and students particularly in classes that have class discussion
- 2) Student grade
- 3) Evaluation of teaching performance by internal auditor

3. Improvement of teaching approaches

A meeting among lecturers will be conducted after receiving the results of students' evaluation and assessment of teaching strategy. The results will be distributed and discussed among the lecturers. The modification and improvement strategies will be decided, according to the census decision among lecturers.

4. Verification of student's learning achievement

Student's learning achievement will be monitored throughout the course (during and after the course). Monitoring methods during the class include observation of student's ability to discuss and answer questions in class, asking student's improvement from his/her advisors or other lecturers, and invite other lecturers to observe student's presentation. Monitoring student's learning achievement after the course can be done by observation of student performance on thesis/thematic paper work, observation of student presentation at scientific meeting/conference, observation on students' behavior and practice toward moral and ethics.



Program	M.Sc. (Tropical Medicine)	Degree Level	Master
Course Title	Epidemiological Concepts in Tropical Medicine	Faculty	Tropical Medicine
Course Code	TMID 548	Department	Interdepartmental

5. Review of the course's effectiveness and plan for improvement



Results from course evaluation and student assessment will be used to guide the improvement strategy of the course. Meetings among program committee will be conducted to review the results and develop course improvement plan. The course will be reviewed and/or revised every 2 years. Teaching contents, and teaching methods will be modified to make them up-to-date and integrate with different areas.

