



Program M.Sc. (Tropical Medicine)  
Course Title Field Practicum in Tropical Medicine  
Course Code TMID 538

Degree Level Master  
Faculty Tropical Medicine  
Department Interdepartmental

### TQF 3: COURSE SPECIFICATION

#### SECTION 1: GENERAL INFORMATION

#### 1. Course code and title

**Thai** วทสว ๕๓๘ การฝึกภาคสนามทางอายุรศาสตร์เขตร้อน

**English** TMID 538 Field Practicum in Tropical Medicine

#### 2. Number of credits 1 (0 - 2 - 1)

#### 3. Program and type of the course

**3.1 Program** Master of Science in Tropical Medicine

**3.2 Type of the course** Core course

#### 4. Course Coordinator and Lectures

##### 4.1 Course Coordinator

Asst. Prof. Dr. Saengduen Moonsom

Department of Protozoology, Faculty of Tropical Medicine

Email: saengduen.moo@mahidol.ac.th

##### 4.2 Lecturers

- 1) Assoc. Prof. Dr. Paron Dekumyoy, Department of Helminthology,  
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- 2) Assoc. Prof. Dr. Poom Adisakwattana, Department of Helminthology  
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- 3) Assoc. Prof. Dr. Dorn Watthanakulpanich, Department of Helminthology  
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- 5) Assoc. Prof. Dr. Urusa Thaenkhram, Department of Helminthology  
E-mail: urusa.tha@mahidol.ac.th
- 6) Prof. Yaowalark Sukthana, Department of Protozoology  
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  - 18) Assoc. Prof. Dr. Narisara Chantratita, Department of Microbiology and Immunology  
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  - 19) Assoc. Prof. Dr. Natthanej Luplertlop, Department of Microbiology and Immunology  
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  - 20) Assoc. Prof. Dr. Nitaya Indrawattana, Department of Microbiology and Immunology  
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- 22) Asst. Prof. Dr. Kobporn Boonnak, Department of Microbiology and Immunology  
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- 28) Asst. Prof. Dr. Ngamphol Soonthornworasiri, Department of Tropical Hygiene  
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- 37) Asst. Prof. Dr. Yanin Limpanont, Department of Social and Environmental Medicine  
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**5. Semester/Year**

5.1 Semester 1 / Academic Year 2018

5.2 Number of participant 20

**6. Pre-requisite course (s)**

None

**7. Co-requisites**

None

**8. Venue**

Faculty of Tropical Medicine and field sites e.g. community or schools

**9. Date of the most recent course specification made**

Day 18 Month July Year 2018



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## SECTION 2: COURSE GOALS AND COURSE OBJECTIVES

### 1. Course Goals

This course provides a conducive environment to prepare students, who are globally competent, guided by ethics, equipped with an entrepreneurial outlook, and who have acquired high achievement and motivation while honing their analytical, collaborative and managerial skills, leadership in solving issues related to tropical diseases through field practicum in the community which is facing with tropical diseases or health problems.

### 2. Objectives of developing/revising this course

#### 2.1 Course Objectives

- 1) Has thorough knowledge and critical understanding of principal concepts of tropical diseases and principles and current applications of diagnostic tools, risk analysis and communication to field practicum. Consistently applies practical and theoretical knowledge in dealing with a wide variety of issues and health problems at the community level.
- 2) Accepts full responsibility for own work and cooperates fully and constructively with others in dealing with issues and problems, exercising both informal and formal leadership and managerial skills where appropriate.
- 3) Acquire, critically evaluates, and makes effective use of mathematical and statistical data, and uses a wide range of appropriate information and technology to communicate for health risk and recommendations for community prevention to various targets.
- 4) Actively encourages others to apply sound ethical and moral judgments in dealing issues affecting themselves and others and exercises leadership in promoting sound ethical and moral practices in field practicum environment and the wider community.

#### 2.2 Course-level Learning Outcomes: CLOs.

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

**CLO1:** Integrate fundamental knowledge and skills in pathogens, hosts and vectors and socio-environmental factors of tropical diseases in field practice



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**CLO2:** Plan for community communication on risk and prevention of tropical diseases

**CLO3:** Participatory work with multi-disciplinary team and community for tropical disease identification and prevention

**CLO4:** Persuade multi-disciplinary team and community with respect to their personality, culture and belief

### 2.3 Relationship between level of learning and PLOs

**Table 2** PLOs responsible by the course

PLOs of MSc
PLO1: Demonstrate moral and ethical manner in knowledge acquisition and application
PLO 3: Conduct research using proper scientific methods and information technology
PLO 4: Apply knowledge and skills in social science, epidemiology or diagnosis of etiologic agents of tropical diseases
PLO 5: Facilitate either as lead or follower to complete assignments
PLO 6: Select appropriate technique to effectively communicate problems/research - based information related to tropical medicine to community

**Table 3** Relationship between CLOs and level of learning toward PLOs

Course Code: TMID538	Program Learning Outcomes					
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO 1: Integrate fundamental knowledge and skills in pathogens, hosts and vectors and socio-environmental factors of tropical diseases in field practice				P/M		P/M
CLO 2: Plan for community communication on risk and prevention of tropical diseases	P * (respond)		R/P	P/M		P



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<i>Course Code: TMID538</i>	<i>Program Learning Outcomes</i>					
	<i>PLO1</i>	<i>PLO2</i>	<i>PLO3</i>	<i>PLO4</i>	<i>PLO5</i>	<i>PLO6</i>
CLO 3: Participatory work with multi-disciplinary team and community for tropical disease identification and prevention			R/P	P/M	P	P
CLO 4: Persuade multi-disciplinary team and community with respect to their personality, culture and belief	P * (Value)				P	

\* **Notes:** aligned with Respond and Value levels of affective domain



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### SECTION 3: CHARACTERISTICS AND OPERATION

#### 1. Course Description

(ภาษาไทย)

การวางแผน การบูรณาการความรู้และทักษะเกี่ยวกับเชื้อก่อโรคเขตร้อนที่สำคัญ การตรวจและวิเคราะห์พาหะนำโรค ปัจจัยจากโฮสต์ สังคมและสิ่งแวดล้อม ที่มีผลต่อการเกิดและการกระจายของโรค การวินิจฉัยเชื้อก่อโรคในชุมชน การสื่อสารความเสี่ยง การป้องกันโรคโดยชุมชนมีส่วนร่วม

(ภาษาอังกฤษ)

Planing, integration of knowledge and skills in infectious agents in tropic; Detection and analysis of disease vectors; Host and socio-environmental factors affecting disease occurrence and transmission; Diagnosis; Risk communication; Disease prevention by community participation

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

(0-32-16)

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

Consultancy methods	Number of hours	Responsible person
Questions and assistance regarding course management could be communicated through email or face to face discussion.	1 hour/week	Course coordinator
Students can access to a lecturer for advice to relevant topic. Contact information by email address, land line telephone number and room number of all lecturers in the course are provided	1 hour/week	All lecturers





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

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

CLO	Expected knowledge	Expected skills	
		Generic	Specific
CLO1	K3: Host-parasite relationship K6: Vector-Borne Diseases K7: Food- and Water-borne Diseases K8: Epidemiology of Tropical Diseases K9: Biostatistics K10: Research Methodology K20: Application of Epidemiological Methods K43: Health Risk Assessment K56: Microscopy of Tropical Diseases	GS4: IT Skill GS5: Leadership Skill GS2: Systemic Thinking GS7: Knowledge and Information Acquisition Skill	SS1: Diagnostic Skill for Tropical Diseases SS2: Statistical Analysis Skill SS12: Microscopic Technique Skill SS21: Epidemiological Analytical Skill S22: Critical Thinking SS16: Diagnostic Skill for Medical Helminthes SS17: Diagnostic Skill for Medical Parasites
CLO2	K58: Risk communication	GS9: Communication Skill GS6: Managerial Skill GS1: Presentation Skill GS3: Interpersonal Skill	S22: Critical Thinking SS18: Bioinformatics Skill
CLO3	K59: Community participation	GS10: Culture and Social Awareness GS6: Managerial Skill GS3: Interpersonal Skill	SS23: Community Engagement
CLO4	K11: Principles of Ethics	GS8: Research Ethics	-



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	K37: Social Science	Awareness	
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## 2. Teaching strategies and assessment of the students' learning outcomes

CLO	Teaching strategies	Methods of assessment
CLO 1 (contributed by 4 topics)	Flipped class room (pre-reading assignment), discussion, laboratory demonstration and hand-on practicum, field practicum	Assessment of incorporation of knowledge and skills, diagnostic tools into students' plan for field practicum
CLO 2 (contributed by 9 topics)	In class discussion and role playing and experience in risk communication and community participation during the field practicum	Observation and assessment of student contribution and planning process and complement of risk communication plan, and student performance during field practicum
CLO 3 (contributed by 7 topics)	Practice in diagnosis of various tropical pathogens, in-class discussion and student planning for field practicum	Observation and assessment of diagnostic activities of students, contribution and complement of student's plans for their field practicum
CLO 4 (contributed by 3 topics)	Group discussion, group assignment and work and field practicum	Student's portfolio on success and lesson learnt and concerns during team work, planning, field practicum and community approaching.

**Note:** All of expected outcomes or performance will be assessed by rubric scoring assessment for each activity, e.g. Presentation, laboratory performance, collaboration and written plans.



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## SECTION 5: TEACHING PLAN AND EVALUATION

### 1. Teaching plan

Period	Topic	Number of hours			T/L activities and media	Instructor
		Lecture	Practice	Self-study		
1	Course orientation	0	0.5	0.25	1. Student's self-study on CLOs, teaching activities and assessments 2. Discussion on CLOs, teaching methods and corresponding assessments	● Asst.Prof. Saengduen Moonsom
2	Guideline for community participation and risk communication CLO2, CLO3	0	2	1	1. Reading assignment for student before class 2. In class activities and role play 3. Student discussion & brainstorming on effective community participation & risk communication	● Dr. Pannamas Maneeekan ● Asst.Prof. Saengduen
3	Basic epidemiological approaches for surveillance and prevention of tropical diseases (statistics & mobile based GIS) CLO 1	0	4*	2	Demonstration and practice	● Asst.Prof. Ngamphol Soonthornworasiri
4	Planing for survey on knowledge, perception and pratice of risk for tropical diseases CLO2, CLO3	0	2	1	1. Reading assignment for student on questionnaire survey development before class 2. Practice on development of questionnaire survey for assess risks (knowledge, skills and practice) for tropical diseases	● Dr. Pannamas ● Asst.Prof. Saengduen ● Lect. from Dept. of Social and Environmental Medicine ● Lect. from Dept. of Medical Entomology



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Period	Topic	Number of hours			T/L activities and media	Instructor
		Lecture	Practice	Self-study		
5	Diagnostic technique for food water borne diseases in the tropics CLO2	0	3	1.5	1. Laboratory demonstration of FWB agents 2. Student practice on detection of bacteria/protozoa/helminths from food, water and feces	<ul style="list-style-type: none"><li>• Lect. from Dept. of Protozoology</li><li>• Lect. from Dept. of Helminthology</li><li>• Dept. of Microbiology and Immunology</li></ul>
6	Diagnostic techniques for blood & vector borne diseases in the tropics (malaria & dengue) CLO2	0	3	1.5	1. Microscopic demonstration of BVB helminths and protozoa 2. Practice on detection of BVB agents 3. Video visualization of mosquito trapping & larvae survey	<ul style="list-style-type: none"><li>• Lect. from Dept. of Protozoology</li><li>• Lect. from Dept. of Helminthology</li><li>• Lect. from Dept. of Medical Entomology</li></ul>
7	Field survey and focus-group interview/community participatory approach CLO2,3,4,5	0	4	2	1. Student-lecturer survey/observation at field site 2. On-site focused group interview or participatory approach with stakeholders	<ul style="list-style-type: none"><li>• Lect. from Dept. of Protozoology</li><li>• Lect. from Dept. of Helminthology</li><li>• Lect. from Dept. of Medical Entomology</li><li>• Dept. of Microbiology and Immunology</li><li>• Lect. from Dept. of Social and Environmental Medicine</li><li>• Dr. Pannamas and Lect from Dept of Tropical Hygiene</li></ul>



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Period	Topic	Number of hours			T/L activities and media	Instructor
		Lecture	Practice	Self-study		
8	Student planning for field practicum CLO 1, 2,3,4	0	1.5	0.75	1. Analysis of questionnaires or data from field survey by students 2. Students' brainstorming on plans for activities in field practicum	<ul style="list-style-type: none"><li>● Lect. from Dept. of Protozoology</li><li>● Lect. from Dept. of Helminthology</li><li>● Lect. from Dept. of Medical Entomology</li><li>● Dept. of Microbiology and Immunology</li><li>● Asst.Prof. Saengduen</li><li>● Dr. Pannamas &amp;, Asst.Prof. Ngamphol</li></ul>
9	Student presentation on plan for field practicum CLO2,3	0	1	0.5	1. Student's presentation on plans for their field practicum 2. In class discussion for improvement of the plans.	<ul style="list-style-type: none"><li>● Asst.Prof. Saengduen</li><li>● Dr. Pannamas and Lect from Dept of Tropical Hygiene</li><li>● Lect. from Dept. of Protozoology, Helminthology, Medical Entomology, Microbiology and Immunology, Social and Environmental Medicine</li></ul>
10	Field practicum CLO1-4	0	10	5	1. Students' practice/activities on detection of FWB and BVB agents, data analysis and interpretation, risk communication and multidisciplinary collaboration, community approaching, development of prevention & control of tropical disease through community participation.	<ul style="list-style-type: none"><li>● Asst.Prof. Saengduen</li><li>● Drs. Pannamas &amp; Chawarat</li><li>● Lect. from Dept. of Protozoology, Helminthology, Medical Entomology, Microbiology and Immunology, Social and Environmental Medicine</li></ul>



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Period	Topic	Number of hours			T/L activities and media	Instructor
		Lecture	Practice	Self-study		
10	Seminar of field practicum CLO 1,2,3	0	1	0.5	Student presentation on results of field practicum	Lect. from Dept. of Protozoology, Helminthology, Medical Entomology, Microbiology and Immunology, Social and Environmental Medicine, Tropical Hygiene
Total		0	32	16		

## 2. Plan to assess students' learning achievement according to CLOs

### 2.1 Student assessment

#### a) Formative Assessment (Monitoring student progress)

Lecturers monitor student progress through daily observations for understanding of students during, observation of student participation and response during in-class discussion, presentation and practicum, narrow escape problem solving of students could be monitored and assessed during discussion or problem based learning. Small quiz or student summary might be requested for checking understanding of students before next step of learning process.

#### b) Summative Assessment

(1) Teaching strategies, assessment methods and weight

CLO	Teaching/learning strategies	Assessment methods and weight (%)	
		Assessment Methods/tools	%
CLO 1	Flipped class room (pre-reading assignment), discussion, laboratory demonstration and hand-on practicum, field practicum	Rubric scoring assessment of incorporation of knowledge and skills, diagnostic tools into students' plan for field practicum and after-field presentation and discussion	20



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CLO 2	In class discussion and role playing and experience in risk communication and community participation during the field practicum	Observation and assessment of student contribution and planning process and complement of risk communication plan, and student performance during field practicum	40
CLO 3	Practice in diagnosis of various tropical pathogens, in-class discussion and student planning for field practicum	Accuracy of identification of tropical etiologic agents using various diagnostic techniques	15
		Rubric scoring assessment of activities or messages for community participation and risk communication during field practicum	15
CLO 4	Group discussion, group assignment and work and field practicum	Student's portfolio on success and lesson learnt and concerns for multi-disciplinary collaboration, planning, field practicum and community approaching.	10
Total weight			100





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(2) Grading will be judged according to Faculty of Graduate Studies, Mahidol University as follow

Score	Grading	GPA
80-100	A	4.00
75-79	B+	3.50
70-74	B	3.00
65-69	C+	2.50
60-64	C	2.00
55-59	D+	1.50
50-54	D	1.00
<50	F (Fail)	

### (3) Re-examination

A student will be considered for re-examination his/her grade is F to D+. The method reexamination will be written and oral based examination until his/her score is greater than 60% to meet C level.

### 3. Student's appeal

Students can feedback or appeal on teaching strategies of individual lecturer or any unfairness relating to course management by email or official appeal form. Students may directly submit the form to course coordinator or Bangkok School of Tropical Medicine (BSTM), Mahidol University.



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## SECTION 6: FACILITIES AND INFRASTRUCTURE

### 1. Required Texts

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### 2. Suggested Materials

Li H. Virtual Community Participation and Motivation: Cross-disciplinary Theories. 1st ed. Hershey, PA: IGI Global; 2013. 451 p.

Wisner B, Adams J, editors. Environmental health in emergencies and disasters: A practical guide. Malta: World Health Organization; 2002.

Lundgren RE, McMakin AH. Risk communication : a handbook for communicating environmental, safety, and health risks. Piscataway, NJ; IEEE Press 2013.

Sellnow TL. Effective risk communication : a message-centered approach: Springer; 2009.

Faruque SM. Foodborne and Waterborne Bacterial Pathogens: Epidemiology, Evolution and Molecular Biology. The Quarterly Review of Biology. 2013;88(4):355-.

Tartakow IJ, Vorperian JH. Foodborne and Waterborne Diseases: Their Epidemiologic Characteristics: AVI Publishing Company; 1981.

Percival SL, Yates MV, Williams DW, Chalmers R, Gray NF. Microbiology of waterborne diseases : microbiological aspects and risks. 2014.

Watstein S, Jovanovic J. Statistical handbook on infectious diseases. Westport, Conn.: Oryx Press; 2002.

Lemon SM, Sparling PF, Hamburg MA, Relman DA, Choffnes ER, Mack A. Vector-borne diseases: understanding the environmental, human health, and ecological connections. Workshop summary. Washington: National Academies Press; 2008. 40 + xxii pp. p.

Marcondes CB. Arthropod Borne Diseases. 2017.

### 3. Other resources (if applicable)

Information Resources Management A. Geographic information systems : Concepts, methodologies, tools, and applications 2013.

(DHIS) DoHIS. Epi Info™ Atlanta: U.S. Department of Health & Human Services 2016 [updated September 13, 2016; cited 2017 13]. Available from:

<https://www.cdc.gov/epiinfo/index.html>.



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## SECTION 7: COURSE'S EVALUATION AND IMPROVEMENT

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

Students are required to complete self-evaluation form for achievement towards Course Learning Outcomes (CLOs). This form will be assessed by lecturers for cross-evaluation of CLO achievement of the whole class. Each year, students have asked to fill online evaluation on effectiveness of the course including student self-assessment and overview performance of the teaching strategies and course management. These evaluation results will be taken into consideration for revision and further improvement the course in the next academic year.

### 2. **Assessment of teaching strategy**

Students could feedback teaching strategy or pedagogy after each teaching section. Also, Students are required to complete evaluation form developed by BSTM for teaching quality of all teachers regarding to their relevant teaching topics. In addition, assessment of teaching strategy can be done by observant, teaching team. Successful of teaching strategies could be reflected by student's pass rate as well as level of CLO achievement of students enrolled in that course.

### 3. **Improvement of teaching approaches**

Once finishing course evaluation processes, course coordinator and lectures in the course will conduct meeting to summarize evaluation results, and corporate feedback and suggestion into plan to revise the course if required.

### 4. **Verification of student's learning achievement**

Course coordinator and lecturer will conduct meeting to review students' score or grades as well as content of rubric scoring assessment forms for in-class presentation and discussion and student performance assessment to identify strengths and weakness in course teaching strategies and assessments. The information obtained from formative assessment, summative assessment, as well as levels of achievement towards course learning outcomes of students will be discussed and incorporated in a plan for improvement of teaching strategy, evaluation and course management for next academic year.



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

Course coordinator will conduct a meeting with all lecturers and review evaluation results for teaching strategies and levels of students' achievement towards CLOs mentioned above in sections 2 and 4 and consider for modification of teaching strategies, content as well as assessment in the course syllabus at the end of the course and to implement in the next academic year. Course structure and course learning outcomes and contents will be considered to update and revised every 2 years by integrating customer and global needs in to teaching and learning at the course level.