

Module XXIV Research Project

1.1. Module Objectives

On completion of this module, the students will be:

- Able to interpret given knowledge to describe various observable phenomenon in their research activities
- Able to make scientific reports in the form of final thesis and publication draft based on their research activities
- Able to apprise their research results in both oral and written to scientific community and society
- Able to show positive attitude to discuss different argument
- Able to answer various question related to various aspect in microbiology outside their research area
- Able to show their formal and non-formal communication skill in order to get support from their society
- Able to collect their idea of research to make research proposal
- Able to show their idea of research to scientific society
- Able to perform their research plan and modify if needed
- Able to design in detail their research plan
- Able to choose and develop laboratory assay related to their research
- Able to perform and develop their scientific- communication skill to show their scientific thinking and negotiate about their research plan to their supervisor
- Able to apply analysis assay that they choose to get data
- Able to confirm and show their research results with use of scientific thinking and various concept of microbiology

1.2. Module Data

Person in charge	Head of Microbiology study programme
Credits	11
Course	BM4090 Final Research I BM4091 Final Research II BM4092 Seminar dan Sidang
Course Examination	Research Document Progress Report and research performance evaluation

1.2.1. Sub-module I: Final Project I

Lecturer	Ernawati A.Giri-Rachman, PhD
Semester	7
Type of submodule / course	Compulsory
Credits	4
Workload - preparation	64
Workload - exam duration	-
Workload - autonomous studies	64

Workload details	textbook reading, group discussion, paper review, presentation review, discussion
Contact hours per week	64
Contact hours per week (50 min)	4
Type of examination	Progress report document evaluation, research performance
Language	Bahasa Indonesia
Course Target / Outcome	Students know and apply steps of preparation, research data documentation, and report research
Teaching methods	(1) Regular class meeting (every 4 weeks) for orientation and monitoring accompanied by class discussion (2). Individual preparation of students, leading to written research progress report
Contents (SAP)	<p>A. Laboratory Skills:</p> <ul style="list-style-type: none"> - Apply microbiology laboratory methods and techniques in accordance with the topic of the final project - Apply work safety principles by using protective equipment and implement appropriate emergency procedures. <p>B. Scientific Skills:</p> <ul style="list-style-type: none"> - Having a scientific thinking pattern and the ability to think creatively to solve problems related to the final project research - Using quantitative and qualitative approaches in processing data on the results of the final project research - Linking the results of the final project data analysis with the concept of microbiology - Communicate the results of research in a written report <p>C. Social Skills:</p> <ul style="list-style-type: none"> - Able to work together and communicate in teams
	Introduction : General overview of conducting research conducted by course coordinator
1	
2	Monitoring and discussion with supervisor
3	Monitoring and discussion with supervisor
4	Monitoring and discussion with supervisor
5	Evaluation Meeting with course coordinator
6	Monitoring and discussion with supervisor
7	Monitoring and discussion with supervisor
8	Monitoring and discussion with supervisor
9	Evaluation Meeting with course coordinator
10	Evaluation Meeting with course coordinator

	11	Evaluation Meeting with course coordinator
	12	Evaluation Meeting with course coordinator
	13	Evaluation Meeting with course coordinator
	14	Preparation of Research Progress Report
	15	Preparation of Research Progress Report
	16	Evaluation conducted by research supervisor under course coordinator coordination
Literature / Sources		-
Other specialties		-

1.2.2. Sub-module II: Final Project II

Lecturer	Ernawati A.Giri-Rachman, PhD
Semester	8
Type of submodule / course	Lecture, research/laboratory work, final report evaluation
Credits	3
Workload - preparation	48
Workload - exam duration	-
Workload - autonomous studies	48
Workload details	textbook reading, group discussion, paper review, presentation review, discussion
Contact hours per week	96
Contact hours per week (50 min)	3
Type of examination	Final report document evaluation, research performance
Language	Bahasa Indonesia
Course Target / Outcome	<p>D. <u>Laboratory Skills:</u></p> <ul style="list-style-type: none"> - Apply microbiology laboratory methods and techniques in accordance with the topic of the final project being conducted - Apply work safety principles by using protective equipment and implement appropriate emergency procedures. <p>E. <u>Scientific Skills:</u></p> <ul style="list-style-type: none"> - Having scientific thinking patterns and the ability to think creatively to solve problems related to the final project research - Using quantitative and qualitative approaches in processing data from the final project research - Linking the results of the final project data analysis with the concept of microbiology - Communicating research results in written reports

	F. Social Skills: - Able to work together and communicate in teams
Teaching methods	(1) Regular class meeting (every 4 weeks) for orientation and monitoring accompanied by class discussion (2). Individual preparation of students, leading to written final research report
Contents (SAP)	
1	Introduction : General overview of how to schedule and reporting the final report conducted by course coordinator
2	Monitoring and discussion with supervisor
3	Monitoring and discussion with supervisor
4	Monitoring and discussion with supervisor
5	Evaluation Meeting with course coordinator
6	Monitoring and discussion with supervisor
7	Monitoring and discussion with supervisor
8	Monitoring and discussion with supervisor
9	Evaluation Meeting with course coordinator
10	Evaluation Meeting with course coordinator
11	Evaluation Meeting with course coordinator
12	Evaluation Meeting with course coordinator
13	Evaluation Meeting with course coordinator
14	Preparation of Final Research Report
15	Preparation of Final Research Report
16	Evaluation conducted by research supervisor on final report under course coordinator coordination
Literature / Sources	-
Other specialties	-

1.2.3. Sub-module III: Seminar and Final defence

Lecturer	Ernawati A.Giri-Rachman, PhD
Semester	8
Type of submodule / course	participation in research seminar, conducting seminar, finishing final scientific document
Credits	2
Workload - preparation	32
Workload - exam duration	2
Workload - autonomous studies	32
Workload details	textbook reading, group discussion, paper review, presentation review, discussion
Contact hours per week	
Contact hours per week	2

Type of examination	Scientific publication document, seminar
Language	Bahasa Indonesia
Course Target / Outcome	<p>A. Concept and comprehension</p> <ul style="list-style-type: none"> - Describe scientific knowledge related to final project topic - Describe basic microbiology scientific knowledge <p>B. Scientific skill</p> <ul style="list-style-type: none"> - Demonstrate ability of presenting their research issues and experimental data in a scientific forum - Demonstrate ability to examine issues in microbiology-relevant setting/phenomena and provide alternative solution for its problem; including those that could be found in nature/research and employment setting. <p>C. Social skill</p> <p>Describe the development of microbiology and its application, including ways to acquire further competence in the field</p>
Teaching methods	(1) present at seminar class, (2) individual preparation of oral presentation and final research defence
Contents (SAP)	
	1 Introduction : presentation preparation, scientific publication, and seminar strategy and scheduling
	2 attending seminar class, leading to presentation preparation, seminar, and finishing scientific publication
	3 attending seminar class, leading to presentation preparation, seminar, and finishing scientific publication
	4 Monitoring and discussion with supervisor
	5 Evaluation Meeting with course coordinator
	6 attending seminar class, leading to presentation preparation, seminar, and finishing scientific publication
	7 attending seminar class, leading to presentation preparation, seminar, and finishing scientific publication
	8 attending seminar class, leading to presentation preparation, seminar, and finishing scientific publication
	9 Monitoring and discussion with supervisor
	10 Evaluation Meeting with course coordinator
	11 Seminar and final defence

12	Seminar and final defence
13	Seminar and final defence
14	Seminar and final defence
15	Seminar and final defence
16	Compilation of seminar and final defence score
Literature / Sources	-
Other specialties	-