

# SCBC322 Course Syllabus

## Module B: Cell and molecular medicine

### SCBC 322: Laboratory Rotation in Cell and Molecular Medicine 3 (1-4-4)

Short term research projects, laboratory techniques related to biochemical research, introduction to research methodologies in biochemical research

**Prerequisite:** None

**Date & time:** Tuesday (8:30-12:30)

**Course coordinator:** Dr. Nattawadee Panyain

**Course Objectives:** This course aims to provide knowledge and abilities as follows:

1. How to search for research background in cell and molecular medicine from various scientific databases.
2. How to plan and design basic experiments in cell and molecular medicine.
3. Basic principle of techniques used in cell and molecular medicine research
4. How to properly use basic equipment used in cell and molecular medicine research
5. Experience of working and collaborating with team members

### Course outline

Week	Date	Topic	Hours		Instructor
			Lecture	Lab	
1	Jan 3 <sup>rd</sup> 2025	Introduction	1	-	NP
1	Jan 5 <sup>th</sup> 2025	Deadline for lab rotation 1 selection (report your selection to NP)	-	-	NP
2-6	Jan 6 <sup>th</sup> - Feb 7 <sup>th</sup> 2025	<b>Lab rotation 1</b> and presentation	1	25	BC staffs
6	Feb 7 <sup>th</sup> 2025	Deadline for rotation 2 selection and report for rotation 1	-	-	NP
7-11	Feb 10 <sup>th</sup> - Mar 14 <sup>th</sup> 2025	<b>Lab rotation 2</b> and presentation	1	25	BC staffs
11	Mar 14 <sup>th</sup> 2025	Deadline for rotation 3 selection and report for rotation 2	-	-	NP
12-17*	Mar 17 <sup>th</sup> - April 25 <sup>th</sup> 2025	<b>Lab rotation 3</b> and presentation	1	25	BC staffs
17	May 2 <sup>nd</sup> 2025	Report due for rotation 3	-	-	NP
		<b>Total</b>	4	75	

\*Week 15 is the Songkran holiday week (April 14<sup>th</sup> 2025 - April 18<sup>th</sup> 2025).

- Students are required to take 3 lab rotations (mandatory rotation - meaning that students are required to rotate through 3 different labs).
- It is the student's responsibility to contact the PI for the lab availability in each rotation slot.

### Teaching Methods

Students learn and acquire knowledge by

1. Choosing a project from research abstracts provided by BC staffs
2. Reading materials assigned by their project advisors
3. Performing literature review
4. Performing research experiments
5. Communication with their peers in the laboratory
6. Discussing results/research literatures with their advisors
7. Analyzing and summarizing the results
8. Presenting their research work
9. Writing a scientific report

### Teaching Media

1. Project abstracts
2. Review and research articles
3. PowerPoint presentation

### Measurement and Evaluation of Student Achievement

Students are evaluated based on their performance on

Lab performance in rotation 1	25%
An oral presentation for rotation 1	5%
A written report for rotation 1	3%
Lab performance in rotation 2	25%
An oral presentation for rotation 2	5%
A written report for rotation 2	3%
Lab performance in rotation 3	25%
An oral presentation for rotation 3	5%
A written report for rotation 3	3%
Class participation	1%
Total	100%

**Grading System:** A-F with scores higher than 80 for A. The rest will be determined according to score distribution (by curve)

### **Course Evaluation**

1. Evaluate students' achievement as described in "Measurement and Evaluation of Student Achievement."
2. Evaluate students' satisfaction towards teaching and learning of the course using a questionnaire.

### **References**

1. Sambrook J, Fritsch EF, Maniatis T. Molecular Cloning: A Laboratory Manual. 2nd Ed. New York: Cold Spring Harbor Laboratory, Cold Spring Harbor Laboratory Press; 1989.
2. Ninfa AJ, Ballou DP. Fundamental Laboratory Approaches for Biochemistry and Biotechnology. Fitzgerald Science Press; 1998.

### **Instructors**

Staffs from the Department of Biochemistry  
Faculty of Science, Mahidol University

### **Course Coordinator**

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