Course Syllabus
MBSB 513 Topics of Current Interest in Systems Biosciences
Academic Year 2022

Course ID and name: MBSB 513 Topics of Current Interest in Systems Biosciences
Course coordinator: Asst. Prof. Dr.Natee Jearawiriyapaisarn
Email: natee.jea@mahidol.edu

Instructors:

1. Assoc. Prof. Dr.Surapon Piboonpocanun
2. Assoc. Prof. Dr.Panat Anuracpreeda
3. Assoc. Prof. Dr.Soraya Chaturongakul
4. Asst. Prof. Dr.Alisa Tubsuwan
5. Asst. Prof. Dr.Alita Kongchanagul
6. Asst. Prof. Dr.Duangrudee Tanramluk
7. Asst. Prof. Dr.Narisorn Kitiyanant
8. Asst. Prof. Dr.Natee Jearawiriyapaisarn
9. Asst. Prof.Dr.Phatchariya Phannasil
10. Asst. Prof.Dr.Sirirat Kumarn
11. Dr.Chutima Thepparit
12. Dr.Duangnapa Kovanich
13. Dr.Kittiphong Paiboonsukwong
14. Dr.Promsin Masrinoul

Credits: 1(1-0-2)
Curriculum: Doctor of Philosophy Program in Systems Biosciences (Required course for Plan 2.2)
Semester offering: Year 2/ Semester 1
Prerequisite: None
Course level: Advanced

Course Description:
Searching and reviewing the research literature; essential skills in analyzing, evaluating, discussing, and presenting research articles in molecular biosciences; ethics in research citation; ethics in information technology

Course Learning Outcomes (CLOs)
Upon completion of this course, students are able to:

1. Search and review research articles related to their thesis topic
2. Develop essential skills in analyzing, evaluating, discussing, and presenting research articles in molecular biosciences
3. Develop scientific presentation and communication skills with ethical codes of conduct

Constructive Alignment of Course Content to CLOs and Program ELOs

Activities	CLOs	Program ELOs
Searching and reviewing literature	1	1-5, 7
Writing an abstract	2, 3	1-5, 8
Slide preparation	2, 3	1-4, 6
Presentation	2, 3	1-6, 8
Question and answer	1, 2	1-4, 6-7
Attending and participating in seminars	2	4

Format:

1. Students are required to present at least 2 current research articles (within 5 years) that are related to their thesis topic. The selected articles have to be approved by their advisor.
   - Students should discuss the topic of the presentation with their advisor and send the title of the presentation with the signature of the advisor to the course coordinator, at least 2 weeks before the presentation date.
   - Students are required to submit the abstract (250-300 words) a week before the presentation date.
   - Students will give a presentation for 30 minutes and then answer questions from audiences for approximately 15 minutes.
2. Students are required to attend and participate in seminars organized in this course with the programs in Molecular Genetics and Genetic Engineering (MGGE).

Course Schedule 2022
December 2 – 21, 2022, Time 10:00-12:00, Room A107

Date	Time	Topics	Presenters
Dec 2	09:30-10:05	Intracellular polymerization of metabolic enzymes in response to starvation and acid stress	Mr.Channarong Nasalingkhan
	10:05-10:40	Investigating the use of phage and antibiotic combination against bacteria	Mr. Kittapart Chantakorn
Dec 7	10:00-11:00	Toward better understanding and measures for infectious diseases by single particle cryo-electron microscopy of ribosome complexes	Dr.Takeshi Yokoyama Graduate School of Life Sciences, Tohoku University.
Dec 14	10:00-10:35	Pulmonary surfactant regulating anti-inflammatory response of alveolar macrophages	Miss Nitchakun Samati
	10:40-11:15	Envelope Protein Glycosylation mediates ZIKV infectivity and pathogenesis	Miss Sutida Poonthavee
Dec 16	10:00-10:35	Molecular and cellular changes in lepidopteran pests after exposure to Vip3 proteins	Mr. Pongsatorn Khunrach
	10:40-11:15	Brain iron accumulation contributes to cognition decline in Alzheimer's disease	Miss Chutathip Kimram
Dec 19	9:00-10:00	Identification and characterization of peptides binding SARSCoV-2 spike protein to develop COVID-19 detection	Mr. Pisit Ubonsri
	10:00-11:00	Analysis of dengue virus induced alteration of the fatty acid synthase interactome	Miss Suthatta Sornprasert
	11:00-12:00	Evaluation of IFN-stimulated gene expression induced by two different strains of Zika virus	Miss Oradee Khammaneejan

Date	Time	Topics	Presenters
Dec 20	9:00-10:00	Identification of novel inhibitor interfering the RNA-binding site in RNA-dependent RNA polymerase of dengue virus	Miss Lakkana Thaveepornkul
	10:00-11:00	Identification and characterization of dengue NS5-interacting factors involved in viral replication	Mr. Jakkrit Jantiya
	11:00-12:00	Proteomic analysis of cassava in response to cassava bacterial blight infection	Mr. Chotiros Phaisomboon
Dec 21	10:00-10:35	A prospective drug candidate for a diverse patient population with β-thalassemia	Miss Jirarud Kenkit
	10:40-11:15	Inhibition of miR-122 Suppresses Hepatic lipogenesis and Improves inflammation, and Oxidative Stress Damage in Non-alcoholic Fatty Liver Disease via Sirt1 and FOXO3.	Mr. Sittichok Sonkamkaew

Assessment Criteria

Assessment Criteria	Assessment Method	Scoring Rubric
Abstract (10%)	1) Written abstract	1) Abstract components 2) Writing quality 3) Length
Oral Presentation (75%)	1) Presentation 2) Answering the questions	1) Organization 2) Scientific content 3) Subject knowledge /answering questions 4) Presentation style 5) Time management
Participation (15%)	1) Direct observation 2) Class participation and ability to ask the questions	1) Attendance and punctuality 2) Participation

Students must receive a score of 60% or more to pass the course. Student's achievement will be graded using symbols: A, B+, B, C+, C and F based on the following criteria;

Percentage	Grade	Description
≥ 80%	A	Excellent
75-79.99%	B^+	Good
70-74.99%	B	Fairly good
65-69.99%	C^+	Fair
60-64.99%	C	Poor
< 60%	F	Fail

However, a final grade will be adjusted based on frequency distribution of student's scores from the whole course.

Appeal Procedure

Should the students have any appeal regarding the assessments or grade, inquiry can be made to the course coordinator immediately either by direct contact, telephone or email.

General Inquiry

Ms. Siriporn Monkasemsiri e-mail: siriporn.mon@mahidol.edu; Tel. 02-441-9003-7 ext. 1314

Date revised: December 5, 2022

Submit this form 2 weeks before your presentation date.

Title :

_____

Speaker name:

_____

Date of presentation: _____Time: _____

Advisor signature: _____

Due date: Submit this form a week before the presentation date.

Title __(Font Times New Roman, size 16,bold)_____

Date: _____ Time: ____(Font Times, size 16 unbold)_____

Speaker: _____(Font Times, size 16 unbold)_____

Abstract (Font Times New Roman, size 14, bold)

Text--------Font Times New Roman, size 12 unbold, 1.5 line spacing

Length **250-300** words

Content in abstract should include short background, purpose of the study, short experimental design, results and short summary.

References: 2-3 major references

MBSB 513 Student Rubric Scores

Student Name:…….

1	2	3	4	5
Unsatisfactory Needs significant improvement	Needs improvement	Average	Above average	Excellent

Rubric Criteria	Score
Abstract (10%)	
- Included all information of background, methods, results, and conclusions (3%)	…….
- The abstract is well-written (clear, concise, and compelling) (4%)	…….
- English grammar and spelling are properly used (1%)	…….
- Appropriate length (250-300 words) (1%)	…….
- Submission on time (1%)	…….
Oral Presentation (75%)	
Organization (20%)	
- The structure of presentation includes an engaging introduction, detailed body/results and memorable conclusion.	…….
- Relationship between ideas is clear.	…….
- Audience can easily follow information presented.	…….
Content (20%)	
- Introduction:	
- describe the importance of the topic/research questions/objectives	…….
- provide sufficient background information	…….
- Methods:	
- clearly describe key techniques used in the study	…….
- explain rationale of each experiment.	…….
- Results:	
- clearly describe key results with adequate supporting data	…….
- give critical analysis and interpretation of results.	…….
- Discussion and conclusions:	
- discuss and summarize the main finding and significance	…….
- suggest the direction of further research.	…….
Subject knowledge/Answering questions (20%)	
- Give clear, concise, and logical answers	…….
- Demonstrate knowledge about basic principles, ideas and concepts	…….
- Demonstrate in-depth understanding of the topic	…….
- Give suggestion if not sure of an answer	…….
Presentation style (10%)	
- Slides are clear and easy to follow (fonts, charts, images and page number).	…….
- References are cited properly.	…….

- The transitions between slides are clear. - Students present naturally and confidently, speak very well and clearly. - Students use gestures comfortably; eye contact is appropriate for audience. ***Time management (5%)*** - Students give a presentation of the topic within 30 ± 2 mins (5), 30± 4 mins (4), 30 ± 6 mins (3), 30 ± 8 mins (2), or 30 ± 10 mins (1).	……. ……. ……. …….
Comments:	

Signature.....

Date……

Rubric score for participation (15%)

Criteria	Level of Achievement				
	0	**1**	**2**	**3**	**4**
Attendance and punctuality (5%)	>20 minutes late or absence	15 minutes late	10 minutes late	5 minutes late	Punctually
Participation (10%)	Never participates in class. Appears apathetic towards class activities.	Seldom participates in class. (1 question)	Moderately participates in class. Has the answer when called on. Appears interested in class activities. (2 questions)	Frequently participates in class, often asks thought provoking questions. Appears enthused about class activities. (3 questions)	Frequently participates in class, often asks thought provoking questions, show much effort in going beyond the scope of the book. (4 questions)