

**Course Syllabus**  
**MBSB 513 Topics of Current Interest in Systems Biosciences**  
**Academic Year 2021**

**Course ID and name:** MBSB 513 Topics of Current Interest in Systems Biosciences

**Course coordinator:** Dr. Phatchariya Phannasil

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**Instructors:**

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

**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. Develop research questions and systematically formulate hypotheses to answer the research questions
2. Search and review research articles supporting the hypotheses
3. Develop essential skills in analyzing, evaluating, discussing, and presenting research articles in molecular biosciences
4. Share research articles to public and develop scientific communication skills

**Constructive Alignment of Course Content to CLOs and Program ELOs**

| Activity                                    | CLOs | Program ELOs |
|---|------|--------------|
| Generating research question and hypotheses | 1    | 1-2, 4-5     |
| Searching and reviewing literature          | 2    | 1-2, 7       |
| Writing an abstract                         | 3, 4 | 1-2, 8       |
| Slide preparation                           | 3, 4 | 1-2, 6       |
| Presentation                                | 3, 4 | 1-2, 6, 8    |
| Question and Answer                         | 3, 4 | 1-4, 6       |

**Format:**

1. MBSB students have a research question (relevant to their research field) and hypotheses to explain the research question. The hypotheses should be combined or involved with several academic disciplines and at least 2 qualified papers supporting the hypothesis are selected for oral presentation. The papers must be published less than 5 years.
2. Student give a presentation for approximately 30 minutes and then answers question from the floor for approximately 15 minutes.
3. 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.
4. Student are required to submit the abstract (250-300 words) a week before the presentation date

**Course Schedule 2021**

Tuesday, Time 10:00-12:00, Room A107

**Assessment Criteria**

| <b>Assessment Criteria</b> | <b>Assessment Method</b>   | <b>Scoring Rubric</b>   |
|----------------------------|--|---|
| Abstract (10%)             | 1) Written abstract  | 1) Introductory Statement<br>2) Purpose<br>3) Methodological Approach<br>4) Finding<br>5) Contribution to Discipline<br>6) Professional Writing<br>7) Length      |
| Oral Presentation (75%)    | 1) Presentation<br>2) Answering the questions                                    | 1) Organization<br>2) Understanding of scientific content<br>3) Presentation style and use of visual aids<br>4) Ability to answer questions<br>5) Time management |
| Participation (15%)        | 1) Direct observation<br>2) Class participation and ability to ask the questions | 1) Attendance and punctuality<br>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;

| <b>Percentage</b> | <b>Grade</b>   | <b>Description</b> |
|-------------------|----------------|--------------------|
| ≥ 80%             | A              | Excellent          |
| 75-79.99%         | B <sup>+</sup> | Good               |
| 70-74.99%         | B              | Fairly good        |
| 65-69.99%         | C <sup>+</sup> | 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 instructors and/or the course coordinator immediately either by direct contact, telephone or email.

### **General Inquiry**

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

**Date revised:** October 14, 2021

**Submit this form 2 weeks before your presentation date.**

Title :

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Speaker name:

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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)\_\_\_\_\_

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

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

Length **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

## Evaluation Criteria

### Rubric score for abstract writing (10%)

| Criteria                | Level of Achievement    |  |   |  | Score                                 |                                       |
|-------------------------|-------------------------|--|---|--|---------------------------------------|---------------------------------------|
|                         | Inadequate<br>(0 point) | Marginal<br>(1 point)  | Good<br>(2 points)  | Excellent<br>(3 points)  | Student<br>name (1)<br>.....<br>..... | Student<br>name (2)<br>.....<br>..... |
| Introductory Statement  | Missing                 | Unclear; Doesn't connect to literature   | Clear, but not engaging; Attempts to connect to literature                                  | Clear, concise, engaging; describes, connects the topics to literature and purpose of work   |                                       |                                       |
| Purpose                 | Missing                 | Unclear, Contains irrelevant or unimportant information                                    | Clear but not concise, might contain irrelevant or unimportant information; lacks specifics | Clear, concise, and relevant   |                                       |                                       |
| Methodological Approach | Missing                 | Not mentioned but implied, or not appropriate for purpose of scholarship                   | Un clear or not connected to purpose of scholarship   | Connected to the purpose of the scholarship, identifies method used to support thesis or answer the research question                    |                                       |                                       |
| Finding                 | Missing                 | Unclear; Or not related to the purpose of the scholarship, Or misinterpretation of results | Attempts to present findings but might be unclear; or some information missing              | Clear, connected to the purpose of scholarship, provides explanation of what was expected, discovered, accomplished, collected, produced |                                       |                                       |

| Criteria                   | Level of Achievement  |  |  |  | Score                                 |                                       |
|----------------------------|---|--|--|--|---------------------------------------|---------------------------------------|
|                            | Inadequate<br>(0 point)   | Marginal<br>(1 point)  | Good<br>(2 points)   | Excellent<br>(3 points)  | Student<br>name (1)<br>.....<br>..... | Student<br>name (2)<br>.....<br>..... |
| Contribution to Discipline | Missing   | Unclear, lacks detail of contribution to the discipline            | Attempts to connect work to discipline, but might be unclear | Clearly states how work advances knowledge in the discipline, why it's important, or how it can be used  |                                       |                                       |
| Professional Writing       | Grammatical errors, typo impede understanding, inappropriate verb tense | Many grammatical errors, typo but they do not impede understanding | Few grammatical errors or typos; Mixed verb tense            | Writing appropriate for the profession; Defines all acronyms at first use; Appropriate verb tense (present/past tense when talking about the study, may use future tense for the contribution to the discipline) |                                       |                                       |
| Length                     | Too long or too short   |  |  | 250-300 words  |                                       |                                       |

**Rubric score for oral presentation (75%)**

| Criteria                                  | Level of Achievement   |  |   |   | Student name<br>(1) | Student name<br>(2)     |
|---|--|--|---|---|---------------------|-------------------------|
|   | Inadequate<br>(0-5 points)   | Marginal<br>(6-10 points)  | Good<br>(11-15 points)  | Excellent<br>(16-20 points)   | .....<br>.....<br>. | .....<br>.....<br>..... |
| Organization<br>(20%)                     | <ul style="list-style-type: none"> <li>• Talk difficult to follow</li> <li>• Does not understand significance of work</li> <li>• Does not understand significance of work</li> <li>• Inadequate content</li> </ul> | <ul style="list-style-type: none"> <li>• Talk somewhat disorganized</li> <li>• Significance somewhat unclear</li> <li>• Includes some irrelevant content and inappropriate content level</li> </ul>                            | <ul style="list-style-type: none"> <li>• Talk easy to follow</li> <li>• Significance clearly stated</li> <li>• Content level not always appropriate</li> </ul>  | <ul style="list-style-type: none"> <li>• Well thoughtout with logical progression</li> <li>• Significance clearly stated</li> <li>• Content level appropriate for audience</li> </ul>                             |                     |                         |
| Understanding of Scientific Content (25%) | <ul style="list-style-type: none"> <li>• Does not understand the research</li> <li>• Does not understand the experimental approach</li> <li>• Does not understand conclusions or recognize</li> </ul>              | <ul style="list-style-type: none"> <li>• Research question somewhat unclear</li> <li>• Description of experiment approach somewhat confusing</li> <li>• Results and conclusions stated but not critically evaluated</li> </ul> | <ul style="list-style-type: none"> <li>• Identifies the research question</li> <li>• Has basic understanding of the experimental approach and significance</li> <li>• Limited evaluation of results,</li> </ul> | <ul style="list-style-type: none"> <li>• Identifies the research question</li> <li>• Has advanced understanding of the experimental approach and significance</li> <li>• Critically evaluates results,</li> </ul> |                     |                         |



| Criteria                | Level of Achievement  |   |  |  | Student name<br>(1) | Student name<br>(2) |
|-------------------------|---|---|--|--|---------------------|---------------------|
|                         | Inadequate<br>(0-5 points)  | Marginal<br>(6-10 points)   | Good<br>(11-15 points)   | Excellent<br>(16-20 points)  | .....<br>.....      | .....<br>.....      |
|                         |   | <ul style="list-style-type: none"> <li>Does not integrate outside readings</li> </ul>   | methodology and conclusions<br><ul style="list-style-type: none"> <li>Well researched</li> </ul>   | methodology and conclusions<br><ul style="list-style-type: none"> <li>Scientifically rigorous and well researched</li> </ul>   |                     |                     |
| Presentation style (5%) | <ul style="list-style-type: none"> <li>Presentation poorly timed</li> <li>Makes no eye contact and reads from notes</li> <li>Hesitation and uncertainty are very apparent</li> <li>Speaks too quietly or quickly for audience to hear and understand</li> </ul> | <ul style="list-style-type: none"> <li>Presentation poorly timed</li> <li>Some hesitation and uncertainty are apparent</li> <li>Exhibits many disfluencies</li> <li>Makes little eye contact and looks at notes</li> <li>Monotone and nonengaging delivery</li> </ul> | <ul style="list-style-type: none"> <li>Speaks well, but often repeats comments</li> <li>Exhibits few disfluencies (“ahs”, “uhms”, etc.)</li> <li>Makes eye contact</li> <li>Uses good vocabulary and tone</li> </ul> | <ul style="list-style-type: none"> <li>Uses time wisely</li> <li>Speaks with good pacing and enthusiasm</li> <li>Makes eye contact and does not read information</li> <li>Uses engaging tone and appropriate vocabulary</li> </ul> |                     |                     |
| Use of Visual Aids (5%) | <ul style="list-style-type: none"> <li>Labeling is not clear</li> <li>Size is too small to see</li> </ul>   | <ul style="list-style-type: none"> <li>Labels and legends somewhat unclear</li> </ul>   | <ul style="list-style-type: none"> <li>Text appropriately sized</li> <li>Very little text</li> </ul>   | <ul style="list-style-type: none"> <li>Tables/graphs summarize data and/or conclusions</li> </ul>  |                     |                     |

| Criteria                          | Level of Achievement   |  |   |  | Student name<br>(1) | Student name<br>(2) |
|-----------------------------------|--|--|---|--|---------------------|---------------------|
|                                   | Inadequate<br>(0-5 points)   | Marginal<br>(6-10 points)  | Good<br>(11-15 points)  | Excellent<br>(16-20 points)  | .....<br>.....      | .....<br>.....      |
|                                   | <ul style="list-style-type: none"> <li>• No logical placement of information</li> <li>• Mostly text and very few images</li> <li>• Figures are not explained</li> <li>• Presentation has numerous misspellings and/or grammatical errors</li> <li>• Use of laser pointer is distracting</li> </ul> | <ul style="list-style-type: none"> <li>• Text size somewhat small</li> <li>• Too much detail on slides</li> <li>• Blocks of text on slides</li> <li>• Figures are explained</li> <li>• Presentation has multiple misspellings and/or grammatical errors</li> <li>• Uses laser pointer unnecessarily</li> </ul> | <ul style="list-style-type: none"> <li>• Most figures and images explained and described well</li> <li>• Presentation has an occasional misspelling or grammatical error</li> <li>• Uses laser pointer effectively</li> </ul> | <ul style="list-style-type: none"> <li>• Size and labels are clear</li> <li>• Very little text</li> <li>• Figures and images explained and described well</li> <li>• Presentation has no misspellings or grammatical errors</li> <li>• Makes limited and effective use of laser pointer</li> </ul> |                     |                     |
| Ability to Answer questions (15%) | <ul style="list-style-type: none"> <li>• Either makes no effort to respond to questions or does so poorly</li> </ul>   | <ul style="list-style-type: none"> <li>• Does not anticipate audience questions</li> <li>• Makes an effort to address question</li> <li>• Can address some questions</li> <li>• Often responds poorly to questions</li> </ul>  | <ul style="list-style-type: none"> <li>• Does not anticipate audience questions</li> <li>• Understands audience questions</li> </ul>  | <ul style="list-style-type: none"> <li>• Anticipates audience questions</li> <li>• Understands audience questions</li> <li>• Can integrate knowledge to</li> </ul>   |                     |                     |

| Criteria                | Level of Achievement       |                           |  |  | Student name<br>(1) | Student name<br>(2) |
|-------------------------|----------------------------|---------------------------|--|--|---------------------|---------------------|
|                         | Inadequate<br>(0-5 points) | Marginal<br>(6-10 points) | Good<br>(11-15 points)   | Excellent<br>(16-20 points)  | .....<br>.....      | .....<br>.....      |
|                         |                            |                           | <ul style="list-style-type: none"> <li>• Can integrate knowledge to answer questions</li> <li>• Thoroughly responds to most questions</li> </ul> | answer questions<br><ul style="list-style-type: none"> <li>• Thoroughly responds to questions</li> </ul> | .                   |                     |
| Time management<br>(5%) | 30±12                      | 30±9                      | • 30±6   | • 30±3   |                     |                     |

### Rubric score for participation (15%)

| Criteria                        | Level of Achievement   |  |  |  |   | Student name (1)<br>.....<br>..... | Student name (2)<br>.....<br>..... |
|---------------------------------|--|--|--|--|---|------------------------------------|------------------------------------|
|                                 | 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) |                                    |                                    |