

Principles for the TIGP-MCB Seminar Course 2022-2023

Course organizers

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Purpose

To learn about new and exciting discoveries in diverse research fields and to improve presentation skills.

To learn how to actively lead and participate in discussions.

General principles

1. Seminars will be held every Thursday morning from 9:30-11:00 am.
2. The course organizers will invite MCB professors to provide research articles for the 1st-year students. The professor whose paper is chosen by a 1st-year student becomes the coach for that student.
3. 2nd-year students should themselves find the papers for presentation with the consent of their advisors, and the advisors should act as coaches.
4. All students should discuss their research article with their coach and invite at least one additional professor to sit in at their seminar. The students must inform the TIGP-MCB office the name and affiliation of the sit-in professor at least two weeks before their presentation.
5. All MCB faculty members are obliged to act as coaches and as sit-in professors for these seminars. Their respective responsibilities are described below.

Coach responsibilities (two credits for each student coached)

1. Provide one research article (not reviews) published within the last two years to the TIGP-MCB office two weeks before the beginning of each semester (one faculty credit).
2. Tutor the student who selects the respective research article. In particular, coaches must discuss the background and significance of the paper with the student.
3. Provide advice on and assistance with the student's seminar preparations, such as by reviewing their PowerPoint files. We strongly recommend that each coach invites the student to rehearse his/her presentation in a lab meeting.
4. Recommend at least one sit-in professor for the student to invite to the seminar.
5. Attend and lead the seminar discussion
6. Evaluate the presenter's performance.

Sit-in professor responsibilities (one faculty credit)

1. Review the student's selected research article before the seminar.
2. Participate in the seminar and facilitate discussion.
3. Evaluate the presenter's performance.

Course structure and student responsibilities

Each student has to take the roles of speaker and host by the course schedule, and 1st- and 2nd-year students are taught in separate classes following different course formats.

Format for the 1st year student:

1. *Aim:* the format is designed to train the 1st-year students to digest a research paper and present it as a coherent story. In the meantime, the audience will have a chance to learn to follow a presentation and ask meaningful questions.
2. *Structure:* 45-minute oral presentation. The audience can raise questions anytime during the presentation.
3. *Preparation:* The audience should read the paper before the seminar and are expected to ask questions during the presentation.
4. *Host:* An assigned host will introduce the speaker at the beginning of the seminar. The host will also record how many questions each student asks and submit it to the TIGP-MCB office.
5. All students (except the presenter) should read the seminar paper and write a pre-seminar report before attending the class.
6. Every student should ask at least two questions during the class.
7. The students should provide written feedback about the speaker's presentation skills. The feedback should be included in the pre-seminar report and given to the speaker before leaving the class.
8. Pre-seminar report format: 12 pt font, 1.5 spacing, no more than one A4 page, and contains
 - I. Significance/contribution of the paper to the field;
 - II. Uniqueness and strengths/weaknesses of the paper;
 - III. Strengths/weaknesses of the presentation.
9. The speaker should evaluate the pre-seminar report and categorize them into '*excellent*,' '*good*,' '*fair*' and '*to be improved*' before returning them to the course organizers.

Format for the 2nd year student:

1. *Aim:* the format is designed to train the 2nd-year students to lead a paper discussion, which requires them to have an in-depth understanding of the paper of choice. The rest of the group will have a chance to be guided to think deeply about a research topic and enjoy vibrant and inspiring scientific discussions.
2. *Structure:* 20-30 min presentation by the discussion leader covering the background and significance of the paper and 1-2 key figures, followed by 40-30 min discussion.
3. *Teamwork:*
 - To facilitate the presentation and discussion, every 2-3 students form a seminar group.
 - In each seminar, one discussion leader will present and lead the discussion. The team members of the discussion leader should assist the leader in preparing for the class (e.g., discuss the paper, collect information, identify key questions, and participate in rehearsal) and, when necessary, help answer questions during the class. Every student should take turns to be the discussion leader.
 - Teams not presenting should also read and discuss the paper before the class. The discussion can focus on potential future directions, the significance of the study, the strengths and weaknesses of the paper, and so on.
4. The discussion leaders should choose an important paper in their research field and study it deeply until they understand the following:

- What questions the paper tries to address? Why are these questions important? What's the historical background of these questions?
 - What are their approaches (you need to know all the technical details)? Anything novel or heroic?
 - What are their answers? Are they convincing? Are there caveats in their experiments? Are there experiments that they can do to make the paper stronger?
 - What are the potential future directions? Are there technical breakthroughs required to answer the questions fully?
 - This is by no mean an exhausting list, but you now know what I meant by “in-depth understanding.”
5. The discussion leaders should guide the participants to develop a deep understanding of the discussed paper.
 6. The discussion leaders have total control of the discussion. They can ask participants to present a figure, answer a question, or express opinions.
 7. The participants MUST read the paper and be prepared to explain any figure or answer questions raised by the discussion leader. The participants are expected to participate actively in the paper discussion.
 8. The participants should submit a “post-seminar report” within 7 days after the seminar with the following format: 12 pt. font, 1.5 spacing, no more than two A4 pages, and contains
 - I. Significance/contribution of the paper to the field;
 - II. Uniqueness and strengths/weakness of the paper.
 - III. Strengths/weaknesses of the presentation
 - IV. Comments/suggestions about the discussion
 9. The discussion leader should evaluate the “post-seminar report” and categorize them into ‘excellent,’ ‘good,’ ‘fair’ and ‘to be improved’ before returning them to the course organizers.

Grading policy

- 1 The grade scale for this course is 0-100. A+: 90-100; A: 80-89; B: 70-79; Fail: below 70.
- 2 The final grade combines the following:

1st-year students

- (1) Presentation performance, evaluated by the coach and sit-in professors (60%)
- (2) Number of questions asked during seminars (10%)
- (3) Pre-seminar reports (30%)

2nd-year students

- (1) Performance as the discussion leader (evaluated by the coach and sit-in professors) and performance as the team member (assessed by the discussion leader) (60%)
- (2) Post-seminar reports (40%)

The above principles are subject to change by the course organizers with the consent of the Curriculum Committee.