

ORI 397
Emerging Topics in ORIE
Fall 2018

Professor

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ETC 5.128D

Course Description

This course introduces students to the full breadth of ORIE research areas by bringing in distinguished seminar speakers working at the forefront of various methodologies and application domains. These speakers include professors from other universities; researchers from national laboratories and research institutes; practitioners who use ORIE methods in the private sector; and occasionally, experts from the UT community. The course emphasizes information literacy, effective written communication of research concepts, critical analysis of academic research, direct engagement with ORIE researchers, and active preparation for thesis and dissertation research.

Seminar Time and Location

The weekly ORIE seminar will be held on Fridays from 2:00 – 3:00 PM in ETC 5.132. After each seminar, ETORIE students will stay from 3:00 – 3:30 PM for a conversation with the seminar speaker.

Office Hours

I will hold office hours on Tuesdays and Thursdays from 11:00 AM – 12:00 PM in ETC 5.128D. If you need to meet with me outside these office hours, please email me stating the specific problem or topic you wish to discuss.

Readings

There is no required textbook for this course. Readings will primarily consist of journal articles from the academic literature that correspond to the research studies and topics that are presented during the seminar.

Materials and Equipment

You will likely find it useful to bring a notebook or laptop to all the seminar sessions in order to take notes.

Course Website

All course materials will be posted on *Canvas*.

Grading

Your final grade will be calculated using the following weights:

Attendance and Participation – 25%

Paper Summaries – 25%

Referee Reports – 25%
Final Research Proposal – 25%

Letter grades will be determined according to the following conversion:

A	93% or greater
A-	90% to <93%
B+	87% to <90%
B	83% to <87%
B-	80% to <83%
C+	77% to <80%
C	73% to <77%
C-	70% to <73%
D+	67% to <70%
D	63% to <67%
D-	60% to <63%
F	<60%

I may choose to raise your final grade by curving or some other method. However, these adjustments will never lower your grade.

Attendance

I will formally take attendance at the weekly seminar meetings. In order to receive credit for taking this course, you can miss at most three seminar meetings. Furthermore, Attendance and Participation count as 25% of your final grade. To earn full points for Attendance and Participation, you must do more than merely attend the seminars. You are expected to ask the speakers insightful questions, and actively participate in the conversations that immediately follow the presentations. This course is a wonderful opportunity to interact with preeminent researchers from the ORIE field, as well as your classmates.

Paper Summaries

Prior to each seminar meeting, I will share a research paper that describes the research study or topic that will be covered during the upcoming seminar. Your assignment is to read the paper carefully and write a Summary, which you will submit electronically via Canvas prior to the beginning of the seminar on Friday at 2:00 PM. The Summary should be approximately two full pages in length, single spaced with size 12 font. You will be graded on the content of your Summary, as well as the quality and clarity of your writing. Your Summary should address the following aspects of the reading:

- What are the goals of the study? What fundamental research questions does it address?
- What existing literature does the study build on? How does it go beyond the existing literature to advance the state of research?
- What methods does the study utilize? Does the analysis rely on any key assumptions?
- What are the most significant findings? Do they have practical implications for effective decision making? Who might be particularly interested in the results?
- What questions are you interested to ask the seminar speaker?

Referee Reports

Twice during the semester, I will replace your normal weekly Paper Summary with a Referee Report assignment. To write a Referee Report, you will read the research paper as if you have been summoned by the editor of a scholarly journal to review the paper for possible publication. The assignment thus simulates serving as a peer reviewer (a.k.a. referee) for a submitted journal paper, which is an important responsibility in the research community. In the process, you will learn to critically analyze academic research and communicate strengths and weaknesses.

Your Referee Report should be roughly three to four pages, single spaced with size 12 font. It should include Comments to the Editor and Comments to the Author(s). The Comments to the Editor should very briefly summarize the paper, recommend a decision that you think the editor should make, and list your major reasons for that recommendation. Typical recommendations include Accept, Minor Revisions, Major Revisions, or Reject. The Comments to the Author(s) should be more extensive, and roughly follow the outline below:

- Briefly summarize the paper.
- State the overall recommendation you are making to the editor.
- Explain what you like about the paper and what it does well.
- Share your major concerns about the paper. These are criticisms that are important and really need to be addressed if the paper is going to be published. You would be unlikely to provide a more favorable recommendation unless the author addresses these concerns in a revision. Each major concern could be worthy of its own paragraph in your Report.
- Share your minor criticisms of the paper. These are less significant than the major concerns, and often refer to specific elements of the analysis or passages in the paper. They do not drive your overall recommendation, but are nevertheless aspects of the paper that should be improved before it is published.

Final Research Proposal

At the end of the semester, your final assignment will be to write a Research Proposal that outlines a research project you would like to do in the near future. You should use this opportunity to propose a project you are excited about, that could form the basis of your M.S. thesis or Ph.D. dissertation. I encourage you to reflect on the seminar presentations throughout the semester, and consider proposing a project in one of the research areas that was highlighted during one or more seminar meetings. Your Research Proposal should be roughly ten pages in length, single spaced with size 12 font. It should address the following:

- State the goal of your project. What are the research questions you intend to address, and why are they important?
- Review the existing literature on relevant methods and/or application domains. What are the critical gaps in the literature? How will your project go beyond what has already been done?
- Outline your methods in detail. What concepts and methodologies will you employ? Do you foresee any major obstacles? How might you overcome them?
- Anticipate the eventual results. What hypotheses do you have about what you will likely find? How would various outcomes be interpreted, and what would be their implications?
- Explain how you could carry out this research at UT. Which faculty members could you work with? What resources are already available here? Are there additional resources you would need to complete the work?

Exams

There are no exams in this course.

Honor Code

I expect everyone to follow the UT Honor Code, which states:

“The core values of the University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the University is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.”

All suspected violations of the Honor Code will be referred to the Administration for adjudication. The written assignments in this course are all to be completed individually. Stealing ideas or copying text from a classmate, the internet, or other external resources will be treated as a violation of the Honor Code. I have formally disciplined students for Honor Code violations in the recent past, and I will do so again without hesitation if any incidents occur in this course. Violating the Honor Code undermines the quality and integrity of your academic experience and degree, and is unfair to the majority of students who go about their work the right way. Cheating can easily result in probation, suspension, or expulsion from the University. Trust me – it’s not worth it!

Disability Statement

Students with disabilities who require special accommodations need to get a letter that documents the disability from the Services for Students with Disabilities area within the Division of Diversity and Community Engagement (contact information below). This letter should be presented to me at the beginning of the semester and necessary accommodations should be discussed at that time.

Services for Students with Disabilities

512-471-6259

ssd@austin.utexas.edu

<http://diversity.utexas.edu/disability/>

Feedback

I am always interested in receiving constructive feedback that helps me enhance your learning experience, improve the course, and be the most effective instructor I can be. Please feel free to attend office hours or schedule a meeting with me at any time to discuss your own learning experience in the course, and whether there are any changes that would enhance it. Near the end of the semester you will have an opportunity to anonymously evaluate the course and myself using the standard College of Engineering evaluation form. Your feedback and suggestions are greatly appreciated, and I promise to give them careful consideration.

Tentative Seminar Schedule

The seminar schedule below is subject to change and will be updated as frequently as possible.

Date	Speaker	Reading	Assignment Due
8/30	ORIE Introductions	None	None
9/7	Shmuel Oren (UC Berkeley)	Hobbs and Oren, 2018	Paper Summary
9/14	Tyler McDonnell (SparkCognition)	McDonnell et al., 2018	Paper Summary
9/21	Kostas Bimpikis (Stanford)	Bimpikis et al., working paper	Paper Summary
9/28	Valerie Karplus (MIT)	Karplus et al., 2018	Paper Summary
10/5	Ramteen Sioshansi (Ohio State)	Sioshansi, 2017	Referee Report
10/12	Rui Gao (UT McCombs)	Gao et al., working paper	Paper Summary
10/19	Hendrik Hamann (IBM Watson)	Lu et al., 2016	Paper Summary
10/26	Max Brozynski (UT ORIE)	Arthur, 1989	Paper Summary
11/2	Bismark Singh (Sandia National Laboratories)	Singh et al., 2018	Paper Summary
11/9	Zhijie Dong (Texas State)	Moreno et al., 2016	Paper Summary
11/16	Steven Gabriel (U Maryland)	Gabriel et al., 2013	Referee Report
11/23	* <i>NO SEMINAR</i> (Thanksgiving)	None	None
11/30	Roshanak Nateghi (Purdue)		Paper Summary

12/7	Canan Ulu (Georgetown)		Paper Summary