SE 450 Syllabus – Fall 2024

Course Name: SE 450 – Decision Analysis
Lecture: 9:00 am to 9:50 am on M/W/F
Classroom: Transportation Building 114
Offering Method: In-person and recorded lectures

Course Website: Canvas will be used to post lecture notes, Zoom links to live lectures, important announcements, documents, and homework assignments. It can be accessed at https://canvas.illinois.edu using your NetID and password. Grades will also be posted on Canvas. Please check it regularly. Class sessions include a mix of in-person lectures, recorded lectures, exercises and discussions.

Course Introduction: In this course, we will learn some important concepts that will enable engineers to make sound decisions in professional and personal lives. The topics under consideration are: Multi-criteria decision making, Group decision making, Decision tree modeling, Decision making under uncertainty, and Risk management. Within each of these topics we will cover various methods and tools, which may be applied to technical decisions that must be made when present or future states of nature are uncertain, and multiple attributes are considered. The methods consider the decision maker's assessment of risk and uncertainty and his or her attitude towards risk.

Instructor and TA Information:

- Instructor: Dr. Pingfeng Wang
  Email: pingfeng@illinois.edu
  Office hours: 2-3 pm (CST) on Wednesday, or by appointment
  (*Note: find the Zoom Link for office hour on CANVAS*)

- Teaching Assistant: Mr. Yuan Jiang
  Email: yuanj5@illinois.edu
  Office hours: 2:00 pm to 3:00pm (CST) on Monday, or by appointment
  (*Note: find the Zoom Link for office hour on CANVAS*)

Required Text:

- Making Hard Decisions with Decision Tools by Robert T. Clemen and Terence Reilly.

Additional Reading:

- Engineering Decision Making and Risk Management by Jeffrey W. Herrmann
- Also, the instructor might assign some additional reading material before classes.

Homework, Quiz & Exam:

- Quizzes will be given along with lectures through CANVAS with submission deadlines.
- Homework will be assigned throughout the semester in weekly/bi-weekly fashion. Late submissions will NOT be accepted under any circumstances.
- There will be two midterms and one final exam. See the course calendar for more information.

Class Project: Students taking an additional 4-th credit are required to complete a class project. The class project will involve reading latest journal articles on an interesting decision

problem/application; writing a summary report including literature review and possible extensions/improvements; and a 15-minute zoom presentations in front of the class. Students are free to explore the decision analysis literature for a suitable topic. See calendar for more details.

Grading: The overall grade of the course will be assembled based on

15%: Quizzes
20%: Homework Assignments
20%: Mid-term Exam # 1 (Exam date: 10/11)
20%: Mid-term Exam # 2 (Exam date: 11/15)
25%: Final Exam

A+: 97 – 100%	A: 93 – 96%	A-: 90 – 92%
B+: 87 – 89%	B: 83 – 86%	B-: 80 – 82%
C+: 77 – 79%	C: 73 – 76%	C-: 70 – 72%
D+: 67 – 69%	D: 63 – 66%	D-: 60 – 62%

Academic Integrity: We will follow university regulations for academic integrity: (http://admin.illinois.edu/policy/code/). Students who violate academic integrity will receive a "0" on that exam or assignment and may receive an "F" grade in the course. Discussing a homework assignment in a group is encouraged as long as each student writes the answer in his/her own words. Plagiarism is considered a serious violation of academic integrity and will be dealt with utmost severity.