ETM 58A – Risk Analysis, Assessment and Management

Spring Semester 2019

Catalog Data: ETM58A Risk Analysis & Management. Credit 3. Definition, perception, assessment, response dimensions of Risk Analysis and Management, as well as organizatonal aspects are focused. Assessment and analysis tools, such as, risk assessment matrices, fault trees, simulation and statistical models are elaborated. Case studies and discussion papers, especially on implementation issues, and selected from diverse application areas are discussed. Prerequisites: IE 256 (or equivalent)

Textbook: Lecture Notes, Ilhan Or

Instructor: Ilhan Or, Professor of Industrial Engineering

Goals: The purpose of this course is to have the students acquire a good understanding of the concept of risk analysis and management and its effective and successful implementation in a wide range of production or service organizations. A secondary goal is to promote inquisitiveness, teamwork, communication and presentation abilities through case studies, group projects and presentations.

Topics:

1. Introduction to Risk Concepts and Risk Perception (5 classes)
2. Risk Management (9 classes)
3. Risk Assessment Tools (10 classes)
4. A Case Study on the Deployment of Simulation and Regression Models (3 classes)
5. Discussion of two books: The Science and Politics of Fear, The Black Swan
6. Case Study and Discussion Paper Presentations (8-10 classes)
7. Midterm exam and its review (4 classes)

Reference Books:

Probabilistic Risk Analysis, T. Bedford, R. Cooke, Cambridge, 2001.

Risk Analysis, T. Aven, Wiley, 2008.

The Black Swan, Nassim Nicholas Taleb, 2007, ISBN 978-1-4000-6351-2.

The Science and Politics of Fear, Dan Gardner, 2008, ISBN 978-1921-21567-4.

Thinking Fast and Slow, Daniel Kahneman, 2011, ISBN 978-0-374-27563-1.

How We Decide, Jonah Lehrer, 2009, ISBN 978-0-618-62011-1.

Fooled By Randomness, Nassim Nicholas Taleb, 2005, ISBN 978-1-58836-767-9.

Assignments:

4-5 homework assignments on risk perception, risk management, risk assessment tools and responding to risk.

Teamwork, Communication and Presentation Skills:

Students (in teams composed of 2 students) must study and then present in class, 3 case and/or discussion articles related to risk analysis and management implementations (selected from a prepared list of articles from established international journals).

Teaching Assistant: e-mail:

Web Site: Enrollment Key:

Grading:

Final Exam:	35 - 40 %
Midterm Exam:	20 - 25 %
Case/Discussion Presentations:	25 - 25 %
Assignments:	10 - 20 %

Class Hours/Classroom: MMM 11 12 13

Course Structure and basic info:

3 hours of lectures (on Mondays and Thursdays) per week;

The topics to be covered are announced in the Syllabus.

We will have a teaching assisstant, he/she will grade the homeworks and manage the course website.

I will use my own lecture notes; I have also named some reference books.

All lectures, assignments and other documents will be uploaded to the Moodle Site;

In the last third of the course, the students will be asked to present some risk related papers from a prepared pool of papers.

Course evaluations will depend on 1 midterm, 1 final, 2/3 paper presentations and 4 assignments;

One A4 size formula sheet will be allowed in the midterm and final exams (written in student's own handwriting).

I will communicate with you (exam dates, homeworks, announcements etc.) through you e-mail addresses registered at the registerers office. Make sure that address is up to date.

If you miss any one of the midterms, I will ask for a doctors report.

If you miss the final, you need to apply to the University's "mazeret comission".

If you miss both the midterm and the final you will automatically get an F.