Lecture 0

Course Introduction

Disaster and Risk Management

Course Number 457.652

Course Hours Monday 14:00~16:45

Location Room 514, Building 35

Instructor
Kim, Young-Oh, Professor (880-8916, *yokim05@snu.ac.kr*)

Grading
Term Project 30%
+ Assignments 20%
+ Test 20%
+ In-class Participation 30%

Disaster and Risk Management

Texts

Glickman, T.S. and M. Gough (ed.), *Readings in Risk,*
Resources for the Future, Washington, D.C., 1990.

Class Handout Articles

Prerequisite

Undergraduate Probability & Statistics

Remarks This lecture emphasizes

- Beforehand preparation homeworks (rather than review assignments)
- Two-way interactive discussions (rather than one-way teaching)
- Teamwork tasks

Disaster and Risk Management

Some Supplemental Readings

Birkmann, J. (ed.), *Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Society*, UN University Press, 2013, 2nd Edition. ((S1))

Singh V.P., S.K. Jain, and A. Tyagi (ed.), *Risk & Reliability Analysis: A Handbook for Civil and Environmental Engineers*, ASCE Press, 2007. ((S2))

Uddin, N., A. Ang, (ed.), *Disaster Risk Assessment and Mitigation: Arrival of the South Asia Tsunami Wave in Thailand*, ASCE Press, 2009. ((S3))

Glavovic, B.C. and G.P. Smith (ed.), *Adapting to Climate Change: Lessons from Natural Hazards Planning*, Springer, 2014. ((S4))

Kim, Y.-K. and H.-G. Sohn, *Disaster Risk Management in the Republic of Korea*, Springer 2017. ((S5))

정진성 외, *위험사회, 위험정치*, 서울대학교출판문화원 2010. ((S6))

Course Schedule

Week	Date	Topic	
1	3/5	Course Introduction	
2	3/12	Discussion: “Defining Risk” Definitions of Risk	
3	3/19	Discussion: “Rating Daily Risk…” Measuring Risk	
4	3/26	Discussion: “Is it Safer to Fly or Drive?” Modeling Risk	
5	4/2	Reliability Analysis Event & Fault Trees	
6	4/9	Poison Process Risk Profiles	
7	4/16	Dynamic Reliability of Series & Parallel Systems	

Course Schedule (cont.)

8	4/23	Discussion: “Assessing Risk of an LNG Terminal” Risk Assessment for Complex Engineering Systems	
9	4/30	Discussion: “ Generating Hazardous Material Risk Profiles …” Risk Assessment for Complex Engineering Systems	
10	5/8?	***Term Project Proposal*** Discussion: “Climate Change Adaptation and Disaster Risk Reduction”	
11	5/14	Sensitivity and Uncertainty Analyses Example: Climate Change Uncertainty	
12	5/21	Risk Management Example: Cost Benefit Analysis	
13	5/28	***Test***	
14	6/4	Risk Management Example: Robust & Adaptive Decision Making	
15	6/11	Risk Communication ***Term Project Presentation***	

In-class Challenge Today

Search various terminologies related to "Disaster" and "Risk", for example hazard, vulnerability, susceptibility, robustness, resiliency, and and discriminate them.

You may refer introduction chapters of the supplemental reading.

1st Homeworks

- **Individual**

Read the article of Text, "Defining Risk (Fischhoff et al., p. 30 - 41) and solve its "Question for Thought and Discussion" (p. 42).

- **Team**

Search various definitions of "Disaster" and "Risk" and make your definitions based on your search results.