

UN 0701 – Engineering Risk and Reliability

Summer 2005 Final Course Schedule

	Module 1	Module 2	Module 3	Module 4	Module 5	Module 6
	Fundamentals of Probability	Statistical Analysis	Reliability Analysis: Analytical Methods	Reliability Analysis: Simulation Methods	Decision Analysis	Risk and Life Cycle Management
Time	May 27, 2005 (Friday)	May 28, 2005 (Saturday)	June 10, 2005 (Friday)	June 11, 2005 (Saturday)	July 8, 2005 (Friday)	July 9, 2005 (Saturday)
9:00 – 10:00 am	Course Overview and Introduction 1. History of Probability	6. Distribution Selection	Discuss Homework 10. Functions of Random Variables	14. Advanced Reliability Concepts	Discuss Homework 18. Risk Analysis Concepts	23. Risk Management / Cost Benefit Analysis
10:00 – 10:15 am	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>
10:15 – 11:15 am	2. Basic Probability Concepts	7. Goodness of Fit	11. Structural Reliability Analysis and Calibration	15. Simulation Methods	19. Fault Tree Analysis	24. Time Dependent Reliability Analysis
11:15 – 12:00 am	3. Uncertainty Modelling and Frequency Analysis	In-Class Exercise	In-Class Exercise	In-Class Exercise	20. Fault Tree Evaluation	In-Class Exercise
12:00 – 1:00 pm	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>
1:00 – 2:00 pm	4. Probability Distributions	8. Parameter Estimation	12. FORM 1. Linear Limit-State Functions	16. Sampling Uncertainty	21. Event Tree Analysis	25. LCM 1. Introduction and Concepts
2:00 – 3:00 pm	5. Random Sampling and Simulation	9. Multivariate Distributions and Regression	13. FORM 2. Non-Linear Limit-State Functions	17. Survival / Reliability Analysis	22. Utility Theory	26. LCM 2. Inspection/Maintenance Optimization
3:00 – 3:15 pm	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>
3:15 – 4:00 pm	In-Class Exercise	In-Class Exercise	In-Class Exercise	In-Class Exercise	In-Class Exercise	Course Summary
4:00 – 5:00 pm	Review	Review and Assign Homework	Review	Review and Assign Homework	Review	Assign Take-home Exam

Marking Scheme: Assignments 60%
Take-home Exam 40%