

UN 0701 – Engineering Risk and Reliability: Summer 2009 Revised Course Schedule

	Module 1	Module 2	Module 3	Module 4	Module 5	Module 6
	Fundamentals of Probability	Statistical Analysis	Functions of Random Variables	Reliability Analysis	System Reliability Analysis	Risk and Life Cycle Management
Time	May 2, 2009 (Saturday)	May 3, 2009 (Sunday)	June 6, 2009 (Saturday)	June 7, 2009 (Sunday)	June 20, 2009 (Saturday)	June 21, 2009 (Sunday)
8:30 – 8:40 am	Welcome / Intro	Review / Discussion	Review / Discussion	Review / Discussion	Review / Discussion	Review / Discussion
8:40 – 9:15 am	Course Overview and Objectives	5. Distribution Selection	10. Functions of Random Variables	15. Reliability of Repairable Systems	20. PSA and System Reliability Analysis	25. Risk Analysis Concepts
9:15 – 10:00 am	1. Reliability and Basic Probability Concepts	6. Goodness of Fit	11. Regression Analysis	16. Reliability Data Analysis 2	21. Fault Tree Analysis	26. Risk Management and Decision 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 – 11:00 am	2. Data Analysis	In-Class Exercise	In-Class Exercise	In-Class Exercise	In-Class Exercise	In-Class Exercise
11:00 – 12:00 am	In-Class Exercise	7. Confidence Intervals	12. Structural Reliability Analysis and Calibration	17. Probabilistic Failure Models	22. Fault Tree Evaluation	27. Life Cycle Management (LCM)
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	3. Probability Distributions	8. Hypothesis Testing	13. Component Reliability Analysis	18. Bayesian Probability	23. Event Tree Analysis	28. Case Study
2:00 – 2:45 pm	4. Monte Carlo Simulation	9. Conditional Probability	14. Reliability Data Analysis 1	19. Bayesian Reliability Analysis	24. Reliability and Risk Significance	In-Class Exercise
2:45 – 3:00 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>
3:00 – 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%