

UN 0701 – Engineering Risk and Reliability

Winter 2012 Course Schedule

Time	Module 1	Module 2	Module 3	Module 4
	Fundamentals of Probability	Statistical Analysis	Functions of Random Variables	Uncertainty Analysis
	January 28, 2012 (Saturday)	January 29, 2012 (Sunday)	February 11, 2012 (Saturday)	February 12, 2012 (Sunday)
8.30 – 9:00 am	Course Overview and Objectives	Review/Discussion	Review/Discussion	Review/Discussion
9:00 – 10:00 am	1. Risk and Reliability: Basic Concepts	5. Distribution Selection	9. Probabilistic Design	13. Monte Carlo Simulation
10:00 – 10:15 am	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>
10:15 – 11:00 am	2. Data Analysis	6. Goodness of Fit	10. Functions of Random Variables	14. Sample Size and Confidence Intervals
11:00 – 12:00 am	In-Class Exercise	In-Class Exercise	In-Class Exercise	In-Class Exercise
12:00 – 1:00 pm	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>
1:00 – 2:00 pm	3. Distributions of Random Variables	7. Classical Reliability Theory	11. Multivariate Distributions and Correlation	15. Hypothesis Testing
2:00 – 2:45 pm	4. Common Probability Distributions	8. Lifetime Data Analysis	12. Regression Analysis	16. Extreme Value Analysis
2:45 – 3:00 pm	<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
4:00 – 4:30 pm	Review Tutorial	Review Tutorial and Homework (Problem Set 1)	Review Tutorial	Review Tutorial and Homework (Problem Set 2)

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Winter 2012 Course Schedule (cont'd)

Time	Module 5	Module 6	Module 7	Module 8
	Repairable System Reliability	Bayesian Reliability	System Reliability Analysis	Risk Analysis and Management
	March 10, 2012 (Saturday)	March 11, 2012 (Sunday)	March 24, 2012 (Saturday)	March 25, 2012 (Sunday)
8.30 – 9:00 am	Review/Discussion	Review/Discussion	Review/Discussion	Review/Discussion
9:00 – 10:00 am	17. Reliability of Repairable Systems	21. Degradation Modelling 1	25. System Reliability Analysis	29. Reliability and Risk Significance
10:00 – 10:15 am	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>
10:15 – 11:00 am	18. Failure Data Analysis	22. Degradation Modelling 2	26. Time-Dependent System Reliability	30. Risk Analysis Concepts
11:00 – 12:00 am	In-Class Exercise	In-Class Exercise	In-Class Exercise	In-Class Exercise
12:00 – 1:00 pm	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>
1:00 – 2:00 pm	19. Probabilistic Failure Models	23. Bayesian Probability	27. Fault Tree Analysis	31. Risk Management and Decision Analysis
2:00 – 2:45 pm	20. Maintenance Optimization	24. Bayesian Reliability Analysis	28. Event Tree Analysis	32. Life Cycle Management
2:45 – 3:00 pm	<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
4:00 – 4:30 pm	Review Tutorial	Review Tutorial and Homework (Problem Set 3)	Review Tutorial	Review Tutorial and Homework (Final Exam)