

Week	Lecture	Date	Subject	Module
1	1	20.03.07	Introduction to the Course Presentation of typical engineering decision problems involving statistics and probability in the field of civil, surveying and environmental engineering.	A
1	2	22.03.07	Basic Probability Theory Interpretations of Probability, Sample Space and Events, Axioms of Probability, Conditional Probability and the Bayes' rule	B
2	No Lecture- Exercise tutorial Exercise tutorial	27.03.07 29.03.07	Exercise tutorial Exercise tutorial	
3	3	03.04.07 05.04.07	Descriptive Statistics Numerical summaries, Central measures, Dispersion measures, Measures of correlation, Graphical representations (Histograms, Q-Q plots etc.) Exercise tutorial	C
4	4	10.04.07 12.04.07	Uncertainty Modelling Uncertainties in engineering problems, Random Variables, Probability distributions, Moments of random variables, Expectation operator Exercise tutorial	D
5	5	17.04.07 19.04.07	Uncertainty Modelling Properties of the expectation operator, Random vectors and joint moments, Sum of random variables, Functions of random variables Exercise tutorial	D
6	6	24.04.07 26.04.07	Uncertainty Modelling Probability functions, The central limit theorem, The Normal distribution, The Lognormal distribution, Stochastic processes, Random sequences, Bernoulli trials Exercise tutorial	D
7	Assessment	03.05.07	First Assessment	
8	7	08.05.07	Uncertainty Modelling Poisson counting process, Continuous random processes, Stationarity and ergodicity, Extreme values, Gumbel distribution, Frechet distribution, Weibull distribution	D

		10.05.07	Exercise tutorial	
9	8	15.05.07	Estimation and Model Building Chi-square distribution, Chi-distribution, t-distribution, F-distribution	E
10	9	22.05.07	Estimation and Model Building Testing for statistical significance, Hypothesis testing, Selection of probability distributions, Model selection using probability paper	E
		24.05.07	Exercise tutorial	
11	10	29.05.07	Estimation and Model Building Estimation of distribution parameters, Methods of moments, Maximum likelihood method.	E
		31.05.07	Exercise tutorial	
12	11	05.06.07	Estimation and Model Building Model evaluation by statistical testing, Chi-square goodness of fit test, Kolmogorov- Smirnov goodness of fit test, Model comparison	E
12	12	07.06.07	Methods of Structural Reliability Failure events, Limit state functions (Linear and non-linear), Simulation methods	F
13	No Lecture- Exercise tutorial	12.06.07	Exercise tutorial	
13	Assessment	14.06.07	Second Assessment	
14	13	19.06.07	Bayesian Decision Analysis Decision/event trees, Expected values, Decisions subject to uncertainty, Prior, posterior and pre-posterior analysis	G
		21.06.07	Exercise tutorial	