



[Advanced Filters](#)
Faculty:

All

Department:

All

Module:

MA4413 - STATISTICS FOR COMPUTING



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Module Code - Title:

MA4413 - STATISTICS FOR COMPUTING

Hours Per Week:

Lecture	Lab	Tutorial	Other	Private	Credits
2	0	1	0	7	6

Grading Type:

N

Prerequisite Modules:**Rationale And Purpose Of The Module:**

To introduce the student to probabilistic ideas through the medium of information theory.

Syllabus:

Combinatorics: permutations, combinations and the binomial theorem.
 Probability: Bayes theorem, conditional probability.
 Introduction to information theory.
 Compression algorithms.
 Normal, Poisson and binomial distributions.
 Hypothesis testing.
 Chi squared test
 Elementary queuing theory.

Learning Outcomes:

Cognitive (Knowledge, Understanding, Application, Analysis, Evaluation, Synthesis)

On successful completion of this module, students should be able to:

1. Apply probability theory to problem solving
2. Employ the concepts of random variables and probability distributions to problem solving
3. Apply information theory to solve problems in data compression and transmission
4. Analyse rates and proportions
5. Perform hypothesis tests for a variety of statistical problems

Affective (Attitudes and Values)

None

Psychomotor (Physical Skills)

None

How The Module Will Be Taught and What Will Be The Learning Experiences Of The Students:

Lectures and tutorials

Research Findings Incorporated In To The Syllabus (If Relevant):

Prime Texts:

(1982) *Introduction to probability theory and statistical inference* ,

Other Relevant Texts:

Larsen, R.J. and Marx, M.L. (2005) *An Introduction to Mathematical Statistics and Its Applications* , Prentice Hall
(2007) *Probability and statistics for engineering and the sciences* ,

Programme(s) In Which This Module Is Offered:

Semester - Year To Be First Offered:

Autumn - 08/09

Module Leader:

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