2024 / 25

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Module Descriptor

Statistical Analysis (Computing and Mathematics)

Statistical Analysis (A06797)

Short Title: Statistical Analysis
Department: Computing and Mathematics
Credits: 5 **Level:** Introductory

Description of Module / Aims

This module introduces students to data analysis techniques in statistics, regression and financial maths. The module will focus on the application of data analysis techniques along with interpretation of data analysis results. Practical labs will be included to introduce more advanced statistical features.

Programmes

		stage/semester/status
STAT-0020	BSc (Hons) in Software Systems Development (WD_KDEVP_B)	1 / 2 / M
STAT-0020	BSc in Applied Computing (WD_KCOMP_D)	1 / 2 / M
STAT-0020	BSc in Information Technology (WD_KINFT_D)	1 / 2 / M
STAT-0020	BSc in Software Systems Development (WD_KCOMC_D)	1 / 2 / M

Indicative Content

- Descriptive Statistics: Data collection methods; Presentation of data; Measures of center and spread
- Linear Regression: Least squares line; Pearson's correlation coefficient; the coefficient of determination
- Financial Mathematics: Interest and depreciation; Present value and Investment appraisal; Annuities

Learning Outcomes

On successful completion of this module, a student will be able to:

1. Apply appropriate graphical and analytical techniques for the investigation of data.
2. Apply regression and correlation techniques in appropriate sets of data.
3. Compute sinking funds, net present value and internal rate of return problems.
4. Use relevant software to analyse data using appropriate functions and graphs.

Learning and Teaching Methods

- This module will be presented by a combination of lectures and computer-based practical labs.
- The practical labs will be used to support lectures by providing students with tools for modelling real world problems.
- The lectures will be used to introduce new topics and their related concepts.
- The tutorials will provide a forum through which the student will rehearse/refine new concepts introduced in lectures.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	24	12
Tutorial	12	6
Practical	12	6
Independent Learning	87	111

Assessment Methods

	Weighting	Outcomes Assessed
Final Written Examination	60%	1,2,3
Continuous Assessment	40%	
In-Class Assessment	15%	1,2
Practical	25%	1,2,3,4

Assessment Criteria

<40%: Unable to interpret and describe key statistical concepts.

40%–49%: Be able to interpret and describe key statistical concepts.

50%–59%: Be able to discuss key statistical concepts and to discover and integrate related knowledge in other knowledge domains.

60%–69%: Be able to solve statistical problems using appropriate statistical tools.

70%–100%: Be able to analyse and design solutions to a high standard for a range of both complex and unforeseen problems through the use and modification of statistical skills and tools.

Supplementary Material(s)

- "Statistical Analysis moodle page." https://moodle.wit.ie
- Francis, A. *Business Mathematics and Statistics.* 7th ed. Boston, USA: Cengage Learning, 2012.

Requested Resources

- Room Type: Computer Lab