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| Module Title: | Accounting and Mathematics |
| Language of Instruction: | English |
| Credits: | 5 |
| NFQ Level: | 6 |
| Module Delivered In | 3 programme(s) |
| Teaching & Learning Strategies: | Lectures and Tutorials Private study |
| Module Aim: | The aim of the mathematics component of this module is to develop the students' mathematical and statistical skills and reasoning and to enable them to apply them to financial and research activities. The module will introduce the students to relevant software applications which can be used for statistical analysis. During accounting component of this module students will also develop a knowledge of the accounting and business techniques associated with construction |

| Learning Outcomes | |
|---|--|
| <i>On successful completion of this module the learner should be able to:</i> | |
| LO1 | Describe basic concepts in statistics and apply statistical skills to explore data numerically and graphically using manual approaches and IT approaches. |
| LO2 | Solve well formed problems by identifying variables, selecting the appropriate formula, applying appropriate mathematical techniques and presenting an answer in applied questions. |
| LO3 | Calculate the solutions for a variety of financial maths topics including APR, EAR, IRR, BCR, NPV, Present and Future values associated with loan payments and sinking funds etc using information technology where appropriate. |
| LO4 | Complete and defend cost control procedures used in construction project through accounting principles |
| LO5 | Prepare and discuss forecasted budgetary expenditure and financial reports |

| Pre-requisite learning |
|--|
| Module Recommendations <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i> |
| No recommendations listed |
| Incompatible Modules <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i> |
| No incompatible modules listed |
| Co-requisite Modules |
| No Co-requisite modules listed |
| Requirements <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i> |
| No requirements listed |

Module Content & Assessment

Indicative Content

Financial Calculations

(a) Revise the calculation of simple and compound interest. (b) Calculation of loan repayments (c) Mortgage calculations (d) Calculation of Monthly payments, and total interest paid (e) Amortisation and amortisation schedule (f) Inflation: Indices, Manipulation and adjustment, price (g) Depreciation: straight line and reducing balance method.

Introduction to Statistics

(a) Describe statistics and data analysis. (b) Distinguish between categorical (nominal, ordinal) and numerical (discrete, continuous) data. (c) Tabulate data and interpret data using Excel and Excel functions (Formulas, Pivot Tables etc). (d) Draw and Interpret Charts and Graphs manually and using appropriate IT packages. (e) Explain the terms population and sample. (f) Distinguish between and describe random and non-random sampling methods. (g) Design a questionnaire. Distinguish between types of questions and data. Describe how to conduct a sample survey. Describe experiments and observational studies.

Further Topics in Statistics

(a) Calculations of the correlation coefficient and the regression line equation. Plotting scatter points and the regression line, Interpolating and Extrapolating using the equation and or the regression line. Using Excel to generate regression lines and correlation data. (b) Draw and interpret the shape of histograms, ogives and boxplots. Calculate and interpret the mean, mode and median. Calculate and interpret quartiles, the range, the interquartile range. Calculate and interpret the variance and standard deviation. (c) Prepare and interpret statistical output from excel/other statistical software.

Basic Introduction to Accounting and Finance

(a) Accounts: financial, management, types of reports (final accounts, financial reviews) (b) Types of Business Structures (Partnerships, Sole Trader, Limited)

Financial Statements

(a) Preparation of Financial Reviews and Final Accounts (Income Statement and Balance Sheet) with basic adjustments e.g. Depreciation (b) Cash Flow Statement

Project and Capital Investment Appraisal

(a) Decision making and relevant costs (b) Methods of project/capital appraisal e.g. Payback, NPV, ARR, IRR

| Assessment Breakdown | % |
|-----------------------|--------|
| Continuous Assessment | 50.00% |
| Project | 50.00% |

Continuous Assessment

| Assessment Type | Assessment Description | Outcome addressed | % of total | Assessment Date |
|-----------------|------------------------|-------------------|------------|-----------------|
| Other | Continuous Assessment | 1,2,3 | 25.00 | n/a |
| Other | Continuous Assessment | 4,5 | 25.00 | n/a |

Project

| Assessment Type | Assessment Description | Outcome addressed | % of total | Assessment Date |
|-----------------|------------------------|-------------------|------------|-----------------|
| Project | n/a | 1,2,3 | 25.00 | n/a |
| Project | n/a | 4,5 | 25.00 | n/a |

No Practical

No End of Module Formal Examination

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

| Workload: Full Time | | |
|----------------------------|--------------------|--|
| <i>Workload Type</i> | <i>Frequency</i> | <i>Average Weekly Learner Workload</i> |
| Lecture | 12 Weeks per Stage | 5.00 |
| Estimated Learner Hours | 12 Weeks per Stage | 3.33 |
| Total Hours | | 100.00 |

Module Delivered In

| Programme Code | Programme | Semester | Delivery |
|----------------|--|----------|-----------|
| CW_CMOPB_B | Bachelor of Science (Honours) in Construction Management | 4 | Mandatory |
| CW_CMQSU_B | Bachelor of Science (Honours) in Quantity Surveying | 4 | Mandatory |
| CW_CMBSE_D | Bachelor of Science in Construction Management | 4 | Mandatory |