

CORE MODULE DESCRIPTORS

YEAR 1

Mathematics

1. MODULE SUMMARY

Aims and Summary

The goal of this course is to make students familiar with basic mathematical tools used in economy and business. Topics include sets, functions of one and several variables, matrix algebra, introduction to the derivative and integral. Some basic connections with economics will be presented, e.g. the production function, the logistic function, the Leontief input-output model, consumer surplus, etc.

Module Size and credits

ECTS points 5

Total student study hours 125

Number of weeks 12

School responsible Lazarski University, Faculty of Economics and Management

Academic Year 2021/2022

Entry Requirements (pre-requisites and co-requisites)

N/A

Excluded Combinations

None

Composition of module mark (including weighting of components)

Final exam, 60%

Coursework, 40%, composed of two in-class exam worth 20% each.

Pass requirements

To pass the course a student must score at least 40% of the overall weighted average and not less than 35% for each assessment component (i.e. coursework and final exam). Reassessment: coursework component and/or examination as appropriate.

Special Features

None

Course stages for which this module is mandatory

BA in Business Economics, Year 1

Course stages for which this module is a core option

None

2. TEACHING, LEARNING AND ASSESSMENT

Intended Module Learning Outcomes

By the end of the course, students should be able to:

1. Apply the notions of a set and basic operations on sets;

2. Perform matrix operations, reduce matrices to row echelon form, solve systems of linear equations, use the Leontief input-output model to solve real world problems;
3. Utilize functions, continuity and limit, sketch graphs of elementary functions, such as polynomial, trigonometric and exponential functions;
4. Calculate the derivatives of a function, geometric and physical interpretations of the derivative, calculate and apply derivatives to find extreme points;
5. Utilize economic applications of the derivative such as marginal analysis and elasticity of demand;
6. Apply the concept of the definite and indefinite integral, have mastered basic techniques of integration such as substitution and integration by parts;
7. Utilize the notions of a partial derivative of a function of several variables, gradient, level curves, extreme points and constrained extreme points.

Indicative Content

1. Sets
2. Matrix algebra and systems of linear equations
3. Functions, limits, and continuity
4. Derivative of a function of one and several variables, and its connection with extreme points
5. Introduction to integration

Teaching and Learning

This module will be taught by means of lecture and workshops and self-directed study. Formative Assessment: Comments will be given on assessments, and tutorial guidance will be provided for coursework and exam. Student activity and time spent on each activity comprises:

Guided	0 hours	(0%)
Lecture	0 hours	(0%)
Self-guided	35 hours	(28%)
Seminar	45 hours	(36%)
Workshop	45 hours	(36%)
Total	125 hours	

Method of Assessment (normally assessed as follows) The intended learning outcomes will be assessed as follows:

Final exam, 60%, will assess learning outcomes 1-7

Coursework, 40%, two in-class exams worth 20% each, will assess learning outcomes 1-7

Date of last amendment

15.02.2017

3. MODULE RESOURCES

Essential Reading

S. Warner, S. R. Costenoble, *Finite Mathematics and Applied Calculus* (Thomson, Brooks/Cole, 2013)

Required Equipment

None

4. MODULE ORGANISATION Module leader

Name Krzysztof Beck, Dr.

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Length and month of examination

120 minutes in January

Expected teaching timetable slots

No timetable information available

Subject Quality and Approval information

Board of Study Faculty Collaborative Provision Committee

Subject Assessment Board Faculty Council, Faculty of Economics and Management

Shortened title

Date of approval by FCPC 13 Feb 2017