



Module Specification

Programming Economic and Financial Models

Version: 2027-28, v1.0, Approved

Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	3
Part 4: Assessment.....	5
Part 5: Contributes towards	6

Part 1: Information

Module title: Programming Economic and Financial Models

Module code: UMETH8-15-3

Level: Level 6

For implementation from: 2027-28

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Business and Law

School: CBL Bristol Business School

Partner institutions: None

Field: Economics

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module introduces students to techniques used in economic and financial modelling. The module develops students' ability to mathematically formulate and solve economic and financial models. You will then be taught to programme such models using appropriate software such as R/Python and perform simple simulation exercises for policy decisions.

This module is beneficial for students seeking to expand their employability as an economist/analyst or aim to undertake postgraduate studies.

You are not required to have prior programming knowledge or A level mathematics to do well in this module.

Features: Not applicable

Educational aims: The aim of this module is to teach students fundamental mathematical and computational methods that underpins economic and financial models. It also exposes students to programming to be able make sensible forecasting through these models and propose policy solutions or expected outcomes.

Outline syllabus: The content will reflect current and future advances in the field of study and therefore from time to time will vary to reflect these changes.

The module will typically cover the following:

Introduction to calculus

Optimisation

Systems of equations

Mathematical finance

Introduction to programming.

Simulation of economic and financial models using programming.

Part 3: Teaching and learning methods

Teaching and learning methods: Learning and Teaching will incorporate use of asynchronous and synchronous activities aimed to develop technical capabilities and programming ability. As we progress, the teaching and learning will shift toward a more problem based approach looking at real economic scenarios or small scaled models used by policy makers.

Asynchronous activities typically will include bite sized videos on concepts, methods, and programming students will need to watch before the class or to reinforce their understanding and application. It will also provide students the opportunity to practice these concepts and techniques through regular online activities such as online quizzes with instant feedback.

The typical format for the delivery will be:

Lecture: introducing students to key techniques. Lectures will be a hands on activity enabling students to learn with the instructor on how to formulate and solve the problems. Students will be expected to watch bite sized videos or complete the reading of the materials ahead of attending the classes to optimise their learning.

Tutorials: Tutorials is an opportunity for students go deeper into specific concepts and solve the models for closed form solutions. Ahead of tutorials students are expected to familiarise and practice the materials. During the tutorial students will be expected to work in groups/pair to solve the problem sets. Students will be encouraged to take a lead on presenting the answers to develop their confidence and ability to present solutions. Following tutorials, students are expected to reinforce their learning through weekly online activities available on blackboard.

Lab Sessions: Lab sessions are for students to be able to programme models and methods exposed in lecture and tutorials. In addition to developing students programming skills, the lab sessions will also enable students to get hands on experience on how models and methods works in reality and draw meaningful results or/and conclusions.

The module make use of 3Ps framework (Prepare, Participate and Practise). students are expected to take responsibility for their own learning, which is facilitated and supported through the 3Ps.

Preparation: this will involve going through pre-released materials such as lecture slides, bite sized videos and readings.

Participate: participation require active learning within classroom where you will individually as well an within groups work solving economic models and creating meaningful interpretation of the solutions or forecasts. Participation will also take

student led discussion on analytical and solution methods.

Practise: As part of practice you should be engaging with weekly formative quizzes available on blackboard. At the same time, to practice students needs to make use of consolidation videos and worked examples provided to ensure your learning is reinforced.

Through out the studies students will be encouraged to access the materials and support available through UWE library.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Formulate and solve problems using concepts, terminology, and methods introduced in the module.

MO2 Demonstrate knowledge of the fundamentals of computer programming techniques for economics and finance.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/umeth8-15-3.html) via the following link <https://uwe.rl.talis.com/modules/umeth8-15-3.html>

Part 4: Assessment

Assessment strategy: The module will utilise formative assessments and feedback on a weekly basis. This will be through regular class problem sets and online activities available on (VLE) Virtual Learning Environment.

Practical Skills Assessment

The summative assessment will be a two-hour practical skills assessment taken in a computer lab where students will be required to solve models and programme them.

Assessment tasks:**Practical Skills Assessment (First Sit)**

Description: 2-hour project completed in computer lab under invigilation. Students will have access to class materials and texts only.

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2

Practical Skills Assessment (Resit)

Description: 2-hour project completed in computer lab under invigilation. Students can access to class materials and texts.

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Banking and Finance {Foundation} [Frenchay] BSc (Hons) 2024-25

Banking and Finance [NEU] BSc (Hons) 2025-26

Banking and Finance [UFM] BSc (Hons) 2025-26

Banking and Finance {Dual} [Taylors] BA (Hons) 2025-26

Banking and Finance [Frenchay] BSc (Hons) 2025-26