Swansea University
Prifysgol Abertawe

FACULTY OF SCIENCE AND ENGINEERING

UNDERGRADUATE STUDENT HANDBOOK

YEAR 1 (FHEQ LEVEL 4)

ACTUARIAL SCIENCE

DEGREE PROGRAMMES

SUBJECT SPECIFIC
PART TWO OF TWO
MODULE AND COURSE STRUCTURE
2023-24

DISCLAIMER

The Faculty of Science and Engineering has made all reasonable efforts to ensure that the information contained within this publication is accurate and up-to-date when published but can accept no responsibility for any errors or omissions.

The Faculty of Science and Engineering reserves the right to revise, alter or discontinue degree programmes or modules and to amend regulations and procedures at any time, but every effort will be made to notify interested parties.

It should be noted that not every module listed in this handbook may be available every year, and changes may be made to the details of the modules. You are advised to contact the Faculty of Science and Engineering directly if you require further information.

The 23-24 academic year begins on 25 September 2023

Full term dates can be found here

DATES OF 23-24 TERMS

25 September 2023 – 15 December 2023

8 January 2024 – 22 March 2024

15 April 2024 – 07 June 2024

SEMESTER 1

25 September 2023 – 29 January 2024

SEMESTER 2

29 January 2024 – 07 June 2024

SUMMER

10 June 2024 – 20 September 2024

IMPORTANT

Swansea University and the Faculty of Science of Engineering takes any form of **academic misconduct** very seriously. In order to maintain academic integrity and ensure that the quality of an Award from Swansea University is not diminished, it is important to ensure that all students are judged on their ability. No student should have an unfair advantage over another as a result of academic misconduct - whether this is in the form of **Plagiarism**, **Collusion** or **Commissioning**.

It is important that you are aware of the **guidelines** governing Academic Misconduct within the University/Faculty of Science and Engineering and the possible implications. The Faculty of Science and Engineering will not take intent into consideration and in relation to an allegation of academic misconduct - there can be no defence that the offence was committed unintentionally or accidentally.

Please ensure that you read the University webpages covering the topic – procedural guidance here and further information here. You should also read the Faculty Part One handbook fully, in particular the pages that concern Academic Misconduct/Academic Integrity.

Welcome to the Faculty of Science and Engineering!

Whether you are a new or a returning student, we could not be happier to be on this journey with you.

At Swansea University and in the Faculty of Science and Engineering, we believe in working in partnership with students. We work hard to break down barriers and value the contribution of everyone.

Our goal is an inclusive community where everyone is respected, and everyone's contributions are valued. Always feel free to talk to academic, technical and administrative staff, administrators - I'm sure you will find many friendly helping hands ready to assist you. And make the most of living and working alongside your fellow students.

During your time with us, please learn, create, collaborate, and most of all – enjoy yourself!

Professor David Smith
Pro-Vice-Chancellor and Executive Dean
Faculty of Science and Engineering

Faculty of Science and Engineering	
Pro-Vice-Chancellor and Executive Dean	Professor David Smith
Director of Faculty Operations	Mrs Ruth Bunting
Associate Dean – Student Learning and Experience (SLE)	Professor Laura Roberts
School of Mathematics and Computer Science	
Head of School	Professor Elaine Crooks
School Education Lead	Dr Neal Harman
Head of Mathematics	Professor Vitaly Moroz
Mathematics Programme Director	Dr Kristian Evans
Year Coordinators	Year 0 – Dr Zeev Sobol Year 1 – Dr Nelly Villamizar Year 2 – Professor Chenggui Yuan Year 3 – Professor Grigory Garkusha Year 4 – Professor Grigory Garkusha MSc – Dr Guo Liu

STUDENT SUPPORT

The Faculty of Science and Engineering has two **Reception** areas - Engineering Central (Bay Campus) and Wallace 223c (Singleton Park Campus).

Standard Reception opening hours are Monday-Friday 8.30am-4pm.

The **Student Support Team** provides dedicated and professional support to all students in the Faculty of Science and Engineering. Should you require assistance, have any questions, be unsure what to do or are experiencing difficulties with your studies or in your personal life, our team can offer direct help and advice, plus signpost you to further sources of support within the University. There are lots of ways to get information and contact the team:

Email: studentsupport-scienceengineering@swansea.ac.uk (Monday–Friday, 9am–5pm)

Call: +44 (0) 1792 295514 (Monday-Friday, 10am–12pm, 2–4pm).

Zoom: By appointment. Students can email, and if appropriate we will share a link to our Zoom calendar for students to select a date/time to meet.

The current student **webpages** also contain useful information and links to other resources:

https://myuni.swansea.ac.uk/fse/

READING LISTS

Reading lists for each module are available on the course Canvas page and are also accessible via http://ifindreading.swan.ac.uk/. We've removed reading lists from the 23-24 handbooks to ensure that you have access to the most up-to-date versions.
We do not expect you to purchase textbooks, unless it is a specified key text for the course.

THE DIFFERENCE BETWEEN COMPULSORY AND CORE MODULES

Compulsory modules must be **pursued** by a student.

Core modules must not only be **pursued**, but also **passed** before a student can proceed to the next level of study or qualify for an award. Failures in core modules must be redeemed.

Further information can be found under "Modular Terminology" on the following link - https://myuni.swansea.ac.uk/academic-life/academic-regulations/taught-guidance/essential-

info-taught-students/your-programme-explained/

Year 1 (FHEQ Level 4) 2023/24
Actuarial Science

BSc Actuarial Science[N323,N325]
BSc Actuarial Science with a Year Abroad[N326]
BSc Actuarial Science with a Year in Industry[N324]

Coordinator: Dr NY Villamizar

Compulsory Modules

Semester 1 Modules	Semester 2 Modules
EC-1014 **Economics for Accounting and Finance** **15 Credits** **Dr AK Tubadji**	**MA-192** **Probability and Statistics** **15 Credits** **Prof C Yuan**
MN-1003 **Accounting for Managers** **15 Credits** **Dr JY Ojra**	**MN-1502** **Foundations of Finance** **15 Credits** **Dr RO Sagay**
Total 120 Credits	

Optional Modules

Choose exactly 15 credits

MAWXXX modules are for students who wish to study part of their course through the medium of Welsh.

MA-101	Introduction to Analysis 1	Prof ECM Crooks	TB1	15 (CORE)
MAW101	Cyflwyniad i Ddadansoddi 1	Prof ECM Crooks	TB1	15 (CORE)

And

Choose exactly 15 credits

MA-102	Introduction to Analysis 2	Prof ECM Crooks	TB2	15 (CORE)
MAW102	Cyflwyniad i Ddadansoddi 2	Prof ECM Crooks	TB2	15 (CORE)

And

Choose exactly 15 credits

MA-111	Foundations of Algebra	Dr EJ Beggs	TB1	15 (CORE)
MAW111	Sylfeini Algebra	Dr EJ Beggs	TB1	15 (CORE)

And

Choose exactly 15 credits

MA-112	Introductory Linear Algebra	Prof G Garkusha	TB2	15 (CORE)
MAW112	Cyflwyniad i Algebra Llinol	Prof G Garkusha	TB2	15 (CORE)

EC-1014 Economics for Accounting and Finance

Credits: 15 Session: 2023/24 September-January

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr AK Tubadji

Format: 10 x 2 hour lecture
10 x 1 hour seminar

Delivery Method: Delivery of this module will be through a series of lectures followed by seminars in small groups. All teaching is based on campus. Guest speakers may be invited to contribute as appropriate.

Module Aims: This module builds provides a rigorous understanding of basic micro-and macro-economic principles by combining theory and application to contemporary issues, such that students have a sound basis for progression to understand the context for business/finance actions in the wider economy.

Module Content: Introduction to Economics and Economic Thinking
Part 1. Microeconomics
1. Supply, Demand and Market Equilibrium
2. Consumer Theory and the Shape and Position of the Demand Curve
3. Production Theory and the Supply Curve in a Perfectly Competitive Market
4. Welfare Analysis and Market Failure
5. Monopoly and Monopolistic Competition; Market Concentration and Market Structure

Part 2. Macroeconomics

1. The Data of Macroeconomics: GDP, Prices, Unemployment
2. Economic Growth
3. The Monetary System
4. Aggregate Demand and Supply in the Short and Long Run
5. The Effects of Fiscal and Monetary Policy

Intended Learning Outcomes: On completion of the module, students will:

i) Explain and apply macroeconomic theory

ii) Describe the measurement and use of national income, and demonstrate how monetary and fiscal policies may influence national income and employment;

iii) Explain and apply microeconomic theory and concepts, derive market demand and supply schedules, and analyze changes in market price;

iv) Explain theories of perfect and imperfect competition, appraise the case for free-market economics, and recount the sources and implications of market failure.

Assessment: Online Class Test (45%)
Open book examination (Online) (55%)
Resit Assessment: Examination (Resit instrument) (100%)

Assessment Description: 45% Online Class Test (best 3 out of 4 Canvas quizzes at 15% each)
55% Online Unseen Examination (2-hour exam)

Moderation approach to main assessment: Moderation by sampling of the cohort

Assessment Feedback: Generic feedback via Canvas plus drop-in session for students who would like individual feedback on their performance.

Failure Redemption: To redeem failure in this module students will be expected to re-sit the open book online examination (Supplementary period August) component and this will be weighted at 100% of the overall module mark.

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

This module is available to incoming exchange/visiting students, if there are any linked pre-requisites students will need to provide a copy of their transcript to assess suitability. Please email employability-management@swansea.ac.uk for more information.

MA-101 Introduction to Analysis 1

Credits: 15 Session: 2023/24 September-January

Pre-requisite Modules:

Co-requisite Modules: MA-111

Lecturer(s): Prof ECM Crooks

Format: 33 hours: This will be a mixture of sessions which may include for example lectures, quizzes, exercises.

11 hours: In Person Interactive Small Group Sessions. This will be an examples class. If it is not possible to deliver these sessions in person then they will take place as Live Online Teaching.

Delivery Method: All programmes will employ a blended approach to delivery using the Canvas digital learning platform.

Module Aims: The module introduces basic concepts such as sets, functions, completeness, sequences and series.

Module Content: • sets, basic properties and set operations
• examples of sets of numbers: natural numbers, integers, rational numbers, real numbers
• arithmetic and ordering properties of real numbers
• the absolute value, inequalities, intervals
• mathematical induction
• functions (domain, co-domain, range), examples including polynomials, rational functions
• injective, surjective, bijective functions, composition of functions, inverse functions
• upper and lower bounds of subsets of real numbers, infimum and supremum
• completeness of the real numbers, Archimedean property
• sequences of real numbers, limits of sequences
• algebra and ordering of limits of sequences
• monotone sequences, recursively-defined sequences
• Cauchy sequences, subsequences, Bolzano-Weierstrass
• series, convergence of series, examples of convergent and divergent series
• absolute convergence of series
• comparison, ratio, root, alternating and integral tests for series convergence

Intended Learning Outcomes: At the end of this module students should be able to:

1) explain basic set theory
2) give a formally correct proof
3) use the concept of mathematical induction
4) determine properties of functions such as injectivity, surjectivity, bijectivity
5) discuss the completeness of the real numbers
6) identify well-known sequences and series
7) apply various techniques to determine whether or not sequences and series converge

Assessment: Examination (80%)
Assignment 1 (20%)

Resit Assessment: Examination (Resit instrument) (100%)

Assessment Description: Examination: A closed book examination to take place at the end of the module.
Assignment 1: formed of a number of coursework assignments along with participation in the module during the semester. The assignments will develop student's skills in problem solving, and developing and writing logical arguments.

Moderation approach to main assessment: Moderation of the entire cohort as Check or Audit

Assessment Feedback: For the homework assignments, students will receive feedback in the form of marks, model solutions, overall feedback on the cohort performance, and some individual comments on their work.
For the exam, students will receive feedback in the form of marks and overall feedback on the cohort performance. Further, individualised feedback, can be provided upon request.

Failure Redemption: Supplementary examination.

Additional Notes: Delivery of teaching will be on-campus. Continuous assessment will be submitted online.

Available to visiting and exchange students

MA-102 Introduction to Analysis 2

Credits: 15 Session: 2023/24 January-June

Pre-requisite Modules:

Co-requisite Modules: MA-101; MA-111

Lecturer(s): Prof ECM Crooks

Format: 44 hours: This will be a mixture of sessions which may include for example lectures, quizzes, exercises.

11 hours: In Person Interactive Small Group Sessions. This will be an examples class. If it is not possible to deliver these sessions in person then they will take place as Live Online Teaching.

Delivery Method: All programmes will employ a blended approach to delivery using the Canvas digital learning platform.

Module Aims: The module introduces fundamental concepts such as limits, continuity, differentiability and integrability.

Module Content: • open and closed subsets of real numbers
• limits for real-valued functions, properties of limits
• continuous functions, examples and properties of continuous functions
• Intermediate Value Theorem
• continuous functions on closed bounded intervals
• uniform continuity
• derivatives, basic properties of derivatives
• Rolle's Theorem, Mean Value Theorem
• local extreme values of functions
• L'Hopital's rules
• exponential, trigonometric and hyperbolic functions
• partition of an interval, lower and upper Riemann sums
• Riemann integral
• inequalities and Mean Value Theorem for integrals
• fundamental theorem of calculus
• improper integrals

Intended Learning Outcomes: At the end of this module students should be able to:

1) use the definition of limit to prove results about the limits of real-valued functions
2) outline properties of continuous and differentiable functions
3) use properties of the derivative to investigate the behaviour of functions
4) sketch the graphs of the exponential, trigonometric and hyperbolic functions
5) determine whether or not functions are Riemann integrable

Assessment:	Examination (80%) Coursework 1 (5%) Coursework 2 (5%) Coursework 3 (5%) Assignment 1 (5%)
Resit Assessment:	Examination (Resit instrument) (100%)

Assessment Description: Exam: A closed book examination to take place at the end of the module.
Courseworks 1-3: This coursework will develop students' skills in problem solving, and developing and writing logical arguments.
Assignment 1 is an Employability Assessment: A number of employability quizzes with the same deadline.

Moderation approach to main assessment: Moderation of the entire cohort as Check or Audit

Assessment Feedback: For the homework assignments, students will receive feedback in the form of marks, model solutions, overall feedback on the cohort performance, and some individual comments on their work. For the exam, students will receive feedback in the form of marks and overall feedback on the cohort performance. Further, individualised feedback, can be provided upon request.
Failure Redemption: Supplementary examination.
Additional Notes: Delivery of teaching will be on-campus. Continuous assessment will be submitted online. Available to visiting and exchange students

MA-111 Foundations of Algebra

Credits: 15 Session: 2023/24 September-January

Pre-requisite Modules:

Co-requisite Modules: MA-101

Lecturer(s): Dr EJ Beggs

Format: 44

Delivery Method: All programmes will employ a blended approach to delivery using the Canvas digital learning platform.

Module Aims: An introduction to logic and algebraic structures. The course covers the basics of logic, proof and algebraic manipulation before introducing the abstract algebra of groups, rings and fields.

Module Content: Logic: statements, connectives, truth tables, quantifiers, what does it mean 'to prove'.
Binary operations on sets: commutative, associative operations, manipulations with brackets.
Introduction to groups and group homomorphisms, symmetric group, integers modulo n
Introduction to rings and ring homomorphisms, integers, rationals.
Introduction to fields, rationals and reals.
Polynomials, polynomial division, roots, irreducibility.
Complex numbers, roots, algebraically closed fields.
Matrices, 2 by 2 determinants.

Intended Learning Outcomes: At the end of this module, the student should be able to:

1) explain and apply the basic principles of logic, proof and algebraic manipulation,
2) define groups, rings and fields and describe their basic properties,
3) solve basic algebraic problems in concrete and abstract situations,
4) apply appropriate techniques of algebraic manipulation to a given situation,
5) recognise patterns underlying a variety of algebraic situations,
6) work with and explain the need for complex numbers,
7) state the fundamental theorem of algebra.

Assessment: Examination (80%)
Assignment 1 (20%)
Resit Assessment: Examination (Resit instrument) (100%)

Assessment Description: Examination: A closed book examination to take place at the end of the module.
Assignment 1: formed of a number of coursework assignments along with participation in the module during the semester. The assignments will develop student's skills in problem solving, and developing and writing logical arguments.

Moderation approach to main assessment: Moderation of the entire cohort as Check or Audit

Assessment Feedback: For the homework assignments, students will receive feedback in the form of marks, model solutions, overall feedback on the cohort performance, and some individual comments on their work.
For the exam, students will receive feedback in the form of marks and overall feedback on the cohort performance. Further, individualised feedback, can be provided upon request.

Failure Redemption: Supplementary examination.

Additional Notes: Delivery of teaching will be on-campus. Continuous assessment will be submitted online.

Available to visiting and exchange students

MA-112 Introductory Linear Algebra

Credits: 15 Session: 2023/24 January-June

Pre-requisite Modules:

Co-requisite Modules: MA-101; MA-111

Lecturer(s): Prof G Garkusha

Format: 44

Delivery Method: All programmes will employ a blended approach to delivery using the Canvas digital learning platform.

Module Aims: An introduction to combinatorics, vectors, matrices and abstract vector spaces.

Module Content: Divisibility, Euclid algorithm for numbers and polynomials.
Relations and orders.
Combinatorics and the binomial theorem.
Countability, Russell's paradox.
Matrices and linear equations, Gauss elimination.
Determinants, PLU decomposition.
Introduction to vector spaces and linear transformations, subspaces, bases, matrix representation of linear transformations.

Intended Learning Outcomes: At the end of this module, the student should be able to:

1) explain set orderings and the concept of countability,
2) apply basic combinatorial techniques,
3) calculate the greatest common divisor and otherwise manipulate the Euclidean algorithm,
4) define the concept of a vector space and subspace and give standard examples of vector spaces,
5) explain the relationships between vectors, matrices, vector spaces and linear transformations,
6) solve systems of linear equations using Gaussian elimination,
7) define the concepts of bases and coordinates in vector spaces and subspaces,

Assessment:	Examination (80%)
	Coursework 1 (5%)
	Coursework 2 (5%)
	Coursework 3 (5%)
	Assignment 1 (5%)
Resit Assessment:	Examination (Resit instrument) (100%)

Assessment Description: Exam: A closed book examination to take place at the end of the module.
Courseworks 1-3: This coursework will develop students' skills in problem solving, and developing and writing logical arguments.
Assignment 1 is an Employability Assessment: A number of employability quizzes with the same deadline.

Moderation approach to main assessment: Moderation of the entire cohort as Check or Audit

Assessment Feedback: For the homework assignments, students will receive feedback in the form of marks, model solutions, overall feedback on the cohort performance, and some individual comments on their work.
For the exam, students will receive feedback in the form of marks and overall feedback on the cohort performance. Further, individualised feedback, can be provided upon request.

Failure Redemption: Supplementary examination.

Additional Notes: Delivery of teaching will be on-campus. Continuous assessment will be submitted online.

Available to visiting and exchange students

MA-192 Probability and Statistics

Credits: 15 Session: 2023/24 January-June

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Prof C Yuan

Format: 44 hours: Primarily lectures, additional support classes and lab classes

Delivery Method: All programmes will employ a blended approach to delivery using the Canvas digital learning platform.

Lectures on campus

Module Aims: The module is an introductory course on applied statistics. It will cover a variety of statistical tests, criteria for choosing appropriate tests, and the use of statistical software in dealing with large data sets.

Module Content: This module will treat the following topics:

Basic probability;
Confidence intervals;
Hypothesis testing;
Regression;
Parametric techniques;
Statistical computing.

Intended Learning Outcomes: At the end of the module the student should be able to:

1) Use basic results in probability;
2) Construct confidence intervals;
3) Test hypotheses including the use of t-tests and ANOVA;
4) Choose correct statistical tests;
5) Use parametric techniques to treat data sets;
6) Use regression techniques;
6) Use statistical software to deal with large data sets.

Assessment:	Examination (70%) Coursework 1 (6%) Coursework 2 (7%) Coursework 3 (7%) Laboratory 1 (10%)
Resit Assessment:	Examination (Resit instrument) (100%)

Assessment Description: Examination: A closed book examination to take place at the end of the module.
Courseworks 1-3: This coursework will develop skills in problem solving, applying techniques to real world problems and understanding the use of computers to investigate problems.
Lab Assessment: Computing based controlled assessment to assess skills in the use of computers to investigate and analyse real world problems.

Moderation approach to main assessment: Moderation of the entire cohort as Check or Audit

Assessment Feedback: For the coursework assignments, students will receive feedback in the form of marks, model solutions, overall feedback on the cohort performance, and some individual comments on their work.
For the exam, students will receive feedback in the form of marks and overall feedback on the cohort performance. Further, individualised feedback, can be provided upon request.

Failure Redemption: Supplementary exam

Additional Notes: Delivery of teaching will be on-campus. Continuous assessment will be submitted online.

Available to visiting and exchange students

MAW101 Cyflwyniad i Ddadansoddi 1

Credits: 15 Session: 2023/24 September-January

Pre-requisite Modules:

Co-requisite Modules: MAW102; MAW111; MAW112

Lecturer(s): Prof ECM Crooks

Format:

Delivery Method: On campus

Module Aims: The module introduces basic concepts such as sets, functions, completeness, sequences and series.

Module Content: • sets, basic properties and set operations
• examples of sets of numbers: natural numbers, integers, rational numbers, real numbers
• arithmetic and ordering properties of real numbers
• the absolute value, inequalities, intervals
• mathematical induction
• functions (domain, co-domain, range), examples including polynomials, rational functions
• injective, surjective, bijective functions, composition of functions, inverse functions
• upper and lower bounds of subsets of real numbers, infimum and supremum
• completeness of the real numbers, Archimedean property
• sequences of real numbers, limits of sequences
• algebra and ordering of limits of sequences
• monotone sequences, recursively-defined sequences
• Cauchy sequences, subsequences, Bolzano-Weierstrass
• series, convergence of series, examples of convergent and divergent series
• absolute convergence of series
• comparison, ratio, root, alternating and integral tests for series convergence

Intended Learning Outcomes: At the end of this module, students should be able to

1) explain basic set theory
2) give a formally correct proof
3) use the concept of mathematical induction
4) determine properties of functions such as injectivity, surjectivity, bijectivity
5) discuss the completeness of the real numbers
6) identify well-known sequences and series
7) apply various techniques to determine whether or not sequences and series converge

Assessment: Examination (80%)
Assignment 1 (20%)
Resit Assessment: Examination (Resit instrument) (100%)

Assessment Description: Component 1 is a written, closed-book examination at the end of the module. Component 2 is formed of a number of coursework assignments along with participation in classes during the semester.

Moderation approach to main assessment: Moderation of the entire cohort as Check or Audit

Assessment Feedback: For the homework assignments, students will receive feedback in the form of marks, model solutions, overall feedback on the cohort performance, and some individual comments on their work.
For the exam, students will receive feedback in the form of marks and overall feedback on the cohort performance. Further, individualised feedback, can be provided upon request.

Failure Redemption: Supplementary examination.

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Available to visiting and exchange students

MAW102 Cyflwyniad i Ddadansoddi 2

Credits: 15 Session: 2023/24 January-June

Pre-requisite Modules:

Co-requisite Modules: MAW101; MAW111; MAW112

Lecturer(s): Prof ECM Crooks

Format: 33

Delivery Method: On campus

Module Aims: The module introduces fundamental concepts such as limits, continuity, differentiability and integrability.

Module Content: • open and closed subsets of real numbers
• limits for real-valued functions, properties of limits
• continuous functions, examples and properties of continuous functions
• Intermediate Value Theorem
• continuous functions on closed bounded intervals
• uniform continuity
• derivatives, basic properties of derivatives
• Rolle's Theorem, Mean Value Theorem
• local extreme values of functions
• L'Hopital's rules
• exponential, trigonometric and hyperbolic functions
• partition of an interval, lower and upper Riemann sums
• Riemann integral
• inequalities and Mean Value Theorem for integrals
• fundamental theorem of calculus
• improper integrals

Intended Learning Outcomes: At the end of this module, students should be able to

1) use the definition of limit to prove results about the limits of real-valued functions
2) outline properties of continuous and differentiable functions
3) use properties of the derivative to investigate the behaviour of functions
4) sketch the graphs of the exponential, trigonometric and hyperbolic functions
5) determine whether or not functions are Riemann integrable

Assessment:	Examination (80%)
	Coursework 1 (5%)
	Coursework 2 (5%)
	Coursework 3 (5%)
	Assignment 1 (5%)
Resit Assessment:	Examination (Resit instrument) (100%)

Assessment Description: Exam: A closed book examination to take place at the end of the module.
Courseworks 1-3: This coursework will develop students' skills in problem solving, and developing and writing logical arguments.
Assignment 1 is an Employability Assessment: A number of employability quizzes with the same deadline

Moderation approach to main assessment: Moderation of the entire cohort as Check or Audit

Assessment Feedback: For the homework assignments, students will receive feedback in the form of marks, model solutions, overall feedback on the cohort performance, and some individual comments on their work.
For the exam, students will receive feedback in the form of marks and overall feedback on the cohort performance. Further, individualised feedback, can be provided upon request.

Failure Redemption: Supplementary examination.

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Available to visiting and exchange students

MAW111 Sylfeini Algebra

Credits: 15 Session: 2023/24 September-January

Pre-requisite Modules:

Co-requisite Modules: MAW101; MAW102; MAW112

Lecturer(s): Dr EJ Beggs

Format: 33

Delivery Method: Ar y campws

Module Aims: Cyflwyniad i strwythurau rhesymegol ac algebraidd. Mae'r cwrs hwn yn ystyried sylfeini rhesymeg, prawf a thrin algebraidd cyn cyflwyno yr algebra haniaethol o grwpiau, cylchoedd a meysydd.

Module Content: Rhesymeg: datganiadau, cysylltion, gwirlenni, meintiolyddion, beth mae 'profi' yn ei olygu.
Gweithrediadau deuaidd ar setiau: cymudol, gweithrediadau cysylltiadol, trin cromfachau.
Grwpiau: grwpiau adnabyddus fel (Z,+), (R*, .), Z_n, S_3, cymesureddau sgwar ac ati.
Cylchoedd: gan gynnwys polynomialau, Z, Z_n , cylch o fatricsau.
Meysydd: gan gynnwys R, Q.
Triniaeth algebraidd a thrin fformularau ar gyfer meysydd.
Gwreiddiau polynomialau.
Cyfuniadeg elfennol a'r theorem binomaidd.
Cylchoedd eto: rhanadwyedd ac algorithm Euclid gydag enghreifftiau yn Z a'r cylch o bolynomialau (gan gynnwys rhannu polynomialau), rhifau cysefin, y prawf bod Z_p yn faes.

Intended Learning Outcomes: Ar ddiwedd y modiwl hwn dylai'r myfyrwyr fod a'r gallu i:

1) egluro a defnyddio egwyddorion sylfaenol rhesymeg, prawf a thriniaeth algebraidd;
2) ddiffinio grwpiau, cylchau a meysydd a'u priodweddau sylfaenol;
3) ddatrys problemau algebraidd sylfaenol mewn sefyllfaoedd diriaethol ac haniaethol;
4) ddefnyddio dulliau priodol o driniaeth algebraidd;
5) adnabod patrymau mewn amrywiaeth o sefyllfaoedd algebraidd.

Assessment: Examination (80%)
Assignment 1 (20%)
Resit Assessment: Examination (Resit instrument) (100%)

Assessment Description: Component 1 is a written, closed-book examination at the end of the module. Component 2 is formed of a number of coursework assignments along with participation in classes during the semester.

Moderation approach to main assessment: Moderation of the entire cohort as Check or Audit

Assessment Feedback: For the homework assignments, students will receive feedback in the form of marks, model solutions, overall feedback on the cohort performance, and some individual comments on their work.
For the exam, students will receive feedback in the form of marks and overall feedback on the cohort performance. Further, individualised feedback, can be provided upon request.

Failure Redemption: Supplementary examination.

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Ar gael i fyfyrwyr ar ymweliad

MAW112 Cyflwyniad i Algebra Llinol

Credits: 15 Session: 2023/24 January-June

Pre-requisite Modules:

Co-requisite Modules: MAW101; MAW102; MAW111

Lecturer(s): Prof G Garkusha

Format: 33

Delivery Method: Ar y Campws

Module Aims: Cyflwyniad i rifau cymhlyg, fectorau, matricsau a gofodau fector haniaethol.

Module Content: Perthnasau, trefnau a rhifadwyedd: enghreifftiau o setiau trefnedig fel R, Q, Z; paradocs Russell.
Rhifau cymhlyg: C fel maes, diagram Argand, theorem De Moivre, gwreiddiau o rifau cymhlyg; rhifau cymhlyg fel set anhrefnedig; theorem sylfaenol algebra.
Matricsau: M_n(R) fel cylch anghymudol.
Hafaliadau llinol, proses Gauss.
Fectorau a gofodau fector: adolygu byr o fectorau, diffiniad ffurfiol gofod fector fel haniaeth o briodweddau o fectorau planar neu geometrig, enghreifftiau R^n, polynomialau, ffwythiannau, M_n, m(R), C^n, ac amrywiolion dros feysydd gwahanol.
Sylfeini a chyfersynnau.
Is-ofodau.
Mapiadau llinol, matricsau fel mapiadau llinol.
Determinannau: arwynebedd, cyfaint.

Intended Learning Outcomes: Ar ddiwedd y modiwl hwn dylai'r myfyrwyr fod a'r gallu i:

1) egluro trefniadau set a'r cysyniad o rifadwyedd;
2) weithio gyda ac egluro pam mae angen rhifau cymhlyg;
3) ddatgan y theorem sylfaenol albegra;
4) ddiffinio'r cysyniad o ofod fector ac is-wagle a rhoi enghreifftiau safonol o ofodau fector;
5) egluro'r berthynas rhwng fectorau, matricsau a thrawsffurfiadau llinol;
6) ddatrys systemau o hafaliadau llinol gan ddefnyddio'r broses Gaussian;
7) ddiffinio cysyniadau sylfeini a chyfersynnau mewn gofodau fector ac is-ofodau.

Assessment:	Examination (80%) Coursework 1 (5%) Coursework 2 (5%) Coursework 3 (5%) Assignment 1 (5%)
Resit Assessment:	Examination (Resit instrument) (100%)

Assessment Description: Exam: A closed book examination to take place at the end of the module.
Courseworks 1-3: This coursework will develop students' skills in problem solving, and developing and writing logical arguments.
Assignment 1 is an Employability Assessment: A number of employability quizzes with the same deadline

Moderation approach to main assessment: Moderation of the entire cohort as Check or Audit

Assessment Feedback: For the homework assignments, students will receive feedback in the form of marks, model solutions, overall feedback on the cohort performance, and some individual comments on their work.
For the exam, students will receive feedback in the form of marks and overall feedback on the cohort performance. Further, individualised feedback, can be provided upon request.

Failure Redemption: Supplementary examination.

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Ar gael i fyfyrwyr ar ymweliad

MN-1003 Accounting for Managers

Credits: 15 Session: 2023/24 September-January

Pre-requisite Modules: None

Co-requisite Modules: None

Lecturer(s): Dr JY Ojra

Format: 10 x 2 hour lectures
10 x 1 hour seminars

Delivery Method: Delivery of this module will be through a series of lectures followed by seminars in small groups. All teaching is based on campus. Guest speakers may be invited to contribute as appropriate.

Module Aims: To introduce students to the fundamentals of financial and management accounting. Accounting is of critical importance in support of all business activities so this course is designed to introduce the basic concepts on which accounting is based, providing students with a toolkit that enables a better understanding of the performance of businesses and the decisions and problems they face.

Module Content: Topics:

(a) Financial planning and control
* The financial dimension of businesses and other organisations
* Estimating costs for planned activities : fixed and variable costs; direct and indirect costs; basic elements of product cost
* Preparation of cash budgets
* Annual budgeting, profit planning, liquidity control and longer term financial projections,
* Preparation of budgets and projected Profit and Loss Accounts and Balance Sheets
* Controlling operations and cost control

(b) Reporting results in financial terms
* Basic distinctions between the accounts of sole traders, partnerships and companies
* Preparation of final accounts from incomplete records
* Preparation of trial balance
* Reporting performance and financial results to higher levels in the organisation: cost centre reports, profit centre reports, investment centre reports
* Reporting the results to shareholders and other outside parties: preparation of final accounts, structure and interpretation of final accounts, underlying concepts (going concern, prudence, materiality, etc.)
* Measures of performance in the financial press: share prices, earnings per share, p/e ratios, assessing the quality of earnings announcements, etc.
* Outline of the role of company law, the accounting profession and Accounting Standards in controlling the content of published information
* Outline of complications created by going international / global for investment analysis, financing the business, financial control and financial reporting.

Intended Learning Outcomes: On completion of this module students should be able to;
1. Explain the role of accounting and financial management in the development and operation of a business.
2. Differentiate between financial accounting and management accounting and discuss their respective purposes and users.
3. Prepare and interpret fundamental financial statements, including statement of Profit or Loss, statement of Changes in Equity, and statement of Financial Position, in accordance with International Financial Reporting Standards (IFRS).
4. Estimate costs for planned activities by distinguishing between fixed and variable costs, direct and indirect costs, and understanding the basic elements of product cost.
5. Implement effective cost control and operational control measures within an organisation.
6. Gain an outline of the complications created by global operations for investment analysis, financing the business, financial control, and financial reporting.

Assessment: Open book examination (Online) (70%)
Online Class Test (30%)
Resit Assessment: Examination (Resit instrument) (100%)

Assessment Description: 30% in-class tests covering financial accounting and management accounting (1 hour)
70% online unseen examination (time restricted to 2 hours)

Moderation approach to main assessment: Moderation by sampling of the cohort
Assessment Feedback: Examination: Generic feedback via the Digital Learning Platform plus drop-in session for students who would like individual feedback on their performance. In class test: Generic Written feedback and verbal feedback during seminar sessions
Failure Redemption: To redeem failure in this module students will be expected to resit the online take home examination component and this will be weighted at 100% in August.
Additional Notes: This module is available to incoming exchange/visiting students, if there are any linked pre-requisites students will need to provide a copy of their transcript to assess suitability. Please email somplacements@swansea.ac.uk for more information.

MN-1502 Foundations of Finance

Credits: 15 Session: 2023/24 January-June

Pre-requisite Modules: None

Co-requisite Modules: None

Lecturer(s): Dr RO Sagay

Format: 10 x 2 hour lectures
10 x 1 hour weekly seminars (seminars to be scheduled in the PC lab where systems have access to FactSet though Zenworks)

Delivery Method: Delivery of this module will be through a series of lectures followed by seminars in small groups. All teaching is based on campus. Guest speakers may be invited to contribute as appropriate.

Module Aims: This module provides students with an understanding of structure and functions of financial systems, and introduces them to quantitative techniques used in investment and financial decision making at a basic level in preparation for further development of these subjects later in the degree.

Module Content: Topics:
Introduction to Financial Systems
Classification and role of financial markets
Classification and role of financial institutions
Nature and characteristics of financial securities
Features of debt and equity as sources of funds
Regulation of the financial sector
Time value of money
The investment decision - payback method
The investment decision - net present value, internal rate of return

Each lecture has an accompanying seminar on the same topic, except for:
Week 5 – coursework preparation seminar
Week 10 - revision session and worked mock-exam.

Intended Learning Outcomes: On completion of this module students should be able to:

Analyse the fundamental composition and functions of the financial system.
Explain the roles played by different types of financial institutions and financial markets in the economy.
Compare and contrast equity and debt, and analyses the nature and characteristics of various financial securities.
Assess the advantages and disadvantages associated with the regulation of the financial sector, considering its impact on market stability and investor protection.
Apply the concept of time value of money in financial decision-making, incorporating principles of present value, future value, and discounting.
Utilise various methods of investment appraisal to assess and select value-enhancing projects.

Assessment: Unseen Examination (Online) (70%)
Coursework 1 (30%)
Resit Assessment: Examination (Resit instrument) (100%)

Assessment Description: 30% Analysis report (1500 words)
70% online unseen examination (2 hours)

Moderation approach to main assessment: Moderation by sampling of the cohort

Assessment Feedback: Examination: Generic feedback via Canvas plus drop-in session for students who would like individual feedback on their performance.

Coursework: Written feedback via Canvas plus drop-in session for students who would like individual feedback on their performance.

Failure Redemption: To redeem failure in this module students will be expected to re-sit the online unseen examination component and this will be weighted at 100% of the overall module mark.

Additional Notes: This module is available to incoming exchange/visiting students, if there are any linked pre-requisites students will need to provide a copy of their transcript to assess suitability. Please email employability-management@swansea.ac.uk for more information.