Course Specification

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Produced By:	Oliver Jones
Status:	Validated

Core Information

Awarding Body / Institution:	University of Wolverhampton		
School / Institute:	School of Mathematics and Computer Science		
Course Code(s):	MM009K23UV	Sandwich	4 Years
UCAS Code:	G108		
Course Title:	BSc (Hons) Mathematics with Finance with Sandwich Placement		
Hierarchy of Awards:	Bachelor of Science with Honours Mathematics with Finance with Sandwich Placement Bachelor of Science with Honours Mathematics with Finance Bachelor of Science Mathematics with Finance with Sandwich Placement Bachelor of Science Mathematics with Finance with Sandwich Placement Diploma of Higher Education Mathematics with Finance Certificate of Higher Education Mathematics with Finance University Statement of Credit University Statement of Credit		
Language of Study:	English		
Date of DAG approval:	16/Apr/2018		
Last Review:	2017/8		
Course Specification valid from:	2017/8		
Course Specification valid to:	2023/4		

Academic Staff

Course Leader:	Dr Liam Naughton
Head of Department:	Mrs Ruth Fairclough

Course Information

Location of Delivery:	University of Wolverhampton
Category of Partnership:	Not delivered in partnership
Teaching Institution:	University of Wolverhampton
Open / Closed Course:	This course is open to all suitably qualified candidates.

Entry Requirements:

Entry requirements are subject to regular review. The entry requirements applicable to a particular academic year will be published on the University website (and externally as appropriate e.g. UCAS

- A Level minimum of A*A or BCC including Maths at grade B
- Applicants will normally be expected to hold GCSE English and Maths at grade C/4 or equivalent
- If you've got other qualifications or relevant experience, please contact The Gateway for further advice before applying. Level 3, A level equivalent mathematics is needed as an entry requirement for this course.
- International entry requirements and application guidance can be found here
- Successful completion of the International Foundation Year in Science and Engineering guarantees entry on to this course

Other Requirements

Students must have studied a minimum of two years post GCSE level. However, it is expected that some applicants will be mature students with work experience, who wish to further their career development. These applicants will be processed through standard procedures, which may involve an interview as part of the process. Please see http://wlv.ac.uk/mature for further information.

Those who do not meet the entry requirements may be offered an alternative course.

Distinctive Features of the Course:

The B.Sc. (Hons) Mathematics with Finance is a programme targeted at producing graduates for the financial sector with rigorous content and industry standard software embedded at all levels. The course contains content streams in applied mathematics and statistics which are extended through each year up until graduations. There is a strong emphasis on applications since it is these applications that serve to embed employability skills in the curriculum.

There is also a strong emphasis on mathematical modelling. You will study modules including mechanics, mathematical modelling, numerical analysis and differential equations as you progress through your studies. At each stage Matlab is embedded in these modules to equip you with the skills to secure graduate employment in this area. You will also be given modules in statistical modelling at each stage. Again there is an emphasis on industry standard software systems and you will learn to use SPSS and R during each year.

Each year you will take specialist modules in financial subject areas which are delivered by the University of Wolverhampton Business School. These modules have been specially chosen to complement the mathematics modules you will study, and they will provide you with knowledge and understanding of financial theories. Financial modules will range from Finance Principles to Quantitative Analysis for Economics and Finance, from Financial Reporting to Global Financial Management, to allow you to develop your own understandings of global citizenship applicable to local, national and international communities.

You will also have the opportunity to develop your programming skills using Python at various points in your studies.

There are optional modules which allow you to specialise in your chosen area including operational research, financial mathematics, fluid dynamics and Galois theory.

So, whether you aspire to further study at Ph.D. level or to enter the workplace and hit the ground running, this course has what is required. You will have the tion to complete a one year placement between year 2 and year 3, and many mathematics students have taken advantage of this option.

Whatever your chosen subject area this course has something to offer you. The mathematics group at the University of Wolverhampton has consistently achieved high scores in the national student survey and our student support is second to none.

Educational Aims of the Course:

This course aims to develop your mathematical and financial expertise in three key areas

- Applied Mathematics

  Through modules such as mechanics, mathematical modelling, operational research and fluid dynamics you will acquire the skills to apply the principles of pure mathematics to problems from the real world.

- Statistics

  You will study probability and statistics in each year of this program and over time you will develop the theoretical expertise and practical programming experience to apply what you have learned to problems involving large data sets from a variety of backgrounds.

- Finance

  You will study Economics for Accounting and Finance, Quantitative Analysis for Economics and Finance, Financial Reporting, Finance Principles, Global Financial Management as well as Mathematical Finance & Data Analysis. These modules will cover aspects of financial theory and practice, as well as reporting, risk and international financial environment that will give skills that are relevant in the fields of financial services.

Intakes:

September

Major Source of Funding:

Office for Students (OFS)

Tuition Fees:

Tuition fees are reviewed on an annual basis. The fees applicable to a particular academic year will be published on the University website.

Year	Status	Mode	Amount
2020/1	H	Full Time / Sandwich	£9250.00
2020/1	Overseas	Full Time / Sandwich	£12250.00
2021/2	H	Full Time / Sandwich	£9250.00
2021/2	Overseas	Full Time / Sandwich	£12950.00

PSRB:

MM009K23UV (Sandwich)

Professional Accreditation Body:
Institute of Mathematics and its Applications (IMA)

Accrediting Body:
Institute of Mathematics and its Applications (IMA)

Accreditation Statement:
"This programme will meet the educational requirements of the Chartered Mathematician designation, awarded by the Institute of Mathematics and its Applications, when it is followed by subsequent training and experience in employment to obtain equivalent competences to those specified by the Quality Assurance Agency (QAA) for taught masters degrees."

Approved	Start	Expected End	Renewal
27/Aug/2019	01/Sep/2019	31/Aug/2025	31/Aug/2025

Course Structure:

September (Sandwich)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Year 1

Module	Title	Credits	Period	Type
4MM018	Core Techniques in Mathematics	20	SEM1	Core
4MM023	Mathematics Foundations	20	SEM1	Core
4AC009	Economics for Accounting and Finance	20	SEM1	Core
4MM027	Calculus and Linear Algebra	20	SEM2	Core
4FC001	Quantitative Analysis for Economics and Finance	20	SEM2	Core
4MM025	Probability & Statistics	20	SEM2	Core

September (Sandwich)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Year 2

Module	Title	Credits	Period	Type
5MM022	Group Theory & Differential Equations	20	SEM1	Core
5MM025	Statistical Modelling & Survey Design	20	SEM1	Core
5AC006	Financial Reporting	20	SEM1	Core
5MM023	Mathematical Modelling	20	SEM2	Core
5MM021	Further Techniques in Operational Research	20	SEM2	Core
5FC001	Introduction to Financial Economics	20	SEM2	Core

September (Sandwich)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Year 3

Module	Title	Credits	Period	Type
5MM006	Industrial Placement	40	CRYRA	Core

September (Sandwich)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Year 4

Module	Title	Credits	Period	Type
6MM032	Professional Project Management and Practice	20	SEM1	Core
6FC004	Finance for SMEs	20	SEM1	Core
6MM024	Mathematics Project	20	SEM2	Core
6MM023	Advanced Techniques in Operational Research	20	SEM2	Core

For this option group you must choose a minimum of 20 credits and a maximum of 20 credits

Module	Title	Credits	Period	Type
6MM027	Rings, Fields & Galois Theory	20	SEM2	
6MM028	Partial Differential Equations & Fluid Dynamics	20	SEM2	

For this option group you must choose a minimum of 20 credits and a maximum of 20 credits

Module	Title	Credits	Period	Type
6MM026	Financial Mathematics and Data Analysis	20	SEM1	
6MM029	Multivariate Statistics with Cybermetrics	20	SEM1	

Please note: Optional modules might not run every year, the course team will decide on an annual basis which options will be running, based on student demand and academic factors, to create the best learning experience.

Learning, Teaching and Assessment

Academic Regulations Exemption:

None.

Reference Points:

Quality Code - [Part A: Setting and Maintaining Academic Standards.](#) Including :

[Qualifications Frameworks](#)

[Characteristics Statements](#)

[Credit Frameworks](#)

[Subject Benchmark Statements](#)

Quality Code - [Part B: Assuring and Enhancing Academic Quality](#)

[University Policies and Regulations](#)

Equality Act (2010)

Learning Outcomes:

CertHE Course Learning Outcome 1 (CHECLO1)

Demonstrate knowledge of the underlying concepts and principles associated with your area(s) of study, and an ability to evaluate and interpret these within the context of that area of study.

CertHE Course Learning Outcome 2 (CHECLO2)

Demonstrate an ability to present, evaluate and interpret qualitative and quantitative data, in order to develop lines of argument and make sound judgements in accordance with basic theories and concepts of your subject(s) of study.

CertHE Course Learning Outcome 3 (CHECLO3)

Evaluate the appropriateness of different approaches to solving problems related to your area(s) of study and/or work.

CertHE Course Learning Outcome 4 (CHECLO4)

Communicate the results of your study/work accurately and reliably, and with structured and coherent arguments.

CertHE Course Learning Outcome 5 (CHECLO5)

Demonstrate the qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility.

DipHE Course Learning Outcome 1 (DHECLO1)

Demonstrate knowledge and critical understanding of the well-established principles of your area(s) of study, and of the way in which those principles have developed with an understanding of the limits of your knowledge, and how this influences analyses and interpretations based on that knowledge.

DipHE Course Learning Outcome 2 (DHECLO2)

Demonstrate the ability to apply underlying concepts and principles outside the context in which they were first studied, including, where appropriate, the application of those principles in an employment context.

DipHE Course Learning Outcome 3 (DHECLO3)

Demonstrate knowledge of the main methods of enquiry in the subject(s) relevant to the named award, and ability to evaluate critically the appropriateness of different approaches to solving problems in the field of study.

DipHE Course Learning Outcome 4 (DHECLO4)

Use a range of established techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis.

DipHE Course Learning Outcome 5 (DHECLO5)

Effectively communicate information, arguments and analysis in a variety of forms to specialist and non-specialist audiences, and deploy key techniques of the discipline effectively.

Ordinary Degree Course Learning Outcome 1 (ORDCLO1)

Apply a full understanding, knowledge and experience of the principles of mathematics and finance (e.g. statistics, operation research, financial management) to the analysis, design and construction of solutions to problems.

Ordinary Degree Course Learning Outcome 2 (ORDCLO2)

Demonstrate and apply knowledge of mathematics with reference to finance and business.

Ordinary Degree Course Learning Outcome 3 (ORDCLO3)

Apply appropriate theory, tools and techniques to the design and synthesis of solutions to problems in the domain of financial mathematics.

Ordinary Degree Course Learning Outcome 4 (ORDCLO4)

Demonstrate competence in the essential concepts, principles, theories and practices enabling graduate employment in finance (e.g. financial reporting, risk and governance).

Ordinary Degree Course Learning Outcome 5 (ORDCLO5)

Demonstrate a range of transferable skills in: problem solving; communication; project management; working individually and in teams; self-management.

Honours Degree Course Learning Outcome 1 (DEGCLO1)

Apply a full understanding, knowledge and experience of the principles of mathematics and finance (e.g. statistics, operation research, financial management) to the analysis, design and construction of solutions to problems.

Honours Degree Course Learning Outcome 2 (DEGCLO2)

Demonstrate and apply knowledge of mathematics with reference to finance and business.

Honours Degree Course Learning Outcome 3 (DEGCLO3)

Apply appropriate theory, tools and techniques to the design and synthesis of solutions to problems in the domain of financial mathematics.

Honours Degree Course Learning Outcome 4 (DEGCLO4)

Demonstrate competence in the essential concepts, principles, theories and practices enabling graduate employment in finance (e.g. financial reporting, risk and governance).

Honours Degree Course Learning Outcome 5 (DEGCLO5)

Demonstrate a range of social, legal, ethical, professional and project management skills required for continuing professional development in the mathematical sciences within a world-wide financial context.

Honours Degree Course Learning Outcome 6 (DEGCLO6)

The ability to gather, evaluate and reflect on information from relevant sources and solutions to problems in the domains of mathematics and finance.

Overview of Assessment:

Module	Title	Course Learning Outcomes
4AC009	Economics for Accounting and Finance	CHECLO3, CHECLO4
4FC001	Quantitative Analysis for Economics and Finance	CHECLO2, CHECLO5
4MM018	Core Techniques in Mathematics	CHECLO1, CHECLO2
4MM023	Mathematics Foundations	CHECLO1, CHECLO5
4MM025	Probability & Statistics	CHECLO2, CHECLO5
4MM027	Calculus and Linear Algebra	CHECLO3, CHECLO4
5AC006	Financial Reporting	DHECLO1, DHECLO2, DHECLO6
5FC001	Introduction to Financial Economics	DHECLO4, DHECLO5
5MM006	Industrial Placement	DHECLO1, DHECLO2, DHECLO3, DHECLO4, DHECLO5, DHECLO6
5MM021	Further Techniques in Operational Research	DHECLO2, DHECLO3
5MM022	Group Theory & Differential Equations	DHECLO1, DHECLO3
5MM023	Mathematical Modelling	DHECLO1, DHECLO2, DHECLO6
5MM025	Statistical Modelling & Survey Design	DHECLO4, DHECLO5, DHECLO6
6FC004	Finance for SMEs	DEGCLO1, DEGCLO2, DEGCLO4, ORDCLO1, ORDCLO2, ORDCLO4
6MM023	Advanced Techniques in Operational Research	DEGCLO1, DEGCLO4, DEGCLO6, ORDCLO1, ORDCLO4
6MM024	Mathematics Project	DEGCLO1, DEGCLO4, DEGCLO6, ORDCLO1, ORDCLO4
6MM026	Financial Mathematics and Data Analysis	DEGCLO1, DEGCLO3, DEGCLO4, ORDCLO1, ORDCLO3, ORDCLO4
6MM027	Rings, Fields & Galois Theory	DEGCLO1, DEGCLO2, DEGCLO4, ORDCLO1, ORDCLO2, ORDCLO4
6MM028	Partial Differential Equations & Fluid Dynamics	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6MM029	Multivariate Statistics with Cybermetrics	DEGCLO1, DEGCLO2, DEGCLO3
6MM032	Professional Project Management and Practice	DEGCLO1, DEGCLO4, DEGCLO5, ORDCLO1, ORDCLO4, ORDCLO5

Teaching, Learning and Assessment:

The learning activities on your course will develop distinctive graduate attributes that will make you stand out and enhance your employability. These skills will be embedded into the curriculum throughout your course.

Examples include:

All Mathematics graduates will surely be users of advanced technologies. However, on your course you will develop your skills to encompass literacy more fully such as learning how to find information and how to take best advantage of digital resources and the Internet to make you effective in the Information Age.

Assessments: Formative assessments provide feedback and are not used in the grading process. Their purpose is to provide both tutors and students with a gauge of progress. Summative assessments are used in the grading process. Most summative assessments (with a notable exception of exams) also have a formative aspect to them in that tutors provide written feedback on the work. Students should use this feedback to improve their performance on future assessments. Feedback on an assessment on one module may help with assessments on other modules. Assessment methods are closely linked to the learning and teaching approaches used. Below are examples of the assessment methods that you may encounter.

Assignments – task based and report based assignments. Coursework frequently requires the writing of reports documenting the development of solutions. It is frequent practice to ask students to reflect on their learning experience as part of the coursework.

Case studies – based on realistic scenarios. Analysis, application and evaluation skills are developed via case studies as appropriate for the topic areas.

Practical exercises – tutorials and workshop sessions. These aid understanding and application of knowledge using a variety of IT tools within practical settings in workshops as well as assessing depth and breadth of understanding and application of subject knowledge. Practical exercises are the primary mechanisms for assessing analysis and evaluation. The tasks undertaken involve well-defined problems with varied level of complexity. Some practical exercise may involve interactive learning tools that are able to provide formative feedback.

Portfolios / e-portfolios – contain samples of work demonstrating what the student has accomplished. This is a good way to assess learning and development which is illustrated by multiple examples of work, opportunities for self-assessment and reflection chartering over a period of time. Tasks set relate to outcomes being assessed thus documenting evidence of development towards mastering the identified outcomes and skills. Enhances the assessment process by demonstrating a range of skills and understandings of the subject area by the student. Some portfolios are sometimes called Learning Journals.

Formal presentations - you may be required to present your work to a group of tutors or to the rest of the class. This may be a demonstration of practical work or something you developed or built or may present the results of a study. These are an important way of assessing your communication skills.

Examinations and Time-Constrained Assessments (tests) - may follow a traditional format or on-line alternatives. They are used to ensure breadth of knowledge has been acquired. TCA and examinations, some of which are case study based, emphasise application of knowledge and skills.

Group Project Work - where group work is assessed, mechanisms are used to allow individual contributions to be reflected in the grading as appropriate e.g. peer assessment of individual group members, individual reflection on the process and the product.

Peer-group assessment – using student feedback, particularly in group assessments to identify each student's contribution to the work.

Individual Project Work - This type of work is supported by either regular meetings with a named project supervisor or through seminars.

Work-based assessments – used to assess the student's work-based modules and enable feedback from work placement organisations. These are usually used for students who are industry-based and doing their course part-time or students doing a placement.

Assessments will also focus on skills such as team working, time-management and developing Continuing Professional Development (CPD) awareness, as well as discipline-specific skills related to the analysis, design, development, implementation, testing and evaluation of systems. Typical tasks include: production of technical documentation, reports for differing target audiences, presentations, demonstrations and viva, allowing assessment of the breadth and depth of knowledge, analysis and synthesis, communication, and

evaluation within the subject area.

Assessment Methods:

At the University of Wolverhampton, a variety of modes of assessment will be used to support and test your learning and progress and to help you develop capabilities that are valued beyond your University studies and into your working life. Your course may include a variety of assessment activities:

Written examinations (including online examinations, open and closed book examinations and quizzes) Coursework (for example, essays, reports, portfolios, project proposals and briefs, CVs, poster presentation) Practical (for example, oral and video presentations, laboratory work, performances, practical skills assessment)

In the final year of your undergraduate degree, and at the end of your postgraduate degree, you are likely to be expected to write an extended piece of work or research, such as a dissertation or a practice-based piece of research.

Student Support:

General University support:

[University Learning Centres](#) are the key source of academic information for students. Learning Centres provide physical library resources (books, journal, DVDs etc.) and offer a range of study areas to allow students to study in the environment that suit them best: Social areas, quiet and silent areas. Learning Centres also provide access to wide range of online information sources, including eBooks, e-Journals and subject databases.

Learning Centres also provide students with academic skills support via the [Skills for Learning programme](#). Students on campus can attend workshops or ask for one-to-one help on a range of skills such as academic writing and referencing. Students can access a range of online skills material at: www.wlv.ac.uk/lib/skills

The [University Student Support website](#) offers advice on a variety of matters (careers, counselling, student union advice, etc.) Students can also access these services by booking appointment with the SU, careers, counselling services, etc.

Course Specific Support

At the start of each year of your course you will be assigned a Personal Tutor who will guide you through the induction process and provide support and academic counselling throughout the year on an appointment basis. They should be able to offer you advice and guidance to help you liaise with other staff and support facilities in the School and University. You should meet your Personal Tutor at least 3 times a year, which must include meetings that you are invited to at critical points in your course.

The Student Office provides academic counselling and will be accessible throughout the week on a drop-in or appointment basis to discuss timetables, requests for extensions, requests for extenuating circumstances, general concerns about study and student life and general programme planning. They will act as a first point of contact in relation to leave of absence (including returning after leave), withdrawal, transferring to another course (internal and external) and changes to mode of attendance. Your Course Leader will be available thereafter for meetings by appointment to discuss leave of absence, withdrawal, transferring to another course (internal and external), changes to mode of attendance, returning after leave of absence and direct entrants.

Subject support:

Tutorials, workshops, seminars and meetings - provide the primary opportunities for students to interact with staff on topics relating to modules. All modules provide at least one of these forms of face-to-face support.

Formative feedback - tutors provide personalised written feedback on most summative assessments. The

mechanism for feedback from purely formative tasks varies between assessments, but will always be provided in some form. Online formative tasks often provide feedback straight away. On occasions tutors may provide generalised verbal feedback to the whole class on points relating to an assessment

Assessment and subject-based surgeries provide additional student support for subjects that students

often need extra help with. They are often concentrated around the times when assessments take place. Revision sessions are provided for many modules that have exam-like tests and enable you to interact with tutors to review parts of the course. Mock exams and tests may provide opportunities to experience an examination environment before the final summative test and give you feedback on your understanding.

Mathematics support is also provided by the drop-in service at the Mathematics Support Centre (located in the Harrison Learning Centre at City Campus), open three days a week during term-time. This support is provided by lecturers from the Mathematics team and by postgraduate Mathematics students.

Employability in the Curriculum:

Throughout your course you will build up your professional and employability skills and learn to apply the knowledge you have acquired in an enterprising way. You will constantly nurture your own intellectual curiosity. The tools, methodologies and techniques that you will learn have been carefully selected to prepare you with the skills that employers demand and the opportunities for work based learning and placements will allow you to gain the vital experience that they often expect.

You will learn how to undertake mathematical and statistical analysis using industry standard software including Matlab, R, SPSS and Python.

In addition to this, both the bronze and silver University of Wolverhampton Enterprise and Employability Awards are embedded as a compulsory component of your studies during first year (Level 4). These awards are delivered in collaboration with the University Careers Enterprise Unit. The content of these awards will be reflected upon again during compulsory Professional Project Management and Practice module during third year (Level 6).