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):	SE057H01UV	University of Wolverhampton	Full-time	3 Years
UCAS Code:				
Hierarchy of Awards:	Bachelor of Science with Honours Mathematics with Secondary Education (QTS) Bachelor of Science Mathematics with Secondary Education (QTS) Bachelor of Science Mathematics with Secondary Education Diploma of Higher Education Mathematics Certificate of Higher Education Mathematics University Statement of Credit University Statement of Credit			
Language of Study:	English			
Date of DAG approval:				
Last Review:	2018/9			
Course Specification valid from:	2013/4			
Course Specification valid to:	2024/5			

Academic Staff

Course Leader:	Mr Pardeep Sud
Head of Department:	Mrs Fay Glendenning 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

All applicants offered places will have;

1. Level 3 points score of 200 or a recognised alternative (Access to HE).
2. A-level mathematics Grade C, or above – or an equivalent.
3. GCSE mathematics and English at GCSE grade C or above (or recognised equivalent).
4. be required to attend an interview and undertake written subject-knowledge audits (mathematics and English).

All applicants must meet the NCTL requirements for Initial Teacher Training prior to beginning the route for recommendation of QTS.

Opt-in points

During year 1 a student can move, after negotiation with the personal tutors, to BSc (Hons) Mathematics with Secondary Education after meeting the above requirements.

The latest opt in date is the 1st September prior to the commencement of level 5 studies.

Distinctive Features of the Course:

The mathematics department includes staff who achieved a very high rating in the recent Research Assessment Exercise. The team includes a professor who is internationally recognised as a leading authority in the field of Statistical Cybermetrics.

We pride ourselves on the academic support and guidance given by our friendly and approachable staff. Students have shown their appreciation for this by the exceptionally high ratings they have given us in the National Student Survey.

Following the changing demand in recent mathematical research and applications, this course has evolved to provide a modern outlook on the subject and the important role it plays in the ever-changing world of commerce, industry and education. This course is designed for those who want to proceed in teaching and we have an excellent record of producing graduates who subsequently enter a career in teaching mathematics. The QTS has three interrelated elements with critical reflection at the core;

- Professional studies
- Subject specialist studies
- School based teaching practice.

Subject specialist studies are concerned with the knowledge, understanding and teaching of a particular subject. They focus on the key principles and key components of subject knowledge, the ability to apply principles and knowledge in the classroom, and the assessment of pupils' achievements.

Professional studies are concerned with teachers' professional values, roles, responsibilities and development,

together with whole school issues in education. Professional studies are taught through Subject studies as well as some whole cohort lectures, mixed group seminars, two days in schools working in mixed subject groups and a Primary school placement.

School based teaching experience involves developing competency in classroom teaching to the standards described in national legislation.

Educational Aims of the Course:

The BSc (Hons) in Mathematics with Secondary Education (QTS) course aims to develop your theoretical understanding of the mathematics. Emphasis is placed on pure mathematics, where you will enhance your techniques in algebra and calculus, by studying subjects such as group theory, geometry and mathematical modelling.

The course will teach you advanced problem-solving skills. These are skills which are highly sought after by many graduate employers. Mathematicians are warmly welcomed in industry, business and commerce for their analytical ability and logical approach to unravelling complex issues.

The course will provide a high standard of both mathematical subject content and pedagogical knowledge in addition to preparing students to take up a mathematics teaching post in the secondary sector. The course reflects the specific and precise quality frameworks established by the relevant national government agency, and complies fully with the relevant teaching standards framework.

The BSc (Hons) Mathematics with Secondary Education (QTS) course is specifically designed to ensure that those who are successful can be recommended to the relevant professional body for the award of Qualified Teacher Status (QTS) which is the recognised professional award required by all those who wish to teach in a maintained school.

The course will also be designed to develop secondary school teachers who will be:

- empathetic and committed to pupils' learning;
- reflective and reflexive;
- enthusiastic and innovative;
- open-minded and research-aware
- capable of engaging in practitioner research
- flexible and creative
- knowledgeable – both mathematically and pedagogically

The course will also help a student to develop as a teacher who understands the links between subject knowledge and the curriculum knowledge needed to teach his/her their subject. Equally we seek to develop teachers who understand the needs of the individual pupil and the school community in which they will work.

Intakes:

September

Major Source of Funding:

National College for Teaching & Leadership (NCTL)

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
2017/8	H	Full Time / Sandwich	£9250.00
2017/8	EU	Full Time / Sandwich	£9250.00
2017/8	Overseas	Full Time / Sandwich	£11475.00
2018/9	H	Full Time / Sandwich	£9250.00
2018/9	EU	Full Time / Sandwich	£9250.00
2018/9	Overseas	Full Time / Sandwich	£11700.00
2019/0	H	Full Time / Sandwich	£9250.00
2019/0	EU	Full Time / Sandwich	£9250.00
2019/0	Overseas	Full Time / Sandwich	£12000.00

PSRB:

None

Course Structure:

September (Full-Time)

Year 1

Full time and Sandwich Undergraduate Honours students normally study 120 credits per academic year; 60 credits semester 1 and 60 credits semester 2.

Module	Title	Credits	Period	Type
4MM018	Core Techniques in Mathematics	20	SEM1	Core
4MM023	Mathematics Foundations	20	SEM1	Core
4MM024	Mechanics	20	SEM1	Core
4MM027	Calculus and Linear Algebra	20	SEM2	Core
4MM025	Probability & Statistics	20	SEM2	Core

Linked Option Group Rule: Select a minimum of 20 credits and a maximum of 20 credits from the linked (*) groups.

*** For this option group you must choose a minimum of 0 credits and a maximum of 20 credits**

4MM020	Introduction to Operational Research	20	SEM2	

*** For this option group you must choose a minimum of 0 credits and a maximum of 20 credits**

4SE001	Subject-specific Pedagogy: Justifying the Specialist Subject	20	SEM2	

September (Full-Time)

Year 2

Full time and Sandwich Undergraduate Honours students normally study 120 credits per academic year; 60 credits semester 1 and 60 credits semester 2.

Module	Title	Credits	Period	Type
5MM002	Mathematical Analysis	20	SEM1	Core
5MM022	Group Theory & Differential Equations	20	SEM1	Core
5MM025	Statistical Modelling & Survey Design	20	SEM1	Core
5SE001	Subject-specific Pedagogy: Teaching the Specialist Subject	20	SEM2	Core
5SE002	Professional Development: The Beginning Teacher	20	SEM2	Core

Linked Option Group Rule: Select a minimum of 20 credits and a maximum of 20 credits from the linked (*) groups.

*** For this option group you must choose a minimum of 0 credits and a maximum of 20 credits**

If you have studied and passed 4SE001 in year 1, then you MUST select 5MM024.

5MM024	Discrete Mathematics & Numerical Analysis	20	SEM2	

*** For this option group you must choose a minimum of 0 credits and a maximum of 20 credits**

5SE003	Subject Specific Pedagogy 1a: Exploring the Teaching of the Specialist Subject	20	SEM2	

September (Full-Time)

Year 3

Full time and Sandwich Undergraduate Honours students normally study 120 credits per academic year; 60 credits semester 1 and 60 credits semester 2.

Module	Title	Credits	Period	Type
6MM014	Mathematics Project	20	SEM1	Core
6SE007	Professional Development: The Developing Teacher	40	SEM2	Core
6SE008	Subject-specific Pedagogy: Investigating Practice	20	SEM2	Core

For this option group you must choose a minimum of 40 credits and a maximum of 40 credits

6MM026	Financial Mathematics and Data Analysis	20	SEM1	
6MM030	Coding Theory & Cryptography	20	SEM1	
6MM029	Multivariate Statistics with Cybermetrics	20	SEM1	
6MM033	Advanced Calculus	20	SEM1	

Continuing students will follow the programme indicated below:

September (Full-Time)

Year 3

Full time and Sandwich Undergraduate Honours students normally study 120 credits per academic year; 60 credits semester 1 and 60 credits semester 2.

Module	Title	Credits	Period	Type
6MM003	Advanced Calculus	20	SEM1	Core
6MM011	Advanced Algebra	20	SEM1	Core
6MM014	Mathematics Project	20	SEM1	Core
6SE007	Professional Development: The Developing Teacher	40	SEM2	Core
6SE008	Subject-specific Pedagogy: Investigating Practice	20	SEM2	Core

Learning, Teaching and Assessment

Academic Regulations Exemption:

Section 1.2.3 - Exemption for delivery outside of the standard University Academic Calendar in order to enable students to complete the required hours for two placement modules;

5SE002 Professional Development: The Beginning Teacher

6SE007 Professional Development: The Developing Teacher.

Section 1.2.5 - Exemption to permit less than 33% differentiation between the main specialist degree with QTS and the ‘opt-in’ specialist degree with QTS.

Section 1.2.7 - Exemption to designate a taught module as the independent study contribution towards the ‘opt-in’ specialist degree with QTS;

6SE008 (Subject-specific Pedagogy: Investigating Practice).

Section 1.3.3 - Exemption to exclude the use of non-subject option modules at Level 4, Level 5 and Level 6 in order to meet QTS requirements.

Section 4.3.3 - Exemption in accordance with the standards required for Qualified Teacher Status (granted by the National College for Teaching and Leadership). There will be no automatic right to a second attempt for any failed practice components at the discretion of the Assessment Board (second attempts are permitted for theory components);

5SE002 Professional Development: The Beginning Teacher

6SE007 Professional Development: The Developing Teacher.

Section 4.4.3 - Exemption in accordance with the standards required for Qualified Teacher Status (granted by the National College for Teaching and Leadership). Compensation will not be permitted for any core modules which are a required in order to meet these standards;

4SE001 Subject-specific Pedagogy: Justifying the Specialist Subject

5SE001 Subject Specific Pedagogy: Teaching the Specialist Subject

5SE002 Professional Development: The Beginning Teacher

5SE003 Subject Specific Pedagogy: Exploring the Teaching of the Specialist Subject

6SE007 Professional Development: The Developing Teacher

6SE008 Subject-specific Pedagogy: Investigating Practice.

Effective date: September 2017.
APPROVED by AFRSC.

Reference Points:

Quality Code - Part A: Setting and Maintaining Academic Standards. Including :

Qualifications Frameworks

Characteristics Statements

Credit Frameworks

Subject Benchmark Statements – *Mathematics, Secondary Education*

Quality Code - Part B: Assuring and Enhancing Academic Quality

University Policies and Regulations

Equality Act (2010)

Learning Outcomes:

CertHE Course Learning Outcome 1 (CHECLO1)

Apply understanding of the principles of mathematics (e.g. core techniques, calculus and linear algebra, mathematical analysis, statistics) to the analysis, design and synthesis of solutions to problems which require mathematics or their resolution",,

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CertHE Course Learning Outcome 2 (CHECLO2)

Apply knowledge of mathematics with particular reference to its applications in other subject areas (e.g. mathematical education, analysis and modelling of business, engineering and scientific systems)",,

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CertHE Course Learning Outcome 3 (CHECLO3)

Demonstrate a range of transferable skills in: problem solving; communication; project management; working individually and in teams; self-management ; and the ability to gather, evaluate and reflect on information from relevant sources and solutions to problems in the domain of applications of mathematics",,

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CertHE Course Learning Outcome 4 (CHECLO4)

Demonstrate a range of social, legal, ethical and professional skills required for continuing professional development in the mathematics discipline within a world-wide context and show your understanding of the professional, ethical and legal responsibilities embodied in the role of the secondary school teacher",,

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CertHE Course Learning Outcome 5 (CHECLO5)

Evaluate the appropriateness of different approaches to secondary education

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DipHE Course Learning Outcome 1 (DHECLO1)

Apply a full understanding and knowledge of the principles of mathematics (e.g. core techniques, calculus and linear algebra, mathematical analysis, statistics) to the analysis, design and synthesis of solutions to problems which require mathematics or their resolution",,

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DipHE Course Learning Outcome 2 (DHECLO2)

Demonstrate and apply knowledge of mathematics with particular reference to its applications in other subject areas (e.g. mathematical education, analysis and modelling of business, engineering and scientific systems)",,

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DipHE Course Learning Outcome 3 (DHECLO3)

Demonstrate a range of transferable skills in: problem solving; communication; project management; working individually and in teams; self-management ; and the ability to gather, evaluate and reflect on information from relevant sources and solutions to problems in the domain of applications of mathematics",,

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DipHE Course Learning Outcome 4 (DHECLO4)

Demonstrate a range of social, legal, ethical and professional skills required for continuing professional development in the mathematics discipline within a world-wide context and show your understanding of the professional, ethical and legal responsibilities embodied in the role of the secondary school teacher",,

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DipHE Course Learning Outcome 5 (DHECLO5)

Demonstrate a range of social, legal, ethical and professional skills required for continuing professional development in the mathematics discipline within a world-wide context and show your understanding of the professional, ethical and legal responsibilities embodied in the role of the secondary school teacher

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Ordinary Degree Course Learning Outcome 1 (ORDCLO1)

Apply a full understanding, knowledge and experience of the principles of mathematics (e.g. core techniques, calculus and linear algebra, mathematical analysis, statistics) to the analysis, design and synthesis of solutions to problems which require mathematics or their resolution",,

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Ordinary Degree Course Learning Outcome 2 (ORDCLO2)

Demonstrate and apply knowledge of mathematics with particular reference to its applications in other subject areas (e.g. mathematical education, analysis and modelling of business, engineering and scientific systems)",,

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Ordinary Degree Course Learning Outcome 3 (ORDCLO3)

Demonstrate a range of transferable skills in: problem solving; communication; project management; working individually and in teams; self-management ; and the ability to gather, evaluate and reflect on information from relevant sources and solutions to problems in the domain of applications of mathematics",,

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Ordinary Degree Course Learning Outcome 4 (ORDCLO4)

Demonstrate a range of social, legal, ethical and professional skills required for continuing professional development in the mathematics discipline within a world-wide context and show your understanding of the professional, ethical and legal responsibilities embodied in the role of the secondary school teacher",,

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Ordinary Degree Course Learning Outcome 5 (ORDCLO5)

Act independently, exercise initiative and act as a positive role model in a range of complex teaching and learning situations.",,

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Honours Degree (QTS) Course Learning Outcome 1 (DEGCLO1)

Apply a full understanding, knowledge and experience of the principles of mathematics (e.g. core techniques, calculus and linear algebra, mathematical analysis, statistics) to the analysis, design and synthesis of solutions to problems which require mathematics or their resolution

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Honours Degree (QTS) Course Learning Outcome 2 (DEGCLO2)

Demonstrate mastery of the essential facts, concepts, principles, theories and practices enabling graduate employment in applications of Mathematics

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Honours Degree (QTS) Course Learning Outcome 3 (DEGCLO3)

Demonstrate a range of transferable skills in: problem solving; communication; project management; working individually and in teams; self-management ; and the ability to gather, evaluate and reflect on information from relevant sources and synthesize new knowledge and solutions to requirements in the domain of applications of Mathematics

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Honours Degree (QTS) Course Learning Outcome 4 (DEGCLO4)

Demonstrate a range of social, legal, ethical and professional skills required for continuing professional development in the Mathematics Discipline within a world-wide context and be able to disseminate this to a wider audience.

Honours Degree (QTS) Course Learning Outcome 5 (DEGCLO5)

Display the technical pedagogical and Mathematics competence to meet the standards required to be recommended for QTS and to teach Mathematics in secondary schools

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Honours Degree (QTS) Course Learning Outcome 6 (DEGCLO6)

Act independently, exercise initiative and act as a positive role model in a range of complex teaching and learning situations.

Overview of Assessment:

Module	Title	Course Learning Outcomes
4MM018	Core Techniques in Mathematics	CHECLO1, CHECLO2
4MM020	Introduction to Operational Research	CHECLO2, CHECLO4
4MM023	Mathematics Foundations	CHECLO1, CHECLO5
4MM024	Mechanics	CHECLO3, CHECLO4
4MM025	Probability & Statistics	CHECLO2, CHECLO5
4MM027	Calculus and Linear Algebra	CHECLO3, CHECLO4
4SE001	Subject-specific Pedagogy: Justifying the Specialist Subject	CHECLO2, CHECLO4
5MM002	Mathematical Analysis	DHECLO1, DHECLO2
5MM022	Group Theory & Differential Equations	DHECLO1, DHECLO3
5MM024	Discrete Mathematics & Numerical Analysis	DHECLO3
5MM025	Statistical Modelling & Survey Design	DHECLO4
5SE001	Subject-specific Pedagogy: Teaching the Specialist Subject	DHECLO5
5SE002	Professional Development: The Beginning Teacher	DHECLO5
5SE003	Subject Specific Pedagogy 1a: Exploring the Teaching of the Specialist Subject	DHECLO2, DHECLO5
6MM014	Mathematics Project	DEGCLO2, DEGCLO3, DEGCLO4, ORDCLO2, ORDCLO3, ORDCLO4
6MM026	Financial Mathematics and Data Analysis	DEGCLO4, ORDCLO3, ORDCLO4
6MM029	Multivariate Statistics with Cybermetrics	DEGCLO1, DEGCLO3, ORDCLO1, ORDCLO3
6MM030	Coding Theory & Cryptography	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2
6SE007	Professional Development: The Developing Teacher	DEGCLO5, DEGCLO6, ORDCLO4, ORDCLO5
6SE008	Subject-specific Pedagogy: Investigating Practice	DEGCLO4, DEGCLO5, DEGCLO6, 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;

Digitally Literacy: 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.

Global Citizenship: On each level of your course you will learn about the social aspects of mathematics, which will broaden your understanding of the way the world works and how communication and collaboration are evolving.

Knowledgeable and Enterprising: 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

Learning activities to support the learning outcomes will include;

- Reflective Journal Entries
- University Professional Studies Sessions
- University Specialist Subject Sessions
- Audit and action planning
- Construction of personal timeline of education
- Review of progress towards standards to Qualified Teacher Status
- Experience in school, including:
- Professional studies placement
- Primary School placement
- Two major teaching placements
- School-based activities and tasks
- Personalised opportunities for enhanced professional development
- Compiling teaching files
- Record of Professional Development
- Subject Specific Research Project
- Career Entry and Development Portfolio.

Learning and Teaching Methods:

This data indicates the proportion of time in each year of study that students can expect to engage in the following activities (expressed as a percentage for each level).

Level	Teaching	Independent	Placement
4	29	71	0
5	27	73	0
6	19	81	0

Assessment Methods:

This data indicates the proportion of summative assessment in each year of study that will derive from the following: (expressed as a percentage for each level).

Level	Written Exams	Practical Exams	Coursework
4	70	0	30
5	60	0	40
6	17	3	80

Student Support:

University provided support:

As well as providing general counselling support the University Counselling Service provides short courses on topics such as "Self Confidence", "Stress Management and Relaxation" and "Life Skills". They also provide study skills and academic support, providing short courses such as provide help in areas such as "Writing and Assignment Skills", "Exam Techniques", "Enhancing Professional Skills", "Personal Development Planning"

and "Making Choices for the Future".

University Learning Centres provide general academic skills support to all students. You can make an appointment with a study skills advisor for advice on areas such as academic writing, assignment planning, exam preparation, and time management. In addition, there is a regular timetable of drop-in and bookable workshops covering information and digital literacy skills, including academic referencing. FSE students are supported by a designated subject librarian who is available to support research and project work.

Course 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 Academic Programme Advisor (APA) 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. The APA 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.

Employability in the Curriculum:

Mathematics graduates may aspire to a wide variety of careers, such as accountancy, actuarial work, operational research, engineering, computing, cryptography and statistics. There is a current shortage of mathematics graduates nationally, so your graduate employment prospects upon successful completion of this course are very high. With the award of QTS you will be well-placed to pursue a career in mathematics teaching in secondary schools. Graduates may also have the opportunity to proceed to a masters course or research degree in Mathematics or Education.