UNIVERSITY OF BATH

Programme Specification

GENERAL INFORMATION	
Awarding Institution/Body	University of Bath
Teaching Institution	University of Bath
Validated/Franchised/Licensed (if appropriate)	N/A
Programme accredited by (including date of accreditation)	N/A
Programme approved by (including date & minute number of Senate)	10.9.14
Final award	Bachelor of Science with Honours
Programme title	BSc Economics and Mathematics (BEM)
UCAS code (if applicable)	
Subject Benchmark Statement	http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/Economics.pdf http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/MathsAnnex09.pdf
Intended level of completed programme (in line with FHEQ)	6
Duration of programme & mode of study	3 years full-time; or 4 years thick sandwich
Date of Specification preparation/revision	July 2014
Applicable to cohorts	All cohorts from September 2015

Synopsis and academic coherence of programme

Economics and Mathematics are very natural academic companions. Mathematics is an excellent language in which to develop economic theory in a rigorous and logical way. It also provides methodological and statistical tools for critical analysis of data; for its part, Economics offers many convenient examples with which to illustrate advances in mathematical theory and applications.

Combining the study of economics and mathematics provides students with appropriate and complementary skills for postgraduate Masters study in either discipline or for a wide range of careers. Some graduates wish to pursue careers as mathematical and/or applied economists, others will follow careers in mathematics/statistics, but a firm disciplinary base in economics and mathematics also provides the basis for career paths, for example, in finance, accountancy, business and management consultancy. Students benefit from the many and well-established links with the financial sector, industry, government and international organisations that have been developed by both departments through their placement schemes and research activities.

The programme is taught over three years, with the option of an additional year on

placement (Year 3 of 4).

The programme has been designed around a number of themes that combine to meet the aims and learning outcomes of the programme. These themes are intended to be consistent with the subject specific skills of the Benchmark Statements in Economics and Mathematics, Statistics and Operational Research and focus on developing students' analytical, conceptual and quantitative skills in both economics and mathematics.

The programme will provide students with a secure understanding of the core elements of economics (microeconomic theory, macroeconomic theory, econometrics). Microeconomics and macroeconomics are compulsory in all three years whilst econometrics is compulsory in year 2 and optional in year 3. The foundations for the mathematical component of the programme are laid in year 1 where students take compulsory units in Analysis, Algebra, Probability and Statistics. This gives students the necessary broad base from which they can pursue two of these pathways in year 2, combining: Statistics and Probability, Algebra and Statistics, Analysis and Statistics, Algebra and Probability, Algebra and Analysis, or Analysis and Probability. Students can continue to deepen and specialise in one or other or both of these selected areas in their final year (from MA level 3 and 4 options lists), or pick up one of the year 2 streams not taken in year 2, or select other year 2 options in applied mathematics which open up additional choices in the final semester, thereby adding breadth to the student's programme.

The amount of student choice increases with progression through the programme. In terms of weightings, the first year is predominately mathematical, in order to lay the necessary mathematical foundations and permit sufficient range of choice in years 2/3 (year 1: Maths 42 credits, Economics 18 credits). In year 2 the emphasis is on developing core economics, building on and integrating mathematical skills laid in the first year (Maths 24 credits, Economics 36 credits). The final year requires a minimum of 24 credits from each of Economics and Maths, the balance being a matter of student choice.

As there is sufficient commonality between the Bachelor Economics and Maths (henceforth BEM) and single honours Economics there is flexibility to change programme from BEM to Economics during and at the end of the first year. It may also be possible to transfer from BEM into one of the degree programmes offered by the Department of Mathematical Sciences provided that a request is made before the end of the first semester of the first year.

Educational aims of the programme

Our primary aim is to develop in our students an understanding of the theories and tools of economics and mathematics that can be used to analyse contemporary problems and policy. The aims of the programme are to:

- introduce students to the major branches of mathematics and economics;
- enable students to apply mathematical and statistical methods to analyse and evaluate economic problems so that they can reach considered and appropriate conclusions, and can competently communicate the reasoning behind these conclusions;
- meet the needs of students with different aspirations within mathematics and economics;
- enable students to appreciate the coherence, logical structure, and broad applicability of mathematics;

- enable students to appreciate the different approaches, concepts and applications in economics;
- impart an awareness of the values of research and scholarship in mathematics and economics;
- accustom students to the use of designated software that is available within mathematics and economics;
- provide a thorough training in the intellectual skills and advanced techniques of modern economics and mathematics;
- develop the ability of students to abstract and generalize, to model various phenomena, and to interpret numerical and empirical data;
- enable students to develop the skills associated with problem solving, rigorous argument and communication;
- broaden and deepen the economic and mathematical background of students;
- prepare students to work in fields where specific and broadly based advanced knowledge in mathematics and economics is required;
- enable students to embark on research in some area of mathematical economics, economic theory or empirical/statistical economics.

Educational aims of the placement year (4 year thick sandwich programme only):

- give students an opportunity to apply their knowledge in practice and see how what they have learned fits into the workplace;
- prepare students for employment by gaining practical experience in the real world;
- enable the student to make informed decisions about the direction of their future career;
- give students the opportunity to build professional networks and secure contacts for the future.

Intended learning outcomes of the programme	
Knowledge & Understanding:	- Knowledge of core economic theory. I.e. microeconomics (decision and choice problems, production decisions, exchange of goods, market pricing, general equilibrium of an economy, principal-agent relationships, incentives, welfare notions) and macroeconomics (employment, national income, balance of payments, income distribution, inflation, growth, business cycles, money and finance). - Understanding of economic policy at microeconomic and macroeconomic levels. - Knowledge of computing techniques, and mathematical and statistical methods (esp. econometrics), along with exposure to economic, financial, and social data and econometric software. - Knowledge and understanding of, and ability to use mathematical methods and techniques, esp. calculus and linear algebra, constrained optimization and its application to allocating scarce resources, modelling of different decision-making processes, critical understanding of analytical methods and models, and how and when they can

	be applied.
	• An understanding of the importance of assumptions and awareness of where they are used and of possible consequences of their violation.
	• An understanding of the power of generalization and abstraction in developing mathematical and economic theories or methods to use in problem solving.
	• Knowledge and understanding of modelling (i.e. formulating problems in mathematical or statistical form using appropriate notation).
Intellectual Skills:	• **Abstraction**: students will have the ability to isolate essential features of complex systems, formulate problems mathematically and in symbolic form, so as to facilitate their analysis and solution.
	• **Logical reasoning**: students will be able to reason deductively and inductively. They will develop these skills by analyzing assumption-based models. This enhances graduates' problem-solving and decision-making ability.
	• Students will be able to structure and organize the world around them through key economic concepts and ideas, such as: opportunity cost, incentives, equilibrium, disequilibrium, stability, strategic behavior, expectations and surprises, marginal considerations, gains from trade and efficiency, dynamic systems. These concepts are present in most decision problems faced by economists.
Professional/Practical Skills:	• Students will be able to quantify economic effects using data, and will be able to organize and present data informatively.
	• Students will be able to frame economic and decision problems by focusing on what is essential.
	• Students will have strong numeracy skills developed by dealing with economic and financial data, which they can organize, manipulate, and interpret clearly.
	• Students will be able to design and conduct experimental and observational studies and analyse the data resulting from them.
	• Students will be able to formulate complex problems of optimization and interpret their solutions in the original context of the problems.
Transferable/Key Skills:	• Graduates will have the ability to learn independently, using a variety of media including books, academic journals, online resources, etc.
	• Graduates will be able to work independently with patience and persistence, pursuing the solution of a problem to its conclusion.
	• Students will acquire time management and organization skills, and will also learn to work as part of a team.

	• Graduates will be able to transfer knowledge from one context to another, to assess problems logically and to approach them analytically. • Students will acquire general IT skills (word processing, basic principles of programming). • Students will have good communication skills (i.e. contribute to discussions, write coherently, communicate results clearly and intuitively).

Intended learning outcomes of placement year (4 year thick sandwich programme only):

Transferable, work-related and employability skills:	• communications skills, e.g. business/commercial/industrial report-writing skills, oral and poster presentation skills • time management and the ability to prioritise effectively • self-motivation, independence/autonomy • adaptability • team working, interpersonal and networking skills • career planning, including occupational awareness and judgement, awareness of work-related personal values, interests and skills, application and selection process skills
Skills and competences specific to the role of mathematical economist:	• understanding that, in contrast to university problem sets, issues in the real world are often vaguely-defined and may not even have a possible solution • an appreciation of the importance of attention to detail. Whereas in examinations it is common to receive partial credit for correct working regardless of answer, in the workplace this is not the case; • an appreciation of the intricacies of dealing with real-world data. A full understanding of precisely how the data was generated and recorded is critical in order to be able to correctly deal with missing, erroneous and incoherent data entries. • an understanding of the limitations of analytical and statistical techniques or the conditions under which such techniques are appropriate.
Higher skills:	• critical thinking and analysis • problem solving • computational skills

	• project management skills
	• original thinking, innovation
	• enhanced self-knowledge
Changed personal attitude and behaviour:	• self-confidence, confidence in professional ability
	• enhanced intellectual maturity and judgement
	• enhanced levels of reflection, diplomacy, and understanding.

Structure and content of the programme

See Appendix

Details of work placements

On the four-year long thick sandwich programme, the third year is spent in a public, commercial or civil society organisation. The placement serves to enable our students to apply first-hand the analytical and disciplinary skills conveyed in the joint Economics and Mathematics programme through institutional practice, thereby further enhancing their *understanding* of economics and mathematics and the *professional* role of economists and mathematicians.

Through the placement, students have the opportunity to deepen their skills in applied economics, mathematics and statistics and gain insight into economic policymaking; they will enhance further their proficiency in IT, teamwork, communication, presentation, time keeping and personal organisation. The placement also provides an excellent opportunity to investigate and assess potential career options prior to graduation.

The Department of Economics works with the Faculty of HSS Placements Office in identifying and generating the network from which placements can be developed. BEM placements will be managed by the HSS Faculty Placements Office. Where necessary the HSS placements team will liaise with the Faculty of Science placements team both in finding and supporting suitable placements. The placement will be evaluated by a **pass/fail-assessment** consisting of a written report on the placement work (2,000 words), an assessment by the visiting placement tutor, and an assessment by the employer. All students prepare a poster presentation of their placement on return to the University at the beginning of their final year.

Details of support available to students

The Department provides a full programme of induction activities for Freshers which is carefully integrated with the offerings of the University and Students' Union. This provides both an orientation for academic life in the Department and several opportunities to meet fellow students and staff from Economics and also from Mathematical Sciences. This is backed up by an area on Moodle (the University's VLE) devoted to Freshers and the information they need to get settled in.

Students will be issued with a Student Handbook that contains detailed information about their academic programme of study, assessment and student support. They are able to access both the Economics and Maths Undergraduate zones on Moodle.

Students will be allocated a Personal Tutor in the Economics department who will work with a dedicated Director of Studies for BEM in addressing the particular academic needs and progress of joint honours students as well as matters of general welfare. Students on the programme will also be assigned a designated Course Tutor from Mathematical Sciences who will sit on the Department of Economics SSLC and who will guide them in their choices of optional modules and subject pathways in Mathematics. In particular, the course tutor will advise students on how different pathways and subject combinations (especially in Mathematics) may affect future placement and career opportunities, and will help students achieve a balanced choice of options across the two semesters of each academic year (especially in the final year which consists mostly of optional units). Also, as all other students affiliated with the Department of Mathematics, students on the BEM programme will be invited along to the Department of Mathematics presentations on optional units before being asked to make their unit choices.

University of Bath students are usually encouraged to stay in University halls of residence during their first year and will be supported in their transition into University life and study by Resident Tutors. These are postgraduate students or staff who live in the halls of residence and are responsible for the general welfare, health and safety and discipline of student residents.

Staff in these roles will be able to respond to many of the questions and concerns raised by their students. However, there is also a range of specialist student support services that will offer both information and advice to support these staff working with their students, as well as take referrals to work more directly with the students. Students can also self-refer to these services.

These services can provide information, advice and support in relation to accommodation, emotional difficulties, assessment of needs and provision of support relating to disability, student funding, general welfare, academic problems, student discipline and complaints, careers, international students, spiritual matters, part time work, security and personal safety. The Students' Union can also provide advocacy for students. More information about these services can be accessed via: http://www.bath.ac.uk/students/support/.

There are also Medical and Dental Centres, and a Chaplaincy on campus that are very experienced in meeting the needs of a student population, as well as a University nursery and vacation play scheme to provide childcare for older children during the school holidays.

Other Support for students on this programme will include:

- ➢ Study skills support (e.g. English Language tuition)
- ➢ Excellent library and IT facilities
- ➢ Sports and Arts facilities
- ➢ Proactive Students' Union

Admissions criteria (including arrangements for APL/APEL)

Candidates must be able to satisfy the general admissions requirements of the University of Bath and the Department of Economics. This will include:

> A-levels: Typical offer A*AA with A* required in A-level Maths.

> **Double Maths:** for applicants taking both A-level Maths and Further Maths a typical offer is A* in A-level Maths, A in A-level Further Maths and A in one further A-level subject. Economics is desirable but not essential.

> **AS Further Maths:** for applicants taking A-level Maths and AS Further Maths a typical offer is grade A* in A-level Maths, grades AA in two further A-level subjects and grade A in AS Further Maths plus at least 2/merit in one STEP/AEA Maths paper. Economics is desirable but not essential.

> **Single Maths**: for applicants taking A-level Maths, a typical offer is A* in Maths with As in each module, grades A* and A in two further A-level subjects plus at least 2/merit in one STEP/AEA Maths paper. Economics is desirable but not essential.

> International Baccalaureate: 39 points including 6 in higher level Maths (HLM) or 38 points with 7 in HLM.

> Applicants with other qualifications should contact the Admissions Office.

> Applicants whose first language is not English should normally also achieve an IELTS score of 7 with not less than 6.5 in each of the four components.

Summary of assessment and progression regulations

The rules for progression from one stage to another and grading of assessed work and examinations conform to the University's framework for assessment and assessment regulations (NFAAR), see http://www.bath.ac.uk/registry/nfa/nfaar.pdf
The year-long work placement on the thick sandwich programme will be evaluated by a pass/fail-assessment.
The designated alternative programme is either the BSc Economics 3 years (full-time) or the BSc Economics 4 years (thick sandwich).

Indicators of quality and standards

To assure continuing excellence in its quality and standards, the University of Bath has a quality management framework including:

1. A Quality Assurance Code of Practice, and associated regulations and policies :
   http://www.bath.ac.uk/quality/cop/statements.html

2. A learning, teaching and quality committee structure which monitors quality and standards and instigates action for enhancement. For further information:
   Governance:
   http://www.bath.ac.uk/quality/documents/QA03PSGuidQSGov.doc
   Review and Monitoring:
   http://www.bath.ac.uk/quality/documents/QA03PSGuidQSRevMon.doc

3. Staff development arrangements that assist staff in enhancing their own performance as educators, as researchers or as professional support services staff. Further information:

http://www.bath.ac.uk/quality/documents/QA03PSGuidQSASD.doc

Students are involved in many of these processes. The emphasis here is upon the *informed* student voice - engaging with students as academic citizens to ensure they have opportunities to take an active part in shaping their own learning.

http://www.bath.ac.uk/quality/documents/QA03PSGuidQSStuVoice.doc

A more detailed overview of the University's Quality Management framework is set out in this summary document: http://www.bath.ac.uk/quality/documents/approach-to-quality-management.pdf

The University's management of its academic standards and quality is subject to external institutional review by the Quality Assurance Agency on a six year cycle. In its 2013 Institutional Review, the QAA confirmed that the University met its expectations for the management of standards, the quality of learning opportunities, the enhancement of learning opportunities. The University was commended on its provision of information. Professional or industrial placements for a year or a semester are particularly supported at Bath by specialised staff and these arrangements are demonstrably effective in improving degree grade and employability within six months of graduation.

Sources of other information

http://www.bath.ac.uk/economics/
http://www.bath.ac.uk/study/ug/prospectus/subject/economics

……………………………………….. Dean/Head LPO   ………………………. Date

APPENDIX

Programme Structure

Programme code	
Programme title	BSc (Hons) Economics and Mathematics
Award type	Bachelor of Science with Honours
Award title	BACHELOR OF SCIENCE IN ECONOMICS AND MATHEMATICS
Mode of Attendance	Full-time or Thick Sandwich
Length	3 years (full-time); 4 years (thick sandwich)
State if coexistent M-level programme	
State any designated alternative programme(s)	**BSc Economics 3 years (full-time); 4 years (thick sandwich)**
Approving body and date of approval	Senate 10.9.14

Year 1									
Year 1 *(for implementation with effect from 2015/16)*									
Part	**Stage**	**Normal period of study for this Mode**	**Unit code**	**Unit title**	**Unit status**	**Credits**	**DPL status**	**Placement or Study Abroad status**	**Notes**
1	1	AY	MA10207	Analysis 1	Compulsory	12			
		S1	ES10001	Introductory Microeconomics	Compulsory	6			
			MA10211	Probability & Statistics 1A	Compulsory	6			
			MA10209	Algebra 1A	Compulsory	6			
			MA10230	Methods and Applications 1	Compulsory	6			
		S2	ES10002	Introductory Macroeconomics	Compulsory	6			
			ES10XXX	Mathematical Economics	Compulsory	6			
			MA10212	Probability & Statistics 1B	Compulsory	6			
			MA10210	Algebra 1B	Compulsory	6			

Part	Stage	Normal period of study for this Mode	Unit code	Unit title	Unit status	Credits	DPL status	Placement or Study Abroad status	Notes
Year 2 *(for implementation with effect from 2016/17)*								
2	2	AY	ES20069	Introduction to Econometrics	Compulsory	12			
		S1	ES20011	Intermediate Microeconomics 1	Compulsory	6			
			ES20013	Intermediate Macroeconomics 1	Compulsory	6			
				Select 2 units from the following:	Compulsory				
			MA20216	Algebra 2A		6			
			MA20218	Analysis 2A		6			
			MA20224	Probability 2A		6			
			MA20226	Statistics 2A		6			
		S2	ES20012	Intermediate Microeconomics 2	Compulsory	6			
			ES20014	Intermediate Macroeconomics 2	Compulsory	6			
				Select 2 units from the following:	Compulsory				
			MA20217	Algebra 2B		6			Prerequisite MA20216
			MA20219	Analysis 2B		6			Prerequisite MA20218
			MA20225	Probability 2B		6			Prerequisite MA20224
			MA20227	Statistics 2B		6			Prerequisite MA20226

Part	Stage	Normal period of study for this Mode	Unit code	Unit title	Unit status	Credits	DPL status	Placement or Study Abroad status	Notes
Year 3 (thick sandwich only) *(for implementation with effect from 2017/18)*								
2	3	AY	ES20024	Placement	Compulsory	60		Standard	This is not a taught unit, but a year-long individualised student placement in industry

						Year 3 (full-time); Year 4 (thick sandwich) *(for implementation with effect from 2017/18)*				

Important Notes:

- Students must take units totalling 60 credits for the year, normally 30 credits in each semester.

- Students must take at least 24 credits of ES (i.e. economics) units.

- Students must take at least 24 credits of MA (i.e. mathematics) units, of which a maximum of 12 credits can be at level 2. When choosing level 2 units, students may only pick those units they have not previously taken in Year 2. Furthermore, when opting for 12 credits at level 2, students can either choose *two* level 2 units in Semester 1 by selecting from list B1 below, or *one* level 2 unit in Semester 1 from list B1 followed by the associated level 2 unit in Semester 2 from list B2 below.

- Students can select MA units at level 4 but should consult the unit lecturer and be guided by appropriate prerequisites.

Part	Stage	Normal period of study for this Mode	Unit code	Unit title	Unit status	Credits	DPL status		Notes
3	3/4	S1	ES30026	Advanced Macroeconomics	Compulsory	6			
			Econ Block 1:		You must choose a minimum of 12 credits (and a maximum of 24 credits) from the union of Econ Block 1 and Econ Block 2 below. You can choose between 0 and 2 Units from Econ Block 1.				Stage 3 (4) for full-time (thick sandwich) programmes
			Year-long Econ units						
		AY	ES30029	Final Year Research Project		12			
		AY	ES30081	Financial Theory & Applications		12			
			Semester 1 Econ units						
		S1	ES30083	Health Economics		6			
		S1	ES30041	Economics of Work		6			
		S1	ES30027	Econometrics 1		6			
		S1	ES30031	Economics of Environmental Regulation		6			
		S1	ES30033	International Trade		6			
		S1	ES30035	Analytical Development Economics		6			
		S1	ES30039	Welfare Economics & Distributive Justice		6			
		S1	ES30037	Experimental, Behavioural. & Neuro Econ.		6			
		S1	ES30089	Economics of Banking		6			
		S1	ES30082	Economics of Education		6			
		S1	ES30038	Public Choice		6			

			Code	Title		Credits			Pre/Co-requisites
		S1	ES30092	Game Theory		6			New unit for 2014/15. Open to other Econ students, too.
			Maths Block 1: **List A1**		You must choose a minimum of 24 credits (and a maximum of 36 credits) from the union of Maths Block 1 and Maths Block 2 below. You must select between 2 & 3 units from the union of lists A1 and B1.				Pre/Co-requisites
		S1	MA30087	Optimisation Methods of Operational Research		6			MA10207 MA10210
		S1	MA30084	Generalised Linear Models		6			MA20227
		S1	MA30086	Medical Statistics		6			MA20227
		S1	MA40092	Classical Statistical Inference		6			MA20226
		S1	MA30125	Markov Processes & Applications		6			MA20225
		S1	MA30041	Metric Spaces		6			MA20219
		S1	MA40042	Measure Theory & Integration		6			MA20219
		S1	MA40043	Real & Abstract Analysis		6			MA20216 MA20218 MA30041 (co-req)
		S1	MA30039	Differential Geometry of Curves & Surfaces		6			MA20216 MA20219
		S1	MA30237	Group Theory		6			MA20217
		S1	MA40188	Algebraic Curves (O)		6			MA20217
		S1	MA40238	Number Theory (E)		6			MA20217
			Maths Block 1: **List B1**		You may choose up to 12 credits from the union of Lists B1 and B2 provided units were not taken in year 2.				
		S1	MA20222	Numerical Analysis		6			MA20216 MA20218
		S1	MA20220	Ordinary Differential Equations & Control		6			MA20216
		S1	MA20216	Algebra 2A		6			
		S1	MA20218	Analysis 2A		6			
		S1	MA20224	Probability 2A		6			
		S1	MA20226	Statistics 2A		6			
		S1	ZZ30001	Director of Studies approved unit		6			
		S2	ES30025	Advanced Microeconomics	Compulsory	6			

			Econ Block 2:		You must choose a minimum of 12 credits (and a maximum of 24 credits) from the union of Econ Block 1 and Econ Block 2 below. You can choose between 0 and 2 Units from Econ Block 1.				
		S2	ES30028	Econometrics 2		6			ES30027
		S2	ES30032	Environmental & Natural Resource Economics		6			
		S2	ES30046	Growth Theory		6			
		S2	ES30034	International Monetary Economics		6			
		S2	ES30093	Political Economy		6			New unit for 2014/15. Open to other Econ students, too.
		S2	ES30040	Economics of Incentives		6			
		S2	ES30044	Industrial Organisation		6			
		S2	ES30047	Development Finance		6			
		S2	MN30470	Investment and Trading		6			
			Maths Block 2: **List A2**		You must choose a minimum of 24 credits (and a maximum of 36 credits) from the union of Maths Block 1 and Maths Block 2 below. You must select between 2 & 3 units from the union of lists A2 and B2.				Pre/Co-requisites
		S2	MA30091	Applied Statistics		6			MA30084
		S2	MA40198	Applied Statistical Inference		6			MA20226
		S2	MA40090	Multivariate Data Analysis		6			MA20227
		S2	MA30085	Time Series		6			MA20227
		S2	MA40189	Topics In Bayesian Statistics		6			MA40092
		S2	MA30089	Stochastic Processes & Finance		6			MA30125
		S2	MA40239	Discrete Probability		6			MA30125
		S2	MA40058	Probability with Martingales		6			MA40042 or MA30089 (co-req)
		S2	MA30055	Introduction to Topology		6			MA30041
		S2	MA30056	Complex Analysis		6			MA20219
		S2	MA30231	Projective Geometry		6			MA20216
		S2	MA40037	Galois Theory (E)		6			MA30237
		S2	MA40054	Representation Theory of Finite Groups (O)		6			MA30237
		S2	MA40057	Functional Analysis		6			MA30041 & MA40043

		S2	MA40203	Theory of Partial Differential Equations		6		MA30041 & MA40043
		S2	MA30170	NUMERICAL SOLUTION OF PDES 1		6		MA20222
		S2	MA40050	NONLINEAR EQUATIONS & BIFURCATIONS		6		MA20222
		S2	MA30241	Communicating Maths		6		Note 1
			Maths Block 2: **List B2**		You may choose up to 12 credits from the union of Lists B1 and B2 provided units were not taken in year 2.			
		S2	MA20221	Modelling & Dynamical Systems		6		MA20220
		S2	MA20217	Algebra 2B		6		MA20216
		S2	MA20219	Analysis 2B		6		MA20218
		S2	MA20225	Probability 2B		6		MA20224
		S2	MA20227	Statistics 2B		6		MA20226
		S2	ZZ30004	Director of Studies approved unit		6		

Note 1: All students taking this unit will be required to have an up-to-date CRB check.

Assessment weightings and decision references		
Stage	**Weighting within programme %**	**NFAAR decisions reference** *See*: **http://www.bath.ac.uk/registry/nfa/index.htm**
Stage 1	**0**	**Main assessment: Appendix 11** **Supplementary assessment: Appendix 12**
Stage 2	**32**	**Main assessment: Appendix 19** **Supplementary assessment: Appendix 20**
Stage 3 (of thick sandwich only)	**0** **(placement)**	**Main assessment : Appendix 19** **Supplementary assessment : not available**
Stage 3 (of 3 year programme) Stage 4 (of thick sandwich programme)	**68**	**Main assessment: Appendix 27** **Supplementary assessment: Appendix 28**