



University of Plymouth International College

PROGRAMME SPECIFICATION

Mathematics and Statistics
University Foundation in Mathematics

FHEQ 3

Version	Current Version	2.19	August 2019
	Prior Version/s	1.19	May 2019
		1.17	March 2017
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		1.12	September 2012

PATHWAY/S

Pathway Type	Undergraduate		
Pathway Areas	Mathematics and Statistics		
Pathways/s	Mathematics	-	-
University UnitE Code/s	4743	-	-
College Navigate Code/s	L1MS	-	-
Pathway Provision	College: FHEQ Level/s	3	
	University: FHEQ Level/s	4, 5 and 6	
Awarding University	Plymouth University		
Awards by Pathway	Degree awards	FHEQ Award Level	
	BSc (Hons) Mathematics	6	
	BSc (Hons) Mathematics With Finance	6	
	BSc (Hons) Mathematics with Education	6	
	BSc (Hons) Mathematics with Statistics	6	
Subject Benchmark Statements	QAA: Mathematics, Statistics and Operational Research 1030 05/15		
College Status	Associate College		
College Location	Drake Circus		
University Location	Drake Circus		
University Faculty	School of Computing and Mathematics		
Rationale	<p>The partnership between the College and Plymouth University facilitates the acquisition of an undergraduate degree by international students who, because of their previous educational experience, are not normally able to gain direct access to the University's degree courses. The pathway has therefore been developed to satisfy important pedagogical issues:</p> <ol style="list-style-type: none"> To ensure that international students have a dedicated period of time, in a familial and safe setting, to adjust to and acquire the skills to prepare for further studies within a western learning environment. To satisfy the University's quality protocols, which in turn are directed by the QAA Subject Benchmark requirements, for articulation purposes. Facilitate access to a pathway leading to a University degree award. Widen access and participation in higher education in line with the University's internationalisation agenda. Commit to the provision of best practice customer service and student experience for international students and thus add value to the University's award winning student lifestyle. Support the integrity of the University's QAA commitment by adopting and adapting the University's quality regime to form the basis of a robust, quality driven academic provision and 		

	administrative systems and processes.	
	7. Assist in the diversification of the student body.	
Educational Aims	<p>The programme, University Foundation in Mathematics and Statistics, has been devised in accordance with Navitas UK general educational aims along with those formulated for the College, see CPR QS4, and the nominated outcomes desired by Plymouth University, School of Computing and Mathematics, to impart a high quality of education in the disciplines required.</p> <p>The educational aims of the programme are to:</p> <ol style="list-style-type: none"> 1. Prepare students, who would not normally be considered qualified, to an appropriate standard for entry into Plymouth University, School of Computing and Mathematics, at FHEQ Level 4 of the prescribed undergraduate degree schemes. 2. To endow each individual with an educational pathway that augments opportunities for professional employment and development in Mathematics and related subject areas at both a national and international level. 3. Develop in students a fundamental knowledge that can demonstrate an understanding of the skills and appropriate techniques applicable to Mathematics, so as to support their transfer into FHEQ Level 4 of the prescribed degree schemes. 4. Develop in students an appreciation and desire to learn based on competent intellectual and practical skills building to a set of transferable skills that will support them in all aspects of their onward academic studies/careers and assist informed decision making. 5. Ensure that students have attained the prescribed level of inter-disciplinary language competence described as Level B2 'Independent User' by the Council of Europe, see Common European Framework of Reference for languages: Learning, teaching assessment 2001, Council of Europe, CUP, Cambridge, p. 24, Table 1. Common Reference Levels: global scale. 6. Ensure that graduates have attained the prescribed level of inter-disciplinary language competence to a minimum pass mark of 50% in the ACL accredited module Interactive Learning Skills and Communication, and therein a minimum 6.0 IELTS equivalent. 	
PROGRAMME		
Title	University Foundation in Mathematics and Statistics	
FHEQ	3	
Credit Points	130	
Duration of Study	Two (2) semesters	
Weeks of Study	Twenty-six (26) weeks	
Mode of Study	Full-time	
Mode of Delivery	Face to Face	
Notional Hours	1,300	
Contact Hours	472	
Directed Study Hours	1028	
Self-directed Study Hours	-	
Delivery Model	Standard Delivery Model (SDM)	
Language of Delivery	Delivery	English
	Assessment	English
	Council of Europe	Common language reference level B2 Independent User
	ACL Accreditation	Interactive Learning Skills and Communication
Intended Learning Outcomes	Generic:	
	All modules have a set of Generic Learning Outcomes (LOs) attached to them, see relevant Definitive Module Documents (DMDs). These provide a basic set of core transferable skills that can be employed as a basis to further study and life-long learning. They are delivered using an interdisciplinary and progressive approach underpinned by the relevant Interactive Learning Skills and Communication (ILSC) module, to build these core skills within the context of subject-specific learning. Incorporated in these core skills are the key themes of relationship-management, time-management, professional communication, technological and numerical understanding and competency.	
	The Generic LOs for the programme are tabled below:	
	Key knowledge will be demonstrated by:	Key skills will be demonstrated by the ability to:
Personal organisation and time-management skills to achieve research goals and maintain solid performance levels.	Meet converging assessment deadlines – based on punctuality and organisation with reference to class, group and individual sessions within a dynamic and flexible learning environment with variable contact hours and forms of delivery.	
Understanding of the importance of attaining in-depth	Communicate clearly using appropriate nomenclature to	

	knowledge of terminology as used in a given topic area, as a basis to further study.	enhance meaning in all oral and written assessments with no recourse to collusion or plagiarism.	
	Understanding, knowledge and application of appropriate and effective methods of communication to meet formal assessment measures.	Present clearly, coherently and logically in a variety of oral and written formats using a variety of appropriate qualitative and quantitative tools and evidence bases.	
	Understanding and knowledge as to the development of the industry and/or scholarship in relation to a given topic under study.	Demonstrate an understanding of the current themes of a given topic, the academic and practical foundation on which they are based – demonstrated by a lack of plagiarism and need for collusion in both individual and group work.	
	Understanding of the rules applying to plagiarism and collusion.	Collate, summarise, reason and debate/argue effectively on a given topic with appropriate reference to another's work or ideas/concepts.	
	Ability to work as an individual, in a small team and in a larger group to effect data collation, discussion and presentation of evidence.	Meet and succeed in each of the varied assessments presented.	
	<p><u>Specific:</u> Module-based LOs are described as Specific LOs and combine to make up the Intended LOs of the programme/stage of study. Specific LOs for a module are fully expressed in the relevant DMD and Module Guide (MG).</p> <p><u>Intended:</u> Each programme/stage of study incorporates a set of Intended LOs to define the wider academic-based knowledge and skills acquisition. These key areas are described and tabled below:</p>		
A	Knowledge and Understanding		
	To obtain a knowledge and understanding:	Teaching/learning methods and strategies:	Assessment methods and strategies are tested via...
1	How to apply basic mathematical methods and rules	Acquisition of Intended LOs via a combination of small group lectures (listening, writing and reading); small group-based tutorial/coursework (oral, reading, listening and written presentation); and individual coursework (oral, and written presentation) and summative examination (reading and writing). In addition, learning outcomes, will be developed through group debates.	A.1 to A.13 – a combination of summative (closed-book) examinations and summative coursework along with written assignments, portfolios and in-course assessments/tests, computer-based coursework and tests, project reports, presentations and practicals.
2	The use of algebraic and graphical methods and logarithmic manipulation in problem solving		
3	The structure and functions of basic mathematical calculations		
4	The importance of coherent mathematical ideas		
5	How to apply and use basic mathematical notation		
6	How to construct clear, logical arguments inter alia demonstrating the difference between experimental evidence and proof, and between an implication and its converse		
7	Modelling and its importance to mathematical thinking		
8	How to manipulate elementary mathematical constructs		
9	The application of numerical techniques to the decision making process with an emphasis on statistical and sampling methods and the description of theories and models		
10	The purpose and processes of basic recording of data in order to carry out performance monitoring within the context of mathematics and adherence to regulatory standards		
11	The application of ICT as a fundamental tool for extracting, sourcing, describing and presenting data and information in a variety of relevant forms, and distributing data and information via a range of relevant channels and formats		
12	Demonstrate the techniques and forms of effective and clear communication expressed in a variety of academic and professional settings in accordance with Level B2 'Independent User' as		
		Ensuring all candidates acquire grounding in Plymouth University and associated end-user IT platforms for academic study.	
		The opportunity to interface regularly with noted platforms in College, Plymouth University library and independent environments to develop an understanding of the implications of the use of different e-learning for research.	
		The Programme Specification, DMDs, Module Guide, reading lists, lecturers and notes, and assessment regimes are available via the College e-	

		described by the Council of Europe, see benchmarking documentation of this document for reference.	learning portal for queries to be met.	
13		The role and the importance of the study of the history of scholarship as a basis to determining a full understanding, correct use of appropriate nomenclature and an appreciation of fundamental concepts associated with a subject area.	<p><i>Students are encouraged throughout the stage of study to undertake independent study both to supplement and consolidate what is being taught/learned and to broaden their individual knowledge and understanding of the subject.</i></p> <p><i>Feedback is given to all students on all work produced and, where appropriate, confirmed in individual appraisal events associated with modules and specifically ILSC. Additional interviews are made with the tutor and/or the College academic services to evaluate and discuss any emerging learning issues and therein candidates options.</i></p>	
B	Cognitive/Intellectual Skills			
	To obtain intellectual/cognitive skills with the ability to:	Teaching/learning methods and strategies	Assessment methods and strategies via...	
1	Make full use of library and College/University e-learning search (catalogue and bibliographic) resources.	Acquisition of B.1 and B.2 via topic specific small lab-based group lectures and the additional support and guidance provided via the provision of small peer-led tutorial group work in differing environments.	B.1 to B.5 – a combination of summative (closed-book) examinations and summative coursework along with written assignments, portfolios and in-course assessments/tests, computer-based coursework and tests, project reports, presentations and practicals.	
2	Apply basic research techniques to sourcing and selecting appropriate academic data and literature.	Ensuring all candidates acquire grounding in Plymouth University and associated end-user IT platforms for academic study.		
3	Integrate oral, written, listening, reading, non-verbal and diagrammatic skills to effect clear communication.	The opportunity to interface regularly with noted platforms in College, Plymouth University library and independent environments to develop an understanding of the implications of the use of different e-learning for research.		
4	Ability to analyse data and various modes of information using appropriate techniques.	Additional support is provided through the provision of small peer-led tutorial group work and of individual tutorial support; College module-specific subject specialists delivering modules; guest speakers (industry/topic specific); monitoring and appraisal by College academic management.		
5	Ability to begin to evaluate and start to apply, reasoned thinking and supportive evidence collation to conflicting sets of information and academic opinion.			
C	Practical Skills			
	To obtain practical skills with the ability to:	Teaching/learning methods and strategies	Assessment methods and strategies via...	
1	Employ key communication skills appropriate to undergraduate study, inclusive of written, oral, reading, speaking, numerical, graphical and diagrammatic manipulation and presentation of information.	Communication skills are central to all teaching, class/lab-based learning and self directed study; these are tested out throughout all assessment practices. Students are encouraged to explore and develop variety of communication skills, underpinned by the ILSC module.	Integrated themes used across the continuous assessment framework for the programme to test robust capability skills in a number of environments.	
2	Employ analytical skills and methodologies as a basis to further study.		A combination of summative (closed-book) examinations and summative coursework along with written assignments, portfolios and in-course assessments/tests, computer-based coursework and tests, project reports, presentations and practicals.	
3	Ability to begin to engage critically	Application of the central	Integrated themes used across the	

	with regard to mathematics and related subject areas.	mathematical themes through all core modules of the programme via examples and topics for assessment regimes.	continuous assessment framework for the programme to test robust copability skills in a number of environments.
D	Transferable Skills		
	To obtain transferable skills with the ability to:	Teaching/learning methods and strategies	Assessment methods and strategies via...
1	Select, read, digest, summarise and synthesise information material in a variety of forms, both qualitative and quantitative (text, numerical data and diagrammatic) and in an appropriate manner to identify and determine key facts/themes and relevancy.	Embedded in all aspects of delivery and assessment structures is the need to disseminate information presented in a variety of forms and modalities. Using a combination of all delivery and assessment styles (oral and written, group and individual) used within the programme to demonstrate competence in presentation, reports, long and short essays (to enhance summarisation techniques and limit collusion and plagiarism), timed-assignments (indicating knowledge, organisation, time management and clear communication ability), of the following: design a persuasive message from the audience's perspective; demonstrate effective presentation delivery skills in a variety of situations; leave effective voice-mail messages; write persuasive E-mails, memos letters; and write factual essays and reports in plain English. These skills are reflective of in-context reading, writing, oral and speaking skills and enhanced language acquisition.	A combination of summative (closed-book) examinations and summative coursework along with written assignments and in-course assessments, computer-based coursework, project reports, portfolios and presentations. Indicating an ability to effectively manage a complex and flexible timetable, combining a variety of delivery and assessment modes, some of which are conflicting in submission and style (oral/written and individual/small group, to demonstrate effective organisation, self-reliance and time-management skills.
2	Use and clearly communicate discursive, numerical, statistical and diagrammatic ideas, concepts, results and conclusions using appropriate technical and non-technical language and language style, structure and form.		
3	Apply basic research and referencing techniques to all aspects of study, information collation, information presentation and formulation of academic opinion.		
4	Embed the importance of self-study and reliance. This involves cultivating and developing a responsibility within each student to take cognizance for their own learning, initiative, effective time-management and self-discipline within the academic and professional environments.		
5	Begin to develop a very good conceptual understanding and evaluation of the main aspects of the cognate area and the wider context.	Benchmarking of skills with regard to IT software packages (Word, PowerPoint, Excel, Access), internet access, web-content management.	
Assessment Regulations	<p>Summary: The programme is compliant with both the generic assessment regulations of Navitas UK and those of the College, see CPR QS9.</p> <p>Each module within the programme/stage of study has an associated Module Outline that may be broadened into a Definitive Module Document (DMD) either of which will be provided to students at the beginning of their studies. These documents offer generic information on the Aims and Specific LOs of the subject/s under study, basic references and the attendance and notional contact requirements. They also include topics/subject areas of study and outlines of the assessment events.</p> <p>Each module has an associated textbook, as prescribed by the University's Module Outlines, and a specifically developed Module Guide (MG) which includes the types of assessment activities employed, teaching methods, resources, assessment criteria and expectations, contact details of the tutor/s, referencing (if applicable) and submission/completion requirements. Contained is also a detailed lecture-by-lecture schedule of subjects students can be expected to cover over the teaching period. This acts as a useful reference for study and revision purposes. All assessment is designed to reflect and measure both an individual's and a cohort's achievement against the Specific LOs of the module and Intended LOs of the programme.</p> <p>In-course written, reading, listening and oral assessment is built in to all modules through general interaction between tutors and students, student peer review and small group tutorials or individual tutorials/appraisals. Modes of assessment include essay/report writing, oral presentation (group or individual, and poster), portfolio, and e-based, in-class or take home exercises/tests.</p> <p>All written assessments must follow certain criteria in style and submission as noted in the relevant Module Guides and Student Guide. This form of assessment is considered fundamental to a student's ability to communicate ideas and evidence with clarity, relevance and logic in a planned and</p>		

organised manner. Plain writing style, syntax and grammar are core skills that can be enhanced to support the maturing of individual students' composition and thus academic and transferable proficiency.

Oral presentations, whether part of formal or informal assessment practice, are encouraged within all modules as they promote, among others, transferable skills and can identify those students who may be plagiarising material. It is advised, however, that they should not make up more than 60% of the final module mark unless as part of the learning rational. Oral group presentations should ideally contain no more than five (5) students, unless specific reasoning is applied. Each member, irrespective of their role, should be awarded the same mark unless where obvious differentiation arises, for management of this process see CPR QS9. This form of expression should not be allocated more than fifty (50) minutes per group, with less than a 30% weighting. Time limits must be upheld by tutors so as to ensure all students have the same opportunity to perform. Furthermore, tutors ought to notify students as to the materials available to them before preparation takes place.

Final summative examination normally adheres to closed-book, invigilated, timed conditions and takes place during allocated exam periods of a programme. It is utilised as a key measure of quality in teaching standards and provides a basis to aspects of delivery and environment which takes place at the conclusion of a semester by College academic services, see CPR QS9. Marks indicated in the relevant DMDs cannot be referred. Only in extenuating circumstances, sickness, personal tragedy or in the possibility of a clerical error, will deferral take place, see CPR QS9.

Formal assessment modalities (coursework and examination, respectively), combine to produce the following weightings applied to any given module:

Coursework	Examination
100%	0%
70%	30%
60%	40%
50%	50%
40%	60%
30%	70%
0%	100%

Successful completion of a module is based on attaining the required overall pass grade prescribed. All students must achieve a grade D* in the Interactive Learning Skills and Communication (see DMD). The assessment mode for a given module is based on the desired Specific LOs, their expressions can be found in the relevant DMD. Students must be briefed at the beginning of each module as to which weightings are in use. They should also be clearly advised as to the marking criteria and, hence, the achievement requirements for each grade cluster.

Where a student has a special need or disability, appropriate steps must be taken by the College, academic staff and/or internal/external invigilators to ensure that the need is recognised and a justified outcome identified, see CPR QS9.

Demonstration of achievement:

Students must pass all modules at the prescribed grade in order to progress to the next stage of their educational continuum, see Progression Criteria, below.

Categories of performance and grading levels:

A and A* (High Distinction) – Distinctive level of knowledge, skill and understanding which demonstrates an authoritative grasp of the concepts and principles and ability to communicate them in relation to the assessment event without plagiarism or collusion. Indications of originality in application of ideas, graphical representations, personal insights reflecting depth and confidence of understanding of issues raised in the assessment event.

B and B* (Distinction) – Level of competence demonstrating a coherent grasp of knowledge, skill and understanding of the assessment and ability to communicate them effectively without plagiarism or collusion. Displays originality in interpreting concepts and principles. The work uses graphs and tables to illustrate answers where relevant. Ideas and conclusions are expressed clearly. Many aspects of the student's application and result can be commended.

C and C* (Credit) – Level of competence shows an acceptable knowledge, skill and understanding sufficient to indicate that the student is able to make further progress. The outcome shows satisfactorily understanding and performance of the requirements of the assessment tasks without plagiarism or collusion. Demonstrates clear expression of ideas, draws recognisable and relevant conclusions.

D (Pass) – Evidence of basic competence to meet requirements of the assessment task and event

	<p>without plagiarism or collusion. Evidence of basic acquaintance with relevant source material. Limited attempt to organise and communicate the response. Some attempt to draw relevant conclusions.</p> <p>F (Fail) – The student’s application and result shows that the level of competence being sought has not yet been achieved. The assessed work shows a less than acceptable grasp of knowledge, skill and understanding of the requirements and communication of the assessment event and associated tasks.</p> <p><u>Generic marking criteria:</u></p> <p>Response – the response must address all parts of the question, that is not just a part or parts of the question. A response that is not specifically tailored to the needs of the question will not be accepted.</p> <p>Structure – the student has identified the main issues of the question and attached the appropriate emphasis to them; has stated their agreement accurately and in some detail; and has utilised the supporting data.</p> <p>Context – the student has displayed knowledge of the basic subject matter under assessment; has included only relevant material where required; has provided a written agreement or mathematical/numerical/diagrammatic/modelled statement and, in doing so, has addressed all aspects of it in reaching a conclusion; and has provided a clear understanding of a question in reaching a conclusion.</p> <p>Presentation – due credit, specified as a percentage of the marking criteria, will be given for a succinct and fluent writing style.</p> <p>Illegible material will not be given due credit, specified as a percentage of the marking criteria.</p> <p>Penalty – a student will be penalised if they have not tackled each issue of a question separately, stating their agreement and or rationalised progression, and then applying this to the facts; and will be penalised for not providing evidence of academically based reasoning in an answer.</p> <p>Sources – the student should provide accurate referencing; it is essential that a student does not plagiarise from any source, see CPR QS9.</p>
Moderation	See CPR QS9
Progression Criteria	<p>Summary: minimum pass mark of 50% achieved for all modules listed bar:</p> <ul style="list-style-type: none"> • ILSC which requires a minimum pass mark of 60% achieved across specified assessment events (see DMD ILSC1&3). • Scientific Methods (see DMD SCI130) which requires a minimum pass mark of 60% achieved across all assessment events. • Programming Techniques (see DMD SCI131) which requires a minimum pass mark of 55% achieved across all assessment events.
Failure to Progress	Summary: a student may not fail a module on more than one (1) occasion, failure of the module once requires that a student re-take the entire module at full cost; failure of a student to complete a module on the re-take of that module will result in referral to the College Learning and Teaching Board for a student management decision. The University will not be incumbent to progress students who fail. See CPR QS9.
Associated Documentation	<p>Definitive Module Documents (DMDs) as follows: DMD ILSC1&3; DMD BUS107; DMD SCI101; DMD SCI115; DMD SCI130; DMD SCI131; DMD BUS105; DMD SCI103</p> <p>Module Guides (MGs) as follows: MG ILSC1&3; MG BUS107; MG SCI101; MG SCI115; MG SCI130; MG SCI131; MG BUS105; MG SCI103</p> <p>Associated teaching aids for a module as required</p> <p>Associated Student Handbook and Student Guide</p> <p>College Policies and Regulations (CPRs)</p>
Human Resource	<p>Sessional academics (tutors) – with appropriate qualifications, experience and abilities.</p> <p>Guest speakers – relevant industries as requested by the College.</p>
Built Environment	All lectures/classes and small group tutorials are held in the designated UPIC class rooms, seminar rooms and dedicated IT laboratories; students are encouraged to use Plymouth University’s library and e-learning facilities for self-directed study; students are encouraged to use their private IT facilities where possible; field-trips will be taken as required.
E-learning	College Portal; University Moodle; Library
Library	Plymouth University
Programme Framework	

University Foundation in Mathematics and Statistics /Engineering Stream 1				
Core Modules		Credit Points	% Examination	% Coursework
Module Code	Module Name			
Semester 1:				
ILSC1&3	Interactive Learning Skills and Communication 1&3	20	40	60
BUS107	Principles of ICT	10	60	40
SCI101	Numerical Techniques 1	20	100	-
SCI115	Physics 1	20	60	40
Semester 2				
SCI130	Practical Methods in Science and Technology	10	40	60
SCI131	Programming Techniques	10	60	40
BUS105	Business Studies	20	100	-
SCI103	Numerical Techniques 3	20	100	-
Undergraduate Stage 1: Mathematics		130 Credit Points		

*proposed addition

University Foundation in Mathematics and Statistics /Engineering Stream 3				
Core Modules		Credit Points	% Examination	% Coursework
Module Code	Module Name			
Semester 1:				
ILSC1&3	Interactive Learning Skills and Communication 1&3	20	40	60
BUS107	Principles of ICT	10	60	40
SCI101	Numerical Techniques 1	20	100	-
SCI115	Physics 1	20	60	40
Semester 2				
SCI130	Practical Methods in Science and Technology	10	40	60
SCI131	Programming Techniques	10	60	40
SCI116	Physics 2	30	100	-
SCI103	Numerical Techniques 3	20	100	-
Undergraduate Stage 1: Mathematics		130 Credit Points		

Management

The University Foundation in Mathematics and Statistics programme is delivered by UPIC on the Drake Circus Campus of Plymouth University. This scenario seeks to provide the necessary resources to ensure that all students enrolled with UPIC are afforded an educational experience that not only provides assimilation into campus and student life but is aligned with the standards and protocols of the University experience.

	<p>The programme operates under and according to the general compliance structures determined by the Quality and Standards Office Navitas UK. This Office has oversight of all Navitas programmes operating in the UK. Any changes to a programme must be submitted via the normal Navitas UK processes through the Quality and Standards Office.</p> <p>The general operational management of the programme lies with UPIC's academic services which assumes overall responsibility for the administrative and implementation functions.</p> <p>The UPIC Director of Academic Services or nominee, is responsible for the day-to-day management of the programme inclusive of attendance monitoring.</p> <p>UPIC provides additional tutorial support to any student who may require it, to the amount of two (2) extra contact hours per week per enrolled student.</p> <p>The various sessional academic module leaders/lecturers/tutors are responsible for the delivery and initial assessment of modules whilst appraisal of delivery and programme content is advised by the UPIC Director of Academic Services or nominee in consultation with the Quality and Standards Office Navitas UK, the Head of the School of Computing and Mathematics and associated appropriate Programme Directors/Leaders and/or Link Tutor.</p> <p>The Learning and Teaching Board of the College, is identified as responsible for candidate selection to the UPIC University Foundation in Mathematics and Statistics.</p>
Monitoring and Review	<p>Formal review of the University Foundation in Mathematics and Statistics programme, takes place as an annual review in January- March between UPIC, the Quality and Standards Office Navitas UK and representation from the School of Computing and Mathematics. Strategic, logistical and operational issues are developed within the remit of the Academic Advisory Committee (AAC) held on a trimester basis and chaired by Plymouth University. Progression is determined via the UPIC Progression Board. For a details of this review and quality management of this and all UPIC programmes, see, CPR QS9.</p> <p>Informal Review takes place on a regular basis via interface between students, academic services and the teaching staff using both student surveys (inclusive of i-graduate) and teaching observation</p>
Entry Requirements	<p>Standard and approved requirements for academic international benchmark qualifications, see CPR 3. English language entry is at CEFR level B2 in line with UKVI requirements for FHEQ 6.</p>
Appendix 1	Intended Learning Outcomes in the constituent modules
Appendix 2	Delivery schedule incorporating notional, contact and self-directed hours of study applied to each module and therein the programme.
Appendix 3	College DMDs

Appendix 1

Development of Programme Learning Outcomes (LOs) in the Constituent Modules:

The tables below map where the intended LOs of the programme are assessed in the core/constituent modules. It provides an aid to (i) academic staff in understanding how individual modules contribute to the programme aims, (ii) a checklist for quality control purposes, and (iii) a means to help students monitor their own learning, personal and professional development as the programme progresses. **Key:** LOs which are assessed as part of a given module ✓✓; LOs which are not explicitly assessed as part of a given module ✓.

FHEQ 3		Intended LOs												
		Knowledge and Understanding												
UPIC Core Modules	Module Code	A.1	A.2	A.3	A.4	A.5	A.6	A.7	A.8	A.9	A.10	A.11	A.12	A.13
Interactive Learning Skills and Communication	ILSC1&3				✓					✓		✓	✓✓	✓✓
Principles of ICT	BUS107				✓		✓			✓	✓	✓✓	✓✓	✓✓
Numerical Techniques 1	SCI101	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓	✓	✓✓	✓✓
Physics 1	SCI115	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	✓✓
Scientific Methods	SCI130	✓	✓	✓	✓	✓	✓✓	✓		✓✓	✓✓	✓✓	✓✓	✓✓
Programming Techniques	SCI131	✓	✓✓	✓		✓✓	✓✓	✓✓	✓	✓✓		✓✓	✓✓	✓✓
Business Studies	BUS105										✓	✓	✓✓	✓✓
Numerical Techniques 3	SCI103	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓	✓	✓✓	✓✓

Knowledge and Understanding

A.1	How to apply basic mathematical methods and rules
A.2	The use of algebraic and graphical methods and logarithmic manipulation in problem solving
A.3	The structure and functions of basic mathematical calculations
A.4	The importance of coherent mathematical ideas
A.5	How to apply and use basic mathematical notation
A.6	How to construct clear, logical arguments inter alia demonstrating the difference between experimental evidence and proof, and between an implication and its converse
A.7	Modelling and its importance to mathematical thinking
A.8	How to manipulate elementary mathematical constructs
A.9	The application of numerical techniques to the decision making process with an emphasis on statistical and sampling methods and the description of theories and models
A.10	The purpose and processes of basic recording of data in order to carry out performance monitoring within the context of mathematics and adherence to regulatory standards
A.11	The application of ICT as a fundamental tool for extracting, sourcing, describing and presenting data and information in a variety of relevant forms, and distributing data and information via a range of relevant channels and formats
A.12	Demonstrate the techniques and forms of effective and clear communication expressed in a variety of academic and professional settings in accordance with Level B2 'Independent User' as described by the Council of Europe, see benchmarking documentation of this document for reference.
A.13	The role and the importance of the study of the history of scholarship as a basis to determining a full understanding, correct use of appropriate nomenclature and an appreciation of fundamental concepts associated with a subject area.

FHEQ 3		Intended LOs												
		Intellectual Skills					Practical Skills			Transferable Skills				
UPIC Core Modules	Module Code	B.1	B.2	B.3	B.4	B.5	C.1	C.2	C.3	D.1	D.2	D.3	D.4	D.5
Interactive Learning Skills and Communication	ILSC1&3	✓✓	✓✓	✓✓	✓	✓✓	✓	✓		✓✓		✓✓	✓✓	
Principles of ICT	BUS107	✓	✓	✓✓	✓	✓✓	✓	✓		✓✓	✓	✓	✓	
Numerical Techniques 1	SCI101	✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓	✓✓
Physics 1	SCI115	✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓	✓✓
Scientific Methods	SCI130	✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓	✓✓
Programming Techniques	SCI131	✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓	✓✓
Business Studies	BUS105	✓	✓✓	✓✓	✓	✓✓	✓✓	✓✓		✓✓	✓✓	✓	✓	✓✓
Numerical Techniques 3	SCI103	✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓	✓✓

Intellectual/Cognitive Skills

B.1	Make full use of library and College/University e-learning search (catalogue and bibliographic) resources.
B.2	Apply basic research techniques to sourcing and selecting appropriate academic data and literature.
B.3	Integrate oral, written, listening, reading, non-verbal and diagrammatic skills to effect clear communication.
B.4	Ability to analyse data and various modes of information using appropriate techniques.
B.5	Ability to begin to evaluate and start to apply, reasoned thinking and supportive evidence collation to conflicting sets of information and academic opinion.

Practical skills

C.1	Employ key communication skills appropriate to undergraduate study, inclusive of written, oral, reading, speaking, numerical, graphical and diagrammatic manipulation and presentation of information.
C.2	Employ analytical skills and methodologies as a basis to further study.
C.3	Ability to begin to engage critically with regard to mathematics and related subject areas.

Transferable skills

D.1	Select, read, digest, summarise and synthesise information material in a variety of forms, both qualitative and quantitative (text, numerical data and diagrammatic) and in an appropriate manner to identify and determine key facts/themes and relevancy.
D.2	Use and clearly communicate discursive, numerical, statistical and diagrammatic ideas, concepts, results and conclusions using appropriate technical and non-technical language and language style, structure and form.
D.3	Apply basic research and referencing techniques to all aspects of study, information collation, information presentation and formulation of academic opinion.
D.4	Embed the importance of self-study and reliance. This involves cultivating and developing a responsibility within each student to take cognizance for their own learning, initiative, effective time-management and self-discipline within the academic and professional environments.
D.5	Begin to develop a very good conceptual understanding and evaluation of the main aspects of the cognate area and the wider context.

Appendix 6**Teaching Rotations:
Semester 1 – University Foundation in Mathematics and Statistics**

Week	Total Hours										
	ILSC1&3			BUS107		SCI101		SCI115		Contact hours/week	Self-directed study hours/week
	Interactive Learning Skills and Communication 3			Principles of ICT		Numerical Techniques 1		Physics 1			
Contact hours	Self-dir study		Contact hours	Self-dir study	Contact hours	Self-dir study	Contact hours	Self-dir study			
1	5	10		3	5	5	10	5	10	18	35
2	5	10		3	5	5	10	5	10	18	35
3	5	10		3	5	5	10	5	10	18	35
4	5	10		3	5	5	10	5	10	18	35
5	5	11		3	5	5	11	5	11	18	38
6	5	11		3	5	5	11	5	11	18	38
7	5	11		3	5	5	11	5	11	18	38
8	5	11		3	5	5	11	5	11	18	38
9	5	11		3	5	5	11	5	11	18	38
10	5	11		3	5	5	11	5	11	18	38
11	5	11		3	5	5	11	5	11	18	38
12	5	11		3	5	5	11	5	11	18	38
13	2	10		2	2	2	10	2	10	8	32
Total hours / module	62	138		38	62	62	138	62	138	224	476
Notional hours / module	200			100		200		200		700	
Credit Points	20			10		20		20		70	

Semester 2 – University Foundation in Mathematics and Statistics

Week	Total Hours									
	SCI130		SCI131		BUS105		SCI103		Contact hours/week	Self-directed study hours/week
	Research and Referencing		Programming Techniques		Business Studies		Numerical Techniques 3			
	Contact hours	Self-dir study	Contact hours	Self-dir study	Contact hours	Self-dir study	Contact hours	Self-dir study		
1	5	10	5	10	5	10	5	10	20	40
2	5	10	5	10	5	10	5	10	20	40
3	5	10	5	10	5	10	5	10	20	40
4	5	10	5	10	5	10	5	10	20	40
5	5	11	5	11	5	11	5	11	20	44
6	5	11	5	11	5	11	5	11	20	44
7	5	11	5	11	5	11	5	11	20	44
8	5	11	5	11	5	11	5	11	20	44
9	5	11	5	11	5	11	5	11	20	44
10	5	11	5	11	5	11	5	11	20	44
11	5	11	5	11	5	11	5	11	20	44
12	5	11	5	11	5	11	5	11	20	44
13	2	10	2	10	2	10	2	10	8	40
Total hours / module	62	138	62	138	62	138	62	138	248	552
Notional hours / module	200		200		200		200		800	
Credit Points	20		20		20		20		80	

