MODULE SPECIFICATION

Please contact the Quality Enhancement Office for guidance completing this form on <u>*QEO-General@salford.ac.uk*</u>

This form is available to download from <u>*http://www.governance.salford.ac.uk/page/aqa_forms*</u>

Date of completion of this version of Module Specification: 03/11/2017				
Date of approval by the PARP: 14/12/2017				

1. Module Title: (Full title and short title no more than 30 characters) Foundation Mathematics 2			2.CRN: 52552 (S2)	
3.University module code: G100 00015	4a.JACS subject area code[i] (one only): G100		4b. HECoS code[ii] (one only): 100403	
5.Level: Level 3	6.Credit Value: 20	7.ECTS Value[iii]: 10	8.Length of module in semesters: 1	9.Month(s) in which to be offered[iv]: January
10.Module Status[v] New	11.Title of Module being replaced *(if any):* Engineering Methodology S0.2		12.With effect from[vi] (academic year): September 2018	
13.Originating School: School of Computing, Science & Engineering	14.Module Leader(s) Mr A Kadir			

15.Programme(s) in which to be offered[vii]:

BEng (Hons) Acoustical and Audio Engineering with Foundation Year
BEng (Hons) Electronic Engineering with Foundation Year
BSc (Hons) Physics with Foundation Year
BSc (Hons) Mathematics with Foundation Year
BSc (Hons) Financial Mathematics with Foundation Year

16.Pre-requisites *(between levels):*	17.Co-requisites *(within a level):*

18.Indicative learning hours (breakdown of hours required)[viii] 200

Lecture	40	Fieldwork	
Seminar		External visits	
Tutorial	20	Work based learning	
Project supervision		Guided independent study	140
Demonstration Practical classes and workshops		Placement	
Supervised time in studio/workshop		Year abroad	
Other – please specify[ix]			

19.Percentage of module taught by School(s) other than originating School: 0%

20.Aims of Module[x]: (maximum of 5)

1. To extend mathematical concepts and their uses in engineering applications.
2. To introduce techniques in mathematical modelling.

21.Intended Learning Outcomes[xi]

<u>Knowledge and Understanding (maximum of 5)[xii]</u>

On successful completion the student will be able to:

1. Use integration and differentiation to solve real problems
2. Use calculus for determining optimum areas and volumes.
3. Use numerical methods for the calculation of areas and volumes of irregular shapes.

Transferable/Key Skills and other attributes (maximum of 5)
On completion the student will have had the opportunity to:

4. Demonstrate problem solving skills acquired by way of tutorial examples.
5. Demonstrate improvements in learning and performance by way of time management in private study and tutorial exercises and use of library and other sources of supplementary learning materials.
6. Demonstrate numeracy skills acquired by way of quantitative mathematical analysis in tutorial examples.

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22. Module mark calculation: Method A

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23. Assessment components (in chronological order of submission/examination date)

Type of assessment	Identify which ILO is met by number[xiii]	Weighting %	Duration	Word count	Component pass required[xiv]	E Submission	Assessment organised by
Phase Tests x 4	1,2,3,5	30	1 hr each		No	Yes	School
Examination	1,2,3,4,6	70	2 hours		No	No	SID

24. Is ethical approval for the module required?	No	25. Is ethical approval for an assessment component required?[xv]	No

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26. Learning, teaching and assessment strategies:

The module is delivered by lectures and tutorials and phase tests.

Tutorial question solutions are carried out with smaller groups of students and additional support is provided with MathScope plus the solutions of the tutorial questions are provided on the VLE.

Four Phase Tests, which are applied throughout the module, will guide the next steps in instructions and help teacher and students to identify learning needs to ensure success. A resit opportunity will be given to students who fail the tests, to improve their mark.

Whenever possible, joint assessment across modules will also be implemented and prioritized. These assessments will focus on practical problem solving tasks that relate to two or more areas together. These will then be jointly assessed by all modules involved. For instance, students could apply subjects from the Mathematics modules to directly solve problems from the Physics modules and be assessed in both modules. Likewise, they will also need to apply knowledge gained in the IT and Study Skills module to solve statistical problems and vice versa. This is to reflect the increasing focus of A-Level on cross-disciplinary problem solving.

Phase Tests 1-4:   30%
Final examination : 70%   Duration: Two Hours

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27. Syllabus outline:

Introduction to calculus to solve problems in velocity and acceleration, also for maximum and minimum values of various shapes to calculate volumes and areas
Differentiation: of trigonometric and exponential functions, product, quotient, and chain rule
Integration: Areas, volumes, centroids
Numerical Methods: Simpson's Trapezoidal rule in real engineering for regular and irregular shapes
Matrices: Properties, Linear equations

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28. Indicative texts and/or other learning materials/resources[xvi]:

After initial approval, up to date reading lists can be accessed at https://salford.rl.talis.com/index.html

i   See UoS guidance notes on selecting JACS codes (http://www.planning.salford.ac.uk/jacs_codes/)
    See HESA JACS Codes webpage http://www.hesa.ac.uk/index.php/content/view/356/233/

ii   From 2017 onwards also map to HECoS (Higher Education Mapping of Subjects) see http://www.salford.ac.uk/qeo/PDRR/programme-approval-and-review/higher-education-classification-of-subjects

iii   The ECTS value is half of the module credit value.

iv   Please indicate the month (s) in which delivery of the module will commence.

v   Amendments to the title or credit value constitute a new module.

vi   If the delivery month of the module is to be available for different intakes of a programme, please indicate this here. E.g. Module effective from Sept 2014 – to state the module is to be available for Sept 2014 intake & Feb 2014 intake.

vii   The module will only be attached to programmes specified in this section. Any approved module can be available as a stand-alone module.

viii   These categories are used for the Key Information Set which currently applies only to full time undergraduate students only but please include for all students – for more information including definitions see http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/contact_hours.pdf and http://www.hesa.ac.uk/component/option,com_studrec/task,show_file/Itemid,233/mnl,13061/href,Calculations_methods.html/#LearningandTeaching

ix   The 'other' category should not be used for learning undertaken by full undergraduate students as 'other' is not used in KIS categories.

x   The aims should express the purpose of the module.

xi   The intended learning outcomes should detail the knowledge, understanding and skills that students will be able to demonstrate on successful completion.

xii   In some circumstances it may be necessary to have more than 5 intended learning outcomes. You will be asked to provide your rationale for this in discussion at the PARP.

xiii   For example, if the assessment is an essay and the essay meets ILOs number 1-4 and 6-7, state 1-4,6-7.

xiv   If Method B is used for module mark calculation, indicate Yes to specify the assessment component(s) to be passed in order to pass the module

xv   Please specify component(s) for which ethical approval is required.

xvi   The "Indicative texts and/or learning materials/resources" box should include a maximum of five items for new modules. These should be formatted using the University's agreed referencing style for the subject area (usually APA Harvard System 6th). See http://www.salford.ac.uk/library/infolit/tool#referencing_tab for more information. The texts should normally be recent texts (i.e. within the last six years) unless they are a particularly "classic" text. For existing modules, the "Indicative texts and/or learning materials/resources" box should include a link for PARP reviewers and readers to the comprehensive reading list at http://lasu.salford.ac.uk