MODULE SPECIFICATION

**SECTION 1: MODULE SPECIFICATIONS**

1. Title of the module: Graphs, Geometry and Trigonometry (MA022)
2. School or partner institution which will be responsible for management of the module

School of Mathematics, Statistics and Actuarial Science (SMSAS)

1. Start date of the module: previous version September 2004 (revised version start date September 2014)
2. The number of students expected to take the module: 150
3. Modules to be withdrawn on the introduction of this proposed module and consultation with other relevant Schools and Faculties regarding the withdrawal

None

1. The level of the module (e.g. Certificate [C], Intermediate [I], Honours [H] or Postgraduate [M]): Foundation [F]
2. The number of credits and the ECTS value which the module represents: 15 (ECTS 7.5)
3. Which term(s) the module is to be taught in (or other teaching pattern): Autumn and Spring Terms
4. Prerequisite and co-requisite modules:

There are no pre-requisite modules.

Co-requisite modules: Algebra and Arithmetic (PH020)

1. The programmes of study to which the module contributes

BEng (Hons) Electronic and Communications Engineering with a Foundation Year, BEng (Hons) Computer Systems Engineering with a Foundation Year, BSc (Hons) Forensic Science with a Foundation Year, BSc (Hons) Mathematics with a Foundation Year, BSc (Hons) Physics with a Foundation Year

1. The intended subject specific learning outcomes

On successful completion of this module students will have:

1. a knowledge of trigonometry, graphical methods and vectors;
2. the ability to apply this knowledge to elementary problem solving;
3. a mathematical proficiency suitable for Stage 1 entry.
4. The intended generic learning outcomes

On successful completion of this module students will have:

1. progressed in their formulating and problem solving skills;
2. enhanced their capacity to communicate mathematical statements and conclusions, both symbolically and literally;
3. established learning skills required for Stage 1 study.
4. A synopsis of the curriculum

Functions and graphs: plotting, roots, intercepts, turning points, area (graphical methods), co-ordinate geometry of straight lines, parallel and perpendicular lines, applications to plots of experimental data, quadratics, introduction to the trigonometric functions

Trigonometry: radians, properties of sine and cosine functions, other trigonometric functions, compound angle formulae and subsequent results, solving trigonometric equations

Geometry: circles and ellipses, right-angled triangles, SOHCAHTOA, trigonometric functions, inverse trigonometric functions, sine and cosine rule, opposite and alternate angle theorems, applications to geometry problems

Vectors: notion of a vector, representation of vectors, addition, subtraction and scaling, magnitude, scalar product, basis vectors in 2 and 3 dimensions

1. Indicative Reading List

Core Maths for Advanced Level, L Bostock and S Chandler, Nelson Thornes Ltd, ISB 0 7847 55098

1. Learning and Teaching Methods, including the nature and number of contact hours and the total study hours which will be expected of students, and how these relate to achievement of the intended module learning outcomes*.*

Number of contact hours: 48

Number of independent learning hours: 102

Total study hours: 150

Teaching methods will involve a mixture of lectures and examples classes. Subject specific learning outcomes 11(a),(b) and generic learning outcomes 12(a),(b) will be addressed by lectures. Subject specific learning outcomes 11(a)-(c) and 12(a)-(c) will be addressed by the examples classes.

1. Assessment methods and how these relate to testing achievement of the intended module learning outcomes

The module will be assessed by examination (70%), class tests (15%) and coursework (15%).

Coursework: This will normally involve two end-of-term written assignments in the Autumn and Spring terms and will assess learning outcomes 11(a),(b) and 12(a),(b).

Class tests: There will be two end-of-term tests in the Autumn and Spring terms to assess learning outcomes 11(a)-(c) and 12(a),(b)

Examination: This will be a two hour written examination that consists of multipart questions requiring a mix of short and long answers to test to varying levels of proficiency the learning outcomes 11(a)-(c) and 12(a)-(c)

1. Implications for learning resources, including staff, library, IT and space

None – this is an existing module

1. The School recognises and has embedded the expectations of current disability equality legislation, and supports students with a declared disability or special educational need in its teaching. Within this module we will make reasonable adjustments wherever necessary, including additional or substitute materials, teaching modes or assessment methods for students who have declared and discussed their learning support needs. Arrangements for students with declared disabilities will be made on an individual basis, in consultation with the University’s disability/dyslexia support service, and specialist support will be provided where needed.
2. Campus where module will be delivered: Canterbury

**SECTION 2: MODULE IS PART OF A PROGRAMME OF STUDY IN A UNIVERSITY SCHOOL**

**Statement by the School Director of Learning and Teaching/School Director of Graduate Studies (as appropriate):** "I confirm I have been consulted on the above module proposal and have given advice on the correct procedures and required content of module proposals"

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| ................................................................  Director of Learning and Teaching/Director of Graduate Studies (delete as applicable)  …………………………………………………  Print Name | ..............................................  Date |

**Statement by the Head of School:** "I confirm that the School has approved the introduction of the module and, where the module is proposed by School staff, will be responsible for its resourcing"

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| .................................................................  Head of School  …………………………………………………….  Print Name | ..............................................  Date |

Module Specification Template  
Last updated February 2013