Wrexham glyndŵr UNIVERSITY

MODULE SPECIFICATION PROFORMA

Module Title:	**Engineering Mathematics**	**Level**:	4	**Credit Value**:	20

Module code:	ENG451	**Is this a new module?** NO	**Code of module being replaced**:	

Cost Centre:	GAME	**JACS3 code**:	G160

Trimester(s) in which to be offered:	1, 2 & 3	**With effect from:**	September 16

School:	Applied Science, Computing & Engineering	**Module Leader:**	B Klaveness

Scheduled learning and teaching hours	60 hrs
Guided independent study	140 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered	Core	Option
FdEng Industrial Engineering	✓	☐

Pre-requisites
none

Derogations
A derogation from regulations has been approved for this module which means that whilst the pass mark is 40%, each element of assessment requires a minimum mark of 30% for the module to be passed overall.

Office use only

Initial approval June 16

APSC approval of modification *Enter date of approval* Version 1

Have any derogations received SQC approval? Yes ✓ No ☐

Module Aims
To provide a uniform understanding of calculations involving algebra, trigonometry, numerical methods and statistics and their relevance to engineering, thus to provide a mathematical base for engineering theory and application studies.

Intended Learning Outcomes

Key skills for employability

KS1	Written, oral and media communication skills
KS2	Leadership, team working and networking skills
KS3	Opportunity, creativity and problem solving skills
KS4	Information technology skills and digital literacy
KS5	Information management skills
KS6	Research skills
KS7	Intercultural and sustainability skills
KS8	Career management skills
KS9	Learning to learn (managing personal and professional development, self-management)
KS10	Numeracy

At the end of this module, students will be able to:		Key Skills	
1	Solve basic engineering problems using a range of algebra and trigonometry techniques	KS10	
2	Select and apply appropriate numerical methods and statistical analysis techniques in the solution of engineering problems.	KS10	

Assessment:

The assessment is 100% in-course and will be made up of two tests. One test will be taken during semester one and will cover all parts of outcome 1.The second will be towards the end of the semester two covering elements of outcome 2.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1	In-class test	50	1.5hrs	
2	2	In-class test	50	1.5hrs	

Learning and Teaching Strategies:
Interactive lectures/tutorials - presentation of theory, mathematical principles and examples. Mathematics will also be studied through the medium of software and programmable calculator functions.

Syllabus outline:
• Arithmetic; • Numerical methods: mensuration, complex numbers, binomial theorem; • Probability and Statistics; • Algebraic methods; • Trigonometric methods; • Calculus.

Bibliography:
Essential reading
Stroud K.A. (2013) *Engineering Mathematics,* Palgrave Macmillan
Other indicative reading
Bird, J. (2014) *Basic Engineering Mathematics*, Routledge