Wrexham glyndŵr UNIVERSITY

MODULE SPECIFICATION PROFORMA

Module Title:	**Diagnostics and Testing**	**Level**:	4	**Credit Value**:	20

Module code:	ENG403	**Is this a new module?** Yes	**Code of module being replaced**:	ENG541

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:**	James Robinson

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
The module aims to enable the student to become proficient at diagnosing and locating faults, determine causes, categorise, repair faults and propose methods of reducing fault occurrence.

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	Understand and implement the acquired knowledge of the theory of fault diagnostics, including fault classification, probability and factors effecting reliability;	KS3	KS5
		KS4	
2	Determine and implement (using correct equipment) systematic fault location techniques	KS3	
		KS6	
		KS9	
3	Develop the concepts of damage limitation, inclusive of prediction, system & device redundancy	KS3	
		KS7	

Assessment:

The student should produce a report inclusive of applied theory and their considered opinions relating to Labs undertaken.

The practical element consists of a series of lab works, PCs and software should be utilised to gain simulated results for comparative purposes. The contents of the experiments should be

chosen such that the learning experience is enhanced relating to diagnostic methods. The outcomes of the labs should be demonstrated to the tutor.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1&3	Report	60		2500
2	2	Practical	40		1500

Learning and Teaching Strategies:

Laboratory work – experiments/exercise sheets developing skills and systems necessary for fault determination, location and specifying remedial actions. In conjunction with tutorials

Syllabus outline:

- Knowledge of system/device reliability and factors affecting this (evaluate device suitability/reliability in different circumstances/environments);
- Determine fault symptoms and develop an understanding of fault type and category;
- Develop a systematic approach for fault location and testing strategies;
- Intermediate fault remedies and factors affecting reoccurrence;
- Remote fault identification;
- Fault prediction (monitoring of device behaviour and trending)

Bibliography:

Essential reading

Mostia, W.L. (2006) Troubleshooting: Technician's Guide, ISA technical publications

Other indicative reading

Tomczyk, J. (2003)System Diagnostics & Troubleshooting Procedures, Esco Press