

Liverpool John Moores University

Title: Fault Diagnosis
Status: Definitive
Code: **5094ENG** (117683)
Version Start Date: 01-08-2016

Owning School/Faculty: Electronics and Electrical Engineering
Teaching School/Faculty: Electronics and Electrical Engineering

Team	Leader
Ronan McMahon	Y
Karl Jones	

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 84
Total Learning Hours: 200 **Private Study:** 116

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	36
Practical	24
Tutorial	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	Port		100	

Aims

*This module is intended to introduce students to the principles of the creative yet logical thought processes used in the diagnosis of simple faults.
This module provides the student with the knowledge and skills to safely diagnose and repair typical faults to component level in ICT systems.*

Learning Outcomes

After completing the module the student should be able to:

- 1 Plan and implement a fault-finding strategy
- 2 Use standard safety measures to protect against common hazards associated with the handling and testing of electronic equipment
- 3 Perform pre-use safety and serviceability checks and correctly configure the test equipment
- 4 Conduct appropriate tests to identify the source of the reported failures using test equipment and diagnostic software
- 5 Produce records of tests and other checks

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Portfolio	1	2	3	4	5
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Outline Syllabus

Health & Safety

Test Instruments: selection & use

Fault-finding strategies: Fault verification, Half-split rule, Faulty stage isolation, Board/module substitution, Use of test points, Data collection, Stimulus/response and decision making

'Customer inquisition' techniques: Knowledge of system operation, Possible operator/user errors, Customer report analysis

Fault logging/service history: Establishing a 'history of common faults', Using fault databases and history reports, Knowledge/use of system specifications, Handy hints and technical tips

Diagnostic skills: Diagnostic tools (system diagnostics, flow charts, computer diagnostics, customer reports)

Learning Activities

Lectures and tutorials, supported by a series of laboratories using problem-based learning

Notes

The module is to be presented as exercises in student-led problem-based learning in which the students will be required to develop and practice the techniques themselves, followed by discovery of theory, analysis and report-writing outside the directed lab sessions.