Liverpool John Moores University

Title:	Analogue and Digital Electronics
Status:	Definitive
Code:	**4509ENGIOM** (117268)
Version Start Date:	01-08-2016
Owning School/Faculty:	Maritime and Mechanical Engineering
Teaching School/Faculty:	Maritime and Mechanical Engineering

Team	Leader
Russell English	Y

Academic Level:	FHEQ4	**Credit Value:**	10	**Total Delivered Hours:**	26
Total Learning Hours:	100	**Private Study:**	74		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	10
Practical	4
Tutorial	10

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam		50	2
Report	Coursework		30	
Report	Coursework		20	

Aims

To provide, using a basic knowledge of mathematics, an introduction to transistors and the small model equivalent circuits, the use of operational amplifiers and the operation of sequential, combination and digital logic circuits.

Learning Outcomes

After completing the module the student should be able to:

1	Use Boolean algebra and the Karnaugh map to simplify and design logic circuits
2	Explain the operation of basic sequential and combinational circuits
3	Use transistor characteristics for simple amplifier design
4	Design and explain the operation of basic BJT and JFET circuits.

Learning Outcomes of Assessments

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

Exam	1	4
Coursework	2	
Coursework	3	

Outline Syllabus

Logic Gates and Functions; Combinational Logic and Boolean expressions; Karnaugh maps; Latches and Flip-Flops; Digital Counters
Diodes, BJT and JFET
Operational amplifiers.

Learning Activities

A combination of lectures and practical work.

Notes

This Level 4 module is devised for electrical and electronic engineering degree level students, discussing the operation of discrete components and other devices.