

## Liverpool John Moores University

Title: ELECTRONIC AUDIO SYSTEMS  
Status: Definitive  
Code: **5091ENG** (117061)  
Version Start Date: 01-08-2018

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

Team	Leader
Paul Otterson	Y
Tony McKenna	

**Academic Level:** FHEQ5      **Credit Value:** 24      **Total Delivered Hours:** 50  
**Total Learning Hours:** 240      **Private Study:** 190

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Practical	24

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam		60	2
Technology	Tech		40	

### Aims

*To provide a practical knowledge of electronics for Audio technicians*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Evaluate and analyze the principles underlying design of audio circuits
- 2 Simulate and design simple audio circuits then use simple integrated circuits to build more complex systems
- 3 Formulate appropriate techniques to measure and test system performance then select and deploy relevant test equipment
- 4 Develop strategies for component testing and fault finding using industry standard equipment to solve audio related scenarios

### **Learning Outcomes of Assessments**

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

Exam	1	4
Technology	2	3

### **Outline Syllabus**

*Tolerance and characteristics of real components*  
*Transistors, diodes, transformers, inductors, capacitors, resistors, led's, potentiometers*  
*Test equipment and utilization*  
*Testing components*  
*Soldering and prototyping techniques*  
*Safe systems of work, risk assessment*  
*PCB's*  
*Design and Simulation of audio circuits*  
*Fault diagnosis*  
*Data sheets*  
*Amplifier design, op amps*  
*Decibels, bode diagrams, frequency response curves*  
*Bandwidth, signal to noise ratio*  
*Low noise techniques, simple filters*  
*Audio devices and technology*  
*Equipment specifications, impedance*  
*Connectivity, signal flow*

### **Learning Activities**

Practical sessions, demonstrations, seminars.

### **Notes**

This module provides a practical knowledge of audio electronics for technicians. It is to be taught in the laboratory with strong emphasis on design, simulate build and testing of electronic circuits