



The  
University  
Of  
Sheffield.

Electronic &  
Electrical  
Engineering.

## **EEE6004 DESIGN PROJECT**

**Credits: 10**

### **Course Description including Aims**

This is a design project module. Students are given the task of designing an audio power amplifier. In the early stages of the project students have the opportunity to develop skills in the area of defining a specification, project management and time planning. During the project they will gain first hand experience of a specialised software design tool and how to use it in the design process. Students will be expected to build and evaluate the performance of their designs and will be introduced to measurement techniques and instruments appropriate for this task.

The unit aims to develop in students the following skills involved in design project work:

- 1 Preparing a specification
- 2 Planning a project, assessing risk and time planning
- 3 Design and simulation
- 4 Prototype construction and testing
- 5 Oral and written reporting
- 6 Critical reflection

### **Outline Syllabus**

Individual investigative design project which consists of 2 technical parts and 3 assessments. Part I involves familiarization with SPICE simulation, followed by circuit construction, testing and troubleshooting of a simple class B amplifier. Part II aims at designing an improved class B power amplifier with the specifications given.

### **Time Allocation**

12 weeks

### **Recommended Previous Courses**

Analogue Electronics or equivalent courses.

### **Assessment**

1. Short report for Part II with risk assessments, project plan, list of components and identification of key points in the project progress (no more than 2 pages) (30%). This should be submitted at the end of week 5.
2. Summary of achievements including brief reflection on skills acquired (1 page) (40%). This should be submitted in week 12.
3. 15 minute Power Point presentation (30%) in week 11/12.

## **Objectives**

At the end of the project, successful students will be able to:-

1. Interpret a project specification.
2. Plan a project and manage their progress.
3. Maintain a log book.
4. Use SPICE to aid the design process.
5. Construct and test prototype hardware.
6. Interpret results and observations to inform improvements in their design.
7. Communicate effectively, both orally and in writing, complex technical ideas.