XMUT204 Electronic Design
Design Project 2: Audio Amplifier
(Marking Schedule)

Due Date: See handout provided.

Marking Scheme

The submissions of the project typically consist of a project report (i.e. length of the report is expected to be approximately 1000 words excluding the appendices). The project should be marked according to the suggested marking scheme as outlined below.

A. Design

This section should cover the design processes, choices and rationales. [20 marks]

- Biasing resistors at the input section of the amplifier. (5)
- Load line and Q-point analysis at the output section of the amplifier. (5)
- Coupling capacitors at input and output sections of the amplifier. (5)
- Emitter feedback resistor and its decoupling capacitor. (5)

B. Simulation

This section should consist of the simulation processes and simulation results. [20 marks]

- Simulation in LTspice for designing of the amplifier (as in Part A). (10)
- Simulation in LTspice for testing of the amplifier (as in Part C). (10)

C. Testing

This section should have testing processes, testing results and troubleshooting. [20 marks]

- DC operating points of the amplifier circuit. (4)
- Transient response of the amplifier circuit for the small-signal gain test. (4)
- Frequency response of the amplifier circuit. (6)
- Power consumption and efficiency test of the amplifier circuit. (6)

D. Discussion

This should discuss the suggested project management aspects of the project. [20 marks]

- Problems in the project and their solutions. (6)
- Critical evaluation of project. (6)
- Enjoyable and difficult parts of the project. (8)

E. Additional Questions

This part should have answers to additional questions. [10 marks]

- Q1 - Roles of capacitors in the circuit. (5)
- Q2 - Difference of Q-points. (5)

F. Project Report

The marking should focus on the quality and quantity of your project report. [10 marks]

- Content and coverage (2.5)
- Organisation, layout and sectioning. (2.5)
- Use of figure, graph, table and reference. (2.5)
- Writing and language usage. (2.5)

Marking Schedule

No	Section	Description	Total	Marks	Remarks
A	Design	Design processes, choices and rationales.	20		
B	Simulation	Simulation processes and simulation results.	20		
C	Testing	Testing processes, testing results and troubleshooting.	20		
D	Discussion	Discuss the project management aspects in the project (e.g. problems + solutions in the project, evaluation of project, and enjoyable/ difficult parts).	20		
E	Additional Questions	Answers to additional questions. • Roles of capacitors in the circuit. (5) • Differences in Q-point. (5)	10		
F	Project Report	Quality and quantity of your project report. • Content and coverage. (2.5) • Organisation, layout and sectioning. (2.5) • Use of figure, graph, table and reference. (2.5) • Writing and language usage. (2.5)	10		
		Total	100		