### Module Title: 4E2 Electronic and Electrical Engineering Project

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<th>Level: Senior Sophister</th>
<th>Credits: 15</th>
<th>Prerequisites:</th>
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**Coordinator:** Assist. Prof. Liam Dowling ([wdowling@tcd.ie](mailto:wdowling@tcd.ie))

**Supervisor:** as agreed with Coordinator

**Terms:** Semester 2

**Duration (weeks):** 12 weeks

### Aims/Objectives
Senior Sophister students in the Electronic Engineering (C) and Electronic & Computer Engineering (CD) streams are required to carry out an individual engineering project. Each student is assigned a project topic and a supervisor. The supervisor acts as the project advisor.

### Syllabus
Projects are allocated in the areas of research expertise and interest of members of the academic staff in the Department of Electronic and Electrical Engineering. Project assignments are made to students on the basis of the choice forms which should be completed and returned by the end of the first week of the first semester. The nature and content of the project is then discussed with the supervisor in the following weeks of the first semester.

### Learning Outcomes
On successful completion of project work, the students will be able to:

1. derive, apply and adapt solutions from the discipline specific knowledge gained in lectures and coursework, to a real world problem solving context;
2. experience independent enquiry and investigation of a practical engineering problem, application or topic;
3. assess and criticise information, methods and results for a defined engineering purpose;
4. identify and formulate technical problems in such a manner as to make them amenable to solution;
5. design a system, component or process to meet a specified goal;
6. analyse and interpret results from experiments conducted during the module of the design process in order to modify, improve or explain the functionality of the system, component or process being created;
7. communicate effectively in technical and scientific writing, and present scientific/technical ideas concisely to a technical audience that may not be expert in the specific domain of the presentation;
8. formulate the design of systems in terms of a schedule of intermediate goals that manifest in subsystems;
9. manage workflow and task scheduling within the constraints of resources and time given specific design goals and deadlines;
10. use industry standard hardware and/or software tools and codes of practice for all aspects of design including analysis and presentation;
11. examine and discuss the impact of the project design or theme on people.

**TEACHING STRATEGIES**

There are no formal timetabled hours associated with the project but students are expected to spend the time it takes to make reasonable progress and to keep in regular contact with their supervisors. It is recommended that students make a formal arrangement with their supervisors to meet on a weekly basis, preferably at a regular appointed time.

**ASSESSMENT MODE(S)**

The Senior Sophister project is assessed by means of three submissions that will be marked by both the project supervisor and an assigned second reader. The combined submissions are marked out of a total of 100 marks. The submissions are as follows:

*Project summary: 5 marks*

A five-page summary outlining the nature of the project and the work carried out to date as well as a plan of work for its completion must be submitted at the end of week 1 of the second semester.

*Poster Session: 20 marks*

Students prepare a poster on their project. A template will be provided for this purpose. Students display an A0 sized poster outlining the aims, technical content and accomplishments of their projects at a special session attended by supervisors, second readers and the external examiner. They give a short oral presentation at their poster and are then briefly questioned on it. This is then marked in confidence by the supervisor and second reader. This session will be scheduled for week 11 of the second semester. The poster must be submitted electronically at the end of week 10 of the second semester.

*Typed Report: 75 marks*

A full typed report on the project is submitted, which should not exceed 50 pages. This report should be properly structured and typed in accordance with instructions given. The report should contain an introduction outlining in detail the aims and objectives of, as well as some background information on the project. The bulk of the report should discuss in detail the main technical work carried out by the student with appropriate results, explanations and deductions. A final conclusion section should comment on the overall outcome of the project. This is then marked by the supervisor and second reader. Two soft-bound copies of the report must be submitted by the end of week 12 in the second semester.
Plagiarism
The college's policy on plagiarism is outlined in section H of the College Calendar.

Listed below are a few of the key points.

Plagiarism arises from:

- copying another student’s work;
- enlisting another person or persons to complete an assignment on the student’s behalf;
- quoting directly, without acknowledgement, from books, articles or other sources, either in printed, recorded or electronic format;
- paraphrasing, without acknowledgement, the writings of other authors.

It is the responsibility of the student to ensure that he/she does not commit plagiarism

Plagiarism is serious whether the plagiarism is deliberate or has arisen through carelessness. Remember, the project dissertation must be your own piece of work and written in your own words. Where material is being repeated verbatim from published, web or other sources, you should use inverted commas, italics and/or present the material in a separate paragraph, to make it clear to the reader that you are quoting directly (and you must reference the source).