CE301 Project Handbook

Site:	Moodle	Printed by:	Emmanuel Olaoye
Course:	CE301-6-FY : Individual Capstone Project Challenge - Colchester (2022/23)	Date:	Friday, 24 March 2023, 8:21 AM
Book:	CE301 Project Handbook		

Description

The handbook provides all the key information regarding CE301 Capstone Project.

Table of contents

1. Key Points and Important Dates

This document introduces the organisational details concerned with CE301 Individual Projects. Details are given regarding project organisation, who to contact should you have problems, the timing and details of the reports you need to submit for assessment, progress monitoring and guidelines on how to approach your project work.

The main points to remember are:

- ***DO*** *keep in close contact with your supervisor.*
- ***DO*** *make the best use of the available time.*
- ***DO*** *look after the equipment you are issued with and ensure it is secure.*
- ***DO*** *keep your work location tidy.*
- ***DO*** *maintain a high standard of design and construction in both hardware and software.*
- ***DO*** *observe safety at all times.*
- ***DO*** *remember that you are required to pass your project to obtain a degree.*
- ***DO*** *remember that each report must be new material. You must not copy your written work from one report to another.*

And the important dates are:

- Week 2 – Challenge Week, Present your work on Friday 14th October to your Supervisor
- Week 11 – attend interim oral examination
- Week 25 – submit poster (E)
- Week 30 – give poster presentation at Project Open Day
- Week 30 – submit final report (E) and Planning Record (School Office)
- Week 31 or 32 – give presentation and demonstration of project and attend oral examination

All (E) submissions are to Faser. Please check there for the actual submission date and time.

2. Introduction

These guidelines provide general information for all students taking CE301 Individual Project. The CE301 Individual Project forms a major part of the degree scheme assessment being a 45-credit module. Many students find the project the most interesting part of their undergraduate experience, as they can be creative, carry out research and/or undertake design. In some cases involving an external company. The project can also be seen as an introduction to the type of work you will find in graduate employment.

The problem with projects is time management. Some students allocate too little time at the beginning, resulting in little progress and a mad panic at the end. Other students spend too much time on it at the expense of other modules. It is essential that you organise your workload so that project work and other coursework is balanced with examination preparation. You must pass your project in order to graduate. Make sure you plan for each assessment element and do remember that each report must be new material. You cannot copy written material from one report to another, only make reference to it like any other reference.

3. Objectives

The project tests your ability to apply knowledge gained from other modules and independent study to solve a realistic design problem. You may also have the opportunity to develop new skills during your project. Projects are more open-ended than laboratory and assignment work in earlier years, and a detailed plan of action is not normally supplied to you. Instead, the project goals and your work plan is decided between you and your supervisor. The project is intended to be similar to industrial or commercial projects that solve a particular problem, investigate the feasibility of a particular solution or produce a product to meet a customer's requirements. All projects normally involve an appraisal of relevant background literature and/or appropriate theory, solution specification, solution synthesis/design, solution implementation/production/construction, and experimental verification/testing/evaluation. You may also have the opportunity to gain experience using relevant equipment and/or software, which is likely to be of immediate use after graduation.

4. Project Assessment

The elements of the CE301 Project are assessed by the Project Supervisor and the Second Examiner as shown in the table below. Each report must contain new material. You cannot copy your written work from one report to another, only reference it like all other references.

Week	Assessment	Supervisor	Second Assessor
2	Challenge Week deliverable	5%	not assessed
11	Interim Oral Interview	`not assessed`	10%
23	Abstract and Poster	5%	not assessed
30	A Planning Record using online tools provided by CSEE (JIRA)	5%	not assessed
30	Final Report	55%	55%
31/32	Presentation, Demonstration and Oral Examination	20%	20%

[1] Assessed by the Module Supervisor

5. Responsibilities of students, supervisors, and second assessors

Students

You must see your supervisor regularly throughout the Autumn and Spring terms (weekly preferably) in order to discuss your progress and to identify solutions to any problems. It is helpful to set up a meeting schedule at the start of each term, to guarantee this happens! At these meetings you must have your online planning record available otherwise you supervisor will cancel the meeting and record the fact. It is your responsibility to maintain the online planning record. This will be a valuable asset at each project meeting so that progress against plans can be monitored. Each meeting should end with an agreed set of objectives with deliverables, all recorded in the online planning tools. Obviously at your next meeting your supervisor will expect you to provide an update on your progress towards completing the actions agreed at the previous meeting.

For hardware work, it is expected that you will use a high standard of construction. Circuits which result in a bird's nest of wire and components will not create a good impression with the examiners, nor are such circuits likely to be reliable. If you need to produce a printed circuit board appropriate design software and prototype manufacturing facilities are available.

The same high standard is expected of software. Large quantities of badly written and undocumented code are as difficult for someone else to use as is untidily constructed circuitry! All code must be managed on the GitLab server, using all relevant tools to update the code. The technical documentation for all projects, software or hardware, must be developed through the project on GitLab.

Supervisors

Their main responsibility is to ensure that you are making satisfactory progress and are heading in the right direction. The role is similar to a project manager in industry. The supervisor will agree a project description, objectives and time scale with you. Meetings are held to help with progress, and to suggest approaches to solving problems. It is not, however, the supervisor's responsibility to provide detailed solutions, it is after all, your project! Specifically, supervisors will**:**

1. Give overall guidance concerning the direction of the work.

2. Check regularly on your progress and provide weekly feedback to students through the Jira 'Supervisor Feedback' issue, including feedback on reports made available at least 5 days before a deadline.

3. Discuss chapter and subsection headings of reports.

4. Give general advice on the presentation and discussion of the results.

5. Give general guidance about the formal presentation, demonstration and oral examination.

Supervisors will **not**:

1. Correct typographical, grammatical or syntactical errors.

2. Predict the outcome of the oral examination, or "guarantee" that the final report will pass.

Second Assessors

The second assessor is another staff member who provides independent assessment of your progress and written reports. You will not have contact with the second examiner, except through feedback about your written reports, your interim oral interview and project demonstration. The Presentation, Demonstration, and Oral (PDO) examination is held by the supervisor and second examiner in weeks 31/32.

6. Laboratory: Location, opening times, security and safety

Location

This will depend on what type of project you are doing. You may be working in your supervisor's research laboratory, which will possibly have the necessary equipment (and possibly research students). Otherwise you will be able to work in any of the laboratories for Software projects and in particular Lab 7 for software projects, and Lab 8 for hardware projects.

Replaceable hard disk modules are available from the Schools' Computer Support group located in room 5.509 accessed through the entrance to the School off Square 2. You will need to make a case for being issued one of these, so consider why you need it before requesting one.

Opening times

Your timetable should give some uninterrupted blocks of time for project work. If you are in a research laboratory, you should check on night opening times and access with your supervisor. Lab 7 is open 24 hours. If you are in the project hardware laboratory the opening times are from 9.00 am to 5.00 pm, Monday to Friday (term time only).

Security

All equipment you use, apart from PCs available in Computer Labs, will be booked out to you by the technical support team located in Lab 8. Do not borrow or move any equipment from another bench or laboratory without the permission of one of the technical support team. The responsibility for the security of all borrowed equipment is entirely with you. If any equipment is found to be missing, report it immediately to the appropriate person. Lockers are available for you to store equipment through the technical support team. You must not remove any equipment from any laboratory without permission.

Safety

Mains voltage may be present in almost any item of equipment. In addition, computer terminals, oscilloscopes and other cathode ray tube equipment will have voltages in excess of 10 kV. You are not permitted to remove the cases of equipment, or to wire mains plugs, or to replace mains connectors or fuses. Please contact a member of the technical support team to carry out this work.

If your project involves the use of lasers, there are special safety precautions to bear in mind. Please discuss with your supervisor the safety aspects of laser experimentation, before starting any practical work.

No food and drink should be taken into any laboratory at any time. The safety guidelines in the *Undergraduates Students' Handbook* must be observed at all times.

7. Laboratory: Components and equipment, facilities and personnel

Ordering Items for your project

It is possible that your project requires items to be purchased. In the first instance, discuss these with your supervisor and if it is decided that they are essential, please make your request through the CE301 App https://csee.essex.ac.uk/ce301app/ . In the main menu, click on 'Submit a special requirement request' and enter the details of what you need, the online link and/or cost. This information will be sent automatically to the CSEE tech team and module supervisor Dr Vishuu Mohan for further processing.

Purchases over £50 are not normally granted unless there is a case for the item being used over a number of years. Purchases need to be made through CSEE Finance office with due approval. So please DONOT buy yourself and claim reimbursement.

Equipment

Basic general purpose test equipment in the form of power supplies, oscilloscopes, signal generators and multimeters are available for hardware projects from the technical support team (Lab 8), who will also provide instruction on their use. There is also a selection of specialised test equipment available. These include a logic analyser, an analogue signal analyser and a fast digital storage oscilloscope. These facilities are for general short-term use. We can also provide access to a full range of CAD tools.

If any equipment is found to be faulty it must be reported immediately to a member of the technical support team (Lab 8)

Tools

If you are involved in circuit construction, you will need a set of tools. These are not provided by the School. Please discuss with your supervisor what you might require to purchase.

Printed circuit boards

There are a number of options for designing a pcb. all the laboratories have National Instruments MultiSim and UltiBoard and Cadsoft Eagle. Proteus is installed on some machines in the hardware laboratory (Lab 8).

If you require advice please see Nick Warren (Room 1NW.4.7). He will advise you on having circuit boards made either in-house or by an external company. The company we use is

http://www.pcb-pool.com.

Data sheets

These are available on the internet. Ask your supervisor or a member of technical staff if you have difficulty locating any data sheets.

Personnel

For advice on the following facilities, please contact

Dr Ian Dukes	Personal computers for project use, removable hard drives, and other project equipment
Dr Ian Dukes (Lab 8) Jon Whitby	General and specialised test equipment
Mark Marney	Robotics Lab
Dr Ian Dukes	Other facility issues/problems

8. Project Planning Record

As you should now appreciate after working in teams in the first and second year, it is important to manage a project and maintain records of the project progression.

In this module you maintain a record of your activities throughout the year. You will use planning tools provided by the School i.e JIRA.

JIRA can be accessed through CSEE Horizon- Follow the steps below

1. Log In to https://csee-horizon.essex.ac.uk/ with your Essex credentials

2. Go to CSEE Windows Virtual lab, Open a browser

3. Log In to Jira https://cseejira.essex.ac.uk/ with your Essex email address (like vm16090)

You should self train on the tools and maintain an agile methodology throughout the project period.

You should give access to your planning tools to your supervisor and your second assessor.

Grading Guidelines for all the CE301 assessments are provided here.

9. Report Writing - General Requirements

Layout

All reports must be prepared and submitted electronically. No paper submissions are required.

Reports should be presented using 11-point Times New Roman font. Margins should be at least 2 cm, on all four sides. The pages of text, including inserted equations and diagrams, must be numbered consecutively at the bottom centre of each page. Equations and diagrams should be generated by you. You should avoid copying and pasting these from other sources unless the diagram is highly complicated.

Cover page

Please ensure that the project title, your name, registration number, your supervisor's name, your second assessor's name, and your degree course are clearly typed on the report front cover.

Referencing

Referencing the work of others is an important topic for professionals. You will observe different referencing styles in the papers you are reviewing as part of your CE101 Precis Assignment. To help you provide correct referencing methodology you have use of 'EndNote' in our labs. You can also

- self-enrol in a Getting started with EndNote Moodle course
- access a pdf of the course materials
- explore the Thomson Reuters video tutorials library
- Explore the IEEE referencing style for common references here, and for less common references here.

Do remember that each report must be new material. You must not copy your written work from one report to another. You can reference previous reports, like any other reference.

10. Challenge Week Deliverable

As a part of the Challenge week, you will ahve one full week (i.e Week 2- October 10-14 2022) to intensively focus on your project, get guidance from your supervisor so that you start your individual project on a firm ground. All regular teaching is suspended during Week2 and the focus will be on your individual project. The summer preparation work and challenge week activity will lead to **a 30-minute presentation of your work to your supervisor** on Day 5 (with suitable evidence recorded in Jira and Gitlab). Please upload the presentation in Jira.

There will be few get together events also held during Challenge week that will be announced during Week 2. In general, the summer preparation, challenge week activity and presentation should focus on-

Background reading that you have done during summer in relation to your project. You need to demonstrate that you have read and understood a range of background literature from a range of sources including to a great extent peer reviewed articles. You could upload a 3-5 page summary of the background reading with appropriate referencing (IEEE[1]) in Jira.

Project objectives Clear formulation of the Project Objectives, Implementation plan, risks, context. Specific deliverables to be achieved by the oral interview in Week 11 must be agreed with your supervisor. Suitable evidence must be uploaded in Jira/Gitlab. The product may be hardware (e.g. electronic device), software (e.g. game, app, website, database), or the use of software packages to deliver a product (e.g. virtual network with security, device simulation). It is important that you describe the goals in a manner that gives confidence to their being achieved. All code for a project and the technical documentation must be held in the CSEE GitLab repository. Some examples of technical documentation will be provided during the autumn term. This week 11 interim oral will be undertaken by the second assessor. S/he will need access to your project management tools and your GitLab repository.

Technical achievements during challenge week- highlighted in your presentation with suitable evidence uploaded in Jira/Gitlab. Evidence could be software, videos, snapshots, a short written summary of achievements based on your own individual project/work done.

Project management- A record of summer and challenge week activity on Jira, demonstrating a clear strategy for the use of Jira, including the use if issues, releases, and reports. Please upload a Health and Safety risk assessment of your project through the CE301 App https://csee.essex.ac.uk/ce301app/index.php a blank template can be downloaded from the app. Please discuss with your supervisor the H&S risks related to your project

You will use Jira/KanBan to record your project planning (while in second year most of you have used Jira/Scrum in your team projects). Below are some tutorials to quickly get started with Kanban- **(Note that your Jira/KanBan projects will be created by us and you will receive a notification)**

CSEE Jira Server and Gitlab resources can be found here

11. Interim Oral Interview

The interim oral interview will last up to 30 minutes. The interview will be conducted by second assessor. You should do a short presentation describing your project goals, novelty, approach, work done so far in relation to MVP (with suitable evidence). Also show then the project management, activity in Jira, GitLab. Please upload the slides in Jira. There will be around 10 mins for questions. This is also a great opportunity to leave a nice first impression about your work on the second assessor (who will be jointly grading your final report along with the supervisor)

Grading Guidelines for all the CE301 assessments are provided here.

12. Project Open Day and Posters

The CE301 project Open Day will take place on Thursday April 27th 2023, from 2.00 pm to 5.00 pm. All projects are demonstrated to staff, students and Industry visitors to the School. To aid your demonstration you will be required to prepare a e-poster indicating the aims and objectives of your project, the approach you have used, and an assessment of what you have achieved. The poster should help visitors to understand what your project is about. A template is provided for you. Make sure you talk to your supervisor and agree on text and layout. Make sure it is spell checked please. You are also required to submit an abstract that will be included in the Open Day Booklet, produced for Industry visitors to the Open Day, future CE301 Students.

Posters are submitted directly to CE301 App https://csee.essex.ac.uk/app-portal .

Abstracts will be submitted to CE301 App and FASER. Please Log In to the CE301 App, go to Edit Project details, enter the abstract, project title. Click on save changes, Generate PDF and upload the PDF to FASER.

Grading Guidelines for all the CE301 assessments are provided here.

13. Final Report

This report gives a full account of your project work. It will be read by your supervisor and second assessor, and will form the basis for the subsequent oral examination. It is important that you discuss the format and structure of this report with your supervisor before writing it. Technical documentation should be made available in GitLab as a read.me file.

You submit only an electronic copy to Faser. Here are some guidelines for the report (see also chapter 9).

The guideline text length is 10,000 words (around 20 pages). Diagrams, equations, pictures, and references are not included in this word count. In addition you are allowed appendices, but these should only be used if they add something useful to the report.

If your project is software oriented and has a lot of code, you are required to have this accessible on the School GitLab or other repository agreed by your supervisor.. The final report can then give an overview of the software, and summarise its performance, with technical details documented in GitLab.

In general the material of a report should be organised as follows:

- *Title page (1 page)*
- *Acknowledgements. You can also acknowledge the support you have received from others such as family, colleagues, academic/technical/administrative staff (1 page)*
- *Abstract/Summary (a page on its own) (1 page)*
- *Table of contents (1 page)*
- *List of symbols (optional) (1 page)*
- *Main text (in as many chapters as are necessary) (30 to 40 pages). The core of this section is the technical documentation .*
- *Project Planning (a review of your project planning and operation including risk management) with evidence in Jira*
- *Conclusions (1-3 pages)*
- *References (in IEEE standard)*
- *Appendices*

Title page

The title page must include the project title. You must also include your name, registration number, your supervisor's name, your second assessor's name, and degree course on the title page.

Acknowledgements

If material has been obtained from sources outside the University, for example from liaison with industry, the student may wish to make an acknowledgement. Acknowledgement to the supervisor and any assistance from postgraduate or other undergraduates should be given.

Abstract / Summary

The report should begin with an abstract or summary of what the report, not exceeding 200 words. This may be the abstract you submitted for the Open Day. It should contain sufficient information for the reader to understand what the project is about, what work has been carried out and what the final outcome of the work was. The summary page should not be numbered, but all other pages are numbered consecutively.

Table of contents

The report should be subdivided into relevant sections. Each should be given a meaningful heading or subheading, and they should follow a numbering scheme as given below.

List of symbols

This list defines the main symbols used in the report, especially acronyms and unusual meanings. The SI unit system is standard and should not be listed here.

Main Text (as many chapters as necessary)

It must begin with setting the context of the project through a literature review demonstrating reading and comprehension of the context of your project. What problem has been solved? Why is this problem important? You must discuss the context of your product and its role in society. You must discuss any issues relating to sustainability, legal, ethical, and Intellectual property that have relevance to your project work.

After setting the context you must state the project aims and objectives. This must then be followed by the **detailed technical documentation**. You should follow a technical documentation style that is appropriate to the product being developed. You can refer to the model(s) you have used in preparing your technical documentation. It is important to **stress the technical achievements** you have made, making it clear what you have adopted, modified, or created entirely from new.

Related topics should be kept close together, and the relationships should be clearly indicated. Explanations should be given in terms of what has already been revealed rather than in terms of what is to follow. References should be given as close to the referred material as possible. You should précis important material and avoid long quotations, a reference to the original work being given instead.

The main text should include no more mathematics than is absolutely essential. Extended mathematical treatment, if necessary, may be added as an appendix at the end of the report. A detailed explanation of, for example, a standard circuit configuration or design technique or a lengthy digression, if it must be included, should also be put in an appendix. Parenthetical remarks and footnotes that also distract the reader's attention from the main theme should be brief and few.

Project Planning

In this section you should discuss your project planning. How successful were you at maintaining momentum, adapting to change, identifying and dealing with risks. You should reflect on your overall achievements, performance, and what you have learnt. Did your methodology prove suitable?

Conclusions

You should conclude your report by drawing together the work you have undertaken and presenting your overall results. Make clear what has been produced against what was intended. Make comment on what future work could be undertaken to improve or further your work.

References

These should be numbered and listed in a special section entitled 'References', or if exhaustive, 'Bibliography', and indicated in the text by [1] for example.

[1] K. Badie and M. Shimura "Machine recognition of Arabic handprinted scripts", *Trans. Inst. Electron. Commun. Eng., Japan*, vol. E65, no. 2, pp.107 -114 1982

[2] Komerska R J,and Chappell S G, "A simulation environment for testing and evaluating multiple cooperating solar-powered AUVs," Proceedings of the MTS/IEEE Oceans 2006 Conference. Boston, 2006, pp.1-6.

You are recommended to use an electronic referencing system for your referencing.

Tables, graphs, figures and equations

Results can often be displayed more effectively by means of graphs than by tabulation. But if a graph is say a straight line, the graph can be replaced by a simple statement, or equation. Tables, graphs, figures and equations should be integrated into the text, rather than appearing on separate pages. All tables, figures and diagrams should have brief meaningful headings and should be numbered consecutively throughout both the main text and appendices. You should avoid copying and pasting figures from other sources. You will gain higher marks for tables, graphs, figures and equations you produce.

Please ensure that the project title, your name, registration number, your supervisor's name, and your degree course, are included on the title page of the report.

Grading Guidelines for all the CE301 assessments are provided here.

14. Presentation, Demonstration and Oral Examination (PDO)

During week 31/32 each student will give a formal presentation (PowerPoint or other tool) outlining their objectives and methodology and a demonstration of their product developed. This will be followed by an oral examination with the supervisor and second examiner who will ask detailed questions in order to verify your understanding and to ascertain the level of achievement. The PDO represents ~3.4% of your degree. It is important that you have a copy of your report with you during this examination.

Individual presentations, demonstrations and oral examinations should typically last between 40 – 55 minutes. Afterwards the examiners are not allowed to announce to you the project mark, or even to indicate whether you have passed or failed. Please do not ask them to do this.

You will be given the time and date of your PDO at the start of the academic year.

Grading Guidelines for all the CE301 assessments are provided here.

15. Plagiarism Advice

It is an academic offence to use the work of others without acknowledgement, where a judgement is made that this has been the result of serious negligence or of intention to deceive. You must acknowledge any assistance received or fully reference the use of the work of others. See also the section on plagiarism in the *Undergraduate Student Handbook* under the section on Academic Offences and also use the link below about 'Authorship and Plagiarism':

http://www.essex.ac.uk/plagiarism

Remember that you are required to submit your report electronically and it will be passed through the "TurnitinUK" plagiarism checking system that will identify copied sections. If you do copy anything (including pictures/jpegs) then be sure to insert it as a quotation or at least acknowledge its source using the appropriate referencing technique. Do remember that quotations should only be used in a technical report in exceptional circumstances.

Do remember that all your reports submiited for CE301 are independent reports. You must not copy from one report to another. You can reference previous reports, like any other reference. If in doubt seek advice from the module director.

Here are some examples of incorrect and correct usage of reference material. This is the original passage, which I have taken directly from this web site (http://nms.lcs.mit.edu/papers/ron-sosp2001.html) Assume the source is going to be Reference 1 in the report.

A Resilient Overlay Network (RON) is an architecture that allows distributed Internet applications to detect and recover from path outages and periods of degraded performance within several seconds, improving over today's wide-area routing protocols that take at least several minutes to recover. A RON is an application-layer overlay on top of the existing Internet routing substrate.

If you use this in your report in the following two ways it would be cheating;

- A Resilient Overlay Network (RON) is an architecture that allows distributed Internet applications to detect and recover from path outages and periods of degraded performance within several seconds, improving over today's wide-area routing protocols that take at least several minutes to recover. A RON is an application-layer overlay on top of the existing Internet routing substrate.
- A Resilient Overlay Network (RON) is an architecture that allows distributed Internet applications to detect and recover from path outages and periods of degraded performance within several seconds, improving over today's wide-area routing protocols that take at least several minutes to recover. A RON is an application-layer overlay on top of the existing Internet routing substrate. [1]

If you use it in the following way it would be discarded from the assessment;

- "A Resilient Overlay Network (RON) is an architecture that allows distributed Internet applications to detect and recover from path outages and periods of degraded performance within several seconds, improving over today's wide-area routing protocols that take at least several minutes to recover. A RON is an application-layer overlay on top of the existing Internet routing substrate. The RON nodes monitor the functioning and quality of the Internet paths among themselves, and use this information to decide whether to route packets directly over the Internet or by way of other RON nodes, optimizing application-specific routing metrics." [1]

If you use it as follows it would be used in the assessment;

- Anderson et al [1] state the following "A Resilient Overlay Network (RON) is an architecture that allows distributed Internet applications to detect and recover from path outages and periods of degraded performance within several seconds, improving over today's wide-area routing protocols that take at least several minutes to recover. A RON is an application-layer overlay on top of the existing Internet routing substrate." From this we can see that RONs have the ability to detect and solve problems. They are easy to implement as it can be overlaid on existing networks.

The most acceptable use would be the following;

- Resilient Overlay Networks (RONs) are architectures with extremely useful features. They can detect and recover situations that occur in networks. For example they can recover path outages. They can also deal with periods of degraded performance. These detections and recoveries can be achieved in seconds. This is a significant improvement on current routing protocols in which recoveries can take minutes. They are easy to implement as it can be overlaid on existing networks [1].

16. Final Year Prizes

A variety of prizes are awarded to final year students, which are listed below:

The **Devdas Korappath Gopel Prize** in memory of a former student, is awarded for outstanding performance on the BSc Computer Science degree. It is open to both second and final year students. The prize of £100 will be awarded to the second or final year BSc Computer Science student with the best overall year mark.

The Institute of Electrical and Electronic Engineers UK and RI Communications Chapter Prize is awarded to the final year BEng student who achieves the highest project mark. This prize is worth £100.

The Computer Science and Electronic Engineering Prize is awarded to the final year student who achieves the highest degree mark and is worth £250.

The Institute of Engineering and Technology Prize is awarded to the final year BEng student who achieves the highest degree mark. The prize-winner will receive two years' free membership.

The Wind River Systems Prize is awarded to the final year student who achieves the highest project mark in the area of Embedded Systems and Robotics, and is worth £250.

The Active Web Solutions Prize is awarded to the student who achieves the highest mark for the final year BSc project, and is worth £250

The TeamCast Prize Donated by TeamCast is awarded by the Board of Examiners to the Final Year student achieving the highest degree mark on the BEng Telecommunication Engineering degree. The value of the prize is £150.

BT Project Prize is awarded for outstanding individual performance on a BEng project and is worth £125. To determine the winner of this prize, the BEng student with the highest mark for the Individual Project Report will be awarded this prize.

BT Project Presentation Prize is awarded for the best presentation mark on a final year BEng project and is worth £125.

The Project Presentation Prize is awarded for the best presentation on a final year project at the Project Presentation Day and is worth £125.

A number of other national prizes are available and details will be emailed to the students when they are received. If you think your project is suitable and you would like to enter any of these competitions please discuss it with your supervisor and the Project Coordinator. We have had some success in such competitions in the past and there is usually a significant financial reward as well as the prestige associated with a national competition.