TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI VICTORIA UNIVERSITY OF WELLINGTON

SCHOOL OF ENGINEERING AND COMPUTER SCIENCE

Group Project - Course Outline

ENGR 302: 2013 Trimester 2

This document sets out the workload and assessment requirements for ENGR 302. It also provides contact information for staff involved in the course. If the contents of this document are altered during the course, you will be advised of the change by an announcement in lectures and/or on the course web site. A printed copy of this document is held in the School Office.

ENGR302 is the practical application of Project Management techniques and methods. This year we use a real-life project called RiverWatch in support of a larger project called WaiNZ for a client farmer in the Wairarapa. You are recommended to watch the YouTube video on Riverdog.

In this course we will expect you to work in a team as well as individually and use your initiative and resources to gather information and ask questions of relevant University staff. You will be working in a group/team with 4 other people to solve one of the following projects.

a) Website development

- i) development of a Content Management System (CMS) platform. A php platform or similar that will allow administration of the website without the requirement for hard code. Currently the back end of the site has python code which will not register with php front end code in drupal. This is a problem that needs to be solved.
- ii) website content development, such as Google maps, phone apps functionality with the site, report generation, data generation, educational resources, U.A.V missions and results.
- iii) website marketing and development of the functionality with key social media sites and pledge sites. CMS functionality with these sites.

b) Phone app platform development

- i) functionality with website CMS android & IOS apps.
- ii) develop app features to allow GPS storage with pic taken in a no service area, to be sent automatically once phone comes into a service area. develop water tester for app, will require a hardware component, but could be a plug-in usb mini hub that the app comes with.
- iii) IOS 7 apples new platform and windows 8 updates impact on functionality, future proofing platform development.

c) U.A.V development

- i) UAV communications, develop hardware/software for live visual feed from the UAV to the operator. This would incorporate live control of the UAV if required.
- ii) development of battery and solar panels to extend flying range from the current 30km round trip. Develop track and find for a crashed or lost UAV
- iii) thermo imaging software to work with camera mounted on UAV that will recognize the thermo heat print of a cow (bovine) and flag it on images recorded.

LEARNING OBJECTIVES

By the end of the course, students should be able to:

1. Produce a Feasibility Study Report and a Project Initiation Document (PID) and explain the importance of each element to starting an engineering project (1(a), 1(b), 2(b), 3(d)).
2. Apply good practices and professional standards to achieve sustainable development and to maximize success of the project in terms of a) problem solving of technical issues leading to quality design leading to producing appropriate and working deliverables; b) your personal experience as a participating group member and a work-package leader (3(a), 3(d), 3(e), 3(f)).
3. Produce meaningful critiques of the work-experience in a multi-disciplined team involving differing skill areas and skill levels (1(a), 2(b)).
4. Prepare and deliver a) an achievement/progress report as a presentation; b) a working demonstration of your product (1(a), 2(b), 3(b), 3(e)).
5. Demonstrate that you understand the basic causes of interpersonal conflict and have applied this to your practical experience of group dynamics in resolving conflicts (2(a)).

There is no single required textbook for ENGR 302. Students will find it useful to borrow from the library or purchase

books on the principles of managing engineering projects.

Lecture Sessions and Practical work

The lecture sessions are on Tuesdays, Wednesdays and Thursdays in Murphy Building room MY632:

on Tuesdays and Thursdays from 11am - 11:50am

on Wednesdays from 1.10pm to 2pm .

A substantial component of your learning experience takes place by your personal practical work in your group project. This is your personal responsibility, do not let yourself down: do not let your team members down.

Practical work can be done using lab facilities, it is up to your team to find time and space for your construction and testing.

Assignment Deliverables

You are required to prepare and deliver: a Feasibility Study Report on your selected project; the Project Initiation Document (PID); Working Documents for your project; a group Project Achievement Presentation; an individual 2000 word Critical Reflection on your individual contribution to the project; a Demonstration of your Product. These are detailed in the following sections.

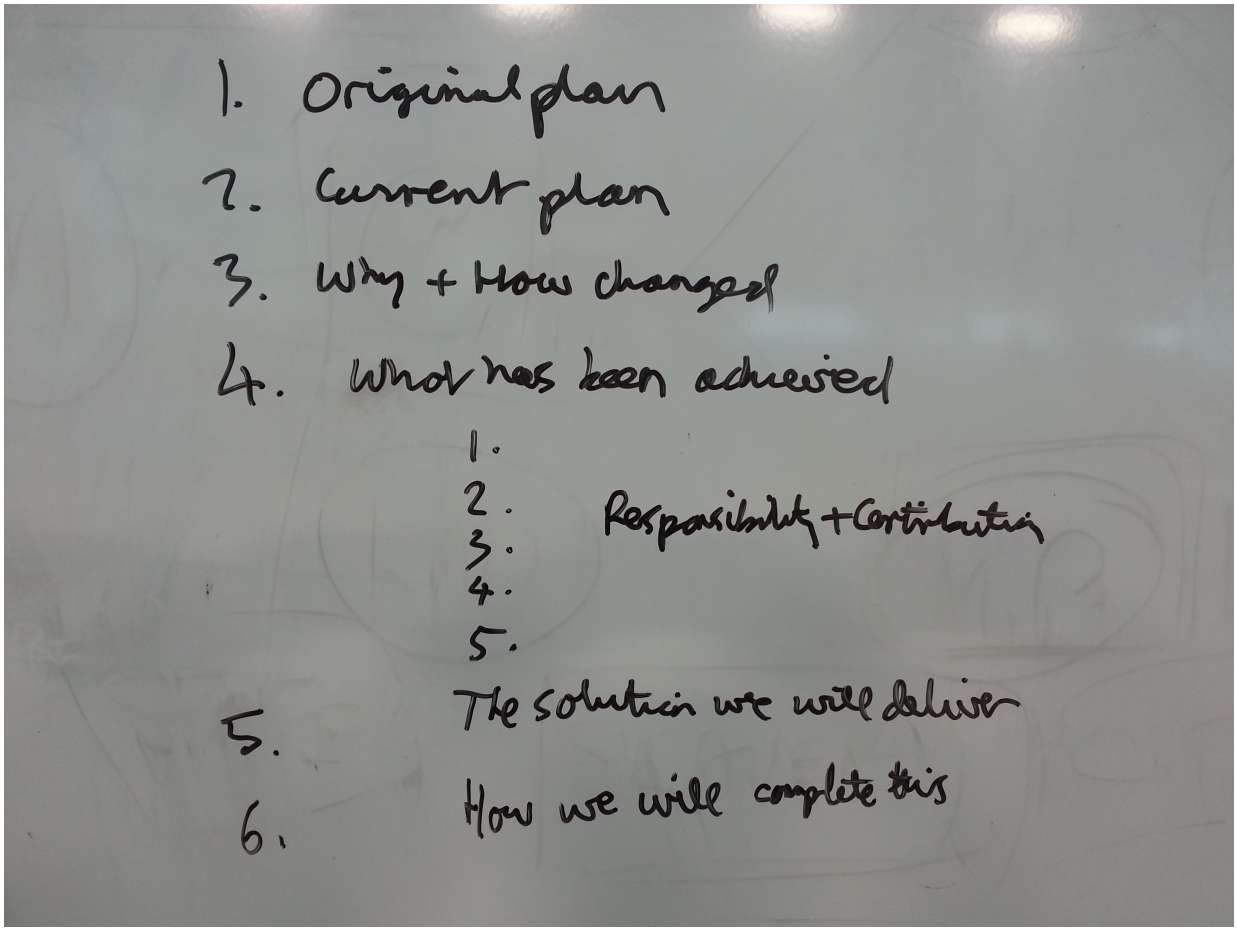
1. Your Feasibility Study is to commence immediately after the Client brief on Wednesday 17 July 2013 and is to be completed within 5 working days and your written Report is to be submitted in class on Thursday 25 July 2013. It must contain sections explaining a) the economics of your project; b) the technicalities of a solution; c) social implications of your product; d) operational issues for the Client using your product. [Learning Objective 1]

2. Your written PID must contain sections covering a) the Business Case for the project; b) Scope statement; c) Identification of each stakeholder by name and role; d) Project Management Plan to include the work to be performed in named work packages with time-schedule for each work package, workload planning and financial budget planning; e) Risk Management Plan and Risk Register; f) Quality Management Plan including all test routines; g) team meetings documentation. The PID is initiated during the Feasibility Study, completed in 10 working days and submitted in class on Thursday 1st August 2013. [Learning Objectives 1 & 2]

3. Your Working Documents are a continuation and weekly update of project plans to show where your project is each week including an indication where your project is going in the short term; updated Risk Register; updated Quality Management Plan; up-to-date minutes of all team meetings. These are submitted weekly on-line and form an audit trail of achievements and problems encountered. [Learning Objectives 2 & 3]

4. Project Achievement Presentation - your team will prepare and deliver (in week 9) a 10-minute presentation on achievement to date followed by Staff questions for 5 minutes. You will make comparisons of progress to date with your initial plans and explain all deviations. Each member should explain her/his area of responsibility and contribution to the work todate. Delivering this presentation will focus your minds on work still to be performed to complete your project. You will outline your preferred solution to a pannel of assessors including the Client and explain your plan for weeks 10, 11 and 12. [Learning Objectives 3 & 4]

Structure of your achievement presentation:



5. You and your team will prepare and give a demonstration of your product to a pannel of assessors in week 12 (08th to 10th October 2013). [Learning Objective 4]

6. Individual Critical Reflective Report (2000 words) - during the project each individual should prepare her/his own critique of the project to this date including personal lessons learned. This will form the basis of your individual Critically Reflective Report and must include your good and bad experiences and what you have learned from these. You must present your analysis of your learning experience (use your record in your learning logbook), reflections on the group dynamics, conflicts and how they were/were not resolved. You must include the lessons you learned during this experience and assess the value of each. You must include your reflections on these lessons learned and draw conclusions on how you will in future do things differently in the light of lessons learned. You must focus on the the learning experience gained through **doing** the project. [Learning Objectives 3 & 5]. Hard copy of your Critical Reflective Report is to be handed in on Wednesday 16th October 2013 in class and submitted electronically on-line by 1:10pm.

Assessment

Your grade for ENGR 302 will be determined based on the following assessment weightings:

Assignment Deliverables	Weight	Due Date
Feasibility Study Report	15%	Thursday 25th July 2013 in class
Project initiation document	20%	Thursday 1st August 2013 in class
Working Documents	10%	Submitted electronically each week on Mondays by 23:59. Hard-copy accumulated version in class on Thursday 22nd August 2013
Presentations	15%	Tuesday 24th, Wednesday 25th and Thursday 26th September 2013
Demonstration of your Product	10%	Tuesday 08th, Wednesday 09th, Thursday 10th October 2013
Individual Critically Reflective Report	30%	Wednesday 16th October 2013 in class at 1:10pm and electronically via the ENGR302 submissions page;

Workload

In order to maintain satisfactory progress in ENGR 302, you should plan to spend at least *10 hours* hours per week EVERY WEEK on this paper, giving a total workload of 150 hours per person. A plausible breakdown for these hours would be:

- Lecture sessions: 3 hours per week
- Group project work: 5 hours per week

- Assignments: 2 hours per week.

School of Engineering and Computer Science

The School office is located on level three of the Cotton Building (Cotton 358).

Staff

The course organiser for ENGR 302 is Dr George Allan. His contact details are:

- Dr George Allan
- Cotton 230
- 04 463 6741
- george.allan@ecs.vuw.ac.nz

ENGR302 sessions will be facilitated by Dr Allan, Professor Seah and Mr Lawrence Collingbourne whose contact details are:

- Professor Winston Seah
- Cotton 336
- 04 463 5233 ext 8493
- winston.seah@ecs.vuw.ac.nz

- Mr Lawrence Collingbourne
- Cotton 230
- 04 463 6741
- lawrence.collingbourne@ecs.vuw.ac.nz

Announcements and Communication

The main means of communication outside of lectures will be the ENGR 302 web area at http://ecs.victoria.ac.nz/Courses/ENGR302_2013T2/. There you will find, among other things, this document, the lecture schedule and assignment handouts, and the ENGR 302 Forum. The forum is a web-based bulletin board system. Questions and comments can be posted to the forum, and staff will read these posts and frequently respond to them.

Tests and Exams

There are no tests or examinations for ENGR302. All assessment is by continuous assessment as outline above.

Policies and penalties for late submission

Plagiarism

Working Together and Plagiarism

We encourage you to discuss the principles of the course and assignments with other students, to help and seek help with programming details, problems involving the lab machines. However, any work you hand in must be your own work.

The School policy on Plagiarism (claiming other people's work as your own) is available from the course home page. Please read it. We will penalise anyone we find plagiarising, whether from students currently doing the course, or from other sources. Students who knowingly allow other students to copy their work may also be penalised. If you have had help from someone else (other than a tutor), it is always safe to state the help that you got. For example, if you had help from someone else in writing a component of your code, it is not plagiarism as long as you state (eg, as a comment in the code) who helped you in writing the method.

Mandatory Requirements

Your team must meet as a group at least once-a-week outside lecture times over the study period of week 1 to week 11. Your team must produce a record of discussion points and action points from each team meeting. You are to keep a personal record of your learning in a personal Learning Log to be able to produce evidence of your learning.

You are strongly advised to complete all practical work, this includes handing-in all the required project documents, presentation, and the individual Critically Reflective Report, on or before the deadlines.

You are strongly advised to attend all meetings and lectures during the course, or produce evidence (e.g. medical certificate, explanation from employer, explanation of special circumstances) for the cause of absence.

Passing ENGR 302

To pass ENGR 302, a student must satisfy mandatory requirements and gain at least a **C** grade overall.

Withdrawal

The last date for withdrawal from ENGR 302 with entitlement to a refund of tuition fees is Friday 26 July 2013. The last date for withdrawal without being regarded as having failed the course is Friday 27 September 2013 -- though later withdrawals may be approved by the Dean in special circumstances.

Rules & Policies

Find key dates, explanations of grades and other useful information at http://www.victoria.ac.nz/home/study.

Find out about academic progress and restricted enrolment at http://www.victoria.ac.nz/home/study/academic-progress.

The University's statutes and policies are available at http://www.victoria.ac.nz/home/about/policy, except qualification statutes, which are available via the Calendar webpage at http://www.victoria.ac.nz/home/study/calendar (See Section C).

Further information about the University's academic processes can be found on the website of the Assistant Vice-Chancellor (Academic) at http://www.victoria.ac.nz/home/about/avcacademic

All students are expected to be familiar with the following regulations and policies, which are available from the school web site:

Grievances
Student and Staff Conduct
Meeting the Needs of Students with Disabilities
Student Support
Academic Integrity and Plagiarism
Dates and Deadlines including Withdrawal dates
School Laboratory Hours and Rules
Printing Allocations
Expectations of Students in ECS courses

The School of Engineering and Computer Science strives to anticipate all problems associated with its courses, laboratories and equipment. We hope you will find that your courses meet your expectations of a quality learning experience.

If you think we have overlooked something or would like to make a suggestion feel free to talk to your course organiser or lecturer.

Course Outline as PDF

- Projects.docx: Projects.docx
- Feasibility_Study_Report.docx: Feasibility_Study_Report.docx
- Feedback_on_Student_Feasibility_Studies.doc: Feedbck on Feasibility Study
- Project_Initiation_Document.docx: PID marking scheme
- 6_Thinking_Hats_visual.pptx: 6 Thinking Hats text
- Feedback on working documents:

Please look at http://www.writing.utoronto.ca/advice/reading-and-researching/critical-reading

* Making_a_Good_Presentation_2013.pptx: Making a Good Presentation

- Achievement_presentation_timings.docx: Achievement presentations timings
- Product_Demonstration_Schedule_ENGR302-2013.docx: Product Demos Timings
- Demo_Marking_Schedule_ENGR302-2013.docx: Product Demo Marking Scheme
- ENGR_302_-_Critical_Reflective_Report.doc: Reflective Reports
- Reflective_Report_Final_Guidance.docx: Final guidance on the reflective report
- ENGR302 Class photo 2013:

- ENGR302 2013 Winning Team reNEWEL: