



Course Brief and Outline: 2017

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Academic Staff

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1 Introduction

We have two groups of students registered for this course:

- those students who are registering for the first time and will complete their vacation work at the end of the year and submit their report in 2018; and
- those students who were registered last year and have completed or about to complete their vacation work and will submit their report this year.

Different tasks and deadline apply to these different groups.

2 Course background, purpose and outcomes

The objective of this course is to expose the student by working for a company during university vacations industrial, social, ethical and economic realities associated with the engineering profession.

At the end of the course, the student will be able demonstrate the ability to:

- Perform practical work (engineering, managerial, educational) at an appropriate level;
- Assume responsibility as part of a team;
- Communicate the experience in a short report;
- Report on matters related to professional ethics encountered during the vacation work (student's personal experiences);
- Report on matters related to economic and social impacts of the vacation work.

3 Requirements

The following extracts from the rules should be borne in mind:

- *The first period of vacation work should be completed during a period of six consecutive weeks in the year succeeding that in which credit is obtained for second year. Where possible the vacation work should take place in an industrial environment, and should be according to the departmental guidelines for vacation work as described in the CB&O.*
- *A student may undertake an alternative approved programme involving community work, work in developing areas or appropriate technology.*
- *The requirements for satisfactory completion of vacation work are the submission of a vacation work certificate confirming that students have completed their work regularly and satisfactorily during the prescribed period and a report on the work undertaken during the period of vacation employment meeting the criteria described in the CB&O*

The two key things we are looking for are

- type of work: we don't mind if part of the time you are photocopying documents, sweeping floors, or cleaning bottles (probably good experience), but there must be a significant part of the work that gives you appropriate industrial experience.
- supervision: the person who supervises you should be in a position to give you appropriate technical or engineering training. For example, having a Pr Eng is highly desirable though we recognise that many other qualifications are more than sufficient (especially in the software industry).

More detail can be found in Section 8.

4 When may Vacation Work be done?

Normally, the Vacation Work must be done over the December/January break (this is the only time in which the 6 consecutive weeks is actually possible). Thus we expect all vacation work to be completed and the report submitted by the date in March for submissions.

Where *good* reason is given, alternative plans *may* be proposed. A good reason is that you have an opportunity that would aid your training and preparation that can only be done at different times. A bad reason, which will not be approved, is that you have not found anything yet for December. For example, this proposal would be most likely be acceptable.

I have been offered an internship at NASA. I will work at the Cape Canaveral laboratories for 3 weeks in January working on the control system of the latest generation of rockets, and receiving training. In June/July, I will spend four weeks on the International Space Station doing scientific experiments measuring the effect of solar radiation on novel antenna design. My supervisor will be Dr Albert Einstein, who is NASA's chief engineer.

(OK, it doesn't have to be quite as impressive as that, but the point is that a deviation of from the normal December/January work must be for a good reason and requires special approval). You are responsible for ensuring that you complete your vacation work

4.1 No carry-over of vac work

Vacation work must be done in the November-September cycle. You can't carry over vacation work from one year to the next (e.g. you **cannot** do 2 weeks in June of one year and 4 weeks in the next June. The faculty examination board considers outcomes of all reports at the end of each year. If you do not make the requirements or if you fail your report, you will have to repeat the work and the report.

4.2 Resubmission of reports

If you fail your report you will be given feedback and one opportunity to resubmit the report. If you fail the report the second time you will fail the course and will need to **repeat the 6 weeks vacation work and submit a new report**. There is no reason to fail and so we shall enforce this policy strictly,

4.3 Days worked and public holidays

The formal requirements are 6 weeks of work, which is 30 days of actual work. There may be public holidays in the periods you are working: whatever the public holidays, **you must complete a minimum of 29 days of work**.

5 Course assessment

The vacation work report forms 100% of the course assessment. Details can be found on Sakai.

- The student must submit a report of 4 pages (plus appendices) by the date given.
- A vacation work diary must be submitted, which gives a brief entry for each day. This should be completed daily.
- A vacation work certificate must be signed by an employer and stamped with a company stamp. If the company does not have a stamp, a separate letter with the company letterhead should be provided confirming employment.

The student must obtain at least 50% for the course and receive a satisfactory assessment from the employer.

Report structure

The report should give a brief overview of the company, including the structure of the company, and how the student fitted into the organisation's hierarchy. The work that the student did should be discussed in the context of the company's activities. The report should give a brief description of the technical aspects of the project so that the level and extent of the work can be evaluated (one page). A brief overview of time-management should be given — a week-by-week activity list. The report should discuss professional ethics relevant to the work – e.g., integrity, personal conduct. Finally there should be a brief discussion of social and economic issues relevant to the work, e.g. benefits to

society, gender, environmental issues, economic benefits, possible negative effects (e.g. possible job losses as a result of automation).

Appendices may be included if necessary, including any reports written for the employer, circuit diagrams, technical documents. but do not over-burden the report.

The comprehensiveness of the report, and quality of writing and presentation will primarily determine the mark given.

6 Submission dates

All submissions are due by 0750 on the date prescribed below and will primarily be done using Sakai. If you have any doubt about access to a computer over a weekend you should ensure that your documents are submitted the week before (there is plenty of time to plan).

6.1 Students who still need to complete their vacation work

You are responsible for finding work. Part of the learning experience is getting experience in applying for work. Write a clear CV, get your necessary documents together and apply early. Vacation work is not always easy to find so start soon – do not leave it to the last moment. If you don't find vacation work in time, you will have to do it the next year and this may delay graduation. Since vacation work is an ECSA requirement, the School cannot waive the requirement.

- All students must submit their proposals for Vacation Work I by **26 September 2017**.

If you are thinking of proposing something different (i.e., proposing dates other than December/January, or doing a project under the *alternative approved programme involving community work, work in developing areas or appropriate technology* clause), please make informal inquiries early. We welcome people doing innovative projects and will try to make good ideas work, but you do need approval **beforehand**.

6.2 Students who have completed the work and are working on reports

You are required to submit your vacation work report by the first submission date after you have finished your vacation work. The submission dates are:

- 20 March 2017 (those who complete in February),
- 14 August 2017 (those who complete in June/July), and
- 2 October 2017 for all others.

Repeat: Vacation work done must be claimed for by the specified submission date and if a student does not submit the report and certificate in time, the vac work will have to be redone.

You snooze, you lose. You cannot save up vacation work for later – if you don't submit your report, you lose credit: to repeat note that no vacation work done in 2017 or before can be counted to a report submitted in 2018 or later.

7 Submission and communication

Hand-in details can be found on Sakai. Since this is a large and complex course which stretches over a long period, all communication should be done through Sakai. Please use the *Message* feature and send email to *Instructor Role* so that all staff who are involved get the email (this also protects you since there is a record of all email sent).

8 Where can work be done

Work can be done:

- In formal industry, where a company provides the student with engineering-related work. It does not need to be an engineering company but the work needs to be of an engineering nature. A graduate engineer employed by the company must act as a supervisor/mentor and meet with the student once a week, and at the end of the work complete a brief report on the student's performance.
- At an educational institution. Some educational institutions provide students with practical or research related work. It does not need to be an engineering faculty, but the work must be of an engineering nature. A member of the academic staff of the institution, preferably a graduate engineer, must act as a mentor and complete a short report on your performance. In general, only one period of vacation work may be done at an educational institution. An exception will only be made for students who are not South African citizens or permanent residents who may have difficulty in being employed outside the university – however, we strongly encourage such students to do their best to do one set of vacation work outside the university.
- Informal industry or community work. We encourage innovative work experiences and working for community organisations, small companies or individuals provided the work is of an engineering nature. If this organisation does not have a graduate engineer available to supervise or mentor, the student must find a graduate engineer or member of the School's staff who is willing to mentor (student's responsibility to find someone, as this is voluntary work on the mentor's part). This person must meet the student once a week. At the end of the vacation work, a report must be completed by the mentor *and* the person's supervisor. In cases like this, you must complete all details as required in Section 6.1, including providing: project plan and details; details of manager/supervisor *and* mentor; where the work is done; and what facilities will be required. The mentor should have indicated in writing their willingness to act as mentor, including meeting once a week.

9 General

Conduct

While doing vacation work, students are bound by the University's rules and regulations. Acts of misconduct or lack of professionalism reflect poorly on the university and may result in disciplinary action being taken against the student. Where a student fails to get a satisfactory report from the employer (e.g., for not completing work, or poor time discipline), the student will fail the course and have to redo the vacation work next year.

Prior experience

Where a student has prior experience we may consider exempting students from the requirement to do vacation work. For example, a graduate who has worked as programmer for several years and has returned to university to complete an engineering degree would likely qualify.

In such cases, students should apply to the coordinator by 30 June for exemption, giving details of the work (type of work, when and where done, who supervised). Exemption is at the discretion of the School.

Splitting vacation work between employers

It is preferable for each batch of work to be done at only one employer, because there is inevitably start up costs. However, we recognise that it may be necessary to split the work between employers – we discourage this if possible. A **maximum** of 2 employers is allowed. No period of work may be shorter than 2 weeks. In such case, a single report is submitted of between 7-8 pages.

Payment

Students must not expect to be paid during their vacation work — this is at the discretion of the employer. Students should clarify this at the point of accepting the position.

Requirement

Successful completion of the vacation work is a requirement for graduation.