

**SCHOOL OF CIVIL AND ENVIRONMENTAL
ENGINEERING**

THE UNIVERSITY OF
NEW SOUTH WALES

Session 2 2013

CVEN4003 Design Practice B



COURSE DETAILS

Units of Credit 6

Course coordinator and Lecturer Associate Professor Ron Cox
r.cox@unsw.edu.au Room 111 Civil Building Tel: 9385 5766

Contact Hours – 4 hours per week

Lecture class	Friday	0900-1100 CLB6
Tutorial	Friday	1100-1300 Quad G026, G055, 1049 ASBus 114, 118, 207, 215 Gold G02, G07 OMB 228, Law 162

Teaching assistants To Be Advised

INFORMATION ABOUT THE COURSE

This is a final year engineering practice/design course designed to integrate water engineering-based material from the entire course which will allow students to apply their knowledge to a major multidisciplinary engineering project. Specific tasks within the course will allow Civil and Environmental Engineers to work co-operatively yet draw on their distinct differences in undergraduate training.

HANDBOOK DESCRIPTION

Refer to Online Handbook available at:

<http://www.handbook.unsw.edu.au/undergraduate/courses/2013/CVEN4003.html>

OBJECTIVES and EXPECTED LEARNING OUTCOMES

The objectives of the course and expected learning outcomes are to give students:

- Advocacy, negotiation and communication skills.
- Appreciation of the range of communication skills required of a consultant in reporting to clients
- Appreciation of the range of communication skills required in community consultation – community awareness, community meetings and posters for public display.
- Leadership and member roles in group related professional engineering project completion
- Ability to incorporate related social, political, environmental and economic

issues within technical engineering based solution options to community sensitive problem.

- Development of skills related to coastal, estuary, flood, water quality and environmental engineering assessment.
- Development of skills related to project planning, scheduling of tasks, cost estimating, timesheets, project management and budget control.

TEACHING STRATEGIES

One of the main aims of practice/design courses is to give you the opportunity for self-directed learning. It will be necessary for you to make decisions in difficult circumstances perhaps with insufficient data. This is what often happens in real life. You have to collect as much relevant data as possible and make educated decisions. The responsibility for any decision rests with your group. Even when incorrect advice has been given, any decisions made are your responsibility.

The subject will involve a range of tasks based on a feasibility assessment for a major project considering the construction of training breakwater walls at Shoalhaven Heads, NSW. There is a 4 hour time slot per week given to the subject. The first one to two hours are for lectures and formal briefing sessions. Subsequent hours are for group work and/or staff consultation.

The course is 6 UoC and therefore there is an expectation that an average student to

Private Study	▣ Research and self directed learning ▣ Work with your group – develop effective group relationships in meeting task deliverables and deadlines ▣ Check your e-mail regularly for messages
Lectures	▣ Find out what you must research, learn and deliver ▣ Hear announcements on course changes
Tutorials	▣ Be guided by teaching assistants ▣ Resolve group problems and set tasks ▣ Ask questions ▣ Maintain timesheets
Assessments (hand-in tasks and presentations)	▣ Demonstrate your knowledge and skills ▣ Demonstrate higher understanding and problem solving ▣ Demonstrate effective group behaviour – demonstrate communication skills
Examination	There is no examination for this course

receive an average mark/grade will put in at least 12 hours of work per week (4 hours class contact time plus 8 hours individual contribution)

PROJECT – BRIEF and TECHNICAL REQUIREMENTS

Introduction

Following submission of a proposal in January 2013 to Shoalhaven City Council, your Consulting firm has only just received the following letter requesting a Final Report (including Executive Summary) into the feasibility of a proposed permanent entrance at the mouth of the Shoalhaven River via the construction of training walls at Shoalhaven Heads.

entrance at The Heads to provide constant flushing by ocean water and the expected enhancement of the environment that this creates. The most significant extended entrance opening followed the major flood of 1978, after which the open entrance gradually deteriorated until it closed in 1981. Over the following years some further flood events have opened the entrance intermittently but the entrance has remained closed most of the time.

When the entrance opens naturally it can result in major erosion at Shoalhaven Heads threatening the Caravan Park and the Surf Club to the north.

Project objective and scope

Your responsibility as outlined in the letter from Council is not limited to the investigation of technical and/or environmental issues BUT should give due consideration to the broader social, political and economic issues.

You are expected to apply communication, leadership and team work skills in addition to technical and environmental problem solving abilities.

It is useful to be familiar with the site – a site visit is scheduled for Friday 27 September Week 8. This site visit is a compulsory component of the course. A site inspection report (2 to 3 pages) is to be submitted in Week 10 after the mid semester break.

It is anticipated that you will identify all critical issues and provide guidance to the Council appropriately in both the Executive Summary and the more detailed Final Report (as to the feasibility of a permanent entrance and studies considered necessary for the carriage of an EIS).

This project will require library and internet research to supplement the technical material provided.

There are a wide range of reasonable text books on coastal and estuarine engineering and environments. You are not expected to become a “Coastal Expert”. You are however expected to utilise the knowledge that you do gain to assess the feasibility of options for a permanent entrance and to adequately define the issues, tasks, priorities and scheduling of studies that would need to be considered in an EIS. Students that have completed courses CVEN4502 Coastal Engineering and CVEN4505 River Engineering will find material covered in these courses to be of assistance.

As with all practice/design projects, team work will be an important component. Where possible, the co-ordinator and teaching assistants will assist students to form teams with a diversity of expertise. Each team will operate as a small consulting group with their allocated teaching assistant acting as either their Consulting company office manager OR the Council client at different times within the carriage of the project.

You will hold discussion with your teaching assistant (as Consulting company office manager) and develop a workplan for the feasibility study (including tasks, staffing, schedule, milestones/deliverables and costings/budget) and submit to the Council in week 3. Progress reports and various deliverables are required of the group culminating in a Final Report to be submitted week 12.

This is a substantial project and all groups will be required to develop a project information management system (PIMS) that will incorporate member diaries and timesheets to monitor and clearly track throughout the project/session the individual contributions to group effort against planned tasking and budget. This information will be reviewed throughout the project. At the end of the project individual members will utilise the group PIMS information in preparing a 1 to 2 page individual assessment of the group performance on the project.

The group is to research aspects relating to the successful carriage of a Community awareness program. 2 members of each group are to prepare a Poster for display at a public meeting in week 10 Friday 11 October 2013 at which the other 2 members of the group will make a 10 minute presentation.

You are expected to apply communication, leadership and team work skills in addition to technical and environmental problem solving abilities.

It is anticipated that you will identify all critical issues and provide clear advice and guidance to the Council in both the Executive Summary and the more detailed Final Report.

The project will require your team to carefully assemble, evaluate and assimilate all available relevant data. You will be expected to incorporate what you have learned in all disciplines of civil and environmental engineering (not just that associated with Water engineering related courses).

As outlined in the detailed course schedule below individual students will be required to undertake a number of independent tasks at designated times- it is noted that the client may require modifications to be made during the carriage of the project.

COURSE PROGRAM

As outlined in draft weekly schedule below, the project involves a number of lectures, seminars, regular tutorials, management activities and reporting tasks.

Week	Lecture period	Tutorial	Away work after lecture/tutorial
1 2 Aug	Cox + Teaching assistants Project outline Details on assessment tasks and deadlines Select groups & leaders Review project guidelines	Groups to assign team leader, timesheet manager, contact details, group work session times.	Technical reading Allocation of tasks to group Identification of issues, tasks, priorities and sequence. (Individuals to each prepare and submit 1 page in week 2)
2 9 Aug	Cox Coastal processes	SUBMIT individual issues paper (1 page) Review group progress with teaching assistant	Library references and wider research Ongoing identification of issues, tasks, priorities and sequence Develop Timesheet/PIMS Prepare workplan covering feasibility study, community meeting, EIS planning etc - including schedule of tasks, staff allocations, milestones, deliverables and costings/budget

Week	Lecture period	Tutorial	Away work after lecture/tutorial
3 16 Aug	Cox + Shoalhaven Council officer Flooding behavior and estuarine sensitivity	SUBMIT group Timesheet/PIMS for review and assessment SUBMIT group workplan including schedule of tasks, staff allocations, milestones, deliverables and costings/budget Review group progress with teaching assistant.	Revisit project –ensure your group has not missed any key issues. Library references and wider research. Assigned tasks - feasibility
4 23 Aug	Cox Breakwaters, training walls and bypassing	Review group progress with teaching assistant Leader to reallocate tasks	Progress Report preparation. Library references and wider research. Assigned tasks - feasibility
5 30 Aug	Cox + Dr Will Glamore Wetlands and Ecological values	SUBMIT group Progress report (will be returned with feedback in week 8) Review group progress with teaching assistant Leader to reallocate tasks	Prepare draft Executive Summary Assigned tasks - feasibility
6 6 Sept	Cox EIS requirements Data and environmental monitoring	Review group progress with teaching assistant Review with teaching assistant your Diary/timesheets/PI MS Leader to reallocate tasks	Prepare draft Executive Summary Assigned tasks - feasibility

Week	Lecture period	Tutorial	Away work after lecture/tutorial
7 13 Sept	13 September 2013 No lecture	SUBMIT group draft Executive Summary (will be returned with feedback in week 10 after break) Review group progress with teaching assistant Leader to reallocate tasks	Assigned tasks - feasibility EIS research, issues, tasking
8 20 Sep	Cox + Guest lecture Community awareness. Posters and Presentations	Review group progress with teaching assistant Review with teaching assistant your Diary/timesheets/PI MS Leader to reallocate tasks	Research community awareness Consider social, political environmental and other issues Prepare poster and community presentation Assigned tasks - feasibility EIS research, issues, tasking
9 27 Sep	Cox & Teaching Assistants Friday 27 September	Year 4 Field trip week Field trip to South Coast all day Friday 27 September 2013 Site inspections at Port Kembla, Lake Illawarra entrance and Shoalhaven Heads	Research community awareness Consider social, political environmental and other issues Prepare poster and community presentation Prepare 2 to 3 page site inspection report
28 Sep to 6 Oct	<i>Mid Semester BREAK</i>	<i>Mid Semester BREAK</i>	<i>Mid Semester BREAK</i>

Week	Lecture period	Tutorial	Away work after lecture/tutorial
10 11 Oct	Cox Final Report expectations	PRESENT group poster and make presentation to community meeting. SUBMIT individual Field trip/site inspection report (2 to 3 pages)	Final Report preparation including revised Executive Summary and EIS draft study schedule Assigned tasks
11 18 Oct	No Lecture	Review group progress with teaching assistant Leader to reallocate tasks	Final Report preparation including revised Executive Summary and EIS draft study schedule Finalise timesheet/PIMS summary and group performance evaluation -individual 1 to 2 pages Individual confidential work contribution form
12 25 Oct	Cox + Teaching assistants Project overview and feedback	SUBMIT group Final report & Executive Summary SUBMIT individual timesheet/PIMS summary and group performance evaluation SUBMIT individual confidential work contribution form Project overview with student feedback	.

ASSESSMENT TASKS

There will be no written examination or quizzes in this subject. The final mark for each student will be determined by a combination of individual and group contributions.

The contribution to your final mark in this subject is summarised in the table below:

<i>Task</i>	<i>Due week</i>	<i>Mark</i>	<i>Total</i>
Establish timesheet/PIMS and utilise throughout the project	3/ongoing	3.5/4	
Study workplan including tasks, schedule, milestones and budget	3	7.5	
Progress Report	5	7.5	
Draft Executive summary	7	7.5	
Final Report including Exec Summary and EIS plan	12	40	
<i>GROUP TOTAL</i>			<i>70</i>
Issues (1 page)	2	5	
Field trip site inspection report (2 to 3 pages)	10	10	
Community awareness Poster (2 person)**	10	10	
Community awareness Presentation (2 person)**	10	10	
Individual Diary/timesheet/PIMS summary and group performance evaluation (1 to 2 pages)	12	5	
Confidential assessment	12	-	
<i>INDIVIDUAL TOTAL</i>			<i>30</i>
<i>TOTAL FINAL ASSESSMENT</i>			<i>100</i>

** Note: two members of each group will complete a poster and two a presentation and each person will be marked for the submission that they participated in.

Each project task should be completed within the specified time period and by the due date. ***There will generally be no extensions to the due date*** unless agreed to by the teaching assistant for exceptional circumstances. Late submissions not agreed to by teaching assistant (and without a medical certificate) will attract a penalty up to 20% of the assessment task value per day.

Project Management Information System PIMS (group value 7.5% - to be developed by week 3 and maintained throughout the project)

Based on diaries and timesheets, each group is to develop and maintain a Project Management Information System (PIMS) for tracking group member activities and progress against the Investigation workplan and budget. The effectiveness and maintenance of the PIMS will be regularly checked by the teaching assistants.

Investigation workplan and budget (group value 7.5% to be submitted in week 3)

This is to include tasks, schedule, milestones and budget. The schedule of activities is to be prepared to indicate the task allocation per group member on a weekly basis. This workplan is the basis for costing and budget that is to be provided for client acceptance. The workplan should be integrated with the PIMS to track progress throughout the project.

Progress report- (group value 7.5% due week 5)

Typically 8-10 pages of text with additional relevant tables and figures.

Executive Summary Draft - (group value 7.5% due week 7)

3 to 4 pages of text with no more than 2 additional pages of tables and figures.

Final Report - (group value 40% due week 12)

The report is not to exceed 30 pages in length including tables and figures (appendices may be additional BUT not to exceed 15 pages).

An updated Executive summary is essential and must not exceed 4 pages.

As outlined in the letter of commission from Council - You are reminded that your report will be the basis of a Council submission to various NSW Government agencies, responsible Ministers and eventually Cabinet. As such we request the report include a concise summary of your considered opinion as to the feasibility of the proposed permanent entrance with clear enunciation of the benefits, dis-benefits, possible environmental impacts and risks.

The report should discuss major issues (coastal, estuarine, flooding, environmental, etc) and sub-consultancy commissions deemed necessary for the preparation of an EIS if the project were to proceed. Linkages, inter-dependencies, timing and relative costs of the various EIS study components for all issues is required in estimating the critical components as well as overall time and cost requirements prior to an EIS being completed and available for public consultation.

Individual issues paper - (individual value 5% due week 2)

Based on accumulated knowledge and some early research each individual student is to summarise the anticipated technical issues and outcomes that will arise from the project. This is to be not more than 1 page of individual (not group) work.

Field trip site inspection report – (individual value 10% - week 10)

Following compulsory site visits on Friday 27 September, a site inspection report (2 to 3 pages) is to be submitted in Week 10 after the mid semester break

Community Poster & Presentation – (individual value 10% - week 10)

The objective here is to demonstrate your ability to synthesise and communicate to the community the coastal, estuarine, flooding, water quality, environmental and socio-economic issues related to the feasibility of the proposed training of the entrance at Shoalhaven Heads. The group will prepare materials to present at a Public Meeting to be held in week 10. For this Public Meeting your group will prepare an information Poster and make a Presentation. Your group will be split in two – with 2 members preparing the Poster and the other two, the Presentation. The poster should be A2 sized to clearly present for a community based audience the essential issues of the project (it does not have to be laminated – marking will be on content, layout and effective communication NOT gloss). If giving the presentation you will be expected to speak for maximum of 10 minutes followed by 5 minutes of questions. Note that both the poster and the presentation should detail other initiatives that will be undertaken to inform the community of the aims and outcomes of the project.

Individual review of group performance – (individual value 5% due in week 12)

Based on the summary of progress by the group over the project provided by PIMS, at the conclusion of the project each student is to submit an individual 1 to 2 page evaluation of the group and member performance against the original Investigation workplan (group PIMS summary should be attached).

Confidential assessment (individual week 12) In week 12 each group member will be required to submit his/her own confidential assessment of the other individual contributions within the group. On the basis of these assessments, the group mark for each group member will be adjusted.

The course coordinator reserves the right to adjust the final scores by scaling if agreed to by the Head of School.

FIRST TUTORIAL

Besides the guidelines given at the start of the project, for the first tutorial:

1. Discuss any problems about group membership with teaching assistants and co-ordinator.
2. Discuss the assessment process. Make sure you fully understand what is required and any deadlines.
3. Each group is to formulate their group's *ground rules*, which will be enforced during the project, as well as any leadership roles. Examples of the some possible ground rules are: no abuse; recognize each member's input and value; common vision; establish clear plan; decisions to be made cooperatively; workload to be equal; everyone turns up on time to meetings; agreed deadlines met; minutes of meetings with client to be kept; methods of conflict resolution;

RELEVANT RESOURCES

Notes and instructions appropriate to the progression of the project will be provided on BlackBoard, given out in class, given by teaching assistants in group meetings and/or emailed.

PROBLEM GROUP MEMBERS

If a member of a group is not fulfilling the agreed group rules, this should be discussed firstly within the group.

If the group member continues to avoid fulfilling responsibilities under the agreed group rules (e.g. not completing set tasks on time or not attending meetings) the matter needs to be referred to the teaching assistant (and if necessary the course coordinator) who will discuss the matter with the problem student and group in determining an alternative assessment process for the individual student and group.

COMMON SCHOOL INFORMATION

Common School information may be found at:

<http://www.civeng.unsw.edu.au/info-about/our-school/policies-procedures-guidelines/academic-advice>

To navigate to this web page from the *Civil and Environmental Engineering School Home page*:

Info About » Our School » Policies, Procedures & Guidelines » Academic Advice

The **Common School Information** site has information on the following:

1. **Dates to Note** - important dates relating to enrolling and disenrolling, and a University website (via MyUNSW) with a calendar of other important UNSW dates (session dates, recess weeks, stuvac dates and exam periods).
2. **School Contacts**
 - i. for enrolment or timetable difficulties,
 - ii. referral chain of contacts for course difficulties:
Course Coordinator/Lecturer → Year Coordinators → Grievance Officer,
 - iii. Advanced Standing, and
 - iv. Mentoring.

3. Course Requirements

- i. attendance at lectures, tutorials and laboratory classes,
- ii. participation in tutorials, and
- iii. completion of assessment work.

4. Notes on Assessment

- i. plagiarism (with link to UNSW Learning Centre web site on plagiarism),
- ii. keep a copy of written submissions,
- iii. submitting assignments, and
- iv. late submissions (obtaining extensions and special consideration)

5. Supplementary Exams – includes link to School website with School policy on supplementary exams.

- i. Special Consideration – includes link to UNSW website (New South Q) for downloading forms, requirements for lodging special consideration forms.

6. Solutions to Problems – Troubleshooters

- i. Learning Centre,
- ii. student counsellors, and
- iii. student support services.

7 Course Evaluation And Development The School of Civil and Environmental Engineering evaluates each course each time it is run through (i) the UNSW Course and Teaching Evaluation and Improvement (CATEI) process, and (ii) Focus Group Meetings.

As part of the CATEI process, your student assessments on various aspects of the course are graded;

the Course Coordinator prepares a summary report for the Head of School. Any problem areas are identified for remedial action, and ideas for making improvements to the course are noted for action the next time that the course is run.

Focus Group Meetings are conducted by the four Year Managers (academic staff) for any students who wish to attend, in each year of the civil and/or environmental engineering programs. Student comments on each course are collected and disseminated to the Lecturers concerned, noting any points which can help improve the course.

8 CEVSOC – student committee membership and link to (unofficial) student CEVSOC website.