

CE 211 ENGINEERING IN CONTEXT 2

Co-ordinator: Professor MGH Bell (Room 608), m.g.h.bell@imperial.ac.uk

Lecturers: see Syllabus

Structure: see below

Links: This module is a direct continuation of Engineering in Context I. It is also intended to enhance skills that are applied throughout the degree course, particularly in Creative Design and the Third Year Group Design Project.

Introduction

The objectives of this course are spelt out in CE108, which you are advised to read carefully before the course begins. Although it is assessed and therefore contributes to your final degree, the course is designed to be enjoyable and to give you an opportunity to think laterally. The course aims to give you insight into the breadth of civil engineering and its multi-disciplinarity. It also encourages awareness of the social, political, economic and environmental issues that surround major civil engineering projects. Another important aim of the course is to provide you with an opportunity to develop your communication skills and leadership potential.

Aims & Structure

The course consists of a two-hour introductory session, four one-hour lectures on the case histories, and four two-hour role-playing sessions. Attendance at all 14 hours of the course is compulsory and marks will be deducted for unjustified non-attendance; any student who misses more than a certain number of sessions without legitimate excuses will automatically fail the course.

The following sections explain the outline of the course and the requirements for the coursework.

The aim of this module is to introduce you to major Civil Engineering projects, which illustrate the scope and diversity of this profession as well as its multi-disciplinary nature. The module also aims to bring to your attention the broader issues involved in Civil Engineering projects, including environmental, social, political and legal aspects, as well as technical matters.

Groups

The class has been divided into 20 or 21 groups, each with three or four students, listed in the following pages. You will work in these groups for the entire course, which runs only in the Autumn Term. For each case history, each group will adopt the role of a particular panel involved in some way with the project under discussion.

Case Histories

These lectures will be presented by eminent speakers who have either been directly involved in the projects or who have followed the project very closely. There will be a brief accompanying each of the case histories, which will be circulated to all students before or at the lecture. The lecture will necessarily, because of the time available, present only an overview of the project

in question, so you may wish to follow up the lecture with some research of your own, either individually or within groups.

You are strongly encouraged to discuss the projects with your Personal Tutor. The lecturers presenting the case histories may also be available for discussion, but you should remember that they have busy schedules; it is preferable to arrange a meeting as a group rather than individually. These discussions will help you further develop your ideas on the topic and so strengthen your contribution to the panel sessions.

Please note that before beginning the panel discussions, on Monday 13th October there is a special lecture on the topic of "Leadership" by the Rector, Sir Richard Sykes. Both the content and the method of presentation will provide you with useful insights into how to make your own presentations.

Panel Discussions

The panel discussions will take place on Tuesday afternoons at the dates, times and places indicated in the timetable. Please note that you only have to attend sessions in certain weeks – check the dates on which you are participating carefully and make a note of them. It is imperative that you arrive punctually at these sessions.

In each discussion session, the spokesperson for each group will make a presentation, using overhead transparencies ***prepared prior to the session*** (you are required to provide your own transparencies, which can be obtained from Andy Chipling in the Reprographics Room). The presentation should not be a summary of the case history, but should instead focus on specific aspects of the case history and its context from the point of view of the panel that the speaker is representing. The presentation should either defend and explain decisions that have been taken, or else raise questions about these decisions and challenge them. There is absolutely no need to limit the presentation to technical issues but it is important that all arguments be based on factual information and clear reasoning, not emotive and irrational statements.

The presentations must each last between 3 and 5 minutes and marks will be deducted if the presentation does not fall within these limits.

Note carefully that each project will be discussed at a different stage of its history and this is indicated on the subsequent pages.

Once all of the presentations have been made, the floor is opened to discussion. Each group will be required to pose one question to one other group based on the latter group's presentation. Each group to which a question is posed will then be asked to respond to the questions put to them. There will then be a brief period of open discussion prior to closing the session, hopefully with feedback from the lecturer who originally presented the case history under discussion.

N.B. Each student will be assessed for the quality of their oral presentation, but there will also be a group mark for each discussion session based on punctuality, the oral presentation and the participation in the discussion.

Final Report

After the final panel session has finished, you will be required to write a report of between 1,500 and 2,000 words, which must be produced with a word processor. The report, which must be entirely your own work, should answer one of the following questions:

1. How has your perception of Civil Engineering changed over the course of the lectures and panel discussions?
2. Is there an area of Civil Engineering which particularly attracts you, and if so, why?
3. What role would you like to play within Civil Engineering after graduating and why?
4. Do you have any concerns about Civil Engineering as a career?
5. Would you like to bring about changes in the Civil Engineering profession, and if so, which?

While the essay should be based on your experience of this course, it should not be an account of the case histories which simply repeats the information given to you by the various lecturers.

The report should be submitted, with a standard coursework cover, in the usual way.

The deadline for submissions of the final report is at the end of the third week of the Spring Term: **5 p.m. on Friday 21st January 2005**. There will be no extension of this deadline.

Module Structure

The module begins with a two-hour session in which the objectives of the module and the format will be explained. At this point, the class will also be divided into groups for the role playing exercises and assigned appropriate roles to be assumed in each of the projects. The module will also include a special lecture by Sir John Egan on 'Leadership', highlighting the qualities, responsibilities and roles required of each student when they adopt the leadership role in acting as spokesperson for their group.

The module will then consist of four one-hour presentations on major Civil Engineering projects around the world. In the two –hour discussion sessions on each case history, with half of the class present each time, each group will make a presentation (delivered by the spokesperson for that case history) prepared on overhead transparencies prior to the session. The presentation needs to address issues of the case history from the perspective of the panel that the group is representing. Clear, informed and well-structured arguments are required and they must be presented in a convincing but not emotive manner. Reference to written notes during the presentations is very strongly discouraged; students should use their overheads as prompts. Following the presentations, each panel is required to put questions to at least one other group, challenging them on some aspect of their presentation.

SYLLABUS

- The Introductory Lecture is delivered by the Module Co-ordinator, Professor MGH Bell.
- The "Leadership" lecture will be presented by the Rector.

The Case Histories are generally presented by experts in various specialist disciplines of Civil and Environmental, mostly from within the Department. The Case Histories and the associated lecturers in the 2002-2003 academic session will be:

- The Jubilee Line Extension (Emeritus Professor John Burland)
- The Pinatubo volcanic eruption (Mr James Molyneaux)
- The Hong Kong Metro (Professor Tony Ridley)

- The Three Gorges Dam on the Yangtze River (Dr. Norman Smith)

Coursework and submission dates

Each student is required to write notes, which can be free-hand and need not exceed at most a single side of A4, on their thoughts on each case history from the perspective of the role of the panel that they are on for that project. These will be collected at the end of the debate session of each case history; notes submitted later will not be considered and marks will be deducted.

At the end of the module, you will be required to write a 2,000 word formal essay on how participation in the module has changed your perception of the Civil Engineering profession and also of the role that you expect to play within the profession. The deadline for the submission of this essay is the end of the third week of the Spring Term (week 17) – 5 pm Friday 21st January 2005.

Assessment

There are three elements to the assessment for this module: each group will be awarded marks collectively for the quality of their presentations and their participation in the discussion sessions. Individuals will be awarded marks both for their delivery as spokesperson and for the final report, which is assessed for quality of presentation, structure, clarity and coherence; adherence to the prescribed word limit is also important. There are penalties in terms of deducted marks for unjustified absence from any part of the module; consistent failure to attend the sessions will result in you failing the course.

Recommended Textbooks/Reading

Handouts are provided for each of the Case Histories, which may be annotated and added to during the lectures. This will provide essential background material for preparation of the role-playing exercises. Students may wish to seek further information on the case histories (or similar cases for comparison) or to support arguments presented in the final report.

Learning Outcomes

The objective of the module is to raise your awareness of the context within which Civil Engineering projects are developed and the interaction between the project and its setting. In particular it is hoped that after completing the module you may have a greater appreciation of the fact that there is rarely a single 'right' answer in Civil Engineering projects but that awareness of all of the elements involved is essential in providing a good solution. The module structure will also enable you to appreciate the importance of team-working and succinct communication by applying some of the skills learnt in the First Year Engineering in Context module.

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Introduction

Date	Time	Room	Presenter	Title
07/10/2004	10:00-11:00	301	Michael G H Bell	"Introduction to CE211"

Keynote presentations

Date	Time	Room	Presenter	Title
11/10/2004	10:00-11:00	201	Rector	"Leadership"
13/10/2004	11:00-12:00	201	John Burland	"Jubilee line extension"
14/10/2004	10:00-11:00	301	Norman Smith	"Three gorges dam"
21/10/2004	10:00-11:00	301	Tony Ridley	"Hong Kong metro"
28/10/2003	10:00-11:00	301	Dominic Molyneux	"Pinatubo volcanic eruption"

Student presentations (class divided into two groups)

Date	Time	Group 1 (in room 301)	Group 2 (in room 307)
04/11/2004	09:00-11:00	"Hong Kong metro"	"Three gorges dam"
18/11/2004	09:00-11:00	"Three gorges dam"	"Jubilee line extension"
02/12/2004	09:00-11:00	"Jubilee line extension"	"Pinatubo volcanic eruption"
16/12/2004	09:00-11:00	"Pinatubo volcanic eruption"	"Hong Kong metro"