

Enquiry based learning

Transport engineering



UCD School of Architecture,
Landscape and Civil
Engineering

Scoil na hAiltireachta, na
Tidhreacha agus na
hInnealtoireachta Sibhialta
UCD

Course Description

- Transport engineering:
 - 4th year civil engineering students – Transport Operations and Planning in semester 2.
 - 2008/09: New transport elective for 3rd year civil engineers.
 - Both classes have 40 civil engineers and up to 10 other students.
 - Both are electives.
 - 3rd year course will be a pre-requisite for 4th year course.



Course Structure -4th year course as it currently stands.

- 40 civil engineers + 10 other students.
- 36 hours of lectures in semester 2 – 3 hours per week.
- 12 hours of tutorials.



Topics covered in the current 4th year course:

- Introduction to transport planning – history of planning, evolution, different approaches to transport planning.
- Transport Economics- brief introduction.
- Transport Modelling. Land use modelling – the interactions!
- Highway Engineering – roundabout, junctions and signalling.



New system

- 3rd year course:
 - 36 hours of lectures
 - Case studies – 4 of 3 hours each.
 - Topics:
 - Transport policy and economics. More emphasis will be placed on these areas in the 3rd year course to give students a good background into why we need to plan transport!
 - Highway design – junctions, roundabouts, highways.



New system

- 4th year course:
 - 36 hours of lectures
 - 12 hours of tutorials available but structure not decided.
 - Topics:
 - Transport modelling and land use modelling – this will be covered in more depth than before with greater emphasis on how it relates to policy and to the commercially available models.
 - Highway design – signalling and systems.



3rd year Case Study Approach

- 4 case studies of 3 hours each.
- 12 week semester – case study sessions will take place in weeks 4, 6, 8 and 11.



Structure

- Students will be in 8-10 groups of 5 students (there are approximately 40 civil engineering students and up to 10 non engineers).
- Postgraduate students will act as facilitators –1 facilitator per 2 groups.



Week 4:

- Case study to be presented to the students at the start of the session. It is intended that the case studies will relate to some area of transport policy (such as modal share, accident prevention, public transport development, road pricing) and will involve students examining controversial issues. Students will be asked to take a position on these issues (eg for or against road pricing in Dublin).
- Training session for enquiry based learning. Formative feedback – no summative assessment for this case study.



2nd case study will be presented to the students in the second half of the session.

Week 6

- Report on case study 2: students will report on case study 2.
- Each group will present to one other group.
- They will be assessed by the facilitator and by their peers.
- Formative assessment!!
- Case study 3 is presented in the second half of the class.



Week 8

- Students must present a poster on case study 3.
- Students peer review the poster of other groups.
- Summative assessment!
- Case study 4 is presented in the second half of the class.



Week 11

- Groups must present a poster on case study 4 and an oral presentation.
- Between weeks 11 and 12, each group must prepare a report on the posters of the other groups and the added value they received from viewing these posters and listening to the presentations.
- This report must be submitted by week 12.

