Instructor: Dr. Thomas W. C. Hu (thomashu@ust.hk)  
Rm. 6531 (via Lift 27/28)  
2358-7179

Lectures: Wed & Fri 1:30PM - 2:50PM, LTB

Tutorial/Lab: Mon 9:30AM - 10:20AM, LTB (no meeting for the first 2 weeks)

Teaching Assistants:

Cheng Qing (qcheng@connect.ust.hk), Wang Chao (cwangbh@connect.ust.hk), Zhou Shengyang (szhouaq@connect.ust.hk), Sun Ming (msunac@connect.ust.hk), Liang Weijian (wliangab@connect.ust.hk)

Main Topics:

- Introduction to main areas of civil engineering
- Forces, construction materials and principles
- Buildings, bridges and construction technology
- Foundation systems, slopes and retaining walls
- Water supply, waste treatment and environmental protection
- Deterioration and maintenance issues
- Scientific decision making in engineering planning and design
- Urban planning and land use in Hong Kong
- Development and redevelopment
- Housing and pertinent social-economic issues in Hong Kong
- Government policies and intervention; impact on society

Assessment

1. Group Project (20%)
   - Each group: 6 students from the same/similar majors. Form your own groups and nominate a group leader before the end of Feb (ungrouped students will then be grouped randomly)
   - Group leaders will keep attendance records of group meetings and report any irregularities

2. Quizzes (10% x 3 = 30%)
   - To be held during tutorial time

3. Final Examination (50%)
   - Comprehensive, covering all course contents
   - Attend lectures regularly and jot down any relevant information not in the notes
About the projects

The group project will demonstrate your understanding of engineering and related issues learned in this class, plus some research on your own on the issues involved. You will also have the opportunity to apply knowledge from your own discipline (e.g. finance) to civil engineering projects. Tentative topics are:

1. Affordable housing in Hong Kong
   - Technical aspects and policy/financial issues
2. Major infrastructure projects
   - Social-economic issues pros and cons; construction difficulties
3. Innovative construction materials (e.g. noise-blocking concrete) and potential applications/commercialization, etc.
4. Applying monitoring techniques to serve the community (e.g. Tin Chung Court/LOHAS Park)
5. Application of decision making tools in construction processes/infrastructure development

You can also propose your own topics; it must be related to civil engineering and innovative solutions to real-life problems (to be approved by the course instructor).

Course Intended Learning Outcomes: upon course completion, students are expected to

- understand the role of civil engineers in infrastructural development;
- understand the challenges in civil engineering design, construction and maintenance;
- understand some of the scientific background and operational details about civil engineering projects such as foundation systems, buildings and maintenance, water supply, etc.;
- acquire basic engineering problem-solving skills such as data collection and analysis;
- understand the complex and stochastic nature of real world projects, and acquire some basic decision-making tools for dealing with engineering uncertainties;
- understand past and future urban development issues in Hong Kong: technical to social perspectives, and the constraints imposed due to environmental concerns and land supply;
- develop effective verbal and written communication skills through project presentation work.