City University of Hong Kong

Information on a Course

offered by Department of Architecture and Civil Engineering
with effect from Semester A in 2015/2016

Part I

Course Title:	Construction Technology
Course Code:	CA3618
Course Duration:	1 Semester (Some courses offered in Summer Term may start a few weeks earlier than the normal University schedule. Please check the teaching schedules with CLs before registering for the courses.)
Credit Units:	3
Level:	B3
Medium of Instruction:	English
Prerequisites:	Nil
Precursor:	CA2514 Industrial Training B and CA2627 Building Science (both pre-cursors are for CEM major only) Students must have attempted (including class attendance, coursework submission, and examination) the precursor course(s) so identified.
Equivalent Courses:	BC3618/BC3618F/BC3618P Construction Technology / SE3618 Construction Technology and Structural Planning / CA3703 Construction Methods and Equipment
Exclusive Courses:	CA3171 Construction Technology and Structural Planning

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Part II

1. Course Aims:

The course aims to provide the knowledge of the methods of construction for super structure and foundation.

2. Course Intended Learning Outcomes (CILOs):

Upon successful completion of this course, students should be able to:

No.	CILOs	Weighting (if applicable)
1.	evaluate the performance requirements of buildings and their elements;	---
2.	discover and implement alternative technical solutions and design satisfactory forms to match performance requirements;	---
3.	appraise construction processes of high rise structures;	---
4.	choose appropriate methods for foundation constructions.	---

3. Teaching and Learning Activities (TLAs):

Semester Hours: 3 hours per week
Lecture/Tutorial/Laboratory Mix: Lecture (2); Tutorial (1); Laboratory (0)

CILO No.	TLAs	Total Hours (if applicable)

CILO 1	• Lecture and Tutorials: Construction technologies for Slope protection, and grouting and soil improvement.	9
CILO 2	• Lecture and Tutorials: Pile construction, basement construction, foundation construction.	10
CILO 3	• Lecture and Tutorials: Construction techniques for reinforced concrete floors, walls, columns and beams; multi-story Construction.	10
CILO 4	• Lecture and Tutorials: Semi precast construction; construction technologies for formwork and scaffolding; structural steel construction.	10

4. Assessment Tasks/Activities:

Coursework: 50%
Examination: 50% (Examination duration = 3 hours)

To pass a course, a student must obtain minimum marks of 30% in both coursework and examination components, and an overall mark of at least 40%

CILO No.	Type of assessment tasks/activities	Weighting (if applicable)	Remarks
CILO 1	• Assignment 1: 3 questions. • Examination: 2 questions.	---	• Nil
CILO 2	• Quiz, with attentions to the documentation of discovery made during study. • Examination: 2 questions.	---	• Nil
CILO 3	• Assignment 2: 6 questions. • Examination: 2 questions.	---	• Nil
CILO 4	• Assignment 3: 4 questions. • Examination: 2 questions. • Construction site visit report.	---	• Nil

5. Grading of Student Achievement:

Grading Pattern:

Standard

Refer to Grading of Courses in the Academic Regulations.

Part III

Keyword Syllabus:

Temporary and permanent lateral support system. Dewatering. Construction of foundation: bored piles, H-piles, caisson etc., pile tests, caps. Multi-story construction. Pre-cast units. Pre-stressing and post-tensioning. Reinforced concrete construction, steel structure construction, temporary works.

Recommended Reading:

- **Texts:**

  1. Andres, C.K. and Smith, R.C., Principles and Practices of Heavy Construction, Prentice Hall, 1998.
  2. Barry, R., Construction of Buildings, Vol. 2-5, Oxford, Blackwell Science Inc, 1996.
  3. Berry, P.L. & Reid, D., An Introduction to Soil Mechanics, MaGraw Hill book company.
  4. Bowles, J.E., Foundation Analysis and Design, 4th Edition, McGraw Hill, Book Company, 1988.
  5. Buildings Department (BD), Code of Practice for Foundations, The Government of Hong Kong Special Administration Region, Hong Kong, 2004.
  6. Chudley, R., Construction Technology, Volumes 1-4, Longman, 1983.
  7. Chudley, R., Building Construction Handbook, Third Edition, Butterworth-Heinemann Ltd., Oxford, 1990.
  8. Coduto. D.P., Foundation Design: Principles and Practrices, 2nd Edition, Prentice Hall, New Jersey, 2001.
  9. Geotechnical Control Office (GCO), Geotechnical Manual for Slopes, 2nd Edition, The Government of Hong Kong Special Administration Region, Hong Kong, 1984.
  10. Geotechnical Control Office (GCO), Geoguide 2: Guide to Site Investigation, The Government of Hong Kong Special Administration Region, Hong Kong, 1987.
  11. Geotechnical Control Office (GCO), Geoguide 3: Guide to Soil and Rock Descriptions, The Government of Hong Kong Special Administration Region, Hong Kong, 1987.
  12. Geotechnical Engineering Office (GEO), Geoguide 1: Guide to Retaining Wall Design, 2nd Edition, The Government of Hong Kong Special Administration Region, Hong Kong, 1993
  13. Geotechnical Engineering Office (GEO), Pile Design and Construction, GEO Publication No. 1/96, The Government of Hong Kong Special Administration Region, Hong Kong, 1993
  14. Geotechnical Engineering Office (GEO), Geoguide 6: Guide to Reinforced Fill Structure and Slope Design, Government of Hong Kong Special Administration Region, Hong Kong, 1993
  15. Institution of Structural Engineers, Standard Method of Detailing Structural Concrete, 1989.
  16. Institution of Structural Engineers, Aspects of Cladding, 1995.
  17. Lin, Michael C.H., Construction Technology for Tall Buildings, World Scientific, 4th Edition, 2012.
  18. Peurifoy, R.L., Ledbetter, W.B. and Schexnayder, C.J., Construction Planning, Equipment, and Methods, Fifth Edition, The MacGraw-Hill Companies, Inc., 1996.
  19. Tomlinson, M.J., Foundation Design and Construction, Longman, 6th Ed., 1996.
  20. Whitlow, R., Basic Soil Mechanics, Longman, 1997.

- **Online Resources:**
  1. http://www.cityu.edu.hk/CIVCAL/