

**City University of Hong Kong  
Course Syllabus**

**offered by Department of Architecture and Civil Engineering  
with effect from Semester A 2023/24**

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**Part I Course Overview**

<b>Course Title:</b>	Geotechnics & Civil Engineering Infrastructures
<b>Course Code:</b>	CA5244
<b>Course Duration:</b>	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.)
<b>Credit Units:</b>	3
<b>Level:</b>	P5
<b>Medium of Instruction:</b>	English
<b>Medium of Assessment:</b>	English
<b>Prerequisites:</b> <i>(Course Code and Title)</i>	Nil
<b>Precursors:</b> <i>(Course Code and Title)</i>	Nil
<b>Equivalent Courses:</b> <i>(Course Code and Title)</i>	Nil
<b>Exclusive Courses:</b> <i>(Course Code and Title)</i>	Nil

## Part II Course Details

### 1. Abstract

The course will introduce basic and more advanced concepts of methods of analysis in geotechnics and civil engineering infrastructure systems, providing scientific background and empirical/analytical approaches to solve various problems.

### 2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs	Weighting (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	A2	A3
1.	Understand fundamental concepts and theories of engineering mechanics and engineering physics/mathematics applied in civil engineering and geotechnics.		✓	✓	
2.	Apply methods of analysis to solve relatively simple engineering systems and express mathematically physical phenomena of significance to civil engineering.		✓	✓	
3.	Understand modelling concepts and equilibrium of forces in engineering systems.		✓	✓	
4.	Apply methods of analysis to solve various geotechnics problems.		✓	✓	
		100%			

#### A1: Attitude

*Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.*

#### A2: Ability

*Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.*

#### A3: Accomplishments

*Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.*

### 3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.				Hours / week (if applicable)
		1	2	3	4	
Lectures	Explain fundamental concepts and theories in geotechnics and civil engineering systems.	✓	✓	✓	✓	
Tutorials	Solving problems and application of theory in selected topics taught during the lectures.	✓	✓	✓	✓	

Semester Hours:	3 hours per week
Lecture/Tutorial/Laboratory Mix:	Lecture (0); Tutorial (0); Laboratory (0)
	3 hours per week including lectures and tutorials

### 4. Assessment Tasks/Activities

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks / Activities	CILO No.				Weighting	Remarks
	1	2	3	4		
Continuous Assessment: 50%						
Assignment(s)	✓	✓	✓	✓	30%	
Mid-term Test	✓	✓	✓	✓	20%	
Examination: 50% (duration: 2 hour(s))						
Examination	✓	✓	✓	✓	50%	
					100%	

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%

## 5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

### Applicable to students admitted in Semester A 2022/23 and thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
Assignment(s)	ABILITY to APPLY fundamental concepts and theories in geotechnics and civil engineering infrastructure systems.	High	Significant	Basic	Not even reaching marginal levels
Mid-term Test	ABILITY to APPLY fundamental concepts and theories in geotechnics and civil engineering systems.	High	Significant	Basic	Not even reaching marginal levels
Examination	ABILITY to APPLY fundamental concepts and theories taught in the class to solve various civil engineering problems.	High	Significant	Basic	Not even reaching marginal levels

### Applicable to students admitted before Semester A 2022/23

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
Assignment(s)	ABILITY to APPLY fundamental concepts and theories in geotechnics and civil engineering infrastructure systems.	High	Significant	Moderate	Basic	Not even reaching marginal levels
Mid-term Test	ABILITY to APPLY fundamental concepts and theories in geotechnics and civil engineering systems.	High	Significant	Moderate	Basic	Not even reaching marginal levels
Examination	ABILITY to APPLY fundamental concepts and theories taught in the class to solve various civil engineering problems.	High	Significant	Moderate	Basic	Not even reaching marginal levels

**Part III Other Information** (more details can be provided separately in the teaching plan)

**1. Keyword Syllabus**

*(An indication of the key topics of the course.)*

Foundation engineering, geotechnics, civil engineering infrastructures, civil engineering systems.

**2. Reading List**

**2.1 Compulsory Readings**

*(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)*

1.	Nil
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**2.2 Additional Readings**

*(Additional references for students to learn to expand their knowledge about the subject.)*

1.	Coduto, D.P. (2001). Foundation Design: Principles and Practices. 2nd Ed. Prentice-Hall.
2.	Craig, R.F. (2004). Craig's Soil Mechanics. 7th Ed. Spon Press
3.	Atkinson (1993). An Introduction to the Mechanics of Soils and Foundations. Mc-Graw-Hill
4.	Mitchell, J. K. and Soga, K. (2005). Fundamentals of Soil Behavior. Wiley
5.	Budhu M., Foundations and Earth Retaining Structures, (2007), John Wiley & Sons, Inc