

## Subject Description Form

<b>Subject Code</b>	CSE1000
<b>Subject Title</b>	Introduction to Civil Engineering and Sustainable Development
<b>Credit Value</b>	3
<b>Level</b>	1
<b>Pre-requisite/ Co-requisite/ Exclusion</b>	Nil
<b>Objectives</b>	<p>This subject is a Freshman Seminar entitled “Introduction to Civil Engineering and Sustainable Development” specially devised for all the first-year students of the 4-year undergraduate degree programme(s) offered by the Department of Civil and Environmental Engineering. Its objectives are to:</p> <ul style="list-style-type: none"> <li>• enthuse the students about their major study and the multi-disciplinary nature of study in the Faculty of Construction and Environment;</li> <li>• introduce students to the basics of structural engineering, fire engineering, geotechnical engineering, transportation engineering, hydraulic engineering and environmental engineering, within the context of the civil and environmental engineering discipline, in a manner that allows students to appreciate the roles of the above engineering disciplines in sustainable urban and infrastructure development;</li> <li>• cultivate students’ creativity, problem-solving ability, and global outlook;</li> <li>• expose students to the concepts and an understanding of entrepreneurship and learning-to-learn; and</li> <li>• engage students, in their first year of study, in desirable forms of learning at university that emphasizes self-regulation, autonomous learning, deep understanding and academic integrity.</li> </ul>
<b>Intended Learning Outcomes</b>  (Note 1)	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> <li>(a) acquire broad education on construction and environment and know its importance in societal and economic development;</li> <li>(b) achieve an introductory understanding of structural, fire, geotechnical, transportation, hydraulic and environmental engineering professionals and identify their key technical components;</li> <li>(c) explain the importance of PolyU’s professionals in the construction industry;</li> <li>(d) demonstrate creative and critical thinking, problem solving, global outlook, communication and entrepreneurship abilities for addressing civil and environmental engineering issues;</li> <li>(e) recognize the need for lifelong learning and demonstrate learning-to-learn capacity;</li> </ol>

	(f) adopt desirable forms of learning for the university study and aware of academic integrity and plagiarism.
<p><b>Subject Synopsis/ Indicative Syllabus</b></p> <p>(Note 2)</p>	<p><b><u>Subject Synopsis</u></b></p> <p>CEE is a leading department in civil and environmental engineering in the world and is widely recognized for its research excellence, high quality education as well as the power of synergy achieved by a pool of renowned scholars and professional faculty members in the field. CEE not only offers broad-based and high quality interdisciplinary education in the areas of structural, fire, geotechnical, hydraulic, transportation and environmental engineering but also an advanced practical training in occupational health and safety, fostering students to become competent engineers and professionals. In this subject, the broad spectrum of civil engineering and sustainable development will be introduced in terms of the existing technologies and latest thoughts and developments.</p> <p>The importance of the overall construction and environment industry and its professionals in enhancing the living quality of mankind will be emphasized.</p> <p>Reputable industrial practitioners and alumni will be invited to give seminars to students to share their experiences in the workplace and solving problems on technical, financial and other issues in the construction industry.</p> <p>Site visits that cover a broad spectrum of construction and environment discipline will be organized, either physically or virtually, for the students to achieve a better understanding on the related technologies and the knowledge covered in the subject and how they have been applied in practice.</p> <p><b><u>Indicative Syllabus:</u></b></p> <p><b><i>Weeks 1-6:</i></b> Departmental lectures and tutorials</p> <p><b><i>Weeks 7-13:</i></b> Site visits, seminars by industrial practitioners and alumni in the inter-discipline areas of construction and environment</p>
<p><b>Teaching/Learning Methodology</b></p> <p>(Note 3)</p>	<p>The teaching and learning methodology involves inspirational lectures, practitioners'/alumni' seminars and tutorials, site visits, assignments and group reports. A blended approach involving face to face teaching and online companion learning tools will be employed to facilitate an easy access to teaching and learning materials and teacher-student and student-student interactions in class and out of class.</p> <p>The knowledge gained from the inspirational lectures, tutorials and other activities in the early stage of the curriculum constitutes a part of the foundation for students in developing their creative thinking, problem solving, global outlook and entrepreneurship abilities in the discipline. Practitioners'/alumni' seminars are purposefully arranged to introduce students how the knowledge is applied in practice, the gap between theory and practice in the construction industry. Site visits allow students to appreciate the real-life multi-disciplinary nature of construction projects.</p>

Assessment Methods in Alignment with Intended Learning Outcomes  (Note 4)	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)					
			a	b	c	d	e	f
	1. Assignments (including learning-to-learn tasks)	60%	✓	✓	✓		✓	
2. Group reports	40%	✓	✓	✓	✓	✓	✓	
3. Online Tutorial on Academic Integrity	0%						✓	
<b>Total</b>	<b>100 %</b>							
<p>Assessment task 1 is knowledge-oriented and plays a part in addressing the intended learning outcomes (a) – (c) and (e) covered in inspirational lectures, tutorials and other activities in the early stage of the curriculum. It constitutes 60% of the overall assessment grade)</p> <p>Assessment task 2 is high-order in nature and the group work serves as an effective assessed task (i.e. 40% of the overall assessment grade) for students to demonstrate their overall attainment of intended learning outcomes (a) – (f) at the end of the curriculum.</p> <p>Assessment task 3 is for awareness of the expected honest academic behavior and of the importance of academic integrity. Students are required to complete the online tutorial within the first 5 weeks of the subject. Students who cannot complete the tutorial will <b>fail</b> the subject. Information of the online tutorial can be found from the below link:  <a href="http://www.polyu.edu.hk/ogur/academic_integrity/Student_Guide.pdf">http://www.polyu.edu.hk/ogur/academic_integrity/Student_Guide.pdf</a></p> <p>A letter-grading system will be used to assess students' performance.</p>								
<b>Student Study Effort Expected</b>	Class contact:							
	▪ Inspirational Lectures						12 Hrs.	
	▪ Tutorials						6 Hrs.	
	▪ Site visits						12 Hrs.	
	▪ Seminars						6 Hrs.	
	Other student study effort:							
	▪ Assignments/Self Study						64 Hrs.	
	▪ Preparation of group reports						20 Hrs.	
	<b>Total student study effort</b>							<b>120 Hrs.</b>

**Reading List and  
References**

M. Millais. *Building Structures: understanding the basics* (3<sup>rd</sup> edition), Routledge, 2017.

B.M. Das. *Principles of Geotechnical Engineering* (9<sup>th</sup> edition), Cengage Learning, 2017

C. Khisty, & B. Lall. (2003). *Transportation engineering: An introduction* (3rd edition).  
Upper Saddle River, N.J.: Prentice Hall.

[https://julac.hosted.exlibrisgroup.com/permalink/f/aohbd4/HKPU\\_IZ21172629240003411](https://julac.hosted.exlibrisgroup.com/permalink/f/aohbd4/HKPU_IZ21172629240003411)

R. Houghtalen, A.O. Akan, & N. Hwang. *Fundamentals of Hydraulic Engineering  
Systems* (5<sup>th</sup> edition), Pearson Education, 2016.

Mr McKenzie L. Davis & David A. Cornwell, *Introduction to Environmental Engineering*,  
McGraw-Hill Europe, 2012. [https://www.abebooks.com/9780071326247/Introduction-  
Environmental-Engineering-Davis-MacKenzie-0071326243/plp?cm\\_sp=plped--2--  
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