

**City University of Hong Kong
Course Syllabus**

offered by

**Department of Mechanical Engineering
with effect from Semester A 2021 / 2022**

Part I Course Overview

Course Title:	Engineering Graphics
Course Code:	MNE2016
Course Duration:	1 semester
Credit Units:	3 credits
Level:	B2
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: <i>(Course Code and Title)</i>	Nil
Precursors: <i>(Course Code and Title)</i>	Nil
Equivalent Courses: <i>(Course Code and Title)</i>	MBE2016 Engineering Graphics
Exclusive Courses: <i>(Course Code and Title)</i>	MBE2107/MNE2107 Basics of Mechanical Engineering or BME3016 Biomedical Engineering CAD

Part II Course Details

1. Abstract

(A 150-word description about the course)

The aim of this course is to introduce to the students basic concepts and use of engineering drawing in the design and mechanical field. Upon successfully completing this course, students should acquire the following learning outcomes:

- (i) **Use** the medium of drawings in engineering communications.
- (ii) **Describe** the general principles involved in the use of Engineering Drawing.
- (iii) **Demonstrate** skills in interpreting, and producing engineering drawings accurately and efficiently; and
- (iv) **Demonstrate** skills in computer-aided-draughting to produce detailed 2D and 3D drawings.

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.	Use the medium of drawings in engineering communications.			✓	
2.	Describe the general principles involved in the use of Engineering Drawing.			✓	
3.	Demonstrate skills in interpreting, and producing engineering drawings accurately and efficiently.			✓	
4.	Demonstrate skills in computer-aided-draughting to produce detailed 2D and 3D drawings.			✓	
		N.A.			

* If weighting is assigned to CILOs, they should add up to 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	
Lecture	Explain key concepts, such as orthographic projection, etc., related to engineering communications and drawing.	✓	✓	✓		1.5 hrs/week
Laboratory Work	Learn and use CAD software to do assignments.			✓	✓	3 hrs/week for 12 weeks only

4. Assessment Tasks/Activities (ATs)

(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: 100%						
Tests	✓	✓	✓		40%	2-3 tests during the second half of the semester
Assignments			✓	✓	60%	7-9 computer-based drawing assignments
Examination: 0%						

* The weightings should add up to 100%.

100%

5. Assessment Rubrics

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

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Adequate (C+, C, C-)	Marginal (D)	Failure (F)
1. Tests	1.1 Ability to use the medium of drawings in engineering communications.	High	Significant	Moderate	Basic	Not even reaching marginal levels
	1.2 Ability to describe the general principles involved in the use of engineering drawing.					
	1.3 Ability to demonstrate skills in interpreting, and producing engineering drawings accurately and efficiently.					
2. Assignments	2.1 Ability to demonstrate skills in interpreting, and producing engineering drawings accurately and efficiently.	High	Significant	Moderate	Basic	Not even reaching marginal levels
	2.2 Ability to demonstrate skills in computer-aided-draughting to produce detailed 2D and 3D drawings.					

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.)

Use of Computer for Engineering Design Drawing. Conventional Representation of Standard Features. Orthographic Projection: 1st and 3rd angle. Isometric View and Oblique Projection. Standard Symbols on a Working Drawing. Dimensioning and tolerance applications. Sectioning. Assembly Drawing. Solid Modelling. 2D and 3D computer-aided-draughting software.

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.	M.A. Parker and F. Pickup, Engineering Drawing with Worked Examples, Part 1, Stanley Thornes Ltd.
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2.2 Additional Readings

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

1.	Giesecke, F.E., Mitchell, A., Spencer, H.C., Hill, I.L., Dygdon, J.T., Novak, J.E., Loving, R.O., Lockhart, S., Johnson, C., <i>Technical Drawing with Engineering Graphics</i> , Pearson.
2.	Bethune, D.B., <i>Engineering Graphics with AutoCAD 2017</i> , Pearson.
3.	Howard, W., Musto, J., <i>Introduction to Solid Modeling Using SolidWorks 2016</i> , McGraw Hill.
4.	Bertoline, G., Wiebe, E., Hartman, N., Ross, W., <i>Fundamentals of Graphics Communication</i> , McGraw Hill.