

Curriculum for BEng in Chemical and Bioproduct Engineering

Major Program Requirements

Core courses

	CENG 101	Chemical Process Principles	[3-1-0:3]
	CENG 103	Products and Processes	[3-1-0:3]
	CENG 131	Chemical Engineering Thermodynamics	[3-1-0:3]
	CENG 202	Process Design and Integration	[2-0-2:3]
	CENG 211	Reaction and Reactor Engineering	[3-1-0:3]
	CENG 221	Separation Processes	[3-1-0:3]
	CENG 231	Process Fluid Mechanics	[3-1-0:3]
	CENG 241	Heat and Mass Transfer	[3-1-0:3]
	CENG 294	Bioproduct Engineering Laboratory	[0-1-8:4]
	CENG 297	Chemical Engineering Laboratory I	[0-1-4:2]
	CENG 302	Process Dynamics and Control	[3-0-1:3]
	CENG 303	Plant Design and Economics	[3-0-0:3]
	CENG 362	Bioproducts and Processing	[3-0-0:3]
	CENG 364	Biomolecular Engineering	[3-1-0:3]
	CENG 392	Chemical and Bioproduct Engineering Project I	[0-1-6:3]
	CENG 394	Chemical and Bioproduct Engineering Project II	[0-1-6:3]
	BIOL 104	Cell Biology	[3-0-0:3]
	BISC 103	Nature of Biochemistry and Biotechnology	[3-0-0:3]
	CHEM 102	Physical Chemistry: Fundamentals and Applications	[3-0-0:3]
	IELM 311	Engineers in Society	[1-0-0:1]
(1)	MATH 021	Concise Calculus	[3-1-0:4]
	MATH 107	Multivariable Differential and Integral Calculus	[3-1-0:4]
	MATH 113	Introduction to Linear Algebra	[2-1-0:2]
	MATH 150	Introduction to Ordinary Differential Equations	[2-1-0:2]
	MATH 230	Introduction to Numerical Methods	[2-1-0:2]

Required courses

(2)	CENG 098	Industrial Training	[0 credit]
	COMP 102	Computer and Programming Fundamentals I	[3-0-2:3]
	IELM 120	Engineering Management	[3-0-0:3]

Elective courses

Elective types	Minimum no. of courses	Minimum total credits	
(3) CENG	Chemical Engineering Elective	3	9
SB&M	Business and Management Elective	1	3

General Education Requirements

Electives must be selected from amongst those general education courses that are listed under the section "Designated General Education Courses".

Elective types	Minimum no. of courses	Minimum total credits	
(4) $\left[\begin{array}{l} \text{GEE(SCIE)} \\ \text{or GEE(SB\&M)} \\ \text{or GEE(H\&SS)} \end{array} \right]$	$\left[\begin{array}{l} \text{Science General Education Elective} \\ \text{Business and Management} \\ \text{General Education Elective} \\ \text{Humanities and Social Science} \\ \text{General Education Elective} \end{array} \right]$	-	12

Required Courses in English Communication

LANG 106	English for Engineering Students I	[0-2-0:1]
LANG 206	English for Engineering Students II	[0-2-0:1]
LANG 306	English for Engineering Students III	[0-2-0:1]

Other Requirements

	CENG 001	Academic and Professional Development I	[0-1-0:0]
	CENG 002	Academic and Professional Development II	[0-1-0:0]
(5)	HLTH 001	Healthy Life Style	[0 credit]

Notes:

- (1) Students who have grade D or better in AL Pure Mathematics or in AL Applied Mathematics are not required to take MATH 021.
- (2) Students are required to complete and pass a prescribed training program within the normal length of study. Details of the program, its requirements and schedule will be announced on the website of the Industrial Training Center (<http://www.ust.hk/itc>) or website of the department in the first year Fall Semester. Training normally takes place in the Winter and Summer Sessions starting from the first year of study. For recording the overall training results, students are normally registered for the course in their last semester of study.
- (3) Chemical Engineering Electives are to be chosen from CENG courses at 300-level or above. ENGG 351 and ENGG 395 can be used to count toward the CENG elective requirement.
- (4) Of these courses, at least one course in Humanities and one in Social Science are required. SOSC 111 is a recommended elective.
- (5) Students are required to take and pass this course in their first year of study. Details of the course and its requirements are announced on the course website <http://www.ab.ust.hk/sao/HLTH001> managed by the Student Affairs Office.

A minimum of 101 credits is required for the BEng program in Chemical Bioproduct Engineering. For students who are required to take MATH 021, the minimum total required is 105 credits.

Recommended Pattern of Study for BEng in Chemical and Bioproduct Engineering

1st year	Fall	C CENG 103, BIOL 104, BISC 103, CHEM 102, MATH 021 R COMP 102, LANG 106 O CENG 001, HLTH 001	(Total: 15/19 credits)
	Spring	C CENG 101, CENG 131, MATH 107, MATH 113 R LANG 106 E two GEE O HLTH 001	(Total: 19* credits)
2nd year	Fall	C CENG 211, CENG 221, CENG 231, CENG 297, CENG 362, IELM 311, MATH 150 R LANG 206	(Total: 17 credits)
	Spring	C CENG 202, CENG 241, CENG 294, CENG 364, MATH 230 R LANG 206	(Total: 16* credits)
3rd year	Fall	C CENG 302, CENG 392 R IELM 120, LANG 306 E two CENG, GEE O CENG 002	(Total: 18 credits)
	Spring	C CENG 303, CENG 394 R CENG 098, LANG 306 E CENG, GEE, SB&M	(Total: 16* credits)

* LANG 106, LANG 206 and LANG 306 are two-semester courses. The course credit (1 credit) will be earned on completion of the courses at the end of the respective Spring Semester.

C = core course; R = required course; E = elective course