

School:		School of Engineering and School of Business Management				Student's Pathway											
Program:		Dual Degree Program (BEng in Chemical Engineering and BBA in Economics)															Remarks
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	Sub-total			

BEng in Chemical Engineering

Engineering Fundamental Courses

COMP	1022P	Note: COMP 1022P OR COMP 1023 OR COMP 2011 OR COMP 2012H	3-5		3									3	Students should take COMP 1022P, COMP 1023, COMP 2011 or COMP 2012H which will also be used to substitute ISOM 2010 and to waive ISOM 2020
COMP	1023	Introduction to Computing with Java	3												
COMP	2011	Introduction to Python Programming	4												
COMP	2012H	Programming with C++	5												
CHEM	1012	Honors Object-Oriented Programming and Data Structures	3	3										3	General Chemistry B: Atomic Structure, Molecules, and Bonding Theories
MATH	1013	Note: MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
	1020	Calculus I	4	3										3	
	1023	Accelerated Calculus	3												
		Honors Calculus I	4												
PHYS	1112	Note: PHYS 1112 OR PHYS 1312	3		3									3	General Physics I with Calculus
	1312	General Physics I with Calculus	3												
		Honors General Physics I	3												
Required Credits for Engineering Fundamental Courses				13-19	6	6	0	0	0	0	0	0	0	12	

Major Required Courses and Electives

CENG	1000	Foundations of Chemical and Biological Engineering	3	3										3	NOTE: Those entering the department in Year 2 will takethis course in Year 2 Fall.
CENG	1010	Academic and Professional Development I	0	0										0	
CENG	1110	Introduction to Chemical Engineering	3		3									3	NOTE: Those entering the department in Year 2 will takethis course in Year 2 Fall.
CENG	1500	A First Course on Materials Science and Applications	3			3								3	
CENG	2210	Chemical and Biological Engineering Thermodynamics	3				3							3	
CENG	2220	Transport Phenomena I	3					3						3	
CENG	2310	Modeling for Chemical and Biological Engineering	3			3								3	
CENG	2320	Modeling for Chemical and Biological Engineering II	3				3							3	
CENG	3110	Process Dynamics and Control	3						3					3	
CENG	3150	Integrated Chemical Process & Product Design	5						5					5	
CENG	3210	Separation Processes	3					3						3	
CENG	3220	Transport Phenomena II	3						3					3	
CENG	3230	Chemical and Biological Reaction Engineering	3					3						3	
CENG	3300	Data Science for Molecular Engineering	3					3						3	
CENG	3950	Chemical and Environment Engineering Laboratory	4						4					4	
CENG	4020	Academic and Professional Development II	0						0					0	
CENG	4920	Note: CENG 4920 OR CENG 4930 OR CENG 4940 (Students taking the Research Option must take CENG 4930)	6												Chemical Engineering Capstone Design
	4930	Chemical Engineering Thesis Research	6									3	3	6	
	4940	Chemical Engineering Industrial Project	6												
BIEN	2410	Note: BIEN2410 OR BIEN2610 OR LIFS1901	3			3								3	Cellular and Systems Physiology for Engineers
	2610	Chemical Biology for Engineers	3												
	1901	General Biology I	3												
CHEM	1052	Laboratory for General Chemistry B	1		1									1	
CHEM	2111	Fundamentals of Organic Chemistry	3			3								3	CHEM 2111 offered in Fall
CHEM	2155	Fundamental Organic Chemistry Laboratory	1			1								1	
CENG/BIEN/COMP/ENEG/CHEM		CENG Elective (Courses from the specified list)	12							3	3	3	3	12	
BEng in Chemical Engineering Major Requirements				71	3	4	13	6	12	15	3	3	6	6	71

BBA in Economics

School Requirements

ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON	2103	Note: ECON 2103 OR ECON 2113	3		3									3	ECON 2103 / 2113 / 2123 is a major pre-requisite
	2113	Principles of Microeconomics	3												
		Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123	3					3						3	Macroeconomics
	3123	Macroeconomic Theory I	3												
		Macroeconomic Theory I	3												
FINA	2303	Financial Management	3			3								3	
ISOM	2010	Introduction to Information Systems	3	-	-	-	-	-	-	-	-	-	-	0	COMP 1023, COMP 2011 and COMP 2012H are more advanced computing courses as compared to ISOM 2010. Students SHOULD take COMP1023 or COMP2011 or COMP2012H instead of ISOM 2010.
ISOM	2020	Coding for Business	1	-	-	-	-	-	-	-	-	-	-	0	
ISOM	2500	Business Statistics	3	-	-	-	-	-	-	-	-	-	-	0	ISOM 2020 is waived for DDP students who have taken and passed COMP 1023, COMP 2011 and COMP 2012H. These two COMP courses are similar or more advanced coding (Python) courses as ISOM 2020.
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3									3		3	Substituted by CIVL 2160
MARK	2120	Marketing Management	3			3								3	
MGMT	2010	Business Ethics and the Individual	2									2		2	
MGMT	2110	Organizational Behavior	3								3			3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
MATH	1003	Note: MATH 1003 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												DDP students should take MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
	1013	Calculus and Linear Algebra	3	(3)											
	1020	Calculus IB	3												
	1023	Accelerated Calculus	4												
		Honors Calculus I	3												
Required Credits for School Requirements				39-40	0	3	3	6	4	3	0	3	5	2	29

Major Required Courses and Electives

ECON	3014	Managerial Microeconomics	4					4						4	
ECON	3024	Managerial Macroeconomics	4						4					4	
ECON	3334	Introduction to Econometrics	4							4				4	
ECON		ECON 4000-level Electives (Any 3 courses of the subject and level as specified)	11								4	4	3	11	
Required Credits for Major Required Courses and Electives				23	0	0	0	0	4	4	4	4	4	3	23

Additional Requirement for Dual Degree

Requirements for Dual Degree Program

TEMG	1011	T&M Professional Activities I	0	0	0									0	To graduate, students should complete ALL requirements as specified for DDP.
TEMG	1012	T&M Professional Activities II	0			0	0							0	
TEMG	1013	T&M Professional Activities III	0					0	0					0	
TEMG	1014	T&M Professional Activities IV	0							0	0			0	
TEMG	1015	T&M Professional Activities V	0									0	0	0	
TEMG	3950	T&M Case Analysis and Product Innovation	3		3									3	
TEMG	4950	T&M Corporate Consulting Project	3-5							4				4	
Required Credits for Additional Requirements				7	0	3	0	0	0	4	0	0	0	7	

University Common Core Requirement

CORE	C3 - C9	U CORE - Others	21			3	3			3	6	3	3	21	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
HMAW	1905	Behavioral Foundations of University Education: Habits, Mindsets, and Wellness	3	1	2									3	
Sub-total for University CORE				30	4	5	3	3	0	0	3	6	3	3	30

Term load (excl. free credits)									
13	21	19	15	20	22	14	16	18	14
172##									

Notes:
() indicates the reuse of the same course to fulfill more than one requirement.
* Courses offered in winter term
^ Courses offered in summer term
--- denotes the course/requirement is either waived or substituted
To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.