

<< Declaration of BEng major << Declaration of BBA major

School:		School of Engineering and School of Business Management			Student's Pathway										
Program:		Dual Degree Program (BEng in Bioengineering and BBA in Marketing)													
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	Remarks

BEng in Bioengineering

Major Requirements

Engineering Fundamental Courses

COMP	1021	Note: [COMP 1021] OR [(COMP 1022P OR COMP 2011) AND COMP1029P]	3-5												
COMP	1022P	Introduction to Computer Science	3												
COMP	1029P	Python Programming Bridging Course	1		3									3	Students should take COMP1021 which will also be used to substitute ISOM 2010 and to waive ISOM 2020
COMP	2011	Programming with C++	4												
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5												
CHEM	1020	General Chemistry I	3	3										3	
CHEM	1050	Laboratory for General Chemistry I	1	1										1	
LANG	2030	Technical Communication I	3											0	Waived for DDP students
LIFS	1901	General Biology I	3	3										3	
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1013	Calculus IA	4												
MATH	1014	Calculus IB	3		3									6	
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
PHYS	1112	Note: PHYS 1112 OR PHYS 1312	3	3										3	
PHYS	1312	General Physics I with Calculus	3												
SENG		Honors General Physics I	3-4		(3)									0	
		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)													
Required credits for Engineering Fundamental Courses			23-29											19	

Major Required Courses and Electives

BIEN	1010	Note: BIEN 1010 OR CENG 1000	3		3									3	
CENG	1000	Introduction to Chemical and Biological Engineering	3												
BIEN	2310	Modeling for Chemical and Biological Engineering	3			3								3	
BIEN	2410	Cellular and Systems Physiology for Engineers	3						3					3	
BIEN	2610	Chemical Biology for Engineers	3			3								3	
BIEN	2990	Academic and Professional Development I	1			1								1	
BIEN	3310	Note: BIEN 3310 OR BIEN 3320	3				3							3	
BIEN	3320	Data Science for Neural Engineering	3												
BIEN	3410	Data Science for Biology and Medicine	3							3				3	
BIEN	3910	Introduction to Bioinstrumentation and Bioimaging	4							4				4	
BIEN	4920	Note: BIEN 4920 OR BIEN 4930 OR BIEN 4940	6									3	3	6	
BIEN	4930	Bioengineering Capstone Design	6												
BIEN	4940	Bioengineering Thesis Research	6												
BIEN	4940	Bioengineering Industrial Project	6												
BIEN	4990	Academic and Professional Development II	1										1	1	
CENG	2210	Chemical and Biological Engineering Thermodynamics	3				3							3	
CENG	2220	Transport Phenomena I	3									3		3	
CENG	3230	Chemical and Biological Reaction Engineering	3							3				3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LIFS	3150	Note: LIFS 3150 OR MATH 2411 OR BIEN 3300	3-4												
MATH	2411	Biostatistics	3			3								3	
BIEN	3300	Applied Statistics	4												
LANG	4035	Data Science for Molecular Engineering	3											3	
LANG	4035	Technical Communication II for Chemical and Biological Engineering	3											3	
SSCI/SENG		Bioengineering Electives (5 courses from the specified elective list, of which at least 9 credits should be taken from a single specialty area (Area 1 or Area 2). Out of the 15 credits taken, at least 9 credits should be at 4000-level)	15								6	3	6	15	
Required credits for Major Required Courses and Electives			60-61											60	

BBA in Marketing

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	2113	Principles of Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123	3							3				3	
ECON	3123	Macroeconomics	3												
FINA	2303	Macroeconomic Theory I	3				3							3	
FINA	2303	Financial Management	3												
ISOM	2010	Introduction to Information Systems	3											0	Substituted by COMP 1021/1022P/2011/2012H
ISOM	2020	Coding for Business	1											0	Waived for DDP students if they have taken and passed COMP1021 or COMP 1029P
ISOM	2500	Business Statistics	3											0	Substituted by LIFS 3150/MATH 2411/BIEN 3300
ISOM	2600	Introduction to Business Analytics	1											0	Substituted by BIEN 3310/3320
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	MARK 2120 is a major pre-requisite
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	
LABU	2040	Business Case Analyses	3											0	Waived for DDP students
LABU	2060	Effective Communication in Business	3											3	
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1012	Calculus and Linear Algebra	3												
MATH	1013	Calculus IA	4		(3)										
MATH	1020	Calculus IB	3												
MATH	1023	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
Required credits for School Requirements			43-44											31	

Major Requirements

Major Required Courses and Electives

MARK	3220	Marketing Research	4					4						4	
MARK	3420	Consumer Behavior	4						4					4	
MARK	4210	Strategic Marketing	4										4	4	
MARK		MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)	12							4	4	4		12	
Required credits for Major Required Courses and Electives			24											24	

Additional Requirements

Requirements for Dual Degree Program

Required Courses															
TEMG	1010	T&M Professional Activities	0	0	0	0	0	0	0	0	0	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											7	

University CORE

CORE	C3 - C9	U CORE - Others	21				3	3	6		6		3	21		
CORE	C1 & C2	U CORE - English Language	6	3	3									6		
CORE	1905	Behavioral Foundations of University Education: Habits, Mindsets, and Wellness	3	0	3									3		
Sub-total for University CORE			36											30		
Term load (excl. free credits)																
				16	18	18	18	16	19	17	16	16	17			
171##																

Notes:

() indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements specified for DDP.

**Remarks on course(s):