Xavier University

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

2008-2009 Curriculum, 3rd Edition

FIRST YEAR

First Semester

Code		Description	Lect.	Lab.	Unit	Pre-Req.
ChE	01	Orientation to Chemical Engineering	1	0	1	
CHEM	81	General Chemistry (Lecture)	3	0	3	
CHEM	81L	General Chemistry (Laboratory)	0	1	1	
ENG	014.1	English Plus: Introduction to Study and Thinking Skills	(3)	0	(3)	
ES	01	Engineering Drawing	0	1	1	
FFP	10	Freshmen Formation Program	3	0	3	
FIL	22	Komunikasyon sa Akademikong Filipino	3	0	3	
MA	81	College Algebra	3	0	3	
MA	82	Plane and Spherical Trigonometry	3	0	3	
PSC	10.1	Politics and Governance with Philippine Constitution	3	0	3	
PE	1	Physical Fitness	2	0	2	
		Total	(24)	2	(26)	
			21	2	23	

Second Semester

Code		Description	Lect.	Lab.	Unit	Pre-Req.
CHEM	82	General Chemistry Calculations	2	1	3	CHEM 81,81L
ENG	16.1	Study, Thinking and Language Skills in English	3	0	3	
FIL	33	Pagbasa at Pagsulat Tungo sa Pananaliksik	3	0	3	FIL 22
HIST	11.1	Rizal's Life, Works and Writings	3	0	3	
MA	83	Advanced Algebra	2	0	2	MA 81
MA	84	Analytic Geometry	2	0	2	MA 81, MA 82
MA	85	Solid Mensuration	2	0	2	MA 81, MA 82
PSYC	1	General Psychology	3	0	3	
RS	15	The Old Testament	3	0	3	
PE	2	Rhythmic Activities	2	0	2	PE 1
		Total	25	1	26	

SECOND YEAR

First Semester

Code		Description	Lect.	Lab.	Unit	Pre-Req.
CHEM	83	Analytical Chemistry	3	2	5	CHEM 82
ES	03	Computer Fundamentals and Programming	0	2	2	2ND YEAR LEVEL
MA	86	Differential Calculus	4	0	4	MA 83, MA 84, MA 85
PHYS	21	General Physics 1	3	0	3	MA 81, MA 82
PHYS	21L	General Physics 1 Laboratory	0	1	1	MA 81, MA 82
RS	20	Christology	3	0	3	RS 15
PHILO	01	Logic	3	0	3	
NSTP	1	National Service Training Program 1	3	0	3	
PE	3	Individual/Dual Sports	2	0	2	PE 2
		Total	21	5	26	

Second Semester

Code		Description	Lect.	Lab.	Unit	Pre-Req.
CHEM	84	Organic Chemistry	4	1	5	CHEM 82
ENG	34.1	The Literatures of the World	3	0	3	ENG 16.1
ENG	17	Effective Speech Communication	3	0	3	ENG 16.1
MA	87	Integral Calculus	4	0	4	MA 86
PHYS	22	General Physics 2	3	0	3	PHYS 21,21L
PHYS	22L	General Physics 2 Laboratory	0	1	1	PHYS 21, 21L
PHILO	15.1	Philosophy of Man and the Human Person	3	0	3	PHILO 01
NSTP	2	National Service Training Program 2	3	0	3	NSTP 1
PE	4	Team Sports/Games	2	0	2	PE 3
		Total	25	2	27	

THIRD YEAR

First Semester

Code		Description	Lect.	Lab.	Unit	Pre-Req.
ChE	10	Chemical Engineering Calculations 1	2	1	3	CHEM 83, MA 83
ChE	20	Physical Chemistry for Engineers 1	3	1	4	CHEM 83, MA 87
CHEM	85	Industrial Chemistry	2	1	3	CHEM 84
ENG	41	Humanities: Arts, Aesthetics and Society	3	0	3	ENG 16.1
ES	04	Statics of Rigid Bodies	3	0	3	PHYS 21,21L, MA 87
MA	88	Differential Equations	3	0	3	MA 87
MA	89	Probability and Statistics	3	0	3	MA 81
RS	35	Church and Sacraments	3	0	3	RS 20
		Total	22	3	25	

Note 1: ***Students who do not qualify are required by the English Department to take ENG 014.1, a non-credit subject.***

Note 2: ***FFP10 must be taken within the first year of entry to the University.***

Note 3: ***Subjects taken without completing the required pre-requisite will not be credited.***

Note 4: ***Year Level is determined based on completion of at least 75% of the required number of units of the preceding year level prescribed by the curriculum.***

Note 5: ***The regular load of a student per semester is as prescribed in this curriculum indicated as TOTAL number of units, which is the MAXIMUM number of units that a student can take in the semester.***

Second Semester

Code		Description	Lect.	Lab.	Unit	Pre-Req.
ChE	11	Chemical Engineering Calculations 2	2	1	3	ChE 10
ChE	12	Advanced Engineering Mathematics in Chemical Engineering	3	0	3	MA 88
ChE	21	Physical Chemistry for Engineers 2	3	1	4	ChE 20
ChE	22	Chemical Engineering Thermodynamics 1	3	0	3	ChE 20
ChE	30	Principles of Transport Processes	3	0	3	MA 88, ChE 10
ENG	27	Writing Term Paper in the Discipline and Business Correspondence	3	0	3	ENG 16.1
ES	02	Computer-Aided Drafting	0	1	1	ES 01, 3rd YEAR LEVEL
ES	05	Dynamics of Rigid Bodies	2	0	2	ES 04
PHILO	30.1	Generic Ethics with PERSON (Philosophical Enrichment and Regeneration for Social Orientation and Networking Program)	3	0	3	PHILO 15.1
		Total	22	3	25	

Summer

Code		Description	Hours	Lect.	Lab.	Unit	Pre-Req.
ChE	70	Industry Immersion 1	120	0	1	1	4TH YEAR LEVEL
			Total			1	

FOURTH YEAR

First Semester

Code		Description	Lect.	Lab.	Unit	Pre-Req.
ACE	05	Basic Electrical and Electronics Engineering Lecture	2	0	2	PHYS 22, 22L
ACE	05L	Basic Electrical and Electronics Engineering Laboratory	0	1	1	PHYS 22, 22L
ChE	23	Chemical Engineering Thermodynamics 2	3	0	3	ChE 22
ChE	31	Momentum Transfer	3	0	3	ChE 30
ChE	32	Heat and Mass Transfer	3	0	3	ChE 30
ChE	60	Fundamentals of Materials Science and Engineering	3	0	3	CHEM 84
ES	06	Mechanics of Deformable Bodies	3	0	3	ES 04
RS	55	Christian Morality with Social Teachings of the Church	3	0	3	RS 35
SOC	01.1	Principles of Sociology w/ Population, Family Planning and HIV/AIDS Education	3	0	3	
		Total	23	1	24	

Second Semester

Code		Description	Lect.	Lab.	Unit	Pre-Req.
ACE	08	Methods of Research	3	0	3	MA 89, 4th YEAR LEVEL
ChE	13	Process Dynamics and Control	2	1	3	ChE 12
ChE	24	Chemical Reaction Engineering	4	0	4	ChE 23, ChE 12
ChE	33	Separation Processes	3	0	3	ChE 32, ChE 23
ChE	34	Chemical Engineering Laboratory 1	0	1	1	ChE 30, ChE 31, ChE 32
ChE	40	Introduction to Biotechnology	3	0	3	CHEM 84
ChE	50	Chemical Process Industries	2	1	3	CHEM 84
ES	10.1	Safety Management/Engineering	1	0	1	3rd YEAR LEVEL
PHILO	25	Philosophy of Religion	3	0	3	PHILO 30.1
		Total	21	3	24	

Summer

Code		Description	Hours	Lect.	Lab.	Unit	Pre-Req.
ChE	80	On the Job Training	300	0	2	2	5TH YEAR LEVEL
			Total			2	

FIFTH YEAR

First Semester

Code		Description	Lect.	Lab.	Unit	Pre-Req.
ChE	14	Computer Applications in Chemical Engineering	0	1	1	5th YEAR LEVEL
ChE	35	Chemical Engineering Laboratory 2	0	1	1	ChE 34
ChE	41	Biochemical Engineering	3	0	3	ChE 40, ChE 24
ChE	61	Process Equipment Design	1	1	2	ChE 33
ChE	62	Process Design and Project Feasibility	2	1	3	5TH YEAR LEVEL, ACE 08
ES	07	Engineering Economy and Accounting	3	0	3	4th YEAR LEVEL
ES	08	Engineering Management	3	0	3	3RD YEAR LEVEL
ES	09	Environmental Engineering	2	0	2	CHEM 81, 81L
		Technical Elective 1*	3	0	3	5th YEAR LEVEL
		Technical Elective 2*	3	0	3	5th YEAR LEVEL
		Total	20	4	24	

Second Semester

Code		Description	Lect.	Lab.	Unit	Pre-Req. (Co_Req.)
ACE	09	Quantitative Methods in Management	3	0	3	ES 08
ChE	51	Safety in Process Industries	2	0	2	5th YEAR LEVEL
ChE	52	Industrial Waste Management and Control	3	0	3	(ChE 51)
ChE	53	Field Trips and Seminars	0	1	1	5th YEAR LEVEL
ChE	63	Chemical Engineering Plant Design	3	2	5	ChE 61, ChE 62, ES 07
ChE	64	Laws and Ethics for ChE	2	0	2	5th YEAR LEVEL
ChE	65	Introduction to Particle Technology	2	0	2	ChE 31
ECON	20.1	Principles of Economy with Taxation, Agrarian Reform, and Constitution Education	3	0	3	
		Technical Elective 3*	3	0	3	5th YEAR LEVEL
		Total	21	3	24	

Note 6: ***At least two of the Technical Electives must be under the same track or area of specialization: Food and Drug Manufacturing, Environmental Management, Energy Engineering, Paints and Coating Technology, Entrepreneurship, Packaging Technologies, Petrochemical Engineering, Biotechnology, Semiconductor Technology, Emerging Technologies. Electives to be chosen are subject to available offerings and must be with the approval of the Department.***

ChETE 10	Food Science and Engineering	ChETE 15	Solid Waste Management	ChETE 20	Cell and Molecular Biology
ChETE 26	Food Safety Systems	ChETE 16	Air Pollution Control	ChETE 21	Nanotechnology
ChETE 12	Food Processing Technologies	ChETE 17	Hazardous Waste Management	ChETE 22	Introduction to Polymer Engineering
ChETE 13	Oleochemical Processing Technologies	ChETE 18	Energy Management	ChETE 23	Enzyme Technologies
ChETE 14	Wastewater Engineering	ChETE 19	Renewable Energy Technologies	ChETE 24	Statistical Process Control for Chemical Engineers
				ChETE 25	Entrepreneurship for Chemical Engineers