A. Program Curriculum

The curriculum for chemical engineering was designed to provide the best possible preparation for engineering practice through a balance of theory and application. The course is given on a semester base for 5 years. The courses are distributed each semester; according to the year and which semester to be taken as first or second semester. The chemical engineering curriculum is divided into the following categories

Math / Science / Engineering

College Compulsory Courses (Credit Hours 29)		
Course number	Course name	Credit Hours
0301101	Calculus (1)	3
0301102	Calculus (2)	3
0301203	Ordinary Differential Equations	3
0302101	General Physics (1)	3
0302102	General Physics (2)	3
0302111	General Physics Lab (1)	1
0302112	General Physics Lab (2)	1
0303101	General Chemistry (1)	3
0303105	General chemistry Lab (1)	1
0402110	Engineering Workshop	1
0403198	Engineering Drawing	2
0403209	Computer-Aided Drawing	1
0403302	Engineering Economics	3
0404200	Communication Skills	1

Chemical Engineering

Chemical Engineering Department Compulsory Courses (Credit Hours 98)		
Course Number	Course Name	Credit Hours
0402226	Engineering mechanics	3
0402227	Materials Strength	3
0404112	Engineering chemistry	3
0404205	Multidimensional Mathematics	3
0404213	Industrial Physical Chemistry	3
0404214	Industrial Analytical Chemistry	3
0404216	Industrial Organic Chemistry	3
0404225	Principles of Chemical Engineering (1)	3
0404228	Principles of Chemical Engineering (2)	3
0404244	Fluid mechanics	3
0404302	Data Analysis in Chemical Engineering	2
0404303	Applied Mathematics for Chemical Engineering	3
0404330	Momentum Transfer	2
0404343	Thermodynamics for chemical engineering (1)	3
0404344	Thermodynamics for chemical engineering (2)	3
0404345	Fluid mechanics lab	1

0404392	Chemical reaction engineering (1)	3
0404401	Practical training	3
0404403	Numerical Analysis	3
0404404	Analysis and Modeling of chemical processes	3
0404430	Heat Transfer	3
0404437	Mass Transfer	3
0404438	Heat Transfer Lab	1
0404447	Thermodynamics for chemical engineering Lab	1
0404453	Unit operation (1) / solid material	3
0404454	Unit operation solid material lab	1
0404455	Principles of Instrumental Analysis	3
0404459	Unit operation (2) / Separation processes	3
0404491	Chemical reaction engineering (2)	3
0404492	Chemical reaction engineering lab	1
0404500	Graduation project (1)	0
0404531	Mass Transfer and Separation Processes Lab	1
0404563	Process Dynamics and Control	3
0404564	Process Dynamics and Control Lab	1
0404565	Equipment Design and Plant Economics	3
0404566	Industrial Safety Engineering	3
0404567	Chemical Industries Engineering	3
0404568	Plant Design	3
0404569	Graduation Project (2)	3

Chemical Engineering Elective Courses (Credit Hours 9)		
Course Number	Course Name	Credit Hours
0404450	Experimental Design	3
0404501	Optimization of Chemical Processes	3
0404571	Petroleum Refining Engineering	3
0404575	Corrosion Engineering	3
0404577	Food Industries Engineering	3
0404578	Polymer Engineering	3
0404584	Transport Phenomena in Living Systems	3
0404586	Environmental Engineering Management	3
0404588	Water and Wastewater Treatment Technologies	3
0404590	Biochemical Engineering	3
0405112	Programming for Engineers	3

Courses taken in an order that ensures that the student is learning progressively more complex material; which are built on the more basic material learned in earlier courses. Because of putting off some courses, the student will not be able to understand a course at all if the prerequisite have not been taken. Though students would successfully pass the class, they may not have a depth of understanding needed. Creating more prerequisites through the program to help channel students better, thus this would be a potential improvement for the chemical engineering program. Students

will benefit by allowing them consistently to take classes with students they know and students can work together for greater understanding of course material.

College Compulsory Courses (Credit Hours 29)				
Course number	Course name	Credit hours	Prerequisite	
0301101	Calculus (1)	3		
0301102	Calculus (2)	3	0301101	
0301203	Ordinary Differential Equations	3	0301102	
0302101	General Physics (1)	3		
0302102	General Physics (2)	3	03032101	
0302111	General Physics Lab (1)	1	0302101	Or Concurrent
0302112	General Physics Lab (2)	1	0302102	Or Concurrent
0303101	General Chemistry (1)	3		
0303105	General chemistry Lab (1)	1	0303101	Or Concurrent
0402110	Engineering Workshop	1		
0403198	Engineering Drawing	2		
0403209	Computer-Aided Drawing	1	0403198	
0403302	Engineering Economics	3	0301203	
0404200	Communication Skills	1		
Chemical Engineering Department Compulsory Courses (Credit Hours 98)				
0402226	Engineering mechanics	3	0301102	0302102
0402227	Materials Strength	3	0402226	
0404112	Engineering chemistry	3	0303101	
0404205	Multidimensional Mathematics	3	0301102	
0404213	Industrial Physical Chemistry	3	0404112	
0404214	Industrial Analytical Chemistry	3	0404112	
0404216	Industrial Organic Chemistry	3	0404112	
0404225	Principles of Chemical Engineering (1)	3	0301102	0404112
0404228	Principles of Chemical Engineering (2)	3	0404225	
0404244	Fluid mechanics	3	0301203	0404225
0404302	Data Analysis in Chemical Engineering	2	0301102	
0404303	Applied Mathematics for Chemical Engineering	3	0404205	0301203
0404330	Momentum Transfer	2	0404205	0404244
0404343	Thermodynamics for chemical engineering (1)	3	0404213	0404228
0404344	Thermodynamics for chemical engineering (2)	3	0404343	
0404345	Fluid mechanics lab	1	0404244	
0404392	Chemical reaction engineering (1)	3	0404343	
0404401	Practical training	3		
0404403	Numerical Analysis	3	0404303	
0404404	Analysis and Modeling of chemical processes	3	0404437	0404403
0404430	Heat Transfer	3	0404244	
0404437	Mass Transfer	3	0404430	
0404438	Heat Transfer Lab	1	0404430	
0404447	Thermodynamics for chemical engineering Lab	1	04044344	
0404453	Unit operation (1) / solid material	3	0404430	
0404454	Unit operation solid material lab	1	0404453	
0404455	Principles of Instrumental Analysis	3	0404437	
0404459	Unit operation (2) / Separation processes	3	0404437	

0404491	Chemical reaction engineering (2)	3	0404392	
0404492	Chemical reaction Engineering lab	1	0404491	
0404500	Graduation project (1)	0		
0404531	Mass Transfer and Separation Processes Lab	1	0404459	
0404563	Process Dynamics and Control	3	0404404	0404459
0404564	Process Dynamics and Control Lab	1	0404563	
0404565	Equipment Design and Plant Economics	3	0404459	
0404566	Industrial Safety Engineering	3	0404565	
0404567	Chemical Industries Engineering	3	0404459	
0404568	Plant Design	3	0404567	0404565
0404569	Graduation project (2)	3	0404500	
Chemical engineering Elective Courses (Credit Hours 9)				
0404450	Experimental Design	3	0404302	
0404501	Optimization of Chemical Processes	3	0404404	
0404571	Petroleum Refining Engineering	3	0404437	
0404575	Corrosion Engineering	3	0404437	
0404577	Food Industries Engineering	3	0404392	
0404578	Polymer Engineering	3	0404437	
0404584	Transport Phenomena in Living Systems	3	0404437	
0404586	Environmental Engineering Management	3	0404437	
0404588	Water and Wastewater Treatment Technologies	3	0404459	
0404590	Biochemical Engineering	3	0404491	
0405112	Programming for Engineers	3	0304099	