

# BACHELOR OF SCIENCE, CHEMICAL ENGINEERING

## GENERAL EDUCATION REQUIREMENTS

45-47 S.H.

(Parentheses indicate prerequisites)

<b>CHECK TO BE SURE THE FOLLOWING REQUIREMENTS ARE COMPLETED:</b>				
<input type="checkbox"/> Senior Engineer Clinic II <input type="checkbox"/> Multicultural/Global Course (M/G) <input type="checkbox"/> Lab Science Course (LAB)		<input type="checkbox"/> Broad Based Literature Course (LIT) <input type="checkbox"/> Computer Competency Exam or Computer Literacy Course <input type="checkbox"/> Rowan Seminar (RS) – <i>Freshmen Only</i>		
Transfer	Rowan	Rowan #	COMMUNICATIONS BANK	3-4 S.H.
		COMP 01111 COMP 01105	College Composition I (3 s.h.) or Integrated College Composition I (4 s.h.)	3-4 s.h.
		ENGR 01201	Sophomore Engineering Clinic I	0 s.h.
		ENGR 01202	Sophomore Engineering Clinic II	0 s.h.
Transfer	Rowan	Rowan #	SCIENCE/MATHEMATICS BANK	16 S.H.
		MATH 01130	Calculus I	4 s.h.
		CHEM 06105	Advanced College Chemistry I	4 s.h.
		MATH 01131	Calculus II (Calculus I)	4 s.h.
		CHEM 06106	Advanced College Chemistry II (Adv. College Chem I)	4 s.h.
Transfer	Rowan	Rowan #	SOCIAL & BEHAVIORAL SCIENCES BANK	6 S.H.
		ECON 04102	Introduction to Microeconomics	3 s.h.
			Directed Elective	3 s.h.
Transfer	Rowan	Rowan #	HISTORY/HUMANITIES/LANGUAGE BANK	6 S.H.
			Directed Elective	3 s.h.
			Directed Elective	3 s.h.
Transfer	Rowan	Rowan #	ARTISTIC & CREATIVE EXPERIENCE BANK	3 S.H.
			Directed Elective	3 s.h.
Transfer	Rowan	Rowan #	NON-PROGRAM COURSES	11-12 S.H.
		PHYS 02200	Physics I (Calculus I)	4 s.h.
		CS 01102 CS 04103	Intro to Programming (3 s.h.) or Computer Science & Programming (4 s.h.)	3-4 s.h.
		BIOL 01210	Biological Systems and Applications	4 s.h.

- ◆ This information has been provided by the department listed above as of the date listed below and is subject to change.
- ◆ To declare this major go to the CAP Center in Savitz Hall, or
- ◆ If this is a restricted major, Requirements for entering this major are attached.
- ◆ A suggested sequence of courses is also attached.

**Bachelor of Science, Chemical Engineering**  
**Chemical Engineering Major Requirements**

**131 S.H.**  
**86 s.h.**

ROWAN #	COURSE NAME	S.H.	PREREQUISITES
ENGR 01101	Freshman Engineering Clinic I	2	<i>Freshman Engineering standing</i>
ENGR 01102	Freshman Engineering Clinic II	2	<i>ENGR 01101 Freshman Engineering Clinic I</i>
CHE 06201	Principles for Chemical Processes I	2	<i>Adv. College Chem I - CHEM 06105, Calculus II - MATH 01131, Physics I - PHYS 02200</i>
MATH 01235	Math for Engineering Analysis I	4	<i>Calculus II - MATH 01131</i>
MATH 01236	Math for Engineering Analysis II	4	<i>Math for Engineering Analysis I - MATH 01235</i>
CHE 06302	Principles for Chemical Processes II	2	<i>Principles for Chemical Processes I - CHE 06201, Adv. College Chem II - CHEM 06106</i>
ENGR 01341	Fluid Mechanics I	2	<i>Math for Engineering Analysis I - MATH 01235, Physics I - PHYS 02200</i>
ENGR 01201	Sophomore Engineering Clinic I	4	<i>Freshman Engineering Clinic II - ENGR 01102</i>
ENGR 01202	Sophomore Engineering Clinic II	4	<i>Principles for Chemical Processes I - ENGR 01201</i>
CHEM 07200	Organic Chemistry I	4	<i>Chemistry II - CHEM 06101 or Adv. College Chemistry II - CHEM 06106</i>
CHE 06309	Process Fluid Transport	2	<i>Fluid Mechanics I - ENGR 01341, Principles for Chemical Processes II - CHE 06302</i>
CHE 06311	Heat Transfer Processes	2	<i>Fluid Mechanics - ENGR 01341, Principles for Chemical Processes II - CHE 06302, Math for Engineering Analysis II - MATH 01236</i>
CHE 06312	Separation Processes I	2	<i>Fluid Mechanics I - ENGR 01341, Principles for Chemical Processes II - CHE 06302, Calculus II - MATH 01131</i>
CHE 06310	Chemical Engineering Thermodynamics I	3	<i>Principles for Chemical Processes II - CHE 06302</i>
CHE 06315	Chemical Engineering Thermodynamics II	3	<i>Chemical Engineering Thermodynamics I - CHE 06310</i>
ENGR 01301	Junior Engineering Clinic I*	2	<i>Sophomore Engineering Clinic II - ENGR 01202</i>
ENGR 01302	Junior Engineering Clinic II*	2	<i>Junior Engineering Clinic I - ENGR 01301</i>
ENGR 01281	Materials Science	2	<i>Chemistry II - CHEM 06101 or Adv. College Chemistry II - CHEM 06105, Physics I - PHYS 02200</i>
CHE 06316	Chemical Reaction Engineering	4	<i>Process Fluid Transport - CHE 06309, Heat Transfer Processes - CHE 06311, Equilibrium Staged Operations - CHE 06312, Organic Chemistry I - CHEM 07200</i>
CHE 06314	Separation Processes II	4	<i>Process Fluid Transport - CHE 06309, Separation Processes I - CHE 06312</i>
CHE 06403	Unit Operations Experimental Design & Analysis	2	<i>Chemical Reaction Engineering - CHE 06316, Separation Processes - CHE 06314, Chemical Engineering Thermodynamics - CHE 06310</i>
CHE 06404	Unit Operations II	2	<i>Unit Operations I - CHE 06403</i>
CHE 06405	Process Dynamics and Control	3	<i>Chem. Proc. Comp. Desg. - CHE 06401, Transport Phenomena - CHE 06402</i>
ENGR 01401	Senior Engineering Clinic I*	2	<i>Junior Engineering Clinic II - ENGR 01302</i>
ENGR 01402	Senior Engineering Clinic II* - WI	2	<i>Senior Engineering Clinic I - ENGR 01401</i>
CHE 06401	Chemical Process Component Design	4	<i>Chemical Reaction Engineering - CHE 06316, Separation Processes - CHE 06314, Chemical Engineering Thermodynamics - CHE 06310</i>
CHE 06406	Chemical Plant Design	3	<i>Chemical Process Component Design - CHE 06401, Transport Phenomena - CHE 06402</i>
	Approved Chemistry Elective**	3	<i>see appropriate course prerequisites</i>
	Advanced Chemistry Elective	3	<i>see appropriate course prerequisites</i>
CHE 064XX	Approved Chemical Engineering Elective**	3	<i>see appropriate course prerequisites</i>
CHE 064XX	Approved Chemical Engineering Elective**	3	<i>see appropriate course prerequisites</i>

\* Junior and Senior Clinics are a project-based experience. Junior and Senior projects must be approved by a ChE Projects Committee and the Senior Clinic II is a writing intensive (WI) course.

\*\* Electives must come from a list of approved courses provided by the ChE Dept Chair

**General Education (see other side).....45 s.h.**

**Total Credits in Program.....131 S.H.**

**ROWAN UNIVERSITY**  
**Requirements for Entering**  
**Engineering**

- 1) College proficiency in reading, writing, and computational skills. These proficiencies are met either by satisfactory score for admissions to Engineering or successful completion of all Basic Skills courses.
- 2) Successful completion of 24 or more semester hours of course work with a cumulative GPA of 3.0 or better. Courses to be included in the 24 semester hours are: College Comp I, Calculus I, Calculus II, Physics I (Calculus Based), Advanced College Chemistry I, and Computer Science & Programming. The cumulative GPA in these major courses must be 3.0 or better.
- 3) Only grades of “C” or better are acceptable for transfer. Pass/Fail grades in any major course work are not acceptable for transfer.
- 4) Acceptance is based on availability of space in the class.
- 5) An interview with a faculty member may be required.
- 6) Change of major applications must be received in the College of Engineering by **Oct. 1 or Jan. 31**. Notification will be by **Nov. 1 or March 1**, if all courses have been completed. If a required course(s) is being taken during the semester, a decision will be deferred until the grades have been received.
- 7) Specific questions regarding the engineering program should be directed to the appropriate Engineering Program Chair.
- 8) Questions regarding the process should be directed to the Engineering Dean’s Office. Applications are available in that office.

## Chemical Engineering Suggested Course Sequence

Class of 2011

PLEASE NOTE: Students should not alter course sequence without permission of Advisor

FIRST SEMESTER		SECOND SEMESTER	
Composition I COMP 01111	3	Calculus II MATH 01131	4
Calculus I MATH 01130	4	Computer Sci & Programming CS 04103 or Intro to Programming CS 01102	3
Advanced College Chemistry I CHEM 06105	4	Fresh. Engineering Clinic II ENGR 01102	2
Fresh. Engineering Clinic I ENGR 01101	2	Physics I PHYS 02200	4
General Education	3	Adv College Chem II CHEM 061016	4
THIRD SEMESTER		FOURTH SEMESTER	
Principles Chemical Processes I CHE 06201	2	Principles Chemical Processes II CHE 06302	2
Math for Engineering Anal I MATH 01235	4	Math for Engineering Anal II MATH 01236	4
Biological Systems & Appl BIOL 01210	4	Fluid Mechanics I ENGR 01341	2
Organic Chemistry I CHEM 07200	4	Adv Chemistry Elective I	3
Soph. Engineering Clinic I ENGR 01201	4	Soph. Engineering Clinic II ENGR 01202	4
FIFTH SEMESTER		SIXTH SEMESTER	
Process Fluid Transport CHE 06309	2	Chem. Engineering Thermo. I CHE 06315	3
Heat Transfer Processes CHE 06311	2	Chemical Reaction Engineering CHE 06316	4
Separation Processes I CHE 06312	2	Separation Processes II CHE 06314	4
Material Science ENGR 01281	2	Junior Engineering Clinic II <sup>3</sup> ENGR 01302	2
Chem Engineering Thermo I CHE 06310	3	General Education	3
Junior Engineering Clinic I <sup>3</sup> ENGR 01301	2		
Intro to Economics- Micro ECON 04102	3		
SEVENTH SEMESTER		EIGHTH SEMESTER	
Approved Adv Chemistry Elective II	3	Process Dynamics & Control CHE 06405	3
Chem. Process Component Design CHE 06401	4	Unit Operations Lab CHE 06404	2
Unit Operations Exp Design & Analysis CHE 06403	2	Chemical Plant Design CHE 06406	3
Approved Chem. Eng. Elec. I <sup>2</sup> CHE 06XXX	3	Approved Chem. Eng. Elec. II <sup>2</sup> CHE 06XXX	3
Senior Engineering Clinic I <sup>3</sup> ENGR 01401	2	Senior Engineering Clinic II <sup>3</sup> ENGR 01402	2
General Education	3	General Education	3
<b>NOTES OR COMMENTS</b>			
1. Required/Approved Courses taken to satisfy ABET category of "Advanced Chemistry." May be exchanged with ChE Elective in Fall.			
2. Required/Approved courses taken to satisfy Chemical Engineering ABET categories/ AIChE electives. Courses must be taken from a list of approved courses provided by the ChE Dept Chair. One of these courses must have substantial advanced chemistry content. Technical electives may be taken in either semester of Senior year.			
3. Junior/Senior Clinics are a project-based experiences. Projects must be approved by a ChE Projects Committee and Senior Clinic II is a writing intensive (WI) course.			