

B.S. General Engineering - Concentration in Chemical Processing

(120 credits)

Concentration in Chemical Processing

First Year**1st Semester**

		Credits
CHEM 125	General Chemistry I	3
CHEM 125A	General Chemistry Lab I	1
FED 101	Fundamentals of Engineering Design	2
ENGL 101	English Composition: Introduction to Academic Writing	3
MATH 111	Calculus I	4
PHYS 111	Physics I	3
PHYS 111A	Physics I Lab	1
FYS SEM	First-Year Student Seminar	0

Term Credits**17****2nd Semester**

CHEM 126	General Chemistry II	3
ENGL 102	English Composition: Introduction to Writing for Research	3
MATH 112	Calculus II	4
PHYS 121	Physics II	3
PHYS 121A	Physics II Lab	1
CHE 101	Introduction to Chemical Engineering	1

Term Credits**15****Second Year****1st Semester**

CS 115 or CS 106	Introduction to Computer Science I in C++ ¹ or Introduction to Computing	3
MATH 211	Calculus III A	3
CHE 201	Material and Energy Balances	4
CHE 230	Chemical Engineering Thermodynamics I	3
	History and Humanities GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/)	3
ENGR 211	Professional Skills for Engineers I	1

Term Credits**17****2nd Semester**

MATH 222	Differential Equations	4
CHEM 243	Organic Chemistry I	3
CHEM 244A	Organic Chemistry I Laboratory	2
CHEM 236	Physical Chemistry for Chemical Engineers	4
CHE 260	Fluid Flow	3

Term Credits**16****Third Year****1st Semester**

CHEM 339	Physical Chemistry Laboratory	2
MTEN 201	Introductory Principles of Materials Engineering	3
CHE 342	Chemical Engineering Thermodynamics II	3
COM 313	Technical Writing	3
IE 331	Applied Statistical Methods	3

Term Credits**14**

2nd Semester

ENGR Elective		1
IE 335	Engineering Cost Analysis and Control	3
Social Science GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/)		3
ENGR 301	Engineering Applications of Data Science	3
IE 355	Human Factors	3
Term Credits		13

Fourth Year**1st Semester**

IE 461	Product Quality Assurance	3
MTEN 305	Materials Characterization Methods	4
ENGR 430	Engineering for Quality and Reliability	3
IE 455	Robotics and Programmable Logic Controllers ²	3
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
Term Credits		16

2nd Semester

IE 459	Supply Chain and Production Planning	3
ENGR 400	Multidisciplinary Engineering Design Project	3
Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/)		3
ENGR 320	Prototyping Essentials	3
Term Credits		12
Total Credits		120

¹ Students interested in Chemical, Materials Engineering should take CS 115

² IE Elective can substitute. Choose one of the following courses-
 IE 447 Legal Aspects of Engineering
 IE 492 Engineering Management