

# B.S. in Chemistry

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(120 credits minimum)

**First Year**

<b>1st Semester</b>		<b>Credits</b>
CHEM 125 or CHEM 121	General Chemistry I or Fundamentals of Chemical Principles I	3
CHEM 125A	General Chemistry Lab I	1
MATH 111	Calculus I <sup>a</sup>	4
BNFO 135	Programming for Bioinformatics <sup>b</sup>	3
HUM 101	English Composition: Writing, Speaking, Thinking I	3
FRSH SEM	First-Year Seminar	0
<b>Term Credits</b>		<b>14</b>

**2nd Semester**

CHEM 126 or CHEM 122	General Chemistry II or Fundamentals of Chemical Principles II	3
CHEM 126A	Gen Chemistry Lab II	1
MATH 112	Calculus II	4
PHYS 111	Physics I	3
PHYS 111A	Physics I Lab	1
HUM 102	English Composition: Writing, Speaking, Thinking II	3
<b>Term Credits</b>		<b>15</b>

**Second Year****1st Semester**

CHEM 222	Analytical Chemistry	3
CHEM 243	Organic Chemistry I	3
PHYS 121	Physics II	3
PHYS 121A	Physics II Lab	1
MATH 211	Calculus III A	3
History and Humanities GER 200 level ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/</a> )		3
<b>Term Credits</b>		<b>16</b>

**2nd Semester**

CHEM 221	Analytical Chemical Methods	2
CHEM 244	Organic Chemistry II	3
CHEM 244A	Organic Chemistry II Laboratory	2
Free Elective		2
MATH 222	Differential Equations	4
History and Humanities GER 300+ level ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/</a> )		3
<b>Term Credits</b>		<b>16</b>

**Third Year****1st Semester**

CHEM 473	Biochemistry <sup>1</sup>	3
Technical Elective <sup>1</sup>		3
CHEM 231	Physical Chemistry I	3
EPS 202	Society, Technology, and the Environment	3
History and Humanities GER 300+ level ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/</a> )		3
<b>Term Credits</b>		<b>15</b>

**2nd Semester**

CHEM 235	Physical Chemistry II	3
CHEM 480	Instrumental Analysis <sup>1</sup>	2
CHEM 412	Inorganic Chemistry <sup>1</sup>	3
Technical Elective <sup>1</sup>		3
Technical Elective <sup>1</sup>		3
<b>Term Credits</b>		<b>14</b>

**Fourth Year****1st Semester**

CHEM 235A	Physical Chemistry II Laboratory	2
CHEM 336	Quantum Chemistry <sup>1</sup>	3
CHEM 340	Chemistry and Engineering of Materials <sup>1d</sup>	3
MATH 225	Survey of Probability and Statistics	1
Technical Elective <sup>1</sup>		3
Technical Elective <sup>1</sup>		3
<b>Term Credits</b>		<b>15</b>

**2nd Semester**

Humanities and Social Science Senior Seminar GER ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/</a> )		3
Technical Elective <sup>1</sup>		3
Technical Elective <sup>1</sup>		3
Technical Elective <sup>1</sup>		3
Technical Elective <sup>1</sup>		3
<b>Term Credits</b>		<b>15</b>
<b>Total Credits</b>		<b>120</b>

<sup>1</sup> 33 credits of these courses must be taken at NJIT, Rutgers-Newark, or Essex County College by all students.

a Students who do not place initially into Math 111 must take the prerequisite(s) first and catch up to the math sequence ASAP.

b CS 113 is also acceptable, but it has a pre-requisite of CS 100, adding 3 more credits unless AP or transfer credit is obtained.

c Mgmt 390 is recommended; students can instead take 3 credits of a free elective class.

d MTSE 301 can be substituted for Chem 340.

For a listing of GER and Electives Refer to the General Education Requirements (<http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/>) "Refer to the General Education Requirements for specific information for GER courses"

**Department Regulations**

For departmental regulations on prerequisites, grades and withdrawals, consult with the departmental undergraduate advisor. Students cannot receive a B.S. in Chemistry unless they achieve a minimum GPA of 2.0 in chemistry courses.

*This curriculum represents the maximum number of credits per semester for which a student is advised to register. A full-time credit load is 12 credits.*

*First-year students are placed in a curriculum that positions them for success which may result in additional time needed to complete curriculum requirements. Continuing students should consult with their academic advisor to determine the appropriate credit load.*