

# Chemistry & Law, Technology and Culture

---

(130 Credits)

**First Year**

| <b>1st Semester</b>     |   | <b>Credits</b> |
|-------------------------|---|----------------|
| CHEM 125<br>or CHEM 121 | General Chemistry I<br>or Fundamentals of Chemical Principles I | 3              |
| CHEM 125A               | General Chemistry Lab I   | 1              |
| MATH 111                | Calculus I <sup>1</sup>   | 4              |
| BNFO 135                | Programming for Bioinformatics <sup>2</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<br>or CHEM 122 | General Chemistry II<br>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         |
| <b>Term Credits</b> |                      | <b>13</b> |

**2nd Semester**

|  |                                 |           |
|--|---------------------------------|-----------|
| CHEM 221   | Analytical Chemical Methods     | 2         |
| CHEM 244   | Organic Chemistry II            | 3         |
| CHEM 244A  | Organic Chemistry II Laboratory | 2         |
| History and Humanities GER 200 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         |
| MATH 222   | Differential Equations          | 4         |
| <b>Term Credits</b>  |                                 | <b>14</b> |

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

|                                 |   |           |
|---------------------------------|---|-----------|
| CHEM 473                        | Biochemistry <sup>3</sup>                             | 3         |
| Technical Elective <sup>3</sup> |   | 3         |
| CHEM 231                        | Physical Chemistry I                                  | 3         |
| EPS 202                         | Society, Technology, and the Environment <sup>4</sup> | 3         |
| EVSC 335                        | Environmental Law <sup>5</sup>                        | 3         |
| <b>Term Credits</b>             |   | <b>15</b> |

**2nd Semester**

|                                 |                                    |   |
|---------------------------------|------------------------------------|---|
| CHEM 235                        | Physical Chemistry II              | 3 |
| CHEM 480                        | Instrumental Analysis <sup>3</sup> | 2 |
| CHEM 412                        | Inorganic Chemistry <sup>3</sup>   | 3 |
| Technical Elective <sup>3</sup> |                                    | 3 |

|   |  |            |
|---|--|------------|
| STS 300   | Legal Reasoning, Writing, and Technology <sup>6, 7</sup> | 3          |
| <b>Term Credits</b>   |  | <b>14</b>  |
| <b>Fourth Year</b>  |  |            |
| <b>1st Semester</b>   |  |            |
| CHEM 235A   | Physical Chemistry II Laboratory                         | 2          |
| CHEM 336  | Quantum Chemistry <sup>3</sup>                           | 3          |
| CHEM 340  | Chemistry and Engineering of Materials <sup>3, 8</sup>   | 3          |
| MATH 225  | Survey of Probability and Statistics                     | 1          |
| Technical Elective <sup>3</sup>   |  | 3          |
| R790 382  | Environm Pol & Policy <sup>3, 5</sup>                    | 3          |
| <b>Term Credits</b>   |  | <b>15</b>  |
| <b>2nd Semester</b>   |  |            |
| HIST 369  | Law and Society in History <sup>6, 7</sup>               | 3          |
| LTC Core Elective   |  | 3          |
| LTC Core Elective   |  | 3          |
| Technical Elective <sup>3</sup>   |  | 3          |
| Technical Elective <sup>3</sup>   |  | 3          |
| <b>Term Credits</b>   |  | <b>15</b>  |
| <b>Fifth Year</b>   |  |            |
| <b>1st Semester</b>   |  |            |
| HSS 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> ) <sup>8</sup> |  | 3          |
| HIST 310  | Co-op in Law, Technology, Culture and History I          | 3          |
| MGMT 290  | Business Law I <sup>6</sup>                              | 3          |
| Technical Elective <sup>3</sup>   |  | 3          |
| Technical Elective <sup>3</sup>   |  | 3          |
| <b>Term Credits</b>   |  | <b>15</b>  |
| <b>Total Credits</b>  |  | <b>130</b> |

- <sup>1</sup> Students who do not place initially into Math 111 must take the prerequisite(s) first and catch up to the math sequence as soon as possible.
- <sup>2</sup> 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.
- <sup>3</sup> 33 credits of these courses must be taken at NJIT, Rutgers-Newark, or Essex County College by all students.
- <sup>4</sup> This course satisfies the Social Science GER.
- <sup>5</sup> This course satisfies 3 credits of the LTC Core Electives.
- <sup>6</sup> This courses satisfies 3 credits of the Legal Foundations Elective.
- <sup>7</sup> Course must satisfy the 300 History and Humanities GER (<https://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/>).
- <sup>8</sup> MTSE 301 can be substituted for Chem 340.
- <sup>9</sup> HSS Senior Seminar must be a law-related course.

| Code                               | Title  | Credits |
|------------------------------------|--|---------|
| <b>Legal Foundations Electives</b> |  |         |
| HIST 361                           | The Founding of the American Nation          | 3       |
| HIST 362                           | Sex, Gender, and the Law in American History | 3       |
| HIST 364                           | American Law in the World                    | 3       |
| HIST 369                           | Law and Society in History                   | 3       |
| MGMT 290                           | Business Law I                               | 3       |
| PHIL 300                           | Philosophy of Law and Social Justice         | 3       |
| STS 300                            | Legal Reasoning, Writing, and Technology     | 3       |
| R790 304                           | Intro Law And Legal Res                      | 3       |

| <b>Code</b>               | <b>Title</b>  | <b>Credits</b> |
|---------------------------|---|----------------|
| <b>LTC Core Electives</b> |   |                |
| EVSC 335                  | Environmental Law                                   | 3              |
| HIST 320                  | Law and Evidence                                    | 3              |
| HIST 338                  | Climate Change and Environmental Justice in America | 3              |
| HIST 370                  | Legal issues in the History of Media                | 3              |
| HIST 375                  | Legal Issues in Environmental History               | 3              |
| HIST 378                  | Medicine and Health Law in Modern America           | 3              |
| HIST 384                  | Invention and Regulation                            | 3              |
| IE 447                    | Legal Aspects of Engineering                        | 3              |
| IT 331                    | Privacy and Information Technology                  | 3              |
| IT 332                    | Digital Crime                                       | 3              |
| IT 400                    | Information Technology and the Law                  | 3              |
| R790 382                  | Environm Pol & Policy                               | 3              |