Chemistry Major

**Secondary Education Concentration**

**2020-2021**

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| Advisor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Student ID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Advisee: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Graduation Year: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| **Core Curriculum Requirements**To fulfill Towson University’s Core Curriculum requirements, students must complete one course from each of the following 14 categories. For further explanation of Core Curriculum Courses, visit: [https://inside.towson.edu/](https://inside.towson.edu/universityrelations/core/corerequirements.cfm)[universityrelations/core/corerequirements.cfm](https://inside.towson.edu/universityrelations/core/corerequirements.cfm)New Towson University Core Curriculum Requirements 🞏 1. Towson Seminar TSEM 102 (3 units)\* 🞏 2. English Composition\* 🞏 3. Mathematics (EXEMPT ) 🞏 4. Creativity and creative Development 🞏 5. Arts and Humanities 🞏 6. Social and Behavioral Sciences 🞏 7. Biological and Physical Sciences (EXEMPT) 🞏 8. Biological and Physical Sciences (EXEMPT) 🞏 9. Advanced Writing Seminar\* **Perspectives (10-14):** One course under Perspectives must be taken in a discipline in the arts and humanities, different from the discipline in requirement 5. One course under Perspectives must be taken in a discipline in the social and behavioral sciences, different from the discipline in requirement 6.🞏 10. Metropolitan Perspectives 🞏 11. The United States as a Nation 🞏 12. Global Perspectives 🞏 13. Diversity and Difference 🞏 14. Ethical Issues and Perspectives \****Grade of ‘C’ or better required; all other core curriculum course require ‘D’ or better.*****Towson UTeach Course Requirements (40 units)***See reverse side for UTeach Course Requirements*  | **Major in Chemistry – Secondary Education****Required Chemistry Courses (32 - 33 Units)**🞏 CHEM 131 General Chemistry I Lecture (3) 🞏 CHEM 131L General Chemistry I Laboratory (1) 🞏 CHEM 132 General Chemistry II Lecture (3) 🞏 CHEM 132L General Chemistry II Laboratory (1) 🞏 CHEM 210 Analytical Chemistry (5) 🞏 CHEM 323 Inorganic Chemistry (4) Or CHEM 351 Biochemistry I (3) 🞏 CHEM 331 Organic Chemistry I (5) 🞏 CHEM 332 Organic Chemistry II (5) 🞏 CHEM 345 Principles of Physical Chem (3) 🞏 CHEM 372 Physical Chemistry Laboratory (2) 🞏 CHEM 401 Communication Skills in Chemistry (1)**Additional Science and Mathematics Courses (59)**🞏 BIOL 190 & BIOL 191L Intro to Biology for Health Professions (4) Or BIOL 201 & BIOL 200L Intro to Cellular Biology and Genetics (4) 🞏 GEOL 121 Physical Geology (4)  Or ASTR 161 The Sky and the Solar System (4)🞏 Math 273 Calculus I (4)  Or  Math 211 Calculus for Applications (4)🞏 SCIE 380 Teaching Science in Secondary Schools (3) 🞏 PHYS 211 General Physics I (4)  Or  PHYS 241 General Physics I (calculus-based) (4)🞏 PHYS 212 General Physics II (4) Or PHYS 242 General Physics II (calculus-based) (4)**Major Electives (at least 4 units)***See reverse side for list of elective courses.*     |

**General Graduation Requirements**

120 Units Required

 Total Units to-date including current semester \_\_\_\_\_\_\_\_\_\_\_\_\_ units.

 32 Units Upper Division Required

 Total Upper Division units to-date including current semester \_\_\_\_\_\_\_\_\_\_\_\_\_ units.

**Towson UTeach Course Requirements (40 Units)**

🞏 SEMS 110 Introduction to Stem Teaching I: Inquiry Approaches to Teaching (2)

 And SEMS 120 Introduction to Stem Teaching II: Inquiry-Based Lesson Design

 Or

 SEMS 130 Introduction to Stem Teaching I & II Combined (2) (Requires Permission from Towson UTeach Department)

🞏 SEMS 230 Knowing & Learning (3)

🞏 SEMS 240 Classroom Interactions (3)

🞏 SEMS 250 Perspectives in Science and Mathematics (3)

🞏 SEMS 360 Research Methods (3)

🞏 SEMS 370 Project Based Instruction (3)

🞏 SEMS 498 Internship in Mathematics and Science Secondary Education (3)

🞏 SCED 460 Using Reading and Writing in the Secondary Schools (4)

🞏 SCED 461 Teaching Reading in the Secondary Content Areas (3)

🞏 SCIE 393 Internship in Secondary Education – Science (12)

🞏 SCIE 430 Seminar in Student Teaching – Science (1)

 Or

 SEMS 430 Seminar in Apprentice Teaching (1)

**Chemistry Major – Secondary Education Elective Courses (at least 4 units)**

**At least 4 units selected from the following list.**

🞏 CHEM 310 Instrumental Analysis (4)

🞏 CHEM 323 Inorganic Chemistry (4)1

🞏 CHEM 346 Theoretical Foundations of Physical Chemistry (3)2

🞏 CHEM 351 Biochemistry I (3)1

🞏 CHEM 356 Biochemistry Lab (2)

🞏 CHEM 357 Biochemistry II (3)

🞏 CHEM 391 Special Problems in Chemistry (1-3)

🞏 CHEM 395 Internship in Chemistry (3)

🞏 CHEM 461 Advanced Lecture Topics (1-3)

🞏 CHEM 462 Advanced Laboratory Techniques (1-2)

🞏 CHEM 472 Applications of Environmental Chemistry (3)

🞏 CHEM 480 Chemical Toxicology (3)

🞏 CHEM 491 Research in Chemistry (1-3)

🞏 FRSC 363 Chemistry of Dangerous Drugs (3)

🞏 FRSC 367 Forensic Chemistry (3)

1 Course cannot be counted as both part of the required courses and part of the electives.

2 Course has prerequisites not listed among the required courses.

Note: Students who decide not to complete all Towson UTeach Science requirements must complete all the requirements of the Chemistry major in order to graduate.