| Chemical Physics Option and Typical Schedule | |
|---|---|
| Fall | Spring |
| FIRST YEAR | |
| General Chemistry Lecture (4.0 cr)[1] 01:160:161 OR 01:160:163 | General Chemistry Lecture (4.0 cr) 01:160:162 OR 01:160:164 |
| General Chemistry Laboratory (1.0 cr) 01:160:171 Either fall or spring | |
| Calculus I (4.0 cr) 01:640:151 | Calculus II (4.0 cr) 01:640:152 |
| SECOND YEAR | |
| Organic Chemistry Lecture (4.0 cr) 01:160:307 OR 01:160:315[2] (by invitation) | Organic Chemistry Lecture (4.0 cr) 01:160:308 OR 01:160:316 |
| Analytical Chemistry (3.0 cr) 01:160:251 | Organic Chemistry Laboratory[3] (2.5 cr) 01:160:309 |
| General Physics[4] (3.0 cr) 01:750:123 OR 01:750:227 | General Physics (3.0 cr) 01:750:124 OR 01:750:228 |
| OR 01:750:271-272-273 | |
| General Physics Laboratory (1.0 cr) 01:750:229 OR 01:750:275 | General Physics Laboratory (1.0 cr) 01:750:230 OR 01:750:276 |
| Multivariable Calculus (4.0 cr) 01:640:251 | Linear Algebra (3.0 cr) 01:640:250 |
| THIRD YEAR | |
| Physical Chemistry Lecture[5] (3.0 cr) 01:160:327 | Physical Chemistry Lecture (3.0 cr) 01:160:328 |
| Elementary Differential Equations (3.0 cr) 01:640:252 | Experimental Physical Chemistry (2.5 cr) 01:160:329 |
| Inorganic Chemistry (3.0 cr) 01:160:351[6] | Inorganic Chemistry (1.5 cr) 01:160:352 OR 01:160:353[6] |
| Mechanics[4] (3.0 cr?) 01:750:381 OR Electromagnetism4 (3.0 cr?) 01:750:385 | Mechanics[4] (3.0 cr?) 01:750:382 OR Electromagnetism4 (3.0 cr?) 01:750:386 |
| FOURTH YEAR | |
| Seminar (1.0 cr) 01:160:491 | Seminar (1.0 cr) 01:160:492 |
| Chemical Physics Elective[7] | Chemical Physics Elective[7] |

## Chemical Physics Option: Summary

The Chemical Physics Option is a challenging program intended for students with a strong interest in physics and fundamental science and an aptitude for mathematics. Students who select this option often attend graduate school in mathematically oriented sciences.

Instead of the standard introductory physics and physics laboratory sequences (01:750:203-4, 205-6) of the Core Option, students choosing the chemical Physics option normally take a more advanced introductory physics and physics laboratory sequence. Sometimes, however, students decide on Chemical Physics only after having taken Physics 203-204, 205-6. In this case, they are advised to take 01:750:323 Advanced General Physics before enrolling in either 01:750:381 Mechanics or 01:750:385 Electromagnetism. A physics adviser should be consulted if there is uncertainty about the proper preparation for any physics course in this option.

In the third and fourth years of this program, laboratories in Organic Chemistry and in Instrumental Analysis are replaced by additional mathematics and physics courses including two that may be chosen from the following list:

- 01:160:421 Atomic and Molecular Structure (3) or 01:750:361 Quantum Mechanics and Atomic Physics (3)
- 01:160:425 Thermodynamics I (3)
- 01:160:434 Kinetics (3)
- 01:750:406 Introductory Solid State Physics (3)
- 01:750:417 Intermediate Quantum Mechanics (3)

The Chemical Physics Option does not lead to certification by the American Chemical Society.

## Chemical Physics Option: Course and Scheduling Notes

[1] Pre-calculus prerequisite
[2] By invitation only.
[3] Chem 309 is offered in the spring only.
[4] Students who choose the Chemical Physics option after having taken Physics 203-204, 205-6 are advised to take 01:750:323 Advanced General Physics before enrolling in either 01:750:381 Mechanics or 01:750:385 Electromagnetism.
[5] Chemistry 327 has Math 251 as a pre-requisite, not as a co-requisite.
[6] Chem 351 and 352 or 353 may be deferred for either one or two semesters, if desired. Both 351 and 353 are offered *fall. Chem 352 is offered spring*. Chem 352 and 353 have Chem 351 and Chem 308 or 316 as pre-requisites.[7] Two advanced courses are to be chosen from the following list:

- 01:160:421 Atomic and Molecular Structure (3) or 01:750:361 Quantum Mechanics and Atomic Physics (3)
- 01:160:425 Thermodynamics I (3)
- 01:160:434 Kinetics (3)
- 01:750:406 Introductory Solid State Physics (3)
- 01:750:417 Intermediate Quantum Mechanics (3)

Two terms of senior-level research of at least 3 credits each may be substituted for one advanced course.