

4+1 CHEMISTRY BS/ ADOLESCENCE 7-12, TEACHING STUDENTS WITH DISABILITIES(ALL GRADES) MSEd

Curriculum Chemistry/SWD ALL GradES 4+1 Curriculum

The 4+1 Program (<http://catalog.canisius.edu/graduate/division-arts-education-sciences/school-education-leadership-studies/educator-preparation/dual-degree-content-and-msed-swd/>) offers a BS in Chemistry as well as a MSEd in Teaching Students with Disabilities All Grades. This program leads to Initial Adolescence Certification in Chemistry as well as Initial Certification in SWD (All Grades: PreK-Grade 12). Since it leads to two teaching certificates, candidates must meet the content requirements for both over the course of their curriculum. In most cases, the content area major covers those requirements. In some instances New York State has additional requirements. Please note, this 4+1 program can be completed in as little as 5 years.

An Ignatian Foundation

All undergraduate students must complete either the Canisius Core Curriculum (<http://catalog.canisius.edu/undergraduate/academics/curricular-information/core-curriculum/>) or the All-College Honors Curriculum (<http://catalog.canisius.edu/undergraduate/academics/curricular-information/all-college-honors-program/>). Many schools refer to their college-wide undergraduate requirements as "general education" requirements. We believe that the core curriculum and the honors curriculum are more than a series of required classes; they provide the basis for a Jesuit education both with content and with required knowledge and skills attributes that are central to our mission.

Free Electives

Students may graduate with a bachelor's degree with more but not less than 120 credit hours. Free electives are courses in addition to the Canisius Core Curriculum or All-College Honors Curriculum and major requirements sufficient to reach the minimum number of credits required for graduation. The number of credits required to complete a bachelor's degree may vary depending on the student's major(s) and minor(s).

Major Requirements

Chemistry Major Course Requirements

| Code | Title | Credits |
|----------------|--|---------|
| CHM 111 & 111L | General Chemistry I and General Chemistry I Laboratory | 4 |
| CHM 112 & 112L | General Chemistry II and General Chemistry II Laboratory | 4 |
| CHM 244 | Inorganic Chemistry | 3 |
| CHM 227 & 227L | Organic Chemistry I and Organic Chemistry I Laboratory | 4 |

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|--|--|-----------|
| CHM 228 & 228L | Organic Chemistry II and Organic Chemistry II Laboratory | 4 |
| CHM 230 & 230L | Analytical Chemistry and Analytical Chemistry Laboratory | 4 |
| CHM 301 | Fundamental Physical Chemistry | 3 |
| CHM 480 | Chemistry and Biochemistry Seminar | 0 |
| BCH 301 & 301L | Introduction to Biochemistry and Introduction to Biochemistry Laboratory | 4 |
| Choose a Chemistry or Biochemistry Elective (any 300- or 400-level CHM or BCH course) ¹ | | 4 |
| BIO 111 & 111L | Introductory Biology I and Introductory Biology Laboratory I | 4 |
| BIO 112 & 112L | Introductory Biology II and Introductory Biology Laboratory II | 4 |
| MAT 111 | Calculus I | 4 |
| MAT 141 | Inferential Statistics and Computers for Science | 4 |
| PHY 201 & 201L | College Physics I and College Physics I Laboratory | 4 |
| PHY 202 & 202L | College Physics II and College Physics II Laboratory | 4 |
| Total Credits | | 58 |

Please note, 6 credits of math, 6 credits of science, 6 credits of English, and 6 credits of social studies (including history) are needed for SWD certification. (Keep in mind that NYSED requires a course grade of C or better for certification).

Education Course List:

The education curriculum is provided below for the MSEd portion of the 4+1 programs. Notice that several foundation courses are taken at the undergraduate level intermingled with other undergraduate requirements. The graduate courses begin at the 500 level and continue until completion.

| Code | Title | Credits |
|-------------------------------------|--|---------|
| Undergraduate Requirements | | |
| EDS 101 | Human Growth and Social Development: Adolescence | 3 |
| EDS 223 | Foundations of Adolescent Literacy (20 hours of field experience required) | 3 |
| EDS 360 | Evaluation and Teaching Strategies (30 hours of field experience required) | 3 |
| EDU 250 | Foundations of Education | 3 |
| SPE 341 | Inclusive Strategies | 3 |
| SPE 356 | Assessment for Diverse Learners | 3 |
| Please select one of the following: | | 3 |
| EDS 402 | Methods of Teaching English: Adolescence (30 hours of field experience required) | 3 |
| or EDS 403 | Methods of Teaching Mathematics: Adolescence | |
| or EDS 405 | Methods of Teaching Science: Adolescence | |
| or EDS 406 | Methods of Teaching Social Studies: Adolescence | |
| Graduate Requirements | | |
| EDU 570 | Pre-Student Teaching (Requires 50 hours of field experience) | 3 |
| EDU 595 | Child Abuse Workshop | 0 |
| EDU 596 | Prevention of School Violence Workshop | 0 |
| EDU 597 | Dignity for All Students Workshop | 0 |

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|---------------|---|----|---------|---------|
| EDU 615 | Research Methods | 3 | SPE 698 | SPE 693 |
| SPE 580 | Classroom Management | 3 | | SPE 697 |
| SPE 631 | Reading and Writing Process for Students with Learning and Behavioral Disorders (25 hours of field experience required) | 3 | | |
| SPE 640 | Learning and Behavioral Disabilities (LBD); Etiology and Research Based Interventions | 3 | | |
| SPE 644 | Collaborative Practices on a Transdisciplinary Team | 3 | | |
| SPE 649 | Transition for Adolescents with Disabilities | 3 | | |
| SPE 650 | Intellectual Disabilities and Autism Spectrum Disorders: Etiology & Educational Needs | 3 | | |
| SPE 652 | Functional Curriculum for Students with Severe Disabilities and ASD (25 hours of field experience required) | 3 | | |
| SPE 693 | Student Teaching | 9 | | |
| SPE 697 | Student Teaching Seminar | 0 | | |
| Total Credits | | 57 | | |

Roadmap

Freshman

| Fall | Spring |
|----------------|--------------------|
| CHM 111 & 111L | CHM 112 & 112L |
| BIO 111 & 111L | BIO 112 & 112L |
| MAT 111 | MAT 141 or PSY 201 |
| | HIS |

Sophomore

| Fall | Spring |
|----------------|----------------|
| CHM 227 & 227L | CHM 228 & 228L |
| PHY 201 & 201L | PHY 202 & 202L |
| EDS 101 | SPE 341 |
| EDU 250 | HIS |

Junior

| Fall | Spring |
|----------------|------------------|
| BCH 301 & 301L | CHM 230 & 230L |
| CHM 244 | CHM/BCH Elective |
| EDS 223 | EDS 405 |
| EDS 360 | |

Senior

| Fall | Spring |
|---------|---------|
| CHM 301 | CHM 481 |
| SPE 356 | SPE 649 |
| SPE 644 | EDU 615 |

Fifth Year

| Fall | Spring |
|---------|---------|
| SPE 580 | EDU 595 |
| SPE 631 | EDU 596 |
| SPE 640 | EDU 597 |