

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 (<https://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 MEd 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 (<https://catalog.canisius.edu/undergraduate/academics/curricular-information/core-curriculum/>) or the All-College Honors Curriculum (<https://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

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		
EDE 100	Human Growth and Development - Birth through Childhood	3
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
Please select one of the following:		3
EDS 402	Methods of Teaching English: Adolescence (30 hours of field experience required)	
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 595	Child Abuse Workshop	0
EDU 596	Prevention of School Violence Workshop	0
EDU 597	Dignity for All Students Workshop	0
EDU 615	Research Methods	3

SPE 556	Assessment for Diverse Learners	3
SPE 580	Classroom Management	3
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 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
SPE 698	Seminar in Teaching and Assessment	3
Total Credits		57

SPE 698	SPE 693
	SPE 697

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