

BA Chemistry Education (Code: Chem 7-12)

This option can be taken only with SEYS minor

A minimum GPA of 2.75 in chemistry courses and 3.00 in SEYS courses must be maintained.
Successful completion of the program leads to NY state teacher certification in chemistry,
grades 7-12.

REQUIRED CHEM COURSES

Course #	Name of the course	Cr.	Pre-Requisites***	Pre/Co-Requisites
CHEM 113.4	Gen Chem 1	4	Math 115 or equiv.	Chem 113.1
CHEM 113.1	Intro to Chemical Techniques (Lab)	1		Chem 113.4
CHEM 114.4	Gen Chem 2	4	Math 122 or equiv. Chem 113.4 & .1	Chem 114.1
CHEM 114.1	Quant and Qual. Analysis (Lab)	1		Chem 114.4
CHEM 211	Thermodynamics & Kinetics	4	Chem 114.4 & .1 Math 152 or 143	Phys 145.4 ^a & .1 ^a
CHEM 251.4	Organic Chem 1	4	Chem 114.4 & .1	Chem 251.1
CHEM 251.1	Organic Chem Lab 1	1		Chem 251.4
CHEM 252.4	Organic Chem 2	4	Chem 251.4 & .1	Chem 252.1
CHEM 252.1	Organic Chem Lab 2	1		Chem 252.4
CHEM 331.3	Adv. Inorg. Chem	3	Chem 252.4 & .1 Math 151 or 142	Chem 331.1
CHEM 331.1	Physical Inorg. Lab	1		Chem 331.3
CHEM 341.3	Instrumental Methods	3	Chem 211, 252.4, 252.1 Phys 145.4 ^a & .1 ^a	Chem 341.1 Phys 146.4 ^b & .1 ^b
CHEM 341.1	Instr. Methods Lab	1		Chem 341.3
CHEM 371	Biochemistry	4	Chem 252.4 & .1 Biol 105 or Permission	

CHEM 395	Senior thesis	3	Chem 211, 212, 251.4 & .1, 252.4 & .1	
Chem 321.1 to 3	Practicum in Chemical Education	2-9	Permission of ChemEd advisor	Chem 252.4 & .1
	TOTAL	41-48		

*** A grade of 'C' or better is required in all pre-requisite 100 and 200 level courses & 'C-' or better in all higher level pre-requisite courses.

^a: Phys 121.4 & 121.1 can be accepted for Phys 145.4 & 145.1 on student's request.

^b: Phys 122.4 & 122.1 can be accepted for Phys 146.4 & 146.1 on student's request.

REQUIRED SEYS COURSES

Course #	Name	Credits	Pre/Co-Req
SEYS 201	Historical, Social, and Phil. Foundations in Ed.	3	
SEYS 221	Dev. & learning in Ed.	3	
SEYS 340	Lang., Lit., and Culture in Ed.	3	SEYS 201
SEYS 350	Cognition, Tech., and Instruction for Diverse Learners	3	SEYS 221 & 340
SEYS 362	Teaching Science in Middle School Practicum	3	SEYS 221 & 340
SEYS 372.2	High School or Middle School Practicum	2	SEYS 350
SEYS 372.4	Student Teaching in Science for High School and/or Middle School	4	SEYS 362
SEYS 382	Curriculum and Assessment in Science	3	SEYS 362
edTPA	see Science Advisor in SEYS		

In addition, students must also take three state certification exams:

LAST – Liberal Arts and Science Test

ATS-W – Assessment of teaching skills written

Chemistry content test

Required Cognate Courses

Note that the Chem major has pre-requisites from Math, Bio, and Phys courses as shown in the table.

BIOL 105 (4 Cr) – General Biology: Physiology and Cell Biology

Phys 121.4 & .1 OR **Phys 145.4 & .1** (5 Cr) - Principles of Physics I

Phys 122.4 & .1 OR **Phys 146.4 & .1** (5 Cr) - Principles of Physics II

Math 122 (4 Cr) – Pre-Calculus (possible to be waived by Math Dept through placement exam)

Math 151 & Math 152 – 4 Credits each OR **Math 141, 142, & 143** – 3 credits each – Calculus

Total Cognate Course credits: 22 to 27