

CHEMISTRY, B.S.ED.

The BSE-CHEM degree leads to certification to teach chemistry at the secondary level in the public schools of the Commonwealth of Pennsylvania. Millersville University's Chemistry Education program allows you to pursue a comprehensive study of the scientific discipline while gaining the skills to teach 7th to 12th grade students. By successfully completing this program, students earn a Bachelor of Science in Education (B.S.E.) degree with a certification in Secondary Chemistry Education and are prepared for Pennsylvania licensure exams.

Major in Chemistry, BSE

Code	Title	Hours
Credits Required for Major		
	true	
Minimum GPA 2.0 for Major		
	true	
Minimum Residency 50% of Major Courses		
	true	

CHEM 188 WAIVED FOR TRANSFER STUDENTS

100 AND 200 LEVEL CHEMISTRY REQUIREMENTS

CHEM 111	Introductory Chemistry 1 (C minimum)	0
CHEM 112	Introductory Chemistry 2 (C minimum)	0
CHEM 231	Organic Chemistry 1 (C minimum)	0
CHEM 232	Organic Chemistry 2 (C minimum)	0
CHEM 251	Inorganic Chemistry 1 (C minimum)	3
CHEM 265	Quantitative Analysis (C minimum)	0

300 AND 400 LEVEL CHEMISTRY REQUIREMENTS

CHEM 326	Biochemistry 1	0
CHEM 341	Physical Chemistry 1	0
CHEM 342	Physical Chemistry 2	0
CHEM 375	Environmental Chemistry	0
CHEM 487	Seminar in Chemistry 1	0.5
CHEM 488	Seminar in Chemistry 2	0.5

Total Hours 4

Professional Education

Code	Title	Hours
EDUCATIONAL FOUNDATIONS		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
REQUIRED EDUCATION COURSES		
EDSE 321	Issues in Secondary Education	3
EDFN 330	Instructional Technology, Design & Assessment	3
EDSE 435	Teaching of Science in Secondary Schools	3
ACCOMMODATIONS AND ADAPTATIONS		
EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3

STUDENT TEACHING

EDSE 471	Student Teaching Seminar	3
Student Teaching		9
EDSC 461	Student Teaching in Science	
Total Hours		33

Req Related for Chemistry, BSE

Code	Title	Hours
MATHEMATICS		
Calculus I - Choose 1 of the following:		4-5
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	
MATH 211	Calculus 2	4
MATH 311	Calculus 3	4
PHYSICS		
PHYS 231	Physics 1 with Calculus	0
PHYS 232	Physics 2 with Calculus	0
BIOLOGY		
General Biology		
Competency may be demonstrated by: 1) a course grade of 'A' or 'B' in AP Bioogy; 2) a score of 3 or better in the national AP exam; 3) a successful score on the CLEP exam; 4) a passing grade for General Biology (BIOL 100)		
Total Hours		12-13

Advanced Professional Studies, BSE

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		
APS REQUIREMENTS		
English Composition - Choose 1 of the following:		3
ENGL 110	Intro to College Writing	
ENGL 110H	Hnrs:Intro to College Writing	
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. [Click here to search for MATH courses on the current web schedule.](#) BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211 Foundations Modern Education 6
& EDFN 241 and Psychological Foundations of Teaching

48 earned (transcript) credit hours are required

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

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Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. [Click here for the application.](#)

Total Hours

12