

BACHELOR OF SCIENCE IN EDUCATION IN INTEGRATED SCIENCES (7-12) - ADOLESCENT LICENSE, CHEMISTRY CONCENTRATION

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OVERVIEW

In cooperation with various academic disciplines in the University, the Department of Teacher Education offers a four-year AYA Education Program (grades 7-12), Integrated Sciences/Chemistry Concentration, approved by the Ohio Department of Education. The AYA Integrated Sciences License, Grades 7-12 (Chemistry as the primary concentration), Bachelor of Science in Education degree requires a minimum of 146-149 semester hours of course work. The Integrated Science license qualifies the license holder to teach all areas of science (Biology, Chemistry, Earth/Space, and Physics). This teaching field also requires passage of the Ohio Assessments for Educators in order to be eligible to student teach.

EMPLOYMENT OPPORTUNITIES

Graduates of the Adolescent/Young Adult Program will be qualified to teach in the 7-12 classroom. Additional opportunities may be available in the private sector to tutor students. It is recommended that students in this major consider adding the Teaching English to Speakers of Other Languages (TESOL) endorsement to increase marketability. Graduates wanting to teach College Credit Plus courses should consider a Master of Science in Education Content Area Concentration degree.

Professional Dispositions:

In addition to the above learning outcomes, teacher candidates are expected to display the following professional dispositions:

- Creating fairness in the classroom
- Providing an inclusive environment that is safe and conducive to learning
- Demonstrating the belief that all students can learn
- Fostering collaborative relationships to support student learning and well-being
- Exhibiting professional skills

FIELD EXPERIENCES AND STUDENT TEACHING

Students complete over 120 hours of pre-clinical experiences in ad Field experiences are included in the following courses and offer opportunities to provide varying levels of classroom support (observing, one-on-one tutoring, small group teaching, co-teaching, whole class teaching).

Field Experiences

- EDFN 1501 Introduction to Education
- EDFN 3708 Education and Society
- SPED 2630 Individuals with Exceptionalities in Society
- TERG 3711 Reading Application in Content Areas, Secondary Years

Preclinical Field Experiences:

The preclinical experience is conducted in local schools and provides an opportunity for teacher candidates to complete an in-depth field experience prior to student teaching. This field experience requires a substantial time commitment, as teacher candidates spend the entire day in schools during designated weeks. The Adolescent/Young Adult preclinical experience is

scheduled during the fall semester. Applications for the preclinical experience must be submitted (1) one year in advance to BCOE Room 2101, by September 1 for the preclinical experience. Contact the Beeghly College of Education, academic advisors for minimum preclinical prerequisites.

- EDFN 3710 Educational Assessment
- SED 3706 Principles of Teaching Adolescents

And

- SED 4800C Science Methods for Adolescent and Young Adult Learners

Or

- SED 4800E English Methods for Adolescent and Young Adult Learners

Or

- SED 4800M Mathematics Methods for Adolescent and Young Adult Learners

Or

- SED 4800S Social Studies Methods for Adolescent and Young Adult Learners

Student Teaching

Students complete a 16 week student teaching experience. Students must pass the edTPA performance-based assessment with a minimum score of 37 during this experience.

- SED 4842 Supervised Student Teaching: High School
- SED 4842A Student Teaching Seminar for Secondary Education

ADVISEMENT

Advisement is provided by the academic advisors in the Beeghly College of Education. Majors in this program must complete general education requirements, subject area curriculum requirements, reading course requirements, and professional education requirements. Prior to student teaching, all adolescent/young adult majors must complete a preclinical experience.

REQUIRED ASSESSMENTS

The Ohio Assessments for Educators (OAE) assess the content area and professional (pedagogical) knowledge of candidates who are seeking initial Ohio educator license or adding a new licence area. The assessments are aligned with Ohio's New Learning Standards. Teacher candidates must pass these exams prior to student teaching.

003 Assessment of Professional Knowledge Adolescence to Young Adult (7-12) (All AYA Teacher Candidates)

020 English Language Arts (for teacher candidates with ELA concentration)

027 Mathematics (for teacher candidates with Math concentration)

024 Integrated Science (for teacher candidates with Science concentration)

025 Integrated Social Studies (for teacher candidates with Social Studies concentration)

ENDORSEMENTS

The following endorsements are available to individuals holding this teaching license and may increase marketability: K-12 TESOL Endorsement, K-12 Reading Endorsement.

COURSE	TITLE	S.H.
General Education Requirements		
Core Competencies		12
ENGL 1550	Writing 1	
ENGL 1551	Writing 2	

2 Bachelor of Science in Education in Integrated Sciences (7-12) - Adolescent License, Chemistry Concentration

CMST 1545	Communication Foundations	
MATH 1571	Calculus 1	
General Education Knowledge Domains		
Some courses are categorized in more than one knowledge domain. Courses can only be used once within the General Education model. Some majors prescribe specific GE courses. If a course has been added to the domains, it is required.		
Arts and Humanities		6
Natural Sciences (2 courses, 1 lab)		7
This requirement met by courses in major.		
Social Science		6
Social Science GER		
PSYC 1560	General Psychology	
Social and Personal Awareness		6
General Education Elective / First-Year Experience		
TCED 1500	Introduction to Becoming a Teacher First Year Experience Course BCOE	3
Subject Area Curriculum		
MATH 1572	Calculus 2	4
Chemistry Concentration		
All of the following:		
CHEM 1515 & 1515L	General Chemistry 1 and General Chemistry 1 Laboratory	4
CHEM 1516 & 1516L	General Chemistry 2 and General Chemistry 2 Laboratory	4
CHEM 2604 & 2604L	Quantitative Analysis and Quantitative Analysis Laboratory	5
CHEM 3719 & 3719L	Organic Chemistry 1 and Organic Chemistry 1 Laboratory	4
CHEM 3720 & 3720L	Organic Chemistry 2 and Organic Chemistry 2 Laboratory	4
CHEM Elective (select any 3000 or 4000 level course)		3
If primary science concentration is Chemistry, then take the following:		
BIOL 2601 & 2601L	General Biology: Molecules and Cells and General Biology: Molecules and Cells Laboratory	4
BIOL 2602 & 2602L	General Biology: Organisms and Ecology and General Biology: Organisms and Ecology Laboratory	4
PHYS 2608	Sound	3
PHYS 2610	General Physics 1	4
PHYS 2610L	General Physics laboratory 1	1
PHYS 2611	General Physics 2	4
PHYS 2611L	General Physics laboratory 2	1
GEOL 1505 & 1505L	Physical Geology and Physical Geology Laboratory	4
GEOL 2602	Introduction to Oceanography	3
GEOG 2630	Weather	3
ASTR 1504	Descriptive Astronomy	3
Select 5 s.h. from the following BIOL electives:		
BIOL 3741 & 3741L	Animal Diversity and Animal Diversity Laboratory	4
BIOL 3702 & 3702L	Microbiology and Microbiology Laboratory	4
BIOL 3721	Genetics	3
BIOL 3762 & 3762L	Field Botany and Field Botany Laboratory	4
BIOL 3759	Evolution	3
BIOL 4890	Molecular Genetics	3
BIOL 4890L	Molecular Genetics Laboratory	1
BIOL 3730	Human Physiology	4
BIOL 3730L	Human Physiology Laboratory	1
Select a minimum of 3 s.h. from the following PHYS electives:		
PHYS 3703	Classical Mechanics and Dynamics	4
PHYS 3705	Thermodynamics and Classical Statistical Dynamics	3
PHYS 3705L	Thermodynamics and Classical Statistical Mechanics Laboratory	1
PHYS 3704	Modern Physics	4
PHYS 3704L	Modern Physics Laboratory	1
PHYS 3722	Advanced Optics and Light	3
PHYS 3722L	Advanced Optics Laboratory	1
PHYS 4805	Undergraduate Physics Research	3
PHYS 2607	Physical Science for Middle and Secondary Education	4
Select one of the following E/SS electives:		
ENST 2600	Foundations of Environmental Studies	3
GEOL 2615	Geology and the Environment 1	3
GEOG 3703	Human Impacts on the Environment	3
GEOG 3730	Global Climates	3
GEOL 3720	Field Investigations in Geology	1-4
Professional Education Curriculum		
EDFN 1501	Introduction to Education	3
PSYC 3709	Psychology of Education	3
SPED 2630	Individuals with Exceptionalities in Society ¹	3
SED 3706	Principles of Teaching Adolescents ²	3
EDFN 3708	Education and Society	3
TERG 3711	Reading Application in Content Areas, Secondary Years ²	3
TEMC 3707	Science/Technology/Society ^{1,2}	3
Preclinical Curriculum		
SED 4800C	Science Methods for Adolescent and Young Adult Learners ²	3
EDFN 3710	Educational Assessment	3
Student Teaching Curriculum		
SED 4842	Supervised Student Teaching: High School ²	10
SED 4842A	Student Teaching Seminar for Secondary Education ²	2
Total Semester Hours: 146-149 s.h.		
¹ Prerequisites for preclinical curriculum.		
² Upper division course.		
BCOE Notes:		
Advisement:		
<ul style="list-style-type: none"> It is highly recommended that all teacher candidates meet with an academic advisor every semester. Freshmen, athletes, and students on warning and probation are required to meet with an advisor before registration. At the completion of 30 SH any teacher candidate who: 1) was required to and has not passed PRAXIS Core Exam(s), or 2) holds a GPA of 2.25 or below will be referred to Central Advising for advising and career services. If at a later date the teacher candidate passes all required parts of the Praxis Core Exam and attains a GPA of 2.25 or higher that student may return to BCOE for advising. 		
Important Notes:		

- Neither admission to the University nor declaration of a major related to a teaching field guarantees admission to the BCOE's Teacher Education Programs or candidacy for a teaching license.
- **Formal Admission to Teacher Education (Upper-Division) is required before teacher candidates are allowed to enroll in certain junior and senior level courses in BCOE.**
- Undetermined education majors must declare a major before applying for admission to a Teacher Education Program.
- Admission to a Teacher Education Program is obtained upon satisfactory completion of the following requirements:

____ Minimum completion of 50 SH

____ Minimum 2.75 overall GPA

- Meet one of the following criteria:

____ Overall GPA 3.4 or better, **OR**

____ ACT scores of Reading-21, English-18, Math-22, **AND/OR**

____ SAT scores of Reading-450, Writing-430, Math-520, **AND/OR**

____ Praxis CORE scores, Reading-156, Writing-162, Math-150

(Attach a copy of your CORE scores to the application)

- "B" average or better (A-C, B-B) for:

____ ENGL 1550 ____ ENGL 1551

If failure to meet "B" average above must also complete:

____ ENGL 2601 grade of "B" or better. **If you receive a "C" or below you will need to retake the course.**

- "B" average or better (B-B-B, A-B-C) across the following:

____ EDFN 1501 ____ CMST 1545

____ SPED 2630 ____ GEOL 1505 or BIOL 2602 or CHEM 1516 or PHYS 2610

If student does not have a "B" average, student will be required to **retake one or more of these courses until the "B" average is achieved.**

- A grade of "C" or better is required in all required major courses. Courses taken as "CR/NC" will not count towards the major
- Professional education and block courses may only be repeated **one** time.
- Minimum requirements for teaching licenses are determined by the Ohio Department of Education; if those requirements change, they become effective immediately at Youngstown State University. (YSU Undergraduate Catalog).

Upper-Division Application Process

- Upper division application and forms must be printed from the BCOE website.
- After completing a minimum of 50 SH, submit the following:
 - Upper Division application
 - Good Moral Character Statement
 - copy of BCI & FBI clearances
 - schedule an upper division interview with the BCOE Office of Student Services, room 2101, no later than:
- Upper Division Application Deadline
 - **September 1**—to register for Upper Division Courses for Spring
 - **February 1**—to register for Upper Division courses for Summer & Fall
- Each completed application is reviewed and approved by the Upper Division Admission and Retention Committee. If all requirements are met, the teacher candidate may register for Upper Division courses for the following semester. Upper Division courses are the courses designated

with the "+" symbol. Applications submitted after the deadline will not be processed until the end of the respective semester.

Program Notes:

- If Math concentration is chosen, Math GER is not required. If Science concentration is chosen, Natural Science GER is fulfilled through subject area curriculum. If Language Arts concentration is chosen, Arts & Humanities GER is fulfilled through subject area curriculum. If Social Studies concentration is chosen, Social Sciences GER is fulfilled through subject area curriculum.
- Candidates will not be permitted to take the following professional education courses more than twice: EDFN 1501, EDFN 3708, PSYC 3709, SPED 2630, TERG 2601, 3701, 3702, 3703, 2610, 3711, TEMC 4802, SED 4800, ECIS 2629, ECIS 3700, all preclinical experience courses, student teaching, and student teaching seminar.
- If the program is concerned regarding teacher candidate performance in the preclinical experience, as determined by CPAST criteria, the program coordinator may require the teacher candidate to complete an additional preclinical experience prior to the student teaching experience.

Preclinical Application with Request for Graduation Evaluation

- Preclinical application is completed on TaskStream. Directions are available on the BCOE website.
- Preclinical application and graduation evaluation request must be submitted one year prior to the intended preclinical semester no later than:
 - **September 1**—for Fall preclinical
 - **February 1**—for Spring preclinical
- Preclinical candidates are screened for eligibility based on GPA and course completion.

Student Teaching:

- Prerequisites:
 - BCOE Upper Division and Senior status,
 - Overall 2.75 GPA
 - Minimum of 2.67 GPA in subject area curriculum and professional education courses with no grade less than a "C" (each computed individually),
 - Passage of OAE test(s) and ACTFL tests for foreign language.
- Instructions for completing the Student Teaching Application and Forms are available on BCOE website. The application and forms must be completed and printed from the BCOE website and submitted to the BCOE Office of Student Services no later than:
 - September 1—to Student Teach the following Spring Semester
 - February 1—to Student Teach the following Fall Semester

Graduation Process:

- Apply for graduation during the first three weeks of the semester you plan to graduate. Graduation evaluation must be completed in advance of application for graduation.

Completing a Bachelor of Science in Education without Licensure:

- Teacher candidates who choose to graduate without licensure must apply for approval in the BCOE Office of Student Services.
- Once approved, teacher candidates graduating without licensure must take TCED 4830 (3 SH) capstone in place of student teaching.

Course	Title	S.H.
Year 1		
Fall		
ENGL 1550	Writing 1	3
MATH 1571	Calculus 1	4

CHEM 1515 & 1515L	General Chemistry 1 and General Chemistry 1 Laboratory	4
BIOL 2601 & 2601L	General Biology: Molecules and Cells and General Biology: Molecules and Cells Laboratory	4
TCED 1500	Introduction to Becoming a Teacher First Year Experience Course BCOE	3

Semester Hours 18

Spring

ENGL 1551	Writing 2	3
MATH 1572	Calculus 2	4
EDFN 1501	Introduction to Education	3
BIOL 2602 & 2602L	General Biology: Organisms and Ecology and General Biology: Organisms and Ecology Laboratory	4
CHEM 1516 & 1516L	General Chemistry 2 and General Chemistry 2 Laboratory	4
PSYC 1560	General Psychology	3

Semester Hours 21

Year 2**Fall**

CHEM 3719 & 3719L	Organic Chemistry 1 and Organic Chemistry 1 Laboratory	4
PHYS 2610 & 2610L	General Physics 1 and General Physics laboratory 1	5
CMST 1545	Communication Foundations	3
GEOL 1505 & 1505L	Physical Geology and Physical Geology Laboratory	4
SPED 2630	Individuals with Exceptionalities in Society	3

Semester Hours 19

Spring

CHEM 3720 & 3720L	Organic Chemistry 2 and Organic Chemistry 2 Laboratory	4
PHYS 2611 & 2611L	General Physics 2 and General Physics laboratory 2	5
ASTR 1504	Descriptive Astronomy	3
PSYC 3709	Psychology of Education	3
Arts and Humanities GER		3
Earth/Space Elective		3

Semester Hours 21

Year 3**Fall**

CHEM 2604 & 2604L	Quantitative Analysis and Quantitative Analysis Laboratory	5
GEOL 2602	Introduction to Oceanography	3
GEOG 2630	Weather	3
Social and Personal Awareness GER		3
Physics Elective		3-4

Semester Hours 17-18

Spring

EDFN 3708	Education and Society	3
SED 3706	Principles of Teaching Adolescents	3
TERG 3711	Reading Application in Content Areas, Secondary Years	3
PHYS 2608	Sound	3
TEMC 3707	Science/Technology/Society	3
Social Science GER		3
Social and Personal Awareness Elective		3

Semester Hours 21

Year 4**Fall**

EDFN 3710	Educational Assessment	3
SED 4800C	Science Methods for Adolescent and Young Adult Learners	3
Arts and Humanities GER		3
Chemistry Elective		3-5
Biology Elective		5

Semester Hours 17-19

Spring

SED 4842	Supervised Student Teaching: High School	10
SED 4842A	Student Teaching Seminar for Secondary Education	2

Semester Hours 12

Total Semester Hours 146-149

Learning Outcomes

The following learning outcomes are based on The Ohio Standards for the Teaching Profession. These standards were developed for use as a guide for teachers as they continually reflect upon and improve their effectiveness as educators throughout all of the stages of their careers. These standards serve as an important tool for teachers as they consider their growth and development in the profession. These standards in developing and content of our teacher education programs. They are interrelated and connect in teachers' practice.

- Teachers understand student learning and development and respect the diversity of the students they teach.
- Teachers know and understand the content area for which they have instructional responsibility.
- Teachers understand and use varied assessments to inform instruction, evaluate and ensure student learning.
- Teachers plan and deliver effective instruction that advances the learning of each individual student.
- Teachers create learning environments that promote high levels of learning and achievement for all students.
- Teachers assume responsibility for professional growth, performance and involvement as an individual and as a member of a learning community.
- Teachers collaborate and communicate with students, parents, other educators, administrators and the community to support student learning. Teachers assume responsibility for professional growth, performance and involvement as an individual and as a member of a learning community.