

This program sheet is effective for all students starting at IUB beginning summer 2020.



INDIANA UNIVERSITY

SCHOOL OF EDUCATION  
Office of Teacher Education  
Bloomington

## B.S. EDUCATION: SCIENCE (CHEMISTRY)

This Bachelor of Science in Education degree enables you to teach Middle School/Junior High or High School students. Course requirements for this program are valid at IUB as reflected in the School of Education Bulletin. A four-year college plan requires completion of 15-16 credits each semester. A 2.5 GPA overall is required for retention and graduation. A total of 120 credits are required for graduation.

May 2020

### PREREQUISITES FOR ADMISSION TO THE TEP

Competitive enrollment. Meeting minimum requirements does not guarantee enrollment in authorized courses.

- 2.5 GPA overall.
- 21 credits and a 2.5 GPA in the content field with at least 15 credits completed and 6 credits in progress. Grade of C minus (C-) or higher is required in each content field course.
- Completion of or enrollment in prerequisites: Grade of C or higher is required in each EDUC course.

#### Courses

#### Credits

- |              |   |   |
|--------------|---|---|
| • EDUC-G 203 | <i>Communication for Youth Serving Professionals (S&amp;H)</i>  | 3 |
| • EDUC-M 300 | <i>Teaching in a Pluralistic Society (P: English Comp.) (D)</i> | 3 |
| • EDUC-P 312 | <i>Learning Theory into Practice (P: Soph. status)</i>          | 3 |
| • EDUC-P 313 | <i>Adolescents in a Learning Community (P: Soph. status)</i>    | 3 |
| • EDUC-W 200 | <i>Using Computers in Education (IF)</i>                        | 3 |
- Apply to TEP by October 1 to enroll in Spring term Block I and EDUC-K 306.
  - Access TEP Application at: <https://education.indiana.edu/>

### I. IUB & SCHOOL OF EDUCATION GENERAL EDUCATION REQUIREMENTS

<https://gened.indiana.edu/approved-courses/index.html>

Careful selection & completion of courses with a grade of "C" or higher may allow double counting within General Education, Professional Education &/or Content Field. If you earn a grade lower than a C, please consult with an academic advisor.

### English Composition (EC) (Select one) 0-3 credits Grade of C or higher required

- |             |   |   |
|-------------|---|---|
| CMLT-C 110  | <i>Writing the World</i>  | 3 |
| ENG-W 131   | <i>Reading, Writing &amp; Inquiry I OR</i>                              | 3 |
| ENG-W 131EX | <i>Elementary Composition-Exempt</i>                                    | 0 |
| ENG-W 170   | <i>Intro to Argumentative Writing-Projects in Reading &amp; Writing</i> | 3 |

### Intensive Writing Course (IW) (Select one) 3 credits

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|------------|--|---|
| EDUC-H 205 | <i>Intro to Educational Thought (P: English Comp.) (S&amp;H)</i> | 3 |
| EDUC-H 340 | <i>Education &amp; American Culture (P: Soph. status)</i>        | 3 |

### Mathematical Modeling (MM) 3-4 credits

Complete at least 1 course for at least 3 credits.

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### Arts & Humanities (A&H) 6 credits

Complete at least 2 courses for a total of at least 6 credits.

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### Social & Historical Studies (S&H) 6 credits

Complete at least 2 courses for a total of at least 6 credits.

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### Natural & Mathematical Sciences (N&M) 5+ credits Complete ONE of the following options.

**Option I:** Complete at least 2 courses for a total of at least 5 credits. At least 1 of these courses must be a Natural Science ( \* ) course.

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- \_\_\_\_\_

**Option II:** Complete a 5 credit science course.

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(The class taken to fulfill the Mathematical Modeling requirement cannot be counted towards the 5+ credits needed to fulfill the N&M requirement.)

### World Languages (WL)/World Cultures (WC) 6 credits Complete ONE of the following options.

**Option I: Language Study (WL):** Complete the study of an approved single language through the second semester of the second-year level of college-level coursework.

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**Option II: World Culture (WC):** Complete at least 2 courses for a total of at least 6 credits.

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**Option III: International Experience (IE):** Complete an approved study abroad program or internship of at least 6 credits & at least 6 weeks abroad in duration.

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### Information Fluency (IF) 3 credits

- |            |                                     |   |
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| EDUC-W 200 | <i>Using Computers in Education</i> | 3 |
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### Diversity in the U. S. (D) 3 credits

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|------------|---|---|
| EDUC-M 300 | <i>Teaching in a Pluralistic Society (P: English Comp.)</i> | 3 |
|------------|---|---|

### Enriching Educational Experiences (EEE) 12 credits

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|------------|---|----|
| EDUC-M 480 | <i>Student Teaching: Secondary (12 weeks)</i> | 12 |
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**II. PROFESSIONAL EDUCATION****51 credits/2.5 GPA**

A grade of C or higher is required in each EDUC course.  
The following courses must be successfully completed before student teaching.

**21 credits**

EDUC-G 203	Communication for Youth Serving Professionals (S&H)	3
EDUC-M 300	Teaching in a Pluralistic Society (P: English Comp.) (D)	3
EDUC-P 312	Learning Theory into Practice (P: Soph. status)	3
EDUC-P 313	Adolescents in a Learning Community (P: Soph. status)	3
EDUC-W 200	Using Computers in Education (IF)	3
EDUC-A 308	Legal & Ethical Issues for Teachers (P: Soph. status)	3
EDUC-H 205	Intro to Educational Thought (P: English comp) (S&H) (IW) OR	3
EDUC-H 340	Education & American Culture (P: Soph. status) (IW)	3

Admission to the Teacher Education Program (TEP) is required in order to enroll in the following courses: **30 credits**

EDUC-K 306	Teaching Students with Special Needs: Secondary Classrooms	3
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Courses must be taken in prescribed blocks. Successful completion (C or higher) of all courses in each block is a prerequisite for the next block and student teaching.

Block I and Block II must be completed in sequence from one semester to the next. Students may add an additional semester(s) between the completion of Block II and Student Teaching (Block III).

**Block I (Spring only) 8 credits**

EDUC-M 346	Exploring Secondary School Science Teaching	3
EDUC-M 303	Field Experience I	2
EDUC-M 469	Content Area Literacy	3

**Block II (Fall only) 6 credits**

EDUC-M 446	Methods of Teaching Jr/Middle/Sr High School Science	3
EDUC-M 403	Field Experience II	2
EDUC-S 303	Classroom Management	1

**Block III (Student Teaching) 13 credits**

Students may not enroll in other classes while completing student teaching. Exception: EDUC-M 202 Job Search Strategies for Educators

EDUC-M 420	Student Teaching Seminar	1
EDUC-M 480	Student Teaching in the Secondary School (12 weeks) (EEE)	12

**III. CHEMISTRY CONTENT****50 credits/2.5 GPA**

A grade of C minus (C-) or higher is required in each course.  
Check with the department regarding when courses will be offered.

**Content Part I: Science Overview 20 credits**

BIOL-L 111	Foundations of Biology: Diversity, Evolution & Ecology (N&M) OR	4
BIOL-L 112	Foundations of Biology: Biological Mechanisms (P: HS/College Chem) (N&M)	4
EAS-E 103	Earth Science: Mat. & Processes (N&M) OR	3
EAS-E 104	Evolution of the Earth (N&M) OR	3
EAS-E 105	Earth: Our Habitable Planet (N&M)	3
HPSC-X 102	Science Rev.: Plato to NATO (S&H) (WC)	3
PHYS-P 201	General Physics I (P: MATH-M 026 or HS equiv.) (N&M) AND	5
PHYS-P 202	Gen. Phys. II (P: PHYS-P 201 or HS equiv.) (N&M) OR	5
PHYS-P 221	Physics I (C: MATH-M/S 211) AND	5
PHYS-P 222	Physics II (C: MATH-M/S 212, P: PHYS-P 221)	5

**Content Part II: Chemistry Major****16 credits**

CHEM-C 117	Principles of Chem & Biochem I (P: CHEM-C 101-C 121 or CHEM-C 103, or chemistry and math placement examinations and consent of department) (N&M) AND	3
CHEM-C 127	Principles of Chem & Biochem I Lab OR	2
CHEM-S 117	Principles of Chem & Biochem I-Honors	5
CHEM-C/S 341	Organic Chem I Lectures (P: CHEM-C 117 or CHEM-C 243)	3
CHEM-C/S 342	Organic Chem II Lectures (P: CHEM-C/S 341)	3
CHEM-C/J 343	Organic Chem I Lab (P: CHEM-C 127 and CHEM-C 341. R: CHEM-C42 or CHEM-S 342)	2
CHEM-C 360	Introductory Physical Chemistry (P: CHEM-C 117 or CHEM-S 117, and MATH-M 119 and PHYS-P 201 or equiv. R: CHEM-N 330) OR	3
CHEM-C 361	Physical Chem of Bulk Matter (P: CHEM-C 117 or CHEM-S 117, MATH-M 212, PHYS-P 202 or PHYS-P 222) OR	3
CHEM-C 362	Physical Chem of Molecules (P: CHEM-C 117 or CHEM-S 117, MATH-M 212, PHYS-P 202 or PHYS-P 222. R: CHEM-N 330.)	3

**Content Part III: Chemistry Electives****14 credits**

CHEM-N 331	Intermediate Inorganic Chemistry (P: CHEM-C 342, CHEM-R 340, or CHEM-S 342. R: CHEM-C 343 or CHEM-J 343) AND	3
CHEM-N 337	Intermediate Inorganic Chemistry Laboratory (P or C: CHEM-N 331)	2
CHEM-C 317	Equilibria and Electrochemistry (P/C: CHEM-C/S 341 & MATH-M 211) OR	2
CHEM-C 318	Spectrochemistry and Separations (P/C: CHEM-C/S 341 & MATH-M 211)	2
CHEM-A 315	Chemical Measurements Lab (P: CHEM-A 314 or CHEM-C 317-C 318) OR	2
CHEM-A 316	Bioanalytical Chem Lab (P: CHEM-A 318 or CHEM-C 317-C 318 or P/C: CHEM-A 314)	2
CHEM-C 321	Advanced and Nanoscale Materials (P or C: CHEM-C 360 or CHEM-C 361)	3
CHEM-C 344	Organic Chem II Lab (P CHEM-C/S 342 & CHEM-C/J 343)	2
CHEM-P 364	Basic Measurements in Physical Chemistry (P: CHEM-C 361)	2
CHEM-P 464	Advanced Measurements in Physical Chemistry (P: CHEM-P 364. P/C: CHEM-C 362)	2
CHEM-C 416	Surface Analysis and Surface Chemistry (P: CHEM-C 360 or CHEM-C 361 or perm.)	3
CHEM-C 430	Inorganic Chemistry (P: CHEM-C 106 or CHEM-N 330. R: CHEM-C 362)	3
CHEM-C 432	Spectroscopic Methods in Inorganic Chemistry (P: CHEM-C 360 or CHEM-C 361, and CHEM-C 430)	3
CHEM-C 437	Inorganic Chemistry Lab (P: CHEM-N 330)	2
CHEM-C 443	Organic Spectroscopy (P: CHEM-C/S 342 and CHEM-C/J 343)	3
CHEM-C 446	Organic Chemistry III (P: CHEM-C/S 342)	3
CHEM-C 460	Nuclear Chemistry (P: CHEM-C 360 or C 361)	3
CHEM-C 481	Physical Biochemistry (P: CHEM-C 361 & CHEM-C 484)	3
CHEM-C 483	Biological Chem (P: CHEM-C/S 342 or R 340) OR	3
CHEM-C 484	Biomolecules & Catabolism (P: CHEM-C/S 342)	3
CHEM-C 485	Biosynthetic Pathways and Control of Metabolism (P: CHEM-C 484)	3
CHEM-B 486	Gene Expression and Physiology (P: CHEM-C 484 or permission of instructor)	3
CHEM-B 487	Biochemistry Laboratory (P: CHEM-C/J 343 and CHEM-C 484. P/C: CHEM-C 485)	2
CHEM-B 488	Advanced Biochemistry Laboratory (P: CHEM-B 487. P/C: CHEM-C 485)	2

**IV. ELECTIVES (To total 120 credits)**