This program sheet is effective for all students starting at IUB beginning summer 2017.

## 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.

### PREREQUISITES FOR ADMISSION TO THE TEP

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

1. Complete the basic skills testing requirement by using any of the following options:
   - Qualifying scores on CASA
   - Reading 220, Math 220, Writing 220
   - SAT combined MA+VE score of at least 1100 if test taken prior to March 1, 2016
   - SAT combined MA+VE score of at least 1170 if test taken on or after March 1, 2016
   - ACT composite score of at least 24

2. 2.5 GPA overall.

3. 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 or higher required in each content field course.

4. Completion of or enrollment in prerequisites: Grade of C or higher required in each EDUC course.

### Courses

- EDUC-M 300 Teaching in a Pluralistic Society (D) 3
- EDUC-P 312 Learning Theory into Practice 3
- EDUC-P 313 Adolescents in a Learning Community 3
- EDUC-W 200 Using Computers in Education (IF) 3

5. Apply to TEP by October 1 to enroll in Spring term Block I and EDUC-K 306.

6. Access TEP Application at: [http://education.indiana.edu/](http://education.indiana.edu/)

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

[http://gened.iub.edu/courses/genedcourses.html](http://gened.iub.edu/courses/genedcourses.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.

#### Oral Expression (Select one)

<table>
<thead>
<tr>
<th>Grade of C or higher required</th>
<th>3 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH-A 122 Interpersonal Communication (S&amp;H) 3</td>
<td></td>
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<tr>
<td>COLL-P 155 Public Oral Communication 3</td>
<td></td>
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<tr>
<td>EDUC-G 203 Comm. for Youth Serving Professionals (S&amp;H) 3</td>
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#### English Composition (EC) (Select one)

<table>
<thead>
<tr>
<th>Grade of C or higher required</th>
<th>0-3 credits</th>
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<tbody>
<tr>
<td>CMLT-C 110 Writing the World 3</td>
<td></td>
</tr>
<tr>
<td>ENG-W 131 Reading, Writing &amp; Inquiry / OR 3</td>
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</tr>
<tr>
<td>ENG-W 131EX Elementary Composition-Exempt 0</td>
<td></td>
</tr>
<tr>
<td>ENG-W 170 Intro to Argumentative Writing-Projects in Reading &amp; Writing 3</td>
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</table>

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

<table>
<thead>
<tr>
<th>Grade of C or higher required</th>
<th>3 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC-H 205 Intro to Educational Thought (P: English comp) (S&amp;H) 3</td>
<td></td>
</tr>
<tr>
<td>EDUC-H 340 Education &amp; American Culture (P: English comp &amp; Soph. status) 3</td>
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</tr>
</tbody>
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### Mathematical Modeling (MM) (Select one) 3-4 credits

- MATH-M/S-V 118 Finite Mathematics 3
- MATH-D 116 Intro to Finite Mathematics I AND 2
- MATH-D 117 Intro to Finite Mathematics II (P: D116) 2
- MATH-M 106 Math of Decision and Beauty 3
- MATH-J 113 Intro to Calculus with Applications 3
- MATH-M 119 Brief Survey of Calculus I (Recommended) 3
- MATH-M/S 211 Calculus I (Recommended) 4

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

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

- ______________________  • ______________________

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

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

- ______________________  • ______________________

### Natural & Mathematical Sciences (N&M)

Complete ONE of the following options. 5+ credits

#### 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.

- ______________________  • ______________________

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

- ______________________

(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.

- ______________________  • ______________________

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

- ______________________  • ______________________

#### 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.

- ______________________  • ______________________
Information Fluency (IF) 3 credits
EDUC-W 200 Using Computers in Education 3

Diversity in the U.S. (D) 3 credits
EDUC-M 300 Teaching in a Pluralistic Society (P: Soph. status) 3

Enriching Educational Experiences (EEE) 12 credits
EDUC-M 480 Student Teaching: Secondary (12 weeks) 12

II. PROFESSIONAL EDUCATION 48 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.

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

Admission to the Teacher Education Program (TEP) is required in order to enroll in the following courses:
EDUC-K 306 Teaching Students with Special Needs: Secondary Classrooms 3

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, without interruption, 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 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 49 credits/2.5 GPA

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

Required Science 19 credits
BIOL-E/L 111 Foundations of Biology: Diversity, Evolution & Ecology (N&M) OR 4
BIOL-E/L 112 Foundations of Biology: Biological Mechanisms (P: HS/College Chem) (N&M) 4
GEOL-G/S 103 Earth Science: Mat. & Processes (N&M) OR 3
GEOL-G 104 Evolution of the Earth (N&M) OR 3
GEOL-G 105 Earth: Our Habitable Planet (N&M) 3

CHEM-C 117 Principles of Chem & Biochem I (P: CHEM & MATH Placement Exams & 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: C117/127 or S117) 5
CHEM-C/S 342 Organic Chem II Lectures (P: C/S341) 5
CHEM-C/S 343 Organic Chem I Lab (P: C341) (P/C: C342) 2
CHEM-C 360 Intro to Physical Chem (P: C117/127 or S117; N330 strongly recommended. MATH-M119, PHYS-P201 or equiv.) OR 3
CHEM-C 361 Physical Chem of Bulk Matter (P: C117/127 or S117, MATH-M/S 212, PHYS-P202 or P222) OR 2
CHEM-C 362 Physical Chem of Molecules (P: C117/127 or S117, N330 strongly recommended. MATH-M/S 212, PHYS-P202 or P222) OR 2

Complete 14 credits from the following:
CHEM-C 317 Equilibria & Electrochem (P/C: C/S341 & MATH-M/S 211) OR 2
CHEM-C 318 Spectrochem & Separations (P/C: C/S 341 & MATH-M211) 2
CHEM-A 315 Chemical Measurements Lab (P: C317 & C318 or A314) OR 2
CHEM-A 316 Bioanalytical Chem Lab (P: C317 & C318 or P/C: A314) 2
CHEM-C/S 344 Organic Chem II Lab (P C/S342 & C/S343) 2
CHEM-C 364 Intro to Basic Measurements (P: C/S361) OR 3
CHEM-P 364 Basic Measurements-Physical Chem (P/C:S361) 2
CHEM-P 464 Advanced Measurements-Physical Chem (P: P364, P/C: C362) 2
CHEM-C 416 Surface Analysis & Surface Chemistry (P: C360 or C361 or permission of instructor) 3
CHEM-C 420 Advanced & Nanoscale Materials (P: CHEM-C 343, C360 or C361)(R: CHEM-N 330 &/or C483 or C484) 3
CHEM-C 430 Inorganic Chem (P: C/S118 or N/S330 & C/S342) (R: C362) 3
CHEM-C 432 Spectroscopic Methods in Inorganic Chem (P: C360 or C361 & C430) 3
CHEM-C 437 Inorganic Chem Lab (P: C/S343 & C430) 2
CHEM-C 443 Organic Spectroscopy (P: C342 & C362) 3
CHEM-C 446 Organic Chemistry III (P: C342 or C343) 3
CHEM-C 460 Nuclear Chem (P/C: C360 & C361) 3
CHEM-C 481 Physical Biochem (P/C: C361 & C484) 3
CHEM-C 483 Biological Chem (P: C/S342 or R340) OR 3
CHEM-C 484 Biomolecules & Catabolism (P: C/S342) 3
CHEM-C 485 Biosynth. Path. & Control of Metabolism (P: C484) 3
CHEM-C 486 Gene Expression & Physiology (P: C484 or permission of instructor) 3
CHEM-C 487 Biochemistry Lab (P: C/S 343 and C484, P/C: C 485) 2-3
CHEM-C 488 Advanced Biochemistry Lab (P: B487, P/C: C 485) 2

IV. ELECTIVES (To total 120 credits)