INTEGRATED SCIENCE TEACHING OPTION

This option is offered within the following major(s):

- Education - College of Education (http://catalog.oregonstate.edu/college-departments/education/education-ba-bs-hba-hbs)

This option is for students wishing to earn a bachelor's degree in Education and qualify for an Oregon Teaching License to teach integrated science at the middle school (grades 6–9) and/or high school (grades 9–12) levels.

Pre-Education Level

Students at this level will be taking general education prerequisite courses and required content course work.

**Note:** Pre-Education students should meet with the Education Double Degree Advisor at least once a year to ensure they are on track to meeting prerequisite and content mastery requirements prior to applying for the Professional Level.

All Pre-Education General Course work must be taken prior to admission to the Professional Level.

### Pre-Education General Course Work

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 216</td>
<td>*PURPOSE, STRUCTURE, AND FUNCTION OF EDUCATION IN A DEMOCRACY</td>
<td>3</td>
</tr>
<tr>
<td>ED 219</td>
<td>CIVIL RIGHTS AND MULTICULTURAL ISSUES IN EDUCATION</td>
<td>3</td>
</tr>
<tr>
<td>ED 253</td>
<td>LEARNING ACROSS THE LIFESPAN ((Not required if you have taken HDFS 311, 313 and 314 with a 3.0 or higher GPA))</td>
<td>3</td>
</tr>
<tr>
<td>ED 309</td>
<td>FIELD PRACTICUM ((Can be waived with 60 hours supervised/documented volunteer service))</td>
<td>3</td>
</tr>
<tr>
<td>ED 472</td>
<td>FOUNDATIONS OF ESOL EDUCATION</td>
<td>3</td>
</tr>
<tr>
<td>ED 479</td>
<td>LINGUISTICS FOR TEACHERS (Prerequisite ED 472)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Integrated Science Content Mastery Requirements

**Standard 1. Introductory Physics Sequence. (9–10 credits/15 credits for emphasis)**

Select one of the following options: 4

**Option 1:**

- PH 201 *GENERAL PHYSICS
- PH 202 *GENERAL PHYSICS
- PH 203 *GENERAL PHYSICS

**Option 2:**

- PH 211 *GENERAL PHYSICS WITH CALCULUS
- PH 212 *GENERAL PHYSICS WITH CALCULUS
- PH 213 *GENERAL PHYSICS WITH CALCULUS

You may replace either PH 203 or PH 213 of the above series with one of the following astronomy courses:

- PH 104 *DESCRIPTIVE ASTRONOMY
- PH 205 *SOLAR SYSTEM ASTRONOMY

**Standard 2. Introductory Chemistry Sequence (10 credits/15 credits for emphasis)**

Select two series of the following: 4

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 231</td>
<td>GENERAL CHEMISTRY</td>
<td>3</td>
</tr>
<tr>
<td>&amp; CH 261</td>
<td>&amp; *LABORATORY FOR CHEMISTRY 231</td>
<td>3</td>
</tr>
<tr>
<td>CH 232</td>
<td>GENERAL CHEMISTRY</td>
<td>3</td>
</tr>
<tr>
<td>&amp; CH 262</td>
<td>&amp; *LABORATORY FOR CHEMISTRY 232</td>
<td>3</td>
</tr>
<tr>
<td>CH 233</td>
<td>GENERAL CHEMISTRY</td>
<td>3</td>
</tr>
<tr>
<td>&amp; CH 263</td>
<td>&amp; *LABORATORY FOR CHEMISTRY 233</td>
<td>3</td>
</tr>
</tbody>
</table>

**Standard 3. Introductory Biology Sequence (8 credits/12 credits for emphasis)**

Select two courses from either series: 4

**General Biology**

- BI 101 *GENERAL BIOLOGY
- BI 102 *ANIMAL BIOLOGY: GENES, BEHAVIOR AND EVOLUTION OF LIFE
- BI 103 *HUMAN BIOLOGY: ANATOMY, PHYSIOLOGY AND DISEASE

**Principles of Biology**

- BI 211 *PRINCIPLES OF BIOLOGY
- BI 212 *PRINCIPLES OF BIOLOGY
- BI 213 *PRINCIPLES OF BIOLOGY

**Standard 4. Geosciences Sequence (7–8 credits/15 credits for emphasis)**

For the purpose of licensure, geosciences include geology (excluding 7-15 geography and geographic information systems) as well as appropriate atmospheric science and oceanography courses. Choose full series plus 1 additional course if this is your area of emphasis. If not your area of emphasis, you must include a minimum of 1 course from the introductory sequence.

**Introductory Sequence**

- GEO 201 *PHYSICAL GEOLOGY
- GEO 202 *EARTH SYSTEMS SCIENCE
- GEO 203 *EVOLUTION OF PLANET EARTH

**Geology**

- GEO 221 *ENVIRONMENTAL GEOLOGY
- GEO 305 *LIVING WITH ACTIVE CASCADE VOLCANOES
- GEO 306 *MINERALS, ENERGY, WATER, AND THE ENVIRONMENT
- GEO 307 *NATIONAL PARK GEOLOGY AND PRESERVATION
- GEO 308 *GLOBAL CHANGE AND EARTH SCIENCES
- GEO 352 *OREGON: GEOLOGY, PLACE, AND LIFE ON THE RING OF FIRE

**Standard 5. Upper-division Course Work**

Select 6 credits in your emphasis area

**Standard 6. Science Education**

- SED 413 INQUIRY IN SCIENCE AND SCIENCE EDUCATION

**Total Hours**

61-84

1 Not required if you have taken HDFS 311 INFANT AND CHILD DEVELOPMENT, HDFS 313 ADOLESCENT DEVELOPMENT and HDFS 314 ADULT DEVELOPMENT AND AGING with a 3.0 or higher GPA
Integrated Science Teaching Option

2 Can be waived with 60 hours supervised/documentated volunteer service.

3 To be completed prior to beginning the Professional Level. Most of this course work will meet student’s first degree requirements.
   • Must have 3.0 accumulative GPA on all course work to fulfill content mastery requirements.
   • All grades must be taken as A–F graded courses; no P/N or S/U grades accepted for content mastery courses; no grade below C– accepted for content mastery courses.

4 Choose a full series if this is your area of emphasis. If not your area of emphasis, choose two courses from series.

5 For the purpose of licensure, geosciences include geology (excluding geography and geographic information systems) as well as appropriate atmospheric science and oceanography courses. Choose full series plus 1 additional course if this is your area of emphasis. If not your area of emphasis, you must include a minimum of 1 course from the introductory sequence.

* Baccalaureate Core Course
^ Writing Intensive Course (WIC)

Note: Integrated Science students must demonstrate an emphasis in one of the four content areas. In the emphasis area, the student must complete the full introductory sequence as well as a minimum of 6 upper-division course credits. All remaining content areas require a minimum of two courses in the introductory sequence.

Professional Level

To be accepted into the Professional Level, a student must have completed the required Pre-Education General Courses and the Content Mastery Requirements with a minimum 3.0 GPA or by special petition. In addition, students need two letters of recommendation and passing scores on all required Oregon licensure exams.

The following courses are taken during the Professional year-long program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 340</td>
<td>SUPPORTIVE DIFFERENTIATED ENVIRONMENTS</td>
<td>3</td>
</tr>
<tr>
<td>ED 407</td>
<td>SEMINAR</td>
<td>1</td>
</tr>
<tr>
<td>ED 409</td>
<td>PRACTICUM/CLINICAL EXPERIENCE (September Experience)</td>
<td>2</td>
</tr>
<tr>
<td>ED 409</td>
<td>PRACTICUM/CLINICAL EXPERIENCE (Fall Practicum)</td>
<td>3</td>
</tr>
<tr>
<td>ED 410</td>
<td>INTERNSHIP/WORK EXPERIENCE (Part-time Student Teaching)</td>
<td>3</td>
</tr>
<tr>
<td>ED 410</td>
<td>INTERNSHIP/WORK EXPERIENCE (Full-time Student Teaching)</td>
<td>10</td>
</tr>
<tr>
<td>ED 412</td>
<td>LEARNING STYLES AND NEEDS IN ADOLESCENCE</td>
<td>2</td>
</tr>
<tr>
<td>ED 424</td>
<td>TEACHER AS REFLECTIVE PRACTITIONER</td>
<td>2</td>
</tr>
<tr>
<td>ED 425</td>
<td>CURRICULUM IMPLEMENTATION AND INSTRUCTIONAL STRATEGIES 7-12</td>
<td>4</td>
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<tr>
<td>ED 427</td>
<td>ALTERNATIVE ASSESSMENT FOR MIDDLE AND HIGH SCHOOL</td>
<td>2</td>
</tr>
<tr>
<td>ED 493</td>
<td>READING, LITERATURE, AND LANGUAGE DEVELOPMENT IN THE CONTENT</td>
<td>2-3</td>
</tr>
<tr>
<td>or ED 473</td>
<td>INSTRUCTIONAL APPROACHES FOR ESOL EDUCATION</td>
<td></td>
</tr>
</tbody>
</table>

ED 494 CONTENT STANDARDS AND CURRICULUM DEVELOPMENT FOR HIGH SCHOOL 3

Total Hours 37-38

* Baccalaureate Core Course
^ Writing Intensive Course (WIC)

Option Code: 67