

# Biological Sciences Education and Comprehensive Science Education

## Biological Sciences Education and Comprehensive Science Education Majors

Students interested in Biological Sciences Education or Comprehensive Science Education are encouraged to declare a double major in the discipline and in education (i.e., Biological Sciences Education and Biological Sciences). Such double majors may be earned by successful completion of a few additional credits. Students should contact their advisers or the Office of Registration and Records (<http://www.ndsu.edu/bulletin/offices/registrar>) for details, and are encouraged to declare their primary and secondary majors with the Office of Registration and Records, Ceres 110 (<http://www.ndsu.edu/bulletin/buildings/ceres>).

Students who intend to teach life sciences in the secondary schools should make their intentions known to the School of Education and consult with a biology education adviser in the Department of Biological Sciences (<http://www.ndsu.edu/biology>) early in their programs to make certain that they have a well-designed program and take the professional education courses required for state teacher certification.

The Comprehensive Science Education major is designed to prepare the secondary general science teacher. This major is an especially good preparation for students who may find themselves teaching several different science courses. Information about curriculum and other requirements is available from the School of Education (<http://www.ndsu.edu/education>) and the education adviser in the Department of Biological Sciences. Biological Sciences Education and Comprehensive Science Education majors cannot pursue a minor in Biology.

## Major Requirements

### Major; Biological Sciences Education

Degree Type: B.A. or B.S.

Required Degree Credits to Graduate: 140

### General Education Requirements

#### First Year Experience (F):

HD&E 189	Skills for Academic Success (Students transferring in 24 or more credits do not need to take HD&E 189.)	1
----------	---	---

#### Communication (C):

ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
ENGL 324	Writing in the Sciences	3
COMM 110	Fundamentals of Public Speaking	3

#### Quantitative Reasoning (R):

MATH 146	Applied Calculus I	4
----------	--------------------	---

#### Science & Technology (S):

The 10 credits required in the Science and Technology category will be satisfied by completing the requirements for the teaching specialty.

**Humanities & Fine Arts (A):** Select from current general education list 6

**Social & Behavioral Sciences (B):** Select from current general education list 6

**Wellness (W):** Select from current general education list 2

**Cultural Diversity (D):** Select from current general education list

#### Global Perspectives (G):

GEOL 105 Physical Geology 3

Total Credits 41

## Major Requirements

**General Education Requirements** 40

### Professional Education Requirements

EDUC 321	Introduction to Teaching	3
EDUC 322	Educational Psychology	3
EDUC 451	Instructional Planning, Methods and Assessment	3
EDUC 481	Classroom Practice Methods of Teaching I:	2-3
EDUC 485	Student Teaching Seminar	1
EDUC 486	Classroom Management for Diverse Learners	3
EDUC 487	Student Teaching	9
EDUC 488	Applied Student Teaching	3
EDUC 489	Teaching Students of Diverse Backgrounds	3

### Teaching Speciality Requirements

BIOL 124 & 124L	Environmental Science and Environmental Science Laboratory	4
BIOL 150 & 150L	General Biology I and General Biology I Laboratory	4
BIOL 151 & 151L	General Biology II and General Biology II Laboratory	4
BIOL 220 & 220L	Human Anatomy and Physiology I and Human Anatomy and Physiology I Laboratory	4
BIOL 221 & 221L	Human Anatomy and Physiology II and Human Anatomy and Physiology II Laboratory	4
BIOL 364	General Ecology	3
BIOL 459		3
BIOL 491	Seminar (Capstone)	2

Select one of the following: 4

BOT 315 & 315L	Genetics and Genetics Laboratory	
ZOO 315 & 315L	Genetics and Genetics Laboratory	
BOT 300-400 Level Elective		3
CHEM 121 & 121L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 122 & 122L	General Chemistry II and General Chemistry II Laboratory	4
CHEM 240	Survey of Organic Chemistry	3
CHEM 260	Elements of Biochemistry	4
GEOL 105 & 105L	Physical Geology and Physical Geology Lab	4

GEOL 106 & 106L	The Earth Through Time and The Earth Through Time Lab	4
PHYS 211 & 211L	College Physics I and College Physics I Laboratory	4
PHYS 212 & 212L	College Physics II and College Physics II Laboratory	4
STAT 330	Introductory Statistics	3
ZOO 370	Cell Biology	3
ZOO 300-400 Level Elective		3
CSCI Elective		3
Total Credits		149-150

## Degree Requirements and Notes

- Courses taken P/F may not be used to satisfy any requirements.
- GPA of 2.75 or better in the teaching specialty is required for placement in student teaching and exit from the program.
- A grade of 'C' or better is required in all Professional Education Requirement courses.
- A GPA of 2.75 or better in professional education as well as passing the appropriate Praxis II exam are required to exit the program.
- See School of Education for admission requirements.

**Bachelor of Arts (BA) Degree** – An additional 6 credits of Humanities and Social Sciences and two years of one modern foreign language at the college level or equivalent are required.

## Major Requirements

### Major: Comprehensive Science Education

**Degree Type: B.A. or B.S.**

**Required Degree Credits to Graduate: 136**

### General Education Requirements

#### First Year Experience (F):

HD&E 189	Skills for Academic Success (Students transferring in 24 or more credits do not need to take HD&E 189.)	1
----------	---	---

#### Communication (C):

ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
ENGL 324	Writing in the Sciences	3
COMM 110	Fundamentals of Public Speaking	3

#### Quantitative Reasoning (R):

STAT 330	Introductory Statistics	3
----------	-------------------------	---

#### Science & Technology (S):

The 10 credits required in the Science and Technology category will be satisfied by completing the requirements for the teaching specialty. 10

**Humanities & Fine Arts (A): Select from current general education list** 6

**Social & Behavioral Sciences (B): Select from current general education list** 6

**Wellness (W): Select from current general education list** 2

**Cultural Diversity (D): Select from current general education list**

**Global Perspectives (G):**

GEOL 105	Physical Geology	3
Total Credits		40

## Major Requirements

**General Education Requirements** 40

### Professional Education Requirements

EDUC 321	Introduction to Teaching	3
EDUC 322	Educational Psychology	3
EDUC 451	Instructional Planning, Methods and Assessment	3
EDUC 481	Classroom Practice Methods of Teaching I:	3
EDUC 485	Student Teaching Seminar	1
EDUC 486	Classroom Management for Diverse Learners	3
EDUC 487	Student Teaching	9
EDUC 488	Applied Student Teaching	3
EDUC 489	Teaching Students of Diverse Backgrounds	3

### Teaching Speciality Requirements

BIOL 124 & 124L	Environmental Science and Environmental Science Laboratory	4
BIOL 150 & 150L	General Biology I and General Biology I Laboratory	4
BIOL 151 & 151L	General Biology II and General Biology II Laboratory	4
BIOL 491	Seminar	2
BOT 372	Structure and Diversity of Plants and Fungi	4
CHEM 121 & 121L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 122 & 122L	General Chemistry II and General Chemistry II Laboratory	4
CHEM 260	Elements of Biochemistry	4
CHEM 341 & 341L	Organic Chemistry I and Organic Chemistry I Laboratory	4
CHEM 342 & 342L	Organic Chemistry II and Organic Chemistry II Laboratory	4
CSCI Elective		2
MATH 165	Calculus I	4
MATH 166	Calculus II	4
PHYS 110	Introductory Astronomy	3
PHYS 251 & 251L	University Physics I and University Physics I Laboratory	5
PHYS 252 & 252L	University Physics II and University Physics II Laboratory	5
GEOL 105 & 105L	Physical Geology and Physical Geology Lab	4
GEOL 106 & 106L	The Earth Through Time and The Earth Through Time Lab	4
BIOL/BOT/ZOO 300-400 Level		6
Total Credits		146

## Degree Requirements and Notes

- Courses taken P/F may not be used to satisfy any requirements.
- GPA of 2.75 or better in the teaching specialty is required for placement in student teaching and exit from the program.
- A grade of 'C' or better is required in all Professional Education Requirement courses.

- A GPA of 2.75 or better in professional education as well as passing the appropriate Praxis II exam are required to exit the program.
- See School of Education for admission requirements.

**Bachelor of Arts (BA) Degree** – An additional 6 credits of Humanities and Social Sciences and two years of one modern foreign language at the college level or equivalent are required.