Biology and Society 2014-2015

The requirements listed below pertain to all students matriculating in August 2014 and January 2015.

Credits

I. Distribution Requirements 39-46

A. Introductory Biology Lecture and Lab 8-9

Starting in Fall 2010, AP credit cannot be used to fulfill the introductory biology requirement for this major.

BIOG 1500 Investigative Lab (F/S, 2 cr) **AND**

Choose two out of three from the following lecture options:

(a) BIOMG 1350 Cell and Development (F/S, 3 cr)
(b) BIOG 1440 Comparative Physiology (F/S, 3 cr) **OR**
    BIOG 1445 Autotutorial Physiology (F/S, 4 cr)
(c) BIOE 1610 Ecology and the Environment (F/S, 3 cr) or BIOSM 1610 **OR**
    BIOE 1780 Evolution and Diversity (F/S, 3 cr) or BIOSM 1780

*Cannot take both to fulfill this requirement

B. Social Sciences 6

C. Humanities 4

No language credit in this area. (See: I.F.)

BSOC 2051 Ethical Issues in Health and Medicine **OR**

BSOC 2061 Ethics and Environment

**MUST BE COMPLETED BY END OF JUNIOR YEAR**

D. Written Communications 6

Must be First-Year Writing Seminars.

**MUST BE COMPLETED DURING FIRST 2 SEMESTERS**

E. Quantitative and Analytical 7-8

a. Either Statistics or Calculus must be taken at Cornell unless you have earned a score of 3 or higher on AP Calculus BC.

b. Once the above requirement is met other AP credit from Calculus AB (a score of 3 or higher) or Statistics (a score of 4 or 5) may be applied to the Quantitative and Analytical requirement if the content is not overlapping.

1. Calculus:
   Choose one of the following:
   MATH 1106, MATH 1110, MATH 1120 **OR**
   Any higher-level calculus course

2. Statistics:
   Choose one of the following:
   AEM 2100, BTRY 3010, ECON 3130, ILRST/STSCI 2100, MATH 1710, PAM 2100 (CHE students only), PSYCH 3500, STSCI 2150

F. Additional requirements 8-13

Courses from any natural science, social science, humanities, or mathematics courses can be counted here for remaining credits.

II. Requirements in the Major 65-82

II. A. Biology Foundation Breadth** 9

One course from each of three of the following areas:

**Biochemistry, Molecular, and Cell Biology** 4-5

BIOMG 3300 Principles of Biochemistry: Individual Instruction
BIOMG 3310 Principles of Biochemistry: Proteins and Metabolism
NS 3200 Introduction to Human Biochemistry
BIOMG 3330 Principles of Biochemistry, Lectures
BIOMG 3350 Principles of Biochemistry: Proteins, Metabolism, Molecular Biology

**Genetics and Development** 3-5

BIOMG 2800 Lectures in Genetics
BIOMG 2820 Human Genetics
NTRES 2830 Genetics for Population Biologists
PLBR 2250 Plant Genetics

**Animal Behavior** 3-4

BIONB 2210 Neurobiology and Behavior I: Intro to Behavior
    (summer BIONB 2213 or BIOSM 3290)

**Neurobiology and Behavior** 3

BIONB 2220 Neurobiology and Behavior II: Intro to Neurobiology

**Biological Diversity** 2-5

BIOL 2410 Introductory Botany
BIOL 2430 Taxonomy of Cultivated Plants
BIOL 2480 Vascular Plant Systematics
BIOMI 2900 General Microbiology Lectures
BIOE 2740 The Vertebrates
BIOE 4500 Mammalogy, Lectures
BIOE 4700/4701 Herpetology, Lectures and Laboratory
BIOE 4750 Ornithology
BIOE 4760 Biology of Fishes
ENTOM 2120 Insect Biology
PLPA 3010 Biology and Management of Plant Diseases
PLPA 3090 Fungi
    (summer, BIOSM 3080, 3100, 3210, 3730, 3740, 3770, or 4490)

**Physiology and Anatomy** 3

BIOP 3110 Introduction to Animal Physiology
NS 3410 Human Anatomy and Physiology
DEA 4520 Applied Anatomy and Biomechanics for Ergonomic Design

**Ecology** 6

( summer BIOSM 3640, 3750)
**Students in Human Ecology may not use NS 1150 to meet the Biology Foundation Breadth requirement. If NS 1150 is taken it will count towards the 43 Human Ecology credit requirement. Human Ecology students building upon Nutritional Science should major in HBHS or NS.**

**Credits**

**II. B. Biology Foundation Depth**

3 – 4

One biology course for which one of the biology courses in II.A. is a prerequisite.

(Human Ecology students cannot use NS 1150 in II.A. for the purpose of defining II.B. Biology Foundation Depth course.)

**II. C. Core Course**

4

Should be completed by end of junior year.

BSOC 3011 Life Sciences & Society OR

PHIL 2860/STS 2861 Science and Human Nature

**II.D. Theme**

15 – 20

Theme areas are Neuroscience, Aging, and Health; Biology and Health Policy; and Human Factors, Ergonomics, and Biomechanics

Five courses related to a theme selected by the student; must at the 2000 level or above, at least 3 credit hours, and taken for a letter grade.

Two courses from: Natural sciences issues and/or Biology elective (course with significant biology content)

Two courses from: Humanities/Social Sciences electives

One course taken junior or senior year: Senior Seminar; courses change yearly

**II. E. Social Sciences/Humanities Foundation**

6 – 8

One course from each of two areas:

(Approved courses are in Courses of Study under Biology & Society)

- History of Biology/History of Science
- Philosophy of Science
- Politics of Science
- Sociology of Science
- Science Communication

**III. Electives**

Variable

**IV. Physical Education**

2

Physical Education must be completed in order to graduate. However, physical education does not count toward college and university minimum credit requirements for full-time status, nor does it count towards the 120 credits required for graduation.

**Total Credits (exclusive of PE)**

120

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**College Requirements:**

- Students are NOT required to complete 9 credits in Human Ecology departments outside the major.

- Students must complete a minimum of 43 HUMEC credits. HUMEC courses are DEA, FSAD, HD, NS, PAM, or HE 3000-level or higher. BSOC courses are not considered HUMEC.

- **Pass/Fail Courses [S/U]**
  - S/U grading option may NOT be used for any required course [i.e., distribution requirements in Category I or major courses in Category II] unless it is the only grade option offered for those courses.
  - S/Us MAY be used for electives in Category III.
  - Students may apply no more than 12 credits of S/U towards graduation requirements. If a required course is only offered S/U, it will not count towards this limit. Students may take more S/Us if they choose, but the additional credit will not be applied towards graduation.
  - The **deadline for changing grade options is 7 weeks** after the start of classes, the same as the “drop” deadline.

- **Special Study Courses [4000, 4010, 4020, 4030]**
  - A total of 12 credits of special study course work from Human Ecology or other colleges will count towards the 120 graduation credit requirement.
  - Additional credits can be taken but will not be applied.
  - A maximum of three credits of 4000-4020 (not including 4030) may count towards the “credit outside the major” category as long as the special study is in a department outside the student’s major.
  - Students cannot TA (4030) the same course for credit more than once or take and TA the same course simultaneously. 4030 does not fulfill any requirements towards the major. Registration for 4030 may not exceed 5 credit hours per semester.

- Students must complete 120 credits overall, exclusive of physical education and “00” courses.

- Elective credits can be earned in Human Ecology or elsewhere.

**Pre-Med Students only:**

(Not required for graduating from Human Ecology with a Biology & Society Major).

**Additional Credits**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Chemistry…</td>
<td>24-28</td>
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<tr>
<td>CHEM 2070 – 2080 General Chemistry AND</td>
<td>8</td>
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<tr>
<td>One of the following sequences:</td>
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<tr>
<td>CHEM 3570 – 3580 Organic Chemistry Lecture &amp; 2510 Lab</td>
<td>8</td>
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<tr>
<td>CHEM 3590 – 3600 Lecture and 3010 Lab</td>
<td>12</td>
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<tr>
<td><strong>and Physics</strong></td>
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<tr>
<td>PHYS 1101 – 1102 General Physics OR</td>
<td>8</td>
</tr>
<tr>
<td>PHYS 2207 – 2208 Fundamentals of Physics</td>
<td>8</td>
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