Human Biology, 2015-2016
Health & Society

The requirements listed below pertain to all students matriculating in August 2015 and January 2016.

Credits

I. Distribution Requirements 39-47

A. Natural Sciences: Introductory Chemistry 8
CHEM 2070 and 2080 General Chemistry

B. Social Sciences 6
An introductory course in two different social sciences. Choose one course in any two of the following four areas:

Anthropology
ANTHR 1400 Introduction to Anthropology: The Comparison of Cultures

Economics
ECON 1110 Introductory Microeconomics OR ECON 1120 Introductory Macroeconomics

Psychology
HD 1110 Lifespan Development OR HD 1150 Human Development: Infancy and Childhood OR HD 1170 Human Development: Adolescence and Emerging Adulthood OR PSYCH 1101 Introduction to Psychology

Sociology
DSOC 1101 Introduction to Sociology OR SOC 1101 Introduction to Sociology

C. Humanities 3
Recommended: Ethics, Philosophy
Language credit may not be counted here.

Includes literature, history (including art and design history), philosophy, religion, and archaeology. Critical, historical, and theoretical studies of the arts and design are considered humanities. Languages and creative or performing arts such as the writing of fiction or poetry, painting, sculpting, designing, composing or performing music, acting, directing, and dance are not considered humanities.

D. Written Communications
Must be First-Year Writing Seminars.
MUST BE COMPLETED DURING FIRST 2 SEMESTERS.

Credits

6

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/Advanced Math
Choose one of the following:
MATH 1105, MATH 1106, MATH 1110, OR Higher level calculus
*Calculus or higher level math is generally needed for premed or grad study

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

F. Additional requirements 9–16
Courses from any natural science, social science, humanities, or mathematics courses can be counted here for remaining credits.

Organic Chemistry Lecture (6-credit minimum for premeds)
Choose one of the following sequences:
CHEM 1570 Elementary Organic Chemistry (Only for Spring, not for premeds) CHEM 3530 Principles of Organic Chemistry (Only for Fall) CHEM 3570 and 3580 Introductory Organic Chemistry (must take both, CHEM 3570 alone will not fulfill the requirement.) CHEM 3590 and 3600 Organic Chemistry (must take both, CHEM 3590 alone will not fulfill the requirement.)

Organic Chemistry Lab
Choose one of the following:
CHEM 2510 Introduction to Experimental Organic Chemistry CHEM 3010 Experimental Chemistry

Physics
PHYS 1101 General Physics I OR PHYS 2207 Fundamentals of Physics

In addition, if premed or interested in graduate study in prephysical therapy/exercise sciences, then take one of the following:
PHYS 1102 General Physics II OR PHYS 2208 Fundamentals of Physics
II. Requirements in the Major  

A. Biology Foundation Courses  

(NS courses count toward 43 required HUMEC credits)  

**II.A.1. Introductory Biology Lecture and Lab**  

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<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>BIOG 1500 Investigative Lab (F/S, 2 cr) AND</td>
<td>8-9</td>
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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*  
(c) BIOG 1445 Comparative Physiology (autotutorial) (F/S, 4 cr)  
(d) BIOEE 1610 Ecology and the Environment (F/S, 3 cr) OR*  
(e) BIOEE 1780 Evolution and Diversity (F/S, 3 cr)  

*Cannot take both to fulfill this requirement  

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**II.A.2. Physiology**  

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<tr>
<th>Course</th>
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<tr>
<td>NS 3410 Human Anatomy and Physiology (S, 4 cr) OR</td>
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<tr>
<td>BIOAP 3110 Animal Physiology (F, 3 cr)</td>
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**II.A.3. Biochemistry**  

Choose one of the following:  

- NS 3200 Introduction to Human Biochemistry (F, 4 cr)  
- BIOMG 3300 Principles of Biochemistry (F/S, 4 cr)  
- BIOMG 3310 (F, 3 cr) and BIOMG 3320 (S, 2 cr) Principles of Biochemistry  
- BIOMG 3310 Principles of Biochemistry (F, 3 cr) and BIOMI 2900 General Microbiology (F/S, 3 cr)  
- BIOMG 3330 Principles of Biochemistry (Su, 4 cr)  
- BIOMG 3350 Principles of Biochemistry (S, 4 cr)  

**II.A.4. Biology Electives**  

(6 additional credits selected from didactic courses in the following areas that relate to human biology and require one year of introductory biology as a pre-req. May not include Special Studies (e.g., NS 4000, 4010, 4020, 4030) or independent research credits (e.g., NS 4990).)  

- Genetics, recommended (including BIOMG 2800 and 2820)  
- Microbiology (including BIOMI 2900, if not used for Biochem req. and VETMI 4310)  
- Neurobiology (including BIONB 2210, 2220 and 4280)  
- Evolution (may use NS 2750 if not used as a HBHS Selectives)  
- Cell Biology (including BIOMG 4320)  
- Physiology (including BIOAP 4890. May use NS 3410 or BIOAP 3110 if both are taken)  

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**Credits**  

**Biology Electives (continued)**  

- Biochemistry (may not include BIOMG 3300, 3310, or 3320, 3350, or NS 3200)  
- Nutrition (may use NS 3030, 3220, 3310, 3420, 4310, 4315, 4410, 4444 – if these are not used as a HBHS Selective)  

**B. Survey Course**  

**II.B.1. Introduction to HBHS and Nutrition**  

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<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>NS 1150 Nutrition, Health and Society</td>
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**C. HBHS Selectives: Students must take a total of 15 credits as broken down in the following categories and are encouraged to choose at least one course on development (+), policy (*), and professional problem-solving (^). In addition, three (3) of these 15 credits must be from a Nutritional Science (NS) Course.**  

**II.C.1. Social Science Perspective on Health**  

<table>
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<tr>
<th>Course</th>
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<tr>
<td>NS 2450 Social Science Perspectives on Food and Nutrition (F, 3 cr)</td>
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<td>^ NS 4250 Nutrition Communications and Counseling (S, 3 cr)</td>
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<td>* NS 4450/AEM 4450 Toward a Sustainable Global Food System: Food Policy for Developing Countries (F, 3 cr)</td>
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<td>^ NS 4500 Public Health Nutrition (S, 2 cr)</td>
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<td>^ NS 4570 Health, Poverty, and Inequality: A Global Perspective (alt S, 3 cr)</td>
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<td>NS 4600 Explorations in Global Health (F, 3 cr)</td>
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<td>HD 2180 Human Development: Adulthood and Aging (S, 3 cr)</td>
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<td>HD 2510 Social Gerontology: Aging and the Life Course (S, 3 cr)</td>
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<td>HD 3300 Developmental Psychopathology (S, 3 cr)</td>
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<td>HD 3490 Positive Psychology (F, 3 cr)</td>
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<td>HD 3570/SOC 3670 Social Inequalities in Physical and Mental Health (alt F, 3 cr)</td>
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<td>HD 3620 Human Bonding (S, 3 cr)</td>
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<td>HD 3700/PSYCH 3250 Adult Psychopathology (S, 3 cr)</td>
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<td>HD 4520 Culture and Human Development (alt S, 3 cr)</td>
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<td>HD 4570 Health and Social Behavior (alt F, 3 cr)</td>
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<td>HD 4590 Life Transitions Across the Life Span (F, 3 cr)</td>
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<td>HD 4770 Psychopathology in Great Works of Literature (F, 3 cr)</td>
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<td>^ PAM 2350 The U.S. Health Care System (F, 3 cr)</td>
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<td>^ PAM 3110 Pharmaceutical Management and Policy (S, 3 cr)</td>
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<td>^ PAM 3240 Risk Management and Policy (F, 3 cr)</td>
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<td>PAM 3280 Fundamentals of Population Health (F, 3 cr)</td>
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<td>PAM 3500 Contemporary Issues in Women’s Health (F 3 or 5 cr)</td>
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<td>PAM 3780 Sick Around the World? Comparing Health Care Systems Around the World (S, 3 cr)</td>
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<td>PAM 4280 Economics of Risky Health Behaviors (F, 3 cr)</td>
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<td>PAM 4370 Economics of Health Care Markets (S, 3 cr)</td>
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<td>PAM 4380 Economics of Public Health (S, 3 cr)</td>
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II.C.2. Natural Science Perspective on Health 6
   NS 2750 Human Biology and Evolution (alt F, 3 cr)
   NS 3030 Nutrition, Health and Vegetarian Diets (S, 3 cr)
   + NS 3220 Maternal and Child Nutrition (alt S, 3 cr)
   NS 3310 Nutrient Metabolism (S, 4 cr)
   ^ NS 3320 Methods in Nutritional Sciences (F, 3 cr)
   NS 3450 Introduction to Physiochemical and Biological Aspects of Food (F, 3 cr)
   NS 4130 Nutritional Genomics-Evolution and Environment (S, 2 cr)
   NS 4310 Mineral Nutrition and Chronic Disease (F, 3 cr)
   NS 3315 Nutrient Requirements and Recommendations: Biological Aspects (S, 3 cr)
   NS 4370 Nutritional Immunology and Infectious Diseases (S, 2 cr)
   NS 4410 Nutrition and Disease (F, 4 cr)
   NS 4420 Implementation of Nutrition Care (F, 3 cr)
   NS 4444 Sports Nutrition and Supplements, Concepts and Evidence (S, 3 cr)
   + NS 4750 Mechanisms Underlying Mammalian Developmental Defects (alt S, 3 cr)
   NS 2200 The Human Brain and Mind: Biological Issues in Human Development (F, 3 cr)
   HD 3200 Human Developmental Neuropsychology (S, 3 cr)
   HD 3250 Neurochemistry of Human Behavior (S, 3 cr)
   + HD 3440 Infant Behavior and Development (F, 3 cr)
   HD 3660 Affective and Social Neuroscience (S, 3 cr)
   HD 4660 Psychobiology of Temperament and Personality (F, 3 cr)
   HD 4780 Attention Deficit/Hyperactivity Disorder in Children (alt S, 3 cr)
   ^ DEA 4700 Applied Ergonomic Methods (alt S, 3 cr)
   FSAD 4390 Biomedical Materials and Devices for Human Body (S, 3 cr)
   PAM 3800 Human Sexuality (S, 4 cr)

II.C.3. Additional Credits 3

   Includes courses from either of the above categories or from the following:
   * NS 3060 Nutrition and Global Health (alt F, 3 cr)
   * NS 3150 Obesity and Regulation of Body Weight (alt S, 3 cr)
   ^ NS 3600 Epidemiology (F, 3 cr)
   ^ CHE Special Studies 4000, 4010, 4020 and 4990

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

College Requirements:

- Students must complete a minimum of 9 HUMEC credits outside of NS/HBHS. These credits are given for any Human Ecology course outside your major from Category I, II, or III. These can be taken S/U only if course is NOT used to fulfill a curriculum requirement.
- Students must complete a minimum of 43 HUMEC credits. Hum Ec credits are given in Category I (distribution), Category II (in your major) and Category III (electives).
- Biology & Society (BSOC) courses do not count as Human Ecology credit or towards the 9 HE credits outside the major.
- 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 the 9 credits of Human Ecology coursework outside the major and 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 the 57th calendar day of the semester, 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.