Global and Public Health Sciences 2021-2022

The requirements listed below pertain to all students matriculating in August 2021 and January 2022.

All of the following sections are required to be completed to graduate.

Courses in areas 1-16 must be taken for a Letter Grade.

Overall Credits (REQUIRED)		
Total: 120 credits	**Human Ecology: 43 credits**	**Human Ecology, outside the major: 9 credits (from DEA, FSAD, HD, PAM any level, or HE at the 3000/4000 level)**

1. Introductory Chemistry (4+ credits)

Choose **one** of the following:

(a) **CHEM 2070** General Chemistry I (4 cr)[1,2] AND **CHEM 2080** General Chemistry II (4 cr) (*two-course sequence required for pre-health*)

(b) **CHEM 2070** General Chemistry I (4 cr)[1,2] (*single course not adequate for pre-health*)

(c) **CHEM 1560** Introduction to General Chemistry [1] (4 cr) (*not for pre-health*)

(d) **CHEM 2150** Honors General and Inorganic Chemistry [2, 3] (4 cr) (*not for pre-health*)

[1] Students may use an AP Chemistry score of 5 to place out of CHEM 2070. However, GPHS students must take at least one semester of chemistry at Cornell—i.e., students who use AP credit toward their chemistry requirement must take an additional chemistry course (i.e., CHEM 2080, CHEM 2150, or other, but not CHEM 1560). Students interested in the pre-health track should take two semesters of chemistry at Cornell.

[2] Students who take CHEM 2070 forfeit AP credit. Students who take CHEM 2150 may keep AP credit.

[3] Students should only select option (d) if they are very strong in chemistry and are not considering a pre-health (e.g. pre-med) track.

2. Introductory Biology (8 credits)

Choose **one** of the following labs:

(a) **BIOG 1500** Investigative Lab (2 cr) **OR**

(b) **BIOSM 1500** Investigative Marine Biology Lab (3 cr)

AND choose **two out of the three** lecture options[1]:

(a) **BIOMG 1350** Cell and Development (3 cr)

(b) **BIOG 1440** Comparative Physiology (3 cr) **OR**[2]
BIOG 1445 Comparative Physiology (*autotutorial*) (4cr)

(c) **BIOEE 1610** Ecology and the Environment (3cr) **OR**[2]
BIOEE 1780 Evolution and Diversity (3 cr)

[1] Students may use an AP Biology score of 5 or IB HL Biology score of 7 to place out of one introductory biology lecture. Pre-health (e.g. pre-med) students should not use AP scores to fulfill biology requirements.

[2] Cannot take both courses within one category to fulfill this requirement

3. Organic Chemistry Lecture (3+ credits)

Choose **one** of the following:

(a) **CHEM 1570** Elementary Organic Chemistry (S only, 3 cr, *not for pre-health*) **OR**

(b) **CHEM 3530** Principles of Organic Chemistry (F only, 4 cr) **OR**

(c) **CHEM 3570** Organic Chemistry for the Life Sciences I (3 cr) **AND CHEM 3580** Organic Chemistry for the Life Sciences II (3 cr) **OR**[1]

(d) **CHEM 3590** Honors Organic Chemistry I (4 cr) **AND CHEM 3600** Honors Organic Chemistry II (4 cr)[2]

[1] Students interested in pre-health tracks should take a two-course sequence of organic chemistry lectures (option c or d above).

[2] Students who select options c or d above must take both courses in sequence; one course alone will not fulfill requirement).

4. Physiology (3-4 credits)

Choose **one** of the following:

(a) **NS 3410** Human Anatomy and Physiology (4 cr) **OR**[1]

(b) [**BIOG 1440** Comparative Physiology (3 cr) **OR**
BIOG 1445 Comparative Physiology (*autotutorial*) (4 cr)][2] **OR**

(c) **NS 1150** Nutrition, Health, and Society (3 cr)

(d) **NS 1220** Nutrition and the Life Cycle (3 cr)

[1] Pre-health students might also consider taking NS 3420 Human Anatomy and Physiology Lab (S, 2 cr).

[2] Can only be used to fulfill physiology requirement if not used to fulfill introductory biology requirement.

5. Biochemistry (4-6 credits)

Choose **one** of the following*:

(a) **NS 3200** Introduction to Human Biochemistry (4 cr)
(b) **BIOMG 3300** Principles of Biochemistry (4 cr)
(c) **BIOMG 3310** Principles of Biochemistry: Proteins and Metabolism (3 cr) AND **BIOMG 3320** Principles of Biochemistry: Molecular Biology (2 cr)
(d) **BIOMG 3310** Principles of Biochemistry: Proteins and Metabolism (3 cr) AND **BIOMI 2900** General Microbiology (3 cr)
(e) **BIOMG 3330** Principles of Biochemistry: Proteins, Metabolism, and Molecular Biology (4 cr)
(f) **BIOMG 3350** Principles of Biochemistry: Proteins, Metabolism, and Molecular Biology (4 cr)

** Students who take only one semester of introductory chemistry should talk with faculty advisors and biochemistry instructors as early as possible to determine which biochemistry course is best for them and how they may access resources for the best chance of success.*

6. Global & Public Health Core Courses (14 credits)

NS 1600 Introduction to Public Health (3 cr)
NS 2060 Preparation for Engaged Learning (2 cr)
NS 2600 Introduction to Global Health (3 cr)
NS 3600 Epidemiology (3 cr)
NS 4600 Explorations in Global and Public Health (3 cr)

7. Supervised Experiential Learning in Global & Public Health (variable credits)

Approval required. May be completed anytime from spring semester sophomore year onward.
Must be largely completed before the fall semester of senior year.
This experience may be obtained through one of several options, including (but not limited to):

- Global Health Summer Programs (India - NS 4060, Tanzania - NS 4630, Zambia - NS 4631)
- Cornell in Washington (NS 4997)
- Public Health Research and Internship (NS 4060)
- Cornell Cooperative Extension - Tompkins County and others (NS 4060)
- Weill Cornell Clinical & Translational Science Center (NS 4060)
- Study abroad programs with a public health focus/internship (NS 4060)

8. Social & Behavioral Health Selective (3-4 credits)

Course should cover some aspect of public health (including nutrition) from a social and/or behavioral health perspective. More than half of the course content must be devoted to consideration of issues of public health from a social science perspective (e.g. sociology, anthropology, psychology, economics, communication, and other social science disciplines). See the Requirements for GPHS majors in CHE for regular updates to course options and information; new options are available to all class years.

Choose **one** course from the following options:

NS 2450 Social Science Perspectives on Food and Nutrition (3 cr)
ANTHR 2021, BSOC / FGSS / LGBT / STS 2841 Viruses–Humans–Viral Politics (Social History and Cultural Politics of HIV & AIDS) (4 cr)
ANTHR 2468 Medicine, Culture, and Society (3 cr)
COMM 4760 Population Health Communication (3 cr)
DSOC / LSP 2200 Sociology of Health and Ethnic Minorities (3 cr)
DSOC 3020 Political Ecologies of Health (3 cr)
PAM 3280 / DSOC 3280 Fundamentals of Population Health (3 cr)
PAM 4280 / ECON 3710 The Economics of Risky Health Behaviors (3 cr)
SOC 4120 Health and Social Context (4 cr)

9. Biological Aspects of Public Health Selective (3-4 credits)

Courses should cover some aspect of public health (including nutrition) from a biological perspective. More than half of the course content must be devoted to consideration of issues of public health from a biological perspective (e.g. biochemistry, molecular biology, physiology, neuroscience, and other biological sciences disciplines). See the Requirements for GPHS majors in CHE for regular updates to course options and information; new options are available to all class years.

Choose **one** course from the following options:

NS 3030 Nutrition, Health and Vegetarian Diets (3 cr)
NS 3060 Nutrition and Global Health (3 cr)
NS 3150 Obesity and the Regulation of Body Weight (3 cr)
NS 4200 Diet and the Microbiome (3 cr)
NS 4300 Proteins, Transcripts, and Metabolism: Big Data in Molecular Nutrition (3 cr)
NS 4410 Nutrition and Disease (4 cr)

BIOMG 4390 Molecular Basis of Disease (3 cr)
BIOMG 4870 Human Genomics (3 cr)
BIOMI 2600 Microbiology of Human Contagious Diseases (3 cr)
BIOMI 2950 Biology of Infectious Disease: From Molecules to Ecosystems (3 cr)
BIOMI 3210 Human Microbes and Health (3 cr)
PLBIO 2100 Medical Ethnobotany (3 cr)

10. Environmental Health Selective (3-4 credits)

Courses should cover some aspect of public health (including nutrition) from an environmental perspective. More than half of the course content must be devoted to consideration of issues of public health from an environmental perspective (e.g. entomology, design and environmental analysis, microbiology, and other related disciplines). See the Requirements for GPHS majors in CHE for regular updates to course options and information; new options are available to all class years.

Choose **one** course from the following options:

DEA 2700 Healthy Places: Design, Planning and Public Health (3 cr)
DSOC 3020 Political Ecologies of Health (3 cr)
DSOC 3400 Agriculture, Food Systems and Society (3 cr)
BIOMI 2500 Public Health Microbiology (3 cr)
BIOMI 2950 Biology of Infectious Disease: From Molecules to Ecosystems (3 cr)
BIOMI 4310 / **BIOMS 4310** Medical Parasitology (2 cr)
CEE 5970 / **TOX 5970** Risk Analysis and Management (3 cr)
COMM 2850 / **STS 2851** Communication, Environment, Science and Health (3 cr)
ENTOM 2100 / **BSOC 2101** Plagues and People (2-3 cr)
ENTOM 3070 / **TOX 3070** Pesticides, the Environment, and Human Health (2 cr)
ENTOM 3520 Medical and Veterinary Entomology (3 cr)
FDSC 3960 Food Safety Assurance (2 cr)
PLBIO 2100 Medical Ethnobotany (3 cr)

11. Health Policy & Practice Selective (3-4 credits)

Courses should cover some aspect of public health (including nutrition) from a health policy and/or practice perspective. More than half of the course content must be devoted to consideration of issues of public health from a health policy and/or practice perspective (e.g. policy analysis and management, developmental sociology, economics, government, nutritional sciences, and other public policy and practice disciplines). See the Requirements for GPHS majors in CHE for regular updates to course options and information; new options are available to all class years.

Choose **one** course from the following options:

NS 4450 / 6450 Toward a Sustainable Global Food System: Food Policy for Developing Countries (3 cr)
NS 4500 Public Health Nutrition (3 cr)
NS 4570 / **ECON 3910** Health, Poverty and Inequality (3 cr)
NS 4800 Implementation and Impact in Global and Public Health (4 cr; *restricted to students in the Cornell in Washington program*)
AMST / **GOVT 2225, DSOC** / **ILROB** / **PAM** / **SOC 2220, PHIL 1950** Controversies about Inequality (4 cr)
ANTHR / **EDUC** / **FGSS 4458** Women, Girls and Gender in Education (4 cr)
CRP 3430 Affordable Housing Policy and Programs (3 cr)
DSOC 2050 International Development (3-4 cr)
DSOC 2090, PAM / **SOC 2208** Social Inequality (4 cr)
DSOC 3020 Political Ecologies of Health (3 cr)
DSOC 3700 / **SOC 3710** Comparative Social Inequalities (3 cr)
DSOC 4230 Gender and Health: Concepts, Data, Theories and Evidence (3 cr)
ECON 3740 / **PAM 4140** Global Health Economics and Policy (3 cr)
GOVT 3032 Politics of Public Policy in the U.S. (4 cr)
PAM 2030 Population and Public Policy (3-4 cr)
PAM 2350 The US Health Care System (3 cr)
PAM 3110 Pharmaceutical Management and Policy (3 cr)
PAM 3780 Sick Around the World? Comparing Health Care Systems Around the World (3 cr)
PAM 3870 / **5870** Economic Evaluations in Health Care (3 cr)

12. First Year Writing Seminars (6 credits)

Two first year writing seminar classes
Note: These two classes must be completed during the first two semesters at Cornell.

13. **Social Sciences** (6 credits)
    Choose **one** course in any **two** of the follow four areas:
    Anthropology
    ANTHR 1400 The Comparison of Cultures (3 cr)
    Economics
    ECON 1110 Introductory Microeconomics (3 cr) **Counts for Human Ecology credit*
    ECON 1120 Introductory Macroeconomics (3 cr) **Does not count for Human Ecology credit*
    Psychology
    HD 1150 Human Development: Infancy and Childhood (3 cr)
    HD 1170 Adolescence and Emerging Adulthood (3 cr)
    PSYCH 1101 Introduction to Psychology (3 cr)
    Sociology
    DSOC 1101 Introduction to Sociology (3 cr)
    SOC 1101 Introduction to Sociology (3 cr)

14. **Humanities** (3 credits)
    Choose any course with the Course Distribution Historical Analysis (HA), Literature and the Arts (LA), or Cultural Analysis (CA).

15. **Statistics** (4 credits)
    STSCI 2150 Introductory Statistics for Biology (4 cr)
    ** Must be taken at Cornell; AP Statistics is not accepted.*

16. **Additional Requirements** (10-12 credits)
    Any course with the Course Distribution PBS, SBA, KCM, MQR, LA, CA, or HA. Language courses may count here.
    For example, students interested in pre-health tracks or graduate study in pre-physical therapy/exercise sciences could fulfill this requirement by taking:
    CHEM 2080 General Chemistry II
    CHEM 3570 AND 3580 Organic Chemistry (full year sequence)
    CHEM 2510 Organic Chemistry Lab
    PHYS 1101 and **1102** General Physics I and II (auto-tutorial) **OR**
    PHYS 2207 and **2208** Fundamentals of Physics I and II

17. **Electives** (Variable)
    Any courses that are not taken in Areas 1-16 above, count as Electives.

18. **Physical Education Requirement** (2 courses)
    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.

19. **Swim Test Requirement**
    A successful swim test must be completed in order to graduate.

College Polices:

- **120 Overall Credits**
  - Students must complete 120 credits toward graduation.
  - A maximum of 15 credits of AP credit and in absentia credit can count towards the 120 total credits.
  - 15 credits of Study Abroad/Exchange, Cornell-In-Washington or 12 credits of Capital semester can count towards total electives.

- **43 HE Credits**
  - Students must complete a minimum of 43 HE credits.
  - HE non-departmental courses at the 2000-level and below do not count toward the 43 HE credits.
  - Students must complete 5 HE credits by the end of the freshmen year and 12 HE credits by the end of the sophomore year.

- **9 HE Credits outside the major**
  - Students must complete a minimum of 9 HE credits outside of NS. These credits are given for any Human Ecology course outside your major (except 4030). These can be taken S/U only if course is NOT used to fulfill a curriculum requirement [Areas 1-16].

- **Pass/Fail Courses [S/U]**
  - S/U grading option may NOT be used for any required course [Areas 1-16] unless it is the only grade option offered for those courses.
  - S/Us MAY be used for the 9 HE Credits outside the major and for electives in Area 17.
  - 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 maximum of 12 credits of special study course work from Human Ecology or other colleges will count towards the 120 overall credits (e.g. DNS special studies course work includes NS 4000, 4010, 4020, and 4030). Courses will be indicated on the class roster with a Component of either IND or RSC. [Additional credits can be taken but will not be applied.]
  - A maximum of 12 credits of 4000-4030 may count toward the 43 HE credit requirement.
  - A maximum of 3 credits of 4000-4020 (not including 4030) may count towards the 9 credits outside the major requirement 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.