GLOBAL HEALTH, CERTIFICATE

The undergraduate certificate in global health is a 15-credit program open to all undergraduate students at the University of Wisconsin—Madison.

All students, especially those who identify as pre-health, are familiar with the concept of health care, the idea of preventing and treating mental and physical health conditions in individuals. The certificate's coursework discusses medicine and particularly the need to improve access to care for all, but it also introduces students to the field of public health, a model for promoting health and well-being that seeks to identify and address the root causes of health problems for populations rather than for individuals.

Public health practitioners focus on preventive, population-level approaches to health promotion. For example, public health work related to substance abuse among UW—Madison students involves education and outreach to high-risk groups as well as facilitating access to treatment. Other public health researchers, government officials, nonprofit staff, and community leaders might work with entire rural communities in a developing country to improve access to clean water, or work on a global scale to try to reduce migration driven by climate change-related declines in food production.

Solutions to public health problems require expertise from many disciplines and the certificate welcomes both pre-health science students and diverse other students who are passionate about improving the well-being of humans, non-human animals, and the environment through changes in politics, economics, culture, and society in general.

Certificate students must complete credit-bearing field work but may or may not actually go abroad to do it—the "global" in "global health" refers both to our desire to achieve equity in health for all people worldwide and to the goal of studying and finding solutions to health issues that cross both geographic and socioeconomic boundaries. There are large differences or "disparities" in health and well-being between different populations in Madison and across the United States such that many students choose to study a health problem locally and make connections to the handling of the same problem in other populations and places.

The certificate is administered by the College of Agricultural and Life Sciences (CALS) and the Global Health Institute (GHI) in partnership with faculty and staff across campus.

Learn more about the program on its website (http://ghi.wisc.edu/education/undergraduate-certificate).

HOW TO GET IN

Undergraduate students from all majors on campus are encouraged to consider completing the certificate in global health.

Students may declare after completing any one of the program's three core courses. While the admission to the certificate is not competitive, students should be aware that enrollment in the core courses occurs on a first-come, first-served basis. Information about declaring the certificate can be found on the program website (http://ghi.wisc.edu/education/undergraduate-certificate/completing).

There is no guarantee that all interested students will be able to complete the certificate, but completion is most likely for students who take the program's core courses as early as possible.

ENROLLMENT IN CERTIFICATE COURSES

While interested students would ideally take at least one of the certificate's core courses as freshmen or sophomores, many students do not get into these courses until their junior or senior years. This can make planning difficult—ideal and actual scheduling options are presented below. In theory, students can complete the program's requirements in any order, but there are two important things to keep in mind:

- Many field experience options have a core course as a prerequisite.
- Whenever students are finished with the requirements of the degree/major(s), they may not extend time on campus just to complete the certificate.

The ideal timing for the program’s requirements is as follows:

- NUTR SCI/AGRONOMY/ENTOM 203 Introduction to Global Health—take fall of the freshman or sophomore year
- POP HLTH 370 Introduction to Public Health: Local to Global Perspectives and/or MED HIST/ENVIR ST 213 Global Environmental Health: An Interdisciplinary Introduction—take any spring from sophomore to senior year
- two or three elective courses—choose and complete these any time after taking one of the three core courses
- 1–3 credits of field experience—summer between junior and senior years or six months on either side of that summer

A more common timing for the program’s requirements is as follows:

- NUTR SCI/AGRONOMY/ENTOM 203 Introduction to Global Health—take fall of the junior or senior year or (when offered in a special section for juniors and seniors only) spring of one of those years
- POP HLTH 370 Introduction to Public Health: Local to Global Perspectives and/or MED HIST/ENVIR ST 213 Global Environmental Health: An Interdisciplinary Introduction—take spring of the junior or senior year
- two or three elective courses—complete at least one or two of these before getting into core courses, potentially choosing courses that meet your major and/or general education requirements.
- 1–3 credits of field experience—summer between junior and senior years or six months on either side of that summer

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<thead>
<tr>
<th>REQUIREMENTS</th>
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<tr>
<td>Code</td>
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<tr>
<td>Core Courses</td>
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<tr>
<td>NUTR SCI/AGRONOMY/ENTOM 203</td>
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<tr>
<td>MED HIST/ENVIR ST 213 or POP HLTH 370</td>
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<tr>
<td>Field Experience</td>
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Field experiences range in length from one week to one year and typically carry from one to four credits. The field experience can be completed in the US or abroad but must be completed for credit and must be approved by certificate staff. Some experiences are “preapproved” while others such as internships must be submitted for approval. Volunteering that includes clinical work is strongly discouraged and is not accepted as field experience. See the program’s field experience web page and handbook for more details.

### Electives

Select from electives list (see below) to reach a minimum of 15 credits total for the certificate.

1. Completing both of these courses is encouraged, and students who do so can count one as an elective.
2. The certificate does not support tracks or specialties but students may choose to concentrate their electives in one or more functional areas (topics of study covered in graduate programs in public health and related fields). Note that many courses span multiple functional areas but are only listed once.

Some courses listed here are “special topics” courses. These are courses whose topic changes from semester to semester and even between sections in the same semester. Sections of these courses accepted by the certificate are shown in parentheses (like this). Use of approved sections to meet the certificate’s electives requirement is fine but requires manual modification of a student’s degree audit, typically during the student’s last term on campus.

### Global Health Electives Grouped by Functional Area

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>Agronomy/Horticulture/Plant Breeding</strong></td>
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<tr>
<td>AGRONOMY 377</td>
<td>Cropping Systems of the Tropics</td>
<td>3</td>
</tr>
<tr>
<td>BOTANY/ PL PATH 123</td>
<td>Plants, Parasites, and People</td>
<td>3</td>
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<tr>
<td>BOTANY 240</td>
<td>Plants and Humans</td>
<td>3</td>
</tr>
<tr>
<td>BOTANY/AMER IND/ ANTHRO 474</td>
<td>Ethnobotany</td>
<td>3-4</td>
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<tr>
<td>HORT 350</td>
<td>Plants and Human Wellbeing</td>
<td>2</td>
</tr>
<tr>
<td>HORT 370</td>
<td>World Vegetable Crops</td>
<td>3</td>
</tr>
<tr>
<td><strong>Animal Science/Dairy Science</strong></td>
<td></td>
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</tr>
<tr>
<td>AN SCI/DY SCI 370</td>
<td>Livestock Production and Health in Agricultural Development</td>
<td>3</td>
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<tr>
<td>DY SCI/AN SCI/ FOOD SCI/ SOIL SCI 472</td>
<td>Animal Agriculture and Global Sustainable Development</td>
<td>1</td>
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<tr>
<td><strong>Community Health</strong></td>
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<tr>
<td>C&amp;E SOC/SOC 532</td>
<td>Health Care Issues for Individuals, Families and Society</td>
<td>3</td>
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<tr>
<td>C&amp;E SOC/SOC 533</td>
<td>Public Health in Rural &amp; Urban Communities</td>
<td>3</td>
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<td><strong>Environmental Health/Environmental Science/Environmental Economics</strong></td>
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<td>A A E/ENVIR ST 244</td>
<td>The Environment and the Global Economy</td>
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<td>A A E/ECON/ ENVIR ST 343</td>
<td>Environmental Economics</td>
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<td>BOTANY/ENVIR ST/ ZOOLOGY 260</td>
<td>Introductory Ecology</td>
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<td>BOTANY/F&amp;W ECOL/ ZOOLOGY 460</td>
<td>General Ecology</td>
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<tr>
<td>CIV ENGR 422</td>
<td>Elements of Public Health Engineering</td>
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<tr>
<td>CIV ENGR 423</td>
<td>Air Pollution Effects, Measurement and Control</td>
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<tr>
<td>ENVIR ST/ POP HLTH 471</td>
<td>Introduction to Environmental Health</td>
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<tr>
<td>ENVIR ST/ POP HLTH 502</td>
<td>Air Pollution and Human Health</td>
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<td>ENVIR ST/HIST SCI/ MED HIST 513</td>
<td>Environment and Health in Global Perspective</td>
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<td>SOIL SCI/ ATM OCN 132</td>
<td>Earth’s Water: Natural Science and Human Use</td>
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<tr>
<td><strong>Epidemiology</strong></td>
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<tr>
<td>ENTOM/ ZOOLOGY 371</td>
<td>Medical Entomology</td>
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<tr>
<td><strong>Exercise Science</strong></td>
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<td>KINES 353</td>
<td>Health and Physical Education in a Multicultural Society</td>
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<td>KINES 355</td>
<td>Socio-Cultural Aspects of Physical Activity</td>
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<tr>
<td><strong>Health Economics/Health Finance</strong></td>
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<tr>
<td>ECON/POP HLTH/ PUB AFFR 548</td>
<td>The Economics of Health Care</td>
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<tr>
<td><strong>Health Education/Behavioral Sciences</strong></td>
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<tr>
<td>ED POL 150</td>
<td>Education and Public Policy (Sexuality and Education; Education and Global Change)</td>
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<tr>
<td>ED POL/CURRIC 677</td>
<td>Education, Health and Sexuality: Global Perspective and Policies</td>
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<tr>
<td><strong>Health Policy</strong></td>
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<tr>
<td>POLI SCI/ INTL ST 434</td>
<td>The Politics of Human Rights</td>
<td>3-4</td>
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<tr>
<td>POLI SCI 507</td>
<td>Health Policy and Health Politics</td>
<td>3-4</td>
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<tr>
<td>SOC WORK 206</td>
<td>Introduction to Social Policy</td>
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<tr>
<td><strong>Health Promotion and Communications</strong></td>
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<tr>
<td>COM ARTS/JOURN/ LSC 617</td>
<td>Health Communication in the Information Age</td>
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<tr>
<td>LSC 515</td>
<td>Public Information Campaigns and Programs</td>
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<tr>
<td><strong>Infectious Diseases</strong></td>
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<tr>
<td>M M &amp; I 301</td>
<td>Pathogenic Bacteriology</td>
<td>2</td>
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<tr>
<td>M M &amp; I 554</td>
<td>Emerging Infectious Diseases and Bioterrorism</td>
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<tr>
<td>M M &amp; I 555</td>
<td>Vaccines: Practical Issues for a Global Society</td>
<td>3</td>
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<tr>
<td>PATH/PATH-BIO 210</td>
<td>HIV: Sex, Society and Science</td>
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<td>PATH 404</td>
<td>Pathophysiologic Principles of Human Diseases</td>
<td>3</td>
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<td>POP HLTH/ M M &amp; I 603</td>
<td>Clinical and Public Health Microbiology</td>
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<td><strong>Maternal and Child Health</strong></td>
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<td>SOC WORK 646</td>
<td>Child Abuse and Neglect</td>
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<td>Course Code</td>
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<tr>
<td>DS 501</td>
<td>Special Topics (Design Thinking for Health; Global Artisans: Pragmatic Design)</td>
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<tr>
<td>AMER IND 450</td>
<td>Issues in American Indian Studies (Dangerous Memories)</td>
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<tr>
<td>ASIAN AM 240</td>
<td>Topics in Asian American Studies (Hmong American Experiences in the US)</td>
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<td>RP &amp; SE 660</td>
<td>Special Topics (Health Promotion for Disabilities and Chronic Illness)</td>
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<tr>
<td>ANTHRO 104</td>
<td>Cultural Anthropology and Human Diversity</td>
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<tr>
<td>ANTHRO 365</td>
<td>Medical Anthropology</td>
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</tr>
<tr>
<td>C&amp;E SOC/SOC 222</td>
<td>Food, Culture, and Society</td>
<td>3</td>
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<tr>
<td>NUTR SCI 132</td>
<td>Nutrition Today (Students may count 132 OR 332, but not both)</td>
<td>3</td>
</tr>
<tr>
<td>NUTR SCI 332</td>
<td>Human Nutritional Needs (Students may count 332 OR 332, but not both)</td>
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<tr>
<td>PHM SCI 310</td>
<td>Biochemical Principles of Human and Animal Nutrition</td>
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<tr>
<td>PL PATH 311</td>
<td>Global Food Security</td>
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<tr>
<td>M M &amp; I/ENTOM/ PATH-BIO/ ZOOLOGY 350</td>
<td>Parasitology</td>
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<td>POP HLTH/C&amp;E SOC/ SOC 380</td>
<td>Contemporary Population Problems for Honors</td>
<td>3</td>
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<tr>
<td>SOC 170</td>
<td>Population Problems</td>
<td>3-4</td>
</tr>
<tr>
<td>A A E/INTL ST 373</td>
<td>Globalization, Poverty and Development</td>
<td>3</td>
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<tr>
<td>A A E/ECON 474</td>
<td>Economic Problems of Developing Areas</td>
<td>3</td>
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<tr>
<td>A A E/ECON 477</td>
<td>Agricultural and Economic Development in Africa</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;E SOC/F&amp;W ECOL/ SOC 248</td>
<td>Environment, Natural Resources, and Society</td>
<td>3</td>
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<tr>
<td>C&amp;E SOC/ENVIR ST/ SOC 540</td>
<td>Sociology of International Development, Environment, and Sustainability</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;E SOC/AMER IND/ SOC 578</td>
<td>Poverty and Place</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;E SOC/SOC 630</td>
<td>Sociology of Developing Societies/ Third World</td>
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</tr>
<tr>
<td>ECON 448</td>
<td>Human Resources and Economic Growth</td>
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<tr>
<td>HDFS/CNSR SCI 465</td>
<td>Families &amp; Poverty</td>
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<tr>
<td>INTL ST 101</td>
<td>Introduction to International Studies</td>
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<tr>
<td>INTL ST 402</td>
<td>Topics in Politics and Policy in the Global Economy (Global Poverty and Inequality)</td>
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<td>MED HIST/ PHILOS 505</td>
<td>Justice and Health Care</td>
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<tr>
<td>MED HIST/ PHILOS 515</td>
<td>Public Health Ethics</td>
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<td>MED HIST 559</td>
<td>Topics in Ethics and History of Medicine (Climate Change Ethics)</td>
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<tr>
<td>POP HLTH 504</td>
<td>Health Care Quality Improvement in Low Resource Settings</td>
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<td>SOC WORK 659</td>
<td>International Aspects of Social Work (Check with global health advisors to see which sections are acceptable in any given term)</td>
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<tr>
<td>C&amp;E SOC/SOC 222</td>
<td>Food, Culture, and Society</td>
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<tr>
<td>NUTR SCI 132</td>
<td>Nutrition Today (Students may count 132 OR 332, but not both)</td>
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<td>NUTR SCI 332</td>
<td>Human Nutritional Needs (Students may count 332 OR 332, but not both)</td>
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<tr>
<td>NUTR SCI/ BIOCHEM 510</td>
<td>Biochemical Principles of Human and Animal Nutrition</td>
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<td>PL PATH 311</td>
<td>Global Food Security</td>
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<td>M M &amp; I/ENTOM/ PATH-BIO/ ZOOLOGY 350</td>
<td>Parasitology</td>
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<td>Contemporary Population Problems for Honors</td>
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<td>SOC 170</td>
<td>Population Problems</td>
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<td>A A E/INTL ST 373</td>
<td>Globalization, Poverty and Development</td>
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<td>Agricultural and Economic Development in Africa</td>
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<td>C&amp;E SOC/F&amp;W ECOL/ SOC 248</td>
<td>Environment, Natural Resources, and Society</td>
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<td>Sociology of International Development, Environment, and Sustainability</td>
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<td>C&amp;E SOC/AMER IND/ SOC 578</td>
<td>Poverty and Place</td>
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<td>C&amp;E SOC/SOC 630</td>
<td>Sociology of Developing Societies/ Third World</td>
<td>3</td>
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<tr>
<td>NURSING/ S&amp;A PHM/ SOC WORK 105</td>
<td>Health Care Systems:</td>
<td>2</td>
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<tr>
<td>NURSING 419</td>
<td>Clinical III: Community Health Nursing Practicum (For nursing students, 419 can count for the certificate as either an elective, a field experience, or both, depending on where the credit is needed.)</td>
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<tr>
<td>NURSING 590</td>
<td>Contemporary Practices in Nursing (Nursing Leadership in Global Health Settings; Obesity Causes, Conseq &amp; Cures)</td>
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<tr>
<td>PHM SCI 310</td>
<td>Drugs and Their Actions</td>
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<tr>
<td>PHM PRAC 305</td>
<td>Consumer Self-Care and Over-the-Counter Drugs</td>
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<tr>
<td>MED HIST/ HIST SCI 509</td>
<td>The Development of Public Health in America</td>
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<tr>
<td>MED HIST/HIST SCI/ POP HLTH 553</td>
<td>International Health and Global Society</td>
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### Social Determinants of Health

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<tr>
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<tr>
<td>HISTORY/HIST SCI/ MED HIST 504</td>
<td>Society and Health Care in American History</td>
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<tr>
<td>MED HIST/HIST SCI/ HISTORY 564</td>
<td>Disease, Medicine and Public Health in the History of Latin America and the Caribbean</td>
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<tr>
<td>RELIG ST 101</td>
<td>Religion in Global Perspective</td>
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<tr>
<td>RELIG ST 102</td>
<td>Exploring Religion in Sickness and Health</td>
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<tr>
<td>S&amp;A PHM 490</td>
<td>Selected Topics in Social and Administrative Pharmacy (Health Equity and Social Justice)</td>
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<td>SOC 531</td>
<td>Sociology of Medicine</td>
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### Toxicology

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<tr>
<td>F&amp;W ECOL/ AGRONOMY/ ENTOM/ M&amp;ENVTOX 632</td>
<td>Ecotoxicology: The Chemical Players</td>
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<tr>
<td>F&amp;W ECOL/ AGRONOMY/ ENTOM/ M&amp;ENVTOX 633</td>
<td>Ecotoxicology: Impacts on Individuals</td>
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<tr>
<td>F&amp;W ECOL/ AGRONOMY/ ENTOM/ M&amp;ENVTOX 634</td>
<td>Ecotoxicology: Impacts on Populations, Communities and Ecosystems</td>
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### Veterinary Public Health

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<tr>
<td>F&amp;W ECOL/ SURG SCI 548</td>
<td>Diseases of Wildlife</td>
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<tr>
<td>GEN&amp;WS/ PSYCH 522</td>
<td>Psychology of Women and Gender</td>
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<tr>
<td>GEN&amp;WS/ INTL ST 535</td>
<td>Women's Global Health and Human Rights</td>
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</tbody>
</table>

### Footnotes related to electives

1. Functional areas/topics for study commonly used in graduate programs in public health and related fields:
   - **Aging**—Focuses on solutions to aging-related challenges, promoting healthy aging, longevity and disability prevention, and the relationship between health risk factors and aging.
   - **Agriculture/Horticulture/Plant Breeding**—The management of crops, soils, fertilizers, water, and other agricultural inputs and the assessment of the degree to which different practices meet goals for productivity, efficiency, human and animal nutrition, and environmental impact.
   - **Animal Science/Dairy Science**—Study of the management of domesticated animals, including assessment of the degree to which different practices meet goals for productivity, efficiency, humane treatment, and environmental impact.
   - **Biomedical Laboratory Sciences**—Focuses on laboratory techniques in areas such as microbiology, immunology, virology, molecular biology, as applied to research on public health issues.
   - **Biostatistics**—Study of theories and techniques for collecting, analyzing, and interpreting quantitative data relevant to public health issues.
   - **Chronic Disease**—Focuses on the etiology and prevention of chronic disease, while addressing interventions such as policy change, education, and various services to reduce chronic disease morbidity and mortality at the level of community and individual behavior.
   - **Clinical Research**—Use of statistical methods in the design and execution of studies involving a person or group of persons and addressing public health problems.
   - **Communication Sciences and Disorders**—Focuses on the practice of public health as applied to disorders of speech production/perception, hearing, and language organization.
   - **Community Health**—Focuses on work with defined communities to identify and resolve public health problems and to promote well-being.
   - **Dental Public Health**—The science of preventing dental diseases and promoting dental health on a community basis, including dental education of the public, applied dental research, and administration of group dental care programs.
   - **Environmental Health/Environmental Science/Environmental Economics**—Study of assessment, control, prevention, and cost implications of factors in the environment that can adversely affect the health of present and future generations.
   - **Epidemiology**—Application of the scientific method to the study of disease in populations for the purpose of prevention and control.
   - **Exercise Science**—The theory-based, research-led study of the impact of physical exercise on the body and health.
   - **Food Safety**—Focuses on identification and decreasing the risk to the public from foodborne illness by surveillance, monitoring occurrences of bacterial pathogens, and response to public complaints.
   - **Genetics**—Explores the impact of genes on public health and disease prevention, including how genes and the environment interact to affect causes, incidence and prevalence of diseases.
   - **Health Administration**—Study of the skills, values, and conceptual abilities needed for management roles in health care, health policy, and public health.
   - **Health Economics/Health Finance**—Study of the composition, use, and impact of finances that fund all components of the public health system. This includes the pricing, production, and distribution of health services.
   - **Health Education/Behavioral Sciences**—Interdisciplinary study focusing on how health education can affect behavior and lifestyle decisions that have an impact on public health.
   - **Health Law**—The impact of law on the furnishing and administration of health services, and study of legal structures that define government’s authority in the interest of public health.
   - **Health Promotion and Communications**—Organized response to promote health and prevent illness, injury, and disability using communication mediums.
   - **Health Services Research**—Research on the cost, access, and quality of the health care system, and on policy issues affecting the organization, financing, and delivery of health care services.
   - **Immunology**—The relationship between body systems, pathogens, and immunity; the development and function of immune cells, and the mechanisms of disease and immunology.
   - **Infectious Diseases**—Study of illnesses resulting from the transmission of microbial agents through diverse pathogens, disease surveillance, outbreak investigation, and the prevention of infectious diseases.
   - **Informatics**—Interdisciplinary science dealing with the structure, acquisition, and use of biomedical information, ranging from theoretical model contraction to building and evaluating applied systems.
LEARNING OUTCOMES

Completing an Undergraduate Certificate in Global Health gives you tools to operate as a global citizen. Through classroom-based courses and a field experience, you will learn to:

• discuss the global burden of disease, threats to well-being in varied settings, and the root causes of these conditions;
• understand how practitioners from a variety of disciplines (health care, education, agriculture, engineering, nutrition, etc.) collaborate with local partners to improve health;
• reflect on your values, ethics and assumptions, so you can practice respectful and mutual engagement with other cultures, collaborators and organizations;
• communicate effectively with other public health professionals and with community representatives about measures being taken to address key health concerns in their communities both within and outside the United States; and
• use your domestic and international health experience to become informed citizens in an increasingly interconnected world.

ADVISING AND CAREERS

Details about advising for the certificate are available on the program’s advising page (http://ghi.wisc.edu/education/undergraduate-certificate/advising).

The certificate maintains a handbook (http://ghi.wisc.edu/education/undergraduate-certificate/handbook) with lengthy sections about careers, including suggested global health-related work opportunities to pursue in students’ first one to two years after college.
Please see the Certificate in Global Health website (http://ghi.wisc.edu/education/undergraduate-certificate/#Who) for a list of certificate staff and ways to contact them.