Rice 360°: Institute for Global Health collaborates with multiple departments to offer students a minor in Global Health Technologies (GLHT), a unique, multidisciplinary program to educate and train students to reach beyond traditional disciplinary and geographic boundaries to understand, address, and solve global health disparities. With complementary contributions from the humanities, social science, policy, bioscience, and engineering programs at Rice, the GLHT minor prepares students to integrate diverse perspectives as they develop solutions to the complex problems of global health, using the formal approach of the engineering design process.

The minor is open to Rice undergraduate students from all disciplines and requires completion of seven courses, including five core courses, and two electives. Students begin the minor by taking GLHT 201, which provides an overview of scientific, economic, and policy issues associated with advanced global health technologies, followed by an introductory design course, GLHT 360. The subsequent core course is selected by the student from a collection of approved courses. The final two courses include GLHT 451 and GLHT 452, which are taken in a two-semester sequence in which multidisciplinary teams of undergraduate students work together to design and implement solutions to existing global health challenges in the developing world. Elective courses include a range of subjects. Courses such as Immunology, Health Economics, Medical Chemistry, or Health Policy, provide students experience in engineering and social sciences as applied to international health challenges.

Throughout the program, GLHT students benefit from receiving guidance and mentorship from Rice faculty and graduate students as well as from the Texas Medical Center, partner organizations in developing countries, and clinicians to design low-cost, effective health technologies.

**Minor**


Global Health Technologies does not currently offer an academic program at the graduate level.
GLHT 392 - NEEDS FINDING & DEVELOPMENT IN BIOENGINEERING
Short Title: NEEDS FINDING & DEV IN BIOE
Department: Global Health Technologies
Grade Mode: Standard Letter
Course Type: Lecture/Laboratory
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: Students in this course will learn and develop the engineering skill of needs finding in the field of bioengineering focused on designing for disabilities. Students will work in groups with patients with disabilities to identify daily needs and develop design criteria to meet those needs including preliminary prototype development. Instructor Permission Required. Cross-list: BIOE 392.
GLHT 448 - TECHNOLOGY COMMERCIALIZATION IN DEVELOPING COUNTRIES FOR ENGINEERING
Short Title: TECH COMM IN DEV CTY FOR ENGS
Department: Global Health Technologies
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: This is a unique opportunity for engineering students to 1) collaborate with graduate business students to design and disseminate global health technologies; 2) learn about the sustainable distribution of health products in developing countries; 3) have a once-in-a-lifetime trip to Africa that tourism can never duplicate; and 4) help the poor. Working alongside advanced MBA students, engineering students will apply their skills to developing business plans for student-designed global health technologies that may influence dissemination and business plans. Interested students should email beyondtraditionalborders@rice.edu for an application. Instructor Permission Required.

GLHT 449 - TROUBLESHOOTING WORKSHOP FOR CLINICALLY-RELEVANT BIOMEDICAL EQUIPMENT
Short Title: MED BIOENGINEERING WORKSHOP
Department: Global Health Technologies
Grade Mode: Standard Letter
Course Type: Lecture/Laboratory
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): ELEC 243
Description: Bioengineering course in the troubleshooting, repair, and maintenance of standard biomedical equipment used in hospitals in the developed and developing worlds. Cross-list: BIOE 449. Repeatable for Credit.

GLHT 451 - GLOBAL HEALTH DESIGN CHALLENGES I
Short Title: GLOBAL HEALTH DESIGN I
Department: Global Health Technologies
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): GLHT 201 and (BIOE 360 or GLHT 360) and (GLHT 363 or BIOS 363 or PSYC 480 or SOCI 345)
Description: Students in this course will work on design projects to address global health disparities. Students will work in teams and partner with bioengineering students to develop solutions to particular problems in delivering healthcare in the developing world. Students must take GLHT 452 in the spring semester to complete their projects. Instructor Permission Required.
Course URL: www.btb.rice.edu

GLHT 452 - GLOBAL HEALTH DESIGN CHALLENGES II
Short Title: GLOBAL HEALTH DESIGN II
Department: Global Health Technologies
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): GLHT 451
Description: Students in this course will work on design projects to address global health disparities. Students will work in teams and partner with bioengineering students to develop solutions to particular problems in delivering healthcare in the developing world. Students must have taken GLHT 451 in the fall semester to initiate their projects.
Course URL: www.btb.rice.edu

GLHT 464 - SOCIAL ENTREPRENEURSHIP
Short Title: SOCIAL ENTREPRENEURSHIP
Department: Global Health Technologies
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: This course introduces students to contemporary concepts, debates, and contexts necessary for analyzing and engaging in the sphere of social entrepreneurship. The course has five distinct parts: 1. social entrepreneurship overview; 2. social context and stakeholders; 3. private sector roles and motivations; 4. organizational forms and collaborations; and 5. measurement and impacts (private and public). Students will be exposed to various forms of social entrepreneurship, such as base of the pyramid/microenterprises, private-public partnerships, private-governmental partnerships, voluntary social codes, corporate social responsibility, and ethical consumerism. From this introductory foundation, students will undertake a social entrepreneurship project about a contemporary social problem in Houston: the urban food desert (https://apps.ams.usda.gov/fooddeserts/fooddeserts.aspx). Students will learn a range of research methods (e.g. quantitative data analysis, ethnography, focus groups). With these research tools and building from perspectives offered by earlier by readings, guest speakers, and field visits, students will problematize, propose, develop, and present competing solutions to the social problem during the final course meetings. Cross-list: BUSI 464, SOSC 464.

GLHT 510 - SEMINAR IN TROPICAL MEDICINE
Short Title: SEMINAR IN TROPICAL MEDICINE
Department: Global Health Technologies
Grade Mode: Satisfactory/Unsatisfactory
Course Type: Seminar
Credit Hour: 1
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: 8 week lecture series on topics in global health. The theme for this offering is one health; integrating efforts to obtain optimal health for humans, animals, and the environment. Offered in conjunction with the new National School of Tropical Medicine, the course will feature lectures by various experts on the public health issues most pressing in poor populations in the world today. Course open to all undergraduates and graduate students. Cross-list: BIOE 510. Repeatable for Credit.
Description and Code Legend

Note: Internally, the university uses the following descriptions, codes, and abbreviations for this academic program. The following is a quick reference:

Course Catalog/Schedule
  • Course offerings/subject code: GLHT

Program Description and Code
  • Global Health Technologies: GLHT

Undergraduate Minor Description and Code
  • Minor in Global Health Technologies: GLHT