Rice 360 Institute for Global Health Technologies 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, GLHT 451 and GLHT 452, 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 low-resource settings. 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 partner organizations and clinicians in the Texas Medical Center and in low-resource settings, to design robust, low-cost, effective health technologies.

Minor


Global Health Technologies does not currently offer an academic program at the graduate level.

**Director and Advisor**

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For Rice University degree-granting programs:

To view the list of official course offerings, please see Rice's Course Catalog [https://courses.rice.edu/admweb/ISWKSCAT.cat?p_action=cata]

To view the most recent semester's course schedule, please see Rice's Course Schedule [https://courses.rice.edu/admweb/ISWKSCAT.cat]

**Global Health Technologies (GLHT)**

GLHT 201 - INTRODUCTION TO GLOBAL HEALTH

**Short Title:** INTRO TO GLOBAL HEALTH

**Department:** Global Health Technologies

**Grade Mode:** Standard Letter

**Course Type:** Lecture

**Distribution Group:** Distribution Group III

**Credit Hours:** 3

**Restrictions:** Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.

**Course Level:** Undergraduate Lower-Level

**Description:** This course provides an overview of contemporary challenges and advances to improve human health. The course opens with an introduction to the epidemiology and physiology of the major human health problems throughout the world. With this introduction, we examine medical technologies to prevent infection, detect cancer and treat heart disease. The course is designed for non-engineering / non-science majors.
GLHT 238 - SPECIAL TOPICS
Short Title: SPECIAL TOPICS
Department: Global Health Technologies
Grade Mode: Standard Letter
Course Type: Internship/Practicum, Laboratory, Lecture, Seminar, Independent Study
Credit Hours: 1-4
Restrictions: Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.
Course Level: Undergraduate Lower-Level
Description: Topics and credit hours vary each semester. Contact department for current semester's topic(s). Repeatable for Credit.

GLHT 392 - NEEDS FINDING AND 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: Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.
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: Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.  
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: Laboratory  
Credit Hour: 1  
Restrictions: Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.  
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: Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.  
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 (http://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: Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.  
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 (http://www.btb.rice.edu)

GLHT 454 - SOCIAL ENTREPRENEURSHIP  
Short Title: SOCIAL ENTREPRENEURSHIP  
Department: Global Health Technologies  
Grade Mode: Standard Letter  
Course Type: Seminar  
Credit Hours: 3  
Restrictions: Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.  
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 four distinct parts: social context; organizational forms and collaborations; private sector roles; and measurement and impacts. Various aspects 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 will be covered. From this foundation, students will undertake a social entrepreneurship project about a contemporary social problem in Houston: food insecurity and food deserts. 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.
GLHT 677 - SPECIAL TOPICS
Short Title: SPECIAL TOPICS
Department: Global Health Technologies
Grade Mode: Standard Letter
Course Type: Internship/Practicum, Laboratory, Lecture, Seminar, Independent Study
Credit Hours: 1-4
Restrictions: Enrollment is limited to Graduate or Visiting Graduate level students.
Course Level: Graduate
Description: Topics and credit hours vary each semester. Contact department for current semester's topic(s). 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

Department (or Program) Description and Code
- Global Health Technologies: GLHT

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

CIP Code and Description
- GLHT Minor. CIP Code/Title: 14.0501 - Bioengineering and Biomedical Engineering

1 Classification of Instructional Programs (CIP) 2020 Codes and Descriptions from the National Center for Education Statistics: https://nces.ed.gov/ipeds/cipcode/