HT - HEALTH TECHNOLOGY

HT Class Schedule (https://courses.illinois.edu/schedule/DEFAULT/DEFAULT/HT/)

Courses

HT 501 Understanding Users of Health Technology credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/HT/501/)
The purpose of this course is to provide a broad overview of human characteristics related to health technology. Topics will include physical (e.g., anthropometry, biomechanics); sensory (e.g., vision, hearing), cognitive (e.g., learning capabilities, memory limitations); attitudinal (e.g., technology acceptance, behavior change), socioemotional (e.g., personality, motivation), and organizational (e.g., workplace policies, culture) characteristics. Students will learn to apply theories of human behavior related to health technology use such as behavior change, reasoned action, self- determination, person-environment fit to guide design and deployment of health technology. Prerequisite: Priority is given to Health Technology graduate students. Other students please contact the instructor.

HT 502 Human Factors Methods for Health Technology credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/HT/502/)
The purpose of this course is to introduce students to the basic tenets of human factors methods to enable successful user-centered design of healthcare technologies. Students will learn about socio-technical systems and develop an understanding of interactions among humans and other elements of a system. Students will acquire skills to apply theory, principles, data, and methods to design that will optimize human well-being and overall system performance. Students will learn how to find information to guide design through literature review, standards evaluation, and comparative assessments. Prerequisite: Priority will be given to Health Technology graduate students. Other students please contact the instructor.

HT 503 Hardware Engineering for Health Technology credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/HT/503/)
In this course, students will explore the role of hardware in developing health technologies. Students will understand how various health technologies are developed and how they operate. HT 503 surveys hardware-engineering topics for health technology and will include exposure to and initial examination of topics. Topics may include: Sensors and Actuators in Healthcare; Common Prototyping platforms (Arduino, Raspberry Pi, Jetson Nano); Robot Operating System (ROS) Platforms; Cameras, LIDARs, Motion-Detection Systems (Microsoft Kinect, etc); Haptic Sensors; Dynamics of Wheeled Personal Transport Systems (Wheelchairs, etc.); Integrative Final Course-Project. Although there is not a traditional lab associated with this class, the course will include lectures, discussion, and hands-on activity based projects. Registration priority will be given to Health Technology graduate students. Other students please contact the instructor.

HT 504 Software Engineering for Health Technology credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/HT/504/)
In this course, students will be introduced to aspects of software engineering to become familiar with rapid prototyping software, programming languages, and app development tools. HT 504 surveys software engineering topics for health technology and will include exposure to and initial examination of topics. Topics may include: Integrated Development Environments (IDEs) for Android/iPhone applications; Virtual Reality (VR) Environments; Basics of AWS-Lambda functions for voice-applications; Software for Analytics and Data-analytics overview; Software for Machine-Learning; MATLAB, SIMULINK and associated packages; User Interface Compilers (UIC); JAVA; PYTHON; MATLAB; ROS; Integrative Final Course-Project. Although there is not a traditional lab associated with this class, the course will include lectures, discussion, and hands-on activity based projects. Registration priority will be given to Health Technology graduate students. Other students please contact instructor.

HT 510 Health Technology Capstone Orientation credit: 1 Hour. (https://courses.illinois.edu/schedule/terms/HT/510/)
In this course, students will be exposed to a variety of industry, community organization, government, and academic environments with health technology projects/challenges needing solutions. Guest speakers will acquaint students with their unique needs to match students with community /industry/ government/ academic partners. Students will explore possible Capstone Project topics and will decide on their capstone project by the end of the semester. HT 510 prepares students and is a prerequisite of HT 511. Prerequisite: Restricted to majors only.

HT 511 Health Technology Capstone Development credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/HT/511/)
In this course students will be introduced to topics critical to their success in developing their Capstone Project in the area of health technology. These topics include: ethics and IRB, government regulations and policies in devices, and design thinking. Students will finalize the details of their Capstone Project topic, connect with community/ industry/ government/ academia, and identify a faculty mentor for their project. HT 511 prepares students and is a prerequisite for HT 512. Prerequisite: HT 510. Restricted to majors only.

HT 512 Health Technology Capstone Implementation credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/HT/512/)
In this course, students will engage in health technology design activities to develop solutions to projects provided by industry, government, or community partners. Students will incorporate human factors, design thinking, and engineering principles to develop their projects. The course is designed to provide students with capstone project design experiences and professional insights to prepare them for work in the broad field of health technology. Students are encouraged to share their experiences with fellow students and learn from each other. Prerequisite: HT 511 and completion of an affiliation agreement. Restricted to majors only.

HT 594 Special Topics in Health Technology credit: 1 to 4 Hours. (https://courses.illinois.edu/schedule/terms/HT/594/)
Lecture course in topics of current interest in Health Technology; specific subject/topic will be announced in the Class Schedule. May be repeated up to 8 hours in the same semester to a maximum of 12 hours in subsequent semesters, if topics vary.