HEALTH SCIENCES AND TECHNOLOGY (HST)

Summer Session Representative
Traci Anderson (*tanderso@mit.edu?subject=Summer Session*)
Room E25-518
617-253-7470

A select number of subjects are offered but may be restricted to students enrolled in HST programs.

Current MIT students can take arranged-unit subjects such as UROP, Special Studies, Research, Internship, Co-op, Independent Study, Thesis Preparation, or Thesis during the Summer Session by prior arrangement with a faculty member.

The following pre-thesis research subjects have subsidized tuition:

- HST.016/HST.017 Artificial Intelligence in Health Care I
- HST.190/HST.191 Introduction to Biostatistics
- HST.198 Independent Study in Health Sciences and Technology
- HST.201 Introduction to Clinical Medicine and Medical Engineering I
- HST.202 Introduction to Clinical Medicine and Medical Engineering II
- HST.240 Translational Medicine Preceptorship
- HST.599 Research in Health Sciences and Technology

See Tuition (*https://catalog.mit.edu/summer/tuition-financial-aid*) for details of the policy concerning these subjects.

IMPORTANT NOTES regarding preclinical subjects (HST.011-HST.200-HST.200):*
*Students not enrolled in an HST program are limited to two HST preclinical courses and must provide justification for enrolling in these courses. This action must be approved by the course director and the student's advisor. These subjects are scheduled according to the Harvard Medical School academic calendar, which differs from the MIT calendar. Students whose graduation depends upon completing one or more of these subjects should take particular care regarding the schedule. * HST.163 and HST.198 are NOT included in the two-course limit.*

HST.016 Artificial Intelligence in Health Care I
Subject meets with HST.017
Prereq: Permission of instructor
G (Summer)
2-0-4 units
08/12/2025–09/04/2025, T, Th 9:00 AM - 12:00 PM, Harvard Medical - MEC 227

Introduces fundamental concepts at the core of artificial intelligence (AI), as applied to health care problems. Didactic lectures, problem sets, and review/analyses of seminal papers in the field. Specific topics include: deep learning for clinical risk stratification, explaining complex machine learning models, bias and fairness in clinical machine learning, large language models, and Generative Pretrained Transformers (GPT models). No background in AI or machine learning is required. Only HST students may register under HST.016, which is graded P/D/F.
Summer: C. Stultz

HST.017 Artificial Intelligence in Health Care I
Subject meets with HST.016
Prereq: Permission of instructor
G (Summer)
2-0-4 units
08/12/2025–09/04/2025, T, Th 9:00 AM - 12:00 PM, Harvard Medical - MEC 227

Introduces fundamental concepts at the core of artificial intelligence (AI), as applied to health care problems. Didactic lectures, problem sets, and review/analyses of seminal papers in the field. Specific topics include: deep learning for clinical risk stratification, explaining complex machine learning models, bias and fairness in clinical machine learning, large language models, and Generative Pretrained Transformers (GPT models). No background in AI or machine learning is required. Only HST students may register under HST.016, which is graded P/D/F.
Summer: C. Stultz

HST.191 Introduction to Biostatistics
Subject meets with HST.190
Prereq: Calculus II (GIR)
G (Summer)
3-0-3 units
08/11/2025–09/05/2025, M, W, F 9:00 AM - 12:00 PM, Harvard Medical - MEC 209

Provides training in the use of statistics to comprehend, reason about, and communicate findings from the biomedical sciences, with an emphasis on critical reading of studies published in the literature. Considers assessment of the importance of chance in the interpretation of experimental data from randomized studies and clinical trials. Topics surveyed include basic probability theory; approximate and exact inferential methods such as chi-squared and t-tests, ANOVA, and their permutation-based analogues; linear and generalized linear regression models; survival analysis; causal inference; and statistical data analysis using high-level programming languages such as R.
Summer: N. Hejazi

HST.201 Introduction to Clinical Medicine and Medical Engineering I
Prereq: Permission of instructor
G (Summer)
0-20-0 units
05/27/2025–07/03/2025, M, T, W, Th, F, West Roxbury VA Hospital

Develop skills in patient interviewing and physical examination; become proficient at organizing and communicating clinical information in both written and oral forms; begin integrating history, physical, and laboratory data with pathophysiologic principles; and become familiar with the clinical decision-making process and broad economic, ethical, and sociological issues involved in patient care. There are two sections: one at Mount Auburn Hospital and one at West Roxbury VA Hospital, subsequent registration into HST.202 must be continued at the same hospital as HST.201.
Summer: C. Stultz, J. Strymish

HST.202 Introduction to Clinical Medicine and Medical Engineering II
Prereq: HST.201
G (Fall, IAP, Spring, Summer)
0-20-0 units
Schedule individually arranged, West Roxbury VA Hospital

Strengthens the skills developed in HST.201 through a six-week clerkship in medicine at a Harvard-affiliated teaching hospital. Students serve as full-time members of a ward team and participate in longitudinal patient care. In addition, students participate in regularly scheduled teaching conferences focused on principles of patient management.
Summer: C. Stultz, J. Strymish

HST.240 Translational Medicine Preceptorship
Prereq: HST.035
G (Fall, Spring, Summer)
0-12-0 units
Schedule individually arranged, Boston-area hospitals

Individually designed preceptorship joins together scientific research and clinical medicine. Students devote approximately half of their time to clinical experiences, and the remaining part to scholarly work in basic or clinical science. The two might run concomitantly or in series. Follow a clinical preceptor's daily activity, including aspects of patient care, attending rounds, conferences, and seminars. Research involves formal investigation of a focused and directed issue related to selected clinical area. Final paper required.
Summer: E. Edelman