ME.600 (HEALTH SCIENCES INFORMATICS)

ME.600.699. Health Sciences Informatics Elective. 0 Credits.
For Medical Students only. Specialized Topics in Health Sciences Informatics. Refer to Medical Student Electives Book located at https://www.hopkinsmedicine.org/som/students/academics/electives.html.

ME.600.702. HIS Knowledge Engineering and Decision Support. 0 Credits.

ME.600.705. Health Sciences Informatics Security, Confidentiality And Privacy. 0 Credits.

ME.600.712. Data Structures and Algorithms in Informatics. 3 Credits.

ME.600.713. Clinical Software Engineering. 3 Credits.

ME.600.717. Authoring Effective Teaching Cases in the Simulation EMR Environment. 1 Credit.
This course covers the complexities of designing and deploying high fidelity patient cases in the electronic medical record (EMR) environment. Students will be introduced to the back-end architecture of the training environment as well as key terminology associated with the patient build process. Opportunities will be provided to navigate the simulation EMR from the perspective of a variety of different clinical and operational end-users. Students will gain experience populating standard templates with essential data elements based on pre-existing paper based clinical vignettes.

ME.600.722. Data Abstraction for the JH CROWN Clinical Registry: Applications of Clinical Informatics in Addressing Novel Infectious Diseases. 1 Credit.
This research elective is intended for graduate students with a clinical background who have an interest in the applications of natural language processing (NLP) techniques in addressing novel infectious disease outbreaks. Students will have an opportunity to perform chart abstraction and unstructured data annotation. They will work alongside clinical researchers, data analysts, and text mining experts to gain experience in the real-world application of creating supervised training sets for machine learning algorithms.

ME.600.801. Writing the Research Paper. 0 Credits.

ME.600.805. Health Sciences Informatics Technology Practicum. 4 Credits.
A practical experience supervised by Hopkins faculty that enables students to showcase and develop skills gained during the didactic curriculum. In correct with a preceptor and an academic advisor, students articulate a concrete deliverable and work with the preceptor and their team to accomplish the deliverable. Example activities include, but are not limited to, literature review, systems analysis, systems evaluations, data analysis, or plans for any of these.

ME.600.906. Real Time Disease Surveillance. 2 Credits.
In this course, we will review the needs and the technologies and provide students with the basic knowledge and skills they need to be critical consumers of these technologies and to enable to follow the emerging research literature over the future.

ME.600.907. Database Querying in Health. 3 Credits.
Through class discussion and interactive Python data exercises, this course provides practical experience working with electronic medical record data. The class will provide students access to the Johns Hopkins Precision Medicine Analytics Platform (PMAP) to conduct analysis on a de-identified EMR dataset of 60K patients with over 100 million data elements. The class will work with Jupyter notebooks to learn how to prepare EMR data and construct models from encounter, symptoms, lab, procedure, vitals and medication data. The topics will include exploratory data analysis, data cleaning, feature extraction, model construction, and evaluation. Working knowledge of SQL is expected and Python encouraged. The class will have access to the PMAP cookbook of Jupyter notebook recipes and Datacamp accounts will be provided for students to master working with major Python libraries Pandas, Matplotlib, Numpy and Sci-kit.

ME.600.914. Secondary Uses of EHR Data. 2 Credits.
Provides students with the skills to construct queries of EHR systems for research and quality-improvement projects. Topics include linking of identifiers, use of data dictionaries and standards, issues of privacy and security, issues of maintaining semantics, and alternative architectures for operational, data warehousing and data mart systems.