HEALTH INFORMATICS AND DATA SCIENCE (HIDS)

Discover, search, courses (https://catalog.luc.edu/course-search/)!

HIDS 399 Health Informatics Capstone (1-3 Credit Hours)
Pre-requisites: Must have completed 2 semesters in program
Development of an informatics project, including research question, literature review, and assessment.
Outcomes:
Development of a scholarly paper and presentation

HIDS 401 Foundations of Health Informatics (3 Credit Hours)
Health Informatics / Biomedical Informatics is the information as studied in or applied to biomedical science, healthcare, and public health. Thus, its focus is on the use of informatics methods to transform data into actionable knowledge within the broad context of health, from basic science, to public health.
Outcomes:
By the end of this course, students will be able to understand the differences between data, information, and knowledge, and analyze the processes to transform data into actionable knowledge

HIDS 411 Clinical Data Science (3 Credit Hours)
Clinical Data Science provides students with an introduction to a broad range of concepts and methods in data science, as they pertain to biomedical research. The focus of the class is on introducing key methods ranging from data collection and storage, to probabilistic methods, etc.
Outcomes:
By the end of this course, students will be able to understand and describe the steps in the life cycle of data in biomedical and clinical research

HIDS 412 Translational Bioinformatics (3 Credit Hours)
Pre-requisites: HIDS 411 Clinical Data Science
This course covers the fundamental issues of bioinformatics and how they apply to translational and clinical problems. The course is organized in 4 parts: sequence analysis, databases and ontologies, genome-wide association and linkage analysis, and networks.
Outcomes:
Students will be able to understand and apply a broad range of bioinformatics algorithms, and their computational efficiency; apply and analyze informatics techniques to retrieve, store, and analyze data

HIDS 421 Security and Privacy in Healthcare (3 Credit Hours)
This course provides students with a broad exposure to concepts, policies, and methodologies in security and privacy, as they pertain to healthcare research and practice. Information security and data privacy are essential components of biomedical and clinical research, and therefore, it is critical for students to understand security guidelines.
Outcomes:
Students will be able to understand the role of information security and data privacy in healthcare; apply basic principles of computer security; apply/analyze security principles in research data management

HIDS 422 Ontologies in Healthcare (3 Credit Hours)
This course provides students with essential concepts of ontologies, building ontologies, and knowledge representation as they pertain to health care, and biomedical research. With the ubiquitous nature of computer systems, and information-based systems in health care (and everywhere!) there is a critical need to be able to represent information.
Outcomes:
Students will be able to understand the role of ontologies in knowledge representation; understand the differences between realist and anti-realist ontologies and apply different types of ontologies in biomedical research

HIDS 431 Introduction to Natural Language Processing in Health (3 Credit Hours)
Pre-requisites: HIDS 401 Foundations of Health Informatics and HIDS 411 Clinical Data Science
The objective of this course is to present a broad overview of methodologies to automatically analyze and mine biomedical text automatically. Students will be exposed to some of the common and state-of-the-art software, algorithms and techniques to extract content and knowledge from biomedical texts.
Outcomes:
By the end of this course, students will be able to understand and apply artificial intelligence methodologies and software to automatically extract information from unstructured text