HHA

Applied Health Informatics

HHA 500: Health Care Delivery Systems

This course will focus on historic and current issues that impact the US healthcare delivery system with a primary focus on how health care is delivered, organized, governed, and financed. Special emphasis on how these concepts impact health care in the United States (US): current health policy and reform; social determinants of health; the interrelated concepts of access, quality, and cost; meaningful use; and more recent focus on value.

3 credits,

HHA 501: Hlth Info Esstls: Standards and Interoperability

This course provides broad but significant immersion into the field of biomedical and health informatics with a special emphasis on the following topics: the clinical flow of data (acquisition, use, and storage of information in healthcare), biomedical research, informatics and public health, decision and cognitive science. Electronic health records, personal health records, personalized medicine, imaging, telemedicine, concepts of meaningful use, Health Information Technology for Economic and Clinical Health (HITECH), and American Recovery and Reinvestment Act (ARRA) are also explored.

3 credits,

HHA 502: Health Information Systems and HIT Essentials

Provides broad but significant immersion into the fields of health information systems and health information technology (HIT). Emphasizes systems analysis, clinical decision-support, integrated networking and distributed computing technologies, telemedicine applications, mobile applications, cloud computing, architecture and infrastructures, and database and systems administration.

3 credits,

HHA 503: HC Cybersec: Regulations, Confidentiality, Privacy

This course provides foundational knowledge in the laws, regulations, policies, and procedures related to the confidentiality, privacy, and security on all levels of health-related information and infrastructures. Special emphasis on will be on the following: interoperability, The Health Insurance Portability and Accountability Act (HIPAA), Health Information Technology for Economic and Clinical Health (HITECH) Act,Privacy Rule and Security Standards, Code Set Rules, meaningful use, and information technology (IT) security forensics.

3 credits,

HHA 504: Cloud Computing Health Informatic Professionals

This course will introduce open source cloud computing to a general audience along with the skills necessary to securely deploy applications and websites to the cloud. In this class, students will have the opportunity to learn about a wide variety of topics related to cloud computing that include the command line, Linux operating systems, open source software development, setting up servers and Linux, Apache, MySQL, and PHP (LAMP) stacks via docker, using GitHub, best practices for security, and the Domain Name System. No prior developer experience is necessary.

3 credits,

HHA 505: Healthcare Leadership and Management Essentials

This course provides broad but significant immersion in organizational change, leadership, organizational behavior, project management, and change management. There is an emphasis on the following: healthcare project life-cycle, theoretical and applied strategies of managing change, communication and group dynamics, systems thinking, and strategic planning.

3 credits,

HHA 506: Research Design and Methodology for the Health Informatics Professionals

This course provides an in-depth overview of quantitative, qualitative, and mixed methods research designs and methodologies. Students will analyze and evaluate the strengths and limitations of methods research designs and methodologies most appropriate to the practice of health informatics. This course emphases critical review and techniques of applied research and evaluation. Upon course completion, attendees will understand how to: (1) design and analyze clinical research protocols, (2) comply with best practices for study conduct, data management, and regulations, and, (3) apply the principles and practices underlying ethical and reproducible research.

3 credits,

HHA 507: Data Science for Health Care: Python and R

This course introduces the student to the emerging field of data science through the presentation of basic math and statistics principles, an introduction to the computer tools and software commonly used to perform the data analytics, and a general overview of the machine learning techniques commonly applied to datasets for knowledge discovery within health care. The students will identify a dataset for a final project that will require them to perform preparation, cleaning, simple visualization, and analysis of the data with such tools as Python and R. Understanding the varied nature of data, their acquisition and preliminary analysis provides the requisite skills to succeed in further study and application of the data science field within healthcare.

3 credits,

HHA 530: Clinical Decision Making and Process Improvement

Provides in-depth immersion into the knowledge and skills required to implement effective clinical decision making systems and participate in the development of clinical process improvements that support effective, efficient, safe, timely, equitable, and patient-centered care. Summer and Fall courses. Prerequisites: Summer and Fall courses including HHA 500, HHA 501, HHA 502, HHA 503, HHA 504, HHA 505, HHA 506, and HHA 507.

4 credits,

HHA 531: Health Information Systems

Provides in-depth immersion into the knowledge and skills required to participate in the development or selection of an information system for clinicians; prepare clinicians prior to implementation and support them during implementation and ongoing operation of clinical information system; and evaluate the effectiveness of a system in meeting clinical needs. Summer and Fall courses. Prerequisites: Summer and Fall courses including HHA 500, HHA 501, HHA 502, HHA 503, HHA 504, HHA 505, HHA 506, and HHA 507.

4 credits,

HHA 532: Leading and Managing Clinical Information Systems Change

Provides in-depth immersion into the knowledge and skills required to lead, manage change, and promote adoption associated with implementing clinical information systems. Summer and Fall courses. Prerequisites: Summer and Fall courses including HHA 500, HHA 501, HHA 502, HHA 503, HHA 504, HHA 505, HHA 506, and HHA 507.

4 credits,

HHA 550: Applied Healthcare Analytics

Focuses on the design and implementation of analytics to aide in the evaluation of health in populations. Explores the role of the health care analyst and analytics in the improvement of healthcare delivery and outcomes. Consists of on-line lectures, videos, and hand on assignments with data set sand analytic models. Prerequisites: Summer and Fall Courses. Prerequisites: HHA 500, HHA 501, HHA 502, HHA 503, HHA 504, HHA 505, HHA 506, and HHA 507. Department permission required.

4 credits,

HHA 551: Big Data Technologies in Healthcare

Focuses on new and emerging Big Data technologies in healthcare, and the technologies that are utilized to process and manipulate data. Technologies such as Facebook, Yahoo, Google, LinkedIn, Twitter, and the Electronic Health Record will be studied. Discusses how healthcare data is organized, processed and analyzed using MATLAB. Consists of four weeks of reading, on-line discussions and assignments, hand-on use of analytical tools for analysis and data extraction, and ten weeks of on-site lectures and hand-on lab sessions. Prerequisites: Summer and Fall Courses. Prerequisites: HHA 500, HHA 501, HHA 502, HHA 503, HHA 504, HHA 505, HHA 506, and HHA 507. Department permission required.

4 credits,

HHA 552: Healthcare Data Visualization

Focuses on techniques and tools for designing and implementing effective visual representations of healthcare data. Students will learn how to analyze, parse, and represent quantitative and text data visually, and how to present data that is clutter free, engaging and easy to comprehend. Hands-on course utilizes Tableau as a presentation platform for the designing and building of data visualizations. Students will learn to express findings, answer questions, and to drive data supported decisions in healthcare. Consists of three weeks of campus lecture, twelve weeks of hand-on use of data visualization tools, assignments, lectures, and on-line discussions. Prerequisites: HHA 500, HHA 501, HHA 502, HHA 503, HHA 504, HHA 505, HHA 506, and HHA 507. Department permission required.

4 credits,

HHA 586: Specialization Practicum I

This is the first course in a two-part experiential learning sequence designed to provide significant hands-on immersion into health informatics. This 180-hour practicum is a progressive experiential learning experience.

6 credits,

HHA 588: Specialization Practicum II

This is the second and final course in a two-part experiential learning sequence designed to provide significant hands-on immersion into health informatics. This second 180-hour practicum is a progressive experiential learning experience that builds on the first experience.

6 credits,

HHA 590: Quality Improvement Project I

This is the first course in a two-part sequence. Under faculty supervision, students are given the opportunity to demonstrate integration, synthesis, and application of their knowledge and skills by identifying a real-world health informatics problem and researching best practices that can be utilized to create a solution. A majority of the course work will be completed independently.

6 credits,

HHA 592: Quality Improvement Project II

This is the second course in a two-part sequence designed to give the student the opportunity to demonstrate mastery of the knowledge and skills acquired in the program. Students will build upon the work in HHA 590 to design a health informatics solution for a real-world problem. Under faculty mentor-ship, students will work independently, but will be required to meet synchronously in small groups during the last week of the semester for presentations. Students are also required to engage in a rigorous peer-review of other students¿ progress throughout the semester.

6 credits,

HHA 599: Practicum Continuation

This course is for Applied Health Informatics students continuing with Practicum.

S/F graded