HEALTH INFORMATICS (HI)

HI 41095   SPECIAL TOPICS IN HEALTH INFORMATICS  1-3 Credit Hours
(Repeatable for credit) Topics could include current or emerging issues in
health informatics. Topics will be announced in schedule of classes. Offered
irregularly as resources and opportunities permit.
Prerequisite: None.
Schedule Type: Lecture
Contact Hours: 1-3 lecture
Grade Mode: Standard Letter

HI 41096   INDIVIDUAL INVESTIGATION IN HEALTH INFORMATICS  1-3 Credit Hours
(Repeatable for credit) Research or individual investigation in areas not
covered in the existing curriculum for baccalaureate level students at or
above the junior level. In-progress (IP) mark permissible.
Prerequisite: Special approval.
Schedule Type: Individual Investigation
Contact Hours: 3-9 other
Grade Mode: Standard Letter-IP

HI 60401   HEALTH INFORMATICS MANAGEMENT  3 Credit Hours
Covers the areas encompassing health informatics management
including the planning, selection, deployment, and management of
electronic medical records (EMR), management decision-support and
tracking systems (DSS), and other health information technologies (HIT).
Prerequisite: Graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 60402   LEGAL ISSUES IN HEALTH INFORMATICS  3 Credit Hours
(Slashed with HI 80402) Introduction to the fundamentals of law for
Health Informatics and Information Management. Elements of the course
include general legal principles and healthcare; legal electronic medical
records (EMR); Health Insurance Portability and Accountability Act
(HIPAA) privacy rules and security rules; access, requests and disclosure
of health information; required reporting and mandatory disclosure laws;
risk management and quality improvement; compliance; workforce
overview; related ethics and social issues.
Prerequisite: Graduate standing.
Pre/corequisite: HI 60401.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 60403   HEALTH INFORMATION SYSTEMS  3 Credit Hours
(Slashed with HI 80403) Introduction to information systems and their
applications in healthcare used for managerial and clinical support.
Study the fundamentals of information systems, including Electronic
Medical Records (EMR), information security. Understand the role of
standardized codes, vocabularies and terminologies used in health
information systems. Analysis of management and enterprise systems,
identify the key elements to manage information resources effectively
and the trends affecting the development of health information systems
and networks.
Prerequisite: Graduate standing.
Pre/corequisite: HI 60401.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 60410   HEALTH RECORDS MANAGEMENT  3 Credit Hours
(Slashed with HI 80410) Conceptual foundations and practicum for
health records management, including the planning, implementation
and operation of electronic medical records (EMR); the management
of EMR in management and enterprise systems; identifying, selecting
and evaluating EMR and health information systems, applications,
and repositories; and issues of data quality, integrity, migration, and
interoperability.
Prerequisite: Graduate standing.
Pre/corequisite: HI 60401.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 60411   CLINICAL ANALYTICS  3 Credit Hours
(Slashed with HI 80411) The use of well-defined and well-integrated
clinical analytics throughout the healthcare value chain can be
transformative. Through careful implementation of health analytics,
hospitals can transform unwieldy amalgamations of data into
information that can: improve patient outcomes, increase safety,
enhance operational efficiency and support public health. Given the
immense size of the data challenge, the distinctness and geographic
spread of many healthcare-related activities, and the fact that so many
healthcare activities are conducted by different entities which must
interact with each other, there is really no other way to provide operations
management tools necessary to deliver personalized medicine and to
control spiraling costs. Since clinical analytics is an immature discipline,
we carefully examine the practices of those institutions who are standard
setters in the industry.
Prerequisite: Graduate standing.
Pre/corequisite: HI 60401.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 60412   CLINICAL DECISION SUPPORT  3 Credit Hours
Provides a practical survey of clinical decision support systems that
collect clinical data and enable the transition to clinical knowledge
in real world applications intended to improve quality and safety of
patient care. Students become familiar with the basic requirements for
clinical decision support systems and the challenges associated with the
development and deployment of new applications within the healthcare
setting.
Prerequisite: HI 60401; and graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 60413   CHANGE MANAGEMENT IN HEALTH INFORMATICS  3 Credit Hours
(Slashed with HI 80413) Designed to cover the process of change
management in large healthcare organizations in light of current trends.
Topics related to technology requirements, technology implementations,
risk assessment and buy-in are among those covered.
Prerequisite: HI 60401; and graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter
HI 60414  HUMAN FACTORS AND USABILITY IN HEALTH INFORMATICS  3 Credit Hours
(Slashed with HI 80414) Provides students with the foundational principles of usability and human factors as applied to safety and quality in health informatics technology. Course readings and materials review the concepts of human factors, usability and the cognitive consequences of health information technology on clinical performance and decision making. Attention is given to the role of mobile computing in health care, as well as information visualization.
Prerequisite: Graduate standing.
Pre/corequisite: HI 60401.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 60415  HEALTH INFORMATICS INQUIRY AND ASSESSMENT  3 Credit Hours
(Slashed with HI 80415) Provides a foundation for understanding research in health informatics with a focus on user and experience design research. Through lectures, readings, discussions and assignments, students review user research methods, data collection techniques and communication strategies within the healthcare context. Students then apply this knowledge to creating a research plan for assessing health information technology and communicating results to key organizational stakeholders.
Prerequisite: HI 60401 with a minimum C grade; and graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 60416  HEALTH INFORMATICS ISSUES: POLICY, POLITICS AND ETHICS  3 Credit Hours
This course uses a policy analysis lens to critically examine issues related to the use of information technology in healthcare from an ethical, political and regulatory perspective. The primary focus will be on the United States, but international approaches will also be discussed. Legislation affecting Health Information Technology area will be examined including the American Reinvestment and Recovery Act, HITECH section; Affordable Care Act and Health Insurance Portability and Accountability Act (HIPAA) of 1996. Topics and issues related to Health Informatics including structure of health administrative and delivery systems, assessment of population health, models of health care delivery, access and quality of care will also be discussed.
Prerequisite: HI 60401; and graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 60417  PUBLIC HEALTH INFORMATICS  3 Credit Hours
Public Health Informatics (PHI) is an emergent, interdisciplinary field that focuses on the systematic management and dynamic application of information resources to enhance public health practice, education and research. As an emerging subset of Health Informatics, PHI is practiced by individuals, governmental and nongovernmental organizations at the international, national, regional, state and local levels. PHI deals with the collection and analysis of vital statistics data through surveillance; information creation; information storage and retrieval; visualization and graphics; dissemination; use of information for policy, decision making and trend tracking. The purpose of this course is to provide students with an introductory overview of the vast and dynamic field of PHI, including definitions, approaches, competencies, applications and informatics principles applied in public health settings.
Prerequisite: HI 60401 or HI 80401; and graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 60418  CLINICAL ANALYTICS II  3 Credit Hours
As the volume and complexity of health data continues to grow, analysis of that data requires more advanced tools to transform that data into meaningful information for clinical decisions. Not only is data from electronic medical records (EMRs) growing at a rapid pace but new types of data are available for analysis, such as, genomic data and patient generated data. These advanced analytic tools break down into three areas, each of which will be examined in this course: new data warehousing techniques to manage big data, new analytic tools including cognitive computing and predictive analytics and new ways to visualize the data. All of these techniques transform the raw data into use cases, such as, population health, precision medicine and clinical decision support using artificial intelligence and machine learning which will also be addressed in this course.
Prerequisite: HI 60411; and graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 60636  STANDARDIZED TERMINOLOGIES IN HEALTHCARE  3 Credit Hours
Introduce various types of standardized healthcare terminologies (controlled vocabularies) used in the Electronic Health Records (EHR) and Health information Exchange (HIE). Present the benefits of using standardized terminologies, as well as the interoperability and Meaningful Use (MU) requirements and standards. Explain the purposes, structures, components, and application of the most widely implemented standardized terminologies such as ICD, CPT, SNOMED CT, LOINC, RxNorm, ICNP, and UMLS.
Prerequisite: Graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 60691  SEMINAR IN HEALTH INFORMATICS  1-3 Credit Hours
(Repeatable for credit). Advanced research by students who are qualified to examine problems of certain special areas related to concentrations of study in health informatics.
Prerequisite: Graduate standing.
Schedule Type: Seminar
Contact Hours: 1-3 other
Grade Mode: Standard Letter
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<td>Project or Capstone</td>
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<td>Masters Thesis</td>
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<td>HI 680401</td>
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<td>Satisfactory/Unsatisfactory-IP</td>
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<td>Lecture</td>
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HI 80402  LEGAL ISSUES IN HEALTH INFORMATICS  3 Credit Hours
(Slashed with HI 60402) Introduction to the fundamentals of law for Health Informatics and Information Management. Elements of the course include general legal principles and healthcare; legal electronic medical records (EMR); Health Insurance Portability and Accountability Act (HIPAA) privacy rules and security rules; access, requests and disclosure of health information; required reporting and mandatory disclosure laws; risk management and quality improvement; compliance; workforce overview; related ethics and social issues.
Prerequisite: HI 80401; and doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 80403  HEALTH INFORMATION SYSTEMS  3 Credit Hours
(Slashed with HI 60403) Introduction to information systems and their applications in healthcare used for managerial and clinical support. Study the fundamentals of information systems, including Electronic Medical Records (EMR), information security. Understand the role of standardized codes, vocabularies and terminologies used in health information systems. Analysis of management and enterprise systems, identify the key elements to manage information resources effectively and the trends affecting the development of health information systems and networks.
Prerequisite: HI 80401; and doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 80410  HEALTH RECORDS MANAGEMENT  3 Credit Hours
(Slashed with HI 60410) Conceptual foundations and practice for health records management, including the planning, implementation and operation of electronic medical records (EMR); the management of EMR in management and enterprise systems; identifying, selecting and evaluating EMR and health information systems, applications, and repositories; and issues of data quality, integrity, migration, and interoperability.
Prerequisite: HI 80401; and doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 80411  CLINICAL ANALYTICS  3 Credit Hours
(Slashed with HI 60411) The use of well-defined and well integrated clinical analytics throughout the healthcare value chain can be transformative. Through careful implementation of health analytics, hospitals can transform unwieldy amalgamations of data into information that can: Improve patient outcomes, increase safety, enhance operational efficiency and support public health. Given the immense size of the data challenge, the distinctness and geographic spread of many healthcare-related activities, and the fact that so many healthcare activities are conducted by different entities which must interact with each other, there is really no other way to provide operations management tools necessary to deliver personalized medicine and to control spiraling costs. Since clinical analytics is an immature discipline, we carefully examine the practices of those institutions who are standard setters in the industry.
Prerequisite: HI 80401; and doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 80412  CLINICAL DECISION SUPPORT  3 Credit Hours
(Slashed with HI 60412) Provides a practical survey of clinical decision support systems that collect clinical data and enable the transition to clinical knowledge in real world applications intended to improve quality and safety of patient care. Students become familiar with the basic requirements for clinical decision support systems and the challenges associated with the development and deployment of new applications within the healthcare setting.
Prerequisite: HI 80401; and doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 80413  CHANGE MANAGEMENT IN HEALTH INFORMATICS  3 Credit Hours
(Slashed with HI 60413) Designed to cover the process of change management in large healthcare organizations in light of current trends. Topics related to technology requirements, technology implementations, risk assessment, end user computing and buy-in are among those covered.
Prerequisite: HI 80401 with a minimum C grade; and doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 80414  HUMAN FACTORS AND USABILITY IN HEALTH INFORMATICS  3 Credit Hours
(Slashed with HI 60414) Provides students with the foundational principles of usability and human factors as applied to safety and quality in health informatics technology. Course readings and materials review the concepts of human factors, usability, and the cognitive consequences of health information technology on clinical performance and decision making. Attention is given to the role of mobile computing in health care, as well as information visualization.
Prerequisite: HI 80401 with a minimum grade of C; and doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 80415  HEALTH INFORMATICS INQUIRY AND ASSESSMENT  3 Credit Hours
(Slashed with HI 60415) This course will provide a foundation for understanding research in health informatics with a focus on user and experience design research. Through course lectures, readings, discussions and assignments, students will review user research methods, data collection techniques and communication strategies within the healthcare context. Students will then apply this knowledge to creating a research plan for assessing health information technology and communicating results to key organizational stakeholders.
Prerequisite: HI 80401 with a minimum C grade; and doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter
HI 80417    PUBLIC HEALTH INFORMATICS    3 Credit Hours
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Prerequisite: HI 60401 or HI 80401; and doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

HI 80691    SEMINAR IN HEALTH INFORMATICS    1-3 Credit Hours
(Repeatable for credit) Advanced research by students who are qualified to examine problems of certain special areas related to concentrations of study in health informatics.
Prerequisite: Doctoral standing.
Schedule Type: Seminar
Contact Hours: 1-3 other
Grade Mode: Standard Letter

HI 81095    SPECIAL TOPICS IN HEALTH INFORMATICS    1-3 Credit Hours
(Repeatable for credit) Offered irregularly as resources and or opportunities permit. Topics could include current or emerging issues in health informatics. Specific topics are announced in the Schedule of Classes.
Prerequisite: Doctoral standing.
Schedule Type: Lecture
Contact Hours: 1-3 lecture
Grade Mode: Standard Letter

HI 81096    INDIVIDUAL INVESTIGATION IN HEALTH INFORMATICS    1-3 Credit Hours
Research or individual investigation for doctoral level students.
Prerequisite: Doctoral standing; and special approval.
Schedule Type: Individual Investigation
Contact Hours: 3-9 other
Grade Mode: Standard Letter-IP