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Health Informatics

The Master of Health Informatics (MHI) program is a comprehensive program that prepares students for professional roles in the field of health informatics within the healthcare organizations. The program is offered through the School of Health Sciences in the College of Health and Human Sciences.

Master of Health Informatics (M.H.I.) in Health Informatics

To earn the MHI, students must complete:

1. 39 credit hours of the core MHI courses including:
MHI 510, MHI 511, MHI 515, MHI 525, MHI 531, MHI 536, MHI 551, MHI 566, MHI 580, MHI 581, MHI 583, MHI 584, and MHI 585
2. MHI 593 - Advanced Research (3 CH). Culminates in a final scholarly work outlined by the SIUC Graduate School.

To complete the health informatics program, the course of instruction consists of 42 credit hours. As part of the 42 credit hours, students will complete a research project.

Course material covers topics specific to the healthcare informatics field including, but not limited to, healthcare systems, knowledge management, personnel development and oversight, electronic health records, strategic leadership and marketing, legal and ethical foundations, health promotion and evaluation, systems design, modeling, database management, security, privacy, health information exchange, and health economics. Upon completion of the program, students are expected to be equipped to operate effectively in administrative roles in healthcare organizations. Special project assignments, case readings, presentations, and journal article reviews are an integral part of the curriculum. Course delivery may be via synchronous and asynchronous methods.

A 2.7 GPA from the student's undergraduate program is required for admission to the MHI program. Students with a 2.5-2.7 undergraduate GPA may enter as a Non-Declared student, following Graduate School policies, and will be allowed to take up to 9 credit hours of MHI courses. At the end of the 9 credit hours, the student must hold a 3.0 GPA to be then admitted to the MHI program. Students not meeting the 3.0 GPA at the end of the 9 credit hours will not be allowed to take any other MHI courses.

All students graduating from the MHI program will be required to meet the qualifications of the Graduate School at SIUC. Students will be required to complete a culminating scholarly work which includes a research paper.

Students earning less than a B twice in any individual MHI courses are dropped from the MHI program due to unsatisfactory academic performance. Students dropped due to unsatisfactory academic performance will not be allowed re-entry into the MHI program at a later date.

On-campus MHI courses are restricted to on-campus students in the graduate programs within the School. Online MHI courses are restricted to online students in the graduate programs within the School. The MHI program strictly prohibits students from changing delivery formats unless there is a well-documented medical reason presented to the Program Director to do so.

Transfer courses from other academic institutions are not permitted as equivalencies to the core MHA courses.

Certificate in Healthcare Informatics

The Certificate in Healthcare Informatics is open to post-bachelor level students holding a degree in healthcare management/administration (or closely related field) and/or a bachelor's level degree and license in a clinical specialty. It is designed to provide the knowledge and skills as germane to healthcare informatics in patient care environments. Well suited as a graduate preparatory certificate, courses are specific to the collection, analysis, and interoperability of data in patient care environments for the purposes of improving operations, patient care delivery, and supporting regulatory expectations specific to the field of healthcare. Students must complete 18 credit hours of graduate level study, all at SIUC, with a B or above in all required courses which includes:

- MHI 510: Effective Healthcare Operations (3 CH) (Same as MHA 510)
- MHI 515: Systems Analysis, Design, and Database Management in Healthcare (3 CH)
- MHI 525: Health Informatics Applications and Project Management (3 CH)
- MHI 566: Managing Health Information (3 CH) (Same as MHA 566)
- MHI 581: Health Information Exchange (3 CH)
- MHI 584: Consumer Informatics (3 CH)

Students earning a grade lower than a B may retake individual courses only once. If a grade of B or higher is not received on the second attempt of an individual course, the student is removed from the certificate program due to unsatisfactory academic performance.

For more information contact:

School of Health Sciences
phone: 618-453-7211
email: health.sciences@siu.edu

Health Informatics Courses

MHI510 - Effective Healthcare Operations An investigation of the functions of HCOs compared to other business operations including logistics and supply chain control. Addresses excessive resource spending focusing on support systems and ineffective operational issues within constraints of highly regulated healthcare sector. eCommerce, hospital materials supply, inventory control of medical supplies/controlled substances, vendor collaboration, purchasing/receiving, and total value analysis explored with PERT/CPM, mathematical programming and quality controls. Restricted to School graduate majors. Credit Hours: 3

MHI511 - Fundamentals of Health Care Systems This course provides a multi-disciplinary analysis and is designed to provide students with information pertaining to the issues surrounding access to care, medical technology, and the complex financial structures of the healthcare system. Students will extensively examine aspects of the complex healthcare system such as managed care, Medicare, Medicaid, pharmaceuticals, health promotion and disease prevention, and the quality of care. Restricted to School graduate majors. Credit Hours: 3

MHI515 - Systems Analysis, Design, and Database Management in Health Care Students explore methods for designing and managing health care organization databases and their use in computer based information systems. Focus is given on the impact that health care information systems have on administrative functions, data security and integrity, and business processes. Use of relational database management software, network hardware technologies, data modeling, clinical data warehousing and mining are explored, as well as, the tools necessary for successful system implementation and human computer interfaces. Restricted to School graduate majors. Credit Hours: 3

MHI520 - Healthcare Policy Explores the public policy interventions within the varying healthcare domains and defines the theoretical reasons for pursuing policy development in the presences of intense political, bureaucratic, and social environments within the healthcare industry. The effects, consequences, and social implications of policy decisions are evaluated through real-world case analysis of actual public

health policies. Focus is placed on how policies impact patients and medical providers. Restricted to School graduate majors. Credit Hours: 3

MHI525 - Health Informatics Applications and Project Management Course designed to explore the history of health information. Students learn how to integrate the clinical, financial and administrative data needed to resolve managerial and patient care problems. Explores the strengths and limitations of health information systems and principles of computer science. Focus is given on project planning, project management tools. Students will develop a workflow project plan for a health informatics project and conduct biomed simulations. Restricted to School graduate majors. Credit Hours: 3

MHI531 - Human Resources in Health Care (Same as MHA 531) Describes the key human resource functions that play a significant role in the healthcare environment and focuses specifically on how those functions support management initiatives and Joint Commission accreditation and/or regulatory compliance. Extensive review of how the failure to systematically apply effective human resource strategies can result in organizational demise is conducted. Explore the dynamic legal and regulatory environment and carefully examines how legislative changes influence the healthcare organization overall focusing particularly on those functions that are linked to patient satisfaction and balanced scorecards and benchmarking of provider performance. Restricted to School graduate majors. Credit Hours: 3

MHI536 - Strategic Leadership in Healthcare This course provides students with an examination of nature, function, and techniques of administration and supervision in HCOs. Topics include the ever-changing healthcare environment and trends impacting leadership competencies. Specific healthcare factors that influence organizing managing of varying health systems such as hospitals vs. ambulatory care. Focus will be given on the professional bureaucracy that is complex given regulatory issues, political factors, and the era of the informed patient. Restricted to School graduate majors. Credit Hours: 3

MHI551 - Legal & Ethical Fundamentals in Healthcare This course provides students with an analysis of the legal and ethical environment of the healthcare industry. Focused on the healthcare environment, the course closely examines the judicial process pertaining to torts, contracts, antitrust, corporate compliance, access to care, negligence, and professional liability. The nature of ethics in the multi-cultural healthcare environment is examined with analysis of the moral issues in healthcare. Restricted to School graduate majors. Credit Hours: 3

MHI556 - Individual Research in Healthcare This course requires students to complete a research project in the field of healthcare based upon student interest and instructor approval. Each project will have a written paper as a final product and this paper will be submitted for publication, as approved by the instructor, in one of the professional journals within the field of healthcare. Restricted to School graduate majors. Credit Hours: 3

MHI566 - Managing Health Information A detailed review of the components of an information system as utilized for the capture of health information. Focus is on EHR, HIPAA, and implementation of information systems in healthcare organizations. Classification systems, clinical terminology, and use of health information in terms of operational management and decision making will be explored. Emerging technologies related to the security of health information management are explored. Restricted to School graduate majors. Credit Hours: 3

MHI580 - Managerial Epidemiology and Evidence Based Management Epidemiological principles pertinent to the delivery, management, and marketing of healthcare services. Examines evidence- and population-based decisions which are critical to effective delivery of patient care. Utilizes evidence-based theories to prepare the students to identify management problems and develop related paths of focused inquiry. Restricted to School graduate majors. Credit Hours: 3

MHI581 - Health Information Interoperability Addresses issues related to the exchange of clinical data across multiple healthcare environments. Special focus is placed on health IT standards, privacy and security issues specifically related to the protection of patient information. Provides an overview of health information system standards and the types of products available to facilitate the use of data exchanges. Students will work in virtual groups to discuss current trends and challenges, best practices for health information systems, and health information standards pertinent to the field of healthcare. Restricted to School graduate majors. Credit Hours: 3

MHI583 - Methods of Medical Informatics Study of algorithms and programming languages for healthcare informatics purposes. Tailored for the use of non-professional programmers and specifically for the healthcare industry. Provides methods to utilize medical information contained in clinical and research datasets and explores the common computational tasks of medical informatics. Overview of access to data, assessment, nomenclatures, and programming scripts. Restricted to School graduate majors. Credit Hours: 3

MHI584 - Consumer Informatics Course focusing on consumer driven healthcare and their greater access to health information. Explores the health care related information available by federal and state agencies and direct consumer-to-consumer communications. Focus is given to consumer perspectives of their own health and the overall evolution of the patient/physician relationship. Students will explore the impact of technology in patient treatment areas, personalized medicine, assessment methods and tools, as well as, the potential impact of future technology on the delivery of healthcare services. Restricted to School graduate majors. Credit Hours: 3

MHI585 - Financial Issues in Healthcare A macro-examination of the role of finance in healthcare. Emphasis is not on financial formulas, but rather on the application of financial information within the healthcare sector. Discussion of charge-masters, healthcare payment systems and sources of revenue, profit vs. duty, regulatory issues and profit maximization, provider payments and pricing in capitated-managed care markets, and IDS, etc. Case principles specifically related to the healthcare field are completed. Restricted to School graduate majors. Credit Hours: 3

MHI593 - Advanced Research in Healthcare Students complete a research project related to health informatics in the student's field which meets Graduate School guidelines. Restricted to graduate standing in the School of Health Sciences. Credit Hours: 3

MHI599 - Independent Study Directed independent study in selected areas of health informatics. Special approval needed from the MHI Program Director. Students must have the Independent Study Proposal Form approved by the MHI Program Director prior to enrolling in the course. Independent study options are not always available and cannot be guaranteed. Restricted to MHI majors only. Credit Hours: 1-3

MHI601 - Continuing Enrollment This course is required to satisfy the Graduate School's requirement of continuous enrollment and is intended for those students who are enrolled in the program but cannot take a core academic course during a given semester. Consent of SAH Academic Advisor. Credit Hours: 1

Health Informatics Faculty

Cataldo, Jessica, Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2021; 2017. Population health; interprofessional collaboration.

Collins, Sandra K., Professor, Distinguished Faculty, Program Director, Ph.D., Southern Illinois University Carbondale, 2010; 2002. Management theory, health care law and ethics, HPV, opioid addiction, and online education.

Shaw, Thomas A., Associate Professor, Distinguished Faculty, Ph.D., Southern Illinois University Carbondale, 2005; 1995. Health care policy, health care law, social determinants of health.

Emeriti Faculty

Rados, Robert C., Assistant Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 2003; 2000.

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Catalog Year Statement:

Students starting their collegiate training during the period of time covered by this catalog (see bottom of this page) are subject to the curricular requirements as specified herein. The requirements herein will

extend for a seven calendar-year period from the date of entry for baccalaureate programs and three years for associate programs. Should the University change the course requirements contained herein subsequently, students are assured that necessary adjustments will be made so that no additional time is required of them.