Southern Illinois University

CARBONDALE

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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 36 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 581, MHI 583, MHI 584, and MHI 593.

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, systems design, modeling, database management, security, privacy, and health information exchange. 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.

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 must earn a "B" in all required MHI courses. If a student earns less than a "B" in any MHI course, they must retake it, only once. If they earn less than a "B" the second time, they 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.

MHI courses are restricted to MHA, MHI students, and concurrent admitted students from the MSRS, and/or MSDOS, with MHI Advisor approval. Online MHI courses are restricted to those online MHI students; on campus MHI courses are restricted to those on campus MHI students. The MHI program strictly prohibits students for changing delivery formats unless there is a well-documented medical reason proposed to the MHI Program Director to consider for approval.

Up to 9 credit hours of transfer credit may be allowed from other regionally accredited academic institutions upon review and approval by the MHI Program Director, or designee. The student will submit through the MHI Academic Advisor the full course syllabi of the course they would like to be considered as transfer credit. This must be submitted for consideration prior to the end of the first semester after being admitted to the MHA program. No late submissions for transfer credit will be considered.

A 2.7/4.0 GPA or better (SIUC calculation) on the entire last undergraduate GPA earned at the time of application is required for admission to the MHI program. Students with a 2.5-2.7/4.0 undergraduate GPA (SIUC calculation) 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 3.0/4.0 GPA to be then admitted to the MHI program. Students not meeting the 3.0/4.0 GPA at the end of the 9 credit hours will not be allowed to take any other MHI courses.

The MHI program follows Graduate School policies. The MHI program will not petition to retain a student who does not meet the academic performance guidelines of the Graduate School.

All international applicants must demonstrate proficiency in the English language by submitting an approved English Language Competency Test score with their application. These applicants must have one of the following minimum scores for consideration:

- 550 on the paper-based TOEFL
- 80 on the internet-based TOEFL
- 6.5 on the IELTS
- 105 on the Duolingo English Exam

This applies to all international applicants. No waivers or exemptions will be provided. Students must provide a copy of their scorecard, verifying test results, with their application to the MHI. Given the accelerated nature of the MHI, the academic program does not agree to or approve late arrivals.

M.H.I. Concurrent Degrees

The MHI offers concurrent degrees with other graduate programs as provided below. All students interested in a concurrent degree option must meet with the MHI academic advisor to design a plan for completing both degrees. All Graduate School policies and procedures apply as well as program policies and procedures for both concurrent degrees as noted in the Graduate Catalog, and/or each individual program's Student Handbook and/or website, as applicable.

A concurrent degree allows students to complete the requirements of two programs and be awarded two master's degrees at the same time with the benefit of shared coursework between the two programs. If a student is awarded a single degree, they will not be eligible for the concurrent pathway which allows up to 9 hours of coursework to be shared between two degrees.

When entering any program offering a concurrent degree option (MHI, MHA, MSRS, MDOS Track II), students will be advised on the concurrent degree option and the eligibility requirements. Students will sign a document acknowledging that if the first degree is conferred that the shared hours in the concurrent option are forfeited.

Additionally, if a student chooses to have the first degree conferred, a second document will be signed by the student acknowledging that the concurrent degree option (and shared hours) will be forfeited.

1. MHI/MHA - offers the MHI student the opportunity to earn two Master's degrees for just 21 additional credit hours. For the MHI student who is interested in advancing their career by also earning the Master in Health Administration (MHA), students will complete the following MHA courses with a B or higher including:
   MHA 520 - Healthcare Policy (3 CH)
   MHA 575 - Current Events Seminar in Healthcare (3 CH)
   MHA 580 - Managerial Epidemiology and Evidence Based Management (3 CH)
   MHA 582 - Healthcare Economics (3 CH)
   MHA 585 - Financial Issues in Healthcare (3 CH)
   MHA 593 - Research in Healthcare Administration (3 CH)
   -AND- **one** of the following:
   HCM 463 - Environment of Care (3 CH), or
   HCM 464 - Infection Prevention Informatics (3 CH), or
   HCM 465 - Infection Prevention and Control Operations (3 CH)
   Students must be admitted separately to the MHI and MHA programs and all policies apply for each program independently.
2. MSRS to MHI - prepares students for data analytics roles in healthcare organizations within and beyond the field of radiology. The Master of Science in Radiologic Sciences (MSRS) requires 36 credit hours for degree completion. For the MSRS student who is interested in advancing their career by also earning the MHI, they will complete just 21 additional credit hours of MHI courses all with a B or higher including:
   MHI 510 - Effective Healthcare Operations (3 CH)
   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)
   MHI 581 - Health Information Interoperability (3 CH)
   MHI 583 - Health Informatics Essentials (3 CH)
   MHI 584 - Applied Data Analytics in Healthcare (3 CH)
   Students must be admitted separately to the MSRS and MHI programs and all policies apply for each program independently.

3. MDOS Track II to MHI - prepares Master of Science in Medical Dosimetry (MDOS) Track II students for analytical roles pertinent to clinical and administrative positions in healthcare, within and beyond the field of medical dosimetry. MDOS - Track II students interested in advancing their career by also earning the MHI will complete just 21 additional credit hours of MHI courses all with a B or higher including:
MHI 510 - Effective Healthcare Operations (3 CH)
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)
MHI 581 - Health Information Interoperability (3 CH)
MHI 583 - Health Informatics Essentials (3 CH)
MHI 584 - Applied Data Analytics in Healthcare (3 CH)
Students must be admitted separately to the MDOS Track II and MHI programs and all policies apply for each program independently.

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

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 - Health Informatics Essentials This course is designed to meet the increasing demand among health care practitioners, researchers, and students for a comprehensive introduction to the field of health informatics. It introduces both a conceptual framework and a practical approach for the implementation and management of IT used to enhance health care delivery. In addition, this course covers fundamental research methodologies, topics, and trends in health informatics. Restricted to MHA or MHI students with consent of MHI advisor. Credit Hours: 3

MHI584 - Applied Data Analytics in Healthcare This course provides healthcare professionals, health information management students, and health informatics students with guidance on how to analyze, categorize, and manage the data they encounter in the increasingly data-dependent health care professional setting. This course examines the use of healthcare data, including an overview of best practices and the realities of obtaining useful data from digital health systems at different stages of the data life cycle. From this course, students will learn how to use data to solve problems and make data-driven health care decisions using various data analytics and data visualization techniques, as well as

how to effectively communicate the analysis results to facilitate care quality. Restricted to MHA or MHI students with consent of MHI advisor. 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 - Research in Healthcare Informatics Students complete a research project or paper on a topic related to healthcare informatics in patient care environments. Each research project and/or paper will result in submission for publication consideration, as approved by the instructor, in one of the professional, peer-reviewed journals within the field of healthcare, healthcare informatics, or healthcare education. Restricted to MHA/MHI students with consent of MHI advisor. Credit Hours: 3-6

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

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.

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