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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. 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 - Individual Research/Residency - 6 credit hours. Culminates in either a final scholarly work outlined by the SIU Graduate School or a Residency in a health care setting approved by the University and Instructor.

To complete the health informatics program, the course of instruction consists of 45 semester hours. As part of the 45 semester hours, students have the choice of selecting a research project or graduate residency/internship. If the graduate residency/internship is selected students must notify the program's residency/internship coordinator that they intend to complete the residency/internship 1 year prior to the semester they will enroll in the residency/internship. This length of time is necessary to allow for the proper authorizations to be obtained between the supervising site and the university. Students who do not notify the residency/internship coordinator that they intend to participate in the residency/internship by this deadline will only have the option of completing the research project. Residency/internship are completed only in healthcare facilities excluding veterinary and animal care facilities.

The Residency is a six-credit hour experience where one credit hour is equivalent to 50 contact hours for a total of 300 credit hours at the time of successful completion.

Course material covers topics specific to the healthcare 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.

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 SIU. Students will be required to complete a culminating scholarly work which includes a research paper if not completing the Residency option.

MHI students will initiate and complete the processes involved with residency/internship site and preceptor selection as well as applicable university approval processes. Students participating in a residency/internship may be required to undergo a criminal background check and drug screening. Students who do not satisfactorily pass the background check and/or drug screening may find it difficult to secure a residency/internship in the field of healthcare and would then be required to satisfactorily complete the graduate research project instead of the residency/internship. Residency/internship hours cannot begin until all approvals have been obtained from the faculty member overseeing the residency/internship processes, the internship site, and the university. The internship coordinator and/or university may decline any residency/internship site or preceptor selected by the student. Any contact hours

students participate in prior to the residency/internship being appropriately approved cannot be counted toward the required 300 contact hours. Not all healthcare organizations or facilities may act as residency sites due to the ability to meet achievable objectives of the program and/or residency course, state to state licensure/permissions, and/or University approvals.

Students earning a failing grade for a residency/internship can repeat the MHI 593 Advanced Research/Residency course once, but they are required to choose and successfully complete the graduate project for the second time they are enrolled. If the graduate project is not successfully completed on the repeat enrollment, the student cannot enroll in MHI 593 a third time and will be removed from the MHI program due to academic performance. The residency/internship cannot be repeated.

Students earning less than a *B* twice in any individual MHI courses are dropped from the MHI program due to poor academic performance. Students dropped due to poor 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 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.

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 semester hours of graduate level study, all at SIU, with a C or above in all required courses which includes:

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

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

For more information contact:

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Health Informatics Courses

MHI510 - Effective Healthcare Operation 510-3 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.

MHI511 - Fundamentals HC Systems 511-3 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.

MHI515 - Systems Design/Analysis 515-3 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.

MHI525 - HI Apps and PM 525-3 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.

MHI531 - HC Human Resources 531-3 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.

MHI536 - HC Leadership/Strategy 536-3 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.

MHI551 - HC Legal/Ethics 551-3 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.

MHI566 - Managing Health Information 566-3 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.

MHI580 - Epidemiology and EBM 580-3 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.

MHI581 - HI Interoperability 581-3 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.

MHI583 - Methods Medical Informatics 583-3 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.

MHI584 - Consumer Informatics 584-3 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.

MHI585 - HC Finance 585-3 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.

MHI593 - Adv Research/Residency 593-6 Advanced Research/Residency. Students choose research project or residency. Research option includes special project related to administration in the student's chosen field which meets Graduate School guidelines. Students selecting residency option must notify the academic advisor one year PRIOR to enrolling in MHA 593 to complete MOU process. Research option is the only available option if residency deadline missed. Residency sites are in healthcare facilities only and subject to approval of the instructor and University. 1 credit = 50 contact hours. 300 contact hours required. Hours/credit arranged individually. Restrictions may apply based on state-to-state rules. Restricted to School graduate majors and School advisor.

MHI601 - Continuing Enrollment 601-1 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.

Health Informatics Faculty

Aydin, Serdar, Assistant Professor, Ph.D., University of South Carolina, 2018.

Collins, Sandra K., Professor, Ph.D., Southern Illinois University Carbondale, 2010.

Rados, Robert C., Assistant Professor, MPH, Ph.D., Southern Illinois University Carbondale, 2003.

Shaw, Thomas A., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2005.

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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.