# Master of Science in Health Care Informatics

**Health Care Informatics**

The effective delivery of medical care increasingly requires information technology to harness and systemize this storehouse of knowledge. Through the emerging field of health care informatics, scattered ports of information are pulled together to expedite more comprehensive, accurate care.

As an informatics professional, you can become an architect of the very future of the industry. In simplified terms, health care informatics brings computer science and knowledge management into day-to-day patient care. Its sole purpose is to automate, organize and improve the transmission of information to support the delivery of health care. Informatics enables doctors and nurses to computerize and centralize their patient records, lab technicians to send electronic test results immediately, pharmacists to view a patient’s entire prescription catalog, and much more. The end goal is to improve medical care by increasing speed and accuracy while reducing errors and costs.

Recent changes in the health care industry call for clinicians, administrators and executive leaders who can mobilize innovative technologies. However, there is a critical shortage of qualified professionals capable of applying these technologies and communicating effectively with both health care providers and IT professionals.

With a graduate certificate program and two master's degrees in Health Care Informatics, the Hahn School of Nursing and Health Science is prepared to address that shortage. Both nursing and non-nursing graduates are prepared for certification through the Healthcare Information and Management Systems Society (HIMSS).

<table>
<thead>
<tr>
<th>Entrance Semesters</th>
<th>Fall and Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Deadlines</td>
<td>March 1 (Fall) and November 1 (Spring)</td>
</tr>
<tr>
<td>Standardized Admission Test</td>
<td>Bachelor's degree from an approved, accredited school</td>
</tr>
<tr>
<td>Additional Requirements</td>
<td>Basic computer and information management skills</td>
</tr>
<tr>
<td></td>
<td>Basic understanding of Microsoft Office products (Word, PowerPoint, Excel)</td>
</tr>
<tr>
<td></td>
<td>Basic statistics course</td>
</tr>
<tr>
<td></td>
<td>Medical terminology course</td>
</tr>
<tr>
<td></td>
<td>Minimum of 50 hours as a volunteer in an acute care setting (Letter of Verification Required)</td>
</tr>
<tr>
<td></td>
<td>One year of work experience preferred</td>
</tr>
<tr>
<td></td>
<td>GPA of 3.0 on a 4.0 scale</td>
</tr>
<tr>
<td></td>
<td>Completion of the University Application for the Master of Science in Nursing (MSN) Program</td>
</tr>
<tr>
<td></td>
<td>One official transcript from each college or university attended</td>
</tr>
<tr>
<td></td>
<td>Three professional recommendations</td>
</tr>
</tbody>
</table>

**Foundation Courses:**

- HCIN 540 Introduction to Health Care Information Management
- HCIN 541 Introduction to Health Care Delivery Systems

**Core Courses:**

- HCIN 542 Systems Analysis and Design for Health Care Informatics
- HCIN 543 Database Design and Knowledge Management
- HCIN 544 Advanced Health Care Information Management
- ENLC 500 Health Care Leadership, Values and Social Justice
- ENLC 553 Financial Management in Health Care Systems
- ENLC 556 Management of Health Care System Quality Outcomes and Patient Safety
- ENLC 557 Strategic Planning and Management of Health Systems
- MSNC 507 Statistics

**HCIN 546 Capstone**

### Code | Title | Hours
--- | --- | ---
HCIN 540 | Introduction to Health Care Information Management | 3
HCIN 541 | Introduction to Health Care Delivery Systems | 3
HCIN 542 | Systems Analysis and Design for Health Care Informatics | 3
HCIN 543 | Database Design and Knowledge Management | 3
HCIN 544 | Advanced Health Care Information Management | 3
HCIN 545 | Residency in Health Care Informatics Capstone | 3
ENLC 500 | Health Care Leadership, Values and Social Justice | 3
ENLC 553 | Financial Management in Health Care Systems | 3
ENLC 556 | Management of Health Care System Quality Outcomes and Patient Safety | 3
ENLC 557 | Strategic Planning and Management of Health Systems | 3
MSNC 507 | Statistics | 3

**Courses**

- **HCIN 501 | HCI NEW STUDENT ORIENTATION**
  - Units: 0
  - Repeatability: Yes (Can be repeated for Credit)
  - Master orientation course. Online HCI students only.

---

**Interview (only qualified applicants will be contacted to schedule an interview based on initial review of their application)**

**Evidence of specified immunizations and screening tests, a report of recent physical examination, and BLS certification if admitted into the program**

**International applicants must meet additional requirements for admission [http://www.sandiego.edu/admissions/graduate/international/](http://www.sandiego.edu/admissions/graduate/international/)**
HCIN 540 | INTRODUCTION TO HEALTH CARE INFORMATION MANAGEMENT  
Units: 3  Repeatability: No  
Provides students with necessary skills to understand the basis for health care informatics. Emphasizes basic understanding of computer hardware, network architecture, clinical application of electronic health records, and health care software applications. Includes relevant regulatory, patient privacy, security and reimbursement issues. Examines current trends in meaningful use and electronic health record (EHR) certification as a foundation for understanding emerging issues in health care informatics.

HCIN 541 | INTRODUCTION TO HEALTH CARE DELIVERY SYSTEMS  
Units: 3  
Provides an overview of the health care delivery system, professional roles, care delivery models, and relevant regulatory environment in the United States. Overviews common chronic and acute disease states that drive the U.S. health care system to provide the student with context for care delivery models. Intended for non-clinician students or individuals who lack significant professional health care employment experience.

HCIN 542 | SYSTEMS ANALYSIS AND DESIGN FOR HEALTH CARE INFORMATICS  
Units: 3  Repeatability: No  
Prepares students in the planning, analysis, design, and implementation of computer-based information and technology systems. Includes systems development life cycle, project management skills, requirement analysis and specification, feasibility and cost-benefit analysis, logical and physical design, prototyping, system validation, deployment, human factors, and post-implementation review.

HCIN 543 | DATABASE DESIGN AND KNOWLEDGE MANAGEMENT  
Units: 3  Repeatability: No  
Prerequisites: HCIN 540 and HCIN 542 (Can be taken Concurrently)  
Provides opportunities to gain advanced skills in data and knowledge management. Addresses applied skills in database design, data structure, modeling, and development of database management systems to resolve problems in health care informatics and research settings. Also focuses on development of fundamental skills in knowledge management and knowledge engineering as applied to the health care environment. Provides an overview of national health care databases such as National Database of Nursing Quality Indicators (NDNQI) and Centers for Medicare and Medical Services (CMS) Core measures and data mining techniques. Promotes skills in accessing clinical databases to resolve selected clinical problems.

HCIN 544 | ADVANCED HEALTH CARE INFORMATION MANAGEMENT  
Units: 3  Repeatability: No  
Prerequisites: HCIN 540 and HCIN 542 and HCIN 543 (Can be taken Concurrently)  
Provides information and skills necessary for leadership in informatics roles in health care systems. Emphasizes design, implementation, and evaluation of electronic health record systems and clinical decision support systems. Also addresses regulatory, reimbursement, ethical issues, and emerging technology in health care informatics.

HCIN 545 | RESIDENCY IN HEALTH CARE INFORMATICS CAPSTONE  
Units: 3  
Prerequisites: HCIN 540 and HCIN 542 and HCIN 543 and HCIN 544  
Provides an integrative field experience to synthesize and apply knowledge attained in the HCIN core courses. Includes related practices and seminar experiences that foster achievement of career goals related to health care informatics.

HCIN 546 | CAPSTONE  
Units: 1  Repeatability: No  
This is the final course in the online Health Care Informatics program sequence and is given during the final 14-week semester of the degree program. The purpose of this course is to thread program concepts, skills, and knowledge developed throughout the program into a culminating capstone experience.

HCIN 550 | HEALTH CARE SIX SIGMA, GREEN BELT  
Units: 3  
Employs the structured Six Sigma “DMAIC” methodology: Define, Measure, Analyze, Improve, and Control to introduce principles, tools, and techniques to improve processes within a health care organization. Enables students to apply the Six Sigma model to improve such systems as: patient throughput, clinical diagnostics reporting, and care delivery redesign. Defines tools and techniques of Six Sigma in order to successfully develop, launch, and transition a project through each phase terminating with an evaluation phase.

HCIN 551 | INTRODUCTION TO GEOHEALTH  
Units: 3  
Enhances the student’s familiarity and builds competence in using geographic information systems (GIS) applied to health surveillance and research. Provides the student interactive experiences to map clinic data and to conduct geographic modeling decisions. Incorporates an active learning environment to provide students an opportunity to develop a practical understanding of GIS software.

HCIN 552 | CLINICAL DOCUMENTATION: ELECTRONIC MEDICAL RECORD SYSTEMS  
Units: 3  
Provides an introduction to the emerging discipline of telehealth. Provides a telehealth program. Includes federal and state regulations covering telehealth and care delivery redesign. Defines tools and techniques of Six Sigma in order to successfully develop, launch, and transition a project through each phase terminating with an evaluation phase.

HCIN 553 | CLINICAL DOCUMENTATION SYSTEMS: SPECIALIST ROLE  
Units: 3  
Provide a basic understanding of the electronic medical record and how digital billing systems are evolving to meet the clinical documentation needs of health care organizations. Fosters skills in applying diagnostic coding standards to meet quality, regulatory and billing requirements, including: code book formats; coding techniques; formats of the ICD, DRG, and CPT manuals; health insurance; billing, reimbursement, and collections. Course examines federal regulations covering billing and patient privacy (HIPPA).

HCIN 554 | TELEHEALTH & EMERGING TECH  
Units: 3  
Provides an introduction to the emerging discipline of telehealth. Provides a historical perspective of remote monitoring of patients using various types of telehealth, including video conferencing, telephonic, and home based sensors. Includes an overview of relevant hardware and software requirements for a telehealth program. Includes federal and state regulations covering telehealth practice and reimbursement models by Medicare, Medicaid and other insurers. Includes consumer grade health monitoring devices and emerging health care technology.
HCIN 555 | HEALTH CARE SIX SIGMA, BLACK BELT
Units: 3 Repeatability: No
Prerequisites: HCIN 550
This is the second course in the Health Care Six Sigma Course Series. Builds upon skills and knowledge acquired during the Six Sigma Green Belt course. Develops team leadership knowledge and applied skills using the quality and performance improvement methodology, “DMAIC” model (Define, Measure, Analyze, Improve, and Control) applied to an actual health care project.

HCIN 560 | INTRODUCTION TO HEALTHCARE SIMULATION
Units: 3 Repeatability: No
Provides an overview of the fundamentals and exploration of health care simulation concepts. Innovative teaching strategies and technology are presented including opportunities to gain “hands-on” experience using multiple simulation methods such as task trainers, hi and lo-fidelity mannequins, and standardized patients within active learning scenarios. Emphasizes basic understanding of entire continuum of planning, executing, and debriefing a successful simulation incorporating creation of cases, resource planning, event management, development of competency checklists, and facilitation of reflective learning.

HCIN U540 | INTRODUCTION TO HEALTH CARE INFORMATION MANAGEMENT
Units: 3
Provides students with necessary skills to understand the basis for health care informatics. Emphasizes basic understanding of computer hardware, network architecture, clinical application of electronic health records, and health care software applications. Includes relevant regulatory, patient privacy, security and reimbursement issues. Examines current trends in meaningful use and electronic health record (EHR) certification as a foundation for understanding emerging issues in health care informatics.