

**Applied Health Informatics Certificate Program
Course Descriptions & Student Learning Outcomes**

Course 1: Exploring Informatics: Improving Human Health

In this introductory course the student will gain broad exposure to the field of health informatics with an emphasis on its application to clinical health care settings and consumer-focused health and wellness initiatives. Students from both clinical and non-clinical backgrounds will articulate the value of core informatics competencies for all health care professionals and will apply systems thinking to bridge the clinical and information technology worlds. This course introduces use of data standards and controlled vocabularies to facilitate interoperability and data exchange. Students will explore impacts of informatics on health care cost, access, quality and safety – through the perspectives of the patient and clinician experience in multiple settings. This course prepares the student to be an on-going learner in the field of applied health informatics. Students will be introduced to basic information literacy and writing skills (using APA format) to support successful AHI Certificate Program completion.

By the end of this course, the student will be able to . . .

- Analyze how informatics concepts and tools contribute to current and evolving health care delivery models and influence cost, access, safety, and quality of care.
- Use systems thinking to identify and describe functions of basic system infrastructure components.
- Be a life-long learner who stays informed of new and emerging health information and communication technologies, policies, and social changes and their potential impact.
- Demonstrate basic information literacy and bachelor’s level writing skills, including use of APA format.

Course 2: Applying Informatics: Linking People, Processes & Tools

This course prepares the student to participate in the clinical information system life cycle using project management tools for the design and use of safe and effective systems. It incorporates essential concepts and principles of human-technology interaction and user-centered design and their impact as they relate to error prevention and health care information technology (HIT) usability. Primary topics introduce HIT-related safety issues, practical application of clinical information and workflow process analysis, and development of recommendations for process improvement and redesign. Students will learn a common vocabulary for communicating system requirements that meet user needs, optimize usability, and promote the organization's strategic objectives.

By the end of this course, the student will be able to . . .

- Recommend opportunities for involving clinical and business customers in the information system life cycle.
- Develop recommendations for improvement of patient care technologies and tools, by applying human-technology interface concepts and design principles.
- Propose opportunities for process improvement or redesign of informatics-enabled clinical workflows and information management practices.
- Manage effective communication among leaders, clinical professionals, and information technology experts to identify and clarify informatics/health information technology and communications needs.

Course 3: Leading Informatics: Accelerating Transformation

This course prepares the student to support successful adoption of health care information technology (HIT). This course focuses on key implementation methodology, project management, and change management roles and principles. It addresses the impact of factors leading to HIT adoption success or failure in a variety of health and health care contexts. Measures and methods for qualitative and quantitative evaluation of HIT are introduced. This course prepares the student to design, implement, and evaluate effective training strategies for adult learners, including consumer-specific impacts of HIT.

By the end of this course, the student will be able to . . .

- Be an effective member of a project team that is implementing an informatics-related initiative.
- Apply change management principles for the training and adoption of a new or redesigned health care technology-related process or tool.
- Develop a role specific training and evaluation plan for a health or health care technology.
- Apply HIT evaluation methods to development of a benefits realization management plan.

Course 4: Revealing Informatics: Understanding the Role of Data

This course prepares the student to effectively communicate the data story through visualization tools and tables and to advocate for data-driven decision-making in healthcare. It emphasizes essential aspects of data quality, data integrity, and data standards as foundational for data transformation to information and knowledge. Basic data analytics tools are introduced. This course incorporates essential concepts of eClinical Quality Measures (eCQM), clinical and business decision support, and data security. Industry trends in data science and their impacts on personalized care and population health will be explored.

By the end of this course, the student will be able to . . .

- Frame a clinical or operational question to be answered using data analytics.
- Understand the appropriate acquisition and use of data.
- Relate informatics to decision support and quality improvement.
- Use decision support concepts to promote safe practice.
- Examine issues related to data sharing and security risks.
- Advocate for data-driven decision-making.