Informatics Courses offered at UMN School of Nursing

Undergraduate and graduate student course plans include informatics as a key area of focus. Undergraduates complete NURS 3113 and graduates in our MN and DNP programs complete NURS 5115. For PhD students our informatics courses are often chosen as electives by students, especially NURS 7108 and NURS 7051. LHIT-HP Certificate students complete all graduate courses except the practicums and NURS 7118. DNP NI students complete all graduate courses.

**Undergraduate**
Method of Delivery: Web-based
NURS 3115 Health Informatics and Information Technology (Credits: 3)
Examine health informatics and information technology from consumer, clinical, and public health perspectives. Develop skills in using information technology to communicate, manage knowledge, mitigate error, and support decision-making.

**Graduate**
NURS 5115 Interdisciplinary Healthcare Informatics (Credits: 3)
Method of Delivery: Web-based
Examine the implications of informatics for practice, including nursing, public health, and healthcare in general. Describe the role of standards to build a national electronic health record, including vocabularies and classification systems and health record architecture. Discuss issues associated with implementing an electronic health record management information system. Apply functional requirements and ethical, legislative, and political issues to a use case. Explore global and future informatics issues. Alternative service learning projects available such as analyzing workflow in an agency and recommending changes or analyzing EHR training needs.

NURS 5611 Database Principles for Healthcare (Credits: 2)
Method of Delivery: Web-based
Principles of database theory, modeling, design, and manipulation of databases will be introduced, taught with a healthcare applications emphasis. Students will be able to critically evaluate database query methods and results, and understand their implications for healthcare.

NURS 6105 System Analysis and Design (Credits: 3)
Method of Delivery: Web-based
Examine the role of the informatician in an interprofessional team for analysis and design of information systems. Integrates concepts and theories of systems analysis, system life cycle, project management, system requirements, human factors, and evaluation of effective use of health information systems. Examples of assignments: working with a clinical agency to analyze workflow for a use case in preparation for implementing an EHR.

NURS 7051 Data Science for Healthcare (Credits: 2)
NURS 7052 Data Science for Healthcare Practicum (Credits: 1)
Method of Delivery: Web-based
This course builds understanding of data science and analytics for use in healthcare, explores concepts of clinical intelligence and the learning health system, and introduces data science methods and analytical skills to evaluate healthcare quality and outcomes.

NURS 7105 Knowledge Representation & Interoperability (Credits: 2)
NURS 7106 Knowledge Representation & Interoperability (Credits: 1)
Method of Delivery: Web-based
Examines conceptual and operational aspects of knowledge representation structures in nursing and health care, including standards and interoperability. Students relate representation of data and information in the electronic health record and critically analyze issues for interoperability. Stakeholder values and ethical issues of knowledge representation are explored. Assignments include looking at specific populations, data sources, and data mapping.

NURS 7108 Population Health Informatics (Credits: 2)
NURS 7109 Population Health Informatics Practicum (Credits: 2)
Method of Delivery: Web-based
Examine standards, interoperability, and integration of information systems for population health. Analyze population health use cases for potential benefits and legal, ethical, and practical issues related to the development of population health information systems. Students select a use case and analyze multiple data sources and how these can be integrated to example factors influencing a population health condition.

NURS 7113 Clinical Decision Support (Credits: 2)
NURS 7114 Clinical Decision Support Practicum (Credits: 2)
Method of Delivery: Web-based
Examine principles and concepts of knowledge management and decision making for support of clinical practice. Design a clinical decision support intervention and examine the legal, ethical, and practical issues related to its implementation and maintenance of CDS interventions. Students partner with clinical, public health, or industry partners to evaluate specific types of clinical decision, the data structure, and recommend specific types of CDS tools for improving decision making.

NURS 7118 Human Factors and Human-Computer Interaction in Health Informatics (Credits: 3)
Method of Delivery: Web-based
Principles of human factors and human-computer interaction to optimize research/practice in nursing and health informatics. Interactive system design that accommodates/enhances capabilities of user.