

# HEALTH INFORMATICS (MHI)

## Graduate Studies

### MHI 202 – Computer-Based Patient Records (4 units)

*Course Description:* Introduction and overview of computer-based clinical record systems. Topics include data modeling, health system standards and terminologies; security, privacy and confidentiality; workflow modeling; data visualization; legal; decision support; public health; and evidence-based practice.

*Prerequisite(s):* Current enrollment within the Health Informatics Graduate Program or consent of instructor.

*Learning Activities:* Lecture 3 hour(s), Discussion 1 hour(s).

*Grade Mode:* Letter.

### MHI 207 – Decision Support Systems (4 units)

*Course Description:* Explores decision support systems for medical application. Topics include medical decision making, uncertainty, review of existing decision support systems, knowledge engineering, data mining, and knowledge based systems.

*Prerequisite(s):* Consent of instructor.

*Learning Activities:* Lecture/Discussion 4 hour(s).

*Grade Mode:* Letter.

### MHI 208 – Medical Informatics in Web-Based Enterprise Computing (4 units)

*Course Description:* Introduction to the decision making processes and technologies that are involved in developing web-based distributed enterprise applications in medicine. Focus on the Informatician's role as a team member.

*Learning Activities:* Lecture 2 hour(s), Discussion 2 hour(s).

*Grade Mode:* Letter.

### MHI 209 – Data Acquisition & Analysis (4 units)

*Course Description:* Examines the nature, acquisition, and analysis of medical data. Data ranges from signals of electrical potentials, sounds, text, images (still and motion), and data from nucleic acid and protein expression and sequencing instruments.

*Learning Activities:* Lecture 2 hour(s), Discussion 1 hour(s), Laboratory 3 hour(s).

*Grade Mode:* Letter.

### MHI 209N – Consumer Digital Health (4 units)

*Course Description:* Landscape, technologies, and policies involved in data acquisition, storage and analysis in digital and connected health and consumer health informatics. Models of digital health data monitoring, including clinical, mobile health and telehealth, and theories relevant to health and information behavior by consumers and patients. Design, acquisition and analysis of data in the personal and consumer health ecosystem.

*Learning Activities:* Lecture 4 hour(s).

*Grade Mode:* Letter.

### MHI 210 – Introduction to Health Informatics (4 units)

*Course Description:* Overview provides broad exposure to the field of Health Informatics. Topics covered include, but are not limited to, networking, information systems, coding, HL7, Security, and HIPAA.

*Learning Activities:* Lecture 3 hour(s), Discussion 1 hour(s).

*Grade Mode:* Letter.

### MHI 212 – Computer Security in Health Informatics (4 units)

*Course Description:* Critical thinking about basic concepts in computer security and privacy. How the computer security and privacy impact health informatics, ranging from electronic health records to telemedicine to remote, virtual surgery.

*Prerequisite(s):* MHI 210; MHI 202; MHI 209.

*Learning Activities:* Lecture 3 hour(s), Project.

*Grade Mode:* Letter.

### MHI 289A – Special Topics in Medical Informatics: Data Acquisition (1-5 units)

*Course Description:* Special topics in Data Acquisition.

*Prerequisite(s):* Consent of instructor.

*Learning Activities:* Lecture 1-5 hour(s), Laboratory 1-5 hour(s).

*Repeat Credit:* May be repeated when topic differs.

*Grade Mode:* Letter.

### MHI 289B – Special Topics in Health Informatics: Seminars in Clinical Translational Informatics (1 unit)

*Course Description:* Seminars in current clinical translational informatics research topics. Guest presenters and faculty led discussions.

*Learning Activities:* Seminar 1 hour(s).

*Grade Mode:* Letter.

### MHI 289E – Clinical Knowledge for the Health Informaticist (3 units)

*Course Description:* Basic clinical knowledge for health informatics students. Human systems, disease states and conditions, treatments and prognosis.

*Prerequisite(s):* Consent of instructor.

*Learning Activities:* Lecture 2 hour(s), Laboratory 2 hour(s).

*Grade Mode:* Letter.

### MHI 289F – Database & Knowledge Management (4 units)

*Course Description:* Objectives include understanding the informatics techniques for data capture, information management, and knowledge generation that a student will use throughout their career.

*Prerequisite(s):* Consent of instructor.

*Learning Activities:* Lecture/Discussion 3 hour(s), Term Paper.

*Repeat Credit:* May be repeated.

*Grade Mode:* Letter.

### MHI 289G – Special Topics in Health Informatics: Biostatistics (4 units)

*Course Description:* Special topics in Biostatistics. Evaluation Methods and Statistics in Biomedical Informatics. Research design and analysis with special emphasis on Biomedical Informatics.

*Prerequisite(s):* Consent of instructor.

*Learning Activities:* Lecture 3 hour(s), Laboratory 3 hour(s).

*Grade Mode:* Letter.

### **MHI 289H – Modeling Biological Systems (4 units)**

*Course Description:* Create awareness of how modern computer graphics have led to VR-Sim-Rob applications, and how they are modifying the teaching of medicine and in some cases the diagnosis and treatment of patients.

*Prerequisite(s):* Consent of instructor.

*Learning Activities:* Lecture 3 hour(s), Laboratory 1 hour(s).

*Enrollment Restriction(s):* Limited to 20 students.

*Grade Mode:* Letter.

### **MHI 289I – Programming in Health Informatics (3 units)**

*Course Description:* Basics of computer programming essential to the study of informatics. Impacts on systems within healthcare, public health, nursing, research, and others.

*Prerequisite(s):* Consent of instructor.

*Learning Activities:* Lecture 2 hour(s), Laboratory 2 hour(s).

*Grade Mode:* Letter.

### **MHI 290 – Seminar in Medical Informatics (1 unit)**

*Course Description:* Discussion of current graduate research and topics in Medical Informatics. Oral presentations of individual study.

*Learning Activities:* Seminar 1 hour(s).

*Enrollment Restriction(s):* Restricted to 20 students.

*Grade Mode:* Satisfactory/Unsatisfactory only.

### **MHI 298 – Group Study in Health Informatics (1-5 units)**

*Course Description:* Directed reading and discussion on select topics.

*Prerequisite(s):* Consent of instructor; graduate student in good academic standing.

*Learning Activities:* Variable 1-5 hour(s).

*Repeat Credit:* May be repeated when topic differs.

*Grade Mode:* Satisfactory/Unsatisfactory only.

### **MHI 299 – Research in Health Informatics (1-12 units)**

*Course Description:* Independent research in Health Informatics.

*Learning Activities:* Variable.

*Grade Mode:* Satisfactory/Unsatisfactory only.