BIOMEDICAL INFORMATICS (BMI)

BMI 810 INTRODUCTION TO BIOMEDICAL INFORMATICS 3 Credit Hours
An introduction to the field of biomedical informatics. The historical development of the field and the current state of the art will be discussed. Issues related to bioinformatics, clinical informatics, and public health/population informatics will be discussed.
Prerequisite: Admitted to BMI program or permission of the instructor.
Typically Offered: FALL

BMI 815 TOOLS AND ALGORITHMS IN BIOINFORMATICS 3 Credit Hours
This course covers most of the commonly used tools for bioinformatics data analysis. The main objectives of this course are to briefly explain the underlying algorithms (methods) of various data analysis tools and to provide hands-on practice opportunities to students using a real dataset. Typically, each bioinformatic tool will be covered in a 3-hour session that includes a lecture and a lab session. This course will introduce the field of bioinformatics and cover the major bioinformatic tools that are used for analyzing a broad spectrum of bioinformatic datasets.
Cross List: MGCB 815
Typically Offered: FALL

BMI 825 INTRODUCTION TO R PROGRAMMING FOR BIOMEDICINE 3 Credit Hours
The main objective of this course is to introduce data manipulation methods for health professionals by using R programming language. Major topics include basic concepts of R, data manipulation and processing, statistical analysis, graphical presentation and simulation, genomic databases retrieval, and commonly used R packages.
Cross List: PAMM 825
Typically Offered: FALL/SPR

BMI 840 CLIN SYSTEMS ARCHITECTURE 3 Credit Hours
This course will explore and integrate multiple topics in health care information systems history, architecture, function and design in order to create an understanding of the complexities of clinical care systems and prepare the student to create and manage the next generation of clinical information systems. The needs of multiple clinical disciplines will be explored to understand how they can share, communicate and manage patient information using clinical information standards and principles of clinical informatics.
Prerequisite: UNO Information Systems/Quantitative Analysis students will be required to have completed foundation requirements for the M.S. in Management Information Systems; PSM 810 or comparable healthcare experience; clinical applicants from the Colleges of Medicine or Nursing must have completed UNO-ISQA 8050 and CIST 2050 or equivalents; Waiver of these requirements is contingent upon review and permission of instructor.
Typically Offered: FALL

BMI 850 SPECIAL TOPICS IN CLINICAL INFORMATICS 3 Credit Hours
An in-depth discussion of implementation science and clinical decision support sciences in health informatics. The focus is on the integrative knowledge of theory and applications in clinical informatics. Grading is based on reflections and course project.
Typically Offered: SPRING

BMI 860 INTRODUCTION TO APPLIED HEALTH INFORMATICS 3 Credit Hours
Health informatics is the interdisciplinary study of the collection, management, and use of patient and health services related data to improve the overall quality and effectiveness of healthcare. This course presents an introduction to the practice of informatics in the healthcare setting. Overarching topics include: the fundamental informatics framework, the role of informatics across the healthcare continuum, and a survey of health informatics applications
Typically Offered: FALL/SPR

BMI 861 HEALTH DATA ANALYTICS 3 Credit Hours
This course presents the basic concepts of data analytics in the healthcare setting. Students will learn and apply skills to effectively collect, query, analyze, and visualize data to solve problems. Evaluation is based on weekly assignments, and a final project.
Instructor: Anne Skinner, RHIA, MS James McClay, MD, MS, FACEP Robert Hoyt, MD
Typically Offered: FALL/SPR

BMI 862 HEALTH INFORMATION SYSTEMS 3 Credit Hours
This course introduces health information systems as tools to gather, analyze, and document patient and health system information to detect, understand, and prevent or treat diseases. Students will learn how interoperable health information and decision support systems work together to provide safe, effective, patient-centered, timely, efficient, and equitable care
Instructor: Anne Skinner, RHIA, MS (Course Director) James McClay, MD, MS, FACEP (Instructor) Robert Hoyt, MD (Instructor)
Typically Offered: FALL/SPR

BMI 863 HEALTHCARE INFORMATION MANAGEMENT AND SECURITY 3 Credit Hours
This course explores topics related to the management and security of health information. Specifically, students will learn the administrative and regulatory uses of health information; the fundamentals of medical coding and reimbursement; and methods used to ensure the confidentiality, privacy, and security of patient health information.
Instructor: Anne Skinner, RHIA, MS (Course Director) James McClay, MD, MS, FACEP (Instructor) Robert Hoyt, MD (Instructor)
Typically Offered: FALL/SPR

BMI 896 RESEARCH OTHER THAN THESIS 1-9 Credit Hours
Student research that is clearly distinct from ongoing or planned thesis/dissertation work, or research/lab rotations preformed prior to selecting a permanent advisor or supervisor.
Prerequisite: Students must be BMI graduate student
Typically Offered: FALL/SP/SU

BMI 899 MASTERS THESIS 1-9 Credit Hours
Independent BMI research related to masters degree
Prerequisite: Must be masters BMI student
Typically Offered: FALL/SP/SU

BMI 970 SEMINAR - HEALTH INFORMATICS 1 Credit Hour
Student and faculty presentations on current research and topics in health informatics. The focus is on creating a venue for student and faculty health informatics researchers to present, discuss and receive constructive criticism on their research.
Prerequisite: Enrolled in the Biomedical Informatics graduate program, MSIA graduate program (Health informatics) or Bioinformatics, or by permission. Must be PhD student in BMI
Typically Offered: FALL/SPR
BMI 998 SPECIAL TOPICS IN BIOMEDICAL BIOINFORMATICS 1-9 Credit Hours
SPECIAL TOPICS IN BIOMEDICAL BIOINFORMATICS
Prerequisite: Must be PhD student in BMI
Typically Offered: FALL/SP/SU

BMI 999 DOCTORAL DISSERTATION 1-9 Credit Hours
Independent student research related to the PhD dissertation. This course may be utilized before or after successful completion of the comprehensive exam.
Prerequisite: Must be PhD student in BMI
Typically Offered: FALL/SP/SU