Carlow University
Health Care Data Analytics (HCDA)
Program Courses and Descriptions
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Freshman Year

Medical Terminology - This online course is designed for students who have never studied medical terminology or for those who want to improve their knowledge in this field. This course introduces students to the medical terminology used in the medical coding and reimbursement profession and covers medical terminology from a Health Informatics perspective. This course is valuable for anyone preparing for a career in a non-clinical medical profession and is a requirement for the Health Information Management and Analytics Major.

HIM 101 Systems Analysis Basics - This course enables the student to investigate systems development and analysis, as well as the types of management that are needed when an organization is planning on process reengineering and improvement. The various concepts, skills, methodologies, techniques, tools and perspectives essential for system analysis will be examined. This course will be of special interest to current and future business professionals who would like to gain a basic knowledge and understanding of systems analysis.

Sophomore Year

HIM 202 Electronic Health Record – This course reviews the many issues and challenges related to the current EHR landscape. This review includes current and planned for quality standards, design and development opportunities, clinical terminologies, a review of EHR programs, security concerns and best practices, as well as the opportunities and usefulness of rich patient health data.

HIM 203 Clinical Classification Systems I – This course introduces students with the principles of classification systems, as well as the importance and purposes of accurately classifying procedures and illnesses. A review and understanding will be gained by the students of CPT-10, ICD-10-PCS, ICD 10-CM coding. The interface of classification systems with Diagnosis Related Groups (DRG's) will be of focus, as well as the Uniform Hospital Discharge Data Set (UHDDS). An examination of data quality guidelines will be of particular focus.

HIM 204 Clinical Classification Systems II – The goal of this course is to build on the learning completed in HIM 203, as well as help students understand the various terminologies used in the health care field including LOINC and SNOMED-CT. An additional review of data capture technologies will be conducted to include voice recognition software, natural language processing, and document imaging.

HIM 206 Legal Aspects of Electronic Records (Prerequisite: HIM 202) – This course is designed to provide a broad overview of the principles, regulations, and laws governing hospitals and other healthcare organizations. The current and potential future laws addressing the management of confidential and health records information will be highlighted, with case studies used to explain over-arching concepts.

Junior Year

HIM 205 HealthCare Reimbursement (Prerequisite: HIM 203, 204) – This course provides a foundation for the understanding of the reimbursement system in hospitals and other facilities. This course expands upon the prerequisite HIM 203 and 204 Clinical Classification courses, focusing on the critical role of coding in the billing process. The course reviews strategies to minimize and identify health care fraud, as well as payment cycle management, value-based purchasing, compliance, and payment methodologies.

HIM 301 Health Informatics Topics – This course will present common health informatics challenges, and review strategies to minimize their negative impact. This course will include discussions and assignments where students will need to research informatics and other critical issues that impact the quality, cost, and delivery of health care.

HIM 302 Health Informatics and Analytics – Health information management operations, and the use of the data generated throughout the health care system, is the focus of this course. This study of database analysis, design, and theory – as well as the use of data management systems in health care – will provide the students with a greater overall understanding of health informatics and analytics.

HIM 303 Health Data Statistics (Pre: HIM 203, 204, 205) – This course addresses the compilation, analysis, maintenance, and use of health care statistics. Various topics will be addressed to include databases, vital statistics, descriptive statistics, indices, basic statistical principles, and research techniques. This course will help students understand how to apply, present, interpret and utilize health care statistics.

Senior Year

HIM 401 Topics in Health Quality and Regulation – This course will review fundamental issues surrounding information management in the ever-changing health care environment, and the regulatory requirements guiding decision makers. The concepts relative to health care informatics and information systems – as well as their application to support clinical and administrative decision-making – will be examined.

HIM 402 Health Care Leadership and Management Issues – This course facilitates the students' understanding and use of health information, along with leadership strategies, in the management of hospital systems. Change management, focusing on outcomes and project goals/deliverables, is a focus of the course. Health industry case studies will be used to highlight issues, as well as explain lessons learned.

HIM 403 Health Data and Information Governance – This course focusses on the application of data management, measurement, and statistical analysis principles to address patient safety and quality improvements. Principles and use of software assurance tools, code analysis, as well as using secure web services will be reviewed.

HIM 404 Health Care Project Management – This course reviews the necessary project management skills needed to lead health information and data analytics efforts. Students will learn how to create productive and effective management teams in the health care environment, while paying special attention to data security, patient safety, and outcomes.

HIM 405 Topics in Clinical Research and Population Health – As an ever-changing field of study, clinical research and population health relies on evidence based data to improve patient outcomes. This course will review current topics in health care related to clinical research and population health to present the student with a broad overview of current activities and issues in the field of study.

HIM 406 Topics in Personalized Medicine – Personalized medicine is a process where, through data analysis and other means, patients receive better diagnoses, earlier interventions, more effective and efficient therapies, and a more customized treatment plan. Through predictive modeling and analytics – facilitated through various health information software programs – precision medicine can help determine each person's unique disease susceptibility, identify preventive measures and enable target therapies to facilitate wellness. Personalized medicine, through health information management and analytics, is the future of medicine.

HIM 407 PPE Professional Practicum – The professional practice experience (PPE) provides students with an internship experience, with the goal being that the student can partner with clinical, educational, technical, or other facilitators to gain knowledge and experience in the health information management and analytics field of their choosing. The ultimate goal is a final placement in the industry and position of their choosing, one that matches the students' interests with the industry's needs.