

Healthcare Technologies Management

Degree Offered

Master of Science*

*Joint-Degree Program with Marquette University

Program Description

The Healthcare Technologies Management Program is a collaborative effort between Marquette University and the Medical College of Wisconsin that combines business, technology and healthcare. The objective of the program is to educate professionals capable of managing the design, development, commercialization, and regulatory compliance of diagnostic and therapeutic medical devices, and the implementation, utilization, and assessment of hospital-based healthcare technologies.

Healthcare institutions, medical device companies, and healthcare consulting firms have a growing need for skilled professionals with technical and managerial skills, and an understanding of the healthcare delivery and regulatory environments. Graduates of the program will have the education and skills needed to pursue career opportunities in clinical, industrial, and consulting environments. The program meets the needs of recent undergraduates seeking an advanced degree as well as employed technical personnel interested in opportunities for career advancement. Elective courses and independent study projects enable students to customize their training to meet individual needs, interests, and career goals. With the assistance of a faculty and industry/clinical advisor, students are required to design and complete an independent study project. The course offerings and schedules are designed to allow working students to pursue this MS degree on a part-time basis. Full-time students can complete the program in three semesters (12 months). Course topics include technology assessment, ethics of technology utilization, standards and regulations, product development management and the environment of healthcare delivery

Program Admissions Requirements

Application is made through Marquette University

*In addition to the general **Graduate School admission requirements**, this program has additional specific requirements.*

Bachelor's degree in engineering, science (physics, chemistry, biology), computer science, information technology, or nursing.

Program Degree Requirements

The Healthcare Technologies Management Program has a required 37.0 course credits to complete.

Required Courses (Medical College of Wisconsin Campus)

14200 Survey of Biomedical Engineering Technology. 3 credits.

Review of technologies employed in medicine for diagnosis, treatment, and prevention of chronic and acute diseases, as well as hospital support. The goal of the course is to familiarize students with the operating principles, economic aspects, and purposes of healthcare technologies in clinical care.

14211 Biomedical Technology Standards and Regulations.

2 credits.

An overview of standards and regulations that impact on the development, acquisition, and management of healthcare technologies. International technical standards, such as those promulgated by ISO and IEC, are important factors in product design and user acceptance. Consensus technical standards are also reiterated in federal regulations that cover the medical manufacture and distribution of medical devices and indirectly regulates their use, including the practice of medicine in healthcare facilities. In order for their organizations to compete, technology managers need to understand the regulatory paths to U.S. and international markets. Likewise, reimbursement standards and regulations affect medical technologies at all stages of maturation, from prototype development, through testing, marketing, customer use and into obsolescence. This course examines how these standards and regulations affect technology viewed from different perspectives based on what a technology is (e.g. physical device or drug, information and knowledge) and what technology causes in the adopting organizations (e.g. change, new processes).

Required Courses (Marquette University Campus) HCTM 6200 Health Care Technology Assessment. 3 credits.

Introduction to health care technology assessment methods for hospital systems and medical businesses encompassing technical, clinical, and business elements. Topics include: clinical results analysis, gold standard comparison, Bland-Altman analysis, sensitivity/specificity analysis, and business trade-off analysis. Extensively uses case studies of present and developing medical technologies as examples of applied assessment methodologies.

HCTM 6400 Ethics of Technology Utilization. 1.5 credits.

Ethics applied to the utilization and management of health-care technologies in a patient-care setting, including topics such as

beneficence, nonmaleficence, quality-cost, resource allocation and personal-public conflicts, technology diffusion models and controls, clinical research and research integrity, and patient rights and confidentiality. This course is offered online only.

HCTM 6500 (MCW 14230) Management of Medical Product Development. *2 credits.*

Activities required for the design, development, and commercialization of new medical devices. Design, testing, regulatory, and legal requirements will be presented along with project evaluation and management methods. Issues involving management of the product development process will be discussed.

HCTM 6931 (MCW 14298): Special Topics in Healthcare Technologies Management. *1 credit*

HEAL 6840 Environment of Healthcare Delivery. *2 credits.*

Review of current models for healthcare delivery (e.g. fee for service, modified fee for service, managed care, capitated care, IPOs, HMOs), and the ascendancy/descendency of various models in different geographic regions and in response to economic incentives. This course is offered online only.

HCTM 6998 Professional Project in Healthcare Technologies Management

(1 credit X 3 semesters)

Students enrolled in the Healthcare Technologies Management Program are required to take MBA 6020, 6030, 6140 **or** 6160, and 6110 (4 courses, 13.5 credits).

MBA 6020. Business Essentials: Accounting, Economics and Finance. *4.5 credits.*

Study of understanding, analyzing and using relevant information for basic management decision making. Accomplished by looking at business decisions from three different fields: Accounting, Economics and Finance. From each field, the intention is to present the basic tools used to model and inform decisions as well as an overview of what expectations you can have of these business areas. Prereq: Admitted to graduate BUAD; HCTM, NURS; [MBA 6010](#); or cons. of M.B.A. prog. dir.

MBA 6030. Business Essentials: Marketing, IT and Operations and Supply Chain. *4.5 credits.*

Essential topics and skills in the areas of marketing, information technology and operations and supply chain management. Includes a mix of in-class meetings and online activities and participation. Utilizing case studies, projects and team-based activities, students learn relevant concepts and skills that are integrated across the three areas. After successful completion, students have a sufficient base in these business disciplines as well as a necessary foundation for future

courses in marketing, information technology and operations and supply chain management. Prereq: Admitted to graduate BUAD, HCTM and NURS; [MBA 6010](#); or cons. of M.B.A. prog. dir.

MBA 6110. Strategic Management Introduction. *3 credits.*

Presents frameworks and tools for formulating successful strategies. Focuses on identifying and analyzing the internal and external sources of competitive advantage available to the firm and on developing strategies to access these sources of profitability. Strategy is viewed as a link between the firm and its environment. Implies that there are two primary areas of analysis: the external industry environment of the firm and the internal environment of the firm (the resources and capabilities it possesses). Prereq: Admitted to graduate ACCO, BUAD, CCOM, ECON, HCTM, HURE and LEDR; [MBA 6010](#), [MBA 6020](#) and [MBA 6030](#); or cons. of M.B.A. prog. dir.

MBA 6140. Leading People and Change. *1.5 credits.*

Introduces concepts for understanding and managing human behavior in organizations. Topics include: individual differences, motivation, group/teamwork, national and organizational culture, as well as organizational change. Emphasis is on applying these concepts to real-world organizational challenges through leadership and human resource management skills. Students leave with a set of tools for enhancing key performance indicators and success in their own organizations. Prereq: Admitted graduate ACCO, BUAD, CCOM, ECON, HCTM, HURE and LEDR; or cons. of M.B.A. prog. dir.

MBA 6160. Leadership Coaching and Development. *1.5 credits.*

Helps identify and understand one's leadership style and the styles of others throughout their career. Assess personal leadership characteristics such as personality traits, values, competencies, and communication and conflict handling styles in order to identify current strengths and opportunities for future growth. The objective is to advance leadership capacity through heightened self-awareness achieved by examination, reflection and feedback. Exposure to both values-based leadership theories and applied ethical frameworks provide a foundation for developing a personal leadership development plan. Prereq: Admitted to graduate ACCO, BUAD, CCOM, ECON, HCTM, HURE and LEDR; or cons. of M.B.A. prog. dir.

Electives

6 credits

There are many elective courses to choose from. Students must obtain approval for their elective courses from the program director.