Pharmacy, M.S.

Learning Outcomes
Graduates will exhibit the ability to:

• demonstrate both subject matter expertise and the ability to critically evaluate the current state of knowledge in that area of expertise;
• understand the fundamental concepts and applications of current methodology and techniques for the conduct and evaluation of research in their area of expertise;
• demonstrate the ability to conduct research under the direction of a faculty member and interact successfully with other members of a research team;
• effectively communicate research findings in both written and oral formats;
• know and apply the highest ethical standards in research and in communication of the results of that research; and
• be prepared for career options in academia, industry, government, or other relevant fields.

Requirements
The Master of Science in pharmacy requires at least 30 s.h. of credit, which may include 6 s.h. of research. The degree usually requires a thesis. Students must maintain a cumulative g.p.a. of at least 2.75. Programs are offered in four areas: clinical pharmaceutical sciences, health services research, medicinal and natural products chemistry, and pharmaceutics.

The clinical pharmaceutical sciences area is designed for students interested in clinical research. The goal of the program is to advance the science of human pharmacology and therapeutics and to improve the safe, effective, and economical use of medications by patients. The program emphasizes the integration of clinical and basic research. It involves advanced studies of clinical pharmacology, pharmacokinetics, pharmacodynamics, pharmacogenetics, and the requirements for regulatory approval of new drugs.

The health services research area provides an innovative approach to studying the challenges facing the health care system and provides evidence to support policy-based solutions. The program combines ideas across several distinct scientific paradigms (sociology, economics, psychology, business, and anthropology) to better understand the factors leading to decisions in health care and the consequences of these decisions. Students gain broad knowledge of health and pharmaceutical care, informed by theories from economics and social psychology. The program teaches intellectual and practical skills to investigate research questions dealing with current issues.

The medicinal and natural products chemistry area educates students in the chemistry and biology of drug discovery. The program offers an interdisciplinary course of study and challenging opportunities to do fundamental drug-related research in the basic chemical and biological sciences. Contemporary research geared toward drug discovery and design is the cornerstone of graduate study in this area. Students design a course of study, including core courses in synthesis, spectroscopy, enzymology, pharmacology, analytical chemistry, toxicology, and drug design as well as elective courses to maintain breadth and achieve depth in a research area.

Admission
Applicants must meet the admission requirements of the Graduate College. They must:

• hold a bachelor's degree from a U.S. institution or an equivalent degree from another country as determined by the University of Iowa Office of Admissions;
• have a g.p.a. of at least 3.00;
• submit a Graduate Record Examination (GRE) General Test score; and
• if an international applicant, receive a Test of English as a Foreign Language (TOEFL) minimum score of 81, an International English Language Testing System (IELTS) minimum overall score of 7.0 with no individual score below 6.0, or a Duolingo English Test (DET) minimum score of 105; however, if an applicant has a master's degree from a U.S. institution, this requirement is waived.

The pharmaceutics area is a multidisciplinary science that examines the development, production, and characterization of dosage forms, as well as the disposition and action of drugs in the body. As pharmaceutical scientists have been engaged in the development of novel biomaterials for sophisticated drug delivery systems, they also have expanded into research with applications in the development of medical devices and tissue engineering.

For more information about graduate study, visit the College of Pharmacy website.

Career Advancement
Advanced study in the pharmaceutical sciences prepares students for research, teaching, and administrative positions in the pharmaceutical industry, in colleges and universities, in government agencies, and in health-related institutions and organizations.