PROGRAM GOALS

The goals of the Pharmaceutical and Chemical Sciences Program curriculum are:

- to prepare students for the challenges in both basic and applied research
- to advance knowledge in pharmaceutical and chemical sciences
- to encourage fundamental discovery in the chemical, pharmaceutical and healthcare sciences
- to attain advanced degrees

GRADUATE DEGREES IN PHARMACEUTICAL AND CHEMICAL SCIENCES

The mission of the Pharmaceutical and Chemical Sciences Graduate Program (PCSP) is to prepare Doctor of Philosophy and Master of Science graduates for increasingly complex and integrated research in the pharmaceutical, chemical and biotechnological environment.

The PCSP offers students five research focus areas through four departments (see back). In addition to core courses, students also receive general training in industrial process and methodology; laboratory management; risk management and safety; instrumentation and laboratory techniques; statistics and experiential design; ethical and legal aspects of scientific inquiry; exposure to the basic, applied and clinical sciences related to the pharmaceutical industry; and experience in professional presentations and data summaries.

Students selected for a graduate assistantship receive a stipend and tuition remission (see back for more on financial aid).
Focus Areas

BIOANALYTICAL AND PHYSICAL CHEMISTRY
Investigation of chemical, biochemical and biomedical questions with the help of a broad range of computational and experimental tools, including state-of-the-art instrumentation, synthetic methods and molecular techniques. Offered through the Department of Chemistry.

CHEMICAL SYNTHESIS, DRUG DISCOVERY AND DESIGN
Discovery and development of new chemical entities as potential drugs; new methods of chemical synthesis, structural elucidation and efficacy evaluation. Offered in conjunction with the Department of Chemistry and Department of Pharmaceutics and Medicinal Chemistry.

DRUG TARGETING AND DELIVERY
Design and application of novel delivery systems for optimizing drug delivery to specific organs or other biological targets as well as pharmacokinetics. Offered through the Department of Pharmaceutics and Medicinal Chemistry.

MOLECULAR-CELLULAR PHARMACOLOGY AND TOXICOLOGY
This track focuses upon investigation of the mechanisms by which drugs and other bioactive chemicals affect cellular processes. Molecular techniques are applied to studies in cell culture as well as laboratory animals. Offered in conjunction with the Department of Physiology and Pharmacology and the Department of Pharmaceutics and Medicinal Chemistry.

PHARMACOECONOMICS AND HEALTH CARE OUTCOMES AND SERVICES
Designed to promote the development of scholars by providing the knowledge and analytical skills necessary to evaluate the delivery and use of pharmaceutical/health care products and services, thereby improving medication use and patient-specific outcomes, as well as reducing health care costs. Offered through the Department of Pharmacy Practice.

Financial Aid
Stipends and tuition remission are awarded to students on a competitive basis. Stipends are awarded to students serving a graduate or research assistantship. Tuition remission pertains to full or partial tuition benefits awarded to graduate assistants to help defray the cost of tuition. Many entering graduate students receive sufficient tuition remission to pay for the entire cost of tuition. Earnings from graduate stipends can be used to pay for rent, groceries and other living expenses.

Degree Requirements
The minimum requirements are 32 units and thesis for the M.S. degree and 45 units and dissertation for the Ph.D. degree.

Admission Requirements
- The GRE General Exam is required. Subject test is optional. Minimum requirements: Verbal and Quantitative = 1100; Analytical = 3.0. GRE scores no more than 5 years old.
- Bachelor’s degree with a B average (GPA of 3.0) or higher in all upper-division coursework.
- Essay or personal statement focusing on career objectives and personal ideals. Applicants must indicate focus area preference. Grammar and writing skills are an important part of the evaluation.
- Three letters of recommendation (no more than one year old).
- Official transcripts from all universities attended. We recommend ASCISS, ECE or WES for evaluating transcripts from foreign institutions.
- English competency exams required for international applicants whose native language is not English. We recommend either TOEFL (Test of English as a Foreign Language) or IELTS (International English Language Testing System). Scores can be no more than two years old.

Minimum scores for admission:

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<thead>
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<th>TOEFL</th>
<th>IELTS</th>
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<tbody>
<tr>
<td>550 (paper)</td>
<td>6.5</td>
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<tr>
<td>79 (online)</td>
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Minimum for graduate assistantship:

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</thead>
<tbody>
<tr>
<td>575 (paper)</td>
<td>7.0</td>
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<tr>
<td>89 (online)</td>
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- International students must complete the Certification of Finances form (supporting bank documentation no more than six months old). Financial Certification may be submitted at the time of application or upon notification of admission by PCSP.