M.S. in Pharmaceutical Engineering

The master's degree is a valued professional credential, offered on a full-time or part-time basis. Applicants are expected to have a baccalaureate degree in chemical engineering or equivalent with a minimum GPA of 3.0. Students with undergraduate degrees in biology, chemistry, physics, and equivalent may also be admitted on condition that additional undergraduate courses, specified at the time of admission, be taken and successfully completed. International students must achieve a TOEFL score of at least 550 (paper-based); 213 (computer-based); 79 (internet-based). A quantitative section of GRE must be at the level approved by NCE, presently at 155.

Thirty credit hours are required for the degree. A thesis is optional.

Code	Title	Credits
Core Courses (5 courses=15 credits):		
CHE 612	Kinetics of Reactions and Reactor Design	3
CHE 611	Thermodynamics	3
PHEN 601	Principles of Pharmaceutical Engineering	3
PHEN 603	Pharmaceutical Unit Operations: Processing of Liquid and Dispersed Phase Systems	3
PHEN 618	Principles of Pharmacokinetics and Drug Delivery	3
Select at least two from these courses (2 course=6 credits):		
PHEN 602	Pharmaceutical Facility Design	3
PHEN 605	Pharmaceutical Packaging Technology	3
PHEN 604	Validation and Regulatory Issues in the Pharmaceutical Industry	3
CHE 714	Micromechanics of Part Tech Pr	3
CHE 624	Transport Phenomena I	3
CHE 603	Separation Process Principles	3
		3
Select any combination of three elective courses/thesis courses/project course from the following list (3 courses=9 credits):		**9**
Any of the courses already listed above but not yet taken		3
Any courses from the programs specified below:		3
Pharmaceutical Engineering (PhEn) (such as courses not taken already)		
Chemical Engineering (ChE)		
Biomedical Engineering (BME)		
Biology (BIOL)		
Chemistry (CHEM)		
Biopharmaceutical Engineering (PhB)		
Pharmaceutical Materials Processing (PhMP)		
Pharmaceutical Systems Management		
Industrial Engineering (IE)		
Engineering Management (EM)		
Mathematics (MATH)		
Project/Independent Study		3
Thesis		6