Winkle College of Pharmacy
Pharmaceutical Sciences Graduate Program
PhD Degree Minimum Requirements

PhD - Biomembrane Sciences (replaces "*Pharmaceutics* " track)

Required Didactic & Research Courses	**Course Number**		**Credit Hours**
Ethics in Research	GNTD7003		1
Principles of Pharmaceutical Sciences	PHID7010		3
Statistics (*choose one of the following courses*)			3
Statistical Principles in Clinical Research (PHDD8060, 3 cr hrs)			
Introduction to Biostatistics (BE7022, 3 cr hrs)			
Advanced Pharmaceutics (*choose one of the following courses*)			3
Advanced Pharmaceutics I (PCEU7020, 3 cr hrs)			
Advanced Pharmaceutics II (PCEU7030, 3 cr hrs)			
Journal Club in Pharmaceutical Sciences	PCEU7004		4
Seminar in Pharmaceutical Sciences	PHID7005		4
Research in Pharmaceutical Sciences	PHID7001		12
Elective Courses* (see examples below)			15
		Required Courses	**45**
Supplemental Elective Courses* and/or Research in Pharmaceutical Sciences			15
PhD Dissertation Research	PHID9001		30
		TOTAL	**90**

*** Examples of Elective Courses**

- Research in Pharmaceutical Sciences (PHID7001, variable 1-12 cr hrs)
- Diffusion, Dissolution and Mass Transport (PCEU7080, 3 cr hrs)
- Skin Care Science (PCEU8010, 3 cr hrs)
- Cosmetic Formulations I (PCEU8020, 3 cr hrs)
- Clinical & Instrumental Testing of Skin (PCEU8060, 2 cr hrs)
- Molecular Biology of Skin (PCEU8070, 2 cr hrs)
- Global Regulatory & Development Strategies of Drugs/Medical Devices (PHDD8010, 3 cr hrs)
- Molecular and Cellular Biology (GNTD7001, 3 cr hrs)
- Biochemistry and Cellular Signaling (GNTD7002, 3 cr hrs)
- Introduction to Functional Genomics (GNTD8001C, 3 cr hrs)
- Separations (CHEM8021, 3 cr hrs)
- Electrochemistry (CHEM8022, 3 cr hrs)
- Scientific Writing (CB9022, 2 cr hrs)