



Course code	PHM 2003
Course title (English)	Pharmaceutical Science Laboratory I
Course title (Chinese)	药学综合实验 I
Units	3
Language of Instruction	English
Description (English)	<p>This course is a hands-on laboratory course that introduces student to compounding methods of different dosage forms and laboratory methods used in contemporary pharmaceutical sciences. Upon completing this course, students should be proficient with the equipment, calculations, procedures, and records used in the nonsterile and sterile compounding of various dosage forms. Practical examples of compounding of liquid, solid, and semi-solid oral dosage forms as well as enteral and topical products will be prepared as part of the laboratory exercises. In addition, students will also get familiar with lab techniques used in contemporary pharmaceutical sciences.</p> <p>Students will also learn about analysis of pharmacokinetic parameters of drugs via different administration routes, with particular focus on area under the curve, volume of distribution, clearance, elimination half-life, and bioavailability.</p>
Description (Chinese)	<p>本课程是一门动手实验课程，向学生介绍当代制药科学中使用的不同剂型的配制方法和实验室方法。完成本课程后，学生应熟练掌握各种剂型的非无菌和无菌配制中使用的设备、计算、程序和记录。液体、固体和半固体口服剂型以及肠内和外用产品。此外，学生还应该熟悉当代制药科学中使用的实验室技术。</p> <p>学生还将通过不同的给药途径学习药物药代动力学参数的分析，特别关注曲线下面积、分布体积、清除率、消除半衰期和生物利用度。</p>

Learning Outcomes

At the end of this course students will demonstrate a working knowledge of compounding techniques of nonsterile formulations and sterile formulations including solution, ointment, tablets, suppository, capsules. Students will demonstrate competence with scientific writing and critical thinking by reporting their experimental results in a form of research paper.



Indicative Teaching Plan

Week	Content/ topic/ activity
1	Tablet I (powder and granulation)
2	Tablet II/ Capsules
3	Ointments Preparation
3	Suppositories Preparation
4	Solutions /Suspension Preparation
5	Emulsions: Preparation and Stabilization
6	Eye drop, injection Preparation
7	Nanoparticle preparation
8	Pharmacokinetic parameter