



Course code	PHM 2005
Course title (English)	Fundamentals of Pharmaceutics
Course title (Chinese)	药剂学基础
Units	3
Language of Instruction	English
Description (English)	<p>This course is designed to impart knowledge and skills in drug formulation and dosage form design used in pharmaceutics R&D. Furthermore, students will be introduced to various traditional and novel drug delivery systems.</p> <p>Upon completion of this course, students will be able to understand:</p> <ul style="list-style-type: none">• The pre -formulation studies of pharmaceutical industry.• The formulation and evaluation of various dosage forms for various route of administration• The need, concept, design and evaluation of sustained and controlled release dosage forms.• The formulation and evaluation of various novel drug delivery systems
Description (Chinese)	<p>本课程旨在传授药物研发中使用的药物配方和剂型设计方面的知识和技能。此外，还将向学生介绍各种传统和新型药物输送系统。</p> <p>完成本课程后，学生将能够理解：</p> <ul style="list-style-type: none">• 制药行业的处方前研究。• 各种给药途径的各种剂型的配制和评价• 缓释和控释剂型的需求、概念、设计和评估。• 各种新型给药系统的制定和评价

Learning Outcomes

Upon completion of the course, students should be able to:

- Choose an appropriate dosage form on the basis of the properties of the raw drug.
- Choose an appropriate dosage form for a given route of drug administration.
- Identify common dosage forms by appearance and physical properties.
- Understand and explain the importance of solubility principles, acid-base theory, colligative properties, and interfacial phenomena in the preparation and stability of dosage forms.
- Explain the purpose of ingredients found in various prescription and non-prescription products.



- Explain the proper use, as well as the practical, economic, and therapeutic advantages and disadvantages of common dosage forms.
- Describe methods for stabilizing and preserving medications.
- Detect drug or vehicle incompatibilities in prescriptions.
- Understand the basic principle of various routes of drug administration.

Indicative Teaching Plan

Week	Content/ topic/ activity
1	Introduction to route of administration and Pre-formulation Studies
2	Liquid dosage forms-solution, dispersed system
3	Liquid dosage forms- solution, dispersed system
4	Solid dosage forms
5	Solid dosage forms
6	Semisolid dosage forms and transdermal delivery system
7	Parenteral dosage forms and sterilization method
8	Respiratory drug delivery system
9	Study of various drug delivery systems: nasal, ocular, colon
10	Concept & Models for controlled delivery system
11	Target drug delivery system
12	Protein /peptide drug delivery system: concepts, delivery techniques, stability, formulation method
13	Biotechnology in drug delivery systems
14	Overview of route of administration