

In the name of GOD

Department of

School of pharmacy

Course title: Pharmaceutics 3 (theory)

Credit (Theory or Practical): 3 (theory)

Prerequisite: pharmaceutics 1

Course lecturers: Dr. Zohreh Mohammadi, Dr. Ahmadrza Barazesh, Dr. Melika Kiani

Responsible lecturer: Dr. Melika Kiani

Student responsibilities

- 1: Active participation in class
- 2: Completing assignments and fulfilling assigned responsibilities
- 3: Participation in midterm and final exams

Course description

Course objectives: Upon successful completion of this course, students are expected to acquire a comprehensive understanding of the fundamental principles and general concepts of solution preparation. Moreover, students should attain proficiency in the formulation of various oral and non-oral solutions, as well as dispersed pharmaceutical systems, including suspensions and emulsions. Furthermore, familiarity with different types of sterile products, such as injectable and ophthalmic formulations, along with a thorough understanding of the principles and concepts of sterilization, constitute key objectives of this course.

Students are expected to:

- Complete understanding of solutions and multiphase systems including suspensions and emulsions understanding of various types of liquid pharmaceutical products such as

- Familiarity with the advantages and disadvantages of each type of liquid dosage form and their methods of administration
- Familiarity with materials and methods used to prepare liquid pharmaceutical dosage forms
- Understanding the principles of sterilization and the ability to select appropriate sterilization methods for liquid pharmaceutical products based on the formulation used in their preparation
- Knowledge of cleanroom principles and basics, existing classifications and specifications, quality control standards, and cleanroom monitoring
- Understanding and gaining experience in various quality control tests for sterile and non-sterile liquid pharmaceutical products

Course title: Monday 10-13

	Subject	Professor	Date
1	Introduction to solutions, types of pharmaceutical solutions, principles of preparing pharmaceutical solutions, and factors affecting solubility	Dr. Ahmadreza Barazesh	7 Mehr 1404
2	Overview, definitions, advantages and disadvantages of injectable and sterile products, components and formulation of injectable products	Dr. Ahmadreza Barazesh	14 Mehr 1404
3	Components and formulation of small and large volume injectable products (bulk injectable products) — sterilization methods	Dr. Ahmadreza Barazesh	21 Mehr 1404
4	Continuation of sterilization methods (manufacturing and control) — types of clean rooms and strategies employed in each area	Dr. Ahmadreza Barazesh	28 Mehr 1404
5	Introduction oral and liquid solutions, types of oral solutions, components, and formulation of various oral and liquid solutions, Methods of manufacturing, quality control, and packaging of oral and liquid solutions	Dr. Melika Kiani	5 Aban 1404
6	Overview, definitions, advantages, and disadvantages of ocular, auricular, and intranasal drug delivery; familiarity with the	Dr. Melika Kiani	12 Aban 1404

	components and common formulations of the mentioned drug delivery methods		
7	Methods of preparation, manufacturing, and evaluation of liquid formulations for drug delivery to the ear, eye, and nose; components and requirements of formulations including sterility, particle size, and osmolarity	Dr. Melika Kiani	19 Aban 1404
8	MIDTERM EXAM		26 Aban 1404
9	Overview, Advantages and Disadvantages of Suspension Types (Flocculated and Deflocculated), Suspension Stability and Its Influencing Factors	Dr. Zohreh Mohammadi	3 Azar 1404
10	Formulation and Manufacturing Techniques of Pharmaceutical Suspensions: Production Line Equipment, Quality Control Procedures, and Labeling Requirements.	Dr. Zohreh Mohammadi	10 Azar 1404
12	Nanosuspensions: Characteristics, Applications, Advantages and Disadvantages, Manufacturing Methods, and Quality Control	Dr. Zohreh Mohammadi	17 Azar 1404
13	Overview, Components, Advantages and Disadvantages of Different Types of Emulsions, Emulsion Stability and Influencing Factors	Dr. Zohreh Mohammadi	24 Azar 1404
14	Emulsion Preparation Methods and Required Equipment in the Production Line, Quality Control Methods, and Labeling	Dr. Zohreh Mohammadi	1 Dey 1404
15	Microemulsions and Nanoemulsions: Definitions, Thermodynamic and Kinetic Stabilities, Characteristics, Preparation Methods and Control, Required Equipment	Dr. Zohreh Mohammadi	8 Dey 1404

Student Evaluation Criteria:

Score Weight out of 20	Evaluation Basis
8	Final Exam
8	Midterm Exam

4	Attendance, Participation, Homework, Projects, Exercises
---	--

References:

1. Aulton's Pharmaceutics: The Design and Manufacture of Medicines, Kevin Taylor, Churchill Livingstone, The latest edition.
2. Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems, Allen L, LWW, The latest edition.
3. Modern Pharmaceutics. Swarbrick EDJ, Informa Healthcare USA Inc, The latest edition.

Notes:

- All classes will be held in Besarati (Eastern 7) street, North Shahrin Boulevard

The absence hours of a student should not exceed 4/17 in theoretical, 2/17 in practical and laboratorial. Otherwise, the score for that course or section will be considered as zero.

Note 1: allowed absences are accepted provided that students bring in documents for that and the related professor approves it. Acting against absences (either excused or not) will be the decision of the professor and agreement of the college.