

## School of pharmacy

### Department

Course title: Physical pharmacy

Course code:

Credit (Theory or Practical): 2(theory)

*Second Semester:* February 2021

Course Instructors: Dr Ali Rastegari

Responsible Instructor: Dr Ali Rastegari

### Student responsibilities:

- Actively participating in the class.
- Doing the home works completely and on time.
- Studying the lessons deeply and carefully.

### Course Description:

#### - Course objectives:

- Giving students an overview and basic knowledge about micromeritics, dissolution and drug release, rheology, interfacial phenomena, colloidal and coarse dispersions.
- describing the relation between physical theories/facts and pharmaceutics.

### Student Learning Objectives:

This course should be able to introduce basic principles of micromeritics, dissolution and drug release, rheology, interfacial phenomena, colloidal and coarse dispersions to the students and at the end of semester students should be able to

define and explain the importance and usage of mentioned subjects in pharmaceutical sciences.

**Students are expected to:**

- Students are expected to be familiar with basic principles and application of micromeritics in pharmacy and pharmaceuticals.
- Students are expected to be familiar with basic principles and application of dissolution theories in pharmacy and pharmaceuticals.
- Students are expected to be familiar with basic principles and application of rheology in pharmacy and pharmaceuticals.
- Students are expected to be familiar with basic principles and application of interfacial phenomena theories in pharmacy and pharmaceuticals.
- Students are expected to be familiar with basic principles and application of colloidal and coarse dispersions theories in pharmacy and pharmaceuticals.

**Course Plan**

|  | subject                                                        | Professor        | Date     | Time |
|--|----------------------------------------------------------------|------------------|----------|------|
|  | Interfacial phenomena: liquid interfaces                       | Dr Ali Rastegari | 04.10.25 | ۸-۱۰ |
|  | Practical Solution                                             | Dr Ali Rastegari | 11.10.25 | ۸-۱۰ |
|  | Interfacial phenomena: solid interfaces                        | Dr Ali Rastegari | 18.10.25 | ۸-۱۰ |
|  | Practical Solution                                             | Dr Ali Rastegari | 25.10.25 | ۸-۱۰ |
|  | Colloidal dispersions: introduction, principles, various types | Dr Ali Rastegari | 01.11.25 | ۸-۱۰ |
|  | Practical Solution                                             | Dr Ali Rastegari | 08.11.25 | ۸-۱۰ |

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|--|-------------------------------------------------------------------|------------------|----------|------|
|  | Colloidal dispersions: optical, kinetic and electrical properties | Dr Ali Rastegari | 15.11.25 | ۸-۱۰ |
|  | Practical Solution                                                | Dr Ali Rastegari | 22.11.25 | ۸-۱۰ |
|  | Coarse dispersions: suspensions                                   | Dr Ali Rastegari | 29.11.25 | ۸-۱۰ |
|  | Practical Solution                                                | Dr Ali Rastegari | 06.12.25 | ۸-۱۰ |
|  | Coarse dispersions: Emulsions                                     | Dr Ali Rastegari | 13.12.25 | ۸-۱۰ |
|  | Practical Solution                                                | Dr Ali Rastegari | 20.12.25 | ۸-۱۰ |

### References:

- 1- Martin's Physical Pharmacy and Pharmaceutical Sciences, Patrick J. Sinko, latest edition
- 2- Aulton's Pharmaceutics: The Design and Manufacture of Medicines, Michael E. Aulton BPharm PhD, Kevin M.G. Taylor BPharm PhD, latest edition