In the name of GOD

Department of

School of pharmacy

Course title: Pharmaceutics 2 (theory)

Credit (Theory or Practical): 3 (theory)

Prerequisite: pharmaceutics 1

Course lecturers: Dr Homa Faghihi- Guest Lecurer

Responsible lecturer: Dr Homa Faghihi

Student responsibilities

1: seminars and projects

2: exercises (yes)

3: comprehensive written examination (yes)

Course description

Course objectives: Training students for further activities in industry specifically in preparation and qualification of solid dosage forms namely powders, granules, tablets and capsules besides preparing them with the concept of preformulation and pharmaceuticals practices like mixing, dryin, filtration, separation and ….

Students learning objectives: Training students for further activities in industry specifically in preparation and qualification of solid dosage forms namely powders, granules, tablets and capsules besides preparing them with the concept of preformulation and pharmaceuticals practices like mixing, dryin, filtration, separation and ….

Students are expected to: Be familiar with preformulation, mixing, drying, filtration, solid dosage forms, quality control test, industrial manufacturing of solid dosage forms, required equipments and failures.

	subject	Professor	Date	Time
1	Pharmaceutical preformulation (1): The concept of pre formulation, Solubility, melting point, Molecular dissociation, Partitioning Pharmaceutical preformulation (2): Dissolution rate, Salt selection, Hygroscopicity, Physical form, Powder properties	Dr. Faghihi	1403/11/14	8-11
2	Mixing(1): Importance of mixing, Definition and objectives of mixing, Types of mixtures, The mixing process, Scale of scrutiny, Mathematical treatment of the mixing process Mixing(2): Mechanisms of mixing and demixing, Powder segregation, Mixing of powders, Powder-mixing equipment, Mixing of miscible liquids and Suspensions, Mixers for miscible liquids and Suspensions, Mixing of semi solids, Mixers for semi-solids	Dr. Faghihi	1403/11/21	8-11
3	Particle size reduction: Introduction, Influence of material properties on size reduction, Influence of size reduction on size distribution, Size reduction methods, Selection of particle size reduction method	Dr. Faghihi	1403/11/28	8-11
4	Introduction to size separation, Size separation methods, Selection of a size separation process Drying (1): Drying of wet solids, Types of drying method, Choice of drying method, Types of pharmaceutical dryers, Spray dryer, Freeze drying	Dr. Faghihi	1403/12/5	8-11
5	Drying (2): Dryers for solutions and Suspensions, Spray dryer, Freeze drying, The phase diagram for water	Dr. Faghihi	1403/12/12	8-11
6	Filtration: Types of filtration, Mechanisms of filtration, Factors affecting the rate of filtration, Equipment s election	Dr. Faghihi	1403/12/19	8-11
7	Mid term exam	Dr. Faghihi	1404/1/17	8-11
8	Powders and granules: Reasons for granulation, Powdered and granulated products as dosage forms, Pharmacopoeial tests, Granules used as an intermediate in tablet manufacture	Dr. Faghihi	1404/1/24	8-11
9	Granulation: Pharmaceutical technology of granule production, Granulation mechanisms, Pharmaceutical granulation equipment and processes, Extrusion/spheronization	Dr. Faghihi	1404/1/31	8-11
10	Tablets and compaction: Quality attributes of tablets, Tablet manufacturing, Stages in tablet formation, Tablet presses, Technical problems during tableting, Tablet production via granulation, Tablet production by direct compaction	Dr. Faghihi	1404/2/14	8-11
11	Tablet excipients: usage and mechanisms Tablet types and testing: Classification of tablets, Test methods	Dr. Faghihi	1404/2/21	8-11
12	Compression of powders: Mechanisms, Evaluation of compress ion behavior, Relationships between material properties and tablet strength	Dr. Faghihi	1404/2/28	8-11
13	Coating(1): Definition of coating, Reasons for coating Types of coating processes, Film coating(Types, Process and equipment, formulations and polymers) Coating (2): Sugar coating (Types of sugar coatings, Ideal characteris tics, Process, equipment), Compression coating, Coating of tablets, Coating of multiparticulates	Dr. Faghihi	1404/3/4	8-11

14	Hard capsules (1): Introduction, Raw materials, Manufacture, Empty capsule properties, Capsule filling Capsule filling machines and process Hard capsules (2): Formulations and controls	Dr. Faghihi	1404/3/11	8-11
15	Soft capsules (1): Description, Manufacture and Formulation Soft capsules (2): In-process testing, Finished product testing	Dr. Faghihi	1404/3/18	8-11

Course title: Sundays 8-11

References:

1- Aulton's Pharmaceutics: The Design and Manufacture of Medicines, Michael E. Aulton BPharm PhD, Kevin M.G. Taylor BPharm PhD, latest edition
2- Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems, Loyd Allen, latest edition

Notes:

- All classes will be held in Besarati (Eastern 7) street, North Shahin 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.