



The Hebrew University of Jerusalem

Syllabus

PHARMACEUTICAL TECHNOLOGIES C - 64611

Last update 28-12-2023

HU Credits: 2

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: School of Pharmacy

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: Ein Karem

Course/Module Coordinator: Prof. Ofra Benny

Coordinator Email: ronk@ekmd.huji.ac.il

Coordinator Office Hours: Sunday 12:00 - 13:00

Teaching Staff:

Dr. Zvi Yaari,
Ms. Larin Deeb,
Ms. Katerina Benyaminson,
Ms. Hadas Shilo,
Ms. Mariana Ghantous,
Ms. Reham Mhamed

Course/Module description:

The laboratory combines practical work with reading material and understanding of scientific articles relevant to drug delivery and quantitative methods in pharmaceutical sciences with their profound practicing.

Course/Module aims:

To guide the student with (a) commonly used laboratory methods in modern pharmaceutical sciences research; (b) understanding the scientific principles behind the measurement methods used in pharmaceutical sciences; (c) manufacturing methods of solid dosage forms, their design and characterization.

Learning outcomes - On successful completion of this module, students should be able to:

At the end of the course the student is expected to demonstrate knowhow in pharmaceutical measurement methods and pharmaceutical research

Attendance requirements(%):

100

Teaching arrangement and method of instruction: Exercise laboratory methods, introductory lectures and manuscripts reviewing.

When possible will be physical, if not- will be digital by preparing reading material, teaching by zoom and discussions.

Course/Module Content:

- 1.Shelf life prediction of pharmaceutical products*
- 2.Surface tension, CMC, monomolecular films*
- 3.Rheology*
- 4.Industrial tabletation*
- 5.Dissolution rates characterization of drug molecules from solid dosage forms.*

Required Reading:

Martin A., *Physical Pharmacy*, 4th edition, Chapter 12: Kinetics, 1993, Lea & Febiger, Philadelphia, pp. 313-316.

Martin A., *Physical Pharmacy*, 4th edition, 1993, Lea & Febiger, Philadelphia, London, Chapter 16: Micromeritics, pp. 423-448.

Martin A., *Physical Pharmacy*, 4th edition, Chapter 17: Rheology, 1993, Lea & Febiger, Philadelphia, pp. 453-476.

Physical Pharmacy, Martin A., 4th edition, 1993. Lea & Febiger - Philadelphia, London, Chapter 14: Interfacial Phenomena, pp. 362-379, Chapter 15: Colloids, pp. 395-398.

Banker G.S., Anderson N.R., "Tablets" in: Lachman L., Liberman H.A., Kanig J.L., *The Theory and Practice of Industrial Pharmacy*, Lea & Febiger, Philadelphia, 1986, pp. 293-345.

1. United States Pharmacopoeial Convention Inc. *Official Disintegration and Dissolution tests of the USP 25, NF 20*.

4. Pillay, V. and Fassihi R., *Unconventional dissolution methodologies*, *J. Pharm. Sci.*, 88(9):843-851, 1999.

Additional Reading Material:

will be provided by the TAs

Grading Scheme:

Written / Oral / Practical Exam 25 %

Essay / Project / Final Assignment / Home Exam / Referat 10 %

Submission assignments during the semester: Exercises / Essays / Audits / Reports / Forum / Simulation / others 25 %

Personal Guide / Tutor / Team Evaluation 40 %

Additional information:

All the labs will be in person and take place at the School of Pharmacy.

The grade will be granted as follows:

35% Quiz for each lab.

15% Report for each lab.

50% Councilor evaluation.