



The University of Jordan

Accreditation & Quality Assurance Center

COURSE Syllabus

1	Course title	Pharmaceutical Calculations and Compounding of Dosage Forms
2	Course number	1202234
3	Credit hours (theory, practical)	1 (Practical)
	Contact hours (theory, practical)	3 (Practical)
4	Prerequisites/corequisites	Pharmaceutical Calculations and Compounding of Dosage Forms (1202131)
5	Program title	BSc Pharmacy
6	Program code	1202234
7	Awarding institution	The University of Jordan
8	Faculty	Pharmacy
9	Department	Department of Pharmaceutics and Pharmaceutical Technology
10	Level of course	Undergraduate
11	Year of study and semester (s)	First semester of the 2th year
12	Final Qualification	Pharmacist
13	Other department (s) involved in teaching the course	NA
14	Language of Instruction	English
15	Date of production/revision	31 January 2016

16. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.

Ebtesam H Al Hawamdeh, BSc, MSc.

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Office hours:

Sunday: 11-2

Tuesday: 11-1

17. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

1-Dr. Bassam A. Amro

Office .

Phone: **Ext.**

E-mail:

Office hours to be announced

2-Dr. Lorina Bisharat

Office .

Phone: **Ext.**

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Office hours to be announced

18. Course Description:

As stated in the approved study plan.

This course aims to provide the students with good knowledge in calculations, formulation and extemporaneous dispensing, packaging, and storage of medicines. Specifically, solutions, suspensions, emulsions, creams, ointments, and gels as well as suppositories and powders preparations are discussed along with their various types, additives, methods of preparation, common examples, packaging and quality requirements. These extemporaneous preparations include:

- 1. Solutions: Zinc sulphate eye drops BP, Sodium bicarbonate ear drops BP, ephedrine nasal drops BP, Aromatic elixir NF 1980, Simple syrup BP 1980, Codeine linctus BP 1980, Peppermint spirit BP 1980, Iodine tincture USP 1980.**
- 2. Suspensions: Menthol and Eucalyptus inhalation BP 1980, Calamine lotion USP 1980, Kaolin mixture BP 1980.**
- 3. Emulsions: Mineral oil emulsion USP 1980 (to be prepared in both dry and wet gum methods).**
- 4. Creams: Cold cream USP, Vanishing cream BP.**
- 5. Ointments: Whitfield's ointment BP, Zinc oxide ointment USP.**
- 6. Gels: Clindamycin gel.**
- 7. Suppositories: Bismuth subgallate suppositories, Glycerol suppository base BP.**
- 8. Powders: Applying trituration mixtures in diluting an active ingredient with a suitable diluent when the total amount of active ingredient required is less than the minimum weighable quantity.**

19. Course aims and outcomes:

A- Aims:

- 1- Gaining a sound base for all aspects of good pharmacy practice.
- 2- Managing a laboratory environment, including the correct use and selection of equipment and ingredients.
- 3- Learning how to interpret a prescription and how to extemporaneously compound such a prescription product by putting knowledge into practice.
- 4- Knowledge in calculations, formulation and extemporaneous dispensing, packaging, and storage of medicines.

B- Course Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ...

A. Knowledge and understanding:

- 1- To acquire knowledge of all aspects of extemporaneous dispensing.
- 2- To understand the different dosage forms and their intended use

B. Intellectual skills:

- 1- to apply knowledge of physical concepts when formulating extemporaneous formulations.
- 2- to understand the use of excipients in a given formulae and to be able to predict the final obtained dosage form.

C. Subject-specific skills:

- 1- Confidence in using different techniques which are fundamental to good compounding.
- 2- Adequate correlation between theoretical principles and laboratory skills.

D. Transferable skills:

- 1- Good pharmacy practice
- 2- Selection of proper equipment and the application of correct manipulative techniques, as well as selection of suitable excipients for the prepared dosage form.

Program Competencies Achieved:

- 1.3 Characterize different dosage forms of medicines and their proper usage
- 1.4 Identify different routes of administration of medicines
- 1.6 Recognize and follow proper storage conditions of medicines
- 1.7 Verify that prescriptions are accurate, authentic and compliant with effective regulations
- 1.8 Document and report fraudulent prescriptions
- 1.9 Contact prescriber to verify and correct any potential mistakes in prescriptions
- 1.10 Accurately interpret prescriptions' instructions including medicine's type, strength, dosage form and route of administration
- 1.11 Package medicines properly to ensure their stability, safety and patient accessibility
- 1.12 Label dispensed medicines with all necessary information and instructions
- 1.13 Advise patients on proper storage, usage and adherence of dispensed medicines
- 1.14 Verify patient's understanding of all instructions related to dispensed medicines
- 1.15 Recognise and properly compound extemporaneously-prepared medicine formulations
- 1.17 Advise patients about the proper use of medical devices and other non-medicinal pharmaceutical products

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
1-Orientation (Introduction to general laboratory instruction) 2- how to prepare lable?	1	Section Instructor *	A1, A2,D1	Practical Sessions Evaluation	Laboratory manual
1- Zinc sulphate eye drops BP 2-Sodium bicarbonate ear drops BP. 3-Ephedrine nasal drops BP.	1	Section Instructor *	A1, A2, D1	Practical Sessions Evaluation, Oral discussion, Assignment, and reports	Laboratory manual
1- Aromatic elixir NF 2- Simple syrup BP 3-Codeine linctus BP.	2	Section Instructor *	A1, A2, C1	Practical Sessions Evaluation, Oral discussion and reports	Laboratory manual
1- Peppermint spirit BP. 2- Iodine tincture USP.	3	Section Instructor *	A1, A2, C1	Practical Sessions Evaluation, Oral discussion Reports, and Quizes	Laboratory manual
1-Menthol and Eucalyptus inhalation BP. 2- Calamine lotion USP, Kaolin 3-mixture BP. Midterm exam (Practical)	4	Section Instructor *	B1, B2, D1	Practical Sessions Evaluation, Oral discussion and Reports	Laboratory manual
Midterm exam (Theory)	5				
Mineral oil emulsion USP	6	Section Instructor *	B1, B2, A2,C1	Practical Sessions Evaluation, Oral discussion and Reports	Laboratory manual
1-Cold cream USP. 2-Vanishing cream BP	7	Section Instructor *	B1,C1,D1	Practical Sessions Evaluation, Oral discussion and Reports, Quizes	Laboratory manual
1- Whitfield's ointment BP. 2-Zinc oxide ointment USP.	8	Section Instructor *	A1, B1, C1	Practical Sessions Evaluation, Oral discussion and Reports	Laboratory manual
1-Bismuth subgallate suppositories BP. 2-Glycerol suppository base BP	9	Section Instructor *	A1, B1, C1	Practical Sessions Evaluation, Oral discussion, Assignment Reports, and Quizes.	Laboratory manual
Phenobarbitone capsule and clindamucine gel	10	Section Instructor *	B1.C2,D2, D1	Practical Sessions Evaluation, Oral discussion and Reports	Laboratory manual
Final Exam (practical)	11, 12				

Final Exam (Theoretical)	13				
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- Section (2 and4) Instructor: Ebtesam AlHawamdeh, Section (1): Instructor: Dr. Lorina Bisharat and Ph. Rana, Section (3) Instructor: Dr. Basam Amro and Ph.Rana.**

21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:		
ILO/s	Learning Methods	Evaluation Methods
A1,A2	Practical Sessions (Experiments), Lecturing Oral discussion, Assignment	Student evaluation, reports, and Quizes
B1,B2.	Practical Sessions (Experiments), Lecturing Oral discussion, Assignment	Student evaluation, reports, and Quizes
C1, C2	Practical Sessions (Experiments), Lecturing Oral discussion, Assignment	Student evaluation, reports, and Quizes
D1, D2	Practical Sessions (Experiments), Lecturing Oral discussion, Assignment	Student evaluation, reports, and Quizes

Learning skills:

- 1-Critical thinking
- 2-Digital literacy
- 3-Problem-solving skills
- 4-Self-directed learning
- 5- Team and group working.
- 6- Scientific reasoning
- 7- Communication skills

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:
<ol style="list-style-type: none"> 1-Students reports and assignments 2- Evaluation on practical sessions 3- Quizzes 4- Exams

23. Course Policies:

<p>A- Attendance policies:</p> <p>Attendance: Mandatory. First warning – with 1 absences Last warning – with 2 absences Failing in the subject – with 3 absences</p> <p>B- Absences from exams and handing in assignments on time:</p>

Will result in zero achievement unless health report or other significant excuse is documented.

C- Health and safety procedures:

General Laboratory safety Instruction are maintained

D- Honesty policy regarding cheating, plagiarism, misbehavior:

The participation, the commitment of cheating will lead to applying all following penalties together

- 1) Failing the subject he/she cheated at**
- 2) Failing the other subjects taken in the same course**
- 3) Not allowed to register for the next semester. The summer semester is not considered as a semester**

E- Grading policy:

Exams and Quizzes.

Evaluation	10 points
Quizz:	10 points
reports	10 points
Mid Exam:	30 points (10 point theoretical, and 20 points practical)
Final Exam:	40 points (20 point theoretical, and 20 points practical)
Total	100 points

F- Available university services that support achievement in the course:

1-Laboratory room,

2- internet classes

24. Required equipment:

All equipment, glassware, instruments required to perform assigned experiments.

25. References:

A- Required book (s), assigned reading and audio-visuals:

Laboratory Manual (Pharmaceutical Calculations and Compounding of Dosage Forms)

B- Recommended books, materials, and media:

- 1- British Pharmacopeia**
- 2- United states Pharmacopeia**
- 3- Pharmaceutics: The science of dosage form design (M.E.Aulton, latest edition)**
- 4- Pharmaceutical practice (A.J.Winfield and R.M.E.Rishards 1998)**

26. Additional information:

NA

Name of Course Coordinator: **Ebtessam Al Hawamdeh**-Signature: ----- Date: Jan, 31, 2016

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----

Copy to:
Head of Department
Assistant Dean for Quality Assurance
Course File