Republic of Yemen
Ministry of Higher Education and Scientific Research
Sana'a University
Faculty of Pharmacy
Quality Assurance Unit

الجمهورية اليمنية
وزارة التعليم العالي والبحث العلمي
جامعة - صنعاء
كلية الصيدلة
وحدة ضمان الجودة

Course Specification of Pharmaceutics III

I. Course Identification and General Information:							
1	Course Title:	Pharmaceutics III					
2	Course Number & Code:	Ph257					
3	Credit hours: 3hrs	C.H				Total	
		Theoretical	Practical	Training	Seminar		
		2	2			3	
4	Study level/ semester at which this course is offered:	Third year/First semester					
5	Pre –requisite (if any):	Physical Pharmacy- Pharmaceutical Calculations- Pharmaceutics I_II					
6	Co –requisite (if any):						
7	Program (s) in which the course is offered:	Bachelor of Pharmacy					
8	Language of teaching the course:	English					
9	The department in which the course is offered:	Pharmaceutics and Industrial Pharmacy					
10	Location of teaching the course:	Faculty of Pharmacy-Sana'a University					
11	Prepared by:	Prof. Dr. Abdulwali Ahmed Saif					
12	Date of approval:						

II. Course description:

This course aims to provide students with basic principles of pharmaceutical semisolid dosage forms. It concentrates on the advantages and disadvantages, additives, methods of formulation and quality control tests of pharmaceutical semisolid dosage forms.

III. Intended learning outcomes (ILOs) of the course:

At the end of this course, the students will be able to:

1. Recognize the anatomy and physiology of skin and factors affects diffusion of drugs through skin.
2. Describe the advantages and disadvantages of pharmaceutical semisolid dosage forms.
3. Recognize the different additives used in manufacturing of pharmaceutical semisolid dosage forms.
4. Describe methods of formulation of pharmaceutical semisolid dosage forms.
5. Discuss the quality control tests of pharmaceutical semisolid dosage forms. Distinguish between pharmaceutical dispersed systems.
6. Propose best formulations to enhance drug delivery through skin such TDDS.
7. Determine the appropriate methods for formulation of pharmaceutical semisolid dosage forms.
8. Select the suitable method for evaluation of pharmaceutical semisolid dosage forms.
9. Propose best approaches to solve the problems encountered in of pharmaceutical semisolid dosage forms.
10. Select and practice different methods for preparation of pharmaceutical semisolid dosage forms.
11. Formulate different pharmaceutical semisolid dosage forms.
12. Label the different formulations of pharmaceutical semisolid dosage forms.
13. perform the quality control tests for pharmaceutical semisolid dosage forms.
14. Implement writing and presentation skills
15. Work effectively in a team

IV. Intended Learning Outcomes (ILOs) of the Course:

(A) Knowledge and Understanding:

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: Knowledge and Understanding.

Program Intended Learning Outcomes (Sub- PILOs) in: Knowledge and Understanding		Course Intended Learning Outcomes (CILOs) in: Knowledge and Understanding	
After completing this program, students will be able to:		After completing this course, students will be able to:	
A1-	Recognize the principles of physical, chemical, clinical, social, behavioral, health and pharmaceutical sciences.	a1-	Recognize the anatomy and physiology of skin and factors affects diffusion of drugs through skin.

A2-	Recognize the physicochemical properties, preparation, structure activity relationship (SAR), toxicity and the modern methods of analysis of various substances of chemical and natural products of therapeutic potential as well as the basic principle of drug discovery, design and development	**a2-**	Describe the advantages and disadvantages of pharmaceutical semisolid dosage forms.
A4	Recognize the pharmaceutical dosage form design and the quality control of pharmaceutical formulations according to GMP and pharmacopeia requirements to support the pharmaceutical industries and research.	**a3-**	Recognize the different additives used in manufacturing of pharmaceutical semisolid dosage forms.
		a4-	Describe methods of formulation of pharmaceutical semisolid dosage forms.
		a5-	Discuss the quality control tests of pharmaceutical semisolid dosage forms.

Teaching And Assessment Methods For Achieving Learning Outcomes:

Alignment of Learning Outcomes of Knowledge and Understanding to Teaching and Assessment Methods:

Course Intended Learning Outcomes (CILOs) in Knowledge and Understanding		Teaching strategies/methods to be used	Methods of assessment
completing this course, students will be able to:		Lectures solving problem, and group discussion	Attendance, Written, oral exams, project and small projects
a1-	Recognize the anatomy and physiology of skin and factors affects diffusion of drugs through skin.		
a2-	Describe the advantages and disadvantages of pharmaceutical semisolid dosage forms.		
a3-	Recognize the different additives used in manufacturing of pharmaceutical semisolid dosage forms.		
a4-	Describe methods of formulation of pharmaceutical semisolid dosage forms.		
a5-	Discuss the quality control tests of pharmaceutical semisolid dosage forms.		

(B) Intellectual Skills:

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: Intellectual skills

Program Intended Learning Outcomes (Sub-PILOs) in Intellectual skills		Course Intended Learning Outcomes (CILOs) of Intellectual Skills	
After completing this program, students will be able to:		After completing this course, students will be able to:	
B1	Consolidate the chemical, biochemical and physiological principles to construct the pharmacophores of the structure and their effect on the stability, pharmacokinetic and pharmacodynamic profiles of the drug.	b1-	Propose best formulations to enhance drug delivery through skin such TDDS.
B3	Design different types of safe and effective pharmaceutical dosage forms and develop novel methods of qualitative and quantitative analytical and biological analysis for pharmaceutical and biopharmaceutical products that support pharmaceutical research.	b2-	Determine the appropriate methods for formulation of pharmaceutical semisolid dosage forms.
		b3-	Select the suitable method for evaluation of pharmaceutical semisolid dosage forms.
		b4-	Propose best approaches to solve the problems encountered in of pharmaceutical semisolid dosage forms.

Teaching And Assessment Methods For Achieving Learning Outcomes:

Alignment of Learning Outcomes of Intellectual Skills to Teaching Methods and Assessment Methods:

Course Intended Learning Outcomes (CILOs) in Intellectual Skills.		Teaching strategies/methods to be used	Methods of assessment
After completing this course, students will be able to:		Lectures, brainstorming and group discussion	Written, oral exams and small projects
b1-	Propose best formulations to enhance drug delivery through skin such TDDS.		
b2-	Determine the appropriate methods for formulation of pharmaceutical semisolid dosage forms.		
b3-	Select the suitable method for evaluation of pharmaceutical semisolid dosage forms.		
b4-	Propose best approaches to solve the problems encountered in of pharmaceutical semisolid dosage forms.		

(C) Professional and Practical Skills:

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: Professional and Practical Skills

Program Intended Learning Outcomes (Sub-PILOs) in Professional and Practical Skills		Course Intended Learning Outcomes (CILOs) in Professional and Practical Skills	
After completing this program, students will be able to:		After completing this course, students will be able to:	
C1-	Operate different pharmaceutical equipments and instruments and use emerging technologies in design, synthesis, pre-formulation, formulation, packaging, storage and analysis of pharmaceutical products according to GLP, GSP and cGMP guidelines.	c1-	Select and practice different methods for preparation of pharmaceutical semisolid dosage forms.
C3-	Extract, isolate, purify, identify and formulate the natural products and assure their rational use.	c2-	Formulate different pharmaceutical semisolid dosage forms.
C5-	Conduct research studies and utilize the results in different pharmaceutical fields.	c3-	Label the different formulations of pharmaceutical semisolid dosage forms.
		c4-	perform the quality control tests for pharmaceutical semisolid dosage forms.

Teaching And Assessment Methods For Achieving Learning Outcomes:

Alignment of Learning Outcomes of Professional and Practical Skills to Teaching and Assessment Methods:

Course Intended Learning Outcomes (CILOs) in Professional and Practical Skills		Teaching strategies/methods to be used	Methods of assessment
After completing this course, students will be able to:		Lectures, tutorials, practical, discussion and brain storming	Attendance, homework, Written, practical, oral exams, report, project and observation.
c1-	Select and practice different methods for preparation of pharmaceutical semisolid dosage forms.		
c2-	Formulate different pharmaceutical semisolid dosage forms.		
c3-	Label the different formulations of pharmaceutical semisolid dosage forms.		
c4-	perform the quality control tests for pharmaceutical semisolid dosage forms.		

(D) General / Transferable Skills:

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: General and Transferable skills

Program Intended Learning Outcomes (PILOs) in General / Transferable skills		Course Intended Learning Outcomes (CILOs) in General / Transferable skills	
After completing this program, students will be able to:		After completing this course, students will be able to:	
D2	Employ proper documentation and filing systems in different pharmaceutical fields.	d1-	Implement writing and presentation skills
		d2	Work effectively in a team
D3	Develop financial, market management, writing, presentation and time management skills as well as creativity, critical thinking, problem solving and decision making abilities.		

Teaching And Assessment Methods For Achieving Learning Outcomes:

Alignment of Learning Outcomes of General and Transferable skills to Teaching and Assessment Methods:

Course Intended Learning Outcomes (CILOs) in General and Transferable Skills		Teaching strategies/methods to be used	Methods of assessment
After completing this course, students will be able to:		Lectures , practical, discussion and brain storm	Written, practical, oral exams, report, project and observation.
d1	Implement writing and presentation skills		
d2	Work effectively in a team		

V. Course Content:

1 – Course Topics/Items:

a – Theoretical Aspect

Order	Topic List / Units	CILOs (symbols)	Sub-topic List	Number of weeks	Contact hours
1	Anatomy and physiology of skin and factors affects diffusion of drugs through skin.	a1, b1, c1, d1-2	- Structure and function of the skin - Target area of treatment after topical application to skin - Basic principles of diffusion through	1	2

			membranes and factors affecting percutaneous absorption - Enhancement of skin penetration		
2	Transdermal Drug Delivery Systems (TDDS)	**a1-3, b1, b3, d1-2**	Definition, types, Advantages, disadvantages and factors affecting percutaneous absorption of TDDS	1	2
3	Pharmaceutical Semisolid Dosage Form (Ointments)	**a2-5, b2-4, d1-2**	Definition, types, Advantages, disadvantages, bases, excipients, method of formulation, stability and Quality control tests of Pharmaceutical ointments	4	8
4	Mid-term Exam	**a1-5, b1-4**		1	2
5	Pharmaceutical Semisolid Dosage Form (Creams)	**a2-5, b2-4, d1-2**	Definition, types, Advantages, disadvantages, bases, excipients, method of formulation, stability and Quality control tests of Pharmaceutical Creams	2	4
6	Pharmaceutical Semisolid Dosage Form (Gels and Pests)	**a2-5, b2-4, d1-2**	Definition, types, Advantages, disadvantages, bases excipients, method of formulation, stability and Quality control tests of Pharmaceutical gels and pests	1	2
7	Pharmaceutical Semisolid Dosage Form (Suppositories and Pessaries)	**a2-5, b2-4, d1-2**	Definition, types, Advantages, disadvantages, vehicles, factors affecting rectal absorption excipients, method of formulation, stability and Quality control tests of Pharmaceutical gels and pests	3	6
8	Pharmaceutical Semisolid Dosage	**a2-5, b2-4, d1-2**	Definition, types, Advantages, disadvantages, Vaginal inserts -Preparation of suppositories	1	2

	Form (Vaginal Preprations)		- displacement values in suppository bases, Specific problems in formulation of suppositories- Quality control tests for Vaginal		
9	Other Topical Pharmaceutical Semisolid Dosage Forms	**a2-5, b2-4, d1-2**	Definition, types, Advantages, disadvantages, excipients, method of formulation, stability and Quality control tests of Other topical pharmaceutical semisolid dosage forms	1	2
10	Final-term Exam	**a1-5, b1-4**		1	**2**
Number of Weeks /and Units Per Semester				**16**	**32**

b- Practical Aspect:

Order	Practical Tasks	CILOs (symbols)	Number of weeks	Contact hours
1.	Formulate, practice preparation, label and quality control tests of Pharmaceutical ointments with hydrophilic bases	**c1-4, d1-2**	2	4
2.	Formulate, practice preparation, label and quality control tests of Pharmaceutical ointments with hydrophobic bases	**c1-4, d1-2**	4	8
3.	Mid-term exam	**c1-4**	1	2
4.	Formulate, practice preparation, label and quality control tests of Pharmaceutical O/W creams	**c1-4, d1-2**	1	2
5.	Formulate, practice preparation, label and quality control tests of Pharmaceutical W/O creams	**c1-4, d1-2**	1	2
6.	Formulate, practice preparation, label and quality control tests of Pharmaceutical gel	**c1-4, d1-2**	1	2
7.	Formulate, practice preparation, label and quality control tests of Pharmaceutical pests	**c1-4, d1-2**	1	2

8.	Formulate, practice preparation, label and quality control tests of Pharmaceutical Suppositories with hydrophilic bases	**c1-4, d1-2**	2	4
9.	Formulate, practice preparation, label and quality control tests of Pharmaceutical Suppositories with hydrophobic bases	**c1-4, d1-2**	2	4
10.	Final-term exam	**c1-4**	1	2
Number of Weeks /and Units Per Semester			**16**	**32**

I- a-Teaching Strategies of the Course:

Lecture method, Group Discussion, Problem solving sessions tutorials, brainstorming and Practical sessions.

b- Assessment Methods:

Oral Exam, Quizzes, Attendance, Participation, Short answers, reports, homework, and Written exam

Practical works, practical exam and practical reports.

VII. Assignments:

No.	Assignments	Aligned CILOs (symbols)	Week Due	Mark
1	Homework Assignments	**a1-5, b1-4, d1-2**	Sporadic through the semester	**10**
2	Reports	**c1-4, d1-2**		

II- Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes (CILOs symbols)
1.	**Attendance, Participation and quizzes**	**All Weeks**	10	7%	a2-4,b1-2, **d1-2**

2.	**Oral Tests and Homework-assignments**	Sporadic through the semester	10	7%	a1-3, b2-3, **d1-2**
3.	**Attendance, Practical Reports**	**All Weeks**	15	10%	c1-4
4.	**Practical mid-semester exam**	6th	15	10%	c1-4
5.	**Theoretical mid-semester exam**	6th	30	20%	**a1-5, b1-4**
6.	**Final Exam (theoretical)**	**16th**	50	33%	**a1-5, b1-4**
7.	**Final Exam (practical)**	**16th**	20	13%	c1-4
	Total		**150**	**100%**	

VI. Students' Support:

Office Hours/week	Other Procedures (if any)
2 hours per week	

VII. Learning Resource (MLA style or APA style)s:

1- Required Textbook(s) (maximum two)

1. Notes on Pharmaceutics prepared by the department staff.
2. Jones, D., 2008, "FASTtrack Pharmaceutics- dosage form and design" 1st edition, Pharmaceutical Press, London.
3. Ansel; H.C., (2011) Pharmaceutical Dosage Forms and drug Delivery Systems'. 9th ,Lea & Febiger; Philadelphia; London.
4. Aulton, M.E. (ed). (2013) Pharmaceutics, the design and manufacture of medicines. edition, Churchill Livingstone, Edinburgh.

2- Recommended Readings and Reference Materials

1. Loyd, V Allen J.,2013, Remington: The Science and Practice of Pharmacy 22nd edi Pharmaceutical Press, London.

	2. Florence, A.T. and Attwood, D., 2006, "Physicochemical Principles of Pharmacy", 4 edition, Pharmaceutical Press, London. 3. Banker, G.S.and Rhodes, C.T, (1999) Modern Pharmaceutics, 3rd edn. Marcel Dek
3- Electronic Materials and Web Sites *etc*.	
	www.pubmed.com http://www.sciencedirect.com
4- Other Learning Material:	
	J. Pharm. Sci Published articles related to the discussed topics United States Pharmacopeia and National Formulary (latest edition) United States Pharmacopeial Convention Inc., Rockville, MD. British Pharmacopoeia (latest edition), HMSO. London. Martindale, W. (latest edition) The Extra Pharmacopoeia., Royal Pharmaceutical Society Great Britain, London. Further information on proprietary products can be found in: The Data Sheet Compendium, Datapharm Publications Ltd (published annually). The Monthly Index of Medical Specialities (MIMS), Medical Publications Ltd.

I. Facilities Required:	
1 - Accommodation:	- Well-equipped lecture halls with data show facilities, whiteboards, net connection, etc. - Well-equipped laboratories with all required equipment and reagents.
2 - Computing resources:	- Computer laboratory with internet facilities.
II. Course Improvement Processes:	
1- Strategies for obtaining student feedback on effectiveness of teaching	
	▪ Student-based assessment of the effectiveness of teaching using a questionnaire designed by the Quality Assurance Unit at the end of the semester. ▪ Meeting with students and faculty (once per semester).
2- Other strategies for evaluation of teaching by the instructor or by the department.	

	▪ Assessment of the course syllabus and contents by the teachers using a questionnaire designed by the Quality Assurance Unit of the university at the end of the semester. ▪ Regular meeting and discussion of the course content between the Head of Department and the teaching staff of the course (for theory and practice).
3- Processes for improvement of teaching.	
	▪ Revision of the course specification and its teaching strategies every three academic years after consideration of all issues raised by the teachers and/or students during regular meetings and discussions. ▪ Exploring any possible defects in the course that might be encountered by the teaching staff and their mitigation in subsequent improved versions of course specification.
4- Processes for verifying standards of students' achievement	
	▪ Checking of a sample of students' work by an independent faculty member. ▪ Periodic exchange and check marking of a sample of students' assignments with a faculty member from another institution. ▪ Adoption of scoring rubrics to assess the students' achievement (both for ongoing or summative assessments). ▪ Regular follow-up of laboratory logbooks to assess the practical achievement of students.
5- Procedures for periodically reviewing of course effectiveness and planning for improvement	
	▪ Student rating and feedback ▪ Peer rating and feedback ▪ Regular meeting of the Curriculum Committee of the faculty.
6- Course development plans	
	▪ Conducting regular workshops for the staff for improving their course specification skills. ▪ Regular revision of course specification and syllabus items.

VIII. Course Policies: (including plagiarism, academic honesty, attendance etc)

The University Regulations on academic misconduct will be strictly enforced. Please refer to ----------

1	**Class Attendance:**

	▪ Attendance of all lectures and practical sessions is required. Unexcused absence exceeding 25% of the lectures or practical sessions will disqualify the student from entering the final exam.
2	**Tardy:** - Roll will be called in the very beginning of each lecture and practical class. Retardation for more than three weeks without a reasonable excursion, the student involved shall not be allowed to attend the class any longer and consequently shall be considered to be absent.
3	**Exam Attendance/Punctuality:** ▪ Exam attendance is obligatory unless being excused by the department and faculty. ▪ Absence from assignments or exams will be dealt with according to the general policy of the university.
4	**Assignments & Projects:** ▪ Assignments: Written and oral; Laboratory logbook signed by the responsible demonstrator. ▪ Projects: Not applicable.
5	**Cheating:** ▪ Punishment of cheating will be according to the general policy of the university in this respect.
6	**Plagiarism:** ▪ Plagiarism in written essays, reports, etc. is not accepted, and students who plagiarize the works of others will be punished according to the general policy of the university.
7	**Other policies:** ▪ General policies of the Students' Affairs of the University and the Quality Assurance Unit.

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وحدة ضمان الجودة

Course Plan of Pharmaceutics III

I. - Information about Faculty Member Responsible for the Course:							
Name of Faculty Member	Prof. Dr. Abdulwali Ahmed Saif	Office Hours					
Location & Telephone No.		SAT	SUN	MON	TUE	WED	THU
E-mail							

II. Course Identification and General Information:						
1-	Course Title:	Pharmaceutics III				
2-	Course Number & Code:	Ph257				
3-	Credit hours: 3hrs	C.H				Total
		Th.	Seminar	Pr.	F. Tr.	
		2	-	1		3
4-	Study level/year at which this course is offered:	Third Level /First Semester				
5-	Pre –requisite (if any):	Physical Pharmacy- Pharmaceutical Calculations-Pharmaceutics I_II				
6-	Co –requisite (if any):					
7-	Program (s) in which the course is offered	Bachelor of Pharmacy				
8-	Language of teaching the course:	English				
9-	System of Study:	Semesters				
10-	Mode of delivery:	Regular				
11-	Location of teaching the course:	Faculty of Pharmacy-Sana'a University				

VIII. Course description:

This course aims to provide the students with basic principles of pharmaceutical semisolid dosage forms. It concentrates on the advantages and disadvantages, additives, methods of formulation and quality control tests of pharmaceutical semisolid dosage forms.

IX. Intended Learning Outcomes (ILOs) of the Course:

At the end of this course, the students will be able to:

1. Recognize the anatomy and physiology of skin and factors affects diffusion of drugs through skin.
2. Describe the advantages and disadvantages of pharmaceutical semisolid dosage forms.
3. Recognize the different additives used in manufacturing of pharmaceutical semisolid dosage forms.
4. Describe methods of formulation of pharmaceutical semisolid dosage forms.
5. Discuss the quality control tests of pharmaceutical semisolid dosage forms.Distinguish between pharmaceutical dispersed systems.
6. Propose best formulations to enhance drug delivery through skin such TDDS.
7. Determine the appropriate methods for formulation of pharmaceutical semisolid dosage forms.
8. Select the suitable method for evaluation of pharmaceutical semisolid dosage forms.
9. Propose best approaches to solve the problems encountered in of pharmaceutical semisolid dosage forms.
10. Select and practice different methods for preparation of pharmaceutical semisolid dosage forms.
11. Formulate different pharmaceutical semisolid dosage forms.
12. Label the different formulations of pharmaceutical semisolid dosage forms.
13. perform the quality control tests for pharmaceutical semisolid dosage forms.
14. Implement writing and presentation skills
15. Work effectively in a team

X. Course Content:

1 – Course Topics/Items:

a – Theoretical Aspect

Order	Topic List / Units	CILOs (symbols)	Sub-topic List	Number of weeks	Contact hours
1	Anatomy and Physiology of Skin and Factors Affects Diffusion of Drugs Through Skin.	**a1, b1, c1, d1-2**	- Structure and function of the skin - Target area of treatment after topical application to skin - Basic principles of diffusion through membranes and factors affecting percutaneous absorption - Enhancement of skin penetration	1	2
2	Transdermal Drug Delivery Systems (TDDS)	**a1-3, b1, b3, d1-2**	Definition, types, Advantages, disadvantages and factors affecting percutaneous absorption of TDDS	1	2
3	Pharmaceutical Semisolid Dosage Form (Ointments)	**a2-5, b2-4, d1-2**	Definition, types, Advantages, disadvantages, bases, excipients, method of formulation, stability and Quality control tests of Pharmaceutical ointments	4	8
4	Mid-term Exam	**a1-5, b1-4**		1	2
5	Pharmaceutical Semisolid Dosage Form (Creams)	**a2-5, b2-4, d1-2**	Definition, types, Advantages, disadvantages, bases, excipients, method of	2	4

			formulation, stability and Quality control tests of Pharmaceutical Creams		
6	Pharmaceutical Semisolid Dosage Form (Gels and Pests)	**a2-5, b2-4, d1-2**	Definition, types, Advantages, disadvantages, bases excipients, method of formulation, stability and Quality control tests of Pharmaceutical gels and pests	1	2
7	Pharmaceutical Semisolid Dosage Form (Suppositories and Pessaries)	**a2-5, b2-4, d1-2**	Definition, types, Advantages, disadvantages, vehicles, factors affecting rectal absorption excipients, method of formulation, stability and Quality control tests of Pharmaceutical gels and pests	3	6
8	Pharmaceutical Semisolid Dosage Form (Vaginal Preprations)	**a2-5, b2-4, d1-2**	Definition, types, Advantages, disadvantages, Vaginal inserts -Preparation of suppositories - displacement values in suppository bases, Specific problems in formulation of suppositories- Quality control tests for Vaginal	1	2
9	Other Topical Pharmaceutical Semisolid Dosage Forms	**a2-5, b2-4, d1-2**	Definition, types, Advantages, disadvantages, excipients, method of formulation, stability and Quality control tests of Other topical pharmaceutical semisolid dosage forms	1	2
10	Final-term exam	**a1-5, b1-4**		1	**2**
Number of Weeks /and Units Per Semester				**16**	**32**

b- Practical Aspect:

Order	Practical Tasks	CILOs (symbols)	Number of weeks	Contact hours

11.	Formulate, practice preparation, label and quality control tests of Pharmaceutical ointments with hydrophilic bases	**c1-4, d1-2**	2	4
12.	Formulate, practice preparation, label and quality control tests of Pharmaceutical ointments with hydrophobic bases	**c1-4, d1-2**	4	8
13.	Mid-term exam	**c1-4**	1	2
14.	Formulate, practice preparation, label and quality control tests of Pharmaceutical O/W creams	**c1-4, d1-2**	1	2
15.	Formulate, practice preparation, label and quality control tests of Pharmaceutical W/O creams	**c1-4, d1-2**	1	2
16.	Formulate, practice preparation, label and quality control tests of Pharmaceutical gel	**c1-4, d1-2**	1	2
17.	Formulate, practice preparation, label and quality control tests of Pharmaceutical pests	**c1-4, d1-2**	1	2
18.	Formulate, practice preparation, label and quality control tests of Pharmaceutical Suppositories with hydrophilic bases	**c1-4, d1-2**	2	4
19.	Formulate, practice preparation, label and quality control tests of Pharmaceutical Suppositories with hydrophobic bases	**c1-4, d1-2**	2	4
20.	Final-term exam	**c1-4**	1	2
Number of Weeks /and Units Per Semester			**16**	**32**

III- a-Teaching strategies of the course:
Lecture method, Group Discussion, Problem solving sessions tutorials, brainstorming and Practical sessions.
b- Assessment Methods:

Oral Exam, Quizzes, Attendance, Participation, Short answers, reports, homework, and Written exam Practical works, practical exam and practical reports.

VII. Assignments:

No.	Assignments	Aligned CILOs (symbols)	Week Due	Mark
1	Homework Assignments	**a1-5, b1-4, d1-2**	Sporadic through the semester	**10**
2	Reports	**c1-4, d1-2**		

IV- Schedule of Assessment Tasks for Students during the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes (CILOs symbols)
8.	**Attendance, Participation and quizzes**	**All Weeks**	10	7%	a2-4,b1-2, **d1-2**
9.	**Oral Tests and Homework-assignments**	Sporadic through the semester	10	7%	a1-3, b2-3, **d1-2**
10	**Attendance, Practical Reports**	**All Weeks**	15	10%	c1-4
11	**Practical mid-semester exam**	6th	15	10%	c1-4
12	**Theoretical mid-semester exam**	6th	30	20%	**a1-5, b1-4**
13	**Final Exam (theoretical)**	**16th**	50	33%	**a1-5, b1-4**
14	**Final Exam (practical)**	**16th**	20	13%	c1-4
	Total		**150**	**100%**	

XI. Students' Support:

Office Hours/week	Other Procedures (if any)
2 hours per week	

XII. Learning Resource (MLA style or APA style)s:

5- Required Textbook(s) (maximum two)

5. Notes on Pharmaceutics prepared by the department staff.
6. Jones, D., 2008, "FAST track Pharmaceutics- Dosage Form and Design" 1st edition Pharmaceutical Press, London.
7. Ansel; H.C., (2011) Pharmaceutical Dosage Forms and drug Delivery Systems'. 9th ,Lea & Febiger; Philadelphia; London.
8. Aulton, M.E. (ed). (2013) Pharmaceutics, the Design and Manufacture of Medicines edition, Churchill Livingstone, Edinburgh.

6- Recommended Readings and Reference Materials

4. Loyd, V Allen J.,2013, Remington: The Science and Practice of Pharmacy 22nd edi Pharmaceutical Press, London.
5. Florence, A.T. and Attwood, D., 2006, "Physicochemical Principles of Pharmacy", 4 edition, Pharmaceutical Press, London.
6. Banker, G.S.and Rhodes, C.T, (1999) Modern Pharmaceutics, 3rd edn. Marcel Dek

7- Electronic Materials and Web Sites *etc*.

www.pubmed.com
http://www.sciencedirect.com

8- Other Learning Material:

J. Pharm. Sci
Published articles related to the discussed topics
United States Pharmacopeia and National Formulary (latest edition) United States Pharmacopeial Convention Inc., Rockville, MD.
British Pharmacopoeia (latest edition), HMSO. London.
Martindale, W. (latest edition) The Extra Pharmacopoeia., Royal Pharmaceutical Society Great Britain, London.
Further information on proprietary products can be found in: The Data Sheet Compendium, Datapharm Publications Ltd (published annually).

	The Monthly Index of Medical Specialities (MIMS), Medical Publications Ltd.

III. Facilities Required:	
1 - Accommodation:	- Well-equipped lecture halls with data show facilities, whiteboards, net connection, etc. - Well-equipped laboratories with all required equipment and reagents.
3 - Computing resources:	- Computer laboratory with internet facilities.

IV. Course Improvement Processes:	
6- Strategies for obtaining student feedback on effectiveness of teaching	
	▪ Student-based assessment of the effectiveness of teaching using a questionnaire designed by the Quality Assurance Unit at the end of the semester. ▪ Meeting with students and faculty (once per semester).
7- Other strategies for evaluation of teaching by the instructor or by the department.	
	▪ Assessment of the course syllabus and contents by the teachers using a questionnaire designed by the Quality Assurance Unit of the university at the end of the semester. ▪ Regular meeting and discussion of the course content between the Head of Department and the teaching staff of the course (for theory and practice).
8- Processes for Improvement of Teaching.	
	▪ Revision of the course specification and its teaching strategies every three academic years after consideration of all issues raised by the teachers and/or students during regular meetings and discussions. ▪ Exploring any possible defects in the course that might be encountered by the teaching staff and their mitigation in subsequent improved versions of course specification.
9- Processes for Verifying Standards Of Students' Achievement	
	▪ Checking of a sample of students' work by an independent faculty member. ▪ Periodic exchange and check marking of a sample of students' assignments with a faculty member from another institution. ▪ Adoption of scoring rubrics to assess the students' achievement (both for ongoing or summative assessments).

	▪ Regular follow-up of laboratory logbooks to assess the practical achievement of students.
10- Procedures for Periodically Reviewing of Course Effectiveness and Planning for Improvement	
	▪ Student rating and feedback ▪ Peer rating and feedback ▪ Regular meeting of the Curriculum Committee of the faculty.
6- Course Development Plans	
	▪ Conducting regular workshops for the staff for improving their course specification skills. ▪ Regular revision of course specification and syllabus items.

IX. Course Policies: (including plagiarism, academic honesty, attendance etc)

The University Regulations on academic misconduct will be strictly enforced. Please refer to ----------

1	**Class Attendance:** ▪ Attendance of all lectures and practical sessions is required. Unexcused absence exceeding 25% of the lectures or practical sessions will disqualify the student from entering the final exam.
2	**Tardy:** - Roll will be called in the very beginning of each lecture and practical class. Retardation for more than three weeks without a reasonable excursion, the student involved shall not be allowed to attend the class any longer and consequently shall be considered to be absent.
3	**Exam Attendance/Punctuality:** ▪ Exam attendance is obligatory unless being excused by the department and faculty. ▪ Absence from assignments or exams will be dealt with according to the general policy of the university.
4	**Assignments & Projects:** ▪ Assignments: Written and oral; Laboratory logbook signed by the responsible demonstrator. ▪ Projects: Not applicable.
5	**Cheating:** ▪ Punishment of cheating will be according to the general policy of the university in this respect.

6	**Plagiarism:** ▪ Plagiarism in written essays, reports, etc. is not accepted, and students who plagiarize the works of others will be punished according to the general policy of the university.
7	**Other policies:** ▪ General policies of the Students' Affairs of the University and the Quality Assurance Unit.