Syllabus: Industrial Pharmacy (2) practical (#131701472)
Second Semester 2021 /2022

COURSE INFORMATION	
Course Name: Industrial Pharmacy 2 Practical (blended education) **Semester:** Second **Department:** Pharmaceutics and Pharmaceutical Technology **Faculty:** Pharmaceutical Sciences	**Course Code:** 131701472 **Section:** 1,2,4,5,6,7 **Core Curriculum**: 2013 Study Plan
Day(s) and Time(s): Sun : 9:00 – 11:00 Mon: 9:00 – 11:00 Wed: 9:00 – 11:00 Thu: 9:00 – 11:00,11:00-13:00, 13:00-15:00 **Classroom:** Pharmaceutical Sciences A315	**Credit Hours: 1** **Prerequisites: 131701471 (Industrial Pharmacy (1))**

COURSE DESCRIPTION

This course teaches pharmacy students how to prepare pharmaceutical prepration in the field of pharmaceutical industry by providing students with practiacl work (including processes, machinery, materials, formulation, standards and quality requirements) in relation to the covered topics.

Topics that are covered here include extended release tablet , hard gelatin capsule and suspensions , and other miscellaneous dosage form. These topics will be discussed based on the knowledge of the preparation, and quality control test according to international guidelines.

DELIVERY METHODS

The course will be delivered through a combination of active learning strategies. These will include:

- PowerPoint lectures and active classroom-based discussion
- Students divided in groups acting in practical lab work
- Relevant films and documentaries
- Video lectures
- E-learning resources: e-reading assignments and practice quizzes through Model and Microsoft Team

The course will be delivered through a combination of active learning strategies. These include:

- Student have to prepare and study Record discussion on moodle & team before lab time.
- In lab , Brief discussion well held to summarize the topics and discuss the procedure of experiment in details
- Discuss how to do calculation and draw graph related to experiment
- Video lectures of Experiment

FACULTY INFORMATION

Name	**Msc. Eqbal Abu-Alkebash**
Academic Title:	**Assistant Teacher**
Office Location:	**Third Floor**
Telephone Number:	**Extension: 3421**
Email Address:	**eqbal@hu.edu.jo**
Office Hours:	**Sunday 13:00-14:00** **Monday 8:00-9:00** **Wednesday 8:00-9:00**

REFERENCES AND LEARNING RESOURCES

Required Textbook(s):

1. *Aulton M., Taylor Kevin (ed.), Aulton's Pharmaceutics The design and Manufacture of Medicine, Elsevier, 4th edition, 2013.*
2. *Khar RK, Vyas SP, Ahmad FJ, Jain GK (2013). Lachman/liebermans: The Theory and Practice of Industrial Pharmacy. 4th editionCbs Publishers & Distributors.*
3. *Remington: The Science and Practice of Pharmacy, LIPPINCOTT WILLIAMS & WILKINS, 21th ed, 2006.*

Useful Web Resources:

http://www.

STUDENT LEARNING OUTCOMES MATRIX

Alignment matrix between the course objectives and the **course** learning outcomes (CLOs) with the **program** learning outcomes (PLOs).

Core Curriculum LOs	B.Sc. Pharmacy Program LOs	Course Objectives	Course Student LOs (A-D as below)				Assessment Method(s)
	Main Domain		**A**	**B**	**C**	**D**	
Foundational Knowledge							Lab participation, Quizzes and Report
Essentials for Practice and Care							Lab participation, Quizzes and Report
Approach to Practice and Care							Lab participation, Quizzes and Report
Personal and Professional Development							Lab participation, Quizzes and Report
Pharmaceutical Product Expert							Lab participation, Quizzes and Report

This course tends to give student practical skills about the covered experiments. These experiments are related to manufacturing and quality evaluation of the pharmaceutical products.
Course Objectives
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Course Learning Outcomes (CLOs)
A-Knowledge and Understanding A1. Concepts and Theories: Define and understand basic concepts of Dissolution, Disintegration and Quality control of different pharmaceutical dosage form. A2. Contemporary Trends, Problems and Research: Understand quality control processes of different dosage form in pharmaceutical industries A3. Professional Responsibility: Use the appropriate machine safely and effectively.
B-Subject-specific skills B1. Problem solving skills:Solve problems related to dissolution test and Quality control of different pharmaceutical dosage form. B2. Modeling and Design: draw diagrams of different equipments used in pharmaceutical industrial laboratory B3. Application of Methods and Tools: Understand different drug formulation
C-Critical-Thinking Skills

C1. Analytic skills: Assess the ability of student to perform quality control of different dosage form (sustained released tablet, enteric coated tablet, suspension and suppositories).

C2.Strategic Thinking: Determine the most suitable equipment used for each technique.

D- General and Transferable Skills (other skills relevant to employability and personal development)

D1. Communication: communicate in the field of industrial pharmacy by conducting discussions and participating in class, asking questions intended to encourage the exchange of ideas in class.

D2. Teamwork and Leadership: Foster an ability to work together in teams, engage in group work, and to develop skills motivating others to accomplish goals.

ACADEMIC SUPPORT

It is The Hashemite University policy to provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their instructor to ensure that their individual needs are met. The University through its Special Need section will exert all efforts to accommodate for individual's needs.

Special Needs Section:

Tel: **00962-5-3903333** **Extension:** **4209**

Location: **Students Affairs Deanship/ Department of Student Welfare Services**

Email: **amalomoush@hu.edu.jo**

amalomoush@staff.hu.edu.jo

COURSE REGULATIONS

Participation

Class participation and attendance are important elements of every student's learning experience at The Hashemite University, and the student is expected to attend all classes. A student should not miss more than 15% of the classes during a semester. *Those exceeding this limit of 15% will receive a failing grade regardless of their performance*. It is a student's responsibility to monitor the frequency of their own absences. **Attendance record begins on the first day of class irrespective of the period allotted to drop/add and late registration. It is a student's responsibility to sign-in; failure to do so will result in a non-attendance being recorded.**

In exceptional cases, the student, with the instructor's prior permission, could be exempted from attending a class provided that the number of such occasions does not exceed the limit allowed by the University. The instructor will determine the acceptability of an absence for being absent. A student who misses more than 25% of classes and has a valid excuse for being absent will be allowed to withdraw from the course.

On average, students need to spend 3 hrs of study and preparation weekly. At the beginning of the lectures, be on time and don't leave before the end of the lecture without an accepted excuse. **If you missed a class, it is your responsibility to find out about any announcements or assignments you have missed.** For any clarification, please communicate your instructor at her posted office hours or by appointment. Listen well to the lecture, if you have a question, ask your instructor. You will find the course material at the course team after the lecture.

Sharing of course materials is forbidden. No course material including, but not limited to, course outline, lecture hand-outs, videos, exams, and assignments may be shared online or with anyone outside the class. Any suspected unauthorized sharing of materials, will be reported to the university's Legal Affairs Office. If a student violates this restriction, it could lead to student misconduct procedures.

Plagiarism
Plagiarism is considered a serious academic offence and can result in your work losing marks or being failed. HU expects its students to adopt and abide by the highest standards of conduct in their interaction with their professors, peers, and the wider University community. As such, a student is expected not to engage in behaviours that compromise his/her own integrity as well as that of The Hashemite University.

Plagiarism includes the following examples, and it applies to all student assignments or submitted work:

- **Use of the work, ideas, images or words of someone else without his/her permission or reference to them.**
- **Use of someone else's wording, name, phrase, sentence, paragraph or essay without using quotation marks.**
- **Misrepresentation of the sources that were used.**

The instructor has the right to fail the coursework or deduct marks where plagiarism is detected

Late or Missed Assignments

In all cases of assessment, students who fails to attend an exam, class project or deliver a presentation on the scheduled date without prior permission, and/or are unable to provide a medical note, will automatically receive a fail grade for this part of the assessment.

- Submitting a term paper on time is a key part of the assessment process. Students who fail to submit their work by the deadline specified will automatically receive a 10% penalty. Assignments handed in more than 24 hours late will receive a further 10% penalty. Each subsequent 24 hours will result in a further 10% penalty.
- In cases where a student misses an assessment on account of a medical reason or with prior permission; in line with University regulations an incomplete grade for the specific assessment will be awarded and an alternative assessment or extension can be arranged.

Missed Assessments
In all cases of assessment, students who fails to attend an exam on the scheduled date without prior permission, and/or are unable to provide a medical note, will automatically receive a failure .grade for this part of the assessment

• In cases where a student misses an assessment on account of a medical reason or with prior permission; in line with university regulations an incomplete grade for the specific assessment will be awarded and an alternative assessment or extension can be arranged.

Cheating
Cheating, academic disconduct, fabrication and plagiarism will not be tolerated, and the university policy will be applied. Cheating policy: The participation, the commitment of cheating will lead to applying all following penalties together:

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

Student Complaints Policy

Students at The Hashemite University have the right to pursue complaints related to faculty, staff, and other students. The nature of the complaints may be either academic or non-academic. For more information about the policy and processes related to this policy, you may refer to the students' handbook.

COURSE ASSESSMENT

Course Calendar and Assessment

Students will be graded through the following means of assessment and their final grade will be calculated from the forms of assessment as listed below with their grade weighting taken into account. The criteria for grading are listed at the end of the syllabus

Students will be graded through the following means of assessment:

Assessment	Grade Weighting	Deadline Assessment
Quiz	15%	*Every week*
Report	10%	Every week
Laboratory work evaluation	10%	Every week
Theoretical Midterm Exam	25%	Between 5th and 6th week
Theoretical Final Exam	40%	Between 13 & 14 week

Description of Exams

Test questions will predominately come from material presented in the lectures. Semester exams will be conducted during the regularly scheduled lecture period. Exam will consist of a combination of multiple choice, short answer, match, true and false and/or descriptive questions.

Quizzes: At beginning of each lab quizzes will be given based upon the previous lectures. It will enforce that you come prepared to the class.

No make-up exams, homework or quizzes will be given. Only documented absences will be considered as per HU guidelines.

Description of Exams

Test questions will predominately come from material presented in the lectures and the lectures themselves. Semester exams may be conducted during the regularly scheduled lecture period. Exam may consist of a combination of multiple choice, short answer, match, true and false, and/or descriptive questions.

No make-up exams will be given. Only documented absences will be considered as per HU guidelines. Make-up exams may be different from regular exams in content and format.

Grades are not negotiable and are awarded according to the following criteria:

Letter Grade	Description	Grade Points
A+	Excellent	4.00
A		3.75
A-		3.50
B+	Very Good	3.25
B		3.00
B-		2.75
C+	Good	2.50
C		2.25
C-		2.00
D+	Pass	1.75
D	Pass	1.50
F	Fail	0.00
I	Incomplete	-

WEEKLY LECTURE SCHEDULE AND CONTENT DISTRIBUTION

"Lecture hours and weeks are approximate and may change as needed"

Introduction **, Safety precaution, grouping students and lab round**		***Week*** **1**
Topic 1	**Dissolution** ***Testing For Paracetamol 500 mg Tablet***	***Week 2***
Topic 2	***Dissolution Testing for Extended release (ER) Tablet***	***Week 3***
Topic 3	***Disintegration of Enteric Coated Tablets***	***Week 4***
Topic 4	***Formulation and quality control of hard gelatin capsules***	***Week 5***
Topic 5	***Dissolution and disintegration of hard gelatin capsules***	***Week 6***
	Midterm Exam	***Week 7***
Topic 6	***Quality Control Tests for Suppositories***	***Week 8***
Topic 7	***Pharmaceutical Development of Suspension Dosage Form and Characterization of different suspension formulas***	***Week 9***
Topic 8	***Forumaltion and evaluation of Emulgel***	***Week 10***
Topic9	***Tablet Coating***	***Week 11***
	Final Exams	***Week*** **13**

ASSESSMENT RUBRICS					
Classroom Participation: Assessment Criteria					
Criteria	**Quality**				**Score**
	Excellent (4 points)	**Good (3 points)**	**Satisfactory (2 points)**	**Needs Improvement (1 points)**	
Degree to which student integrates course readings into classroom participation	- often cites from readings; - uses readings to support points; - often articulates "fit" of readings with topic at hand.	- occasionally cites from readings; - sometimes uses readings to support points; - occasionally articulates "fit" of readings with topic at hand .	- rarely able to cite from readings; - rarely uses readings to support points; - rarely articulates "fit" of readings with topic at hand	- unable to cite from readings; - cannot use readings to support points; cannot articulates "fit" of readings with topic at hand .	
Interaction / participation in classroom discussions	- always a willing participant, responds frequently to questions; - routinely volunteers point of view .	- often a willing participant, - responds occasionally to questions; - occasionally volunteers point of view .	- rarely a willing participant, - rarely able to respond to questions; - rarely volunteers point of view .	- never a willing participant., - never able to respond to questions; - never volunteers point of view .	
Interaction /participation in classroom learning activities	- always a willing participant; - acts appropriately during all role plays; - responds frequently to questions; - routinely volunteers point of view.	- often a willing participant; - acts appropriately during role plays; - responds occasionally to questions; - occasionally volunteers point of view.	- rarely a willing participant. - occasionally acts inappropriately during role plays; - rarely able to respond to direct questions; - rarely volunteers point of view .	- never a willing participant - often acts inappropriately during role plays;, - never able to respond to direct questions; - never volunteers point of view.	
Demonstration of professional attitude and demeanor	- always demonstrates commitment through thorough preparation; - always arrives on time; - often solicits instructors' perspective outside class.	- rarely unprepared; rarely arrives late; - occasionally solicits instructors' perspective outside class .	- often unprepared; occasionally arrives late; - rarely solicits instructors' perspective outside class .	- rarely prepared; - often arrives late; - never solicits instructors' perspective outside class	

Assessment Rubrics to be determined by the department. Add samples below.