



**Pharmacy Department**

**Paitaxt Private Institute**

**Subject: Industrial Pharmacy**

**Course Book: 2<sup>nd</sup> stage**

**Lecturer's name:**

**Assist. lect. Tariq Waece Sadeq(theory)**

**Muslih Saber Hama shareef**

**Academic Year: 2020/2021**

## Course Book

<b>1. Course name</b>	Industrial Pharmacy
<b>2. Lecturer in charge</b>	Tariq Waece Sadeq
<b>3. Department/ College</b>	Pharmacy, noble private institute
<b>4. Contact</b>	<a href="mailto:Tariqwaece9@gmail.com">Tariqwaece9@gmail.com</a>
<b>5. Time (in hours) per week</b>	Theory 2 hours Practical 2 hours
<b>6. Office hours</b>	<b>2 hrs./week</b>
<b>7. Course code</b>	
<b>8. Teacher's academic profile</b>	<p>Tariq graduated from Hawler medical University/ College of pharmacy / in 2010 as pharmacist and from 2012 to 2015 continue Msc form pharmaceutics and Industrial pharmacy, since graduation working as teacher Erbil polytechnic University, Erbil Technical Institute, one of the top teacher for 2017 and 2018, he was head of the pharmacy department from 2015 to 2018. Now head of the scientific comity from pharmacy department, and member of the research enhancement comity from institute.</p> <p>He has experience as assistance lecturer teaching subject industrial pharmacy, pharmaceutics, Quality Control theory and practice from 1<sup>st</sup> stage and 2<sup>nd</sup> stage</p> <p>He was medical logistician for 4 years from International comity of red Crosse.</p> <p>In 2014 start as production manager from TSG Factory for cosmetic household and car care product until now.</p> <p>Know also working as Business Development Manager from Minas company Goran group.</p> <p>I participated in some courses including the followings:</p> <ul style="list-style-type: none"> <li>➤ English language Training course in 2012 at BII</li> <li>➤ Computer Training course in 2013 in the Erbil polytechnic university.</li> <li>➤ Teaching Methods Course in 2016 in the Erbil polytechnic university.</li> </ul>
<b>9. Keywords</b>	Industrial pharmacy, medicine manufacturing, raw material, natural medicine
<b>10. Course overview:</b>	<p>Pharmacy students should receive information about industrial pharmacy factory and production of medicine of most pharmaceutical dosage forms and effect of some physicochemical property of drugs various production in pharmaceutical manufacturing .also methods of drug preparation and</p>

drug evaluation and development from the laboratory includes in this course. student should know information on the strong relationship between all raw material and dosage forms in order to know the method of an drug dosage form manufacturing in different methods and evaluations and solve the problem during manufacturing process.

#### 11. Course objective:

**First:** students should understand information about different methods and evaluations and solve the problem during manufacturing process.

- **Second:** students should have information about machine and instrument used in lab and manufacture □

- **Third:** students should know information on raw material

- **Fourth:** student should understand various method of medicine manufacturing

#### 12. Student's obligation

The role of students and their obligations throughout the academic year comes from Evaluating them through exams, presence and activity in the Lab.

#### 13. Forms of teaching

Different forms of teaching will be used to reach the objectives of the course:

- Course book
- Data show and power point.
- Scientific videos.
- Group discussion's.
- Papers for practical work and notes.
- Whiteboard.
- Seminars

#### 14. Assessment scheme

First course 25 marks (theoretical 10 marks and practical 10 marks) 5 MARKS ACTIVITY

Second course 25 marks (theoretical 10 marks and practical 10 marks) 5 MARKS ACTIVITY

Final exam 50 marks (Theory 20 marks and Practical 30 marks)

**Theory:** - for each course  
Exam 8 marks

Quiz and activity 2 marks

**Total 10 marks**

**Practical:**-for each course

Report 5 marks

Activity 5 marks

Exam 5 marks

**Total 15 marks**

#### 15. Student learning outcome:

Pharmacy department students should have information about dosage form of most human organs and physiological effect of some drugs or antibiotic on various organs in human body.

#### 16. Course Reading List and References:

1-Text book of Remington the science and practice of pharmacy,22<sup>nd</sup> edition, 2013

2- Leon Lachman , the theory and practice of Industrial pharmacy 1976.

3-pharmaceutical technology Volume 1 theory and practical Sushama Talegaonkar ISBN 81-89747-18-5

<b>17. The Topics:</b>	<b>Lecturer's name</b>
<p><b>1<sup>st</sup> Lecture</b> Structure and development, the subject of development, stages of development, structure theory, Installation practice. Packaging, assembly laboratory, field tripe, test storage, departments of industry.</p> <p><b>2<sup>nd</sup> Lecture</b> Introduction to the manufacturing operations and the reasons to increase the size of manufacturing. Economic reasons, the settings or resolution, clear image, change the characteristics of the treatment. Milling operations. Rules and Operations Unit, the flow of fluids, Pyrolysis, a transformation of mass.</p> <p><b>3<sup>rd</sup> Lecture</b> Particles Size. The meaning of the particle size, the definition of the particle size. Particle size Distribution and analysis.</p> <p><b>4<sup>th</sup> Lecture:</b> Reduce the sizes, the subject of size reduction Energy required for size reduction, mechanical size reduction.</p> <p><b>5<sup>th</sup> Lecture:</b> Methods of size reduction. Cutting, pressing, pressure, ways to reduce the size.</p> <p><b>6<sup>th</sup> Lecture:</b> Sieving methods, mechanical methods of sieving, mixing, the definition and the topic.</p> <p><b>7<sup>th</sup> Lecture:</b> Types of mixture.</p> <p><b>8<sup>th</sup> Lecture:</b> Mixing fluid mixing powder Provision of powder mixture</p> <p><b>9<sup>th</sup> Lecture:</b> Mechanical mixing powder Mixing of materials semi-solid.</p> <p><b>10<sup>th</sup> Lecture:</b> Mixing devices, to identify the device, its mode of operation.</p> <p><b>11<sup>th</sup> Lecture:</b> Evaporation, factors affecting the evaporation, Improve the efficiency of evaporation.</p> <p><b>12<sup>th</sup> Lecture:</b> Filtration, properties and influencing factors.</p> <p><b>13<sup>th</sup> Lecture:</b> Extraction, the theory of extraction, extraction methods, circular extraction, multi-stage extraction, continuous extraction.</p> <p><b>14<sup>th</sup> Lecture:</b> Pharmaceutical dosage form, tablet compressed pressure of</p>	<p>Tariq W.Sadeq</p>

<p>tablet, tablet single-machine multi-punch and the rotating.</p> <p><b>15<sup>th</sup> Lecture:</b> Prepare materials for tablet , dry and moister.</p>	
<p><b>18. Practical Topics (If there is any)</b></p> <p><b>1<sup>st</sup> Lab.:</b> Risks of the pharmaceutical industry <b>2<sup>nd</sup> Lab. :</b> Devices used in the pharmaceutical industry <b>3<sup>rd</sup> lab.:</b> Mixing of powder <b>4<sup>th</sup> lab.:</b> Reduce the sizes and Isolation of sizes <b>5<sup>th</sup> lab.:</b> Determination angle of repose <b>6<sup>th</sup> lab.:</b> calculation bulk density and tab density <b>7<sup>th</sup> lab.:</b> percentage compressibility <b>8<sup>th</sup> lab.:</b> tablet preparation and evaluation <b>9<sup>th</sup> lab.:</b> Extraction <b>10<sup>th</sup> lab.:</b> Evaporation <b>11<sup>th</sup> lab.:</b> Weight variation <b>12<sup>th</sup> lab.:</b> disintegration <b>13<sup>th</sup> lab.:</b> 1<sup>st</sup> term Exam <b>14<sup>th</sup> lab.:</b> capsule preparation</p>	
<p><b>19. Examinations:</b></p> <p><b>Examples of exams:</b></p> <p><b>Theoretical:</b></p> <p><b>Q1/ Put later (T) for true and (F) for false sentences . ( 25 mark)</b></p> <p><b>1- Equipments are used in the mixing process :</b></p> <ul style="list-style-type: none"><li>A.Turbulent flow.</li><li>B.Air jets</li><li>C.Fluid jets</li><li>D.Baffles</li></ul>	

E. Impeller

2- Power may be supplied to the fluid mass in by means of an:

- A. Impeller.
- B. Air stream.
- C. liquid jet.
- D. Baffles.
- E. Air Jets

**Q2/ Enumerate the below mention requirement: 25 mark**

A-Mixing Mechanism in liquid materials?

C-Factor affecting the extraction process?

- a. Nature of the drug
- b. Therapeutic effect
- c. Thermal stability
- d. Solvent characteristics ( volatile / non volatile )
- e. Type of products (conc. /Non conc.)

**Q3/ Answer by short note? (25 mark)**

1- Extraction by Infusion.

**Q4/Mach each one from A class with suitable one in B class? 25 mark**

Class A

Class B

1-Used to mill dry materials and slurried

1- Ball mill

& wet cakes ointments.

2- used for wet or dry material, and sterilized

2-Cutter mill

production of ophthalmic and parenteral product.

3-used for material have low milting point

3- Colloid mill

or thermo labile.

4- used to process suspensions and emulsions.

4- Fluid Energy mill

5- Used for tough fibrous materials.

5- Hammer mill

## 20. Extra notes:

non

## 21. Peer review

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After review this course book is v. good and is high quality selected lecture and information is perfect scientifically and academic subject is fulfilled for the pharmacy department student.

Dr. Zana Ahmd Mustafa  
Lecture pharmacy department