****

**Pharmacy Department**

**Erbil Medical Technical institute**

**Subject: Industrial Pharmacy**

**Course Book:** 2nd stage

2nd semester

**Lecturer's name:**

**lect. Tariq Waece Sadeq**

**Academic Year:** 2022/2023

**Course Book**

|  |  |
| --- | --- |
| **1. Course name** |  Industrial Pharmacy |
| **2. Lecturer in charge** |  Tariq Waece Sadeq |
| **3. Department/ College** | Pharmacy, EPU |
| **4. Contact** | **Tariqwaece9@gmail.com** |
| **5. Time (in hours) per week**  | Theory 2 hoursPractical 2 hours  |
| **6. Office hours** | **2 hrs./week** |
| **7. Course code** |  |
| **8. Teacher's academic profile**  |  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. He has experience as assistance lecturer teaching subject industrial pharmacy, pharmaceutics, Quality Control theory and practice from 1st stage and 2nd stage He was medical logistician for 4 years from International comity of red Crosse.  In 2014 start as production manager from TSG Factory for cosmetic household and car care product until now.Know also working as Business Development Manager from Minas company Goran group. I participated in some courses including the followings:* English language Training course in 2012 at BII
* Computer Training course in 2013 in the Erbil polytechnic university.
* Teaching Methods Course in 2016 in the Erbil polytechnic university.
 |
| **9. Keywords** |  Industrial pharmacy, medicine manufacturing, raw material, natural medicine  |
| **10. Course overview:** 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 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 fromEvaluating 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 ACTIVITYFinal exam 50 marks (Theory 20 marks and Practical 30 marks)**Theory: -** for each course Exam 8 marksQuiz and activity 2 marks**Total 10 marks****‌Practical:-**for each courseReport 5 marksActivity 5 marksExam 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,22nd 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 |
| **17. The Topics:** | **Lecturer's name** |
| **1st Lecture:** Types of mixture, **2nd Lecture**: Mixing fluid mixing powder Provision of powder mixture Mechanical mixing powder Mixing of materials semi-solid. Mixing devices, to identify the device, its mode of operation.**3rd Lecture:** Evaporation, factors affecting the evaporation, Improve the efficiency of evaporation. 4th  **Lecture:** Filtration, properties and influencing factors.**5th Lecture:** Emulsion, Emulsion combination, choose oily selection factors.**6th Lecture:** Semi-solid dosage form, the rules to form semi-solid, ointment and creams. Pastes, Gel, eye ointment.**7th Lecture:** Pharmaceutical Suspension, composition of suspension.**8th Lecture:** Suppositories, prescription dose, therapeutic uses, the basis of types of suppositories, cocoa butter.**9th Lecture:** Fluids, factors desalinated theoretical factor Injection solution or infusion, manufacturing steps, quality control.**10th Lecture:** Packaging, type of packaging, limits of pharmaceuticals packaging.**11th Lecture:** Cosmetics.**12th Lecture:** Technique to isolate the microorganisms for the production of antibiotics.**13th Lecture:** Antibiotics produced by cetritogene. Antibiotics produced by fungi.**14th Lecture:** Methods of production, the effectiveness of antibiotics.**15th Lecture:** Final Exam | Tariq W.Sadeq |
| **18. Practical Topics (If there is any)**1st lab.: Evaporation2nd lab.: capsule preparation3rd lab.: granulation method and preparation4th lab.: suspension preparation and evaluation definition, types, methods of preparation5th lab.: Emulsion preparation and evaluation6th lab.:  Semi-solid dosage form ointment and creams preparation and evaluation7th lab.: Eye Solution eye drop8th lab.: suppositories dose characteristics, main types therapeutic use9th lab.: producing antibiotics10th lab.: Visiting College of pharmacy11th lab.: Visiting Awa medica Industrial Factory12th lab.: quality control13th lab.: elixir preparation and evaluation14th lab.: 2nd term exam15th lab.: Cosmetic product16th lab.: Review 17th lab.: Final Exam  |  |
| **19. Examinations:****Examples of exams:****Theoretical:****Q1/ Put later (T) for true and (F ) for false sentences . ( 25 mark)**1- **Equipments are used in the mixing process :** A.Turbulent flow. B.Air jets C.Fluid jets D.Baffles 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?* 1. Nature of the drug
	2. Therapeutic effect
	3. Thermal stability
	4. Solvent characteristics ( volatile / non volatile )
	5. 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 parentral 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 mill5- Used for tough fibrous materials. 5- Hammer mill |
| **20. Extra notes:**non |
| **21. Peer reviewپێداچوونه‌وه‌ی هاوه‌ڵ** 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  |