**Course Description**

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| **Faculty** | **Pharmacy** |
| **Department**  | Pharmaceutics and Pharmaceutical Technology | **Level** | 7 |
| **Course**  | pharmaceutics 1 | **Code** | 1701206 | **Prerequisite** | 1701205 |
| **Credit hours** | 2 | **Theoretical**  |  | **Practical** | NON |
| **Coordinator** |  | **Email** |  |
| **Teachers** | Dr. areegawadalah | **Emails** |  |
| **Lecture Time** |  | **Place** |  | **Attendance mode** | Face to face  |
| **Semester**  |  | **Preparation date**  |  | **Modification Date** |  |

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|  **Abstracted Course Description**  |
| At this level, the student will be familiar with the basics of solutions dosage form, Students apply that knowledge to the pharmaceutical dosage forms and will be introduced to coarse dispersions (suspension and emulsion) , additionally this course provide the student with basic knowledge and understanding of the different types of interfaces, the term surface tension and interfacial tension and the mechanism of adsorption at interfaces, classifying the surface active agents and appreciating their application in pharmacy along with the basic knowledge of Rheology |
| **Course Goals** |
| * The types and uses of pharmaceutical solutions as oral drug delivery systems
* The advantages and disadvantages of pharmaceutical solutions as oral drug delivery systems
* The formulation considerations for orally administered pharmaceutical solutions.
* The physical stability of pharmaceutical disperse systems.
* The advantages and disadvantages pharmaceutical disperse systems.
* Formulation considerations for pharmaceutical disperse systems.
* Considerations for the manufacture of pharmaceutical disperse systems.
* Description of rectal, vaginal and respiratory dosage forms and the rationale for their use.
* Formulation strategies for suppositories, pessaries and related products that are specifically designed for administration to the rectum or vagina.
* The advantages and disadvantages of rectal, vaginal and respiratory dosage forms.
* Considerations for the manufacture of rectal, vaginal and respiratory dosage forms.
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| **CILOs** |
| **Knowledge** |
| A.1 Defining and understanding the concepts of different types of liquid dosage forms (solution, suspensions, and emulsions).A.2 Discuss the different types of dosage forms and administration routes in relation with therapeutic outcomes. A.3 explaining the physicochemical principles relevant to liquid pharmaceutical dosage forms.  |
| **Skills** |
| . B.1 Compare various liquid preparain pharmaceuticalrmaceutical dosage forms and assess their advantages and disadvantages B.2 Demonstrate capability of choosing the appropriate preparation method for a particular pharmaceutical product prescription compoundingB.3 Demonstrate and apply physicochemical and biopharmaceutical concepts to interpret dosage form design |
| **Competencies** |
| C.1 Practical skills of mixing liquid C.2 Practical skills Written/oral communicationC3 Information data collection |
| **Learning Methods** |
| * Lectures
* Oral discussion
* Assignment
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| **Evaluation Tools** |
| **Exams****Quiz**  |
| **Week** | **Topics**  | **Learning methods** | **Evaluation tool** | **ILOs** | **Hours** |
| **1.** | Pharmaceutical dosage form:  Introduction dosage form and excipient  Classification (physical form)  Classification (route of administration) | Textbook and handouts | QUIZ |  | **2** |
| **2.** | 2. Pharmaceutical solutions  Introduction  Solvents and vehicles  Preparation of solutions  Formulation considerations |  | **3** |
| **3.** | Oral solutions  Syrups  Elixirs  Tinctures | Textbook and handouts | Exam |  | **2** |
| **4.** | Topical solutions  Vaginal & Rectal  Miscellaneous:  Aromatic waters  Spirits  Colloidons | Textbook and handouts | Assignment  |  | **2** |
| **5.** | 3. Dispersed systems: Suspension:  Surface tension phenomena and surfactants |  | **2** |
| **6.** | Revision  | Textbook and handouts |  |  | **2** |
| **7.** | Exam – 1 | Textbook and handouts | Exam |  | **1** |
| **8.** | Suspensions Sedimentation rate  Preparation of flocculated suspensions | Textbook and handouts |  | **2** |
| **9.** |  Wetting, flocculating, and suspending agents.  Sustained release suspensions  Packaging and storagePharmaceutical applicationsRheology of suspension | Textbook and handouts | Project  |  | **2** |
| **10.** | Textbook and handouts |  | **2** |
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| **11.** | Exam 2 | Textbook and handouts | Quiz |  | **1** |
| **12.** | 4. Dispersed systems: Emulsions: Lecture Page 5 of 8  Types  Tests for identification  Purpose  Preparation  Emulsifiers and stabilizers | Textbook and handouts |  |  | **2** |
| **13.** | HLB method | Textbook and handouts | Exam |  | **2** |
| **14.** | Microemulsions  Methods of emulsion preparationStability of emulsions | Textbook and handouts |  | **2** |
| **15.** | Final Examinations |  | Exam |  | **2** |

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| **Plan of Course Evaluation** |
| **Evaluation Tools** | **Mark** | **ILOs** |
| **A1** | **A2** | **A3** | **B1** | **B2** | **B3** | **C1** | **C2** | **C3** |
| **First Exam (Mid-term)**  | **30%** | \* |  |  | \* |  | \* |  | \* |  |
| **Second Exam (If available)** |  |  |  |  |  |  |  |  |  |  |
| **Final Exam** | **50%** |  |  |  | \* | \* |  |  |  |  |
| **Activities** | **20%** |  |
| **Activities Evaluation** | Homework/Tasks | 10% |  | \* |  |  |  | \* | \* |  |  |
| Case Study  |  |  |  |  |  |  |  |  |  |  |
| Discussion and Interactions |  |  |  |  |  |  |  |  |  |  |
| Group Activities |  |  |  |  |  |  |  |  |  |  |
| Laboratory Exams |  |  |  |  |  |  |  |  |  |  |
| Presentations |  |  |  |  |  |  |  |  |  |  |
| Quizzes | 10% |  | \* | \* |  | \* |  |  |  |  |
| Others |  |  |  |  |  |  |  |  |  |  |
| **Total** | 100% |  |  |  |  |  |  |  |  |  |

 **Components**  |
| **Book** | Pharmaceutical Dosage Forms and Drug Delivery SystemsMartin’s Physical Pharmacy and Pharmaceutical SciencesModern PharmaceuticsMerck Index: An Encyclopedia of Chemicals, Drugs, & BiologicalsPhysical Pharmacy: Physical Chemical Principles in the Pharmaceutical Sciences. Handbook of Pharmaceutical ExcipientsRemington: The Science and Practice of Pharmacy |
| **References** | 1. Pharmaceutical Dosage Forms and Drug Delivery Systems by Loyd V. Allen, Jr & Howard C. Ansel, Lippincott Williams & Wilkins 10th Edition ,2014 2. Aulton’s Pharmaceutics, The Design and Manufacture of Medicines, Edit.: Michael E. Aulton, Kevin M. G. Taylor Pub.: Churchill Livingstone, 4thedition, 2013

1. Martin’s Physical Pharmacy and Pharmaceutical Sciences By : Patrick J. Sinko, Lippincott Williams & Wilkins , 2006, 5th Edition 2. Modern Pharmaceutics by Gilbert S. Banker (Editor), Christopher T. Rhodes (Editor) 4th edition (June 15, 2002), Marcel Dekker; ISBN: ISBN: 0824706749 3. Merck Index: An Encyclopedia of Chemicals, Drugs, & Biologicals by Merck, Co, Maryadele J. Oneil (Editor), Ann Smith (Editor) 13th edition (October 2001), Merck & Co; ISBN: 0911910131 4. The Theory and Practice of Industrial Pharmacy by Leon Lachman, Herbert A. Lieberman, Joseph L. Kanig. 3rd edition (August 1986), Lea & Febiger; ISBN: 0812109775 5. Physical Pharmacy: Physical Chemical Principles in the Pharmaceutical Sciences by Alfred Martin, Pilar Bustamante, A.H.C. Chun (Illustrator) 622 pages 4th edition (January 15, 1993), Lea & Febiger; ISBN: 0812114388 6. Handbook of Pharmaceutical Excipients by Arthur H. Kibbe (Editor), Ainley Wade, Paul J. Weller 665 pages 3rd edition Vol 3 (January 15, 2000), Amer. Pharmaceutical Assoc.; ISBN: 091733096X 7. Remington: The Science and Practice of Pharmacy by Alfonso R. Gennaro (Editor) 20th edition (December 15, 2000), Lippincott, Williams & Wilkins; ISBN: 0683306472 |
| **Recommended Readings** |  |
| **Electronic materials** |  |
| **Other websites** |  |

**Subject Coordinator:**

**Head of Curriculum Committee:**

**Department Head:**

**Faculty Dean:**

**Last update date:**