**Course Description**

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| **Faculty** | **Pharmacy** |
| **Department**  | **Pharmaceutics and pharmaceutical Technologies** | **Level** |  |
| **Course**  | **Biopharmaceutics and pharmacokinetics lab** | **Code** | **1701401** | **Prerequisite** | 1701400 |
| **Credit hours** | 1 | **Theoretical**  | 1701400 | **Practical** |  |
| **Coordinator** | Rehan Al kasasbeh | **Email** |  |
| **Teachers** | Rawan al karaki | **Emails** |  |
| **Lecture Time** |  | **Place** |  | **Attendance mode** |  |
| **Semester**  |  | **Preparation date**  |  | **Modification Date** |  |

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| **Abstracted Course Description**  |
| The purpose of this course is to define certain pharmacokinetic parameters and the application of these parameters to selected problems, studying the effect of different factors on drug absorption. |
| **Course Goals** |
| * To enable students to apply theoretical knowledge of pharmacokinetics to practical situations.
* To define and measure essential pharmacokinetic parameters related to drug absorption.
* To study the effect of different factors on drug absorption and its significance in drug therapy.
* To develop analytical and laboratory skills for pharmacokinetic experiments.
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| **CILOs** |
| **Knowledge** |
| a1. Understand the theoretical principles of pharmacokinetics and drug absorption.a2. Identify and define essential pharmacokinetic parameters related to drug absorption.a3 . Recognize the impact of various factors on drug absorption  |
| **Skills** |
| b1. Conduct laboratory experiments to measure pharmacokinetic parameters.b2. Analyze and interpret experimental data related to drug absorption.b3. Apply theoretical knowledge to practical situations and problem-solving.. |
| **Competencies** |
| c1. Apply pharmacokinetic principles to evaluate the effect of different factors on drug absorption.c2. Make informed decisions about drug therapy based on experimental results.c3. Demonstrate the ability to perform pharmacokinetic experiments independently.. |
| **Learning Methods** |
| * Laboratory experiments to measure pharmacokinetic parameters (e.g., drug concentration measurements, absorption rates)
* Data analysis and interpretation of experimental results
* Application of pharmacokinetic principles to practical problems and case studies
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| **Evaluation Tools** |
| Quizzes, Midterm exam, Final Exam, Reports |
| **Week** | **Topics** | **Learning methods** | **Evaluation tool** | **ILOs** | **Hours** |
| **1.** |  |  |  |  |  |
| **2.** | Introduction | Lecture material and notes | Exams | **A2,a3,b1,b3,c2,c3** | **3** |
| **3.** | The one-compartment open model with an intravenous bolus dose: calculating pharmacokinetic parameters from plasma data | Homework and Projects, Presentation, … | Assignments, | **A2,a3,b1,b3,c2,c3** | **3** |
| **4.** | The one-compartment open model with an intravenous bolus dose: calculating pharmacokinetic parameters from plasma data | Lecture material and notes  | Exams | **A2,a3,b1,b3,c2,c3** | **3** |
| **5.** | The one-compartment open model with an intravenous bolus dose: calculating pharmacokinetic parameters from urinary data | Homework and Assignments, Projects, Presentation, … | Exams | **A1,a2,b1,b2,c1** | **3** |
| **6.** | The one-compartment open model with an intravenous infusion: calculating pharmacokinetic parameters from continues infusion, infusion with a bolus dose, post infusion data | Lecture material and notes  | Exams | **A1,a2,b1,b2,c1** | **3** |
| **7.** | The one-compartment open model with absorption and elimination: calculating pharmacokinetic parameters from plasma data | Lecture material and notes  | Exams | **A1,a2,b1,b2,c1** | **3** |
| **8.** | Midterm Exam | Homework and Assignments, Projects, Presentation, … | Exams | **A1,a2,b1,b2,c1** | **3** |
| **9.** | The one-compartment open model with absorption and elimination: calculating pharmacokinetic parameters from plasma data | Lecture material and notes  | Exams | **A2,a3,b1,b3,c2,c3** | **3** |
| **10.** | The one-compartment open model with multiple dosing kinetics: multiple dosing IV | Lecture material and notes  | Exams | **A2,a3,b1,b3,c2,c3** | **3** |
| **11.** | The one-compartment open model with multipledosing kinetics: multiple dosing oral | Lecture material and notes  | Exams | **A2,a3,b1,b3,c2,c3** | **3** |
| **12.** | Designing dosing regimens | Lecture material and notes | Exams | **A2,a3,b1,b3,c2,c3** | **3** |
| **13.** | The two-compartment open model with intravenous administration. | Lecture material and notes | Exams | **A1,a2,b1,b2,c1** | **3** |
| **14.** |  |  |  |  | **3** |
| **15.** | Final Exam | **3** |
| **16.** |  |  |  |  |  |

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| **Plan of Course Evaluation** |
| **Evaluation Tools** | **Mark** | **ILOs** |
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| **First Exam (Mid-term)**  | **30%** | **A1,a2,b1,b2,c1** |  |  |  |  |  |
| **Second Exam (If available)** |  |  |  |  |  |  |  |
| **Final Exam** | **50%** | **A1,A2,a3,b1,b2,b3,,c1c2,c3** |  |  |  |  |  |
| **Activities** |  |  |
| **Activities Evaluation** | Homework/Tasks | 10% | B1.B2,B3C1 |  |  |  |  |  |
| Case Study  |  |  |  |  |  |  |  |
| Discussion and Interactions |  |  |  |  |  |  |  |
| Group Activities |  |  |  |  |  |  |  |
| Laboratory Exams |  |  |  |  |  |  |  |
| Presentations |  |  |  |  |  |  |  |
| Quizzes | 10% | B1.B2,B3C1 |  |  |  |  |  |
| Others |  |  |  |  |  |  |  |
| **Total** | 100% |  |  |  |  |  |  |

 **Components**  |
| **Book** |  |
| **References** |  |
| **Recommended Readings** |  |
| **Electronic materials** |  |
| **Other websites** |  |