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| Course Plan for Bachelor Program - Study Plan Development and Updating Procedures/<br>Pharmacy Department | QF02/0408-4.0E |
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|----------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Study Plan No. | 2021/2022                                                                                                          | University Specialization                                                                                          | Bachelor of Pharmacy                                                                                    |
| Course No.     | 0201554                                                                                                            | Course Name                                                                                                        | Selected Topics in Pharmacology                                                                         |
| Credit Hours   | 3                                                                                                                  | Prerequisite<br>*Co-requisite                                                                                      | Pharmacology (3)                                                                                        |
| Course Type    | <input type="checkbox"/> Mandatory University Requirement <input type="checkbox"/> University Elective Requirement | <input type="checkbox"/> Faculty Mandatory Requirement <input type="checkbox"/> Support course family requirements | <input type="checkbox"/> Mandatory Requirement <input checked="" type="checkbox"/> Elective Requirement |
| Teaching Style | <input type="checkbox"/> Full Online Learning                                                                      | <input checked="" type="checkbox"/> Blended Learning                                                               | <input type="checkbox"/> Traditional Learning                                                           |
| Teaching Model | <input type="checkbox"/> 1 Synchronous: 1 Asynchronous                                                             | <input checked="" type="checkbox"/> 1 Face to Face: 1 Asynchronous                                                 | <input type="checkbox"/> 2 Traditional                                                                  |

#### Faculty Member and Study Divisions Information (to be filled in each semester by the subject instructor)

| Faculty Member and Study Divisions Information (to be filled in each semester by the subject instructor) |                              |            |                       |                     |                                   |
|----------------------------------------------------------------------------------------------------------|------------------------------|------------|-----------------------|---------------------|-----------------------------------|
| Name                                                                                                     | Academic rank                | Office No. | Phone No.             | E-mail              |                                   |
|                                                                                                          |                              |            |                       |                     |                                   |
| Office Hours<br>(Days/Time)                                                                              | Sunday, Tuesday, Thursday () |            | Monday, Wednesday ()  |                     |                                   |
| Division number                                                                                          | Time                         | Place      | Number of<br>Students | Teaching<br>Style   | Approved Model                    |
|                                                                                                          |                              |            |                       | Blended<br>Learning | 1 Face to Face: 1<br>Asynchronous |

#### Brief Description

This course is designed to cover some elected topics in pharmacology. It covers drug interactions, therapeutic drug monitoring, Drugs during pregnancy and lactation, drugs used for osteoporosis, drugs used for obesity, drugs used for erectile dysfunction, immunomodulators, drugs used for biliary and pancreatic diseases, Drugs for inflammatory bowel diseases and Targeted therapy in cancer: tyrosine kinase inhibitors, monoclonal antibodies and cytokines.

#### Learning Resources

|                                                                                                  |                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Course Book Information<br>(Title, author, date of issue, publisher ... etc)                     | 1. Goodman and Gilman's The Pharmacological Basis of Therapeutics, Laurence L. Brunton, McGraw-Hill Education / Medical; 12 <sup>th</sup> edition (2011)                                                     |
| Supportive Learning Resources<br>(Books, databases, periodicals, software, applications, others) | 2. Lippincott Illustrated Reviews – Pharmacology; K. Whalen, C. Field, and R. Radhakrishnan; 8 <sup>th</sup> Edition; 2023; Wolters Kluwer.<br>3. Selected review articles from the literature and internet. |
| Supporting Websites                                                                              | <a href="https://elearning.zuj.edu.jo/login/index.php">https://elearning.zuj.edu.jo/login/index.php</a>                                                                                                      |
| The Physical Environment for Teaching                                                            | <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Labs <input checked="" type="checkbox"/> Virtual Educational Platform <input type="checkbox"/> Others                                 |
| Necessary Equipment and Software                                                                 | - PC/laptop with headphones<br>- Microsoft Office.<br>- Moodle.                                                                                                                                              |
| Supporting People with Special Needs                                                             |                                                                                                                                                                                                              |

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| For Technical Support | E-Learning & Open Educational Resources Center.<br>Email: <a href="mailto:elarning@zuj.edu.jo">elarning@zuj.edu.jo</a> ; Phone: +962 6 429 1511 ext. 425/362. |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Course learning outcomes (K= Knowledge, S= Skills, C= Competencies)

| No.                                   | Course Learning Outcomes                                                                        | The Associated Program Learning Output Code |
|---------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------|
| <b>Knowledge</b>                      |                                                                                                 |                                             |
| <b>The student should be able to:</b> |                                                                                                 |                                             |
| K1                                    | Recognize different aspects of drug interactions                                                | MK3                                         |
| K2                                    | Recognize drug alternatives and dose modifications for special population                       | MK3                                         |
| K3                                    | Recall the drugs that require therapeutic monitoring for specific parameters.                   | MK3                                         |
| K4                                    | Outline recent advances in the treatment of selected disease conditions.                        | MK3                                         |
| <b>Skills</b>                         |                                                                                                 |                                             |
| <b>The student should be able to:</b> |                                                                                                 |                                             |
| S1                                    | Manage common drug-related medical problems.                                                    | MS2                                         |
| S2                                    | Select appropriate evidence-based treatments for the disease conditions covered in this course. | MS2                                         |
| <b>Competencies</b>                   |                                                                                                 |                                             |
| <b>The student should be able to:</b> |                                                                                                 |                                             |
| C1                                    | Manage drug-related problems resulting from drug interactions.                                  | MC3                                         |

### Mechanisms for Direct Evaluation of Learning Outcomes

| Type of Assessment / Learning Style    | Fully Electronic Learning | Blended Learning | Traditional Learning (Theory Learning) | Traditional Learning (Practical Learning) |
|----------------------------------------|---------------------------|------------------|----------------------------------------|-------------------------------------------|
| Midterm Exam                           | 30%                       | 30%              | 30%                                    | 0%                                        |
| Participation / Practical Applications | 0%                        | 0%               | 30%                                    | 60%                                       |
| Asynchronous Interactive Activities    | 30%                       | 30%              | 0%                                     | 0%                                        |
| Final Exam                             | 40%                       | 40%              | 40%                                    | 40%                                       |

**Note 1:** Asynchronous interactive activities are activities, tasks, projects, assignments, research, studies, projects, and work within student groups ... etc, which the student carries out on his own, through the virtual platform without a direct encounter with the subject teacher.

**Note 2:** According to the Regulations of granting Master's degree at Al-Zaytoonah University of Jordan, 40% of final evaluation goes for the final exam, and 60% for the semester work (examinations, reports, research or any scientific activity assigned to the student).

### Schedule of Simultaneous / Face-to-Face Encounters and their Topics

| Week | Subject           | Learning Style* | Reference ** |
|------|-------------------|-----------------|--------------|
| 1    | Drug interactions | lecture         | 77-78        |
| 2    | Drug interactions | lecture         | 77-78        |

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|----|---------------------------------------------------------------------------------------------|---------|----------------------|
| 3  | Therapeutic drug monitoring                                                                 | lecture | 37-38                |
| 4  | <b>Special Populations:</b><br>Pregnancy                                                    | lecture | 1846 and literatures |
| 5  | <b>Special Populations:</b><br>Pregnancy                                                    | lecture | 1846 and literatures |
| 6  | <b>Special Populations:</b><br>Lactation                                                    | lecture | 1847 and literatures |
| 7  | <b>Drugs used in:</b><br>Osteoporosis                                                       | lecture | 1290 – 1301          |
| 8  | <b>Drugs used in:</b><br>Obesity<br>Phosphodiesterase inhibitors and Erectile dysfunction   | lecture | 891<br>1059 - 1060   |
| 9  | Immunomodulators<br><b>Midterm Exam</b>                                                     | lecture | 1005-1030            |
| 10 | Immunomodulators                                                                            | lecture | 1005-1030            |
| 11 | Immunomodulators                                                                            | lecture | 1005-1030            |
| 12 | Drugs used for biliary and pancreatic diseases                                              | lecture | 1323 - 1350          |
| 13 | Drugs for inflammatory bowel diseases                                                       | lecture | 1351-1360            |
| 14 | Targeted therapy in cancer: tyrosine kinase inhibitors, monoclonal antibodies and cytokines | lecture | 1732-1754            |
| 15 | Targeted therapy in cancer: tyrosine kinase inhibitors, monoclonal antibodies and cytokines | lecture | 1732-1754            |
| 16 | <b>Final Exam</b>                                                                           |         |                      |

\* Learning styles: Lecture, flipped learning, learning through projects, learning through problem solving, participatory learning ... etc.

\*\* Reference: Pages in a book, database, recorded lecture, content on the e-learning platform, video, website ... etc.

#### Schedule of Asynchronous Interactive Activities (in the case of e-learning and blended learning)

| Week | Task / Activity                                                                                          | Reference | Expected Results |
|------|----------------------------------------------------------------------------------------------------------|-----------|------------------|
| 1    | ----                                                                                                     | ----      | ----             |
| 2    | <b>Assignment 1:</b><br>Drug interaction                                                                 | Internet  | Tutorial         |
| 3    | <b>Assignment 2:</b><br>TDM                                                                              | internet  | Written Report   |
| 4    | <b>Quiz1:</b><br>(Includes lectures for the 1 <sup>st</sup> , 2 <sup>nd</sup> , & 3 <sup>rd</sup> week ) |           | <b>Quiz1</b>     |
| 5    | <b>Assignment 3:</b><br>Drugs for lactation                                                              | internet  | Written Report   |
| 6    | <b>Assignment 4:</b><br>Osteoporosis                                                                     | Internet  | Written Report   |
| 7    | <b>Assignment 5:</b><br>Obesity                                                                          | Internet  | Written Report   |
| 8    | <b>Assignment 6:</b>                                                                                     | Internet  | Case study       |

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|----|----------------------------------------------------------------------------------------------------------------------------|----------|---------------------|
|    | Erectile dysfunction                                                                                                       |          |                     |
|    | <b>Quiz 2:</b><br>(Includes lectures for the 4 <sup>th</sup> , 5 <sup>th</sup> , 6 <sup>th</sup> , & 7 <sup>th</sup> week) |          | <b>Quiz 2</b>       |
| 9  | <b>Midterm Exam</b>                                                                                                        |          | <b>Midterm Exam</b> |
| 10 | <b>Assignment 7:</b><br>Immunosuppressants                                                                                 | Internet | Written Report      |
| 11 | <b>Assignment 8:</b><br>Tyrosine kinase inhibitors                                                                         | Internet | Tutorial            |
| 12 | Monoclonal antibodies in disease treatment                                                                                 | -----    | Tutorial            |
| 13 | Cytokines in disease treatment                                                                                             | -----    | Tutorial            |
| 14 | Lectures review                                                                                                            | -----    | -----               |
| 15 | Lectures review                                                                                                            | -----    | -----               |
| 16 | <b>Final Exam</b>                                                                                                          |          | <b>Final Exam</b>   |