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Lebanese International University

School of Pharmacy


Beirut – Bekaa Campuses

Spring 2021 – 2022

PHAR565 - Pharmacotherapeutics III – Cardiology/Nephrology

3 Credits

Course Syllabus

| Instructor | Campuses | Sect | Room | Offered Time | Office hours |  Address |
|----------------------|----------|------|------|-----------------|--------------|--|
| Dr. Jihan Safwan | Beirut | A | 404E | MW 09:30-10:45 | TBA | jihan.safwan@liu.edu.lb |
| | | B | 404E | MW 11:00-12:15 | | |
| | | C | 405E | MW 12:45-14:00 | | |
| | | D | 402E | TTh 09:30-10:45 | | |
| | | E | 305E | TTh 11:00-12:15 | | |
| Dr. Maryline Mansour | | F | 305E | TTh 12:45-14:00 | TBA | maryline.mansour@liu.edu.lb |
| Dr. Samar Younes | Bekaa | A | C2 | MW 09:30-10:45 | TBA | samar.younes@liu.edu.lb |
| | | B | 313C | MW 12:30-13:45 | | |

Course Coordinator: Dr. Jihan Safwan

Department: Biomedical Sciences

Office: Pharmacy School

COURSE PREREQUISITE:

BIOL200 (General Biology), BIOL345 (Human Anatomy and Physiology), BMED445 (Pathophysiology), PHAR400 (Medicinal Chemistry I), PHAR450 (Medicinal Chemistry II), PHAR480 (PPEI), PHAR505 (Pharmacology I)

REQUIRED BOOKS:

1. DIPIRO JT. Pharmacotherapy: A Pathophysiologic Approach. 10th edition. New York: McGraw Hill, 2017.
2. Koda-Kimble Mary Anne et al. Applied Therapeutics: the clinical use of drugs. 10th edition. Maryland: LIPPINCOTT WILLIAMS & WILKINS, 2013.

COURSE DESCRIPTION:

This course identifies the pathophysiology, etiology, risk factors and signs and symptoms of most common cardiovascular and renal disorders. It provides the non-pharmacologic and pharmacologic treatment options according to evidence-based guidelines. It introduces the students to the application of pharmacologic and pharmacokinetic parameters, and description of factors that would guide the selection of the best treatment options. It also familiarizes the students with how to evaluate the treatment therapy for cardiovascular and renal disorders through highlighting on the monitoring parameters and important medications' adverse effects. The student will apply problem-solving strategies to patient-oriented cases and will develop patient treatment plan.

COURSE OBJECTIVES:

This course aims to prepare the students to:

1. Differentiate between the most common cardiovascular and renal disorders.
2. Develop a patient care plan for cardiovascular and renal disorders through selecting the appropriate pharmacological and non-pharmacological measures.
3. Evaluate the patient treatment outcomes and select appropriate alternative approaches when necessary.

INTENDED LEARNING OUTCOMES:

Upon the completion of the course, the student will be able to:

Domain 1: Foundational Knowledge

| <u>PLO</u> | <u>ILOs</u> |
|---------------------|--|
| <u>1.1.1</u> | <ul style="list-style-type: none">• Explain the pathophysiology associated with cardiovascular and renal disorders.• Describe signs, symptoms, and diagnostic tests of cardiovascular and renal disorders.• Describe the different treatment modalities of various cardiovascular and renal disorders. |
| <u>1.1.2</u> | <ul style="list-style-type: none">• Assess patients' treatment outcomes and prognosis. |

| | |
|---------------------|---|
| <u>1.1.3</u> | <ul style="list-style-type: none"> • Select appropriate diagnostic tests and laboratory parameters to identify the related disease. • Choose non-pharmacologic options (dietary modifications, exercise, etc.). |
| <u>1.1.4</u> | <ul style="list-style-type: none"> • Review the medications used in the management of cardiovascular and renal disorders. |
| <u>1.1.5</u> | <ul style="list-style-type: none"> • Report drugs side effects, dispensing and administration especially for those requiring blood level monitoring. |
| <u>1.1.6</u> | <ul style="list-style-type: none"> • Apply knowledge to make therapeutic decisions about cardiovascular and renal disorders taking into consideration the advances in medicine and the availability of alternative approaches. |

Domain 2: Pharmaceutical Care

| <u>PLO</u> | <u>ILOs</u> |
|---------------------|---|
| <u>2.1.2</u> | <ul style="list-style-type: none"> • Describe possible drug-drug, drug-disease, or drug-food interactions. |

Domain 3: Essentials for Practice and Care

| <u>PLO</u> | <u>ILOs</u> |
|---------------------|---|
| <u>3.1.1</u> | <ul style="list-style-type: none"> • Interpret patients' history and clinical manifestations. |
| <u>3.1.2</u> | <ul style="list-style-type: none"> • Select the appropriate management based on the patients' subjective and objective data. • Identify complications associated with inadequate treatment of cardiovascular and renal disorders. |
| <u>3.1.3</u> | <ul style="list-style-type: none"> • Analyze the data to construct a patient-oriented treatment plan based on efficacy, safety, patient preference or other parameters... |
| <u>3.1.5</u> | <ul style="list-style-type: none"> • Interpret various diagnostic, prognostic, patient and disease related factors to propose the most effective therapeutic options for cardiovascular and renal disorders. |
| <u>3.1.6</u> | <ul style="list-style-type: none"> • Recommend various monitoring parameters to assess safety and efficacy of selected drugs. |

Domain 4: Approach to Practice and Care

| <u>PLO</u> | <u>ILOs</u> |
|---------------------|---|
| <u>4.1.1</u> | <ul style="list-style-type: none"> • Identify the primary problems while selecting the appropriate therapy including allergies, age group, pregnancy, and drug resistance. |
| <u>4.1.2</u> | <ul style="list-style-type: none"> • Explore multiple alternatives to solve identified problems. |

TEACHING AND ASSESSMENT METHODS:

| <u>ILOs</u> | <u>Learning Methods</u> | <u>Assessment Methods</u> |
|--|--|--|
| 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 2.1.2 | <ul style="list-style-type: none"> • Lectures as PowerPoint presentations | <ul style="list-style-type: none"> • Exams I, II, and Final (MCQ's) |

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| 3.1.1, 3.1.2, 3.1.3, 3.1.5, 3.1.6, 4.1.1, 4.1.2 | <ul style="list-style-type: none"> • Lectures as PowerPoint presentations • Group Case Discussions | <ul style="list-style-type: none"> • Exams I, II, and Final (MCQ's) • Graded rubric for group case discussions |
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COURSE DELIVERY METHODS:

1. The learning platform for this course is Google Classroom.
2. The instructor will post course material as PDF, Microsoft Word, or Microsoft PowerPoint to students on Google Classroom stream. All material for assignments, homework, or other course details will be posted as well.
3. **Hybrid teaching model will be adapted for the delivery of the course. It will be delivered on-campus during selected weeks, as well as remotely using synchronous (live sessions according to course schedule) and asynchronous (recordings by voice-over-PowerPoint [VOPP]) methods.**
4. Live sessions will be scheduled according to the time slot when the course is offered. VOPP recordings will be shared prior to class time to allow students to watch them at their own pace before live sessions.

COURSE ATTENDANCE REGULATIONS:

1. Attendance of live sessions is HIGHLY RECOMMENDED. Please try to join them to get maximal benefit from the course.
2. During live sessions, instructors will summarize recordings and highlight essential concepts to help you understand the material. They will also answer questions, create discussions, and perhaps do quizzes online.

ONLINE ETIQUETTE:

A code of conduct should be applied in remote education. Please note the following important etiquette for live sessions:

1. You are expected to join class on time.
2. Reduce noise by using earphones and the mute button, and minimize distractions from the surroundings as much as you can.
3. Please remember that the virtual class replaces the normal (physical) class. Accordingly, make sure to professionally join the class (adequate dress code, adequate seating, avoid eating, drinking, and disrupting activities).
4. The instructor will try to create an engaging, respectful, and meaningful learning environment. Please acknowledge that by participating in discussions, asking questions, and properly interacting in the session. Be ready to share, connect and engage with the class.
5. If you choose to communicate with the instructor via chat boxes, please use appropriate, professional, English language and double check your text for mistakes before posting it.
6. If assignments or homework are posted on Google Classroom, please make sure to post your work prior to deadlines.

CHEATING REGULATIONS:

1. Exams will be conducted on campus in a computerized format.
2. Cheating during online exams in any way or form, will not be tolerated and will be considered as evidence of academic dishonesty. Students will be referred to the grievance committee and an F will be posted on the exam.
3. Plagiarism: It is unacceptable to copy and pass off as one's own the ideas or words of another without properly crediting the source. Turnitin, the university's designated plagiarism checker, may be used on any submitted written work. Instances of inappropriate or unacceptable academic behavior will be treated on a case by case basis with the consequences ranging from no credit on the assignment for those involved to automatic failure of or removal from the course. In addition, university administration may be notified.

MAKE-UP EXAMS:

- Makeup exams are not allowed and attending exams is obligatory.
- Make up exams are **ONLY** allowed in cases of:
 - a. Death of a first degree relative **ONLY**
 - b. Hospitalization with a valid hospital medical report: only hospital records are allowed.

GRADE DISTRIBUTION AND EXAM SCHEDULE:

| Exam | Date | Time | Grade distribution |
|-----------------|-------------------------|--------------------|--------------------|
| Midterm Exam | Tuesday, April 26, 2022 | 9:30 AM - 10:45 AM | 40% |
| Case Discussion | TBA | | 5% |
| Final Exam | Set by the university | TBA | 55% |

COURSE OUTLINE:

| Week | Date | Lecture number | Topic's details | Digital Tools | ILOs covered |
|---------|------|----------------|--------------------------------------|---|---|
| 1, 2 | | 1 | Hyperlipidemia | Case studies | 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 2.1.2, 3.1.1, 3.1.2, 3.1.3, 3.1.5, 3.1.6, 4.1.1, 4.1.2 |
| 3 | | 2 | Hypertension | Case studies + Gamification (crossword and word search) | |
| 4, 5, 6 | | 3 | Ischemic heart disease (stable) | Case studies | |
| | | 4 | ACS (unstable angina, NSTEMI, STEMI) | | |
| 6 | | 5 | PAD | Padlet | |

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|---------------------|--|----|---|----------------------|--|
| 7 | | 6 | Stroke | Miro | |
| Midterm Exam | | | | | |
| 8, 9 | | 7 | Thromboembolism | Case Studies | |
| 10, 11, 12 | | 8 | Heart failure/cardiogenic shock | Padlet | |
| 12 | | 9 | Acute renal failure/ Hemodialysis and peritoneal dialysis | Flipped Classroom | |
| 13 | | 10 | Arrhythmia | Miro | |
| 14, 15 | | 11 | Chronic renal insufficiency & ESRD | Case Studies | |
| Final Exam | | | | | |