Princess Nora Bint Abdul Rahman University

A brief Course Description

Course Name	**Integrated Pharmacotherapy (2)**
Course Code	**CPP 421**
College	**College of Pharmacy**
Department/ Program	**Doctor of Pharmacy (Pharm D)**
Year / Level:	**7th Level / 4th Year**
Credit Hours	**3**
Contact Hours	**Lecture: 3** **Lab/Tutorial: -------** **Training: -------**
Language	**English**
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course
Pre-requisites Course:	**CPP 322M, CPP 342**
Co-Requests:	**CPP 441, CPP 431M**
Course Objectives:	A) **Solve a problem or case by applying knowledge about the pharmacology and medicinal chemistry of the following drug classes; All Antibiotics covered during the Integrated Pharmacotherapy I course. (Macrolides /Aminoglycosides/ Tetracycline/ Fluoroquinolones/ Rifampin/ Folate and membrane agents.)** B) **Recommend appropriate pharmacotherapy for patients with the following infectious disease/disorders: (Sepsis, Endocarditis, Rheumatic Fever, Meningitis, GI / Abdominal infections, Surgical Prophylaxis , Bone and joint infections, Skin and skin structure infections, Sexually Transmitted Diseases,**

	Brucellosis ,Malaria, Upper respiratory infections , Lower respiratory infections, Tuberculosis)
	C) Explain how to provide antimicrobial stewardship.
	D) Recommend appropriate vaccines for infants, children, and adults that will prevent selected infections.
	E) Demonstrate the ability to function as an effective team member.

A brief Course Description

Course Name	**Drug information and literature evaluation**
Course Code	**CPP 417**
College	**College of Pharmacy**
Department/ Program	**Doctor of Pharmacy (Pharm D)**
Year / Level:	**7th Level / 4th Year**
Credit Hours	3
Contact Hours	**Lecture: 3** **Lab/Tutorial:** **Training: ------**
Language	**English**
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course
Pre-requisites Course:	**MaSc 264**
Co-Requests:	-------
Course Objectives:	**A)** Classify a research study according to the type of study design. **B)** Identify and list different types of information resources available. **C)** Define the tertiary, secondary, and primary literature and outline the advantages and disadvantages of them. **D)** Perform a literature search and retrieve relevant articles using electronic databases. **E)** Evaluate drug and poisoning information resources for potential accuracy, objectivity, and general quality (WebMed, Wikipedia).

	F) Discuss key terms and concepts in statistics used in pharmacy and medical journals.
	G) Describe the sections of a research article and the elements that must be present in order to confidently interpret the findings.
	H) Assess whether a statistical test is most appropriate for the study design and type of data.
	I) Given a test-statistic that is reported in a literature article, interpret the result.
	J) Understand the statistical portions of most research articles and be able to interpret data when presented in figures and graphs of publications.

A brief Course Description	
Course Name	Pharmacy Practice Experience (1) (Community & Wellness)
Course Code	CPP 431M
College	College of Pharmacy
Department/ Program	Doctor of Pharmacy (Pharm D)
Year / Level:	7th Level / 4th Year
Credit Hours	4
Contact Hours	Lecture: ------ Lab/Tutorial: ------ Training: 104
Language	English
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course
Pre-requisites Course:	------
Co-Requests:	CPP 421M, CPP 441
Course Objectives:	A) Demonstrate effective communications with pharmacist preceptors. B) Prepare a curriculum vitae (CV) or resume. C) Participate in patient care activities where an interprofessional team works collaboratively to provide patient care and after observing/interacting with the team, reflect on how well the team works together. D) Demonstrate the ability to perform a patient interview. E) Prepare a SOAP note that summarizes the findings from the patient interview.

	F) Participate in a community service activity where health/wellness screening is provided.
	G) Demonstrate professionalism in all daily activities.
	H) Participate with other health professional students in promoting health/wellness in the community setting (this outcome may be included if an interprofessional Learning experience is established across of the Health Science Colleges).
	I) Reflect on experience to identify.

A brief Course Description	
Course Name	**Principles of Self Care and Medication Therapy Management**
Course Code	**CPP 410**
College	**College of Pharmacy**
Department/ Program	**Doctor of Pharmacy (Pharm D)**
Year / Level:	**7th Level / 4th Year**
Credit Hours	**2**
Contact Hours	**Lecture: 2** Lab/Tutorial: ----- Training: -----
Language	**English**
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course
Pre-requisites Course:	-----
Co-Requests:	-----
Course Objectives:	**A) Assess and manage a patient who presents with a request for self- care.** **B) Recommend self - care and primary care for the following complaints/disorders: Dermatologic disorders (acne, insect bites, sunburn), wound care, ear disorder, GERD, pain, fever, allergic rhinitis, nausea and vomiting, cough and cold, pediatric nutrition).** **C) Solve a problem by applying knowledge about the pharmacology and medicinal chemistry of the following drug classes: as Proton pump inhibitors, Histamine 2 blockers, Analgesics.**

A brief Course Description

Course Name	**Principles of pharmacoepidemiology & pharmacoeconomics of medicine**
Course Code	**CPP 418**
College	**College of Pharmacy**
Department/ Program	**Doctor of Pharmacy (Pharm D)**
Year / Level:	**7th Level / 4th Year**
Credit Hours	**3**
Contact Hours	**Lecture: 3** — **Lab/Tutorial: ----** — **Training: -----**
Language	**English**
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course
Pre-requisites Course:	**MaSc 264**
Co-Requests:	-----
Course Objectives:	**A)** Interpret and evaluate an article that reports the probability of adverse effects and drug benefit. **B)** Describe how post-marketing surveillance is done to monitor for unwanted effects and other safety-related aspects of drugs, outline economic principles that are used in pharmacoeconomics. And interprets and evaluates pharmacoeconomic articles that used the following type of analyses. **C)** Measuring and estimating cost-minimization analysis, cost-effectiveness analysis, cost-utility analysis, cost-benefit analysis and health-related quality of life.

	D) Discuss how a pharmacy service can be evaluated using pharmacoeconomic approaches.

A brief Course Description	
Course Name	**Integrated patient care laboratory (3)**
Course Code	**CPP 441**
College	**College of Pharmacy**
Department/ Program	**Doctor of Pharmacy (Pharm D)**
Year / Level:	**7th Level / 4th Year**
Credit Hours	**2**
Contact Hours	**Lecture: 1** **Lab/Tutorial: 3** **Training: -----**
Language	**English**
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course
Pre-requisites Course:	**CPP 319, CPP 322M, CPP 342**
Co-Requests:	**CPP 417, CPP 418, CPP 410, CPP 421M, CPP 431M**

Course Objectives:	<u>Horizontal integration:</u> Students must apply what they are learning in didactic courses which are taken concurrently with this integrated patient Care Laboratory course. Specifically, each semester:
	
	A. Apply principles and concepts related to the pharmaceutical sciences to the care of patients. Examples include:
	    - Explain to a pharmacist the pharmacoepidemiological findings that support an adverse drug reaction.
	    - Interpret pharmacoeconomic data and provide recommendations.
	B. Retrieve drug information and answer drug information questions.
	C. Apply pharmacy laws to solve practice problems.
	D. For a patient who seeks self-care, conduct an assessment and recommend either appropriate self-care therapy or triage to a physician.
	E. For a patient with a chronic disease, conduct a work up using Medication Therapy management process.
	
	<u>Vertical progression:</u> The following outcomes are vertically achieved across the Integrated Patient Care Laboratory Sequence and will be demonstrated during this semester:
	
	A. Demonstrate effective oral and/or written communication skills and practitioners, colleagues, patients and caregivers.
	B. Interpret prescriptions/medication orders with a accuracy:
	    - Prescription for a cream.
	    - Prescription for an oral suspension.
	    - Prescription for an oral liquid for a child.
	C. Fill and /or compound prescriptions/medication orders with accuracy:
	    - Prescription for a cream.
	    - Prescription for an oral suspension.
	    - Prescription for an oral liquid for a child.
	D. Use informatics (computers, software, etc.) to process prescription orders, document activities and services, submit for reimbursement, and to access medical records.

E. Apply the principles of pharmaceutical care when providing patient care.

F. Use the pharmaceutical care process when a patient presents with chronic renal failure.

G. Perform basic patient assessments to evaluate the efficacy and toxicity of a patient's medication regimen.

H. Identify, solve, and prevent the following types of medication-related problems:

- No indication for a current drug.

- Indication for a drug but no drug prescribed.

- Wrong drug prescribed.

- Too much of correct drug.

- To tittle of the correct drug.

- Adverse drug reaction or allergy.

- Drug-drug/drug-disease interaction.

- Patient not receiving a prescribed drug.

- Other.

I. Identify, manage and prevent medication errors such as adverse events, incorrect choice of therapy, equipment failure, infections related to inappropriate drug therapy, and mis-interpretation of prescriptions/medical orders.

J. Interpret laboratory values and use the information in caring for a patient.

K. Perform accurate calculations related to dosage design and/or drug administration.

L. Assess socioeconomic, cultural, and demographic factors that impact a patient's medication therapy and care.

M. Make evidence-based decisions that are based on evidence and use of problem-solving and clinical decision-making skills.

N. follow legal requirements and use ethical decision-making in providing all aspects of patient care.

O. Demonstrate professionalism.

A brief Course Description

Course Name	**Integrated Pharmacotherapy 3**
Course Code	**CPP 423M**
College	**College of Pharmacy**
Department/ Program	**Doctor of Pharmacy (Pharm D)**
Year / Level:	**8th Level / 4th Year**
Credit Hours	**3**
Contact Hours	**Lecture: 1** **Lab/Tutorial: 4** **Training: -----**
Language	**English**
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course
Pre-requisites Course:	**CPP 421, CPP 441**
Co-Requests:	**CPP424, CPP 442, CPP 432**
Course Objectives:	A) **Prepares students to assess and manage the pharmacotherapy of common disorders seen in women, men , and infants and children.** B) **Solve a problems or case by applying knowledge about the pharmacology and medicinal chemistry of the following drug classes: acetylcholine, epinephrine, beta adrenergic agonist and antagonist, muscarinic cholinergic agonist, nicotinic cholinergic agonist and antagonist , cholinesterase inhibitor, and steroid anti-inflammatory agents.** C) **Recommend appropriate pharmacotherapy for patients with asthma or COPD.**

A brief Course Description	
Course Name	**Integrated Pharmacotherapy 4**
Course Code	**CPP 424M**
College	**College of Pharmacy**
Department/ Program	**Doctor of Pharmacy (Pharm D)**
Year / Level:	**8th Level / 4th Year**
Credit Hours	**3**
Contact Hours	**Lecture: 1** **Lab/Tutorial: 4** **Training: -----**
Language	**English**
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course
Pre-requisites Course:	**CPP 421, CPP 441**
Co-Requests:	**CPP 423, CPP 442, CPP 432M**
Course Objectives:	**A)** Prepares students to assess and manage the pharmacotherapy of patients with common cardiovascular diseases and disorders. **B)** Focuses on solving problems that require application of the pharmacology and medicinal Chemistry of drugs affecting cardiovascular function. **C)** Uses a team-based learning format to develop the student's ability to function as a team-member.

A brief Course Description

Course Name	**Pharmacy Practice Experience (2) (Community Service & Medication Therapy Management)**
Course Code	**CPP 432M**
College	**College of Pharmacy**
Department/ Program	**Doctor of Pharmacy (Pharm D)**
Year / Level:	**8th Level / 4th Year**
Credit Hours	**4**
Contact Hours	**Lecture: -----** / **Lab/Tutorial: -----** / **Training: 104**
Language	**English**
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course
Pre-requisites Course:	**CPP 431M**
Co-Requests:	**CPP 423M, CPP 424M, CPP 442**
Course Objectives:	**A)** Participate in patient care activities in the community pharmacy setting. **B)** Demonstrate the ability to work up a patient using the MTM process. **C)** Prepare a SOAP note that summarizes the finding from the patient interview and MTM workup. **D)** Demonstrate professionalism in all daily activities. **E)** Demonstrate the following in a community practice setting: **1.** Interpret prescriptions for completeness and accuracy.

2. Prepare, fill, and document prescriptions accurately.

3. Understand the process of identifying, resolving, and preventing medication related problems.

4. Communicate with patients or health professionals to confirm or clarify prescription information.

5. Use appropriate references available in the pharmacy to counsel patients or answer drug information questions

6. Describe the record keeping for controlled substances and poisons that are received, stored and dispensed by the pharmacy.

7. Describe the pharmacy's quality assurance program, including medication error prevention, inventory control, and pharmacy inspection.

8. Adhere to the pharmacy regulations.

9. Make ethical decisions when interacting with patients and colleagues.

10. Respect the confidentiality of patients.

11. Cooperate with the pharmacy personnel when completing assigned duties.

F) Reflect on experience to identify personal strengths and areas for improvement in future learning activities.

جامـعة الأمـيرة نـورة بنت عبدالرحمن

وكـالة الجامـعة للشؤون التعليمية

A brief Course Description	
Course Name	**Principles of Practice Management**
Course Code	**CPP 413M**
College	**College of Pharmacy**
Department/ Program	**Doctor of Pharmacy (Pharm D)**
Year / Level:	**8th Level / 4th Year**
Credit Hours	**2**
Contact Hours	**Lecture: 2** Lab/Tutorial: ----- Training: -----
Language	**English**
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course
Pre-requisites Course:	------
Co-Requests:	------
Course Objectives:	**A)** Explain how to manage the operations of a pharmacy through strategic planning, business planning, managing general operations, technology, and pharmacy information systems, and also through continuous quality improvement. **B)** Discuss how to manage both employees and customers. **C)** Define key principles related to organizational structure and behavior. **D)** Describe how to effectively use performance appraisal systems. **E)** Review how to provide good customer service. **F)** Illustrate how to manage money within a pharmacy by applying basic accounting principles and using financial reports.

	G) Given a case study that involves a management issue within a pharmacy, recommend appropriate actions.

A brief Course Description			
Course Name	**Principles of Medication Safety**		
Course Code	**CPP 415**		
College	**College of Pharmacy**		
Department/ Program	**Doctor of Pharmacy (Pharm D)**		
Year / Level:	**8th Level / 4th Year**		
Credit Hours	**2**		
Contact Hours	**Lecture: 2**	**Lab/Tutorial: -----**	**Training: -----**
Language	**English**		
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course		
Pre-requisites Course:	**CPP 431M**		
Co-Requests:	**------**		
Course Objectives:	**A) Describe the common causes of medication errors.** **B) Describe how to prevent medication errors in the following areas:** - **Prescribing.** - **Dispensing** - **Drug administration.** - **Drug delivery devices.** - **Patient factors.** **C) Identify practice patterns that increase the likelihood of errors by healthcare professionals and patients.**		

	D) Describe appropriate responses when errors are detected considering ethical and legal aspects.

جامعة الأميرة نورة بنت عبدالرحمن

وكالة الجامعة للشؤون التعليمية

A brief Course Description	
Course Name	**Principles of Evidence-Based Practice**
Course Code	**CPP 416**
College	**College of Pharmacy**
Department/ Program	**Doctor of Pharmacy (Pharm D)**
Year / Level:	**8th Level / 4th Year**
Credit Hours	**2**
Contact Hours	**Lecture: 2** **Lab/Tutorial: -----** **Training: -----**
Language	**English**
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course
Pre-requisites Course:	**CPP 417, CPP 418**
Co-Requests:	**------**
Course Objectives:	A) **Explain how an evidence-based medicine approach benefits both patient care and your personal lifelong learning.** B) **Given a patient problem that is encountered in the practice setting:** 1. **Establish a question that can be effectively answered using an evidence-based medicine strategy.** 2. **Perform a literature search and find the most appropriate literature.** 3. **Prepare a CAT which summarizes your evidence-based interpretation of the clinical trial.** 4. **Interpret clinical trials with respect to bias and random error**

	5. Interpret clinical trials in which a drug therapy (treatment) is attributed to lowering risk.
	6. Interpret clinical trials that report confidence interval.
	7. Interpret clinical trials that were stopped early.
	8. Interpret clinical trials that report intention to treat.
	9. Interpret clinical trials that report odds ratio.
	10. Interpret clinical trials that report number needed to treat.

A brief Course Description	
Course Name	**Integrated Patient Care Laboratory 4**
Course Code	**CPP 442**
College	**College of Pharmacy**
Department/ Program	**Doctor of Pharmacy (Pharm D)**
Year / Level:	**8th Level / 4th Year**
Credit Hours	**2**
Contact Hours	**Lecture: 1** **Lab/Tutorial: 3** **Training: -----**
Language	**English**
Track (Select)	☐ University Requirement ☐ College Requirement ☒ Department Requirement ☐ Elective Course
Pre-requisites Course:	------
Co-Requests:	**CPP 423M, CPP 424M, CPP 432M, CPP 415, CPP 416**
Course Objectives:	<u>Horizontal integration:</u> **Students must apply what they are learning in didactic courses which are taken concurrently with this course. Specifically, each semester:** 1. **Apply principles and concepts related to the use of natural products** 2. **Apply principles of medication safety** 3. **Apply principles of evidence-based practice.** 4. **Perform a pharmaceutical care work up for a patient with asthma, COPD, hypertension, Stroke, DVT, and peripheral vascular disease.**

<u>Vertical progression:</u> The following outcomes are vertically achieved across the integrated patient care laboratory course and will be demonstrated during this semester:

1. Demonstrate effective oral and/or written communication skills with practitioners, colleagues, patients and caregivers.

2. Communication activities include interviewing, consultation, education, phone, dealing with challenging people, prepare written protocols and monographs and other forms of technical writing.

3. Interpret prescriptions/medication orders with accuracy.

4. Fill and/or compound prescriptions/medication orders with accuracy.

5. Compounding activities include oral, topical, rectal, IV and other.

6. Use informatics (computers, software) to process prescription orders, document activities and services, submit for reimbursement, and to access medical records.

7. Apply the principles of pharmaceutical care when providing patient care.

8. Perform a pharmaceutical care work up for a patient with asthma, COPD, hypertension, Stroke, DVT, and peripheral vascular disease.

9. Perform basic patient assessments to evaluate the efficacy and toxicity of a patient's medication regimen.

10. Identify, solve, and prevent the following types of medication-related problems:

    - No indication for a current drug.

    - Indication for a drug but no drug prescribed.

    - Wrong drug prescribed.

    - Too much of the correct drug.

    - Too little of the correct drug.

    - An adverse drug reaction or allergy.

    - Drug-drug/drug-disease interaction.

    - Patient not receiving a prescribed drug.

    - Others.

	11. Identify, manage and prevent medication errors such as adverse events, incorrect choice of therapy, equipment failure, infections related to inappropriate drug therapy and mis-interpretation of prescriptions/medical orders. 12. Interpret laboratory values and use the information in caring for a patient. 13. Perform accurate calculations related to dosage design and/or drug administration. 14. Design a dosage regimen using pharmacokinetic principles. 15. Recommend appropriate non-pharmacologic therapy 16. Demonstrate the ability to promote public health. 17. When a patient presents self-care or Medication therapy management services assess whether a pharmacist (student pharmacist) should manage the problem or triage the patient to a physician or other health care provider. 18. Retrieve, interpret and apply drug information literature and other resources when solving a patient problem.