

دكتور الصيدلة في الصيدلة الاكلينيكية (فارم د)

كلية الصيدلة - جامعة المنصورة

نظام الدراسة

فترة الدراسة وبرنامج الدراسة:

1. مدة الدراسة للحصول على درجة دكتور الصيدلة فى الصيدلة الإكلينيكية هي 4 فصول دراسية على مدار عامين بالإضافة إلى فصل دراسي صيفي وعدد الساعات المخصصة للبرنامج هي 50 ساعة معتمدة.
2. الحد الأدنى لمنح درجة دكتور الصيدلة فى الصيدلة الإكلينيكية هو عامان من تاريخ القيد.
3. الحد الأقصى لمنح الدرجة هو أربعة سنوات دراسية من تاريخ القيد مع مراعاة حالات وقف القيد.

نظام الدراسة والتدريب:

1. عدد الساعات المعتمدة للحصول على درجة دكتور الصيدلة فى الصيدلة الإكلينيكية هي 50 ساعة (28 ساعة مقررات دراسية + 4 ساعات مشروع تخرج + 18 ساعة تدريب إكلينيكي).
2. يقوم الطالب بدراسة مقررات بواقع 14 ساعة معتمدة ، كل فصل دراسي خلال العام الأول (12 ساعة مقررات عامة وإجبارية بالإضافة إلى عدد 2 ساعة مقرر اختياري).
3. يتدرب الطالب ستة دورات إكلينيكية (4 دورات إجبارية + 2 دورة اختيارية) بواقع 3 ساعات معتمدة لكل دورة على مدار العام الثانى.
4. يقوم الطالب بإجراء مشروع التخرج فى الفصل الدراسي الثانى من العام الثانى فى موضوع تحدده لجنة الاشراف
5. يتم تقييم الطلاب فى التدريبات العملية والأنشطة العلمية من خلال عرض حالات المرضى والامتحانات القصيرة وعرض البحوث والتي يتم تقييمها من قبل المشرف الأكاديمي.
6. لا يسمح للطلاب بالتدريب الإكلينيكي إلا بعد الانتهاء من دراسة 75% من المقررات واجتيازها بنجاح أو اجتياز ما يعادل 21 ساعة معتمدة بنجاح.
7. فى حالة رسوب الطالب فى أحد المقررات الدراسية يسمح له بإعادة التسجيل فى الفصل الدراسي الصيفي.

المقررات الدراسية ومحتواها العلمي:

- 1- تتبع اللائحة نظام الساعات المعتمدة.
- 2 - توزع المقررات الدراسية على الفصول الدراسية كما هو مبين بجدول توزيع المقررات

الساعات المعتمدة:

الساعة المعتمدة تعادل محاضرة نظرية مدتها ساعة واحدة أو تدريب عملي بحد ادني ساعتين اسبوعيا أو تدريب اكلينيكي و ميداني مدته ثلاث ساعات أسبوعيا لمدة فصل دراسي.

مقررات (درجة دكتور الصيدلة فى الصيدلة الإكلينيكية) (PP-PDP-200)

Pharm D Courses (PP-PDP-200)

First Semester

الفصل الدراسي الأول

Code No	Course Title	Credit Hours	Exam. Hours		Exam. Marks		
			Written	Practical	Written	Practical	Oral
PP –PDP-201	Adv. Pharmacotherapeutics I العلاج الدوائى المتقدم 1	3 + 0	2	-	90	-	10
PP –PDP-202	Adv. Pharmacotherapeutics II العلاج الدوائى المتقدم 2	2+ 0	2	-	90	-	10
PP –PDP-203	Treatment of Infectious diseases and immunological disorders علاج الأمراض المعدية وأمراض المناعة	3+ 0	2	-	90	-	10
PP –PDP-204	Pharmacy Practice (1) ممارسه صيدليه (1)	1 + 0	2	-	90	-	10
PP –PDP-205	Applied Clinical Pharmacokinetics حركية الدواء الاكلينيكية التطبيقية	2 + 1	2	2	70	20	10
Elective course			المقررات الاختيارية				
PP –PDP-206	Clinical Skills Development تطوير المهارات الإكلينيكية	2 + 0	2	-	90	-	10
PP –PDP-207	Bioinformatics المعلوماتية الحيوية	2 + 0	2	-	90	-	10
Total		14	12	2	520	20	60

توصيف مقررات (درجة دكتور الصيدلة الإكلينيكية) (PP-PDP-200)
Courses Description (Clinical Pharm D) (PP-PDP-200)

First Semester		الفصل الدراسي الأول	
PP-PDP-201	Adv. Pharmacotherapeutics I	العلاج الدوائي المتقدم 1	Credit Hours (3 + 0)
<p>It involves: a) Pharmacotherapy of Cardiovascular disorders: Hypertension, Hypertensive Crisis, Heart Failure, Acute Decompensated Heart Failure, Dyslipidemia, Ischemic Heart Disease (Angina, Acute Coronary Syndrom), Arrhythmia, Cardiac Arrest, Shock, Venous Thromboembolism.</p> <p>b) Pharmacotherapy of Gastrointestinal Disorders: Nausea and Vomiting, Constipation, Diarrhea, Gastroesophageal Reflux Disease, Peptic Ulcer Disease, Stress Ulcer, Upper Gastro-intestinal bleeding, Inflammatory Bowel Disease, Pancreatitis.</p> <p>c) Pharmacotherapy of Haematological disorders: Blood and body fluids, Complications of blood transfusion and blood substitutes, Anaemia, Drug induced haematological disorders, Sickle Cell Disease and Sickle Cell Anaemia, Thalassaemia.</p>			
PP-PDP-202	Adv. Pharmacotherapeutics II	العلاج الدوائي المتقدم 2	Credit Hours (2 + 0)
<p>It involves: a) Pharmacotherapy of Endocrine system: Diabetes Mellitus, Diabetes Insipidus, Thyroid diseases, Pituitary Gland Disorders, Adrenal Gland Disorders, Obesity, Polycystic Ovary Syndrome.</p> <p>b) Pharmacotherapy of Respiratory Disorders: Allergic Rhinitis, Asthma, Chronic Obstructive Pulmonary Disease, Cystic Fibrosis.</p> <p>c) Specific population: Pediatric and geriatric pharmacotherapy.</p>			
PP-PDP-203	Treatment of Infectious diseases and immunological disorders	علاج الأمراض المعدية وأمراض المناعة	Credit Hours (3 + 0)
<p>This course covers: a) Infectious Diseases treatment: Antimicrobial Regimen Selection, Antimicrobial Prophylaxis in Surgery, Sepsis, Quality Improvements, Antimicrobial Stewardship, Rapid Diagnostic Tests, Interpreting Susceptibility Reports, Mechanisms of Antibacterial Resistance and Treatment of Multi-drug-Resistant Pathogens, Immunocompromised Patients.</p> <p>b) Antifungal Therapy.</p> <p>c) Antiviral Therapy: viral treatment guidelines, Hepatitis, Cirrhosis complications.</p> <p>d) Treatment of Sexually Transmitted Diseases.</p> <p>e) Immunological Disorders treatment: The innate and adaptive immune system, Regulation of the complement system and diseases associated with complement deficiency, Immune dysfunction., Modulation of the immune response.</p> <p>f) Application of immunological products in treatment, Vaccines and Toxoids (monoclonal antibodies... etc).</p>			
PP-PDP-204	Pharmacy Practice (1)	ممارسة صيدلانية (1)	Credit Hours (1 + 0)
<p>The course involves the following concepts: a) Clinical Pharmacy concept, General Characteristics of Professional clinical Pharmacist, Role of clinical pharmacist in the hospital. b) Clinical Pharmacy Services, Importance of Communication in clinical pharmacy, The Goals & outcome of Communications with patient, Communication channel (verbal-vocal-visual), Emotional intelligence (definition & framework), Communication Barriers. c) Effective questioning skill with patient (definition-types), Listening skills for gathering & giving information. d) Patient consulting, Challenges to providing patient counseling services, Level of Action of Clinical Pharmacists (before -during - after).</p> <p>d) Pharmacoeconomics concepts in clinical pharmacy, Basic Economic Terms, Gross Domestic Product & Gross National Product.</p> <p>Costs (direct -indirect - tangible), Costs Measurement, Pharmacoeconomics and Outcomes Research.</p> <p>Pharmacoeconomic Evaluation and Methodologies, Cost-benefit analysis (CBA), Cost-effectiveness analysis (CEA), Cost-utility analysis (CUA), The uses of Pharmacoeconomic Applications in pharmaceutical market.</p>			
PP-PDP-205	Applied. Clinical Pharmacokinetics	حركية الدواء الإكلينيكية التطبيقية	Credit Hours (2 + 1)
<p>The course deals with: a) Basic Concepts of Pharmacokinetics. b) One-Compartment Open Model: Intravenous Bolus Administration. c) Multicompartment Models: Intravenous Bolus Administration. d) Continuous IV infusion. e) Pharmacokinetics of Oral Absorption. f) Special populations (Drug PK/dosing and hepatic function, Drug PK/dosing and renal function, Geriatric patients). g) Antibiotics (Aminoglycosides & Vancomycin). h) Cardiovascular agents (Digoxin, Lidocaine, Procainamide). i) Anticonvulsants (phenytoin, carbamazepine, valproic acid). j) Other drugs (Theophylline, Lithium). k) Clinically relevant PK drug interactions. l) Therapeutic Drug monitoring.</p>			

PP-PDP-206	Clinical Skills Development	تطوير المهارات الإكلينيكية	Credit Hours (2 + 0)
This course is intended to provide: a) Introduction: The Practice of Clinical Pharmacy. b) Communication Skills for the Pharmacists. c) Taking Medication Histories. d) Physical Assessment Skills. e) Review of Laboratory and Diagnostic Tests. f) The Patient Case Presentation. g) Therapeutics Planning. h) Monitoring Drug Therapies. i) Researching and Providing Drug Information. j) Ethics in Pharmacy and Health Care.			
PP-PDP-207	Bioinformatics	المعلوماتية الحيوية	Credit Hours (2+0)
The course covers: a) Introduction to Bioinformatics. b) Database structure. c) Bacterial Genome and Gene Prediction. d) Eukaryotic Gene Structure and Prediction. e) Functional Genomics. f) Protein structure and function: basics. g) Protein misfolding diseases. h) Protein degradation. i) Cell signalling pathways. j) Molecular Modeling and drug discovery. k) Drug-receptor, Docking, examples of docking, Pharmacophore-based drug design, examples, applications.			

Second Semester

الفصل الدراسي الثاني

Code No	Course Title	Credit Hours	Exam. Hours		Exam. Marks		
			Written	Practical	Written	Practical	Oral
PP – PDP-208	Adv. Pharmacotherapeutics III العلاج الدوائي المتقدم 3	2 + 0	2	-	90	-	10
PP – PDP-209	Adv. Pharmacotherapeutics IV العلاج الدوائي المتقدم 4	2 + 0	2		90		10
PP – PDP-210	Pharmacy practice (II) ممارسة صيدلوية 2	1 + 0	2	-	90		10
PP – PDP-211	Clinical Nutrition التغذية الاكلينيكية	1 + 0	2	-	90	-	10
PP – PDP-212	Drug literature Evaluation and Biostatistics تقييم ابحاث الدواء و الاحصاء الحيوي	2 + 1	2	2	70	20	10
PP- PDP-213	Clinical laboratory investigation فحص معملى اكلينيكي	2 + 0	2	-	90	-	10
PP – PDP-214	Clinical Toxicology السموم الاكلينيكية	1 + 0	2	-	90	-	10
Elective course المقررات الاختيارية							
PP – PDP-215	Critical care رعاية الحالات الحرجة	2 + 0	2	-	90	-	10
PP – PDP-216	Patient Assessment and Disease Outcome Evaluation تقييم المريض وتقييم المردود المرضي	2 + 0	2	-	90	-	10
Total		14	14	2	700	20	80

Second Semester

الفصل الدراسي الثاني

PP-PDP-208	Adv. Pharmacotherapeutics III	العلاج الدوائي المتقدم 3	Credit Hours (2 + 0)
It involves pharmacotherapeutic management of: a) Renal Disorders: acute kidney injury, chronic and end-stage renal disease, renal replacement therapy, dose adjustment in renal disorder, fluids and electrolytes, acid–base disturbances. b) Urologic disorders: urinary incontinence and benign prostatic hyperplasia. c) Bone and joint Disorders: rheumatoid arthritis, osteoarthritis, osteoporosis, gout, systemic lupus erythematosus. d) Men’s and Women’s Health: menstrual disorders, types of contraceptives and emergency contraception, post-menopausal disorders, hormone replacement therapy, drug use in pregnancy and lactation, complications in pregnancy, infertility, male sexual dysfunction.			
PP-PDP-209	Adv. Pharmacotherapeutics IV	العلاج الدوائي المتقدم 4	Credit Hours (2 + 0)
It involves pharmacotherapeutic management of: a) Oncology: cell cycle, general principles of cancer chemotherapy, commonly used cytotoxic drugs, lung cancer, breast cancer, head and neck cancer, prostate cancer, cervical cancer, colorectal cancer, haematological malignancies. b) Management of Chemotherapy Associated Complications, Oncologic Emergencies. c) Neurologic Disorders: epilepsy, Parkinson’s disease, stroke and transient ischaemic attacks, headache, multiple sclerosis, pain management. d) Psychiatric Disorders: major depressive disorder, bipolar disorder, Schizophrenia, anxiety disorders, insomnia and sleep disorders, substance use disorders (alcohol, opioid dependence, tobacco dependence).			
PP-PDP-210	Pharmacy Practice (II)	ممارسة صيدلانية (2)	Credit Hours (1 + 0)
This course deals with: a) Pharmacy practice concept & objective. b) Patient counseling & dealing with medical staff. c) Patient management issues. d) Store management practices. e) Hospital formulary system & hospital pharmacy layout. f) Pharmaceutical care & pharmaceutical services. g) Hospital Drug Dispensing Systems. h) Ward Round Participation. i) Medication errors and their types.			
PP-PDP-211	Clinical Nutrition	التغذية الاكلينيكية	Credit Hours (1+0)
The course provides the following aspects: a) Basics of Nutrition and Metabolism: nutrition intake, digestion, absorption, and excretion, measurement of energy, components of the nutrition (carbohydrates, lipids, proteins, fibers, water, vitamins, electrolytes, trace elements), fluids, electrolytes and acid base disorders, vitamins and trace elements, measurement of energy. b) Clinical Foundations of Nutrition Support: nutrition screening and assessment, Overview of EN (Enteral formulations, Enteral access devices, Complications of enteral nutrition, overview of PN (PN formulations, PN access devices, Complications of PN), drug-nutrient interactions, parenteral implementation and management. c) Nutrition Support of Specific States: pregnancy and lactation , solid organ transplantation, wound healing, trauma, surgery, burns, sepsis and infection, pulmonary and cardiac, neurological impairments, gastrointestinal disease, pancreatitis, renal disease, liver disease, cancer and HIV, diabetes mellitus and obesity.			
PP-PDP-212	Drug literature Evaluation and Biostatistics	تقييم ابحاث الدواء و الاحصاء الحيوي	Credit Hours (2 + 1)
The course involves: 1. Drug literature Evaluation a) Introduction to the Concept of Medication Information. b) Modified Systematic Approach to Answering Questions. c) Literatures: Definition, Advantages, Disadvantages, Evaluation, Types, Examples. d) How to access Literature Resources (obtain information, or to provide information). e) Pharmacy information system, Electronic Medical Records & Pharmacist's Role in HIT (Health Information Technology). 2. Biostatistics: a) Introduction to statistics and types of data. b) Descriptive and inferential statistics. c) Choosing the appropriate statistical methods. d) Introduction to study design and clinical trials. e) Types of study designs. f) Measure of effect and how to choose a new test. 3. Tutorial: a) Drug information center services. b) Literature review. c) Pharmacovigilance. d) Evidence-based medicine. e) Biostatistics applied problems.			

PP-PDP-213	Clinical laboratory investigation	فحص معملى اكلينيكي	Credit Hours (2 + 0)
<p>The course deals with clinical laboratory tests used in the evaluation of disease states and interpretation of Test results: a) Clinical Biochemistry: Liver function, Renal function, Thyroid function tests, Tests associated with cardiac disorders, Fluid and electrolyte balance, Pulmonary Function Tests, Common tests in Urine, sputum, faces & CSF.</p> <p>b) Clinical Microbiology: Sensitivity screening for common pathogenic microorganisms and Its significance, resistance in disease states, and selection of appropriate anti-microbial regimens.</p> <p>c) Clinical Hematological and Immunological laboratory tests.</p>			

PP-PDP-214	Clinical Toxicology	السموم الاكلينيكية	Credit Hours (1 + 0)
<p>The course deals with a) General principles involved in the management of poisoning: General principles of toxicology, Antidotes and the clinical applications, Supportive Care in Clinical Toxicology, Gut Decontamination, Toxicokinetics.</p> <p>b) Clinical symptoms and management of acute poisoning with the following agents: i. Pesticide poisoning: organophosphorous compounds, carbamates organochlorines, pyrethroids. ii. Opiates overdose. iii. Antidepressants iv. Barbiturates and benzodiazepines. v. Alcohol: ethanol, methanol. vi. Paracetamol and salicylates. vii. Non-steroidal anti-inflammatory drugs. viii. Hydrocarbons: Petroleum products and PEG. ix. Caustics: inorganic acids and alkali. x. Radiation poisoning.</p> <p>c) Substance abuse: Signs and symptoms of substance abuse and treatment of dependence of a) CNS stimulants : amphetamine, b) Opioids, c) CNS depressants, d) Hallucinogens: LSD, e) Cannabis group, f) Tobacco.</p>			

PP-PDP-215	Critical Care	رعاية الحالات الحرجة	Credit Hours (2 + 0)
<p>This course provides the students with a comprehensive evaluation of the pathophysiology, diagnosis and management of common acute illnesses and care of the critically ill patient. A complete discussion of pharmacotherapy will be performed so that the student can acquire by the end of this course skills for development of different treatment strategies in the acute care settings.</p>			

PP-PDP-216	Patient Assessment and Disease Outcome Evaluation	تقييم المريض وتقييم المردود المرضي	Credit Hours (2 + 0)
<p>The course provides the following aspects: a) Patient data analysis: the patient's case history, its structure and use in evaluation of drug therapy. Understanding common medical abbreviations and terminologies used in clinical practices. Pharmacist's Role in HIT (Health Information Technology).</p> <p>b) Evaluation of prescribed medication, Medication error & adherence: Adverse events, adverse drug events, adverse drug reaction, side effects and medication error. Categories and causes of medication errors, tools to measure the performance of the medication use process, categories of medication non-adherence.</p> <p>c) New pharmacist responsibilities: Collaborative practice agreement. Collaborative drug therapy management. Comprehensive medication management.</p> <p>d) Outcome evaluation of important chronic diseases: Hypertension, DM, heart failure, dyslipidemia, Angina, gout, rheumatoid and osteoarthritis.</p>			

Third Semester

الفصل الدراسي الثالث

تدريبات اكلينيكية إجبارية Mandatory Clinical Rotation

Courses					Exams/Marks		
level	No.	Core courses	Total credit hours	Code No	Practical/ tutorial	Oral	Total
الفصل الدراسي الثالث	1	Clinical rotation (Cardiology) التدريب الإكلينيكي (القلب)	3	PP-PDP-217	90	10	100
	2	Clinical rotation (Endocrinology) التدريب الإكلينيكي (الغدد الصماء)	3	PP-PDP-218	90	10	100
	3	Clinical rotation (GIT and Hepatology) التدريب الإكلينيكي (الجهاز الهضمي والكبد)	3	PP-PDP-219	90	10	100
	4	Critical Care Management العناية الحرجة	3	PP-PDP-220	90	10	100
إجمالي عدد الساعات المعتمدة			12	--	--	--	--

الفصل الدراسي الرابع
Fourth Semester

Elective Clinical Rotations: (Select 2 rotations only)

تدريبات إكلينيكية اختيارية (يتم اختيار دورتين فقط من السنة) + مشروع التخرج

Courses					Exams/Marks		
level	No.	Core courses	Total credit hours	Code No	Practical/ tutorial	Oral	Total
الفصل الدراسي الرابع	1	Clinical rotation (Oncology) التدريب الإكلينيكي (علم الأورام)	3	PP-PDP-221	90	10	100
	2	Clinical rotation (Neurology and Psychiatry.) التدريب الإكلينيكي (الأمراض النفسية والعصبية)	3	PP-PDP-222	90	10	100
	3	Clinical rotation (Drug Information.) التدريب الإكلينيكي (معلومات دوائية)	3	PP-PDP-223	90	10	100
	4	Clinical rotation (Pediatric) التدريب الإكلينيكي (الأطفال)	3	PP-PDP-224	90	10	100
	5	Clinical rotation (Nephrology) التدريب الإكلينيكي (الكلية والمسالك البولية)	3	PP-PDP-225	90	10	100
	6	Enteral & total parenteral nutrition التغذية بالمحاليل بالفم والتغذية الكاملة بمحاليل الحقن	3	PP-PDP-226	90	10	100
	7	Graduation project مشروع التخرج	4	PP-PDP-227	Course work & Report	Final seminar	
					70	30	100
		عدد الساعات المعتمدة في هذا الفصل	10	--	--	--	--

Clinical Training

At the completion of training , the student should be able to :

- 1- Collect and organize data in timely fashion .
- 2-Complete patient database was and prepare student was for patient discussions .
- 3-Formulate an appropriate patient -specific problem list .
- 4- Assess potential drug therapy problems and develop an appropriate intervention and monitoring plan .
- 5- Implement successfully the plan .
- 6- Identify and minimize potential errors in blood sample collection for TDM .
- 7- Determine appropriate drug dosing equations to use for the patient.
- 8- Perform calculation accurately and in a timely fashion .
- 9- Integrate clinical pharmacology and pharmacokinetic literature into patient-specific drug problems .
- 10-Express ideas clearly during rounds with the medical team .
- 11- Communicate effectively with medical and nursing staff .
- 12- Provides accurate , clear , succinct , and legible written documentation in the patient's chart .
- 13- Develop a positive professional relationship with medical and nursing staff .
- 14- Demonstrate good judgment and assertiveness if he / she believes an error has been made .
- 15- Admits readily to what he / she does not know but is able to find the required information in a timely fashion