



جامعة الفيصل
Alfaisal University

كلية الصيدلة
College of Pharmacy

APPE MANUAL

ADVANCED

PHARMACY PRACTICE EXPERIENCE ROTATIONS

MANUAL

2025-2026

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CONTACTS

Contact Information

Experiential Learning Team

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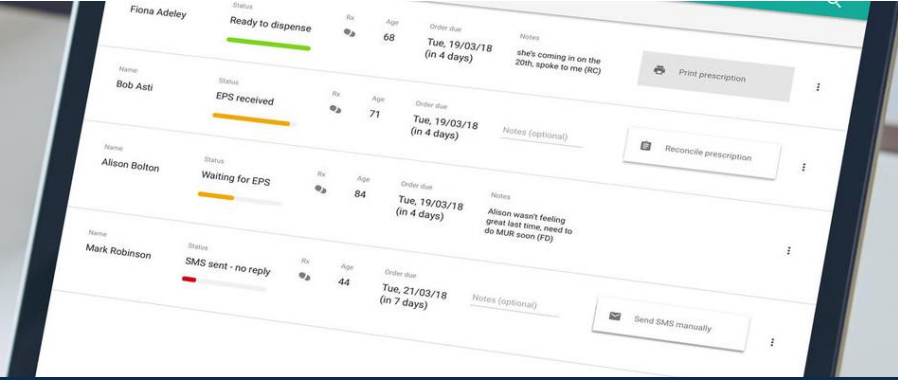
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APPE CALENDAR



APPE Calendar

Rotation Number	Start	End
1	27 Jul 25	28 Aug25
2	31 Aug 25	2 Oct 25
3	5 Oct 25	6 Nov 25
4	9 Nov 25	11 Dec 25
5	14 Dec 25	15 Jan 26
6	18 Jan 26	19 Feb 26
7	22 Feb 26	9 Apr 26
8	12 Apr 26	14 May 26
9	17 May 26	18 Jun 26
10	16 Jul 26	21 Jun 26

* Eid Holiday: 15 March 2026 to 26 March 2026

APPE Overview

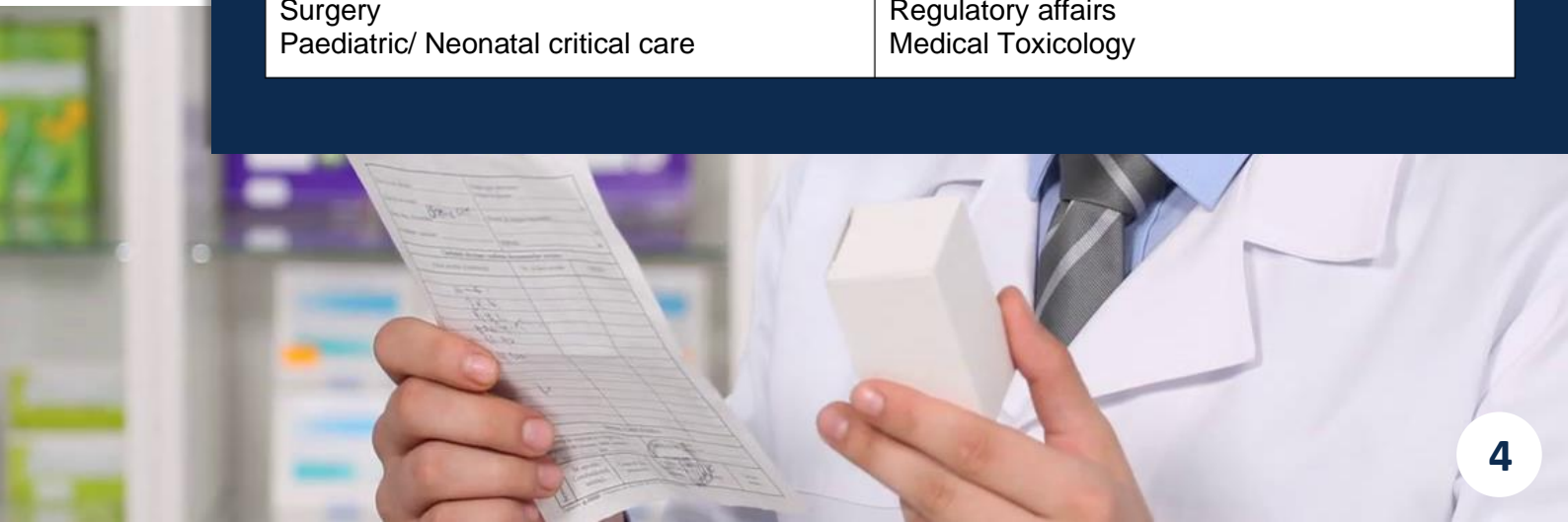
College of Pharmacy focuses on the importance of experiential education in its curriculum plan. If a student has reached this stage successfully, it means he/she has already accomplished three introductory practice experience courses to start the next stage with nine advanced pharmacy practice experience rotations.

The advanced pharmacy practice experience plays an important role through combining knowledge learned during the programme and the introductory pharmacy practice experience. In addition, students practicing in a different variety of settings will help them in choosing their future career. These experiences also allow the student to develop further their communication skills with different patient populations and health care professionals.

During the advanced pharmacy practice experiences, students should be under a close supervision of the pharmacist/preceptor role models. The Advanced Pharmacy Practice Experience (APPE) Program at Alfaisal University College of Pharmacy provides an environment for the students in their sixth and final year, to combine their didactic knowledge, pharmacy practice skills, self-learning, with more responsibility. All will contribute greatly to develop their professional attitude for the future. The students will spend approximately 1800 hours in pharmacy practice areas including primary, acute, and chronic care settings where pharmacists are delivering patient care services to diverse populations. Also, elective non-clinical areas are offered including pharmacy administration and management, medication safety, automation, and quality improvement.

APPE program begins in the summer following the completion of fifth year and continues for 45 weeks. The APPE series consists of five core rotations plus three – five selective rotations given over plus a maximum of two elective rotations.

Core Rotations	Selective/Elective Rotations (3-5)
Ambulatory care General internal medicine Institutional pharmacy practice Community pharmacy practice Pharmacy administration and management	General pediatrics Infectious diseases Cardiology Adult critical care Drug Information Total Parenteral Nutrition Adult haematology/Oncology
Elective Rotations (0-2)	
Organ Transplant Nephrology Acute care Pharmacy automation and informatics Surgery Paediatric/ Neonatal critical care	Investigational drug services Medication safety Pharmacy quality improvement Pharmaceutical industry Regulatory affairs Medical Toxicology



APPE Policies and Regulations

PREREQUISITES

1. Successful completion of all the 3 introductory practice experiences (IPP 489, IPP 596, IPP 5X5)
2. Completion of required immunizations
3. Completion of required blood tests
4. Certification in basic life support

DOCUMENTS REQUIRED

Each student must submit a clear copy of their civil ID card or a copy of the passport

ROTATION SCHEDULING

Students are given a two-week period to rank their preferences for the selective and elective rotations. Sites are then contacted for core, selective and elective rotations availability. The students are placed according to the availability of the rotation/preceptor. A copy of the schedule will be distributed to students at least 2 weeks prior to the internship.

SCHEDULE CHANGES

Changes to the schedule are only made in the circumstances of preceptor unavailability. The experiential learning coordinator, together with the site, will work with the affected student to assign a new rotation preceptor as soon as possible. Changes requests by students after schedule submission are not considered unless serious professional conditions occur. The request should be provided in writing (3 months in advance) with a complete explanation of the reasons for the request. There is no guarantee for the availability of an alternative rotation. Submitted requests will be evaluated by the university. Submission of requests does not guarantee approval.

STUDENT ATTENDANCE

- Attendance is MANDATORY
- If the student is being late due to a transportation issue, the student MUST call the site or the preceptor as soon as possible before the expected arrival time to the site.
- Students are required to spend a minimum of 40 contact hours per week at the site (200 hours per rotation). Students are not allowed to do "in advanced" hours to shorten their cycle .
- Students must inform the preceptor, as soon as possible, of any excuse for absence. Absence must be approved by the preceptor BEFORE YOU COMMIT
 - Student should provide a report/documentation for absence justification. All absences requests and documentation should be included with the student evaluation.
- Any missed time must be made up prior to the end of the current experience. The make-up time will be coordinated with the preceptor's schedule and approved by site education coordinator.

APPE POLICIES

- Repetitive lateness or non-compliance with the attendance policy may result in an incomplete (I) grade until all APPE requirements have been completed or failing the rotation.
- Summer holiday DO NOT APPLY while on APPE .
- Students are expected to be punctual and document all his/her hours. The attendance sheet for each rotation should be emailed to experientiallearning@alfaisal.edu at the end of each rotation (signed by the student and the **preceptor/institution training office**).

ABSENCE TYPES

1. Emergency Absence

- Sickness or a family emergency (death of a first-degree family member)
- Students should make an effort to notify the preceptor as soon as possible on that day, and on every day, they will be absent thereafter
- Student MUST provide documentation from a health care provider (signed and stamped) or relevant third party for these types of absences. Student should make up days of absence at the direction of the preceptor.

2. Planned Absence

- Students planning to attend a professional meeting or schedule residency or career interviews during internship should request this time off from their preceptor .
- Student must submit a request for leave of absence to the site training coordinator at least 2 weeks before the planned date of leave (see Appendix B)
- Time off for personal or social reasons should NOT be planned during rotations and therefore are NOT APPROVED.

3. Unexcused Absences

- Any failure to be present on a scheduled rotation day(s), failure to notify the preceptor of an illness or emergency in a reasonable period of time, or any absence that was not approved by the preceptor
- Unexcused absences are NOT tolerated by any means and student may be dismissed from the rotation in such event with a FAIL grade. Preceptors should immediately notify the university if such absences occur.

CORONA AND EPIDEMICS

- In the event where an epidemic occurs, students need to follow institution specific policy. No suspension from training is permitted unless instructed by the institution. Please communicate with your institution training coordinator for instructions.
- Students should always consider standard precautions to prevent and minimize transmission of infectious microorganisms through the following simple steps:
 - Hand hygiene
 - The use of disposable gloves where appropriate
 - The use of face mask where appropriate
 - Complete necessary vaccination (if applicable)

- **BAD WEATHER POLICY:** Student MUST follow site policy about any bad weather circumstances.
- **NATIONAL AND FOUNDING DAYS:** Student MUST follow site policy about these holidays.





Student Responsibilities

1. Observe dates for registration schedule. Register for APPE courses and initiate contact with the university if any problem arises during registration .
2. Contact the site education coordinator at least 2 weeks prior to the start of the rotation to help plan for the first day and discuss expectations of the experience. Inquire about introductory or review readings and site policies that they would need to know prior to orientation
3. Exhibit professionalism in manner and dress. Demonstrate a level of maturity required in a professional practice environment .
4. Punctuality is essential. Notify the preceptor, as soon as possible, of any excuse for absence. Schedules will be determined by the preceptor. Any missed time must be made up prior to the end of the current experience .
5. Keep in mind that the primary objective of these courses is learning. Learning is not a passive process; it occurs actively and requires ongoing commitment by the student .
6. Recognize that the optimum learning experience requires mutual respect and courtesy between the preceptor and the student .
7. Wear a nametag, identifying student as a pharmacy student at all times in their assigned practice environment. The dress code will be determined and enforced by the assigned preceptor as each site may have different requirements. For all sites, white coats are required. Wearing thobe, jeans, abayas and tide pants/skirts are prohibited, closed shoes and socks should be worn .
8. Respect any and all confidences revealed during the practice experiences, including pharmacy records, professional policies, patient data, patient charts, etc
9. Encourage clear, concise and effective communication with all persons involved at the assigned sites, including pharmacists, physicians, other health professionals, patients and other students.
10. Be responsible for all transportation, housing and other incidental expenses associated with APPEs
11. Do not make professional decisions without prior discussion with the preceptor, particularly when filling prescriptions or medication orders, or advising patients and other health care providers on therapeutic and drug related matters.
12. Take the initiative in communicating with physicians and patients, but do not step beyond the bounds of professional courtesy or common sense.
13. Be constantly alert to the laws, regulations and policies that govern the practice of pharmacy, and seek clarification of any points that are not clear.

STUDENT

14. Be responsible for adhering to his/her predetermined schedule. It may be necessary to devote more than the scheduled time to take advantage of certain experiences and exposures.
15. Master the basic pharmacy procedures as soon as possible so that time can be devoted to those aspects of the practice of pharmacy which involve professional judgment and the decision-making process.
16. Do not accept or receive any form of payment, financial or otherwise, from the assigned preceptor during any APPEs
17. Be responsible for submitting the evaluation form to the site preceptor.
18. The student is responsible for maintaining confidentiality in accordance with the policies of the practice site. Inappropriate disclosure of protected health information or other related information could result in a student's dismissal from the practice site. The Confidentiality Statement must be signed and dated by the student prior to participating in the experiential program.
19. Evaluation forms are due on or before 12:00 PM on the Sunday after the end of the experience.
20. Be responsible for evaluating your preceptor on or before 12:00 PM on the Sunday after the end of the experience. Evaluations must be completed to receive a final grade.
21. Be responsible for keeping copies of all submitted activities in a portfolio. Portfolios should be submitted on or before 12:00 PM on the Sunday after the end of the experience. Portfolios must be completed to receive a final grade.
22. Letters of guidance will be issued to students upon a complaint from a preceptor regarding the students' lack of compliance with the above guidelines. Copies of the letters will be sent to the student, Dean's office, and preceptor. Letters of guidance may be cause for disciplinary action.
23. Students are prohibited from contacting current or potential preceptors to whom they are not assigned for the purpose of obtaining placement for themselves for any APPEs
24. Students violating this policy will be referred to the appropriate college committee for review.
25. Students are responsible for all material in this manual





Preceptor Responsibilities

1. The preceptor should encourage the principles of professional ethics and serve as a role model.
2. The preceptor should expose student(s) to all aspects of professional practice and serve to facilitate learning experiences.
3. The preceptor should ensure objectives of the student experience are discussed with all employees to avoid misunderstanding and conflict about the students' role.
4. A preceptor must be willing to mentor student(s).
5. The preceptor must supervise the students' activities at all times; however, the preceptor may delegate this responsibility to another pharmacist or health care professional.
6. The preceptor should conduct or should arrange for an orientation for student(s) assigned. Topics to cover during orientation should include, but are not limited to preceptor expectations, standard operating procedures, and expected activities for student participation.
7. The preceptor is responsible for evaluation of student progress. Critique should be in the form of constructive feedback, and conveyed to the student in private, whenever possible. Feedback should be given on an ongoing basis. The preceptor must provide the student with a midpoint evaluation during the experience (approximately at week 3) and the final evaluation upon completion of the experience.
8. Preceptors are expected to maintain a representative portfolio of student work completed at the site.
9. The preceptor may use his/her discretion in allowing off-site experiences such as continuing education seminars, pharmacy conferences, etc. to count toward the experience requirements.
10. Preceptors must have email addresses and internet access.
11. The preceptors must assist Alfaisal University, College of Pharmacy in the achievement of the educational goals, objectives, and outcomes set forth and to provide a professional environment for the training of the students.
12. The preceptors must provide evidence of a desire to continue the broadening of his/her professional education and of an active involvement in a patient-oriented practice.
13. The preceptor helps and guides college of pharmacy regarding the need for letters of guidance if required to be issued

Preceptor Guidelines for Orientation Meeting

1. Schedule an orientation for students on day 1 of the APPE.
2. Develop a schedule with the student that is agreeable.
3. Provide the student with safety information about the area and site, including the facility safety office phone and emergency number (if applicable).
4. Provide information regarding preceptor expectations and expected activities the student should participate in.
5. Provide the student with other general information about the facility.
6. Discuss the student's previous pharmacy experiences.
7. Tour the facility and introduce the student to those individuals with whom they will be interacting.
8. Orient the student to the general operation of the pharmacy and facility. Orient the student to your policy and procedures.
9. Orient the student to the duties of other personnel in the facility.
10. Orient the student to the communication system within the facility (telephones, computers, messenger service, etc). Provide the student with information about emergency numbers on site.
11. Orient the student to cafeteria, personal care areas and library facilities (if available). Include guidelines on the use and availability to students for each of these areas.
12. Explain the facility's record keeping system if applicable.
13. Explain the facility's inventory control system if applicable.
14. Explain the guidelines for patient contact in the facility if applicable.

Preceptor Eligibility Criteria

1. Licenced pharmacist
2. Commitment to college APPE requirements: provide a high-quality rotation, frequent feedbacks to student, completion of two evaluations for each student (Mid-point and Final)
3. For non-clinical rotations: a qualification of Pharm.D. or B.Sc. Pharm with 1 year of practice experience
4. For clinical rotations: A qualification of Pharm.D. or B.Sc. Pharm with PGY1 residency \pm PGY2 residency or clinical pharmacy master's degree \pm PGY1 residency and 6 month of practice experience



Site Selection Criteria

The site:

- Provides experiences that meet the goals, objective, and educational outcomes of the advanced pharmacy practice experience
- Must be devoted to patient-centered care consistent with current pharmacy practice and provide preceptors with direct contact with students, to provide them with feedback and the opportunity to ask questions.
- Demonstrates a caring and compassionate environment with a commitment to educating student pharmacists.
- Should be adequately staffed (professional, technical, and clerical) to provide high standard patient-centred care to patients and a professional staff which is involved in the education of student pharmacists.
- Should include primary preceptor to supervise each student during the experience. All pharmacists at the facility can participate in educating the student.
- Must have a sufficient patient population to accomplish the goals, objectives, and educational outcomes of the specific experience.
- Make available opportunities for the student to learn specific disease therapy management, provider-patient communication skills, ethical behaviour and an environment that allows the student to interact with patients.
- Must have available technology, informatics, and learning resources needed to support the student training and provide optimal patient care.
- Should allow students to access all pharmacotherapy information (patient profiles, patient history, medication history, physical examinations, disease states, laboratory data) which allows them to interpret and evaluate patient information.
- Allows students to have opportunity to communicate, where appropriate, as part of a multidisciplinary team of healthcare professionals providing patient care for a patient population with diverse cultures, medical conditions, gender, and age.
- Allows students to perform pharmacist functions under the close supervision of a licensed pharmacist.

Site Responsibilities

1. The practice site must meet all standards set by appropriate governmental, regulatory, and accrediting agencies.
2. All practice sites must reflect a professional image.
3. The experience sites should have facilities to provide a wide range of pharmaceutical services such as, but not limited to:
 - a) Dispensing services or a contemporary drug distribution system: The pharmacy should employ and maintain an inventory system (regular and systematic means of reviewing stock levels; system for ordering direct from manufacturer and/or from wholesaler; method of determining most economical turnover of stock for various sections of the pharmacy; etc).
 - b) Patient profile review mechanisms: The pharmacy must maintain and utilize patient or family medication record systems for drug therapy monitoring purposes and, in addition, should have an area set aside for patient consultation.
 - c) Learning and information resources: Appropriate reference materials must be available for use in supplying drug information to the patient, physician, or allied professionals. The pharmacy should supply drug and health related information for the needs of its patients, perhaps by literature or brochure displays, mailings to clients, workshops, etc. Recommended computer resources: Access to the Internet, Microsoft Office and Excel, or equivalent is recommended, as well as access to scientific periodicals.
 - d) Clinical pharmacy services: The pharmacy should strive to achieve outcomes that improve patients' quality of life and optimise disease control. The scope of which should include:
 - Participating in drug therapy decisions
 - Selecting the drug product dosage form
 - Determining the dose and dosage schedule
 - Monitoring the patient to maximize compliance with therapy instructions
 - Monitoring the patient to detect adverse drug reactions and drug interactions
 - Monitoring the patient to enhance the probability that therapy proceeds with established therapeutic objectives
 - Providing patients with effective transitions of care, thus playing an active role in minimizing adverse drug events from occurring when patients transition from one level of care to another
4. Where applicable, the pharmacy should have procedures to provide for the appropriate handling of pharmaceutical waste.
5. Where applicable, the site should utilize and actively maintain a formulary system.



Policy for Using Computing Resources at Experiential Sites

The computing resources of your experiential site are intended to be used for programs of instruction, research and to conduct legitimate business. Students are responsible for seeing that these computing resources are used in an effective ethical and legal manner. Students must be aware of the legal and moral responsibility for ethical conduct in the use of computing resources. Students have a responsibility not to abuse the network and resources, and to respect the privacy, copyrights, and intellectual property rights of others.

Computing Resource Policy Violations:

- For purposes other than the experiential site's program of instruction, research and legitimate business of the site
- To harass, threaten or otherwise cause harm to specific individuals or classes of individuals
- To impede, interfere with or otherwise cause harm to the activities of others
- To download, post or install to experiential site computers or transport across experiential site network, material that is illegal, proprietary or violates copyrights or otherwise damaging to the experiential site
- To recklessly or maliciously interfere with or damage computer or network resources or computer data, files or other information

Examples of Policy Violations:

- Using computer resources for personal reasons
- Sending email on matters not concerning legitimate business or the experiential site
- Sending an individual or group repeated or unwanted (harassing) email
- Accessing or attempting to access another individual's data or information without authorization
- Propagating electronic chain email, pyramid schemes or sending forged or falsified email
- Obtaining, possessing, using, or attempting to use someone else's email password regardless of how the password was obtained
- Using illegally obtained licensed data/software in violation of their licenses or purchase agreements
- Releasing a virus, worm or other program that damages or otherwise harms a system or network
- Attempting to tamper with or obstruct the operation of the site's computer systems or networks
- Violating copyright laws

Assessment and Evaluation

Grading System

APPE rotations are graded on a PASS/FAIL System. The evaluation system focuses on the students' ability to demonstrate competent performance of the curricular outcomes and successful completion of the program. The rotation minimum passing score is 70%

Student's required activities are to be graded separately; completion of such activities is a REQUIREMENT to pass the rotation. Even though activities grade are not showing in the final calculation of the grade, not fulfilling this part will risk the student having an INCOMPLETE grade.

Incomplete Grading: A student receiving an incomplete for a justified reason will be provided with instructions as well as a timetable from their preceptor as to how the incomplete will be changed to a passing grade. The preceptor will inform the university when the student training has been completed.

Evaluations

- Preceptors should fill a final evaluation at the end of the rotation. Also, at the end of week 2 or the beginning of week 3 of the rotation, preceptors are encouraged to do a midpoint-evaluation. Only final evaluation grade counts towards student's final score.
 - The students are assessed on 3 major areas:
 - General skills and abilities: including professionalism and punctuality
 - Knowledge skills: including disease and drug, pharmaceutical care, drug information and system and medications management knowledge
 - Oral and written communication skills
 - Mid-point evaluation:

The purpose of the midpoint assessment is to assess student's progress and detect deficiencies. Deficiencies detected during the mid-point evaluation should be the area of focus for the rest of the rotation to successfully achieve the outcome before the final assessment. If inadequate performance is detected, the student and the preceptor should set a plan to improve the student's performance and chance of his/her success.

- Students should fill an evaluation of the site and preceptor at the end of the rotation.

It is important that feedback is obtained on the quality of the experience and preceptor. Students will have the opportunity to confidentially evaluate the rotation and preceptor at the end of each rotation. To maintain confidentiality, individual rotation evaluations will not be released to preceptors. At the end of the APPE, evaluations are shared with the site training coordinators. The information should be utilized as a tool to make potential enhancements to the site training program. Upon request, preceptors can also receive their evaluations at the end of the APPE.



Required Activities

Clinical Rotations

- Observe/shadow the preceptor in performing clinical pharmacy practice duties.
- Perform clinical pharmacy practice duties under the supervision of the preceptor.
- Conduct at least 3 SOAP notes
- Conduct at least 5 of the following: medication history/patient interview/ patient counseling/medication reconciliation
- Answer at least 5 drug information queries
- Perform at least one formal presentation (e.g.: patient case, journal club, topic review or in-service education)

Non-Clinical Rotations

- Perform at least 2 written assignments (e.g.: complete adverse drug reaction (ADR) reports, prepare and present drug monograph, prepare an article for publication, create and reference a therapeutic drug protocol or pathway, prepare a case report, create brochure or pamphlet for patient education)
- Perform at least one formal presentation

Institutional Pharmacy Rotation

- Observe/shadow the preceptor in performing inpatient pharmacy practice duties.
- Perform inpatient pharmacy practice duties under the supervision of the preceptor)

Portfolio Checklist

- ✓ Student CV and career objectives
- ✓ Patient care documentation:
 - Direct patient interaction – e.g. medication history, med reconciliation, patient counseling and/or MTM evaluation
 - Patient care notes – e.g. SOAP, pharmacokinetic, renal dosing, anticoagulation management, therapy monitoring, IV to PO switches
 - ADR/ Medication Error reports
- ✓ Presentations preformed
- ✓ Educational materials (brochures, flyers.)
- ✓ Any of the following documentations
 - Formulary Management (P&T Committee) Material – e.g. drug monograph, therapy protocol review/development, QA activity
 - Newsletter article
 - Medication Use Evaluation (MUE)
- ✓ Reflection paper (at least one page, single spaced, 12-pt font) explaining:
 - ✓ APPE experience with appropriate detail and specific examples (i.e. expectations vs. reality, ability to complete objectives, etc)
 - ✓ What you learned from the experience
 - ✓ Evaluate yourself and your role in the practice of pharmacy at this point
 - ✓ Examples of how the experience ties to past didactic work and/or previous healthcare/service/life experiences
 - ✓ Interactions with other healthcare professionals and pharmacists' roles on the healthcare team
 - ✓ Impact of the experience on your pharmacy career/care of future patients



Rotations Goals and Objectives

Clinical Rotations

Core/ Elective/Selective

In a clinical rotation, students should actively participate in appropriate pharmaceutical care delivery through patient assessment, drug therapy assessment and development, implementation, and monitoring of drug therapy plans.

Students should be able to:

- Perform an accurate and effective patient history
- Perform, when applicable, relevant, and accurate physical assessment
- Assess the appropriateness of patient's medication therapy and identify drug-related problems
- Design evidence based therapeutic regimens and discuss the treatment, monitoring, and outcomes
- Participate in therapeutic drug monitoring activities

Institutional Pharmacy Practice

Core

In an institutional pharmacy rotation, students will be able to prepare and evaluate in-patient and sterile preparations orders including cytotoxic medications, narcotics, extemporaneous preparations and IV medications.

Students should be able to:

- Discuss appropriate medication use and quality improvement
- Apply appropriate Patient-centered care
- Apply principles of pharmacotherapy to patient care
- Apply appropriate evidence-based practice through the appropriate use of drug information resources
- Communicate relevant, concise, comprehensive, and timely information through oral and written communication in a clear manner using appropriate terminology and vocabulary for health care professionals and patients
- Interpret medication orders completely, accurately, and efficiently
- Demonstrate professionalism in communications, attitude, behaviors, and appearance

Community Pharmacy Practice

Core

In a community pharmacy practice rotation, students will be able to apply basic practice and communication skills and to interface with patients and healthcare providers through training at community pharmacies or in an outpatient pharmacy in primary health care centre.

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Students will also participate in community service focusing on face-to-face interaction with the community including patients and healthcare providers.

Students should be able to:

- Explain the legal requirements of a prescription (legend drug, non-prescription, controlled substances and parenteral medications).
- Describe the scope of practice and responsibilities of pharmacists in the community pharmacy, primary care center.
- Understand and demonstrate professionalism in all daily activities.
- Develop effective communication skills with patients and community.
- Participate in a promoting health/wellness with other health care professional students in the community.
- Reflect on the degree of professionalism displayed by practitioners at the site.
- Reflect on the various practice skills needed to function effectively within a practice setting.
- Identify the variety of career opportunities.

Pharmacy Administration and Management

Core

This rotation gives the student an opportunity to acquire first-hand experience in the managerial and administrative aspects of pharmacy practice. The primary goal of this rotation is to develop leadership and management skills that will support a professional and productive practice in management, leadership, and quality assurance. This could be achieved by providing experiences and responsibilities that develop and augment the intern's communication skills, problem solving abilities, professional knowledge base, judgment, and insight by ensuring intern exposure to targeted administrative and management roles while receiving guidance and structure as required

Students should be able to:

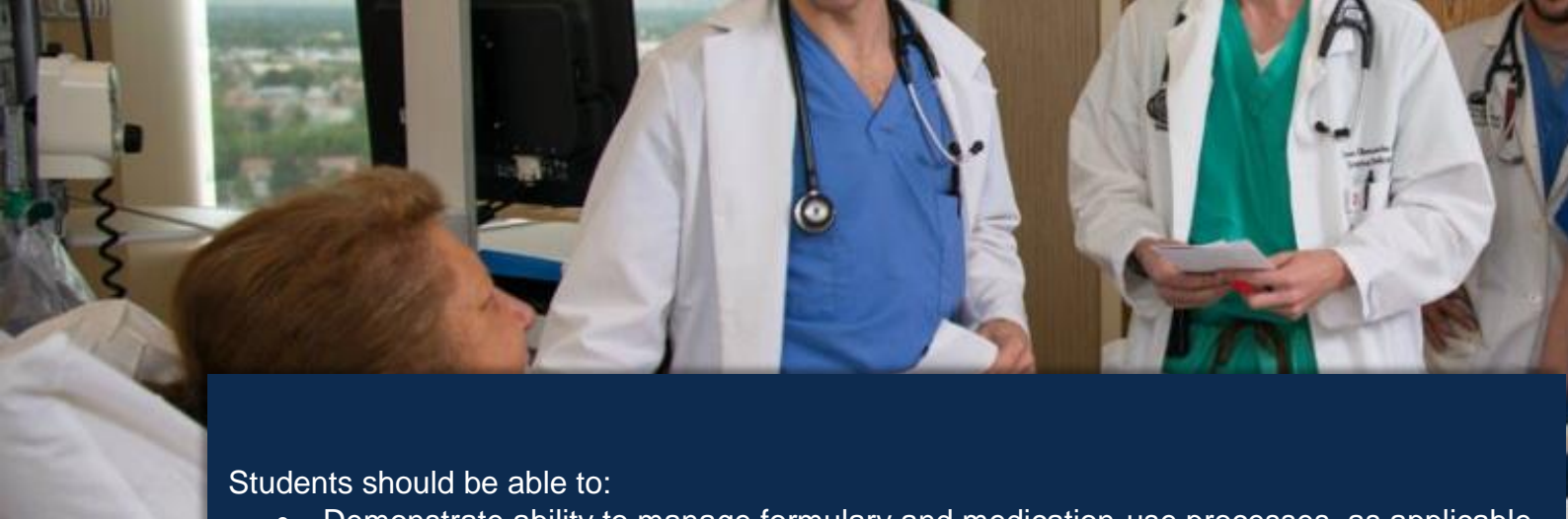
- Describe laws and regulations and accreditation standards affecting pharmacy operations
- Describe methods of inventory control and purchasing
- Describe basic management principles that are needed to effectively supervise drug distribution systems and clinical services
- Design and implement interventions to solve problems or aspects of medication-use system to improve the quality
- Demonstrate ability to assure that pharmacy operations comply strictly with all applicable accreditation standards as well as laws and regulations

Drug Information

Selective/Elective

This rotation aims to develop the student's ability to retrieve, analyse, and communicate drug therapy information to pharmacists, physicians, nurses, and allied healthcare professionals as well as the public.





Students should be able to:

- Demonstrate ability to manage formulary and medication-use processes, as applicable to the site
- Provide concise, applicable, comprehensive, and timely responses to requests for drug information from patients and health care providers.
- Create pertinent, evidence-based medication information for health care professionals
- Demonstrate the ability to communicate legible and accurate information in oral and written form to other members of the health care team.

Medication Safety

Elective

This rotation will give students chances to develop their understanding of medication safety issues in hospitals and clinics.

Students should be able to:

- Demonstrate ability to describe types of error and reporting systems
- Demonstrate ability to promote safe medication practices
- Identify, report, and analyze medication errors and adverse drug reactions to identify preventable cause and remedial preventive actions.
- Demonstrate the ability to communicate legible and accurate information in oral and written form to patients and other members of the health care team
- Demonstrate ability to utilize electronic health records

Pharmacy Automation and Informatics

Elective

This rotation exposes students to the evolution of organizations' medication-use systems by applying pharmacy informatics principles, standards, and best practices.

Students should be able to:

- Demonstrate ability to discuss the importance and scope of Computerized Prescriber Order Entry (CPOE) and Clinical Decision Support Systems (CDSSs).
- Describe the current standard of technology in pharmacy automation and information systems
- Describe currently available automated technology for order processing, safe and efficient distribution, dispensing, and administration of medications, documentation of medication administration, electronic surveillance systems for effects monitoring, and pharmacy inventory management systems.
- Demonstrate ability to identify opportunities for improving the safety and quality of the medication-use system through the application of informatics principles, standards, and best practices.
- Demonstrate ability to propose a workflow solution involving informatics to address a medication-use process identified as needing improvement.

ROTATIONS

Pharmaceutical Industry

Elective

The purpose of this rotation is for students to learn about the functions and activities of pharmaceutical manufacturers. The Pharmaceutical Industry rotation will afford students the opportunity to be exposed to different departments within the organization in order to gain a better understanding of the role of the pharmaceutical industry in the provision of healthcare. In addition, students will become familiar with the potential job opportunities available to pharmacists within this setting.

Students will be able to:

- Describe the roles and responsibilities of pharmacists working in pharmaceutical industry
- Explain the daily activities of pharmaceutical sales representatives
- Describe how the knowledge of detailed information about the company's products relates to the daily activities of pharmacists working for a drug manufacturer
- Explain the legal and industry-wide standards for drug marketing within the pharmaceutical industry
- Review educational materials on products marketed by the manufacturer

Medical Toxicology

Elective

During this rotation, the student will have the opportunity to follow poisoned patients, answer drug information calls, perform literature searches, and receive didactic instruction in clinical toxicology. Students will work with specialists in poison information and emergency medicine.

Students will be able to:

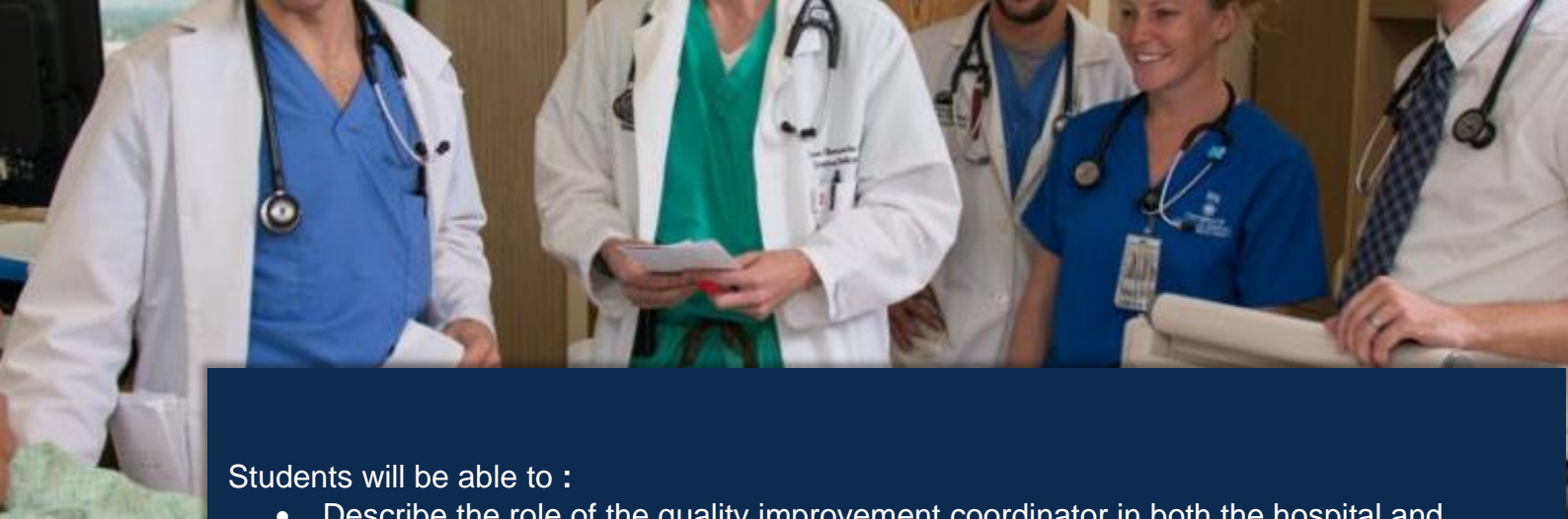
- Recognize the drug and poison centre computerized information sources
- Describe the formulary management process
- Develop proficiency in the use of all reference materials commonly used by poison centre staff including computerized information sources.
- Be able to examine the literature supporting current guidelines for the treatment of commonly occurring poisonings and toxic exposures
- Be able to respond to actual poison information and treatment referral assistance.

Pharmacy Quality Improvement

Elective

This rotation enhances the students understanding of quality improvement concepts, their familiarity with the pharmacy quality improvement, and to gain practical experience with root-cause analysis and quality improvement initiatives.





Students will be able to :

- Describe the role of the quality improvement coordinator in both the hospital and pharmacy setting
- Describe the role of the quality improvement coordinator in JCIA preparation
- Identify the tools required to ensure a continuous quality improvement system practice and its team, including process improvements, standard operating procedures and appropriate staff training
- Demonstrate ability to promote health improvement, wellness, and disease prevention through participating in Awareness Days if present during the rotation
- Participate the hospital improvement plan and hospital PI projects including those in the pharmacy department.

Regulatory Affairs

Elective

This rotation will give students chances to develop their understanding of medication safety. The purpose of this rotation is to familiarize the student with the role of sectors such as the Food and Drug Administration in the drug development, review, and post-marketing phases, as well as offer experience in providing drug information to consumers, health care professionals, and industry.

Students will be able to:

- Describe the development of a new drug from laboratory to commercial distribution of the product and the FDA's role in that process.
- Distinguish between the three phases of clinical trials in the drug development process.
- Outline the post-marketing surveillance mechanisms that FDA uses to assure drugs remain safe and effective for patients.
- Become familiar with the laws, regulations, and guidance documents governing drugs.
- Become familiar with the drug review process within Saudi Arabia
- Respond to inquiries regarding FDA approved products.

APPENDIX B: HELPFUL RESOURCES FOR STUDENTS

Preceptor may use different evaluation forms specific to their site. These forms are included to guide and help students.

Appendix B-1: Case Presentation Evaluation Criteria

Appendix B-2: Journal Club Evaluation Criteria

Appendix B-3: Patient Encounter Data Collection Form

Appendix B-4: Helpful Online Information Resources

APPENDIX B-1: CASE PRESENTATION EVALUATION CRITERIA

#	Criteria	Points Earned
1	<p>Patient Presentation</p> <ul style="list-style-type: none"> • Patient identification, CC, HPI, histories, ROS, VS, PE and lab/test results clearly presented • Detail of chronology of events 	
2	<p>Discussion of patient-specific disease states/pathophysiology</p> <ul style="list-style-type: none"> • Etiology, Epidemiology • Identification of risk factors • Signs and symptoms 	
3	<p>Drug Therapy</p> <ul style="list-style-type: none"> • Explain indications and rationale for patient's drug therapy • Relate problem list with drug therapy– evaluate the appropriateness of current regimen and identify alternative treatment regimens where required • Discuss mechanisms of action of drugs • Evaluate the dosing regimen including pharmacokinetic considerations • Identify drug induced effects if present and outline its management • Identify potential common or serious adverse drug reactions and recommend appropriate prevention strategies when indicated • Identify potential drug interactions 	
4	<p>Monitoring</p> <ul style="list-style-type: none"> • Identify appropriate parameters for monitoring of therapeutic effects (including the desirable endpoint and frequency of monitoring) • Identify appropriate parameters for assessment of adverse effects (including frequency of monitoring) 	
5	<p>Patient Information & Counseling</p> <ul style="list-style-type: none"> • Explain purpose(s) of drug therapy • Important instructions for use • Side effects and precautions • Self-monitoring parameters 	
6	<p>Presentation Style</p> <ul style="list-style-type: none"> • Organization • Voice projection, correct pronunciation • Ability to answer questions– can support with evidence from the literature • Ability to present without “reading” notes • Distracting mannerisms 	
7	<p>Audiovisual</p> <ul style="list-style-type: none"> • If handouts are used –they are organized and appropriately referenced • If overheads or slides are used –they are clear 	
Total		/100

APPENDIX B-2: JOURNAL CLUB EVALUATION CRITERIA

#	Criteria	Points Earned
1	Described the study design <ul style="list-style-type: none"> • Study title • Type of study • Study group allocations, drug doses, regimens, duration (if applicable) • Follow-up tests, laboratory and otherwise (if applicable) • Assessment of compliance (if applicable) 	
2	Described the purpose of the study and the study's hypothesis: The student should discuss the question that the investigators are asking and what the study is trying to show	
3	Briefly placed the study in context by giving an overview of the current state of knowledge regarding the study's hypothesis: The student should discuss the existing standard of care about the topic generating the study.	
4	Described the characteristics of the study population <ul style="list-style-type: none"> • Inclusion/exclusion criteria • Date study conducted, country (ies), center (s) • Demographics, drugs being taken, co-morbidities of the research subjects • Disease states and conditions that preclude participation in the study 	
5	Described the statistical tests used and their interpretation	
6	Identified potential sources of bias (confounding) <ul style="list-style-type: none"> • Described the sources and methods used for controlling or adjusting for bias. • Explained how investigators would overcome/control for bias in the study 	
7	Described the study's end point (s) and if they are, clinically meaningful to patients.	
8	Described the magnitude of the differences (effect size) between treatments or interventions and whether or not they were clinically meaningful <ul style="list-style-type: none"> • Explained how the practice might change based on the study's results 	
9	Discussed the dropout rate (loss to follow-up or response rate) in the study and its effect on the study results <ul style="list-style-type: none"> • Adverse effects • Accountability of the number of patients initiating and completing the study 	
10	Discussed whether or not the student agrees or disagrees with the investigators Conclusions and why <ul style="list-style-type: none"> • Whether the study has ethical consideration or not • Limitations and strengths of the study 	
11	Delivery: Voice: volume, speed, enunciation, pronunciation Language: Accuracy of terminology used. Makes a clear attempt to answer questions accurately. Accepts questions and comments in non-defensive manner	
Total		/100

APPENDIX B-3: PATIENT ENCOUNTER DATA COLLECTION FORM

PATIENT'S DEMOGRAPHICS (Name, DOB, Age, Marital status, Education, Occupation, patient MRN)

CHIEF COMPLIANT (CC): Describe briefly your present symptoms?

DIAGNOSIS (Dx)

HISTORY OF PRESENTING ILLNESS (HPI)

Past Medical History (*ask about the presence of other illnesses, surgeries*)

Diagnosis	Date (Approximate)	Management

Previous surgeries

FAMILY HISTORY – *Are there any illnesses in the family – 1st degree?*

If living		
Relationship	Condition	Age of onset

MEDICATION HISTORY

Allergy:

Drug	Type of reaction

Recent vaccinations:

Present Prescribed Medications/ discontinued medications (include reason for stopping)/ OTC medications

Name	Dose (Strength, frequency, timing, route)	Start/End date	Indication	Helped? (a lot, some, no)	Recent changes (increase/decrease dose? Reason?)

Herbals/ vitamins and supplements:

Name	Dose	Reason for taking

Questions to ask to assess the adherence (adopted from: Morisky Medication Adherence questionnaire):

- Do you sometimes forget to take your medicine?
- People sometimes miss taking their medications for reason other than forgetting. Thinking about the past 2 weeks, were there any days you did not take your medicine?
- Have you ever cut back or stopped taking your medicine without telling your doctor because you felt worse when you took it?
- When you travel/leave home, do you sometimes forget to bring along your medications?
- Did you take all your medications yesterday?
- When you feel like your symptoms under control, do you sometimes stop your medications? Do you ever feel hassled about sticking to your treatment plan?
- How often do you have difficult remembering to take all your medications?

Social History

Occupation

Mobility

Exercise

Smoking

Alcohol

Living situation

Activities of daily living

For women only: *Pregnant? Planning to be pregnant? Breast feeding?*

Objective data:

- ✓ Vital signs
- ✓ Relevant and abnormal labs
- ✓ Relevant and abnormal physical examination notes

Drug Information Resources:

- ✓ Lexi-Comp Online
- ✓ Micromedex

Medical Databases:

- ✓ UpToDate
- ✓ BMJ best practice
- ✓ PubMed
- ✓ Cochrane Database of Systematic Reviews

Useful resources:

- ✓ [ClinicalTrials.gov](https://clinicaltrials.gov) a registry and results database of federally and privately supported clinical trials conducted in the United States and around the world.
- ✓ [Drugs @ FDA](https://www.accessdata.fda.gov/drugsatfda) allows you to search for official information about FDA approved brand name and generic drugs and therapeutic biological products.
- ✓ [Drugs.com](https://www.drugs.com) Professional Resource Centre
- ✓ [FDA - For the Health Professional - Drugs](https://www.fda.gov/oc/ohrt/)
- ✓ [FDA - Paediatrics](https://www.fda.gov/oc/ohrt/)
- ✓ [LactMed - Drugs and Lactation Database](https://www.lactmed.org)
- ✓ [Medscape](https://www.medscape.com)



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