المجلس الأعلى للجامعات
الادارة العامة لشئون لجان قطاعات
التعليم الجامعي

السيد الأستاذ الدكتور/

رئيس جامعة

تحية طيبة وبعد ،،

أتشرف بالإفادة أنه قد صدر قرار المجلس الأعلى للجامعات بجلسته بتاريخ ٢٠٢٤/٢/٢٤ باعتماد الدليل الأسترشادي المحدث لبرنامج التدريب الإجباري (الامتياز) للصيادلة بالجامعات المصرية (مرفق) والمقدم من لجنة قطاع الدراسات الصيدلية، مع التعميم على الجامعات للاسترشاد به .

برجاء التفضل بالنظر والتكرم بالتنبيه باتخاذ ما ترونه سيادتكم مناسبًا في هذا الشأن.

وتفضلوا بقبول وافر الاحترام ،،

أمين المجلس الأعلى للجامعات

٢٠٢٤/٣/٦

(أ.د/ مصطفى رفعت)

تم التحرير فى ٢٠٢٤/٠٣/٠٣

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المجلس الأعلى للجامعات
لجنة قطاع الدراسات الصيدلية

الدليل الاسترشادي لبرنامج
التدريب الاجباري (الامتياز) للصيادلة

التاريخ

المحتـــوى

مقدمة

بدأ تطبيق برنامج بكالوريوس الصيدلة (فارم دي – PharmD) مع بداية العام الدراسي ٢٠١٩-٢٠٢٠ لمواكبة التغيرات العالمية في مجال التعليم الصيدلي بتعزيز جودة البرامج التعليمية بما يحقق المعايير العالمية وإكساب الخريج المواصفات والمهارات التي تلبي احتياجات سوق العمل من كفاءات وجودة الأداء وإعداد صيادلة مؤهلين بأحدث المفاهيم الصيدلية والرعاية الصحية التي تمكنهم من الإسهام في رفع كفاءة منظومة الرعاية الصحية، وتطوير الصناعات الدوائية على المستوى المحلي والإقليمي.

وقد تم تصميم البرنامج التدريبي لإعداد صيدلي قادر على تقديم الخدمات الصيدلية بمستوى مهاري محترف بالمستشفيات والصيدليات العامة والخاصة ومصانع وشركات الأدوية ومعامل الرقابة الدوائية وتحليل الأغذية إضافة إلى العمل في مجال الإعلام والتسويق الدوائي والمشاركة بفاعلية في البحث العلمي من خلال مراكز البحوث والجامعات لخدمة المجتمع. وكذلك مراعاة الحاجة الفعلية لسوق العمل بما يسمح للخريج بالمنافسة على فرص العمل داخلياً وخارجياً وزيادة الفرص المتاحة للعمل في المجال الصيدلي التخصصي. وكل ذلك يتطلب إكساب الصيدلي الجدارات Competencies (إضافة إلى المعلومات والمهارات التي اكتسبها في دراسته الأكاديمية بالكلية) التي تمكنه من القيام بالكثير من الوظائف المستحدثة في مجال الصيدلة بما في ذلك كيفية توفير الدواء والمعلومات الدوائية، وإرشاد المريض إلى الاستخدام الأمثل له وكيفية الانتفاع به وترشيد استهلاكه وتطوير مهارات ريادة الأعمال والمهارات القيادية للخريج.

وهذه القدرات لا يمكن تحقيقها إلا من خلال التدريب المكثف والتخصصي في مواقع العمل المتنوعة ويقوم به المتدرب بعد اجتيازه اختبارات السنة الخامسة بنجاح. ولذلك تم تصميم برنامج التدريب الإجباري (الإمتياز) للصيادلة على هيئة دورات تدريبية تنعقد بشكل دوري تناوبي ليتمكن صيدلي الامتياز من التدريب في عدة مجالات (مثل التصنيع الدوائي – الرقابة الدوائية والشئون التنظيمية – البيع والتسويق – المستشفيات والمراكز الطبية .... إلخ) مع التركيز على المجال الذي يرغب المتدرب أن يتخصص فيه مستقبلا، كما يقدم المتدرب مشروع بحثي تطبيقي في مجال معين يسهم في تمهيد وإعداد المتدرب للتوجه لهذا التخصص.

وبعد أن تم الانتهاء من اللوائح الخاصة بالبرنامج التعليمي الأكاديمي (خمس سنوات) وبعد صدور اللائحة الموحدة لسنة التدريب الإجباري (الإمتياز) للصيادلة بقرار وزير التعليم العالي رقم ٩٦٧ بتاريخ ٢٠٢٣/٥/٢٩ شرعت لجنة قطاع الدراسات الصيدلية فى مراجعة الدليل الإسترشادى للقواعد والضوابط التى يجب على الكليات الإسترشاد بها عند تنفيذ البرنامج التدريبي والذي سوف يتم تطبيقه للمرة الأولى في أكتوبر ٢٠٢٤ على الطلاب الذين استكملوا العام الدراسي الخامس بنجاح.

القواعد والضوابط الاسترشادية
لبرنامج التدريب الإجباري (الإمتياز) للصيادلة
لدرجة بكالوريوس الصيدلة (فارم دي – PharmD)
ولدرجة بكالوريوس الصيدلة (فارم دي PharmD) - صيدلة اكلينيكية

أولا: تعريف برنامج التدريب الإجبارى (الإمتياز) للصيادلة

اسم البرنامج: التدريب الإجباري (الإمتياز) للصيادلة

مدة البرنامج: تسعة أشهر (٣٦ أسبوعا)

الوحدة المسئولة عن البرنامج: وحدة التدريب الإجباري (الإمتياز) للصيادلة بالكلية

- **تعريف البرنامج:** مجموعة من الدورات العملية التطبيقية تنفذ فى مواقع العمل التي تشمل المنشآت والمؤسسات الصيدلية وكذا المؤسسات والهيئات العلاجية الحكومية والخاصة، يحقق البرنامج تدريباً تطبيقياً على الممارسة الفعلية للمهنة ويشمل ست دورات تدريبية تناوبية في مختلف مجالات العمل الصيدلي، مدة كل دورة ستة أسابيع، ويبدأ البرنامج بعد اجتياز الطالب عدد الساعات المنصوص عليها في اللائحة الأكاديمية لبرنامج بكالوريوس الصيدلة (فارم دي - PharmD) أو بكالوريوس الصيدلة (فارم دي PharmD) - صيدلة اكلينيكية، وكذا اجتياز التدريب الميداني (مائة ساعة).

- يؤهل اجتياز برنامج التدريب الإجباري (الامتياز) خريجي كليات الصيدلة للعمل بعد الحصول على شهادة التدريب الإجبارى (الإمتياز) المعتمدة.

ثانيا: أهداف البرنامج التدريبي

يهدف برنامج التدريب الإجباري الي تنمية قدرات ومهارات خريجي كليات الصيدلة لتلبي احتياجات سوق العمل من كفاءات وجودة الأداء وإعداد صيادلة مؤهلين بأحدث المفاهيم في مجال الرعاية الصحية ومجال اكتشاف وتطوير الدواء، من خلال:

١. إعداد صيدلي قادر على المنافسة في سوق العمل محليًا وإقليميًا ودوليًا.
٢. الربط الفعلي بين مواقع العمل الصيدلي (المنشآت والمؤسسات الصيدلية والمؤسسات والهيئات العلاجية) والجامعات.
٣. توفير تدريب تطبيقي ينمي كفاءات الخريج كمتعلم ومهني قادر على الارتقاء بالرعاية الصحية.
٤. إعداد صيدلي قادر على الإسهام فى تطوير وتوطين الصناعات الدوائية في مصر وملم بالشئون التنظيمية للدواء.
٥. إعداد كوادر صيدلية قيادية مبتكرة ومطورة وقادره على حل المشكلات والعمل بروح الفريق.
٦. مزاولة المهنة في ضوء الأخلاقيات والقيم الحاكمة، مع الالتزام بالحقوق والواجبات والمسئوليات التي تقتضيها المهنة.
٧. شرح وإبراز التخصصات المختلفة أمام خريجي كليات الصيدلة وتجهيزهم بالتدريبات الكافية لتحديد أوجه اهتماماتهم.
٨. إمداد المنشآت والمؤسسات الصيدلية والمؤسسات والهيئات العلاجية والمراكز البحثية والجامعات بالصيادلة المؤهلين مهنياً للعمل.

ثالثا: الجهات المسئولة والمنظمة لبرنامج التدريب

١- الجهات المنظمة للتدريب

يقوم المجلس الأعلى للمستشفيات الجامعية بالتنسيق والمشاركة مع هيئة الدواء المصرية على تنظيم التدريب الإجبارى (الإمتياز) للصيادلة تحت إشراف المجلس الأعلى للجامعات على النحو التالي:

أ- الدورات التدريبية في مجال تنظيم وتصنيع ورقابة وتداول المستحضرات والمستلزمات الطبية:

يتم التدريب في المنشآت والمؤسسات الصيدلية الخاضعة لإشراف هيئة الدواء المصرية، وتتولى الهيئة حصر وتحديد أماكن التدريب المتاحة وأعداد المتدربين المطلوبة وفقًا للاحتياجات الفعلية لكل موقع تدريبي على حِدَّة، وأعداد صيادلة الإمتياز من مختلف كليات الصيدلة على مستوى الجمهورية، وتنظيم وتنسيق تدريب صيادلة الامتياز في هذه الدورات.

ب- الدورات التدريبية في المستشفيات:

يتم التدريب في المستشفيات الجامعية والحكومية والخاصة وغيرها المعتمدة من قبل المجلس الأعلى للمستشفيات الجامعية. وكذلك في مستشفيات القوات المسلحة التي يصدر بتحديدها قرار من الوزير المختص كمستشفيات معتمدة، (ويتولى المجلس الأعلى للمستشفيات الجامعية، تنظيم وتنسيق تدريب صيادلة الامتياز في هذه الدورات بالتنسيق مع هيئة الدواء المصرية).

- يمكن ان يتم تنسيق توزيع المتدربين على مواقع التدريب من خلال منصة إلكترونية مصممة خصيصا لهذا الأمر.

٢- <u>اللجنة العليا للإشراف على التدريب الإجبارى (الإمتياز) للصيادلة</u>

طبقا لما ورد بالمادة (٦) من اللائحة الموحدة للتدريب الإجباري (الإمتياز) للصيادلة الصادرة بقرار وزير التعليم العالى رقم ٩٦٧ بتاريخ ٢٠٢٣/٥/٢٩.

- **ومن ضمن مهام اللجنة العليا القيام بالآتى:**

١- الخطة العامة والسنوية للبرنامج التدريبي والتنسيق بين الجهات المسئولة عن تنظيم وتنسيق الدورات التدريبية (المجلس الأعلى للمستشفيات الجامعية وهيئة الدواء المصرية).
٢- التنسيق مع لجنة قطاع الدراسات الصيدلية بالمجلس الأعلى للجامعات لتوصيف دورات برنامج التدريب الاجباري.
٣- تحديد تكلفة الخدمات التي يتم تقديمها في الدورات التدريبية.
٤- إتخاذ ما يلزم من اجراءات تصحيح وتطوير للخطة العامة للتدريب في ضوء تقارير تقييم التدريب الواردة من الجامعات بهدف التحسين والتطوير.
٥- التنسيق مع لجنة قطاع الدراسات الصيدلية لاستحداث دورات تدريبية جديدة طبقا لاحتياج سوق العمل.

٣- <u>وحدة التدريب الإجبارى (الامتياز) للصيادلة بالكلية</u>

تنشأ وحدة تدريب بكل كلية لإدارة برنامج التدريب الإجباري (الإمتياز) للصيادلة، ويشكل لها مجلس إدارة برئاسة عميد الكلية وعضوية كل من:

١. مدير الوحدة (يعينه مجلس الكلية).
٢. وكيل الكلية لشئون التعليم والطلاب.
٣. وكيل الكلية لشئون خدمة المجتمع وتنمية البيئة.
٤. المدير التنفيذي للمستشفيات الجامعية بالجامعة او من يفوضه.
٥. ممثل عن هيئة الدواء المصرية (يرشحه رئيس هيئة الدواء المصرية).
٦. عدد ثلاثة على الأقل من أعضاء هيئة التدريس بالكلية من ذوي الخبرة في مجال التدريب.
٧. مدير وحدة ضمان الجودة بالكلية أو من يفوضه.
٨. ممثل عن الجهاز الإداري بالكلية يحدده عميد الكلية.

- يجوز لمجلس الإدارة إضافة عضو أو أكثر من خبراء سوق العمل الصيدلي.
- يجتمع مجلس الإدارة مرة واحدة على الأقل كل ثلاثة أشهر أو كلما دعت الضرورة لمناقشة قضايا التدريب.

وتكون مهام مجلس إدارة الوحدة:

١. تحديد مسؤول الإشراف من أعضاء هيئة التدريس بالكلية عن كل دورة تدريبية لبرنامج التدريب الإجباري.
٢. إعداد قوائم بأسماء الناجحين بالمستوى الخامس موضحا بها المجموع التراكمي وارسالها الي هيئة الدواء المصرية والمجلس الأعلى للمستشفيات الجامعية لتوزيع المتدربين على مواقع التدريب المختلفة.

٣. إخطار جميع المتدربين من الكلية بجهات التدريب وموعد بدء الدورات وفقا للقوائم الواردة من هيئة الدواء المصرية والمجلس الأعلى للمستشفيات الجامعية.
٤. متابعة تنفيذ برنامج التدريب الإجباري (الإمتياز) للصيادلة طبقا للتوصيف المعتمد والتأكد من التحاق المتدربين في الدورات بشكل منتظم من خلال الزيارات الميدانية لمسؤول الإشراف من أعضاء هيئة التدريس بالكلية والتواصل المستمر مع جهات التدريب.
٥. مناقشة المعوقات التي قد تعترض تنفيذ برنامج التدريب الإجباري واقتراح الحلول وعرضها على مجلس الكلية تمهيدا للتنسيق مع الجهات المسئولة عن التدريب.
٦. النظر وإبداء الرأي في طلبات تأجيل او استبدال الدورات التدريبية او أماكن التدريب وأي طلبات اخرى لصيادلة الإمتياز بالتنسيق مع الجهات المسئولة عن تنسيق التدريب.
٧. تقييم سير الدورات التدريبية وأماكن التدريب في ضوء التقارير المقدمة من وحدة التدريب بالكلية بعد انتهاء سنة التدريب الاجباري وعرض نتائج التقييم على مجلس الكلية.

رابعا: اماكن التدريب

يتم تنفيذ الدورات التدريبية المختلفة لصيادلة الإمتياز في الأماكن التي تنطبق عليها الشروط والمعايير الواجب توافرها في مواقع التدريب (المستشفيات والشركات ... إلخ) والمعتمدة من المجلس الأعلى للجامعات بجلسته بتاريخ ٢٠٢٢/٣/٢٩.على النحو التالي:

أولا: هيئة الدواء المصرية والمنشآت والمؤسسات الصيدلية الخاضعة لإشرافها على النحو التالي:

١. شركات ومصانع المستحضرات الصيدلية.
٢. شركات ومصانع المستلزمات الطبية.
٣. الصيدليات العامة.
٤. الصيدليات الخاصة (صيدليات المستشفيات – الصيدليات التابعة للجمعيات الأهلية).
٥. شركات ومخازن التوزيع.
٦. مستودعات الوسطاء في الأدوية.
٧. معامل ومراكز إجراء الدراسات اللازمة لضمان جودة وفعالية ومأمونية المستحضرات والمستلزمات الطبية والمواد الخام التي تدخل في تصنيعها.

ثانيا: المستشفيات الجامعية ومستشفيات وزارة الصحة والتأمين الصحي ومستشفيات الهيئة العامة للمستشفيات والمستشفيات التابعة لوزارة الداخلية والمعاهد التعليمية التي يعتمدها المجلس الأعلى للمستشفيات الجامعية، ويجوز أن ينفذ التدريب في المستشفيات الخاصة التي يعتمدها المجلس الأعلى للمستشفيات الجامعية في حال عدم توفر مستشفيات جامعية في الجامعة التابع لها المتدرب، ومستشفيات القوات المسلحة التي يصدر بها قرار من الوزير المختص.

- **يمكن ان يتم التدريب في أماكن أخرى على سبيل المثال:**

١. شركات ومصانع مستحضرات التجميل (Cosmetics Companies and Factories).
٢. شركات ومصانع المكملات الغذائية (Dietary Supplements & Nutraceuticals Companies and Factories).
٣. شركات ومصانع منتجات الأعشاب والنباتات الطبية (Herbal Products and Medicinal Plants Companies and Factories).
٤. شركات ومصانع المطهرات (Disinfectants and Pesticides Companies and Factories).
٥. مؤسسات الطب الشرعي (Forensic Medicine Institutions)
٦. المراكز البحثية (Research centers).

خامسا: الدورات التدريبية

مدة البرنامج التدريبي لسنة الإمتياز ستة وثلاثون (٣٦)أسبوعًا علي الا تقل الدورة الواحدة عن 180 ساعة، ويشمل البرنامج التدريبي ست (٦) دورات تدريبية تناوبية مدة كل دورة ستة (٦) أسابيع على ان يكون منها عدد (٤) دورات تدريبية اجبارية وعدد (٢) دورة تدريبية اختيارية على النحو التالي:

أولا: الدورات الإجبارية: تشمل أربع (٤) دورات تدريبية لجميع المتدربين على النحو التالي:

١. **دورة تدريبية في صيدليات المستشفيات والصيدليات العامة والخاصة.**
٢. **دورة تدريبية في الصيدلة الإكلينيكية.**
٣. **دورة تدريبية في تصنيع وتسجيل المستحضرات الصيدلية.**
٤. **دورة مشروع بحثي تطبيقي**

ثانيا: الدورات الاختيارية: تشمل دورتين تدريبيتين على النحو التالي:

١. **برنامج بكالوريوس الصيدلة (فارم دي-PharmD):** دورتين في مجالات تصنيع وتنظيم تداول الدواء ويتم اختيارها من البرامج المطروحة.

٢. **برنامج بكالوريوس الصيدلة (فارم دي- PharmD) صيدلة اكلينيكية:** دورتين في مجال الصيدلة الاكلينيكية ويتم اختيارها من البرامج المطروحة.

- **أمثلة للدورات في مجالات تصنيع وتنظيم تداول الدواء:**
  - تطوير المستحضرات الصيدلانية Pharmaceutical Product Development
  - دورة إدارة الجودة في صناعة الدواء Quality Management in Pharmaceutical Industry
  - اليقظة الدوائية Pharmacovigilance
  - التفتيش التنظيمي الصيدلي Pharmaceutical Regulatory Inspection
  - دورة اكتشاف وتطوير الدواء Drug Discovery and Development
  - المبيعات والتسويق الدوائي Pharmaceutical Sales & Marketing
  - التصنيع الدوائي Pharmaceutical Production
  - دورة الجودة من خلال التصميم والتكنولوجيا التحليلية للعمليات Quality by Design and Process Analytical Technology (QbD & PAT)

- **أمثلة للدورات في مجالات الصيدلة الإكلينيكية:**
  - علاجيات أمراض: (القلب، والصدرية والباطنة، الجراحة، الكلى والمسالك البولية، النفسية والعصبية، صحة المرأة ... إلخ)
    (Cardiology & pulmonology, internal medicine, surgery, nephrology & urology, neuropsychiatry, ...etc.)
  - علاجيات الأورام (Oncology)
  - علاجيات الأطفال (Pediatrics)
  - علاجيات العناية الحرجة (Intensive Care)
  - الصيدلة الإكلينيكية في دعم التغذية الإكلينيكية Clinical Nutrition Support
  - الدراسات السريرية (Clinical Studies)

وللجامعات اضافة دورات تدريبية اخرى لاستيعاب التطوير والتحديث المستمر في المجالات الصيدلية ولا يتم العمل بها إلا بعد موافقة لجنة قطاع الدراسات الصيدلية واعتمادها من المجلس الأعلى للجامعات.

- **دورة المشروع البحثي التطبيقي:**

تتولى وحدة التدريب بالكلية بالتنسيق مع الأقسام العلمية تحديد مشروع بحثي تطبيقي لكل مجموعة من المتدربين، وتشكيل لجان الإشراف والتقييم على المشروعات من أعضاء هيئة التدريس بالكلية ويمكن الاستعانة بعضو من جهة التدريب.

سادسا: ضمان تحقيق الجدارات (Competencies) المطلوبة للخريج

١. مجلس الكلية هو الجهة المسئولة ، من خلال وحدة التدريب وذلك بالتنسيق مع الجهات المنظمة للتدريب، عن ضمان تحقيق الجدارات المختلفة للمعايير الأكاديمية القومية المرجعية الصادرة من الهيئة القومية لضمان جودة التعليم والاعتماد في البرنامج التدريبي لسنة الامتياز وأساليب التقييم الملائمة لصيدلي الامتياز من أجل تحقيق المعايير الأكاديمية القومية المرجعية والتأكد من أن الخريج اكتسب الجدارات التي تواكب متطلبات سوق العمل الحديث ، وتضمن تحقيق التنافسية للخريجين وذلك على المستوى القومي والإقليمي والدولي.

٢. تتولى وحدة تدريب صيادلة الامتياز بالتنسيق مع وحدة ضمان الجودة بالكلية مهمة المراجعة الداخلية لبرنامج التدريب وإجراء استطلاع رأي صيادلة الامتياز وكذا استطلاع رأي جهات التدريب في البرنامج التدريبي ورفع تقرير لعميد الكلية يتضمن التغذية الراجعة ويقوم العميد بعرض التقرير على مجلس الكلية لاعتماده وإخطار لجنة قطاع الدراسات الصيدلية لإعداد خطط التطوير والتحسين.

سابعا: قواعد عامة

١- شروط الالتحاق ببرنامج التدريب الإجباري (الإمتياز) للصيادلة:

أ. اجتياز الطالب عدد الساعات الدراسية خلال السنوات الدراسية المنصوص عليها في اللائحة الأكاديمية لبرنامج بكالوريوس الصيدلة (فارم دي - PharmD) أو بكالوريوس الصيدلة (فارم دي– PharmD) - صيدلة إكلينيكية.

ب. اجتياز التدريب الميداني (مائة ساعة).

٢- مواعيد الالتحاق ببرنامج التدريب الإجباري (الإمتياز) للصيادلة

يبدأ البرنامج التدريبي في المواعيد الآتية:

أ. الأسبوع الأول من أكتوبر من كل عام، لجميع خريجي دور يونيو (فصل الربيع) والفصل الصيفي، وينتهي بنهاية شهر يونيو من العام التالي.

ب. الأسبوع الأول من مارس من كل عام، لخريجي دور يناير (فصل الخريف)، وينتهي بنهاية نوفمبر من نفس العام.

٣- الدورة المستندية

أ. تتولى وحدة تدريب صيادلة الامتياز إخطار جميع خريجي الكلية بموعد بدء البرنامج التدريبي لسنة الامتياز فور إعلان نتائج مرحلة السنوات الدراسية الخمس.

ب. تقوم كل كلية بإعداد وتصميم كتيب التدريب (Training Logbook) للطلاب والمدربين والمشرفين ونماذج التقييم.

ت. تقوم وحدة التدريب بتسليم كتيب التدريب لكل متدرب (صيدلي الامتياز) في بداية كل دورة، ويقوم بدوره بتسليم كتيب التدريب الخاص به في كل دورة لمسئول التدريب في موقع التدريب.

ث. في نهاية كل دورة تدريبية يقوم مسئول التدريب بتسليم صيدلي الامتياز كتيب التدريب لاعتماده من وحدة التدريب بالكلية وبعد ذلك يقوم صيدلي الامتياز بتسليمه لمسئول التدريب في موقع تدريب الدورة التالية.

ج. عند نهاية برنامج التدريب كاملاً يقوم الطالب بتسليم كتيب التدريب لوحدة التدريب بالكلية لاعتماده.

ح. أي كشط أو تعديل في نماذج التقييم بكتيب التدريب يجب أن يكون موقعا ومعتمدا من جهة التدريب مع ذكر سبب التعديل وإلا يعد صيدلي الامتياز هو المسئول عن ذلك وتتم مسائلته.

خ. يمكن للكليات أن تقوم بإعداد نماذج إلكترونية لكتيب التدريب للتداول عن طريق البريد الإلكتروني لاختصار الوقت وتسهيل الإجراءات. على أن يشمل كتيب التدريب: قائمة بالدورات التدريبية لكل متدرب، المهارات والمخرجات المستهدفة لكل دورة تدريبية، لجنة الإشراف على التدريب في كل دورة، استمارة تقييم أداء المتدرب في كل دورة تدريبية، المشروع البحثي التطبيقي (الوصف، لجنة الإشراف، استمارة التقييم).

٤- الإشراف على التدريب:

- يتم تشكيل لجنة مشتركة من أحد أعضاء هيئة التدريس (تحدده وحدة التدريب بالكلية) وعضو من جهة التدريب (تحدده جهة التدريب).
- تقوم اللجنة بالإشراف والمتابعة المستمرة على التدريب وتقييم أداء صيدلي الامتياز خلال فترة التدريب بكل دورة والتوقيع على كتيب التدريب الخاص به.
- يقوم مشرف التدريب بالكلية بعمل الزيارات الميدانية لجهة التدريب للتأكد من الحضور ومدى الالتزام بالمحتوى التدريبي للدورة.

٥- حقوق الصيدلي خلال برنامج التدريب الإجباري (الإمتياز)

يتمتع صيدلي الامتياز خلال برنامج التدريب الإجباري (الإمتياز) بجميع الحقوق المنصوص عليها في المادة رقم (٩) باللائحة الموحدة لسنة التدريب الإجباري (الإمتياز) للصيادلة.

٦- واجبات وضوابط أداء صيادلة الامتياز:

أ. احترام القوانين واللوائح الخاصة بجهة التدريب، والحفاظ على آداب وأخلاقيات مهنة الصيدلة.
ب. الالتزام بتعليمات وإرشادات مسؤول التدريب بالكلية ومشرف التدريب بجهة التدريب ويتم تقييم أداء المتدرب بصفة مستمرة وتوجيهه أثناء فترة التدريب.
ت. الالتزام بالحضور والانصراف في مواعيد العمل الرسمية لجهة التدريب وفقاً للوائح المنظمة للعمل بمواقع التدريب.
ث. التعامل مع فريق العمل والزملاء في مواقع العمل بقدر من الخلق والاحترام يعكس صورة الجامعة والكلية التي ينتمي إليها.
ج. المحافظة على سرية المعلومات الخاصة بجهات التدريب المختلفة وعدم الإفصاح عنها، وفقًا للقواعد المقررة في جهة التدريب.
ح. تسليم نماذج التقييم المعتمدة من جهة التدريب إلى وحدة التدريب بالكلية فور انتهاء الدورة التدريبية.
خ. إذا صدر من صيدلي الامتياز أي سلوك غير لائق على مسئول التدريب إخطار الكلية بذلك لتقوم إدارة الكلية باتخاذ الإجراء المناسب.

٧- التقييم

أ. يتم عمل كتيب التدريب (log book) لكل متدرب منذ بدء السنة التدريبية بحيث يحتوي على جميع نماذج التقييم وأيضا جميع الأوراق الخاصة به خلال الدورة التدريبية لمتابعة درجة تقدم أداء المتدرب اثناء التدريب.
ب. يتم تقييم أداء صيدلي الإمتياز في كل دورة تدريبية طبقاً لنماذج التقييم الموضحة في دليل التدريب.
ت. لا يتم احتساب النتيجة التي حصل عليها المتدرب في سنة الامتياز ضمن مجموعه التراكمي عند التخرج.

٨- ضوابط عامة لتنفيذ برنامج التدريب الإجباري (الإمتياز) للصيادلة

أ. **استبدال مواقع التدريب:** تقوم وحدة التدريب في الكلية بالتنسيق مع الجهة المسؤولة عن التدريب بالنظر في الموافقة على طلبات تغيير أماكن التدريب لنفس الدورة التدريبية.

ب. **استبدال دورات التدريب:** يجوز الترخيص للمتدرب في حال عدم اجتياز دورة تدريبية أو أكثر أن يستبدلها في الإعادة بدورة أخرى في نفس المجموعة التدريبية بعد موافقة وحدة التدريب بالكلية والجهة المسؤولة عن التدريب.

ت. **تأجيل التدريب:** يجوز الترخيص لصيدلي الامتياز بتأجيل التدريب في دورة تدريبية أو أكثر من دورات برنامج التدريب بناءً على طلب يقدم لوحدة التدريب بالكلية مؤيدًا طلبه بالأسباب والمستندات، ويقبله مجلس الكلية، على أن تعد الحالات المرضية من الأعذار القهرية والتي يتعين قبولها شريطة تقديم تقريرًا طبيًا معتمدًا من الجهة المختصة، على أن يتم إعادتها في الموعد الذي يقرره مجلس الكلية بالتنسيق مع الجهة المسؤولة عن التدريب.

ث. يجوز لصيادلة **الامتياز الوافدين أو المصريين** بعد موافقة وحدة التدريب ومجلس الكلية قضاء **سنة** التدريب الإجباري (الامتياز) أو عدد من الدورات التدريبية **خارج جمهورية مصر العربية** على أن يقدم المستندات الرسمية التي تفيد اجتيازه جميع الدورات التدريبية المقررة بالبرنامج التدريبي لمجلس الكلية.

ج. تتولى وحدة تدريب صيادلة الامتياز تحديد لجان الإشراف للدورات التدريبية، وتحديد المشروع البحثي التطبيقي لكل مجموعة من الطلاب، وتشكيل لجان الإشراف والتقييم.

٩- أجازات صيادلة الامتياز:

يقدم طلب الأجازة إلى وحدة التدريب بالكلية ويتم اعتمادها من مجلس الكلية وأخطار جهة التدريب بها فور قبولها، ويجوز منح صيدلي الإمتياز خلال السنة التدريبية الأجازات الآتية:

١. أجازه عارضة لمدة (٥) خمسة أيام خلال سنة الإمتياز وذلك لسبب طارئ يتعذر معه الحصول على أجازه أخرى.
٢. أجازة اعتيادية لمدة (١٥) خمسة عشر يوماً خلال سنة الإمتياز بحد أقصى ثلاثة أيام في الدورة التدريبية الواحدة وبما لا يتجاوز النسبة المقررة للغياب.
٣. الأجازة المرضية، أجازه الوضع، وأجازه رعاية الطفل على أن تعوض بفترة مماثلة قبل منح شهادة الإمتياز، وإذا تجاوزت الاجازة النسبة المقررة لاجتياز الدورة التدريبية فإنه يلزم إعادة تلك الدورة التدريبية كاملة، دون باقي الدورات التي تم اجتيازها، شريطة عدم مرور عامين بحد أقصي على اجتياز آخر دورة تدريبية.

١٠- الجزاءات والتظلمات:

يتم تطبيق الجزاءات وطريقة التظلم طبقا لنص المادة (١٩) باللائحة الموحدة لسنة التدريب الإجباري (الامتياز) للصيادلة.

ثامنا: شروط اجتياز سنة الامتياز

١. اجتياز صيدلي الامتياز ست دورات تدريبية بنجاح (كما هو موضح في بند الدورات التدريبية) ويتم اعتمادها من مجلس الكلية.
٢. الحصول على ٦٠% من إجمالى درجات أو نقاط الدورة كحد أدنى لاجتياز الدورة التدريبية بنجاح طبقا لنماذج التقييم التي تعمدها الكلية.
٣. نسبة حضور لا تقل عن ٧٥% في كل دورة تدريبية.

في حال عدم اجتياز صيدلي الامتياز دورة تدريبية أو أكثر يتم إعادة الدورات التي لم يجتزها مع بداية برنامج التدريب اللاحق أو في الموعد الذي يقرره مجلس الكلية.

تاسعا: شهادة اجتياز برنامج التدريب (الامتياز)

- تمنح شهادة اجتياز برنامج التدريب الإجباري (الإمتياز) من الكليات موضحة أسماء الدورات وإجمالي عدد ساعات التدريب لكل دورة، وتصدر نسخة باللغة العربية وأخرى باللغة الإنجليزية.

- يؤهل اجتياز برنامج التدريب الإجباري (الامتياز) خريجي كليات الصيدلة للعمل بعد الحصول على شهادة التدريب الإجبارى (الإمتياز) المعتمدة.
- يشترط للحصول على شهادة الامتياز اجتياز ست دورات تدريبية (كما هو موضح فى بند الدورات التدريبية).
- يقوم الصيدلي بسداد الرسوم المقررة للحصول على الشهادة طبقاً للقواعد المعمول بها.

عاشرا: أمثلة للدورات التدريبية

يشتمل هدا الجزء على أمثلة للدورات التدريبية مع توصيف كامل للدورات التدريبية فى مجال تصنيع وتنظيم تداول الدواء وعلى توصيف موجز للدورات التدريبية فى مجال الصيدلة الإكلينيكية.

الـــــدورات التـــــدريبية
أ- الدورات الإجبارية
A) Obligatory Rotations

١- دورة الصيدليات
1- Pharmacy Based Rotation

Outline:

Item	Design
Rotation Title	Pharmacy Based Rotation
Rotation Type	Obligatory
Rotation Duration	6 weeks
Mode of Delivery	On-site

دورة الصيدليات (دورة اجبارية)

خلال هذه الدورة، من المتوقع أن يتعرض المتدرب لدورة إدارة الدواء داخل إحدى الصيدليات سواء صيدليات عامة (صيدليات المجتمع) أو صيدليات خاصة او صيدليات المستشفيات.

يمكن للمتدربين حضور أي من مواقع التدريب التالية أو الجمع بين موقعين أو ثلاثة مواقع لمدة ستة أسابيع، مع الأخذ في الاعتبار ألا يتجاوز تدريب تحضير المحاليل الوريدية ثلاثة أسابيع.

Pharmacy Based Rotation (Mandatory)

During this rotation, the trainee is expected to be exposed to the medication use cycle within one of the pharmacy settings mentioned below (1-3) whether in the community or in the hospital. Trainees can attend any of the following practice sites or a combination of two or three sites for a total of six weeks, taking into consideration that the IV admixing preparation training should not exceed three weeks.

أ- الصيدليات العامة والخاصة (صيدليات المجتمع) (٣-٦ أسابيع)

تلتزم دورة ممارسة صيدلة المجتمع بتزويد المتدربين بمجموعة متنوعة من تجارب رعاية المرضى لتعزيز مهاراتهم ليصبحوا صيادلة مجتمع مثاليين. خلال هذه الدورة، يتعرض المتدرب لجميع الجوانب المهمة لممارسة صيدلة المجتمع المعاصرة من خلال العمل مع وتحت إشراف صيدلي مسجل. خلال هذه الدورة يقوم المدرب بتقييم الخبرات السابقة للمتدرب في مجال صيدلة المجتمع ووضع أهداف للدورة التي تكمل وتبني على خبرة المتدرب والخطط المستقبلية.

a - Community Pharmacy (3-6 Weeks)

Objective:

The community-based advanced pharmacy practice experience is committed to providing trainees with a variety of patient care experiences including technical and clinical services to enhance their skills to become exemplary community pharmacists. During this rotation, the trainee will be exposed to all the important aspects of contemporary community pharmacy practice by working with and under the direction of a registered pharmacist preceptor. The preceptor should evaluate the trainee's experience in community pharmacy and establish goals for the rotation which complement and build on the trainee's experience and future plans.

Learning Outcomes (LOs):
After the completion of this rotation, the trainee should be able to:

- Demonstrate and provide the appropriate pharmaceutical technical services related to the community practice
- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making.
- Identify drug related problems and adverse drug reactions (ADRs).
- Develop and implement pharmaceutical care plans pertaining to the community practice
- Communicate effectively and provide competent counselling services
- Demonstrate professionalisms and ethical practice

ب- صيدليات المستشفيات (٣-٦ أسابيع)

هي دورة تقدم داخل صيدلية المستشفى. الهدف الرئيسي من هذه الدورة هو تعريف المتدرب وتطوير معارفه ومهاراته في مجال عمليات وخدمات صيدليات المستشفى (على سبيل المثال، صيدلية العيادات الخارجية، صيدلية المرضى الداخليين، وحدة سلسلة الإمداد، الخ).

تتيح هذه الدورة للمتدربين التعرف على الخدمات الفنية والإدارية للصيدلي في المستشفى. وهذا يشمل إدارة العلاج الدوائي الأساسي والخاص بالإضافة إلى أنشطة رعاية المرضى المباشرة.

خلال هذا التدريب، من المستهدف أن يتعرف المتدرب على جميع الجوانب المهمة لممارسة صيدلة المستشفيات المعاصرة من خلال العمل مع وتحت إشراف صيدلي مسجل. يجب على المدرب تقييم الخبرة السابقة للمتدرب في مجال صيدلية المستشفى ووضع أهداف للتناوب التي تكمل وتبني على خبرة المتدرب والخطط المستقبلية.

في هذه الدورة، من المستهدف أن يقوم المتدرب بتطبيق المعرفة والخبرة المتقدمة في العمليات والوظائف التي يتم تنفيذها داخل خدمات صيدلية المستشفى.

b- Institutional/Hospital Pharmacy **(3-6 weeks)**

Objective:
In this rotation, the trainee is expected to apply knowledge and advanced experience in the processes and functions carried within the hospital pharmacy services. The main aim of this rotation is to introduce the trainee and develop their knowledge and skills in hospital pharmacy operations and services (e.g., outpatient pharmacy, inpatient pharmacy, supply chain unit, pharmacy administration...etc.). These activities will allow the trainees to recognize the pharmacist's technical and administrative services in the hospital. including basic and special drug therapy management in addition to direct patient care activities.

The hands-on exposure of the trainees to all the important aspects of contemporary hospital pharmacy practice is achieved by working with and under the direction of a registered

pharmacist preceptor and other pharmacy personnel. The preceptor should evaluate the trainee's experience in hospital pharmacy and establish goals for the rotation which complement and build on the trainee's experience and future plans.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Demonstrate and provide the appropriate pharmaceutical technical services related to the Institutional/Hospital practice
- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making
- Identify drug related problems and adverse drug reactions (ADRs)
- Develop and implement pharmaceutical care plans pertaining to the community practice
- Communicate effectively and provide competent counselling services
- Demonstrate professionalisms and ethical practice

ج- تحضير المحاليل الوريدية (٣ أسابيع)

ستقوم هذه الدورة على إعداد المتدرب لتحضير المركبات المعقمة والأدوية الخطرة وجميع جوانب المناولة من استلام المواد إلى الفحص النهائي أو التخلص منها.

c- Intravenous (IV) Admixing Preparation (3 weeks)

Objective:

This rotation will prepare the trainee on the preparation of sterile compounds, hazardous/radiopharmaceutical medications, and all aspects of handling from receiving materials to final examination or disposal.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Demonstrate and provide the appropriate pharmaceutical technical services related to the IV admixing practice
- Communicate effectively and provide competent counselling services.
- Demonstrate professionalisms and ethical practice

٢- دورة الصيدلة السريرية فى الطب العام للبالغين
2- Clinical Pharmacy Rotation in Adult General Medicine

Outline:

Item	Design
Rotation Title	Clinical Pharmacy Rotation in Adult General Medicine
Rotation Type	Obligatory
Rotation Duration	6 weeks
Mode of Delivery	On-site

دورة الصيدلة السريرية في الطب العام للبالغين **(٦ أسابيع)**

الغرض من هذه الدورة هو تطوير الكفاءات المعرفية للمتدربين والمهارات السريرية المطلوبة للتعامل باحتراف مع مجموعة واسعة من الحالات المتعلقة بالأمراض المختلفة (على سبيل المثال، أمراض الغدد الصماء، أمراض الجهاز الهضمي، أمراض الكلي، أمراض القلب وغيرها من الأمراض المزمنة) وتقديم الرعاية الصيدلانية المطلوبة لهؤلاء المرضى.

خلال هذه الدورة، سيقضي المتدرب ٦ أسابيع في موقع التدريب وسيعمل المتدرب عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The purpose of this rotation is to develop the trainees' knowledge- based competencies and clinical skills required to deal professionally with a wide range of general medicine-related diseases (endocrine (e.g., endocrine disorders, gastrointestinal disorders, renal disorders, cardiovascular disorders, and other chronic conditions) and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at any adult general medicine rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making
- Identify drug related problems and adverse drug reactions
- Develop and implement pharmaceutical care plans pertaining to the internal medicine practice
- Communicate effectively and provide competent counselling services
- Demonstrate professionalisms and ethical practice

٣- دورة الدواء: من التسجيل الى التسويق
3- Drug Tour: Registration to Market Rotation

Outline:

Item	Design
Rotation Title	Drug Tour: Registration to Market
Rotation Type	Obligatory
Rotation Duration	6 weeks
Mode of Delivery	On-site / Online

Description:

This rotation aims to provide an overview of various stages of the pharmaceutical industry. Trainees will be exposed to the regulatory requirements for registration. Multiple stages of the product life-cycle will be covered according to the following pillars:

Pillar 1: Regulatory overview on the registered pharmaceutical and biological products

Pillar 2: Regulation overview of the registration of Medical Devices and in-vitro diagnostic medical devices (IVDs)

Pillar 3: Overview on bioavailability and bioequivalence studies

Pillar 4: Overview on Good Manufacturing Practice (GMP)

Pillar 5: Pharmaceutical inspection and knowledge of the application of pharmacy laws and inspection tasks

Pillar 6: Quality Control of Pharmaceutical Products in EDA Labs

Pillar 7: Over- The-Counter Marketing of drugs, Application, Approaches and Principals

Pillar 8: How to Regulate Insert Leaflet and Promotional material

Pillar 9: Regulatory Overview on Pharmacovigilance Practice

PILLAR 1: Regulatory overview on the registered pharmaceutical and biological products

المحور الأولي: نظرة عامة تنظيمية علي المستحضرات الصيدلية و البيولوجية المسجلة:

يهدف هذا المحور إلى التعريف بالدراسات اللازمة لضمان جودة المستحضرات الصيدلية بالرجوع إلى الإرشادات الدولية المتبعة وتسليط الضوء على إرشادات عملية التسجيل.

Objective:

This pillar aims to introduce the necessary studies to ensure the quality of pharmaceutical products in reference to the international guidelines followed and highlight on the registration process guidelines.

Learning Outcomes (LOs):

After completion of this pillar, the intern pharmacist should be able to:

1- Define different pharmaceutical products with their different forms (human, veterinary, herbal and cosmetics).
2- Define biological products and their derivatives.
3- Understand how to register pharmaceutical products according to international guidelines.
4- Comprehend how to prepare registration files of pharmaceutical products according to EDA regulatory guidelines.
5- Know how to register biological products according to the international guidelines.
6- Comprehend how to prepare registration files of biological products according to EDA regulatory guidelines.

7- Know the components of the unified technical file (Common Technical Document – CTD & eCTD files).
8- Identify international institutions regulating the registration and trading of pharmaceutical products such as (WHO, EMA, FDA).

PILLAR 2: Regulation overview of the registration of Medical Devices and in-vitro diagnostic medical devices (IVDs)

المحور الثاني: نظرة عامة على اللائحة التنظيمية لتسجيل الأجهزة الطبية والأجهزة الطبية التشخيصية المعملية:

يهدف هذا المحور إلى التعريف بالدراسات اللازمة لضمان جودة المستلزمات الطبية بالرجوع إلى الإرشادات الدولية المتبعة وتسليط الضوء على الإرشادات الحديثة.

Objective:

This pillar aims to introduce the necessary studies to ensure the quality of medical supplies in reference to the international guidelines followed and highlight on the recent guidelines.

Learning Outcomes (LOs):
After completion of this pillar, the intern pharmacist should be able to:
1- Define the medical device.
2- Recognize how to register the medical device and *in-vitro* diagnostic medical devices (IVDs) in accordance with international guidelines.
3- Know how to prepare registration files and the current regulatory decrees.
4- Identify medical devices classification.

PILLAR 3: Overview on bioavailability and bioequivalence studies

المحور الثالث: نظرة عامة على دراسات التوافر والتكافؤ الحيوي:

يهدف هذا المحور إلى تقديم الدليل التنظيمي المصري لإجراء دراسات التكافؤ الحيوي ودراسات الذوبان المعملية على المستحضرات الصيدلية. بالإضافة إلى مناقشة الظروف التجريبية. كما سيوفر المعلومات اللازمة حول كيفية عمل تصميمات دراسات التكافؤ الحيوي، بما في ذلك معايير اختيار المتطوعين، وحركية الدواء، وتقييم الإحصاءات، وتسليط الضوء على المعايير في المستحضرات الصيدلية المعفاة.

Objective:

This pillar aims to introduce Egyptian Guidelines for conducting Bioequivalence Studies and *in-vitro* dissolution studies on pharmaceutical products. In addition to discussing the experimental conditions. Also, it will provide the needed information how to make bioequivalence study designs, including subject selection criteria, pharmacokinetics, and statistics evaluation, highlight on the criteria in the exempted pharmaceutical products.

Learning Outcomes (LOs):
After completion of this pillar, the intern pharmacist should be able to:
1- Identify the importance of Bioequivalence in drug registration.
2- Recognize a brief introduction about bioequivalence study.
3- Recognize a brief introduction about *in-vitro* dissolution study.
4- Understand the Egyptian guidelines for conducting bioequivalence studies.

5- Know the licensing process of bioequivalence and bioavailability centers approved by EDA.

PILLAR 4: Overview on Good Manufacturing Practice (GMP)

المحور الرابع: نظرة عامة على ممارسات التصنيع الجيدة:

يهدف هذا المحور إلى التعريف بالمتطلبات الأولية لممارسات التصنيع الجيدة ونظام الجودة في مصانع الأدوية وفقا لأحدث المراجع العالمية والخبرة العلمية والعملية للمتدربين.

Objective:

This pillar aims to introduce the initial requirements of good manufacturing practice and quality system in pharmaceutical factories according to the latest international references and the scientific and practical experience of trainees.

Learning Outcomes (LOs):

After completion of this pillar, the intern pharmacist should be able to:

1- Identify basic principles of Good Manufacturing Practices.
2- Recognize Good documentation system (How to control and validate data integrity from regulatory point of view).
3- Understand Good documentation system (Manufacturing point of view).
4- Recognize the guidelines of assurance system for good cleaning and public health (Cleaning Validation).
5- Understand systems for the qualification and verification of equipment and devices.
6- Identify raw material management systems, good storage, and warehouses, ensuring and applying safety measures in every step, and good storage conditions of warehouses.

PILLAR 5: Pharmaceutical inspection and knowledge of the application of pharmacy laws and inspection tasks

المحور الخامس: التفتيش الصيدلي ومعرفة تطبيق قوانين الصيدلة ومهام التفتيش:

يهدف هذا المحور إلى التعريف بإجراءات التفتيش المتبعة لإحكام الرقابة على سوق الدواء المصري .بالإضافة إلى تسليط الضوء على المتطلبات الأساسية للتخزين والتوزيع الجيد الواجب توافرها في جميع الكيانات الصيدلية والمخازن والمستودعات وشركات التوزيع، توضيح المخالفات الأكثر شيوعاً وذلك طبقاً لاشتراطات التخزين والتوزيع الجيد الدولية لضمان توافر مستحضرات طبية آمنة وفعالة وذات جودة عالية في السوق المصري.

Objective:

This pillar aims to introduce the inspection procedures followed to tighten control over the Egyptian drug market. In addition to highlight on the essential requirements for good storage and distribution that must be met in all pharmaceutical entities, stores, warehouses, and distribution companies. To clarify the most common violations in accordance with international Good Storage and Distribution requirements to ensure the availability of safe, effective, and high-quality medical preparations in the Egyptian market.

Learning Outcomes (LOs):

After completion of this pillar, the intern pharmacist should be able to:

1- Identify licensing procedures for the stores, warehouses, and distribution companies of pharmaceutical and biological products.
2- Recognize pharmaceutical inspection laws and regulations.
3- Understand the controlling method on licensed pharmaceutical entities.
4- Recognize the control over pharmaceutical establishments (factories -stores - pharmacies.).
5- Identify narcotic drugs usage laws and how to apply in market.
6- Practice reports writing for tests and checklists.
7- Prepare regulatory inspection reports, warning letters and recalls.

PILLAR 6: Quality Control of Pharmaceutical Products in EDA Labs

المحور السادس: مراقبة جودة المستحضرات الصيدلية بمعامل هيئة الدواء المصرية:

يهدف هذا المحور إلى التعريف بالمبادئ العامة لمراقبة جودة المستحضرات الصيدلية مع التركيز على السلامة والفاعلية والتوافق بالإضافة إلى طرق التقييم كاختبارات قابلة للتطبيق للخصائص الكيميائية والفيزيائية والميكرو بيولوجية للمستحضرات الصيدلية.

Objective:

This pillar aims to introduce the general principles of Quality Control for Pharmaceutical Products with emphasis on the Safety, Efficacy and Compliance in addition to assessment methods as applicable tests of chemical, physical, and microbiological properties of pharmaceutical products.

Learning Outcomes (LOs):

After completion of this pillar, the intern pharmacist should be able to:

1- Identify the basic concepts of Total Quality Management (TQM) and Quality Management System (QMS).
2- Perform the physicochemical analysis of Pharmaceutical Products (Basics).
3- Execute the microbiological analysis of pharmaceutical products (Basics).
4- Recognize good laboratory and inspection practices (Basics).
5- Accomplish practical training.

PILLAR 7: Over- The-Counter Marketing of drugs, Application, Approaches and Principals

المحور السابع: التسويق والتطبيق والنهج والمبادئ للأدوية بدون وصفة طبية:

يهدف هذا المحور إلى تقديم عدد من الموضوعات المثيرة للاهتمام فيما يتعلق بجوانب ممارسة الصيدلة المجتمعية مثل نظام بدون وصفة طبية (OTC) ، حيث يحدد معايير ولوائح المستحضرات التي لا تستلزم وصفة طبية ، ويسلط الضوء على تطبيق نظام جديد لاعتماد الأدوية التي تصرف بدون وصفة طبية، وما هي الأخطاء الدوائية الشائعة وكيفية الإبلاغ عنها ، بالإضافة إلى الاستخدام الرشيد للأدوية المضادة للميكروبات.

Objective:

This pillar aims to introduce a number of interesting topics concerning community pharmacy practice aspects as Over the counter (OTC) system, in which, it defines the OTC products criteria and regulations, highlight on the implementation of new system for approving OTC drugs, what

are common medication errors and how to report them, in addition to the rational use of anti-microbial agents.

Learning Outcomes (LOs):

After completion of this pillar, the intern pharmacist should be able to:

1- Define a pharmaceutical product as an OTC.
2- Recognize the approved national list of OTC drugs.
3- Know EDA regulations for the registration of OTC products.
4- Identify the role of outpatient (community) Pharmacist in reporting emergency and medical errors.
5- Understand the restrictions on dispensing antimicrobial agents on the OTC.
6- Realize pharmacy outpatient role in patient counseling on the OTC usage.

PILLAR 8: How to Regulate Insert Leaflet and Promotional material

المحور الثامن: كيفية تنظيم إدراج النشرة والمواد الترويجية:

يهدف هذا المحور إلى إعطاء لمحة عامة عن أهم الركائز في توفير معلومات كاملة عن الخصائص الدوائية للأدوية. تسليط الضوء على المرجع الأكثر اعتمادا لبيانات الدواء دوليا. تسليط الضوء على تطبيق المعلوماتية الصيدلية الذي تجريه هيئة الدواء المصرية. مقدمة حول تطبيق Promat والمبادئ التوجيهية السريعة والترويجية باعتبارها ركائز للمعلومات .الالمام بأهم المراجع الصيدلية والمعلوماتية كعصر جديد للتكنولوجيا وأيضا تقديم جلسة عملية للتأكيد على الجانب العلمي.

Objective:

This pillar aims to give an overview on the most important pillars in providing full information about the pharmacological characteristics of drugs. Highlight on the most accreditable reference for data providence of drug internationally. Highlight on the Pharmacy informatics application conducted by EDA. Introduction on the Promat application and prompt and promotional guidelines as Pillars of information and SmPC. The most important pharmaceutical References, informatics new era for technology and also provide practical session to emphasize on the scientific part.

Learning Outcomes (LOs):

After completion of this pillar, the intern pharmacist should be able to:

1- Define promotional materials and learn how to prepare and control them.
2- Identify SmPC and PIL: pillars of information.
3- Recognize the most important pharmacological and drug references.
4- Determine pharmacy informatics application.
5- Discern drug information resources and search approaches.
6- State drug regulatory authorities in reference countries.
7- Navigate through pharmaceutical references *via* practical training.

PILLAR 9: Regulatory Overview on Pharmacovigilance Practice

المحور التاسع: نظرة عامة تنظيمية على ممارسة اليقظة الدوائية:

يهدف هذا المحور إلى التعريف بالعملية التنظيمية وممارسة اليقظة الدوائية في ثلاثة محاور مختلفة: شركات الأدوية والمستشفيات والصيدليات الأهلية مع تسليط الضوء على أهمية الإبلاغ عن اليقظة الدوائية في الحفاظ على سلامة المرضى وتوضيح طرق الإبلاغ عن الآثار الضارة وأهميتها.

Objective:

This pillar aims to introduce regulatory process and pharmacovigilance practice in 3 different pillars: Pharmaceutical companies, hospitals and public pharmacies with highlighting the importance of reporting pharmacovigilance in maintaining patient safety and clarifying the methods of adverse effects reporting and its importance.

Learning Outcomes (LOs):

After completion of this pillar, the intern pharmacist should be able to:

1- Understand the importance of Pharmacovigilance regulation system for pharmaceutical companies and the impact on drug registration.
2- Know the importance of Pharmacovigilance regulation to hospitals and health institutes.
3- Recognize Pharmacovigilance regulatory system channels of reporting for the public.
4- Tracking data of Pharmaceutical Products globally (new warnings or precautions).
5- Identify Risk Management Plan (RMP).
6- Recognize emerging safety issues (ESI) / Safety information.
7- Fulfill causality assessment of individual case safety reports (ICSRs).
8- Execute practical training on reporting to national database.

٤-المشروع البحثى التطبيقى
4- Applied Research Project

Outline:

Item	Design
Rotation Title	Project
Rotation Type	Obligatory
Rotation Duration	6 weeks
Mode of Delivery	On-site / Online

Description:

يمثل المشروع اختباراً حقيقياً للمتدرب إذ يكشف عن قدرته في التعامل مع أو حل المشكلات وابتكار حلول جديدة لها عن طريق تصميم مشروع باستخدام إحدى التقنيات التي أتم دراستها. كما يقدم المشروع تجربة فعلية مهمة للطالب تكون مقدمة للحياة العملية له إذ يعتمد الطالب في عمل المشروع على إبداعه اعتماداً كلياً.

أهداف المشروع:

١. تأهيل صيدلي الامتياز ليكون عنصراً فعالاً في شتى المجالات العلمية والعملية والبحثية.

٢. تدريب صيدلي الامتياز على استخدام معارفه وقدراته الكتابية والخطابية والبحثية والتنظيمية.
٣. إعطاء صيدلي الامتياز فرصة لتطبيق ما تعلمه وتنفيذ ذلك على أرض الواقع.
٤. إعطاء صيدلي الامتياز فرصة لممارسة وتطبيق أخلاقيات المهنة والعمل بروح الفريق قبل التحاقه فعلياً بالعمل.
٥. تنمية القدرة الابتكارية لدى صيدلي الامتياز.

ب- الدورات الإختيارية

A) Elective Rotations

١- الدورات الإختيارية فى مجال تصنيع وتنظيم تداول الدواء

1) Drug Manufacture and Regulations Elective Rotations

دورة تطوير المستحضرات الصيدلانية
Pharmaceutical Product Development Rotation

Outline:

Item	Design
Rotation Title	Pharmaceutical Product Development
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of Delivery	On-site / Online

دورة تطوير المستحضرات الصيدلانية

تهدف هذه الدورة إلى تعريف المتدربين بمختلف جوانب البحث والتطوير في صناعة الأدوية. وتشمل المواضيع حقوق الملكية الفكرية، والبحث العلمي والمراحل المتعددة لتطوير المستحضرات الصيدلانية؛ الصياغة وتطوير طرق تحليل الأدوية والتحقق من صحتها بالإضافة إلى الدراسات المختلفة اللازمة لتقييم جودة التشغيلات التجريبية والإنتاجية للمستحضرات الصيدلانية النهائية مثل دراسات الثبات والتكافؤ الحيوي. وستغطي الدورة أيضًا المتطلبات التنظيمية لتسجيل المستحضرات الصيدلانية وإعداد ملف CTD.

Objective:

This rotation aims to expose the trainees to various aspects of research and development in the pharmaceutical industry. Topics include intellectual property rights, literature search and multiple stages of pharmaceutical product development; formulation, analytical method development and validation as well as various studies required for quality assessment of the pilot and production batches of finished pharmaceutical products such as stability and bioequivalence studies. The program will also cover the regulatory requirements for the registration of pharmaceutical products and the preparation of a dossier in CTD format.

Learning Outcomes (LOs):

After completion of this rotation, the intern pharmacist should be able to:

1- Review the specifications of raw materials and pharmaceutical products according to the latest editions of pharmacopoeias.
2- Know and follow references and guidelines for conducting performance, stability, comparative dissolution, and bioequivalence studies on pharmaceutical products.
3- Recognize the development process stages for new formulations, from initial planning to production.
4- Participate in the design and conduct of laboratory experiments on different pharmaceutical dosage forms, for example, dissolution, disintegration, friability, hardness, content uniformity, weight variation, etc.…
5- Engage in conducting stability studies on finished products, follow-up them in stability chambers, and conduct the required stability tests.
6- Participate in designing and conducting comparative dissolution and/or bioequivalence studies for pharmaceutical products (Generic *versus* Innovator).
7- Collaborate in the analytical method development and validation.
8- Investigate any problem that appears during the production of new pharmaceutical products and take preventive measures (Troubleshooting).
9- Apply Good Laboratory Practices (GLP) and Good Pharmaceutical Manufacturing Practices (cGMP).
10- Participate in recording, analyzing, and interpreting test results and processing them statistically.
11- Identify and prepare the Common Technical Document (CTD & eCTD files) and their components.
12- Demonstrate responsibility, cooperate, and integrate effectively with research team members.
13- Demonstrate effective communication skills verbally, non-verbally with research team members.

دورة إدارة الجودة في صناعة الدواء
Quality Management in Pharmaceutical Industry Rotation

Outline:

Item	Design
Rotation Title	Quality Management in Pharmaceutical Industry
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site / Online

دورة إدارة الجودة في صناعة الدواء

تهدف هذه الدورة إلى تزويد المتدربين بالمفاهيم الأساسية لإدارة الجودة الشاملة، وأنظمة إدارة الجودة، والعناصر المختلفة لضمان الجودة (QA) ومراقبة الجودة(QC) ، وممارسات التوثيق الجيدة، ... إلخ. سيكون المتدرب قادرًا على

مراجعة وتقييم نماذج إجراءات التشغيل القياسية(SOPs) ، وإجراء عمليات التدقيق، وتحديد حالات عدم المطابقة، واقتراح الإجراءات التصحيحية اللازمة. وسيتم أيضًا مناقشة مفاهيم أنظمة إدارة السجلات الصيدلانية وسلامة البيانات. سيتم شرح المؤهلات والصلاحيات للشخص المسؤول عن عمليات إطلاق التشغيلات الإنتاجية من خلال سلسلة من دراسات الحالة. سيتم تعريف المتدربين أيضًا بمعايير ISO ذات الصلة بصناعة الأدوية ومتطلبات الاعتماد.

Objective:

This rotation aims to provide the trainees with the basic concepts of total quality management (TQM), quality management systems (QMS), various elements of quality assurance (QA) and quality control (QC), good documentation practice, ... etc. Trainees will be able to review and evaluate models of standard operating procedures (SOPs), perform audits, identify nonconformities, and propose the necessary corrective actions. The concepts of pharmaceutical record management systems and data integrity will be also discussed. Qualifications and authorities for the person in charge of batch release operations will be explained through a series of case studies. Trainees will be introduced also to the relevant ISO standards for the pharmaceutical industry and requirements for accreditation.

Learning Outcomes (LOs):

After completion of this rotation, the intern pharmacist should be able to:

- *Quality Control (QC):*

1- Identify and participate in QC tests of raw materials: procedures, significance, and troubleshooting.
2- Recognize and collaborate in QC tests of finished products: procedures, significance, and troubleshooting.
3- Prepare quality control (QC) reports.
4- Engage in the analytical method development and validation.
5- Identify and apply standard operating procedures (SOPs) for operation, validation and calibration of different instruments and devices.
6- Apply Good Laboratory Practices (GLP) and data integrity in QC.

- *Quality Assurance (QA):*

7- Monitor different production lines.
8- Recognize Good Documentation Practice and Data Integrity.
9- Understand the basic concepts of Total Quality Management (TQM), Quality Management System (QMS) and the risk management system (RMS).
10- Apply standard operating procedures (SOPs) for deviation, complaint, recall, and change control.
11- Prepare operating records for manufacturing products (Batch Records).
12- Perform Process Validation: protocol, sampling, and final report.
13- Perform Cleaning Validation: protocol, sampling, and final report.
14- Participate in Room Qualification or Machine Qualification: protocol and final report.
15- Execute internal auditing and prepare quality reports.
16- Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.
17- Demonstrate effective communication skills verbally, non-verbally with teamwork members.

دورة اليقظة الدوائية
Pharmacovigilance Rotation

Outline:

Item	Design
Rotation Title	Pharmacovigilance
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site / Online

دورة اليقظة الدوائية

تهدف هذه الدورة إلى توفير معرفة عميقة للمتدربين حول أهمية اليقظة الدوائية في مراقبة سلامة المستحضرات الصيدلانية والأجهزة الطبية التي تم طرحها في السوق. سيتم عرض إرشادات اليقظة الدولية وممارسات اليقظة الدوائية الجيدة (GVP). اكتشاف وتقييم الأدوية التي تسبب تفاعلات دوائية ضارة خطيرة (ADRs) بما في ذلك عدم فعاليتها، ثم إزالتها من السوق لحماية الصحة العامة. كما سيتم مناقشة أهمية اقتصاديات الدواء في تطوير أنشطة اليقظة الدوائية كأداة عمل لتوجيه عملية صنع القرار في قطاع الرعاية الصحية. وستركز الدورة أيضًا على أدوات تلقي تقارير متابعة جودة المستحضرات الصيدلانية واتخاذ الإجراءات المناسبة والتواصل الجيد مع أعضاء فريق الرعاية الصحية.

Objective:

This rotation aims to provide profound knowledge to the trainees on the importance of pharmacovigilance in monitoring the safety of pharmaceutical products and medical devices that have been launched in the market. Reflection on the international vigilance guidelines and good pharmacovigilance practice (GVP) will be presented. Detection & evaluation of medicines that cause serious adverse drug reactions (ADRs) including lack of efficacy, and subsequent removal from the market to protect public health. The importance of Pharmacoeconomics in developing pharmacovigilance activities as a working tool to guide the process of decision-making in the healthcare sector will be also discussed. The rotation will focus also on the tools for receiving follow-up reports on the quality of pharmaceutical products, taking the appropriate actions and good communication with members of the healthcare team.

Learning Outcomes (LOs):

After completion of this rotation, the intern pharmacist should be able to:

1- Determine, measure, and compare the costs, risks, and benefits of different treatment programs.
2- Monitor the serious adverse drug reactions (ADRs) of drugs by following-up on marketed pharmaceutical products.
3- Ensure the safety, quality, and efficacy of marketed pharmaceutical products.
4- Receive and inspect follow-up reports on the quality of pharmaceutical products with decision-making in case of the occurrence of ADRs.
5- Prepare the Risk Management Plan (RMP) document.

6- Prepare periodic safety update reports (PSUR) for pharmaceutical products.
7- Understand the international vigilance guidelines and apply good pharmacovigilance practices (GPvP).
8- Recognize the procedures of regulatory inspections and audits.
9- Demonstrate responsibility, cooperate, and integrate effectively with healthcare team members.
10- Demonstrate effective communication skills verbally, non-verbally with healthcare team members.

دورة التفتيش التنظيمى الصيدلي
Regulatory Inspection Rotation

Outline:

Item	Design
Rotation Title	Pharmaceutical Regulatory Inspection
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of Delivery	On-site / Online

دورة التفتيش التنظيمي الصيدلي

تهدف هذه الدورة إلى تغطية متطلبات التفتيش الدوائي وفقًا لمتطلبات منظمة الصحة العالمية. سيتم تعريف المتدربين بالمعايير والأساليب والاهتمامات الخاصة بالمفتشين، وأدوات إعداد عمليات التفتيش والتعامل معها وإدارتها في المنشآت الصيدلانية. سيتم تناول المواضيع التالية: نظرة عامة على ممارسات التصنيع الجيدة، وتوقعات عمليات التفتيش التنظيمية، وخطابات التحذير، وعمليات الاسترداد، وغيرها من الإجراءات المحتملة، وإعداد الاستجابة لنتائج التفتيش وإعداد/تنفيذ خطط الإصلاح.

Objective:

This rotation aims to cover the regulatory inspection requirements as per the WHO requirements. Trainees will be introduced to the parameters, approaches, and concerns of inspectors, and the tools for preparing, coping, and managing inspections in pharmaceutical facilities. The following topics will be covered: GMP overview, expectations of regulatory inspections, warning letters, recalls, and other potential actions, preparation of response to inspection findings and preparation/execution of remediation plans.

Learning Outcomes (LOs):

After completion of this rotation, the intern pharmacist should be able to:

1- Identify the international institutions concerned with the registration and circulation of pharmaceuticals, such as WHO, EMA, FDA, EUDRA.
2- Recognize current registration procedures of pharmaceutical and biological products, nutritional supplements, medical supplies, and cosmetics.

3- Understand the pharmaceutical inspection process in compliance with WHO requirements, and pharmacy laws.
4- Receive pharmaceutical products with physical examination and their certificates of analysis.
5- Prepare, cope, and manage the audit and inspection tools over pharmaceutical and biological products, nutritional supplements, medical supplies, and cosmetics, and their significance.
6- Prepare, cope, and manage the audit and inspection tools over pharmaceutical establishments (companies – drug distribution stores – pharmacies, etc...).
7- Prepare regulatory inspection reports, warning letters, recalls and follow them up.
8- Prepare and execute remediation plans.
9- Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.
10- Demonstrate effective communication skills verbally, non-verbally with teamwork members.

دورة اكتشاف وتطوير الدواء
Drug Discovery and Development Rotation

Outline:

Item	Design
Rotation Title	Drug Discovery and Development
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of Delivery	On-site / Online

دورة اكتشاف وتطوير الدواء

تهدف هذه الدورة إلى إعطاء المتدربين لمحة عامة عن عملية اكتشاف الأدوية وتطويرها بما يتوافق مع المتطلبات القانونية والتنظيمية. تشمل المواضيع اكتشاف المركب الرئيسي وتحضيره باستخدام التركيب الكيميائي/الكيميائي الحيوي، والاستخلاص من المصادر الطبيعية، وتكنولوجيا التخمير بالإضافة إلى أدوات مبتكرة أخرى مثل زراعة الخلايا. سيتم شرح التقنيات التجريبية المختلفة في المعمل اللازمة لتقييم السلامة والفعالية. سيتم استكشاف الأدوات ذات الصلة التي تهدف إلى تقليل الآثار الجانبية المحتملة وتعزيز الفعالية وخفض تكاليف الإنتاج مثل تصميم الأدوية بمساعدة الحاسوب وهندسة البروتين وغيرها من الأدوات المتقدمة. سيشارك المتدربون في تصميم وإجراء التجارب ضمن البيئات قبل السريرية والسريرية. كما سيتم شرح أساسيات البحث العلمي، وإعداد البروتوكولات التجريبية، والحصول على موافقات اللجنة الأخلاقية المطلوبة، والتفسير العلمي والتحليل الإحصائي للنتائج وكتابة التقارير والأوراق العلمية.

Objective:

This rotation aims to give the trainees an overview of the drug discovery and development process in compliance with the legal and regulatory requirements. Topics include lead compound discovery and preparation using chemical / biochemical synthesis, extraction from natural sources, fermentation technology as well as other innovative tools such as cell culture. Various in

vitro experimental techniques required to evaluate safety and efficacy will be explained. Relevant tools intended to reduce possible side effects, enhance efficacy and reduce production costs such as computer-aided drug design, protein engineering and other advanced tools will be explored. The trainees will participate in designing and conducting experiments within preclinical & clinical settings. The basics of literature search, preparation of experimental protocols, obtaining the required ethical committee approvals, scientific interpretation and statistical analysis of the results and writing of reports and scientific papers will be also explained.

Learning Outcomes (LOs):

After completion of this rotation, the intern pharmacist should be able to:

1- Understand the drug discovery and development process in the light of legal and regulatory requirements.
2- Discover and prepare lead compounds *via* chemical/biochemical synthesis, extraction from natural sources, fermentation, cell cultures, etc.
3- Apply computer-aided drug design or other suitable tools to enhance the safety and efficacy of potential drugs, and to reduce the production costs.
4- Design and conduct *in vitro* experiments, preclinical and clinical studies on potential drugs.
5- Participate in recording, analyzing, and interpreting test results and processing them statistically.
6- Practice literature search and writing of scientific reports and/or research articles.
7- Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.
8- Demonstrate effective communication skills verbally, non-verbally with teamwork members.

دورة المبيعات والتسويق الدوائي
Pharmaceutical Sales & Marketing Rotation

Outline:

Item	Design
Rotation Title	Pharmaceutical Sales & Marketing
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site / Online

دورة المبيعات والتسويق الدوائي

تهدف الدورة إلى تزويد المتدربين بأساسيات إدارة الأعمال الصيدلانية. سيتم استكشاف فهم بيانات أبحاث السوق وأدوات التنبؤ وتطوير استراتيجيات وتكتيكات التسويق بالإضافة إلى تجزئة السوق واستهدافه. سيتم تعريف المتدربين أيضًا بمفاهيم مهارات الاتصال، ومفاهيم رضا العملاء، ونماذج التسعير، والميزانية. سيتم شرح الإرشادات التنظيمية

لإعداد المواد الترويجية والحملات التسويقية. سيتم أيضًا شرح إدارة تجارة التجزئة والجملة والخدمات اللوجستية لممارسات التوزيع الجيدة (GDP)

Objective:

The rotation aims to provide the trainees with the fundamentals of pharmaceutical business administration. Understanding market research data and forecasting tools, developing marketing strategies and tactics as well as market segmentation and targeting will be explored. Trainees will be also introduced to the concepts of communication skills, concepts of customer value satisfaction, pricing models, and budgeting. Regulatory guidelines for the preparation of promotional materials and marketing campaigns will be explained. Managing retailing, wholesaling, and logistics of good distribution practice (GDP) will be also explained.

Learning Outcomes (LOs):

After completion of this rotation, the intern pharmacist should be able to:

1- Understand the basics of pharmaceutical business administration.
2- Identify the marketing strategies and tactics.
3- Understand the art of medical advertising, and medicinal sales.
4- Recognize the concepts of individual and group communication skills.
5- Understand the concepts of customer value satisfaction, pricing models, and budgeting.
6- Understand the work of scientific offices in medical advertising.
7- Know and identify clients and customers in the healthcare system.
8- Understand market research data and forecasting tools.
9- Develop market segmentation and targeting.
10- Identify the types of economic analyses and studies used in the field of Pharmacoeconomics.
11- Participate in recording, analyzing, and interpreting collected data and processing them statistically.
12- Understand managing retailing, wholesaling, and logistics of good distribution practice (GDP).
13- Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.
14- Demonstrate effective communication skills verbally, non-verbally with teamwork members.

دورة التصنيع الدوائى
Pharmaceutical Production Rotation

Outline:

Item	Design
Rotation Title	Pharmaceutical Production
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site / Online

دورة التصنيع الدوائي

تهدف هذه الدورة إلى إعطاء المتدربين نظرة عامة على التكنولوجيا الحالية لإنتاج أشكال صيدلانية مختلفة من خلال تمارين قائمة على السيناريوهات. سيتم عرض سير العمل الذي يتضمن العلاقات بين الإدارات المختلفة في مرافق إنتاج الأدوية. سيتم إجراء عرض مرئي لممارسات التصنيع والهندسة الحالية من خلال زيارات الموقع والرسوم التوضيحية بالفيديو. سيتم تجربة العروض التوضيحية الفعلية لخطوات الإنتاج الرئيسية مثل الخلط، والمزج، والتجفيف، والتحجيم، والتشكيل، والتغليف، والطلاء ... إلخ. سيتم عرض دراسات الحالة المتعلقة بالإنتاج. سيتم إجراء تحليل المشكلات لتحديد السبب الجذري والحلول المقترحة.

Objective:

This rotation aims to give the trainees an overview of the current technology to produce various pharmaceutical dosage forms through scenario-based exercises. Workflow involving the relationships between various departments in pharmaceutical production facilities will be presented. Visual demonstration of the current manufacturing and engineering practices through site visits and video illustrations will be performed. Real-time demonstrations of production key steps such as mixing, blending, drying, sizing, tableting, encapsulation, coating … etc will be experienced. Case studies for production-related issues and concerns will be presented. Analyzing the problems to identify the root cause and present solutions will be carried out.

Learning Outcomes (LOs):

After completion of this rotation, the intern pharmacist should be able to:

1- Identify the various production areas in the pharmaceutical manufacturing company: solid preparations (such as tablets and capsules), non-solid preparations (such as ointments, creams, and syrups), sterile preparations (such as ampoules and vials), gelatin capsules, and other products.
2- Recognize the layout of production areas, and the workflow in different production facilities.
3- Determine the production process operations starting from receiving the raw materials through the various manufacturing stages until reaching the finished product.
4- Apply product control during manufacturing (in-process control 'IPC' Tests), and the significance of each test.

5- Examine production-related problems that may occur during manufacturing (Troubleshooting) and how to overcome them.
6- Apply good manufacturing practices (cGMP) and data integrity in production.
7- Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.
8- Demonstrate effective communication skills verbally, non-verbally with teamwork members.

دورة الجودة من خلال التصميم والتكنولوجيا التحليلية للعمليات
Quality by Design and Process Analytical Technology (QbD & PAT) Rotation

Outline:

Item	Design
Rotation Title	Quality by Design and Process Analytical Technology (QbD & PAT)
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site / Online

دورة الجودة من خلال التصميم والتكنولوجيا التحليلية للعمليات

تهدف هذه الدورة إلى تعريف المتدربين بالاتجاهات الأكثر تقدمًا في تطوير المستحضرات والعمليات في صناعة الأدوية. سيتم إعادة النظر في المفاهيم الأساسية لممارسات التصنيع الجيدة (GMP) والممارسات المعملية الجيدة (GLP). سيتم تناول قيمة تنفيذ الجودة حسب التصميم (QbD) والتكنولوجيا التحليلية للعملية (PAT) في ضمان جودة المنتج النهائي. سيتم توضيح التأثير الإيجابي لـ QbD وPAT على تكلفة/كفاءة الإنتاج وسرعة عمليات إطلاق التشغيلات من خلال دراسات الحالة.

Objective:

This rotation aims to expose the trainees to the most advanced trends in product and process development in the pharmaceutical industry. Basic concepts of good manufacturing practice (GMP) and good laboratory practice (GLP) will be revisited. The value of the implementation of Quality by Design (QbD) and Process Analytical Technology (PAT) in ensuring final product quality will be addressed. The favorable impact of QbD and PAT on production cost/efficiency and speed of batch release processes will be demonstrated through case studies.

Learning Outcomes (LOs):

After completion of this rotation, the intern pharmacist should be able to:

1- Recognize the concept of pharmaceutical quality by design (QbD) and describes its objectives.
2- Identify the ICH guidelines Q8 (Pharmaceutical Development), Q9 (Quality Risk Management), and Q10 (Pharmaceutical Quality System).
3- Design a quality product and its manufacturing process to consistently deliver the intended performance of the product to meet patient needs.
4- Describe that critical material parameters (CMP) and critical process parameters (CPP) linked to the critical quality attributes (CQAs) of the product.

5- Increase process capability and reduce product variability and defects by enhancing product and process design, understanding, and control.
6- Analyze, evaluate, and interpret problems associated with the design of pharmaceutical products.
7- Understand the quality risk management across the product lifecycle for drug products.
8- Illustrate the principles and tools of quality risk management that can be applied to different aspects of pharmaceutical quality.
9- Understand and analyze case studies related to Quality by design (QbD) approach for product development.

٢- دورات الصيدلة الإكلينيكية الإختيارية
2) Clinical Pharmacy Elective Rotations

دورة الصيدلة السريرية للحالات الحرجة
Critical Care Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Critical Care Clinical Pharmacy Rotation
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of Delivery	On-site

دورة الصيدلة السريرية للحالات الحرجة

الغرض من هذه الدورة هو تطوير الكفاءات المعرفية للمتدربين والمهارات السريرية المطلوبة للتعامل باحتراف مع مجموعة واسعة من حالات الرعاية الحرجة وتوفير الرعاية الصيدلانية المطلوبة لمرضى حالات الرعاية الحرجة المختلفة (على سبيل المثال، الأمراض الباطنية والجراحة وأمراض القلب والأوعية الدموية). خلال هذه الدورة، سيقضي المتدرب ٦ أسابيع في موقع دورة الرعاية الحرجة وسيعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The purpose of this rotation is to develop the trainees' knowledge base competencies and clinical skills required to deal professionally with a wide range of critically ill patients and provide the required pharmaceutical care for patients in different critical care areas including intensive care units (ICU) including medical and surgical ICU, coronary care units (CCU), neuro-intensive care units (NICU), etc., During this rotation, trainee will spend 6 weeks at a critical care rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making.
- Develop and implement pharmaceutical care plans pertaining to the critical care medicine practice.
- Identify drug related problems and adverse drug reactions.
- Communicate effectively and provide competent counselling services
- Demonstrate professionalisms and ethical practice

دورة الصيدلة السريرية لأمراض القلب والأوعية الدموية
Cardiology and Cardiovascular Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Cardiology and Cardiovascular Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية لأمراض القلب والأوعية الدموية

الغرض من هذه الدورة هو تطوير الكفاءات المعرفية للمتدربين والمهارات السريرية المطلوبة للتعامل باحتراف مع مجموعة واسعة من حالات أمراض القلب (على سبيل المثال، ارتفاع ضغط الدم، وقصور الأوعية الدموية، والرجفان الأذيني، وارتفاع نسبة الشحوم في الدم، واعتلال عضلة القلب، وأمراض الشريان التاجي الحادة، وحالات الرعاية الحرجة لأمراض القلب. والأوعية الدموية بما فيها السكتة الدماغية، والجلطات الرئوية والوريدية) وتقديم الرعاية الصيدلانية المطلوبة لهؤلاء المرضى. خلال هذا التناوب، سيقضي المتدرب ٦ أسابيع في موقع دورة أمراض القلب والأوعية الدموية وسيعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The purpose of this rotation is to develop the trainees' knowledge base competencies and clinical skills required to deal professionally with a wide range of cardiology and cardiovascular diseases cases (e.g., hypertension, ischemic heart disease, atrial fibrillation, dyslipidemia, heart failure, coronary artery diseases and acute critical care cardiology cases) and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at a cardiovascular rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making
- Develop and implement pharmaceutical care plans pertaining to the cardiology and cardiovascular practice
- Identify drug related problems and adverse drug reactions

- Communicate effectively and provide competent counselling services
- Demonstrate professionalisms and ethical practice

دورة الصيدلة السريرية لأمراض الجهاز الهضمي والكبد
Gastroenterology and Hepatology Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Gastroenterology and Hepatology Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية لأمراض الجهاز الهضمي والكبد

الغرض من هذه الدورة هو تطوير الكفاءات المعرفية للمتدربين والمهارات السريرية المطلوبة للتعامل باحتراف مع مجموعة واسعة من الحالات المتعلقة بالجهاز الهضمي وأمراض الكبد (على سبيل المثال، قرح الجهاز الهضمي وأمراض الأمعاء الالتهابية واضطرابات الحركة وأمراض البنكرياس والقنوات المرارية وأمراض الكبد بما في ذلك الالتهابات الفيروسية) وحالات الدعم التغذوية الإكلينيكي وتوفير الرعاية الصيدلانية المطلوبة لهؤلاء المرضى.

خلال هذه الدورة، سيقضي المتدرب ٦ أسابيع في موقع تناوب الجهاز الهضمي ويعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The purpose of this rotation is to develop the trainees' knowledge base competencies and clinical skills required to deal professionally with a wide range of gastrointestinal related cases (e.g., peptic ulcer, inflammatory bowel disease, motility disorders, pancreatic-biliary diseases, hepatic diseases including viral infections, and patients) and cases for clinical nutrition support need and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at gastroenterology rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making
- Develop and implement pharmaceutical care plans pertaining to the gastrointestinal medicine practice
- Identify drug related problems and adverse drug reactions.
- Communicate effectively and provide competent counselling services
- Demonstrate professionalisms and ethical practice

دورة الصيدلة السريرية لأمراض الكلى والمسالك البولية
Nephrology and Urology Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Nephrology and Urology Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of Delivery	On-site

دورة الصيدلة السريرية لأمراض الكلى والمسالك البولية

خلال هذه الدورة سيقضي المتدرب ٦ أسابيع في موقع التدريب على أمراض الكلى والعمل عن كثب مع المدرب وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة. سيكون المتدرب الذي يكمل هذا البرنامج مؤهلاً ومسؤولا عن تحسين نتائج العلاج الدوائي لمرضى الكلى كعضو أساسي في فريق الرعاية الصحية متعدد التخصصات.

تشمل الموضوعات التي سيتم تناولها أثناء التدريب إصابات الكلى الحادة والمزمنة، والفشل الكلوي الناجم عن الأدوية، وفقر الدم الناتج عن أمراض الكلى المزمنة، وهشاشة العظام والتغذية في أمراض الكلى المزمنة، والعلاج بالبدائل الكلوية (غسيل الكلى)، وزرع الكلى، وجرعات الأدوية في مرضى الكلى.

Objective:

The nephrology rotation in clinical pharmacy provides education and training with a primary emphasis on the development of practice skills in specialized pharmacy practice areas. Trainees completing this program will be qualified to provide and be responsible for improved drug therapy outcomes for renal patients as an integral member of the multidisciplinary healthcare team. During this rotation, trainees will spend 6 weeks at a nephrology rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed. Topics that will be covered during the rotation include acute kidney injury (AKI), drug-induced kidney failure, anemia of chronic kidney disease (CKD), bone metabolism in CKD, nutrition in CKD, renal replacement therapy (hemodialysis (HD) and continuous renal replacement therapy CRRT)), drug dosing in kidney impairment/HD/CRRT, hyponatremia and renal transplantation.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making
- Develop and implement pharmaceutical care plans pertaining to the renal/urology medicine practice.
- Identify drug related problems and adverse drug reactions
- Communicate effectively and provide competent counselling services
- Demonstrate professionalisms and ethical practice

دورة الصيدلة السريرية للأورام وأمراض الدم
Oncology and Hematology Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Oncology and Hematology Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of Delivery	On-site

دورة الصيدلة السريرية للأورام وأمراض الدم

الغرض من هذه الدورة هو تطوير الكفاءات المعرفية للمتدربين والمهارات السريرية المطلوبة للتعامل باحتراف مع مجموعة واسعة من الحالات المتعلقة بالأورام الصلبة (مثل سرطان الثدي وسرطان الرئة وسرطان المعدة وسرطان القولون وسرطان الجهاز البولي التناسلية) والحالات المتعلقة بأورام الدم (على سبيل المثال، اللوكيميا، أورام الغدد الليمفاوية والورم النخاعي المتعدد، وأمراض الدم، بما في ذلك اضطرابات خلايا الدم الحمراء (فقر الدم) وخلايا الدم البيضاء والصفائح الدموية (قلة الصفيحات الدموية) وعوامل التخثر واضطرابات النزيف) والحالات التي تحتاج إدارة الألم والدعم الغذائي و توفير الرعاية الصيدلانية المطلوبة لهؤلاء المرضى.

خلال هذه الدورة، سيقضي المتدرب ٦ أسابيع في موقع تدريب أمراض الأورام وأمراض الدم وسيعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The purpose of this rotation is to develop the trainees' knowledge-based competencies and clinical skills required to deal professionally with a wide range of solid tumors related cases (e.g., breast cancer, lung cancer, gastric cancer, colon cancer and genitourinary tract cancer) as well as hematologic malignancies (e.g., Leukemias, Hodgkin's and Non- Hodgkin's lymphoma and Multiple myeloma), hematologic diseases, including disorders of red blood cells (anemia), white blood cells and platelets (thrombocytopenia), and coagulation factors and bleeding disorders. This rotation also addresses cases for clinical nutrition support and pain management needs and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at an oncology and or hematology rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making
- Develop and implement pharmaceutical care plans pertaining to the oncology/hematology practice
- Identify drug related problems and adverse drug reactions
- Communicate effectively and provide competent counselling services

- Demonstrate professionalisms and ethical practice

دورة الصيدلة السريرية للأمراض المعدية والأوبئة
Infectious Diseases Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Infectious Diseases Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية للأمراض المعدية والأوبئة

تم تصميم هذه الدورة لتزويد المتدرب بفرصة لتطوير مهاراته في التعامل من الأمراض المعدية البسيطة والمعقدة (الالتهابات البكتيرية والفيروسية والفطرية والكائنات الأولية)، كونه عضوًا نشطًا في فريق الرعاية الصحية، والمشاركة في اتخاذ القرار العلاجي وتطبيقه ومراقبته. من المتوقع أن يتعرض المتدرب لمجموعة واسعة من المتلازمات الرئيسية بما في ذلك الالتهابات المكتسبة في المجتمع والمستشفيات مثل الالتهاب الرئوي والتهاب بطانة القلب المعدية والجلد والأنسجة الرخوة والجهاز الهضمي والتهابات مجرى الدم والتهابات المسالك البولية وتقييم الحمى. خلال هذه الدورة، سيقضي المتدرب وقتًا في العمل عن كثب مع فريق الإشراف على مضادات الميكروبات. خلال هذه الدورة، سيقضي المتدرب فترة ٦ أسابيع في موقع تدريب الأمراض المعدية وسيعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective

This rotation is designed to provide the trainee with an opportunity to develop his/her skills in management of simple and complex infectious diseases (bacterial, viral, fungal, and protozoal infections), being an active member of team of health professionals, and taking part in therapeutic decision making, its application and monitoring. It is expected that trainees will be exposed to a broad range of major syndromes including community and hospital-acquired infections like pneumonia, infective endocarditis, skin and soft tissue, gastrointestinal, bloodstream infections, urinary tract infections and the evaluation of fever. During this course, the trainee will spend time working closely with the Antimicrobial Stewardship team. During this rotation, trainees will work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making
- Develop and implement pharmaceutical care plans pertaining to the infectious disease practice
- Identify drug related problems and adverse drug reactions (ADRs)

- Communicate effectively and provide competent counselling services
- Demonstrate professionalisms and ethical practice

دورة الصيدلة السريرية لأمراض الأطفال وحديثي الولادة
Pediatrics and Neonates Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Pediatrics and Neonates Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية لأمراض الأطفال وحديثي الولادة

الغرض من هذه الدورة هو تزويد المتدربين بالخبرة والكفاءة في الرعاية الصيدلانية لمرضى الأطفال بشكل عام وحديثي الولادة بشكل خاص. وسيشمل ذلك بناء معرفة المتدرب باضطرابات الأطفال/حديثي الولادة، والعلاجات ذات الصلة، ومصادر معلومات أدوية الأطفال. بالإضافة إلى ذلك، سيطور المتدرب مهاراته في حل المشكلات لدى المرضى من خلال مجموعة متنوعة من تجارب رعاية المرضى.

سيقوم المتدرب بالمشاركة في الجولات السريرية اليومية. خلال هذه الدورة، سيقضي المتدرب فترة ٦ أسابيع في موقع تدريب طب الأطفال/حديثي الولادة والعمل عن كثب مع مدربهم وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The purpose of this rotation is to provide trainees with experience and competencies in the pharmaceutical care of pediatric patients in general and neonatal in specific. This will include building the trainee's knowledge of pediatric/neonatal disorders, related treatments, and sources of pediatric medication information. In addition, the trainee will develop patients' problem-solving skills through a variety of patient care experiences. The trainee will work with and participate in daily work rounds. During this rotation, trainees will spend 6 weeks at pediatrics/neonates rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making
- Develop and implement pharmaceutical care plans pertaining to pediatrics medicine practice
- Identify drug related problems and adverse drug reactions (ADRs)
- Communicate effectively and provide competent counselling services
- Demonstrate professionalisms and ethical practice

دورة الصيدلة السريرية فى أمراض الشيخوخة (كبار السن)
Geriatrics (Elderly) Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Geriatrics (Elderly) Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية في أمراض الشيخوخة (كبار السن)

تعتمد هذه الدورة على إعداد صيدلي يمكنه وصف التغيرات الفسيولوجية التي تحدث نتيجة الشيخوخة ومناقشة كيفية تأثير هذه التغييرات على حركية الأدوية لدى المريض المسن. تهدف هذه الدورة إلى إعداد صيدلي يمكنه أيضا وصف الفسيولوجيا المرضية والتدخلات العلاجية والمعايير الحاكمة للأمراض الشائعة التي يواجهها كبار السن بما في ذلك الذبحة الصدرية وسلس الأمعاء/المثانة وفقر الدم واعتلال عضلة القلب الاحتقاني والخرف والاكتئاب والأرق والسكري وارتفاع ضغط الدم، عدم انتظام ضربات القلب، هشاشة العظام، مرض باركنسون، قرح الجهاز الهضمي، الالتهاب الرئوي، تقرحات الفراش، التهابات المسالك البولية، نوبات الصرع وغيرها.

يُمنح المتدرب أيضًا القدرة على توصيل المعلومات ذات الصلة بالعلاج الدوائي للمرضى ومقدمي الرعاية الصحية. خلال هذه الدورة، سيقضي المتدرب فترة ٦ أسابيع في موقع تدريب أمراض الشيخوخة والعمل عن كثب مع مدربهم وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

This rotation is based on preparing a pharmacist who can describe the physiological changes that occur as a result of aging and discuss how these changes affect the pharmacokinetics of drugs in the elderly patient. This rotation aims to prepare a pharmacist who can describe the pathophysiology, therapeutic interventions, and control criteria for common diseases faced by the elderly including ischemic heart diseases, bowel/bladder incontinence, common anaemias, congestive heart failure, dementia, depression, insomnia, diabetes, and hypertension, arrhythmia, osteoporosis, Parkinson's disease, peptic ulcer disease, pneumonia, pressure sores, urinary tract infections, epileptic seizures. The trainee is also given the ability to communicate relevant information related to drug therapy to patients and health care providers. During this rotation, trainees will spend 6 weeks at geriatrics rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making
- Develop and implement pharmaceutical care plans pertaining to the geriatrics practice
- Identify drug related problems and adverse drug reactions (ADRs)
- Communicate effectively and provide competent counselling services through:
- Demonstrate professionalisms and ethical practice

دورة الصيدلة السريرية فى الأمراض العصبية والنفسية
Neuropsychiatric Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Neuropsychiatric Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية في الأمراض العصبية والنفسية

الهدف من هذه الدورة في مجال الأمراض النفسية والعصبية هو إعطاء المتدرب فهمًا للتعرف على الاضطرابات النفسية/العصبية وتشخيصها وعلاجها ومراقبة الاستخدام الآمن والفعال للأدوية النفسية/العصبية. سيتعلم المتدربون في هذه الدورة مفاهيم فسيولوجيا الألم وتقييمه وإدارته. يُمنح المتدرب أيضًا القدرة على توصيل المعلومات ذات الصلة بالعلاج الدوائي للمرضى ومقدمي الرعاية الصحية.

خلال هذه الدورة، سيقضي المتدرب فترة ٦ أسابيع في موقع التدريب ويعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The goal of this rotation in neuropsychiatry is to give the trainee an understanding of the recognition, diagnosis, and treatment of neuropsychiatric disorders and monitoring the safe and effective use of psychotropic medications. Trainees in this rotation will learn concepts of pain physiology, assessment, and management. The trainee is also given the ability to communicate relevant information related to drug therapy to patients and health care providers. During this rotation, trainee will spend 6 weeks at rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making
- Identify drug related problems and adverse drug reactions
- Develop and implement pharmaceutical care plans pertaining to neuropsychiatric medicine practice
- Communicate effectively and provide competent counselling services
- Demonstrate professionalisms and ethical practice

دورة الصيدلة السريرية في أمراض النساء والولادة
Obstetrics and Gynecology Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Obstetrics and Gynecology Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية في أمراض النساء والولادة

تؤهل هذه الدورة المتدربون على التعامل مع المرضى قبل الولادة وبعدها. حيث يكتسب المتدرب خبرة في مضاعفات الحمل: تسمم الحمل، والولادة المتعسرة، وحالات عدوى الدم (الإنتان)، ونزيف ما بعد الولادة. خلال هذه الدورة، سيقضي المتدرب٦ أسابيع في موقع التدريب ويعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

This rotation qualifies trainees to deal with patients before and after childbirth, as the trainee will gain experience in maternal complications: preeclampsia, obstructed labor, sepsis, and postpartum hemorrhage. During this rotation, trainees will spend 6 weeks at rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making
- Develop and implement pharmaceutical care plans pertaining
- Identify drug related problems and adverse drug (ADRs) reactions
- Communicate effectively and provide competent counselling services
- Demonstrate professionalisms and ethical practice

دورة الصيدلة السريرية في دعم التغذية الإكلينيكية
Clinical Nutrition Support Rotation

Outline:

Item	Design
Rotation Title	Clinical Nutrition Support
Rotation Type	Elective
Rotation Duration	6 weeks

Mode of delivery	On-site

دورة الصيدلة السريرية في دعم التغذية الإكلينيكية

تتمثل أهداف هذه الدورة في تزويد المتدرب بفهم عام للقضايا المتعلقة بدعم التغذية السريرية وإتاحة الفرصة لهم لتطوير المهارات في تقييم المريض ومراقبة المريض وصياغة التغذية الأنبوبية الوريدية وتعديل الصيغة وذلك بعد تحديد علاقة الحالة المرضية أو طبيعة كل مرض باحتياجات المريض التغذوية. يجب على المتدرب أيضًا زيادة كفاءته في تقنيات الاتصال لتسهيل التفاعل مع غيره من المتخصصين في الرعاية الصحية والمرضى.

سيتم تصميم الدورة وفقًا لنقاط القوة والضعف لدى الطالب، خاصة فيما يتعلق بالموضوعات الأساسية مثل توازن السوائل والكهارل، وتفسير قيم غازات الدم والاختبارات المعملية، وتأثير الأدوية على توازن السوائل، والكهارل، والاختبارات المعملية.

تم تصميم هذه الدورة لتعزيز وتطوير المعرفة والمهارات والقيم المهنية من أجل توفير رعاية فعالة قائمة على الأدلة ومركزة على المريض.

Objective:

The goals for this rotation are to provide the trainee with a general understanding of issues related to specialized nutrition support and the influence of disease state and pathogenesis on nutritional status of patient and nutrient requirements. This rotation will give the trainee the opportunity to develop skills in patient assessment, patient monitoring, enteral and parenteral nutrition formulation, and formula adjustment and diet fortification. The trainee should also increase their proficiency in communication techniques so as to facilitate interaction with other health care professionals and patients. The rotation will be tailored to the trainee's strengths and weaknesses, especially as related to basic topics such as fluid and electrolyte balance, interpretation of blood gas values and laboratory tests, and effects of medications on fluid balance, electrolytes, and laboratory tests.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making
- Develop and implement enteral or parenteral nutritional plan
- Identify drug related problems and adverse drug (ADRs) reactions
- Communicate effectively and provide competent counselling services
- Demonstrate professionalisms and ethical practice

حادى عشر: ملحق الدليل

يتم اعداد ملحق للدليل لتقوم كليات الصيدله للاسترشاد به عند اعداد الدليل الخاص بهم يشمل:

- توصيف تفصيلي لدورات الصيدلة الاكلينيكية والصيدليات
- نماذج مقترحة لتقييم أداء المتدرب والتأكد من تحقيق المهارات والجدارات التي اكتسبها الطالب والمتماشية مع المعايير الاكاديمية القومية المرجعية
- توافق التوصيف مع المعايير الاكاديمية القومية المرجعية
- المعايير الواجب توافرها في المدربين

المشاركون فى إعداد ومراجعة الدليل

الأستاذ الدكتور / ماهر الدمياطى	رئيس لجنة قطاع الدراسات الصيدلية
الأستاذ الدكتور / ناهد داود مرتضى	أمين لجنة قطاع الدراسات الصيدلية
الأستاذ الدكتور / حمد الله زيدان	ألاستاذ بكلية الصيدلة جامعة القاهرة
الأستاذ الدكتور / رمضان الدومانى	عميد كلية الصيدلة جامعة كفر الشيخ
الأستاذ الدكتور / محمود شيحة	ألاستاذ بكلية الصيدلة جامعة أسيوط
الأستاذ الدكتور / راجية طه	ألاستاذ بكلية الصيدلة جامعة الأزهر (بنات)
الأستاذ الدكتور / تورهان فناكى	ألاستاذ بكلية الصيدلة جامعة الإسكندرية
الأستاذ الدكتور / سلوى المليجى	ألاستاذ بكلية الصيدلة جامعة القاهرة
الأستاذ الدكتور / نهلة العشماوى	ألاستاذ بكلية الصيدلة جامعة طنطا
الأستاذ الدكتور / أميمة سمور	ألاستاذ بكلية الصيدلة جامعة عين شمس
الأستاذ الدكتور / منى حته	ألاستاذ بكلية الصيدلة جامعة الفيوم
الأستاذ الدكتور / دينا محمد على	ألاستاذ بكلية الصيدلة جامعة قناة السويس
الأستاذ الدكتور / ماجدة نصر	ألاستاذ بكلية الصيدلة جامعة المنصورة
الأستاذ الدكتور / امانى أسامه	عميد كلية الصيدلة جامعة عين شمس
الأستاذ الدكتور / غادة عبد البارى	عميد كلية الصيدلة جامعة القاهرة
الأستاذ الدكتور / جمال المغربى	ألاستاذ بكلية الصيدلة جامعة طنطا
الأستاذ الدكتور / نرمين أحمد صبرى	ألاستاذ بكلية الصيدلة جامعة القاهرة
الأستاذ الدكتور / لمياء الوكيل	ألاستاذ بكلية الصيدلة جامعة عين شمس
الأستاذ الدكتور / منى شعلان	ألاستاذ بكلية الصيدلة جامعة مصر الدولية
الأستاذ الدكتور / مدحت الغباشى	ألاستاذ بكلية الصيدلة جامعة القاهرة
الأستاذ الدكتور / رانيا عزيز أسحق	ألاستاذ بكلية الصيدلة جامعة عين شمس
الدكتور / محمد سويلم	شركة فياتريس - مصر
الدكتور / بيتر مكرم مهنى	شركة جلوبال نابى للأدوية - مصر
الدكتور / مايكل إلهامى	شركة إيفا فارما - مصر
الدكتور / محى حافظ	عضو مجلس ادارة غرفة صناعة الدواء

Appendix

Detailed Description of Pharmacy Based and Clinical Rotations

مقدمة

يعتبر برنامج التدريب الصيدلي متطلب أساسي لبدء الحياة المهنية في مجال الصيدلة السريرية. لا يسمح هذا البرنامج للمتدربين بالعمل كممارس مرخص له، ولكن بالتدريب تحت إشراف مدرب مطابق للمعايير المنصوص عليها بهذه اللائحة. يعتبر كل من رعاية المرضى المباشرة وإدارة الممارسة الصيدلية حجري الاساس في هذا البرنامج التدريبي لممارسة الصيدلة.

خلال هذا البرنامج، يكون المتدرب قادرًا على تطوير المهارات والكفاءات في تقديم الرعاية الصيدلية لمجموعة متنوعة من المرضى في مختلف التخصصات العلاجية، وبالتالي النمو السريع إلى ما بعد مستوى الدخول. يوفر هذا التدريب للمتدربين مميزات تنافسية في سوق العمل لمواكبة الاتجاهات في النظم الصحية التي تتطلب بشكل متزايد التدريب على خدمات الرعاية السريرية. بالإضافة إلى ذلك، تتوفر العديد من فرص وظائف التواصل. يمنح إكمال التدريب المتدرب فرصة لتحديد أهدافه المهنية بشكل أفضل. من خلال المشاركة في مجموعة متنوعة من مجالات الممارسة، يمكن الحصول على منظور أفضل حول مجال الرعاية الصيدلية الذي يناسب احتياجاته.

Introduction

Completing a pharmacy training program is a mandatory requirement to begin a career in clinical pharmacy. This program does not allow the trainees to perform as a licensed practitioner but to train under the supervision of an experienced preceptor who follows the eligibility criteria stated in the current bylaw. The cornerstones of any pharmacy practice training program include direct patient care and practice management. During this program, the trainee can develop skills and competencies in providing pharmaceutical care to a variety of patients in various medical specialties, thus accelerating growth beyond entry-level experience. This training provides trainees with a competitive advantage in the job market in line with current trends in health systems that increasingly require training for clinical positions. In addition, many networking opportunities are available. Completing a training gives the trainee an opportunity to better define his/her career goals. By participating in a variety of practice areas, a better perspective can be gained on which area of care best fits his/her needs.

هدف البرنامج التدريبي في الصيدلة الإكلينيكية

الهدف الرئيسي من هذا البرنامج التدريبي هو تعريف المتدرب بخدمات الرعاية الصحية المباشرة المقدمة للمرضى في المستشفيات/المراكز/وحدات الرعاية.

تم إعداد هذا البرنامج كي يتيح للمتدرب استخدام المهارات المكتسبة سابقًا في المناهج الدراسية من أجل المشاركة في عملية تقديم الرعاية الصيدلية للمرضى، والتي تشمل (أ) جمع و (ب) تقييم المعلومات الخاصة بالمريض، (ج) تطوير و (د) تنفيذ خطط رعاية فردية ترتكز على المريض، (هـ) مراقبة وتقييم فعالية خطط الرعاية الصيدلية، بالإضافة إلى توثيق هذه المعلومات. وخلال هذا البرنامج سوف يتم العمل على تطوير مهارات المتدربين لتحديد المشكلات والعمل على حلها، بالإضافة إلى مهارات التواصل مع المرضى وفريق الرعاية الصحية. مما يتيح تخريج صيدلي إكلينيكي مدرب بكفاءة عالية قادر على تحسين الخدمة الصيدلية والارتقاء بالرعاية الصحية.

الأهداف العامة لرعاية المرضى المباشرة

بنهاية هذا البرنامج يكون المتدرب قادراً على:

1. إجراء تقييم دقيق وفعال للمرضى؛ بما في ذلك التاريخ الدوائي/مقابلة المريض وتقييم إجراءات التقييم البدني ذات الصلة (عند اللزوم).
2. مراجعة مخططات المريض بشكل فعال لاستخراج معلومات المريض ذات الصلة.
3. تحديد المشاكل المحتملة والحقيقية المتعلقة بالأدوية وترتيب قائمة المشاكل حسب الأولوية.
4. المشاركة بشكل استباقي في فرص اتخاذ قرارات العلاج الدوائي لتطوير خطة رعاية صيدلية ترتكز على المريض مع معايير مراقبة مناسبة.
5. متابعة وتقييم فعالية خطط الرعاية.
6. التواصل الفعال شفهيًا وكتابيًا مع المرضى وفريق الرعاية الصحية.
7. التصرف بطريقة مهنية وأخلاقية، وإظهار التعاطف والاحترام للآخرين.

Aim of the Clinical Pharmacy Training Program

The main aim of this training program is to introduce and familiarize the trainees with the delivery of direct patient care services in the various patient care settings.

The trainees will be expected to use skills learned previously in the curriculum in order to participate in the Pharmacists' Patient Care Process (PPCP), which includes (a) collecting and (b) assessing patient-specific information, (c) developing and (d) implementing individualized patient-centred care plans, (e) monitoring and evaluating the effectiveness of the care plans, in addition to documenting this information. This should allow the trainees to practice problem identification, problem-solving, as well as communication skills with patients and healthcare team. This will promote the development of efficiently trained competent clinical pharmacists capable of improving the provision of pharmaceutical care and advancement of patient care services.

General Direct-Patient Care Objectives

By the end of this program the trainee shall be able to:

1. perform an accurate and effective patient assessment; medication history/patient interview and perform relevant physical assessment procedures (when applicable).
2. effectively review patient charts to retrieve relevant patient information.
3. identify potential and actual real drug-related problems and prioritizing the problem lists.
4. participate proactively in pharmacotherapy decision making opportunities to develop a patient centred pharmaceutical care plan with appropriate monitoring parameters.
5. follow-up and evaluate the effectiveness of the care plans.
6. communicate effectively both verbally and written with patients and other healthcare team.
7. act in a professional, ethical manner, showing empathy and respect to others.

A) Obligatory Rotations

1- Pharmacy Based Rotation

Outline:

Item	Design
Rotation Title	Pharmacy Based Rotation
Rotation Type	Obligatory
Rotation Duration	6 weeks
Mode of Delivery	On-site

دورة الصيدليات (دورة اجبارية)

خلال هذه الدورة، من المتوقع أن يتعرض المتدرب لدورة إدارة الدواء داخل إحدى الصيدليات سواء صيدليات عامة (صيدليات المجتمع) أو صيدليات خاصة او صيدليات المستشفيات.

يمكن للمتدربين حضور أي من مواقع التدريب التالية أو الجمع بين موقعين أو ثلاثة مواقع لمدة ستة أسابيع، مع الأخذ في الاعتبار ألا يتجاوز تدريب تحضير المحاليل الوريدية ثلاثة أسابيع.

Pharmacy Based Rotation (Mandatory)

During this rotation, the trainee is expected to be exposed to the medication use cycle within one of the pharmacy settings mentioned below (1-3) whether in the community or in the hospital. Trainees can attend any of the following practice sites or a combination of two or three sites for a total of six weeks, taking into consideration that the IV admixing preparation training should not exceed three weeks.

١.الصيدليات العامة والخاصة (صيدليات المجتمع) **(٣-٦ أسابيع)**

تلتزم دورة ممارسة صيدلة المجتمع بتزويد المتدربين بمجموعة متنوعة من تجارب رعاية المرضى لتعزيز مهاراتهم ليصبحوا صيادلة مجتمع مثاليين. خلال هذه الدورة، يتعرض المتدرب لجميع الجوانب المهمة لممارسة صيدلة المجتمع المعاصرة من خلال العمل مع وتحت إشراف صيدلي مسجل. خلال هذه الدورة يقوم المدرب بتقييم الخبرات السابقة للمتدرب في مجال صيدلة المجتمع ووضع أهداف للدورة التي تكمل وتبني على خبرة المتدرب والخطط المستقبلية.

1. Community Pharmacy (3-6 Weeks)

Objective:

The community-based advanced pharmacy practice experience is committed to providing trainees with a variety of patient care experiences including technical and clinical services to enhance their skills to become exemplary community pharmacists. During this rotation, the trainee will be exposed to all the important aspects of contemporary community pharmacy practice by working with and under the direction of a registered pharmacist preceptor. The preceptor should evaluate the trainee's experience in community pharmacy and establish goals for the rotation which complement and build on the trainee's experience and future plans.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Demonstrate and provide the appropriate pharmaceutical technical services related to the community practice including:**
  - preparation and dispensing medications using appropriate techniques and following applicable professional standards, laws, and regulations and in accordance with patient needs.
  - demonstrating knowledge of commonly used medications, formulations, and drug products in Egypt, in terms of their generic name, trade name, indications, side effects, and counselling messages.
  - compounding non-sterile products and extemporaneous preparations according to the physician order, using appropriate techniques and following applicable professional standards, laws, and regulations.
  - completion of all steps in the final check of filled prescriptions to ensure accuracy.
  - demonstrating understanding of the principles of inventory control, including cycle counts, audits, physical inventory, turnover rate, handling return of merchandise, drug recalls, and days-on-hand.
  - determination of impact of the pharmaceutical return process.
  - understanding and adherence to coding, billing, and reimbursement regulations.
  - handling of narcotics and psychotropic medications according to the applicable laws and regulation and determining if modifications are needed to improve their security.
  - explaining strategies for ensuring the integrity of the supply chain.
  - adherence to appropriate safety and quality assurance practices and effective promotion of the safety culture.
  - identification of system errors prior to an event.
- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - receiving the medication order/prescription and obtaining all required information for its processing.
  - collecting relevant patient information from different sources (patient interview, and patient chart).
  - interpreting the medication order completely, accurately, and efficiently and perform order entry accurately (if applicable).
  - conducting medication reconciliation thoroughly and effectively

- dispensing prescription and performing order entry accurately (if applicable).
- conducting effective and thorough literature search in many resources and utilize appropriate drug information resources.

- **Identify drug related problems and adverse drug reactions (ADRs) through:**
  - identification of potential and actual medication-related problems and take appropriate actions on identified problems.
  - identifying and reporting ADRs and prevention strategies.
- **Develop and implement pharmaceutical care plans pertaining to the community practice through:**
  - performing pharmaceutical calculations related to medication orders, based on a patient's condition including pediatric medications doses by weight including pediatric medications doses by weight.
  - Identification of patient's need and respond according to presented patient's symptoms.
  - selecting the most appropriate over the counter medication (OTC) according to the case evaluation.
  - Identification of patients' needs for appropriate available services in the practice to facilitate safe and effective use of medications (e.g., compliance packaging, delivery services, compounded formulations).
  - conducting appropriate point of care testing, if applicable.
  - determination of barriers to patient adherence and making appropriate adjustments.
  - taking appropriate actions to refer patients for other health care services or care.
- **Communicate effectively and provide competent counselling services through:**
  - working effectively as a team member in an efficient and interactive way to perform the required tasks.
  - managing time well and demonstrating an appropriate level of preparedness.
  - employing effective counseling techniques and educating the patient and/or caregiver effectively about both dispensed and self-care medications.
    - Counsel patients on prescription/OTC medications.
    - Counsel patients on appropriate use of inhalers.
    - Counsel patients on appropriate insulin injections techniques.
  - demonstrating effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.
  - participating in disease screening or health promotion activities or education of a group of patients, community groups or school trainees on disease/medication use.
  - identifying and clarifying drug information questions.
  - determination of barriers to patient adherence and making appropriate adjustments.
- **Demonstrate professionalisms and ethical practice through:**
  - applying professional ethics as they relate to the practice of pharmacy.
  - adherence to legal, and regulatory requirements.
  - monitoring effectively and efficiently the accuracy of the work of pharmacy assistants, clerical personnel, and others.
  - accepting constructive criticism; and responding to feedback to modify behaviours.

٢. صيدليات المستشفيات **(٣-٦ أسابيع)**

هي دورة تقدم داخل صيدلية المستشفى. الهدف الرئيسي من هذه الدورة هو تعريف المتدرب وتطوير معارفه ومهاراته في مجال عمليات وخدمات صيدليات المستشفى (على سبيل المثال، صيدلية العيادات الخارجية، صيدلية المرضى الداخليين، وحدة سلسلة الإمداد، الخ).
تتيح هذه الدورة للمتدربين التعرف على الخدمات الفنية والإدارية للصيدلي في المستشفى. وهذا يشمل إدارة العلاج الدوائي الأساسي والخاص بالإضافة إلى أنشطة رعاية المرضى المباشرة.

خلال هذا التدريب، من المستهدف أن يتعرف المتدرب على جميع الجوانب المهمة لممارسة صيدلة المستشفيات المعاصرة من خلال العمل مع وتحت إشراف صيدلي مسجل. يجب على المدرب تقييم الخبرة السابقة للمتدرب في مجال صيدلية المستشفى ووضع أهداف للتناوب التي تكمل وتبني على خبرة المتدرب والخطط المستقبلية.
في هذه الدورة، من المستهدف أن يقوم المتدرب بتطبيق المعرفة والخبرة المتقدمة في العمليات والوظائف التي يتم تنفيذها داخل خدمات صيدلية المستشفى.

2. Institutional/Hospital Pharmacy (3-6 weeks)

Objective:

In this rotation, the trainee is expected to apply knowledge and advanced experience in the processes and functions carried within the hospital pharmacy services. The main aim of this rotation is to introduce the trainee and develop their knowledge and skills in hospital pharmacy operations and services (e.g., outpatient pharmacy, inpatient pharmacy, supply chain unit, pharmacy administration...etc.). These activities will allow the trainees to recognize the pharmacist's technical and administrative services in the hospital. including basic and special drug therapy management in addition to direct patient care activities.

The hands-on exposure of the trainees to all the important aspects of contemporary hospital pharmacy practice is achieved by working with and under the direction of a registered pharmacist preceptor and other pharmacy personnel. The preceptor should evaluate the trainee's experience in hospital pharmacy and establish goals for the rotation which complement and build on the trainee's experience and future plans.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Demonstrate and provide the appropriate pharmaceutical technical services related to the Institutional/Hospital practice including:**
  - demonstrating knowledge of commonly used medications, formulations, and drug products in Egypt, in terms of their generic name, trade name, indications, side effects.
  - participation in formulary management.
  - assisting in stock control within the pharmacies and coordinate with warehouse, clinics, nurse stations and physicians to prepare and dispense medications.
  - understanding the different medication distribution systems within the hospital.
  - implementation and working according to the infection prevention and control requirements and standards.
  - explanation of strategies for ensuring the integrity of the supply chain.
  - demonstrating understanding of the principles of inventory control, including cycle counts, audits, physical inventory, turnover rate, handling return of merchandise, drug recalls, and days-on-hand.
  - determination of the impact of the pharmaceutical return process.
  - handling of narcotics and psychotropic medications according to the applicable laws and regulation and determining if modifications are needed to improve their security.
  - performing pharmaceutical/pharmacokinetics calculations related to medication orders, including pediatric medications doses by weight.
  - preparation and dispensing medications using appropriate techniques and following applicable professional standards, laws, and regulations and in accordance with patient needs.
  - practicing intravenous (IV) admixture preparation, IV compatibility checking and compounding of sterile products according to the national and international standards.
  - completing all steps in the final check of medication order to ensure accuracy.
  - appropriately substituting generic products according to formulary system

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - receiving medication orders and obtaining all required information for its processing.
  - interpreting the medication order/prescription completely, accurately, and efficiently and performing order entry accurately (if applicable).
  - collecting, retrieving, and reviewing relevant patient information from different sources (patient interview, patient chart, electronic system if available).
  - conducting an effective and thorough literature search in many resources and utilize appropriate drug information resources.
- **Identify drug related problems and adverse drug reactions (ADRs) by:**
  - identifying potential and actual drug-related problems including, potential interactions with other drug therapy or disease states, contraindications, and duplicate therapy and recognize medication errors and acting according.
  - identifying and reporting adverse drug events, and prevention strategies.
- **Develop and implement pharmaceutical care plans pertaining to the community practice through:**
  - selecting the appropriate dosage form and regimen according to the patient's conditions and history.
- **Communicate effectively and provide competent counselling services through:**
  - communicating effectively (verbally & written) with patients and other healthcare professionals.
  - providing effective medication counseling and patient education showing empathy.
  - Identifying, clarifying, and responding to drug information questions.
  - working effectively as a team member in an efficient and interactive way to perform the required tasks.
- **Demonstrate professionalisms and ethical practice through:**
  - adherence to legal, and regulatory requirements.
  - applying professional ethics as they relate to the practice of pharmacy.
  - accepting constructive criticism; and responding to feedback to modify behaviours.
  - managing time well and demonstrating an appropriate level of preparedness.

٣. تحضير المحاليل الوريدية (٣ أسابيع)

ستقوم هذه الدورة على إعداد المتدرب لتحضير المركبات المعقمة والأدوية الخطرة وجميع جوانب المناولة من استلام المواد إلى الفحص النهائي أو التخلص منها.

3. Intravenous (IV) Admixing Preparation (3 weeks)

Objective:

This rotation will prepare the trainee on the preparation of sterile compounds, hazardous/radiopharmaceutical medications, and all aspects of handling from receiving materials to final examination or disposal.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Demonstrate and provide the appropriate pharmaceutical technical services related to the IV admixing practice including:**
  - demonstrating appropriate pharmaceutical calculations as required to prepare a variety of sterile compounded preparations (Reconstitution, drug dose, IV flow rate, etc.)
  - describing the various sterile compounding areas: anteroom, buffer room, clean room, and the compounding, storage, and cleaning requirements for each area.

- recalling the various types of hoods and isolators to determine the appropriate method required for cleaning each.
- listing the proper methods for documenting environmental quality control in the cleanroom.
- demonstrating 100% accurate aseptic technique in
  -handwashing,

  -proper gowning and sterile gloving technique,

  - proper horizontal hood cleaning technique,

  - proper vertical hood or barrier isolator cleaning technique (when applicable),

  - proper powder vial reconstitution technique and

  - proper liquid vial and ampoule technique.
- practicing intravenous (IV) admixture preparation, IV compatibility checking and compounding of sterile products according to the national and international standards
- Maintenance of sterile compounding and clinical competency in compliance to policy and sufficient to meet pharmacy standards for patient safety and effective therapy.
- handling of cytotoxic medications and hazardous substances and preparing cancer treatment drugs in a way to maintain a sterile environment, including cleaning procedures and sterilization techniques, the use of appropriate personal protective equipment and procedures for the disposal of cytotoxic materials and supplies used in dealing with them (If available).
- assisting in stock control within the pharmacies and coordinate with warehouse, clinics, nurse stations and physicians to prepare and dispense prepared medications whenever appropriate.
- supervising technicians in aseptic compounding including parenteral nutrition.
- providing all needed interventions, reporting, and discussing medication errors, and adverse drug reaction(s) (ADRs).
- referring pending and unresolved difficulties to senior level.

- **Communicate effectively and provide competent counselling services through:**
  - communicating effectively orally and in writing with patients and other healthcare providers.
  - supervising technicians/workers in aseptic compounding areas.
- **Demonstrate professionalisms and ethical practice through:**
  - applying professional ethics as they relate to the practice of pharmacy.
  - adherence to legal, and regulatory requirements.
  - working as an effective member of the patient care team in an efficient and interactive way to perform the required tasks.
  - managing time well and demonstrate an appropriate level of preparedness.

2- Clinical Pharmacy Rotation in Adult General Medicine

Outline:

Item	Design
Rotation Title	Clinical Pharmacy Rotation in Adult General Medicine
Rotation Type	Obligatory
Rotation Duration	6 weeks
Mode of Delivery	On-site

دورة الصيدلة السريرية في الطب العام للبالغين **(٦ أسابيع)**

الغرض من هذه الدورة هو تطوير الكفاءات المعرفية للمتدربين والمهارات السريرية المطلوبة للتعامل باحتراف مع مجموعة واسعة من الحالات المتعلقة بالأمراض المختلفة (على سبيل المثال، أمراض الغدد الصماء، أمراض الجهاز الهضمي، أمراض الكلى، أمراض القلب وغيرها من الأمراض المزمنة) وتقديم الرعاية الصيدلانية المطلوبة لهؤلاء المرضى.خلال هذه الدورة، سيقضي المتدرب ٦ أسابيع في موقع التدريب وسيعمل المتدرب عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The purpose of this rotation is to develop the trainees' knowledge- based competencies and clinical skills required to deal professionally with a wide range of general medicine-related diseases (endocrine (e.g., endocrine disorders, gastrointestinal disorders, renal disorders, cardiovascular disorders, and other chronic conditions) and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at any adult general medicine rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - demonstrating appropriate understanding of disease state, and drug therapy.
  - assessing patient/patient medical history to identify disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
  - ability to review and retrieve information from patient charts.
  - identifying and utilizing appropriate drug information resources and demonstrating ability to research, review, and critically evaluate pertinent drug literature to respond to drug information questions.
  - conducting medication reconciliation and drug use evaluation accurately and in a timely manner.
  - responding proficiently to drug information requests from available resources.
- **Identify drug related problems and adverse drug reactions through:**
  - consistent and accurate identification of potential and actual drug-related problems including allergies, potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
  - recognizing and reporting adverse drug reactions (ADRs) on the appropriate ADR form as directed by the preceptor.
- **Develop and implement pharmaceutical care plans pertaining to the internal medicine practice through:**
  - participation in the formulation and selection of rational pharmacotherapeutic plan to include drug, route, dose, interval, therapeutic endpoint, and monitoring parameters in assigned patients.
  - evaluating and adjusting doses of different medications and accurate performance of pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on ideal body weight (IBW), and creatinine clearance (CrCl)).
  - interpreting vital signs and laboratory values and adjusting medications accordingly.
  - performing therapeutic drug monitoring and pharmacokinetic based dosing.
- **Communicate effectively and provide competent counselling services through:**
  - effective presentation of patient cases and therapeutic care plans to preceptors and peers.

- communicating effectively (verbal & written) with patients/carer and healthcare professionals regarding drug therapy.
- demonstrating sensitivity, respect, and showing empathy during communication with patients.
- providing effective medication counseling and patient education about safe and proper use of medicines including OTC preparations and medical devices.
- utilizing technologies and media to demonstrate effective presentation skills.

- **Demonstrate professionalisms and ethical practice through:**
  - adherence to legal, and regulatory requirements.
  - applying professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.
  - working collaboratively with other healthcare professionals daily in various medical departments and respecting each other's roles and responsibilities.
  - managing time well and demonstrating an appropriate level of preparedness.
  - Practicing self-assessment, accepting constructive criticism; and responding to feedback to modify behaviours.
  - implementing consistent scientific method for critical analysis of information and solving problems.
  - accomplishing assignments, tasks and topics research that require independent work and functioning for future professional development.

B)Elective Rotations

Critical Care Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Critical Care Clinical Pharmacy Rotation
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of Delivery	On-site

دورة الصيدلة السريرية للحالات الحرجة

الغرض من هذه الدورة هو تطوير الكفاءات المعرفية للمتدربين والمهارات السريرية المطلوبة للتعامل باحتراف مع مجموعة واسعة من حالات الرعاية الحرجة وتوفير الرعاية الصيدلانية المطلوبة لمرضى حالات الرعاية الحرجة المختلفة (على سبيل المثال، الأمراض الباطنية والجراحة وأمراض القلب والأوعية الدموية). خلال هذه الدورة، سيقضي المتدرب ٦ أسابيع في موقع دورة الرعاية الحرجة وسيعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The purpose of this rotation is to develop the trainees' knowledge base competencies and clinical skills required to deal professionally with a wide range of critically ill patients and provide the required pharmaceutical care for patients in different critical care areas including intensive care units (ICU) including medical and surgical ICU, coronary care units (CCU), neuro-intensive care units (NICU), etc., During this rotation, trainee will spend 6 weeks at a critical care rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - demonstrating appropriate understanding of disease state in terms of disease terminology, pathophysiology, symptomatology, and drug therapy.
  - assessing critical ill patient/patient medical history to identify disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
  - ability to review and retrieve information from critically ill patient charts.
  - conducting medication reconciliation and drug use evaluation accurately and in a timely manner.
  - identifying and utilizing appropriate drug information resources and demonstrating ability to research, review, and critical evaluation of pertinent drug literature to respond to drug information questions.
  - responding proficiently to drug information requests from available resources.
- **Develop and implement pharmaceutical care plans pertaining to the critical care medicine practice through:**
  - participating in the formulation and selection of rational pharmacotherapeutic plans to include drug, route, dose, interval, therapeutic endpoint, and monitoring parameters in assigned critically ill patients.
  - evaluating and adjusting doses of different medications and accurately perform pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on IBW, and CrCl).
  - interpreting vital signs and laboratory values and adjusting medications accordingly.
  - performing therapeutic drug monitoring and pharmacokinetic based dosing.
- **Identify drug related problems and adverse drug reactions through:**
  - consistent and accurate identification of potential and actual drug-related problems including allergies, potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
  - recognizing and reporting adverse drug reactions (ADRs) on the appropriate ADR form as directed.
- **Communicate effectively and provide competent counselling services through:**
  - effective presentation of patient cases and therapeutic care plans to preceptors and peers.
  - communicating effectively (verbally & written) with patients/care providers and healthcare professionals regarding drug therapy and being an active listener.
  - providing effective medication counseling and patient education and patient education about safe and proper use of medicines including OTC preparations and medical devices.
  - demonstrating sensitivity, respect, showing empathy during communication with patients.
- **Demonstrate professionalisms and ethical practice through:**
  - adherence to legal, and regulatory requirements.
  - applying professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.
  - working collaboratively with other healthcare professionals daily in various medical departments and respecting each other's roles and responsibilities.
  - managing time well and demonstrating an appropriate level of preparedness.
  - practicing self-assessment, accept constructive criticism; and responding to feedback to modify behaviours.

- implementing consistent scientific method for critical analysis of information and solving problems.
- utilizing technologies and media to demonstrate effective presentation skills.
- accomplishing assignments, tasks and topics research that require independent work and functioning for future professional development.

Cardiology and Cardiovascular Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Cardiology and Cardiovascular Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية لأمراض القلب والأوعية الدموية:

الغرض من هذه الدورة هو تطوير الكفاءات المعرفية للمتدربين والمهارات السريرية المطلوبة للتعامل باحتراف مع مجموعة واسعة من حالات أمراض القلب (على سبيل المثال، ارتفاع ضغط الدم، وقصور الأوعية الدموية، والرجفان الأذيني، وارتفاع نسبة الشحوم في الدم، واعتلال عضلة القلب، وأمراض الشريان التاجي الحادة، وحالات الرعاية الحرجة لأمراض القلب. والأوعية الدموية بما فيها السكتة الدماغية، والجلطات الرئوية والوريدية) وتقديم الرعاية الصيدلانية المطلوبة لهؤلاء المرضى. خلال هذا التناوب، سيقضي المتدرب ٦ أسابيع في موقع دورة أمراض القلب والأوعية الدموية وسيعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The purpose of this rotation is to develop the trainees' knowledge base competencies and clinical skills required to deal professionally with a wide range of cardiology and cardiovascular diseases cases (e.g., hypertension, ischemic heart disease, atrial fibrillation, dyslipidemia, heart failure, coronary artery diseases and acute critical care cardiology cases) and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at a cardiovascular rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - demonstrating appropriate understanding of disease state and drug therapy.
  - assessing cardiology patient/patient medical history to identify disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
  - ability to review and retrieve information from cardiology patient charts.
  - conducting medication reconciliation and drug use evaluation accurately and in a timely manner.
  - identifying and utilizing appropriate drug information resources and demonstrating ability to research, review, and critical evaluation of pertinent drug literature to respond to drug information questions.
  - responding proficiently to drug information requests from available resources.
- **Develop and implement pharmaceutical care plans pertaining to the cardiology and cardiovascular practice through:**

- participating in the formulation and selection of rational pharmacotherapeutic plans to include drug, route, dose, interval, therapeutic endpoint, and monitoring parameters in assigned cardiology patients.
- evaluating and adjusting doses of different medications and accurately perform pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on IBW, and CrCl).
- interpreting vital signs and laboratory values and adjusting medications accordingly.
- performing therapeutic drug monitoring and pharmacokinetic based dosing.

- **Identify drug related problems and adverse drug reactions through:**
  - consistent and accurate identification of potential and actual drug-related problems including allergies, potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
  - recognizing and reporting adverse drug reactions (ADRs) on the appropriate ADR form as directed by the preceptor.
- **Communicate effectively and provide competent counselling services through:**
  - effective presentation of patient cases and therapeutic care plans to preceptors and peers.
  - communicating effectively (verbal & written) with patients/carer and healthcare professionals regarding drug therapy.
  - demonstrating sensitivity, respect, and showing empathy during communication with patients
  - providing effective medication counseling and patient education about safe and proper use of medicines including OTC preparations and medical devices.
  - utilizing technologies and media to demonstrate effective presentation skills.
- **Demonstrate professionalisms and ethical practice through:**
  - adherence to legal, and regulatory requirements.
  - applying professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.
  - working collaboratively with other healthcare professionals daily in various medical departments and respecting each other's roles and responsibilities.
  - managing time well and demonstrating an appropriate level of preparedness.
  - Practicing self-assessment, accepting constructive criticism; and responding to feedback to modify behaviours.
  - implementing consistent scientific method for critical analysis of information and solving problems.
  - accomplishing assignments, tasks and topics research that require independent work and functioning for future professional development.

Gastroenterology and Hepatology Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Gastroenterology and Hepatology Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية لأمراض الجهاز الهضمي والكبد

الغرض من هذه الدورة هو تطوير الكفاءات المعرفية للمتدربين والمهارات السريرية المطلوبة للتعامل باحتراف مع مجموعة واسعة من الحالات المتعلقة بالجهاز الهضمي وأمراض الكبد (على سبيل المثال، قرح الجهاز الهضمي

وأمراض الأمعاء الالتهابية واضطرابات الحركة وأمراض البنكرياس والقنوات المرارية وأمراض الكبد بما في ذلك الالتهابات الفيروسية) وحالات الدعم التغذوية الإكلينيكي وتوفير الرعاية الصيدلانية المطلوبة لهؤلاء المرضى.
خلال هذه الدورة، سيقضي المتدرب ٦ أسابيع في موقع تناوب الجهاز الهضمي ويعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The purpose of this rotation is to develop the trainees' knowledge base competencies and clinical skills required to deal professionally with a wide range of gastrointestinal related cases (e.g., peptic ulcer, inflammatory bowel disease, motility disorders, pancreatic-biliary diseases, hepatic diseases including viral infections, and patients) and cases for clinical nutrition support need and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at gastroenterology rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - demonstrating appropriate understanding of disease state and drug therapy.
  - assessing gastrointestinal patient/patient medical history to identify disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
  - ability to review and retrieve information from gastrointestinal patient charts.
  - identifying and utilizing appropriate drug information resources and demonstrating ability to research, review, and critical evaluation of pertinent drug literature to respond to drug information questions.
  - conducting medication reconciliation and drug use evaluation accurately and in a timely manner.
  - responding proficiently to drug information requests from available resources.
- **Develop and implement pharmaceutical care plans pertaining to the gastrointestinal medicine practice through:**
  - participation in the formulation and selection of rational pharmacotherapeutic plan to include drug, route, dose, interval, therapeutic endpoint, and monitoring parameters in assigned patients.
  - evaluating and adjusting doses of different medications and accurate performance of pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on ideal body weight (IBW), and creatinine clearance (CrCl)).
  - interpreting vital signs and laboratory values and adjusting medications accordingly.
  - performing therapeutic drug monitoring and pharmacokinetic based dosing.
- **Identify drug related problems and adverse drug reactions through:**
  - consistent and accurate identification of potential and actual drug-related problems including allergies, potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
  - recognizing and reporting adverse drug reactions (ADRs) on the appropriate ADR form as directed by the preceptor.

- **Communicate effectively and provide competent counselling services through:**
  - effective presentation of patient cases and therapeutic care plans to preceptors and peers.

- communicating effectively (verbal & written) with patients/carer and healthcare professionals regarding drug therapy.
- demonstrating sensitivity, respect, and showing empathy during communication with patients
- providing effective medication counseling and patient education about safe and proper use of medicines including OTC preparations and medical devices.
- utilizing technologies and media to demonstrate effective presentation skills.

- **Demonstrate professionalisms and ethical practice through:**
  - adherence to legal, and regulatory requirements.
  - applying professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.
  - working collaboratively with other healthcare professionals daily in various medical departments and respecting each other's roles and responsibilities.
  - managing time well and demonstrating an appropriate level of preparedness.
  - Practicing self-assessment, accepting constructive criticism; and responding to feedback to modify behaviours.
  - implementing consistent scientific method for critical analysis of information and solving problems.
  - accomplishing assignments, tasks and topics research that require independent work and functioning for future professional development.

Nephrology and Urology Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Nephrology and Urology Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of Delivery	On-site

دورة الصيدلة السريرية لأمراض الكلى والمسالك البولية

خلال هذه الدورة سيقضى المتدرب ٦ أسابيع في موقع التدريب على أمراض الكلى والعمل عن كثب مع المدرب وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة. سيكون المتدرب الذي يكمل هذا البرنامج مؤهلاً ومسؤولا عن تحسين نتائج العلاج الدوائي لمرضى الكلى كعضو أساسي في فريق الرعاية الصحية متعدد التخصصات. تشمل الموضوعات التي سيتم تناولها أثناء التدريب إصابات الكلى الحادة والمزمنة، والفشل الكلوي الناجم عن الأدوية، وفقر الدم الناتج عن أمراض الكلى المزمنة، وهشاشة العظام والتغذية في أمراض الكلى المزمنة، والعلاج بالبدائل الكلوية (غسيل الكلى)، وزرع الكلى، وجرعات الأدوية في مرضى الكلى.

Objective:

The nephrology rotation in clinical pharmacy provides education and training with a primary emphasis on the development of practice skills in specialized pharmacy practice areas. Trainees completing this program will be qualified to provide and be responsible for improved drug therapy outcomes for renal patients as an integral member of the multidisciplinary healthcare team. During this rotation, trainees will spend 6 weeks at a nephrology rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed. Topics that will be covered during the rotation include acute kidney injury (AKI), drug-induced kidney failure, anemia of chronic kidney disease (CKD), bone metabolism in CKD, nutrition in CKD, renal replacement therapy (hemodialysis (HD) and continuous renal replacement therapy CRRT)), drug dosing in kidney impairment/HD/CRRT, hyponatremia and renal transplantation.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - demonstrating appropriate understanding of renal disease state and drug therapy.
  - demonstrating appropriate understanding of different renal replacement therapy modalities and their effect on medications.
  - assessing renal patient/patient medical history to identify renal disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
  - ability to review and retrieve information from renal patient charts.
  - identifying and utilizing appropriate drug information resources and demonstrating ability to research, review, and critical evaluation of pertinent drug literature to respond to drug information questions.
  - conducting medication reconciliation and drug use evaluation accurately and in a timely manner.
  - responding proficiently to drug information requests from available resources.
- **Develop and implement pharmaceutical care plans pertaining to the renal/urology medicine practice through:**
  - providing expert advice on which medications are safe for people with CKD, dialysis patients and transplantation patients to take.
  - assessing current options for treating anemia, hypertension, mineral bone disorder and parathyroid disorders in patients with CKD.
  - participating in the formulation and selection of rational pharmacotherapeutic plans to include drug, route, dose, interval, therapeutic endpoint, and monitoring parameters in assigned renal patients.
  - evaluating and adjusting doses of different medications and accurately perform pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on IBW, and CrCl).
  - interpreting vital signs and laboratory values and adjusting medications accordingly.
  - performing therapeutic drug monitoring and pharmacokinetic based dosing.
- **Identify drug related problems and adverse drug reactions through:**
  - consistent and accurate identification of potential and actual drug-related problems including allergies, potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
  - recognizing and reporting adverse drug reactions (ADRs) on the appropriate ADR form as directed by the preceptor.
- **Communicate effectively and provide competent counselling services through:**
  - effective presentation of patient cases and therapeutic care plans to preceptors and peers.
  - communicating effectively (verbal & written) with patients/carer and healthcare professionals regarding drug therapy.
  - demonstrating sensitivity, respect, and showing empathy during communication with patients
  - providing effective medication counseling and patient education about safe and proper use of medicines including OTC preparations and medical devices.
  - utilizing technologies and media to demonstrate effective presentation skills.
- **Demonstrate professionalisms and ethical practice through:**
  - adherence to legal, and regulatory requirements.

- applying professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.
- working collaboratively with other healthcare professionals daily in various medical departments and respecting each other's roles and responsibilities.
- managing time well and demonstrating an appropriate level of preparedness.
- Practicing self-assessment, accepting constructive criticism; and responding to feedback to modify behaviours.
- implementing consistent scientific method for critical analysis of information and solving problems.
- accomplishing assignments, tasks and topics research that require independent work and functioning for future professional development.

Oncology and Hematology Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Oncology and Hematology Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of Delivery	On-site

دورة الصيدلة السريرية للأورام وأمراض الدم

الغرض من هذه الدورة هو تطوير الكفاءات المعرفية للمتدربين والمهارات السريرية المطلوبة للتعامل باحتراف مع مجموعة واسعة من الحالات المتعلقة بالأورام الصلبة (مثل سرطان الثدي وسرطان الرئة وسرطان المعدة وسرطان القولون وسرطان الجهاز البولي التناسلية) والحالات المتعلقة بأورام الدم (على سبيل المثال، اللوكيميا، أورام الغدد الليمفاوية والورم النخاعي المتعدد، وأمراض الدم، بما في ذلك اضطرابات خلايا الدم الحمراء (فقر الدم) وخلايا الدم البيضاء والصفائح الدموية (قلة الصفيحات الدموية) وعوامل التخثر واضطرابات النزيف) والحالات التي تحتاج إدارة الألم والدعم الغذائي و توفير الرعاية الصيدلانية المطلوبة لهؤلاء المرضى.

خلال هذه الدورة، سيقضي المتدرب ٦ أسابيع في موقع تدريب أمراض الأورام وأمراض الدم وسيعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The purpose of this rotation is to develop the trainees' knowledge-based competencies and clinical skills required to deal professionally with a wide range of solid tumors related cases (e.g., breast cancer, lung cancer, gastric cancer, colon cancer and genitourinary tract cancer) as well as hematologic malignancies (e.g., Leukemias, Hodgkin's and Non- Hodgkin's lymphoma and Multiple myeloma), hematologic diseases, including disorders of red blood cells (anemia), white blood cells and platelets (thrombocytopenia), and coagulation factors and bleeding disorders. This rotation also addresses cases for clinical nutrition support and pain management needs and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at an oncology and or hematology rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - demonstrating appropriate understanding of oncologic and hematologic disease state, signs and symptoms of oncologic and hematologic emergencies and drug therapy including bone marrow transplantation.

- being familiar with the role of diagnostic, palliative, and curative radiation therapy and surgery in cancer management including the monitoring and managementof the associated complications.
- recognizing typically presenting signs and symptoms of oncologic emergencies.
- assessing patient/patient medical history to identify oncology/hematology disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
- ability to review and retrieve information from oncology/hematology patient charts.
- identifying and utilizing appropriate drug information resources and demonstrating ability to research, review, and critical evaluation of pertinent drug literature to respond to drug information questions.
- responding proficiently to drug information requests from available resources.

- **Develop and implement pharmaceutical care plans pertaining to the oncology/hematology practice through:**
  - conducting medication reconciliation and drug use evaluation accurately and in a timely manner.
  - participating in the formulation of rational pharmacotherapeutic plan to include drug, route, dose, interval, therapeutic endpoint and monitoring parameters in assigned cancer patients.
  - participating in the formulation and selection of rational pharmacotherapeutic plans to include drug, route, dose, interval, therapeutic endpoint, and monitoring parameters in assigned cancer patients.
  - planning for antimicrobial therapy in immunosuppressed patients, febrile neutropenia and developing a plan for supportive care nutrition counselling and pain control for these patients.
  - providing supportive care for oncological regimen to treat and relieve side effects and prevent toxicities of chemotherapy and radiation.
  - participating in the development of a nutritional support program for cancer patients.
  - evaluating and adjusting doses of different medications and accurately perform pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on IBW, and CrCl).
  - interpreting vital signs and laboratory values and adjusting medications accordingly.
  - performing therapeutic drug monitoring and pharmacokinetic based dosing.
- **Identify drug related problems and adverse drug reactions through:**
  - consistent and accurate identification of potential and actual drug-related problems including allergies, potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
  - recognizing and reporting adverse drug reactions (ADRs) on the appropriate ADR form, as pharmacovigilance reporting as directed by the preceptor.
- **Communicate effectively and provide competent counselling services through:**
  - effective presentation of patient cases and therapeutic care plans to preceptors and peers.
  - communicating effectively (verbally and written) with patients/care providers and healthcare professionals regarding drug therapy and being an active listener.
  - providing effective medication counseling and patient education and patient education about safe and proper use of medicines including OTC preparations, herbal products, and medical devices.
  - demonstrating sensitivity, respect, showing empathy during communication with patients.
  - utilizing technologies and media to demonstrate effective presentation skills.

- **Demonstrate professionalisms and ethical practice through:**
  - adherence to legal, and regulatory requirements.
  - applying professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.
  - practicing collaboratively with healthcare professionals daily in the department of oncology and hematology.
  - exhibiting critical thinking and problem-solving skills.
  - dealing professionally with health care team, patients, and communities.
  - managing time well and demonstrating an appropriate level of preparedness.
  - practicing self-assessment, accepting constructive criticism; and responding to feedback to modify behaviours.
  - accomplishing assignments, tasks and topics research that require independent work and functioning for future professional development.

Infectious Diseases Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Infectious Diseases Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية للأمراض المعدية والأوبئة

تم تصميم هذه الدورة لتزويد المتدرب بفرصة لتطوير مهاراته في التعامل من الأمراض المعدية البسيطة والمعقدة (الالتهابات البكتيرية والفيروسية والفطرية والكائنات الأولية)، كونه عضوًا نشطًا في فريق الرعاية الصحية، والمشاركة في اتخاذ القرار العلاجي وتطبيقه ومراقبته. من المتوقع أن يتعرض المتدرب لمجموعة واسعة من المتلازمات الرئيسية بما في ذلك الالتهابات المكتسبة في المجتمع والمستشفيات مثل الالتهاب الرئوي والتهاب بطانة القلب المعدية والجلد والأنسجة الرخوة والجهاز الهضمي والتهابات مجرى الدم والتهابات المسالك البولية وتقييم الحمى. خلال هذه الدورة، سيقضي المتدرب وقتًا في العمل عن كثب مع فريق الإشراف على مضادات الميكروبات. خلال هذه الدورة، سيقضي المتدرب فترة ٦ أسابيع في موقع تدريب الأمراض المعدية وسيعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective

This rotation is designed to provide the trainee with an opportunity to develop his/her skills in management of simple and complex infectious diseases (bacterial, viral, fungal, and protozoal infections), being an active member of team of health professionals, and taking part in therapeutic decision making, its application and monitoring. It is expected that trainees will be exposed to a broad range of major syndromes including community and hospital-acquired infections like pneumonia, infective endocarditis, skin and soft tissue, gastrointestinal, bloodstream infections, urinary tract infections and the evaluation of fever. During this course, the trainee will spend time working closely with the Antimicrobial Stewardship team. During this rotation, trainees will work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**

- demonstrating appropriate understanding of infectious disease including signs and symptoms in the inpatient settings and in the ambulatory care settings.
- appropriately interpreting microbiological data such as pathogen identification, gram stain and antimicrobial culture sensitivities.
- understanding basic principles of infection control such as contact or respiratory isolation and contact tracing.
- assessing patient/patient medical history in order to identify disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
- ability to review and retrieve information from infectious patient charts.
- identifying and utilizing appropriate drug information resources and demonstrating ability to research, review, and critical evaluation of pertinent drug literature to respond to drug information questions.
- responding proficiently to drug information requests from available resources.

- **Develop and implement pharmaceutical care plans pertaining to the infectious disease practice through:**
  - conducting medication reconciliation and drug use evaluation accurately and in a timely manner.
  - demonstrating ability to select an appropriate antimicrobial agent, dose and route based on antimicrobial mechanism of action, spectrum activity, adverse effects, drug interactions, drug penetration and relative costs and providing expert advice on which medications are safe for different types of infections.
  - participating in the formulation and selection of rational pharmacotherapeutic plans to include drug, route, dose, interval, therapeutic endpoint, and monitoring parameters in assigned patients with infections.
  - planning for antimicrobial therapy in immunosuppressed patients, febrile neutropenia, and critically ill patients.
  - evaluating and adjusting doses of different medications and accurately perform pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on IBW, and CrCl).
  - interpreting vital signs and laboratory values and adjusting medications accordingly.
  - performing therapeutic drug monitoring and pharmacokinetic based dosing.
  - assessing when a patient has treatment failure, despite susceptibility data suggesting otherwise.
  - ability to implement antimicrobial stewardship principles including surgical prophylaxis protocols to decrease antimicrobial resistance.
- **Identify drug related problems and adverse drug reactions (ADRs) through:**
  - consistent and accurate identification of potential and actual drug-related problems including allergies, potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
  - recognizing and reporting ADRs on the appropriate ADR form as directed by the preceptor.
- **Communicate effectively and provide competent counselling services through:**
  - effective presentation of patient cases and therapeutic care plans to preceptors and peers.
  - communicating effectively (verbal & written) with patients/carer and healthcare professionals regarding drug therapy.
  - demonstrating sensitivity, respect, and showing empathy during communication with patients

- providing effective medication counseling and patient education about safe and proper use of medicines including OTC preparations and medical devices.
- utilizing technologies and media to demonstrate effective presentation skills.

- **Demonstrate professionalisms and ethical practice through:**
  - adherence to legal, and regulatory requirements.
  - applying professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.
  - working collaboratively with other healthcare professionals daily in various medical departments and respecting each other's roles and responsibilities.
  - managing time well and demonstrating an appropriate level of preparedness.
  - Practicing self-assessment, accepting constructive criticism; and responding to feedback to modify behaviours.
  - implementing consistent scientific method for critical analysis of information and solving problems.
  - accomplishing assignments, tasks and topics research that require independent work and functioning for future professional development.

Pediatrics and Neonates Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Pediatrics and Neonates Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية لأمراض الأطفال وحديثي الولادة

الغرض من هذه الدورة هو تزويد المتدربين بالخبرة والكفاءة في الرعاية الصيدلانية لمرضى الأطفال بشكل عام وحديثي الولادة بشكل خاص. وسيشمل ذلك بناء معرفة المتدرب باضطرابات الأطفال/حديثي الولادة، والعلاجات ذات الصلة، ومصادر معلومات أدوية الأطفال. بالإضافة إلى ذلك، سيطور المتدرب مهاراته في حل المشكلات لدى المرضى من خلال مجموعة متنوعة من تجارب رعاية المرضى.

سيقوم المتدرب بالمشاركة في الجولات السريرية اليومية. خلال هذه الدورة، سيقضي المتدرب فترة ٦ أسابيع في موقع تدريب طب الأطفال/حديثي الولادة والعمل عن كثب مع مدربهم وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The purpose of this rotation is to provide trainees with experience and competencies in the pharmaceutical care of pediatric patients in general and neonatal in specific. This will include building the trainee's knowledge of pediatric/neonatal disorders, related treatments, and sources of pediatric medication information. In addition, the trainee will develop patients' problem-solving skills through a variety of patient care experiences. The trainee will work with and participate in daily work rounds. During this rotation, trainees will spend 6 weeks at pediatrics/neonates rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - demonstrating appropriate understanding of disease state and drug therapy.

- defining the different age groups and corresponding developmental milestones in pediatric patients.
- describing fundamental differences between pediatric and adult patients regarding drug therapy, including availability of treatment options, clinical data, and administration challenges.
- assessing pediatrics patient medical history to identify disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
- ability to review and retrieve information from pediatric/neonate patient charts.
- identifying and utilizing appropriate drug information resources and demonstrating ability to research, review, and critical evaluation of pertinent drug literature to respond to drug information questions.
- responding proficiently to drug information requests from available resources.
- ensuring appropriate formulary management for the pediatric population.

- **Develop and implement pharmaceutical care plans pertaining to pediatrics medicine practice through:**
  - conducting medication reconciliation and drug use evaluation accurately and in a timely manner.
  - participating in the formulation and selection of rational pharmacotherapeutic plans to include drug, route, dose, interval, therapeutic endpoint, and monitoring parameters in assigned pediatric/neonatal patients.
  - evaluating and adjusting doses of different medications and accurately perform pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on IBW, and CrCl).
  - interpreting vital signs and laboratory values and adjusting medications accordingly.
  - performing therapeutic drug monitoring and pharmacokinetic based dosing.
- **Identify drug related problems and adverse drug reactions (ADRs) through:**
  - consistent and accurate identification of potential and actual drug-related problems including allergies, potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
  - recognizing and reporting ADRs on the appropriate ADR form as directed by the preceptor.
- **Communicate effectively and provide competent counselling services through:**
  - effective presentation of patient cases and therapeutic care plans to preceptors and peers.
  - communicating effectively (verbally & written) with patients/care providers and healthcare professionals regarding drug therapy and being an active listener.
  - providing effective medication counseling and patient education and patient education about safe and proper use of medicines including OTC preparations and medical devices.
  - demonstrating sensitivity, respect, showing empathy during communication with patients.
  - working as an effective member of the patient care team.
- **Demonstrate professionalisms and ethical practice through:**
  - adherence to legal, and regulatory requirements.
  - applying professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.
  - working as an effective member of the patient care team.
  - managing time well and demonstrating an appropriate level of preparedness.
  - accepting constructive criticism; and responding to feedback to modify behaviours.

Geriatrics (Elderly) Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Geriatrics (Elderly) Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية في أمراض الشيخوخة (كبار السن)

تعتمد هذه الدورة على إعداد صيدلي يمكنه وصف التغيرات الفسيولوجية التي تحدث نتيجة الشيخوخة ومناقشة كيفية تأثير هذه التغييرات على حركية الأدوية لدى المريض المسن. تهدف هذه الدورة إلى إعداد صيدلي يمكنه أيضا وصف الفسيولوجيا المرضية والتدخلات العلاجية والمعايير الحاكمة للأمراض الشائعة التي يواجهها كبار السن بما في ذلك الذبحة الصدرية وسلس الأمعاء/المثانة وفقر الدم واعتلال عضلة القلب الاحتقاني والخرف والاكتئاب والأرق والسكري وارتفاع ضغط الدم، عدم انتظام ضربات القلب، هشاشة العظام، مرض باركنسون، قرح الجهاز الهضمي، الالتهاب الرئوي، تقرحات الفراش، التهابات المسالك البولية، نوبات الصرع وغيرها.

يُمنح المتدرب أيضًا القدرة على توصيل المعلومات ذات الصلة بالعلاج الدوائي للمرضى ومقدمي الرعاية الصحية. خلال هذه الدورة، سيقضي المتدرب فترة ٦ أسابيع في موقع تدريب أمراض الشيخوخة والعمل عن كثب مع مدربهم وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

This rotation is based on preparing a pharmacist who can describe the physiological changes that occur as a result of aging and discuss how these changes affect the pharmacokinetics of drugs in the elderly patient. This rotation aims to prepare a pharmacist who can describe the pathophysiology, therapeutic interventions, and control criteria for common diseases faced by the elderly including ischemic heart diseases, bowel/bladder incontinence, common anaemias, congestive heart failure, dementia, depression, insomnia, diabetes, and hypertension, arrhythmia, osteoporosis, Parkinson's disease, peptic ulcer disease, pneumonia, pressure sores, urinary tract infections, epileptic seizures. The trainee is also given the ability to communicate relevant information related to drug therapy to patients and health care providers. During this rotation, trainees will spend 6 weeks at geriatrics rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - demonstrating appropriate understanding of disease state and drug therapy in elderly patients.
  - describing fundamental differences between elderly patients and adult patients regarding drug therapy, including availability of treatment options, clinical data, and administration challenges.
  - assessing elderly patient medical history to identify disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
  - ability to review and retrieve information from elderly patient charts.
  - identifying and utilizing appropriate drug information resources and demonstrating ability to research, review, and critical evaluation of pertinent drug literature to respond to drug information questions.
  - responding proficiently to drug information requests from available resources.
  - ensuring appropriate formulary management for the geriatrics population.

- **Develop and implement pharmaceutical care plans pertaining to the geriatrics practice through:**
  - conducting medication reconciliation and drug use evaluation accurately and in a timely manner.
  - participating in the formulation and selection of rational pharmacotherapeutic plans to include drug, route, dose, interval, therapeutic endpoint, and monitoring parameters in assigned elderly patients.
  - evaluating and adjusting doses of different medications and accurately perform pharmaceutical calculations related to medication orders, including renal patient orders (based on IBW, and CrCl).
  - interpreting vital signs and laboratory values and adjusting medications accordingly.
  - performing therapeutic drug monitoring and pharmacokinetic based dosing.
- **Identify drug related problems and adverse drug reactions (ADRs) through:**
  - consistent and accurate identification of potential and actual drug-related problems including allergies, potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
  - recognizing and reporting ADRs on the appropriate ADR form as directed by the preceptor.
- **Communicate effectively and provide competent counselling services through:**
  - effective presentation of patient cases and therapeutic care plans to preceptors and peers.
  - communicating effectively (verbal & written) with patients/carer and healthcare professionals regarding drug therapy.
  - demonstrating sensitivity, respect, and showing empathy during communication with patients
  - providing effective medication counseling and patient education about safe and proper use of medicines including OTC preparations and medical devices.
  - utilizing technologies and media to demonstrate effective presentation skills.
- **Demonstrate professionalisms and ethical practice through:**
  - adherence to legal, and regulatory requirements.
  - applying professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.
  - working collaboratively with other healthcare professionals daily in various medical departments and respecting each other's roles and responsibilities.
  - managing time well and demonstrating an appropriate level of preparedness.
  - Practicing self-assessment, accepting constructive criticism; and responding to feedback to modify behaviours.
  - implementing consistent scientific method for critical analysis of information and solving problems.
  - accomplishing assignments, tasks and topics research that require independent work and functioning for future professional development

Neuropsychiatric Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Neuropsychiatric Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية في الأمراض العصبية والنفسية

الهدف من هذه الدورة في مجال الأمراض النفسية والعصبية هو إعطاء المتدرب فهمًا للتعرف على الاضطرابات النفسية/العصبية وتشخيصها وعلاجها ومراقبة الاستخدام الآمن والفعال للأدوية النفسية/العصبية. سيتعلم المتدربون في هذه الدورة مفاهيم فسيولوجيا الألم وتقييمه وإدارته. يُمنح المتدرب أيضًا القدرة على توصيل المعلومات ذات الصلة بالعلاج الدوائي للمرضى ومقدمي الرعاية الصحية.

خلال هذه الدورة، سيقضي المتدرب فترة ٦ أسابيع في موقع التدريب ويعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

The goal of this rotation in neuropsychiatry is to give the trainee an understanding of the recognition, diagnosis, and treatment of neuropsychiatric disorders and monitoring the safe and effective use of psychotropic medications. Trainees in this rotation will learn concepts of pain physiology, assessment, and management. The trainee is also given the ability to communicate relevant information related to drug therapy to patients and health care providers. During this rotation, trainee will spend 6 weeks at rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - demonstrating appropriate understanding of disease state and drug therapy in neuropsychiatric patients.
  - understanding different strategies to assess mental status including general description, emotions, perceptual disturbances, thought process, orientation, memory, impulse control, judgment, insight and reliability.
  - discussing the clinical use, pharmacokinetics, adverse effects, toxicity, and drug interactions of antianxiety, sedative-hypnotics, antidepressants, antipsychotics, mood stabilizers, central nervous system (CNS) stimulants, antiparkinsonian agents, antimigraine agents, analgesics, opioids, and anticonvulsants.
  - identifying possible drug-induced abnormalities and developing plan to support or rule out a drug-induced etiology for psychiatric, neurologic, or medical illness.
  - assessing patient/patient medical history to identify disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
  - ability to review and retrieve information from patient charts.
  - identifying and utilizing appropriate drug information resources and demonstrating ability to research, review, and critically evaluate pertinent drug literature to respond to drug information questions.
  - responding proficiently to drug information requests from available resources.
- **Identify drug related problems and adverse drug reactions through:**
  - consistent and accurate identification of potential and actual drug-related problems including allergies, potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
  - recognizing and reporting adverse drug reactions (ADRs) on the appropriate ADR form as directed by the preceptor.
- **Develop and implement pharmaceutical care plans pertaining to neuropsychiatric medicine practice through:**
  - conducting medication reconciliation and drug use evaluation accurately and in a timely manner.
  - interpreting vital signs and laboratory values and adjusting medications accordingly.

- participation in the formulation of a rational pharmacotherapeutic plan to include drug, route, dose, interval, therapeutic endpoint and monitoring parameters in assigned neuropsychiatric patients.
- designing plan for initiating, monitoring, and discontinuing pain therapy for patients with acute and chronic pain syndromes.
- evaluating and adjusting doses of different medications and accurate performance of pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on ideal body weight (IBW), and creatinine clearance (CrCl)).
- recommending plan for the dosing conversion of different types of opiates and different product formulations (e.g., oral to IV, IV to oral).
- performing therapeutic drug monitoring and pharmacokinetic based dosing.

- **Communicate effectively and provide competent counselling services through:**
  - effective presentation of patient cases and therapeutic care plans to preceptors and peers.
  - communicating effectively (verbal & written) with patients/carer and healthcare professionals regarding drug therapy.
  - demonstrating sensitivity, respect, and showing empathy during communication with patients
  - providing effective medication counseling and patient education about safe and proper use of medicines including OTC preparations and medical devices.
  - utilizing technologies and media to demonstrate effective presentation skills.
- **Demonstrate professionalisms and ethical practice through:**
  - adherence to legal, and regulatory requirements.
  - applying professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.
  - working collaboratively with other healthcare professionals daily in various medical departments and respecting each other's roles and responsibilities.
  - managing time well and demonstrating an appropriate level of preparedness.
  - Practicing self-assessment, accepting constructive criticism; and responding to feedback to modify behaviours.
  - implementing consistent scientific method for critical analysis of information and solving problems.
  - accomplishing assignments, tasks and topics research that require independent work and functioning for future professional development.

Obstetrics and Gynecology Clinical Pharmacy Rotation

Outline:

Item	Design
Rotation Title	Obstetrics and Gynecology Clinical Pharmacy
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة السريرية في أمراض النساء والولادة

تؤهل هذه الدورة المتدربون على التعامل مع المرضى قبل الولادة وبعدها. حيث يكتسب المتدرب خبرة في مضاعفات الحمل: تسمم الحمل، والولادة المتعسرة، وحالات عدوى الدم (الإنتان)، ونزيف ما بعد الولادة. خلال هذه الدورة، سيقضي المتدرب٦ أسابيع في موقع التدريب ويعمل عن كثب مع مدربه وسيكون التدريب تجربة ديناميكية لضمان تطوير المهارات اللازمة.

Objective:

This rotation qualifies trainees to deal with patients before and after childbirth, as the trainee will gain experience in maternal complications: preeclampsia, obstructed labor, sepsis, and postpartum hemorrhage. During this rotation, trainees will spend 6 weeks at rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - demonstrating appropriate understanding of disease state and drug therapy including:
    preterm labor and delivery.

    premature rupture of membranes (PROM).

    pregnancy with chronic disease; iv. Infections during pregnancy.

    gestational hypertension, pre-eclampsia, eclampsia.

    gestational diabetes.

    hematologic disorders of pregnancy.
  - assessing patient/patient medical history in order to identify disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
  - ability to review and retrieve information from patient charts.
  - identifying and utilizing appropriate drug information resources, demonstrate ability to research, review, and critically evaluate pertinent drug literature to respond to drug information questions.
  - responding proficiently to drug information requests from available resources.
- **Develop and implement pharmaceutical care plans pertaining through:**
  - conducting medication reconciliation and drug use evaluation accurately and in a timely manner.
  - reviewing medication profiles and pertinent laboratory data for assigned patients in the emergency department setting for appropriateness of therapeutic regimens, drug interactions, and endpoint monitoring.
  - participating in the formulation and selection of rational pharmacotherapeutic plans to include drug, route, dose, interval, therapeutic endpoint and monitoring parameters in assigned patients.
  - evaluating and adjusting doses of different medications and accurately perform pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on IBW, and CrCl).
  - interpreting vital signs and laboratory values and adjusting medications accordingly.
  - performing therapeutic drug monitoring and pharmacokinetic based dosing.
- **Identify drug related problems and adverse drug (ADRs) reactions through:**
  - consistent and accurate identification of potential and actual drug-related problems including allergies, potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
  - recognizing and reporting ADRs on the appropriate ADR form as directed by the preceptor.

- **Communicate effectively and provide competent counselling services through:**
  - effective presentation of patient cases and therapeutic care plans to preceptors and peers.
  - communicating effectively (verbal & written) with patients/carer and healthcare professionals regarding drug therapy.
  - demonstrating sensitivity, respect, and showing empathy during communication with patients
  - providing effective medication counseling and patient education about safe and proper use of medicines including OTC preparations and medical devices.
  - utilizing technologies and media to demonstrate effective presentation skills.
- **Demonstrate professionalisms and ethical practice through:**
  - adherence to legal, and regulatory requirements.
  - applying professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.
  - working collaboratively with other healthcare professionals daily in various medical departments and respecting each other's roles and responsibilities.
  - managing time well and demonstrating an appropriate level of preparedness.
  - Practicing self-assessment, accepting constructive criticism; and responding to feedback to modify behaviours.
  - implementing consistent scientific method for critical analysis of information and solving problems.
  - accomplishing assignments, tasks and topics research that require independent work and functioning for future professional development.

Clinical Nutrition Support Rotation

Outline:

Item	Design
Rotation Title	Clinical Nutrition Support
Rotation Type	Elective
Rotation Duration	6 weeks
Mode of delivery	On-site

دورة الصيدلة الإكلينيكية في دعم التغذية الإكلينيكية

تتمثل أهداف هذه الدورة في تزويد المتدرب بفهم عام للقضايا المتعلقة بدعم التغذية السريرية وإتاحة الفرصة لهم لتطوير المهارات في تقييم المريض ومراقبة المريض وصياغة التغذية الأنبوبية الوريدية وتعديل الصيغة وذلك بعد تحديد علاقة الحالة المرضية أو طبيعة كل مرض باحتياجات المريض التغذوية. يجب على المتدرب أيضًا زيادة كفاءته في تقنيات الاتصال لتسهيل التفاعل مع غيره من المتخصصين في الرعاية الصحية والمرضى.

سيتم تصميم الدورة وفقًا لنقاط القوة والضعف لدى الطالب، خاصة فيما يتعلق بالموضوعات الأساسية مثل توازن السوائل والكهارل، وتفسير قيم غازات الدم والاختبارات المعملية، وتأثير الأدوية على توازن السوائل، والكهارل، والاختبارات المعملية.

تم تصميم هذه الدورة لتعزيز وتطوير المعرفة والمهارات والقيم المهنية من أجل توفير رعاية فعالة قائمة على الأدلة ومركزة على المريض.

Objective:

The goals for this rotation are to provide the trainee with a general understanding of issues related to specialized nutrition support and the influence of disease state and pathogenesis on nutritional status of patient and nutrient requirements. This rotation will give the trainee the opportunity to develop skills in patient assessment, patient monitoring, enteral and parenteral nutrition formulation, and formula adjustment and diet fortification. The trainee should also increase their proficiency in communication techniques so as to facilitate interaction with other

health care professionals and patients. The rotation will be tailored to the trainee's strengths and weaknesses, especially as related to basic topics such as fluid and electrolyte balance, interpretation of blood gas values and laboratory tests, and effects of medications on fluid balance, electrolytes, and laboratory tests.

Learning Outcomes (LOs):

After the completion of this rotation, the trainee should be able to:

- **Collect relevant information related to patient data and knowledge of disease states to aid in clinical decision making including:**
  - gathering necessary patient data from appropriate sources (nurse, patient, chart, physicians, etc.).
  - demonstrating understanding of knowledge of biochemical symptoms of malnutrition states, eating disorders and other nutritional diseases.
  - assessing patient medical and medication history including active problems, Past Medical History (PMH), pertinent Physical Examination (PE), laboratory data and physical assessment and diagnostic measures.
  - Conducting comprehensive nutritional assessment of the patient using validated tools, encompassing dietary, anthropometric, clinical, biochemical, and sociologic evaluations.
- **Develop and implement enteral or parenteral nutritional plan through:**
  - evaluating the appropriateness of enteral/parenteral nutrition as the route for nutritional intervention.
  - estimating caloric and protein requirements for a patient and formulating a parenteral nutrition plan to meet these requirements.
  - discussing normal fluid and electrolyte balance.
  - recommending adjustments in electrolyte provision and the most appropriate route for adjustments (change total parenteral nutrition (TPN) versus change maintenance IV versus IV or oral (PO) supplemental dose).
  - understanding basic interpretation of blood gas values, especially as related to components of the parenteral nutrition formulation and appropriate changes in the parenteral nutrition formulation.
  - Recognizing, developing, and implementing different nutrition plans and requirements in different disease states; hypertension, cardiovascular, hepatic, renal and oncologic diseases including recognizing the following
    - purposes and goals of parenteral nutrition therapy.
    - contraindication for enteral /parenteral nutritional plan based on the comorbid chronic disease state.
    - parameters to monitor efficacy and safety.
  - discussing monitoring parameters for patients receiving parenteral nutrition including which parameters to use, how often they are checked, and interpretation of test results.
  - recognizing differences between adult and pediatric parenteral nutrition guidelines and requirements in different disease states
- **Identify drug related problems and adverse drug (ADRs) reactions through:**
  - consistently and accurately identifying potential drug-related problems including potential interactions with other drug therapy or disease states, and duplicate therapy, recognizing medication errors and prioritizing the problem list.
  - recognizing and reporting ADRs on the appropriate ADR form as directed by the preceptor.
  - discussing issues related to medications, tube feeding and potential drug nutrient interactions.

- discussing issues related to medications and parenteral nutrition in terms of chemical stability and physical incompatibility.

- **Communicate effectively and provide competent counselling services through:**
  - communicating effectively (verbally & written) with patients/care providers and healthcare professionals regarding drug therapy and nutritional formula; being an active listener
  - effectively presenting recommendations for changes in the enteral/parenteral nutrition therapy of a patient, both oral presentation and in writing.
  - providing effective nutrition counseling and patient education.
  - demonstrating sensitivity, respect, showing empathy during communication with patients
  - effective presentation of patient cases and nutritional care plans to preceptors and peers.
- **Demonstrate professionalisms and ethical practice through:**
  - apply professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.
  - working collaboratively with other healthcare professionals daily in various medical departments, respecting each other's roles and responsibilities.
  - managing time well and demonstrate an appropriate level of preparedness.
  - complying with ethics, laws and regulations, respecting patients' confidentiality and adhering to dress code.
  - demonstrating enthusiasm, ability to undertake tasks, completing assignments, fulfilling responsibilities in a timely manner, appropriately prioritizing, and organizing tasks independently or in groups.
  - conducting self-assessment to identify the strengths and weaknesses, accepting constructive criticism for personal and professional development, and responding to feedback to modify behaviours.
  - accomplishing assignments, tasks and topics research that require independent work and functioning for future professional development

Industrial Rotations Assessment and Evaluation Forms

A) Obligatory Rotations

Drug Tour: Registration to Market Rotation

Item	Description
Name of Trainee	
Faculty of Pharmacy - University	
Rotation Site	
Rotation Period	From ...../...../..... to ...../...../.....
Mode of Delivery	On-site ( ) / Online ( )

Performance Evaluation Elements		Rating (Max = 4)				
No	**Please rate the trainee's performance according to the mentioned activity**	**1**	**2**	**3**	**4**	**NA ***
PILLAR 1: Regulatory overview on the registered pharmaceutical and biological products						
1	Define different pharmaceutical products with their different forms (human, veterinary, herbal and cosmetics).					
2	Define biological products and their derivatives.					
3	Understand how to register pharmaceutical products according to international guidelines.					
4	Comprehend how to prepare registration files of pharmaceutical products according to EDA regulatory guidelines.					
5	Know how to register biological products according to the international guidelines.					
6	Comprehend how to prepare registration files of biological products according to EDA regulatory guidelines.					
7	Know the components of the unified technical file (Common Technical Document – CTD & eCTD files).					
8	Identify international institutions regulating the registration and trading of pharmaceutical products such as (WHO, EMA, FDA).					
PILLAR 2: Regulation overview of the registration of Medical Devices and in-vitro diagnostic medical devices (IVDs)						
9	Define the medical device.					
10	Identify medical devices classification.					
11	Recognize how to register the medical device and *in-vitro* diagnostic medical devices (IVDs) in accordance with international guidelines.					
12	Know how to prepare registration files and the current regulatory decrees.					
PILLAR 3: Overview on bioavailability and bioequivalence studies						

13	Identify the importance of Bioequivalence in drug registration.					
14	Recognize a brief introduction about bioequivalence study.					
15	Recognize a brief introduction about *in-vitro* dissolution study.					
16	Understand the Egyptian Guidelines for Conducting Bioequivalence Studies.					
17	Know the licensing process of bioequivalence and bioavailability centers approved by EDA.					
PILLAR 4: Overview on Good Manufacturing Practice (GMP)						
18	Identify basic principles of Good Manufacturing Practices.					
19	Recognize the guidelines of assurance system for good cleaning and public health (Cleaning Validation).					
20	Understand systems for the qualification and verification of equipment and devices.					
21	Identify raw material management systems, good storage, and warehouses, ensuring and applying safety measures in every step, and good storage conditions of warehouses.					
22	Recognize Good documentation system (How to control and validate data integrity from regulatory point of view).					
23	Understand Good documentation system (Manufacturing point of view).					
PILLAR 5: Pharmaceutical inspection and knowledge of the application of pharmacy laws and inspection tasks						
24	Identify licensing procedures for the stores, warehouses, and distribution companies of pharmaceutical and biological products.					
25	Identify narcotic drugs usage laws and how to apply in market.					
26	Recognize pharmaceutical inspection laws and regulations.					
27	Understand the controlling method on licensed pharmaceutical entities.					
28	Recognize the control over pharmaceutical establishments (factories - stores - pharmacies ...).					
29	Practice reports writing for tests and checklists.					
30	Prepare regulatory inspection reports, warning letters and recalls.					
PILLAR 6: Quality Control of Pharmaceutical Products in EDA Labs						
31	Identify the basic concepts of Total Quality Management (TQM) and Quality Management System (QMS).					
32	Perform the physicochemical analysis of Pharmaceutical Products (Basics).					
33	Execute the microbiological analysis of pharmaceutical products (Basics).					
34	Recognize good laboratory and inspection practices (Basics).					
PILLAR 7: Over- The-Counter Marketing of drugs, Application, Approaches and Principals						
35	Define a pharmaceutical product as an OTC.					
36	Recognize the approved national list of OTC drugs.					

37	Know EDA regulations for the registration of OTC products.					
38	Identify the role of outpatient (community) Pharmacist in reporting emergency and medical errors.					
39	Understand the restrictions on dispensing antimicrobial agents on the OTC.					
40	Realize pharmacy outpatient role in patient counseling on the OTC usage.					
PILLAR 8: How to Regulate Insert Leaflet and Promotional material						
41	Define promotional materials and learn how to prepare and control them.					
42	Identify SmPC and PIL: pillars of information.					
43	Recognize the most important pharmacological and drug references.					
44	Discern drug information resources and search approaches.					
45	State drug regulatory authorities in reference countries.					
46	Navigate through pharmaceutical references *via* practical training.					
47	Determine pharmacy informatics application.					
PILLAR 9: Regulatory Overview on Pharmacovigilance Practice						
48	Understand the importance of Pharmacovigilance regulation system for pharmaceutical companies and the impact on drug registration.					
49	Know the importance of Pharmacovigilance regulation to hospitals and health institutes.					
50	Recognize Pharmacovigilance regulatory system channels of reporting for the public.					
51	Tracking data of Pharmaceutical Products globally (new warnings or precautions).					
52	Identify Risk Management Plan (RMP).					
53	Recognize emerging safety issues (ESI) / Safety information.					
54	Fulfill causality assessment of individual case safety reports (ICSRs).					
55	Execute practical training on reporting to national database.					
GENERAL						
56	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.					
57	Demonstrate effective communication skills verbally, non-verbally with teamwork members.					
Total Marks						

***NA, Not Applicable**

Scoring:

$$Rotation\ Score\ (\%) = \frac{\text{Total marks scored by the trainee (... ... ...) x 100}}{\text{Number of Evaluation Elements (... ... ...) x 4}}$$

N.B.: The minimum score for passing this rotation is 60%.

Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... ... absence days/hours equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Signatures of Preceptors:

From the Training Site	*From the Faculty of Pharmacy*
Name:	*Name:* .....
Signature:	*Signature:* .....
Stamp:	*Stamp:*

B) Elective Rotations

Pharmaceutical Product Development Rotation

Item	Description
Name of Trainee	
Faculty of Pharmacy - University	
Rotation Site	
Rotation Period	From ...../...../..... to ...../...../.....
Mode of Delivery	On-site ( ) / Online ( )

Performance Evaluation Elements		Rating (Max = 4)				
No	**Please rate the trainee's performance according to the mentioned activity**	**1**	**2**	**3**	**4**	**NA***
1	Review the specifications of raw materials and pharmaceutical products according to the latest editions of pharmacopoeias.					
2	Know and follow references and guidelines for conducting performance, stability, comparative dissolution, and bioequivalence studies on pharmaceutical products.					
3	Recognize the development process stages for new formulations, from initial planning to production.					
4	Investigate any problem that appears during the production of new pharmaceutical products and take preventive measures (Troubleshooting).					
5	Participate in the design and conduct of laboratory experiments on different pharmaceutical dosage forms, for example, dissolution, disintegration, friability, hardness, content uniformity, weight variation, etc....					
6	Engage in conducting stability studies on finished products, follow-up them in stability chambers, and conduct the required stability tests.					
7	Participate in designing and conducting comparative dissolution and/or bioequivalence studies for pharmaceutical products (Generic *versus* Innovator).					
8	Collaborate in the analytical method development and validation.					
9	Apply Good Laboratory Practices (GLP) and Good Pharmaceutical Manufacturing Practices (cGMP).					
10	Identify and prepare the Common Technical Document (CTD & eCTD files) and their components.					
11	Participate in recording, analyzing, and interpreting test results and processing them statistically.					
12	Demonstrate responsibility, cooperate, and integrate effectively with research team members.					

13	Demonstrate effective communication skills verbally, non-verbally with research team members.					
Total Marks						

***NA, Not Applicable**

Scoring:

$$Rotation\ Score\ (\%) = \frac{Total\ marks\ scored\ by\ the\ trainee\ (\ldots\ldots\ldots)\ x\ 100}{Number\ of\ Evaluation\ Elements\ (\ldots\ldots\ldots)\ x\ 4}$$

N.B.: The minimum score for passing this rotation is 60%.

Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... ... absence days equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Signatures of Preceptors:

From the Training Site	*From the Faculty of Pharmacy*
Name:	***Name:***
.....	.....
Signature:	***Signature:***
.....	.....
Stamp:	***Stamp:***

Quality Management in Pharmaceutical Industry Rotation

Item	Description
Name of Trainee	
Faculty of Pharmacy - University	
Rotation Site	
Rotation Period	From ...../...../..... to ...../...../.....
Mode of Delivery	On-site ( ) / Online ( )

Performance Evaluation Elements		Rating (Max = 4)				
No	**Please rate the trainee's performance according to the mentioned activity**	**1**	**2**	**3**	**4**	**NA***
1	Identify and participate in QC tests of raw materials: procedures, significance, and troubleshooting.					
2	Recognize and collaborate in QC tests of finished products: procedures, significance, and troubleshooting.					
3	Engage in the analytical method development and validation.					
4	Apply Good Laboratory Practices (GLP) and data integrity in QC.					
5	Monitor different production lines.					
6	Understand the basic concepts of Total Quality Management (TQM), Quality Management System (QMS) and the risk management system (RMS).					
7	Apply standard operating procedures (SOPs) for deviation, complaint, recall, and change control.					
8	Execute internal auditing and prepare quality reports.					
9	Perform Process Validation: protocol, sampling, and final report.					
10	Perform Cleaning Validation: protocol, sampling, and final report.					
11	Participate in Room Qualification or Machine Qualification: protocol and final report.					
12	Prepare quality control (QC) reports.					
13	Recognize Good Documentation Practice and Data Integrity.					
14	Prepare operating records for manufacturing products (Batch Records).					
15	Identify and apply standard operating procedures (SOPs) for operation, validation and calibration of different instruments and devices.					
16	Demonstrate responsibility, cooperate, and integrate effectively with research team members.					
17	Demonstrate effective communication skills verbally, non-verbally with research team members.					
Total Marks						

***NA, Not Applicable**

Scoring:

$$Rotation\ Score\ (\%) = \frac{Total\ marks\ scored\ by\ the\ trainee\ (\ldots\ldots\ldots)\ x\ 100}{Number\ of\ Evaluation\ Elements\ (\ldots\ldots\ldots)\ x\ 4}$$

N.B.: The minimum score for passing this rotation is 60%.

Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... ... absence days/hours equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Signatures of Preceptors:

From the Training Site	*From the Faculty of Pharmacy*
Name:	***Name:***
.....	.....
Signature:	***Signature:***
.....	.....
Stamp:	***Stamp:***

Pharmacovigilance Rotation

Item	Description
Name of Trainee	
Faculty of Pharmacy - University	
Rotation Site	
Rotation Period	From ...../...../..... to ...../...../.....
Mode of Delivery	On-site ( ) / Online ( )

Performance Evaluation Elements		Rating (Max = 4)				
No	**Please rate the trainee's performance according to the mentioned activity**	**1**	**2**	**3**	**4**	**NA***
1	Determine, measure, and compare the costs, risks, and benefits of different treatment programs.					
2	Monitor the safety, quality, and efficacy of marketed pharmaceutical products.					
3	Monitor the serious adverse drug reactions (ADRs) of drugs by following-up on marketed pharmaceutical products.					
4	Receive and inspect follow-up reports on the quality of pharmaceutical products with decision-making in case of the occurrence of ADRs.					
5	Prepare the Risk Management Plan (RMP) document.					
6	Prepare periodic safety update reports (PSUR) for pharmaceutical products.					
7	Understand the international vigilance guidelines and apply good pharmacovigilance practices (GPvP).					
8	Recognize the procedures of regulatory inspections and audits.					
9	Demonstrate responsibility, cooperate, and integrate effectively with healthcare team members.					
10	Demonstrate effective communication skills verbally, non-verbally with healthcare team members.					
Total Marks						

***NA, Not Applicable**

Scoring:

$$Rotation\ Score\ (\%) = \frac{Total\ marks\ scored\ by\ the\ trainee\ (\ldots\ldots\ldots)\ x\ 100}{Number\ of\ Evaluation\ Elements\ (\ldots\ldots\ldots)\ x\ 4}$$

N.B.: The minimum score for passing this rotation is 60%.

Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... ... absence days/hours equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Signatures of Preceptors:

From the Training Site	*From the Faculty of Pharmacy*
Name:	*Name:* .....
Signature:	*Signature:* .....
Stamp:	*Stamp:*

Regulatory Inspection Rotation

Item	Description
Name of Trainee	
Faculty of Pharmacy - University	
Rotation Site	
Rotation Period	From ...../...../..... to ...../...../.....
Mode of Delivery	On-site ( ) / Online ( )

Performance Evaluation Elements		Rating (Max = 4)				
No	**Please rate the trainee's performance according to the mentioned activity**	**1**	**2**	**3**	**4**	**NA***
1	Identify the international institutions concerned with the registration and circulation of pharmaceuticals, such as WHO, EMA, FDA, EUDRA.					
2	Recognize current registration procedures of pharmaceutical and biological products, nutritional supplements, medical supplies, and cosmetics.					
3	Understand the pharmaceutical inspection process in compliance with WHO requirements, and pharmacy laws.					
4	Receive pharmaceutical products with physical examination and their certificates of analysis.					
5	Prepare, cope, and manage the audit and inspection tools over pharmaceutical and biological products, nutritional supplements, medical supplies, and cosmetics, and their significance.					
6	Prepare regulatory inspection reports, warning letters, recalls and follow them up.					
7	Prepare and execute remediation plans.					
8	Prepare, cope, and manage the audit and inspection tools over pharmaceutical establishments (companies – drug distribution stores – pharmacies, etc...).					
9	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.					
10	Demonstrate effective communication skills verbally, non-verbally with teamwork members.					
Total Marks						

***NA, Not Applicable**

Scoring:

$$Rotation\ Score\ (\%) = \frac{Total\ marks\ scored\ by\ the\ trainee\ (\ldots\ldots\ldots)\ x\ 100}{Number\ of\ Evaluation\ Elements\ (\ldots\ldots\ldots)\ x\ 4}$$

N.B.: The minimum score for passing this rotation is 60%.

Final Evaluation	Result
The trainee has successfully passed the training rotation (…….. %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (……. … absence days/hours equivalent to …… % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Signatures of Preceptors:

From the Training Site	*From the Faculty of Pharmacy*
Name:	***Name:***
……	……
Signature:	***Signature:***
……	……
Stamp:	***Stamp:***

Drug Discovery and Development Rotation

Item	Description
Name of Trainee	
Faculty of Pharmacy - University	
Rotation Site	
Rotation Period	From ...../...../..... to ...../...../.....
Mode of Delivery	On-site ( ) / Online ( )

Performance Evaluation Elements		Rating (Max = 4)				
No	**Please rate the trainee's performance according to the mentioned activity**	**1**	**2**	**3**	**4**	**NA***
1	Understand the drug discovery and development process in the light of legal and regulatory requirements.					
2	Discover and prepare lead compounds via chemical/biochemical synthesis, extraction from natural sources, fermentation, cell cultures, etc.					
3	Design and conduct *in vitro* experiments, preclinical and clinical studies on potential drugs.					
4	Apply computer-aided drug design or other suitable tools to enhance the safety and efficacy of potential drugs, and to reduce the production costs.					
5	Participate in recording, analyzing, and interpreting test results and processing them statistically.					
6	Practice literature search and writing of scientific reports and/or research articles.					
7	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.					
8	Demonstrate effective communication skills verbally, non-verbally with teamwork members.					
Total Marks						

***NA, Not Applicable**

Scoring:

$$Rotation\ Score\ (\%) = \frac{Total\ marks\ scored\ by\ the\ trainee\ (\ldots\ldots\ldots)\ x\ 100}{Number\ of\ Evaluation\ Elements\ (\ldots\ldots\ldots)\ x\ 4}$$

N.B.: The minimum score for passing this rotation is 60%.

Final Evaluation	Result
The trainee has successfully passed the training rotation (…….. %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (……. … absence days/hours equivalent to …… % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Signatures of Preceptors:

From the Training Site	*From the Faculty of Pharmacy*
Name:	***Name:***
……	……
Signature:	***Signature:***
……	……
Stamp:	***Stamp:***

Pharmaceutical Sales & Marketing Rotation

Item	Description
Name of Trainee	
Faculty of Pharmacy - University	
Rotation Site	
Rotation Period	From ...../...../..... to ...../...../.....
Mode of Delivery	On-site ( ) / Online ( )

Performance Evaluation Elements		Rating (Max = 4)				
No	**Please rate the trainee's performance according to the mentioned activity**	**1**	**2**	**3**	**4**	**NA***
1	Understand the basics of pharmaceutical business administration.					
2	Identify the marketing strategies and tactics.					
3	Recognize the concepts of individual and group communication skills.					
4	Understand the concepts of customer value satisfaction, pricing models, and budgeting.					
5	Know and identify clients and customers in the healthcare system.					
6	Understand market research data and forecasting tools.					
7	Develop market segmentation and targeting.					
8	Identify the types of economic analyses and studies used in the field of Pharmacoeconomics.					
9	Participate in recording, analyzing, and interpreting collected data and processing them statistically.					
10	Understand managing retailing, wholesaling, and logistics of good distribution practice (GDP).					
11	Understand the art of medical advertising, and medicinal sales.					
12	Understand the work of scientific offices in medical advertising.					
13	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.					
14	Demonstrate effective communication skills verbally, non-verbally with teamwork members.					
Total Marks						

***NA, Not Applicable**

Scoring:

$$Rotation\ Score\ (\%) = \frac{Total\ marks\ scored\ by\ the\ trainee\ (\ldots\ldots\ldots)\ x\ 100}{Number\ of\ Evaluation\ Elements\ (\ldots\ldots\ldots)\ x\ 4}$$

N.B.: The minimum score for passing this rotation is 60%.

Final Evaluation	Result
The trainee has successfully passed the training rotation (…….. %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (……. … absence days/hours equivalent to …… % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Signatures of Preceptors:

From the Training Site	*From the Faculty of Pharmacy*
Name:	***Name:***
……	……
Signature:	***Signature:***
……	……
Stamp:	***Stamp:***

Pharmaceutical Production Rotation

Item	Description
Name of Trainee	
Faculty of Pharmacy - University	
Rotation Site	
Rotation Period	From ...../...../..... to ...../...../.....
Mode of Delivery	On-site ( ) / Online ( )

Performance Evaluation Elements		Rating (Max = 4)				
No	**Please rate the trainee's performance according to the mentioned activity**	**1**	**2**	**3**	**4**	**NA***
1	Identify the various production areas in the pharmaceutical manufacturing company: solid preparations (such as tablets and capsules), non-solid preparations (such as ointments, creams, and syrups), sterile preparations (such as ampoules and vials), gelatin capsules, and other products.					
2	Recognize the layout of production areas, and the workflow in different production facilities.					
3	Determine the production process operations starting from receiving the raw materials through the various manufacturing stages until reaching the finished product.					
4	Apply product control during manufacturing (in-process control 'IPC' Tests), and the significance of each test.					
5	Examine production-related problems that may occur during manufacturing (Troubleshooting) and how to overcome them.					
6	Apply good manufacturing practices (cGMP) and data integrity in production.					
7	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.					
8	Demonstrate effective communication skills verbally, non-verbally with teamwork members.					
Total Marks						

***NA, Not Applicable**

Scoring:

$$Rotation\ Score\ (\%) = \frac{Total\ marks\ scored\ by\ the\ trainee\ (\ldots\ldots\ldots)\ x\ 100}{Number\ of\ Evaluation\ Elements\ (\ldots\ldots\ldots)\ x\ 4}$$

N.B.: The minimum score for passing this rotation is 60%.

Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... ... absence days/hours equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Signatures of Preceptors:

From the Training Site	*From the Faculty of Pharmacy*
Name:	***Name:***
.....	.....
Signature:	***Signature:***
.....	.....
Stamp:	***Stamp:***

Quality by Design and Process Analytical Technology (QbD & PAT) Rotation

Item	Description
Name of Trainee	
Faculty of Pharmacy - University	
Rotation Site	
Rotation Period	From ...../...../..... to ...../...../.....
Mode of Delivery	On-site ( ) / Online ( )

Performance Evaluation Elements		Rating (Max = 4)				
No	**Please rate the trainee's performance according to the mentioned activity**	**1**	**2**	**3**	**4**	**NA***
1	Recognize the concept of pharmaceutical quality by design (QbD) and describes its objectives.					
2	Identify the ICH guidelines Q8 (Pharmaceutical Development), Q9 (Quality Risk Management), and Q10 (Pharmaceutical Quality System).					
3	Design a quality product and its manufacturing process to consistently deliver the intended performance of the product to meet patient needs.					
4	Describe that critical material parameters (CMP) and critical process parameters (CPP) linked to the critical quality attributes (CQAs) of the product.					
5	Increase process capability and reduce product variability and defects by enhancing product and process design, understanding, and control.					
6	Analyze, evaluate, and interpret problems associated with the design of pharmaceutical products.					
7	Understand the quality risk management across the product lifecycle for drug products.					
8	Illustrate the principles and tools of quality risk management that can be applied to different aspects of pharmaceutical quality.					
9	Understand and analyze case studies related to Quality by design (QbD) approach for product development.					
10	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.					
11	Demonstrate effective communication skills verbally, non-verbally with teamwork members.					
Total Marks						

***NA, Not Applicable**

Scoring:

$$Rotation\ Score\ (\%) = \frac{Total\ marks\ scored\ by\ the\ trainee\ (\ldots\ldots\ldots)\ x\ 100}{Number\ of\ Evaluation\ Elements\ (\ldots\ldots\ldots)\ x\ 4}$$

N.B.: The minimum score for passing this rotation is 60%.

Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... ... absence days/hours equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Signatures of Preceptors:

From the Training Site	*From the Faculty of Pharmacy*
Name:	*Name:* .....
Signature:	*Signature:* .....
Stamp:	*Stamp:*

Clinical Rotations Assessment and Evaluation

General requirements to surpass any Clinical Pharmacy Rotation

General Activities

The activities below are required to be fulfilled during all clinical rotations.

Trainees will be evaluated through each rotation by the fulfillment of the following requirements.

	Activity description	Evaluated by	Details in
1.	Attendance of daily rounds according to rotation specification. Attendance of 75% of rotation days is mandatory and is a prerequisite for passing the rotation. ***It does not add to your grade.***	P	Section 1
2.	Completes required number of general activities performed on rounds	P	Table of "Trainee Assessment Form for the Achievement of Practice-based Competencies Required"
3.	Evaluates and discusses required number of cases seen on rounds.	P	Table of "Disease Encounter Pertaining to Each Specialty Rotation"
4.	Completes required number of specific activities performed on rounds	P	Table of "Specific Activities Pertaining to Each Specialty Rotation"
5.	At least 1 case presentation/**trainee**/rotation and extra points for more	P & F	Section 2
6.	At least 1 topic discussion/**trainee**/rotation pertaining to	P & F	Section 3
7.	Journal club attendance and preparation (**Group work**)	P & F	Section 4
8.	Design & submission of a counselling material (**Group work**)	P & F	
9.	Drug information review preparation and submission (**2-3 DIR**)	P & F	Section 5
10.	Others; medication error reporting (**1/trainee**)	P & F	Section 6
F, Faculty member; P, preceptor.			

Description of rotation-specific requirements

Section 1. Patient profiling

- Each trainee should attend daily rounds and morning meetings.
- The patient's prescription should be reviewed in conjunction with the administration record, the patient's notes, the medicine history and relevant laboratory test results.
- Record patient data and pharmacist notes and interventions in the provided patient follow up sheet.
- Perform patient interview and discharge medication counseling.

Section 2. Case presentation

- Each trainee should perform at least ONE case presentation/rotation.
- **The presentation of the case** should be performed at the end of the rotation.

Each case should include the following components.

- General information at the time of first contact or admission
  - Name, age, race, gender
  - Date of first contact or admission
- Chief complaint
- History of present illness
- Past medical history
- Family history
- Social history (smoking, alcohol, illicit drugs; marital status; education; employment; housing)
- Medication history

- Review of systems
- Physical examination findings
    a. General descriptive statement
    b. Vital signs: blood pressure, heart rate, temperature and respiratory rate
    c. Pertinent positive and negative findings on Physical examination
- Pertinent positive and negative laboratory and diagnostic test results
- Patient problem list and initial plans
- Patient progress
- Discharge data (if applicable)
    a. Final diagnosis
    b. Discharge medications
- Plans for follow-up.

Section 3. Topic discussion

A topic discussion can address various topics including:

- Disease state
- Guideline comparison and update OR
- Drug class comparison in a disease state

The topic discussion should include the following parts:

1. Overview and introduction on the topic with elaboration of its importance
2. Main scientific body of evidence required to be known and elaborated.
3. Conclusion of the important points relevant to the topic

The details of the aforementioned points should be discussed with your faculty member & preceptor.

Section 4. Journal clubs

- Each trainee should perform **1 journal club** by the end of each rotation.
- The purpose of the journal club is to educate the trainee to critically evaluate the literature.
- The article to be reviewed will be approved by the preceptor.
- The article should be distributed to the trainees and preceptors 3-4 days prior to the presentation. Below is a helpful checklist for critique of a journal article (this list is not complete, and trainees are urged to identify other weaknesses or strengths of the study in addition to those listed here):

Objectives/Introduction

a. Are the objective(s) clearly stated? What questions are to be answered?
b. Is there a brief review of previous work and background on why the study was done?

Methodology

a. Is the study prospective or retrospective? Blinded? Placebo-controlled? Randomized?
b. Were the inclusion/exclusion criteria clearly stated? Will these affect the results?
c. Were doses, schedules, and duration of drug treatment adequate and comparable?
d. Were washouts used? Were they of sufficient length?
e. Was concurrent therapy allowed? Was it controlled and detailed in the article?
f. Were the outcome measures subjective or objective? Were they appropriate for the desired endpoint(s)?
g. How long were the subjects followed? Was it long enough?
h. Was the number of subjects adequate? Are the groups comparable?

Statistics

a. What is considered statistically significant?

b. What is the power of the study?
c. Are the methods appropriate for the source and nature of the data?

Results

a. Were the results clearly, accurately, and adequately presented?
b. Were all the findings presented?
c. Were the dropouts accounted for?
d. Were the results relevant to the study objective?
e. What do the tables/figures show?

Discussions/Conclusions

a. Does a statistically significant difference imply clinical significance?
b. Were valid conclusions drawn based upon the results presented? Authors' conclusion should be critiqued, not just to have listed them (i.e., were they appropriate and supported by the results of the study).
c. Do the authors place the results into perspective with previous trials, comparing and contrasting results?
d. Does the discussion outline the shortcomings of the study? any additional shortcomings should be identified AND critique the validity of the authors' discussion of their studies limitations (is their discussion unbiased and rigorous?).
e. What is the place of the findings in current therapy? What population (if any) do they apply?

The author's conclusion should be critiques (agree or disagree with it) and provide personal conclusion (i.e., an overview of the impact of the article on pharmacy practice and if there are any fatal flaws in the study (A fatal flaw is one that causes you not to accept the outcome of the study (i.e., a serious problem with methodology, clear bias, etc.).

Section 5. Drug information requests assignment

- ✓ Each trainee should respond to and fill out **2 DIRs per week.**
- ✓ Each DIR should be documented in the provided DIR Form
- ✓ **Main pillars of a valid DIR**
  a. Demographics of the requester
  b. Background information
  c. Ultimate question
  d. Response to the ultimate question
  e. References

Section 6. Medication error reporting

- ✓ Each trainee should report **medication errors (ME)** identified during the rotation.
- ✓ Each ME should be reported in ME form provided.
- ✓ **Main pillars of a valid medication error form**
  a. Date and time of the event
  b. Type of error (prescribing or dispensing or administration error)
  c. Description and category of the error.
  d. Action(s) taken to correct the error and/or prevent future errors.
  e. Reporter information.

Trainee Assessment Form for the Achievement of Practice-based Competencies Required in Community Pharmacy Based Rotation

(To be filled by the preceptor)

Trainee's name: _____ ID: _____
Training site: _____ Training Period: _____
Preceptor's name: _____ Contact number:

Skills & abilities		Midpoint evaluation	Final Evaluation
A. Technical, Administrative and Clinical Services (40%)		1 2 3 4 5 NA	
I. Demonstrates and provides the appropriate administrative services according to professional standards, laws and regulations			
Procurement and storage			
1.	Describes procedures for determining inventory needs		
2.	Describes procedure for obtaining inventory from suppliers, including related documentation. • including cycle counts and audits, • physical inventory, turnover rate, • handling return of merchandise, • drug recalls • determine impact of the pharmaceutical return process.		
3.	Adheres to coding, billing, and reimbursement regulations.		
4.	Identifies system errors prior to an event.		
II. Demonstrates and provides the appropriate pharmaceutical, technical services according to professional standards, laws and regulations			
Preparation/dispensing of prescription products			
5.	Selects correct products/finished dosage forms from the inventory		
6.	Prepares and dispenses medications using appropriate technique		
Compounding			
7.	Compounds non-sterile products and extemporaneous preparation according to the physician order and national and international standards • Uses appropriate techniques. • Uses appropriate ingredients. • Makes accurate calculations. • Makes accurate measurements. • Accurately labels the product		
Controlled Substances: Describes and complies with established procedures			
8.	Properly handles and dispensing of narcotics and psychotropic medications according to laws and regulations]		
9.	Appropriately counsels patients regarding use of narcotics and psychotropic agents		
III. Demonstrates and provides the appropriate clinical services according to professional standards, laws and regulations			
Processing Prescriptions			
10.	Receives, evaluates prescriptions, and obtains all required information for its processing in terms of • Completeness • Legal requirements • Appropriate indication • Appropriate dosing and route of administration		

	• Allergies		
Identification of drug related problem(s) (DRPs) and adverse drug reactions (ADRs); accurately identifies and prioritizes patient and drug-related problems needed to assess goals of therapy			
11.	Consistently and accurately identifies and prioritizes medication related problems needed to assess goals of therapy including: - adverse drug events/reactions - interactions with other drug therapy or disease states - therapy duplication - dose related problems - prescription errors		
12.	Suggests intervention to solve identified DRPs		
Drug information skills and resources			
13.	Identifies and utilizes appropriate drug information resources to be able to conduct an effective and thorough literature search		
14.	Identifies and clarifies drug information questions to be able to respond proficiently to druginformation requests .		
Development and implementation of pharmaceutical care services			
15.	Reviews and retrieves patient's information from different sources (patient interview, patient chart, electronic system)		
16.	Identifies patient's need and responds according to patient's symptoms and refer patients for other healthcare services when needed.		
17.	Selects the most appropriate over the counter medication (OTC) according to the case evaluation.		
18.	Calculates and adjusts doses of different medications and select the appropriate dosage form based on a patient's condition including pediatrics		
19.	Conducts appropriate point of care testing, if applicable		
20.	Conducts medication reconciliation and drug use evaluation accurately and in a timely manner.		
21.	Describes procedures for reporting significant adverse drug events to national bodies.		
B. Communication and counseling Skills (10%)			
1	Communicates effectively (verbally and written) with patients and caregivers professionals.		
2.	Provides effective medication counseling (Prescription/OTC medications) and patient education showing empathy.		
3.	Participates in disease screening or health promotion activities or education of a group of patients, community groups or school trainees on disease/medication use.		
C. Professionalism and Ethics (10%)			
1.	Complies with ethics, laws and regulations, and respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.		
2.	Shows punctuality, communicates tardiness and absence effectively.		
3.	Demonstrates enthusiasm, able to undertake tasks, complete assignments, fulfills responsibilities in a timely manner, appropriately prioritize and organize tasks independently or in groups.		
4.	Demonstrates confidence and overall problem-solving abilities.		
D. Graded clinical pharmacy activities and assignments (40%)			
1.	Graded assignments and activities (Table below) (30%).		

2.	Graded written counseling and education materials (Table below) (10%).		

Rating scale:	
[5] – Excellent	Consistently performs above the expected level.
[4] – Very Good	Often performs at expected level.
[3] - Satisfactory	Displays attributes consistent with readiness to enter general practice.
[2] - Poor	Often perform at a level below the expected level.
[1] - Deficient	Needs improvement to be ready to enter general practice.
[NA] Not applicable	Not performed during this rotation.
Please check the appropriate box according to the trainee's performance during his/her rotation	

Minimum expectation of required activities for the Community Pharmacy rotation

Required Activities	Minimum Number of Trials for Each Activity	Grade
Preparing prescriptions for dispensing	20	10
Recommending OTC medications	10	5
Detection of medication error or ADR	6	3
Searching a drug information request	4	2
Develop a drug list for 20 of the commonly used drugs with the Egyptian trade names, strength, dosage, and indication.	20 (medications)	10
Graded written counseling and education materials		10
Total		**40 Marks**

* Minimum score for passing rotation is 60%.

Specific strengths of the trainee noted during this rotation.

_____

_____

Specific areas needing improvement on which the trainee should work on during subsequent rotations.

_____

_____

Other comments

_____

Preceptor's signature: ..... **Date: .....**

Trainee's signature: ..... **Date: .....**

Trainee Assessment Form for the Achievement of Practice-based Competencies Required

Institutional/Hospital/ Intravenous (IV) Admixing Preparation Pharmacy Based Rotation

(To be filled by the preceptor)

Trainee name: _____ **ID:** _____
Training site: _____ **Training Period:** _____
Preceptor's name: _____ **Contact number:** _____

Skills & abilities		Midpoint Evaluation	Final Evaluation
A. Technical, Administrative and Clinical Services (50%)		**1 2 3 4**	**5 NA**
I. Demonstrate and provide the appropriate administrative services related to the Institutional/Hospital Pharmacy practice according to professional standards, laws, and regulations			
Managing Pharmacy Operations			
1.	Participates in institutional-based activities (e.g., pharmacy and therapeutics committee, drug information services, and formulary management)		
2**	Assists in stock control within the pharmacies and coordinates with warehouse, clinics, nurse stations and physicians to prepare and dispense medications whenever appropriate.		
3.	Understands the different medication distribution systems within the hospital.		
4**	Describes procedure for determining and obtaining inventory from suppliers, including: • related documentation. • cycle counts and audits, • physical inventory, and turnover rate, • handling return of merchandise, • drug recalls and days-on-hand and • impact of the pharmaceutical return process.		
5.	Adheres to appropriate safety and quality assurance practices and promotes culture of safety.		
6.	Identifies system errors prior to an event.		
II. Demonstrate and provide the appropriate pharmaceutical, technical services according to professional standards, laws and regulations (Covers a minimum of 2 items from 8-14).			
Demonstrates and provides appropriate technical services related to the sterile compounding (e.g., intravenous (IV) mixture/Parenteral Nutrition and cytotoxic preparations).			
7.	Demonstrates familiarity and basic understanding of aseptic compounding techniques according to the national and/or international standards (e.g., USP <797/800>standards).		
8.	Demonstrates 100% accurate aseptic technique. • Handwashing • Proper gowning and sterile gloving technique • Proper hood or barrier isolator cleaning technique (when applicable). • Proper powder vial reconstitution technique		

	• Proper liquid vial and ampule technique		
9.	Compounds sterile products according to the physician order, using appropriate techniques: • Using appropriate ingredients. • Performing accurate calculations. • Making accurate measurements for reconstitution. • Using correct procedures and techniques to prepare the product. • Following procedures for accurate labeling and documentation.		
10.	Practices intravenous (IV) admixture preparation, and IV compatibility checking.		
Cytotoxic or hazardous products/Chemotherapy preparations			
11.	Handles, prepares, and dispenses cytotoxic medications, and hazardous substance using appropriate precautions to maintain safe and sterile environment.		
12.	Performs cleaning procedures and sterilization techniques, using appropriate personal protective equipment and procedures for the disposal of cytotoxic materials and supplies used in dealing with them.		
Narcotics and Psychotropic Medications- Describes and complies with established procedures			
13**	Accurately verifies, dispenses, and documents dispensed narcotics and psychotropic medications and determines if modifications are needed to improve their security		
14.	Appropriately counsels patients regarding use of narcotics and psychotropic medications		
III. **Demonstrates and provides the appropriate clinical services according to professional standards, laws and regulations**			
Processing Prescriptions			
15**	Receives, reviews, and evaluates prescriptions/physician order and obtains all required information for its processing in terms of. • Completeness • Legal requirements • Appropriate indication • Appropriate dosing and route of administration • Allergies		
Identification of drug related problem(s) (DRPs); consistently and accurately identifies and prioritizes patient and drug-related problems needed to assess goals of therapy			
16**	Identifies and documents prescription problems to determine if any DRPs exist including: - Adverse drug reactions and allergies - Drug interactions with other drug therapy or disease states, - Duplication - Dosing problems - Prescription/Order errors		

17.	Resolves prescription problems; Effectively communicates disease/therapy-related problems and suggests intervention(s).		
18.	Describes procedures for reporting significant adverse drug events to Egyptian Pharmacovigilance center		
Drug information skills and resources			
19**	Identifies and utilizes appropriate drug information resources to be able to conduct an effective and thorough literature search to be able to respond proficiently to drug information requests from available resources		
Development and Implementation of Pharmaceutical Care Plan(s)			
20**	Reviews and retrieves patient's information from different sources (patient interview, patient chart/records).		
21.	Identifies patient's need(s) and responds accordingly.		
22**	Recognize names and indications of commonly prescribed medications and shows proficiency in filling orders by selecting the correct medication and dosage form		
23**	Provides appropriate substitution to generic products and demonstrates familiarity with the formulary system		
24**	Performs pharmaceutical calculations related to medication orders, based on a patient's condition including pediatric medications doses adjusts doses of different medications and select the appropriate dosage form based on available information.		
B. Communication and counseling Skills (5%)			
1.	Communicates effectively (verbally and written) with patients and healthcare providers		
2.	Provides effective medication counseling (Prescription/ OTC) and patient education showing empathy		
3.	Works effectively as a team member in an efficient and interactive way to perform the required tasks.		
C. Professionalism and Ethics (5%)			
1.	Complies with ethics, laws and regulations, and respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene		
2.	Shows punctuality, communicates tardiness and absence effectively		
3.	Demonstrates enthusiasm, able to undertake tasks, completes assignments, fulfills responsibilities in a timely manner, appropriately prioritizes and organizes tasks independently or in groups.		
4.	Conducts self-assessment to identify strengths and weaknesses, accepting constructive criticism for personal and professional development, responding to feedback to modify behaviors		
5.	Demonstrates confidence and overall problem-solving abilities		

D. Graded clinical pharmacy activities and assignments (40%)			
1.	Graded assignments and activities (Table below) (35%)		
2.	Graded written counseling and education materials (5%)		

Rating scale:	
[5] – Excellent	Consistently performs above the expected level.
[4] – Very Good	Often performs at expected level.
[3] - Satisfactory	Displays attributes consistent with readiness to enter general practice.
[2] - Poor	Often perform at a level below the expected level.
[1] - Deficient	Needs improvement to be ready to enter general practice.
[NA] Not applicable	Not performed during this rotation.
Please check the appropriate box according to the trainee's performance during his/her rotation	

*** Minimum score for passing rotation is 60%.**

**** The student is requested to pass with a minimum score of 3 in each of the 10 mandatory activities (items number A.I.2, A.I.4, A.II.13, A.III.15, A.III.16, A.III.19, A.III.20, A.III.22, A.III.23, and A.III.24), and complete other activities to achieve the minimum passing score.**

Required Activities	Minimum Number of Trials for Each Activity	Grade
Receiving and processing medication orders for dispensing	15	15
Detection of medication error or ADR	5	5
Searching and responding to drug information request	5	5
Develop drug monograph for 5 of the commonly used drugs with the Egyptian trade names, strength, dosage, and indication.	5 (medications)	10
Graded written counseling and education materials (minimum of 3 activities)		5
Total		**40 Marks**

Specific strengths of the trainee noted during this rotation.

Specific areas needing improvement on which the trainee should work on during subsequent rotations:

Other comments

Preceptor's signature: ..... **Date: .....**

Trainee's signature: ..... **Date: .....**

Trainee Assessment Form for the Achievement of Practice-based Competencies Required

Clinical Pharmacy Rotations (Direct Patient Care – Clinical Pharmacy Rotation)

(To be filled by the preceptor)

Trainee's name: _____ ID: _____

Training site: _____ Training Period: _____

Preceptor's name: _____ Contact number: _____

Skills & abilities		Midpoint evaluation			Final Evaluation		
A. Knowledge and clinical skills (40%)		**1**	**2**	**3**	**4**	**5**	**NA**
I. Knowledge of Problem and Disease State Clinical Decision Making							
1.	Demonstrates appropriate understanding of specific disease state and drug therapy for clinical decision making						
2.	Data collection: Reviews and retrieves information from different sources (patient interview, patient chart, electronic system)						
II. Assessment of patient medical and medication history including active problems, Past Medical History (PMH), pertinent Physical Examination (PE), laboratory data and hospital course in database, if available							
3.	Assesses patient medical history including active problems, PMH, laboratory data, physical assessment and diagnostic measures.						
4.	Performs and completes patient medication history and updates medication profiles						
5	Conducts medication reconciliation and drug use evaluation accurately and in a timely manner.						
III. Identification of drug related problem(s) (DRPs); consistently and accurately identifies and prioritizes patient and drug-related problems needed to assess goals of therapy							
6.	Consistently and continuously, identifies, prioritizes the problem list depending on significance and assessment of severity providing recommendation of an appropriate course of action, and documents DRPs including: - adverse drug events with treatment and allergies - potential interactions with other drug therapy or disease states - duplicate therapy - recognizing medication errors						
IV. Drug information skills and resources							
7.	Identifies and utilizes appropriate drug information resources to be able to conduct an effective and thorough literature search						
8.	Identifies and clarifies drug information questions to be able to respond proficiently todrug information requests from available resources						
V. Development and Implementation of Pharmaceutical Care Plan(s) Monitors and Evaluates Drug Therapy: Initial and Ongoing							
9.	Demonstrates the ability to develop and implement a pharmaceutical care plan including: a. Determination of the therapeutic goals b. therapeutic endpoints c. appropriate drug therapy (dose, duration, route, etc.) d. parameters to monitor efficacy and safety						
10.	Evaluates and adjusts doses of different medications and select the appropriate dosage form based on a patient's condition.						
11.	Performs pharmaceutical calculations related to medication orders, including pediatric and renal patient orders, if applicable (IBW, Cr Cl using reliable drug information resources).						

	➢ Calculates creatinine clearance (CrCl) for adult and pediatric using appropriate formula and recommends appropriate dose adjustment for medications		
	➢ Calculates and adjust the doses for pediatric, neonatal medications and adults according to body weight, body surface area (BSA), or ideal body weight (IBW) (when applicable)		
	➢ Performs therapeutic drug monitoring (TDM) and dose adjustment for narrow therapeutic index medications (e.g., vancomycin, aminoglycoside, phenytoin….) when applicable.		
12.	Interprets laboratory values and adjusts medications accordingly		
VI.	**Follow Up Plan(s)**		
13.	Determines appropriate time(s) to re-evaluate patient and assess efficacy and safety		
14.	Identifies and documents adverse drug reactions, drug interactions, and contraindications of prescribed drugs.		
15.	Presents patient cases and therapeutic care plans to preceptors and peers.		
B.	**Communication and counseling Skills (10%)**		
1.	Communicates effectively (verbally & written) with patients and other healthcare professionals		
2.	Provides effective medication counseling (Prescription/OTC) and patient education showing empathy		
3.	Works effectively as a team member in an efficient and interactive way to perform the required tasks.		
4.	Participates in institutional-based activities (e.g., pharmacy and therapeutics committee) when applicable		
C.	**Professionalism and Ethics (10%)**		
1.	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene		
2.	Shows Punctuality, and communicates tardiness and absence effectively		
3.	Demonstrates enthusiasm, able to undertake tasks, complete assignments, fulfills responsibilities in a timely manner, appropriately prioritize and organize tasks independently or in groups.		
4.	Conducts self-assessment to identify the strengths and weaknesses, accepting constructive criticism for personal and professional development, responding to feedback to modify behaviors		
5.	Demonstrates confidence and overall problem-solving abilities		
D.	**Graded clinical pharmacy activities and assignments (40%)**		
1.	Graded assignments and activities (Table below) (35%)		
2.	Graded written counseling and education materials (5%).		

Rating scale:

[5] – Excellent	Consistently performs above the expected level.
[4] – Very Good	Often performs at expected level.
[3] - Satisfactory	Displays attributes consistent with readiness to enter general practice.
[2] - Poor	Often perform at a level below the expected level.
[1] - Deficient	Needs improvement to be ready to enter general practice.
[NA] Not applicable	Not performed during this rotation.

Use the above-mentioned scores to grade the trainee at midpoint and the final stage.

Required Activities	Minimum Number of Trials for Each Activity	Grade
$Topic discussion	1-2	13
Case presentation	1	12
Journal club	5	5
#DIR and Medication error	5 (medications)	5
Graded written counseling and education materials (minimum of 3 activities)		5
Total		**40 Marks**

$One OR Two topic discussion (with average mark of the 2 recorded);
#each DIR or medications error is for 1 mark, a total of 5 should be submitted to get (5).

*** Minimum score for passing rotation is 60%.**

Specific strengths of the trainee noted during this rotation.

_____

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Specific areas needing improvement on which the trainee should work on during subsequent rotations.

_____

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Other comments

_____

_____

_____

_____

Preceptor's signature: ..... **Date: .....**

Trainee's signature: ..... **Date: .....**

Disease Encounter Pertaining to Each Specialty Rotation

Clinical Pharmacy Rotation in Adult General Medicine (CODE……..)

This applies to other rotations viz. Gastroenterology and Hepatology Nephrology and Urology/ Infectious Diseases/ Pediatrics and Neonates/ Geriatrics/ Neuropsychiatric/ Obstetrics and Gynecology

The preceptor will indicate the level of exposure with regards to each of the disease states/topics associated with this rotation.

Trainee's name: _____ ID: _____

Training site: _____ Training Period: _____

Preceptor's name: _____ Contact number: _____

(PT) = Patient seen on round **(PT+)** = Multiple patients seen on rounds

(DIS) = Topic discussion **(TALK)** = Trainee presented this topic **(NA)** = Non-applicable

#	Topics	PT+	PT	DIS	TALK	NA	Signed by
1	**Cardiovascular** • Hypertension and hypertensive crisis • Dyslipidemia • Angina • Heart Failure • Venous thromboembolism (VTE) • Others (specify)						
2	**Pulmonary disorders** • Asthma • COPD • Pulmonary hypertension • Others (specify)						
3	**Infectious diseases** • Pneumonia • Skin and soft tissues • Others (specify)						
4	**Neurology** • Stroke • Depression • Epilepsy • Others (specify)						
5	**Endocrine complications** • Diabetes mellitus and diabetic ketoacidosis (DKA) • Syndrome of inappropriate antidiuretic hormone (SIADH) • Adrenal insufficiency • Pituitary disorders • Thyroid disorders • Others (specify)						
6	**Gastrointestinal disease** • Gastroesophageal reflux disease • Peptic ulcer • Irritable bowel • Pancreatitis • Hepatic related complications • Others (specify)						
7	**Renal Disorders** • Acute kidney injury						

	• Chronic kidney disease and its complications • Renal replacement therapy • Others (specify)						
8	**Musculoskeletal disorders** • Gout and hyperuricemia • Rheumatoid arthritis • Osteoarthritis • Others (specify)						

Trainees need to cover at least 2 from EACH of any 5 internal medicine branches encounter OR 1-2 from 8 branches. A total of 10 different disease topics to be covered in the internal medicine rotation.

Specified topics included:

Preceptor final signature/approval: .....Date: .....

Specific Activities Pertaining to Each Specialty Rotation

Clinical Pharmacy Rotation in Adult General Medicine (CODE……..)

This applies to other rotations viz. Gastroenterology and Hepatology/ Nephrology and Urology/ Infectious Diseases/ Pediatrics and Neonates/ Geriatrics/ Neuropsychiatric/ Obstetrics and Gynecology

Directions

The preceptor will indicate the level of exposure with regards to each of the activities associated with this rotation.

Trainee's name: _____ ID: _____

Training site: _____ Training Period: _____

Preceptor's name: Contact number:

#	(SP) = Trainee performed once (OB) = Trainee observed	(SP+) = Trainee performed multiple times (None) = Trainee did not perform or observe this activity				
	Activities	**SP+**	**SP**	**OB**	**None**	**Signed by**
1.	Vital signs assessment (specify) • HR • BP • RR					
2.	Pulmonary function test interpretation					
3.	Patient counselling on discharge					
4.	Chest X-ray tracing interpretation (pneumonia, etc.) (specify) CT scan interpretation (specify) Others (specify)					
5.	Calculate disease related scores. • *Severity assessment*: (1. CHADSVASC, 2. pooled cohort equation, 3. Others.) (specify) • *Staging assessment*: (1. COPD/asthma/others).					
6.	Calculate and adjust medication doses for renal and hepatic functions, body weight, and therapeutics outcomes of the medications (e.g., insulin, antiepileptics, antidiabetics, aminoglycoside, vancomycin, etc.…).					
7.	Nutrition management (calculation of caloric needs) specify					
8.	Others					

*** Trainee is requested to cover at least 4 points from the 8 main domains mentioned in the above list.**

Specified topics included:

Preceptor final signature/ approval: …… Date: ……

Disease Encounter Pertaining to Each Specialty Rotation

Critical Care Specialty Rotation Topics (CODE……)

Directions

The preceptor will indicate the level of exposure with regards to each of the disease states/topics associated with this rotation.

Trainee's name: _____ ID: _____

Training site: _____ Training Period: _____

Preceptor's name: _____ Contact number: _____

(PT) = Patient seen on round **(PT+)** = Multiple patients seen on rounds

(DIS) = Topic discussion **(TALK)** = Trainee presented this topic **(NA)** = non-applicable

#	Topic	PT+	PT	DIS	TALK	NA	Signed by
1	Acid/Base disorder						
2	Asthma/COPD exacerbations						
3	DVT/PE (management and/or prophylaxis)						
4	Endocrine complications • DKA • SIADH • Adrenal insufficiency • Others (specify)						
5	Fluid and electrolytes imbalances						
6	Gastrointestinal bleeding and stress related mucosal damage (management and/or prophylaxis)						
7	Infectious disease • Respiratory tract infections • Gastrointestinal tract infections • Urinary tract infections • Sepsis • Others **(specify)**						
8	Mechanically Ventilated Patients						
9	Sedation and ICU psychosis/agitation/confusion						
10	Shock • Septic • Hypovolemic • Cardiogenic						
11	Stroke **(specify)** • Ischemic • Hemorrhagic						
12	Cardiovascular Conditions • Decompensated Heart failure • Hypertensive crisis • Cardiac surgeries (e.g., Coronary bypass, valve replacement/repair)						
13	Cardiac arrest						

Trainees need to cover at least 2 from EACH of any 5 critical care branches encounter OR 1-2 from 13 branches. A total of 10 different disease topics to be covered in the critical care rotation.

Specified topics included:

Preceptor final signature/approval: ……Date: ……

Specific Activities Pertaining to Each Specialty Rotation

Critical Care Specialty Rotation Activities (CODE.....)

The preceptor will indicate the level of exposure with regards to each of the activities associated with this rotation.

Trainee's name: _____ ID: _____
Training site: _____ Training Period: _____
Preceptor's name: _____ Contact number: _____

	(SP) = Trainee performed once **(SP+)** = Trainee performed multiple times **(OB)** = Trainee observed **(None)** = Trainee did not perform or observe this activity					
#	Parameter	SP+	SP	OB	None	Signed by
1.	Vital signs assessment (specify) 1. HR 2. BP 3. CVP 4. RR					
2.	Hemodynamic Monitoring					
3.	Oxygen therapy/Ventilatory setting practice. 1. Nasal Cannula 2. Oxygen mask 3. MV modes interpretation 4. P/F calculation for all					
4.	ABG interpretation (calculation and assessment of fraction% of inspired oxygen (P/F) assessment					
5.	CPR					
6.	Selection and dose adjustments of vasopressors and inotropes					
7.	Fibrinolytic monitoring and dose calculation					
8.	Calculate illness severity score. 1. CHADSVASC 2. pooled cohort equation 3. SOFA 4. Others (specify)					
9.	Calculate and adjust medication doses.					
10.	Nutrition management (TPN, tube feeds, calculation of caloric needs) specify					
11.	Participate in patient counseling/education activity at discharge (specify disease)					
12.	Others					

*** Trainee is requested to cover at least 5 points from the 12 main domains mentioned in the above list.**

Specified topics included:

Preceptor final signature/approval: ..... Date: .....

Disease Encounter Pertaining to Each Specialty Rotation

Cardiology and Cardiovascular Specialty Rotation Topics (CODE……)

The preceptor will indicate the level of exposure with regards to each of the disease states/topics associated with this rotation.

Trainee's name: _____ ID: _____
Training site: _____ Training Period: _____
Preceptor's name: _____ Contact number: _____

(PT) = patient seen on round **(PT+)** = Multiple patients seen on rounds)
(DIS) = topic discussion **(TALK)** = Trainee presented this topic **(NA)** = non-applicable

#		PT+	PT	DIS	TALK	NA	Signed by
1	**Anginal syndromes.** Stable/unstable/variant/silent myocardial ischemia **Acute coronary syndromes.** • STEMI and NSTEMI • Cardiac catheterization						
2	Hypertension Hypertensive emergencies						
3	Dyslipidemia						
4	Heart failure (1. Compensated 2. Decompensated, 3. right sided, 4. left sided)						
5	Valvular diseases **(Specify)** • Rheumatic heart disease • Endocarditis • Others						
6	Arrhythmia **(specify)** **Sinus:** 1. Bradycardia, 2. Tachycardia, Atrial flutter & fibrillation **AV block;** 1st, 2nd, 3rd degree, Torsades de pointes Others (specify)						
7	Drug and electrolyte induced arrhythmia						
8	**Cardiomyopathies** • Restrictive • Dilated • Hypertrophic • Cardiac tamponade management						
9	Pre and post operative management. • Coronary arterial bypass grafting (CABG) • Valve replacement surgery						
10	Cardiac arrest						
11	Venous Thromboembolism (VTE) (management and/or prophylaxis)						
12	Others (Specify)						

Trainees need to cover at least 2 from EACH of any 5 cardiology/cardiovascular branches encounter OR 1-2 from 12 branches. A total of 10 different disease topics to be covered in the cardiology/cardiovascular rotation.

Specified topics included: ……
Preceptor final signature/Approval……Date: ……

Specific Activities Pertaining to Each Specialty Rotation

Cardiology and Cardiovascular Specialty Rotation Activities (CODE.....)

The preceptor will indicate the level of exposure with regards to each of the activities associated with this rotation.

Trainee's name: _____ ID: _____
Training site: _____ Training Period: _____
Preceptor's name: _____ Contact number: _____

#	**(SP)** = trainee performed once **(SP+)** = trainee performed multiple times **(OB)** = trainee observed **(None)** = Trainee did not perform or observe this activity					
	Parameters	SP+	SP	OB	None	Signed by
1	Vital signs assessment (specify) • HR • BP • CVP • RR					
2	Hemodynamic Monitoring					
3	Interpretation of Physical assessment • JVP/Lower limb edema • Respiratory sounds (rales, wheezes, etc) • Heart sounds					
4.	Stratify patients according to risk factors. • Heart Failure • Acute Coronary Syndrome (ICS) • Others (specify)					
5.	Basic life support/Advanced life support and CPR					
6.	Interpretation of the results/report of • Chest Xray (pneumonia, etc.) (specify) • CT (hemorrhagic stroke, etc.) (specify) • Angiography • Thallium/technetium • Exercise stress testing • Holter interpretation • Others (specify)					
7.	Fibrinolytic monitoring and dose calculation					
8.	Fluid and electrolyte adjustment					
9.	Calculate illness severity score. • CHADSVASC • Pooled cohort equation • NYHA class • Others (specify)					
10.	Pharmacokinetics adjustments **(specify)**					
11.	Vasopressors and inotropes selection and dose adjustments					
12.	Interpretation of ventilatory setting practice and parameters. (Modes, arterial blood gases (ABG) interpretation, fraction % of inspired oxygen (P/F))					
13.	Anticoagulation selection and adjustments as required					
14.	Participation in patient counseling/education activity at discharge (specify disease).					
15.	Others (specify)					

*** Trainee is requested to cover at least 7 points from the 15 main domains mentioned in the above list.**

Specified topics included:

Preceptor final signature/ approval: .....Date: .....

Disease Encounter Pertaining to Each Specialty Rotation

Oncology and Hematology Specialty Rotation Topics (CODE……)

The preceptor will indicate the level of exposure with regards to each of the disease states/topics associated with this rotation.

Trainee's name: _____ ID: _____
Training site: _____ Training Period: _____
Preceptor's name: _____ Contact number: _____

	(PT) = patient seen on round (PT+) = Multiple patients seen on rounds) (DIS) = topic discussion (TALK) = Trainee presented this topic (NA) = Nonapplicable						
#	Parameter	PT+	PT	DIS	TALK	NA	Signed by
1	Leukemias • acute myeloid • acute lymphocytic • chronic myelogenous • chronic lymphocytic						
2	Malignant Lymphomas • Hodgkin's • Non-Hodgkin's						
3	Multiple Myeloma						
4	Solid Tumors • Breast cancer • Lung cancer (small cell and non-small cell) • Gastrointestinal/colorectal cancers • Hepatocellular • Pancreatic • Prostate/testicular cancer • Uterine/ovarian cancer • Renal/bladder cancer • CNS neoplasms • Head and neck cancer						
5	Cancer therapy approach • Curative • Palliative • Cytoreductive • Adjuvant						
6	Complication management • Pain • Tumor Lysis Syndrome • Electrolyte imbalance • Extravasation injury management • GIT symptoms - Diarrhea, mucositis) - Nausea and vomiting -Stomatitis • Others (Specify)						
7	Others (specify)						

Trainees need to cover at least 2 from EACH of any 5 oncology branches encounter OR 1-2 from 7 branches. A total of 10 different disease topics to be covered in the oncology rotation.

Specified topics included:

Preceptor final signature/approval: …… Date: ……

Specific Activities Pertaining to Each Specialty Rotation

Oncology and Hematology Specialty Rotation Activities (CODE)

Directions

The preceptor will indicate the level of exposure with regards to each of the activities associated with this rotation.

Trainee's name: _____ ID: _____
Training site: _____ Training Period: _____
Preceptor's name: _____ Contact number: _____

	(SP) = trainee performed once **(SP+)** = trainee performed multiple times **(OB)** = trainee observed **(None)** = Trainee did not perform or observe this activity					
#	Parameter	SP+	SP	OB	None	Signed
1	Vital signs assessment (specify) • HR • BP • CVP • RR					
2	Calculating toxicity scores using Common Terminology Criteria for adverse events (CTCAE) and Management of Chemotherapy Induced Organ Toxicities					
3	Calculating quality of life Questionnaire					
4	IV admixing Practice • Use of Personal protective equipment (PPE) • Aseptic handling and preparation • Disinfection of Biological Safety Cabinets (BSC) • Necessary calculation • Labeling of the product • Hazardous spill management • Hazardous waste management					
5.	Perform protocol/preprinted order review?					
6.	Calculating and adjusting medication(s) doses					
7.	Checking and evaluating drug interactions					
8.	Participating in patient counseling/education activity at discharge					
9.	Supportive care services • Febrile neutropenia • Anemia • Tumor lysis syndrome • Pain management • GIT symptoms (Diarrhea, mucositis); (nausea and vomiting)					
10.	Others					

*** Minimum of 5 activities out of the 10 to be covered during this rotation.**

Specified topics included:

Preceptor final signature/ approval: ..... Date: .....

Trainee Assessment Form for the Achievement of Practice-based Competencies Required
Clinical Nutrition Support Rotation

Trainee's name: _____ ID: _____
Training site: _____ Training Period: _____
Preceptor's name: _____ Contact number: _____

Skills & abilities		Midpoint evaluation	Final Evaluation
A. Knowledge and clinical skills (40%)		1 2 3 4 5 NA	
Knowledge of Problem and Disease State for Clinical Nutrition Decision Making			
1.	Demonstrates appropriate understanding of specific disease state for clinical nutrition decision making		
2.	Data collection: Reviews and retrieves information from different sources (patient interview, patient chart, nurse, physicians)		
Assessment of patient medical and medication history including active problems, Past Medical History (PMH), pertinent Physical Examination (PE), laboratory data and hospital course in database, if available			
3.	Assesses patient medical history including active problems, PMH, laboratory data, physical assessment, and diagnostic measures.		
4.	Assesses the nutritional risk of the patient using validated tools including dietary, anthropometric, clinical, biochemical, and sociologic assessment.		
Drug information skills and resources			
5.	Identifies and utilizes appropriate drug/nutrients information resources to be able to conduct an effective and thorough literature search		
6.	Identifies and clarifies drug/nutrients information questions to be able to respond proficiently to drug information requests from available resources		
Development and Implementation of Nutritional Care Process **Monitors and evaluates nutritional support: Initial and Ongoing**			
7.	Demonstrates the ability to develop and implement enteral/parenteral nutrition plan including recognizing the following …… a. purposes and goals of parenteral nutrition therapy. b. contraindication for enteral /parenteral nutritional plan based on the comorbid chronic disease state. c. parameters to monitor efficacy and safety		
8.	Provides micronutrients based on patient age, organ function and disease state.		
9.	Estimates caloric and protein requirements for a patient and formulate a parenteral nutrition plan to meet these requirements.		
10.	Recognizes when three-in-one formulations or premixed formula are most appropriate to use.		
11.	Recognizes the types of specialized amino acid formulas available for use in parenteral and enteral nutrition formulations and when these formulas might be recommended		
12.	Discusses normal fluid and electrolyte balance and recognizes the effects of medications on fluid and electrolyte balance.		
13.	Recommends adjustments in electrolyte provision and the most appropriate route for adjustments (change total parenteral nutrition (TPN) versus change maintenance IV versus IV or oral (PO) supplemental dose).		
14.	Understands basic interpretation of blood gas values, especially as related to components of the parenteral nutrition formulation and appropriate changes in the parenteral nutrition formulation.		

15.	Recognizes different nutrition plans and requirements in different disease states; hypertension, cardiovascular, hepatic, renal and oncologic diseases.		
16.	Recognizes differences between adult and pediatric enteral/parenteral nutrition guidelines and requirements in different disease states.		
Identification of drug related problem(s) (DRPs) and ADR reactions; consistently and accurately identifies and prioritizes patient and drug-related problems and ADRs needed to assess goals of therapy and nutritional plan.			
17.	Consistently and continuously, identifies, recognizes, documents and reports ADRs form as directed by the preceptor. - potential interactions with other drug therapy, nutrients, or disease states - recognizing the effects of medications on fluid and electrolyte balance - discussing issues related to medications, tube feeding and potential drug nutrient interactions. - discussing issues related to medications and parenteral nutrition in terms of chemical stability and physical incompatibility.		
18.	Provides management of all nutrition impact symptoms, offering pharmacological treatment options		
19.	Presents patient cases and nutritional care plans to preceptors and peers		
Follow Up Plan(s)			
20.	Determines appropriate time(s) to re-evaluate patient and assess efficacy and safety of recommended nutritional care plan		
21.	Discussing monitoring parameters for patients receiving parenteral nutrition including which parameters to use, how often they are checked, and interpretation of test results.		
22.	Discusses options for controlling hyperglycemia in patients receiving parenteral nutrition.		
B. Communication and counseling Skills (10%)			
1.	Communicates effectively (verbally & written) with patients and other healthcare professionals regarding the nutritional formula; being an active listener.		
2.	Communicates effectively through evidence with healthcare professionals regarding impact on nutrition on patient's QOL, therapeutic outcome, overall LOH and costs.		
3.	Works effectively as a team member in an efficient and interactive way to perform the required tasks.		
4.	Effectively presents recommendations for changes in the enteral/parenteral nutrition therapy of a patient, both oral presentation and in writing.		
5.	Provides effective nutrition counseling and patient education to patients as well as patient cases and nutritional care plans to preceptors and peers.		
C. Professionalism and Ethics (10%)			
1.	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene		
2.	Shows punctuality, and communicates tardiness and absence effectively		
3.	Demonstrates enthusiasm, able to undertake tasks, complete assignments, fulfills responsibilities in a timely manner, appropriately prioritize and organize tasks independently or in groups.		

4.	Conducts self-assessment to identify the strengths and weaknesses, accepting constructive criticism for personal and professional development, responding to feedback to modify behaviors		
5.	Demonstrates confidence and overall problem-solving abilities		
Graded clinical pharmacy activities and assignments (40%)			
1.	Graded assignments and activities divided as in the table below (30%);		
2.	Graded written counseling and education materials (10%).		

Rating scale:	
[5] – Excellent	Consistently performs above the expected level.
[4] – Very Good	Often performs at expected level.
[3] - Satisfactory	Displays attributes consistent with readiness to enter general practice.
[2] - Poor	Often perform at a level below the expected level.
[1] - Deficient	Needs improvement to be ready to enter general practice.
[NA] Not applicable	Not performed during this rotation.
Use the above-mentioned scores to grade the trainee at midpoint and the final stage.	

* Minimum score for passing rotation is 60%.

Minimum expectation of required activities for Clinical Nutrition Rotation

Required Activities	Minimum Number of Trials for Each Activity	Grade
Perform nutrition assessment using validated tools	**5**	**5**
Enteral Nutrition protocol review	**2**	**5**
Parenteral Nutrition protocol review, including the following activities	**2**	**10**
Recommend relevant monitoring labs and performing needed plan modifications	**5**	**5**
Order verification and aseptic technique review and PN aseptic compounding	**2**	**5**
Graded written counseling and education materials at discharge (minimum of 2 activities)	**5**	**10**
Total		**40 Marks**

Specific strengths of the trainee noted during this rotation.

Specific areas needing improvement on which the trainee should work on during subsequent rotations:

Other comments

Preceptor's signature: ..... **Date: .....**

Trainee's signature: ..... **Date: .....**

Industrial Rotations NARS Competencies

A) Obligatory Rotations

Drug Tour: Registration to Market Rotation

NARS Competencies	Key elements	Performance Evaluation Elements	
		No	Please rate the trainee's performance according to the mentioned activity
PILLAR 1: Regulatory overview on the registered pharmaceutical and biological products			
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.**	**1-1-1**	1	Define different pharmaceutical products with their different forms (human, veterinary, herbal and cosmetics).
		2	Define biological products and their derivatives.
2-5 **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**2-5-1**	3	Understand how to register pharmaceutical products according to international guidelines.
		4	Comprehend how to prepare registration files of pharmaceutical products according to EDA regulatory guidelines.
		5	Know how to register biological products according to the international guidelines.

		6	Comprehend how to prepare registration files of biological products according to EDA regulatory guidelines.
		7	Know the components of the unified technical file (Common Technical Document – CTD & eCTD files).
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-6** **2-5-1**	8	Identify international institutions regulating the registration and trading of pharmaceutical products such as (WHO, EMA, FDA).
PILLAR 2: Regulation overview of the registration of Medical Devices and in-vitro diagnostic medical devices (IVDs)			
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.**	**1-1-1**	9	Define the medical device.
		10	Identify medical devices classification.

1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-1** **2-3-2** **2-5-1**	11	Recognize how to register the medical device and *in-vitro* diagnostic medical devices (IVDs) in accordance with international guidelines.
		12	Know how to prepare registration files and the current regulatory decrees.
PILLAR 3: Overview on bioavailability and bioequivalence studies			
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for**	**1-1-1** **1-1-3** **1-1-6** **2-2-4** **2-3-2** **2-5-1** **2-5-2** **2-5-3**	13	Identify the importance of Bioequivalence in drug registration.
		14	Recognize a brief introduction about bioequivalence study.

dispensing, storage, and distribution of medicines. **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**		15	Recognize a brief introduction about *in-vitro* dissolution study.
		16	Understand the Egyptian Guidelines for Conducting Bioequivalence Studies.
2-5 **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**2-5-1**	17	Know the licensing process of bioequivalence and bioavailability centers approved by EDA.
PILLAR 4: Overview on Good Manufacturing Practice (GMP)			
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for**	**1-1-1** **1-1-3** **2-2-2** **2-3-2** **2-5-1**	18	Identify basic principles of Good Manufacturing Practices.
	1-1-1 **1-1-3** **2-2-2** **2-2-3** **2-3-2**	19	Recognize the guidelines of assurance system for good cleaning and public health (Cleaning Validation).

dispensing, storage, and distribution of medicines. **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**2-5-1**	20	Understand systems for the qualification and verification of equipment and devices.
		21	Identify raw material management systems, good storage, and warehouses, ensuring and applying safety measures in every step, and good storage conditions of warehouses.
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-1** **1-1-3** **2-2-2** **2-5-1**	22	Recognize Good documentation system (How to control and validate data integrity from regulatory point of view).
		23	Understand Good documentation system (Manufacturing point of view).
PILLAR 5: Pharmaceutical inspection and knowledge of the application of pharmacy laws and inspection tasks			

1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-1** **2-3-2** **2-5-1**	24	Identify licensing procedures for the stores, warehouses, and distribution companies of pharmaceutical and biological products.
	1-1-1 **1-1-4** **2-3-2** **2-5-1**	25	Identify narcotic drugs usage laws and how to apply in market.
	1-1-1 **1-1-6** **1-1-7** **2-3-2** **2-5-1** **2-5-2**	26	Recognize pharmaceutical inspection laws and regulations.
2-5 **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**2-5-1** **2-5-2**	27	Understand the controlling method on licensed pharmaceutical entities.
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2**	**1-1-1** **1-1-2** **1-1-6** **1-1-7** **2-2-2** **2-3-2** **2-5-1** **2-5-2**	28	Recognize the control over pharmaceutical establishments (factories - stores - pharmacies ...).

Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines. **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-1** **1-1-3** **1-1-7** **2-2-2** **2-3-2** **2-5-1**	29	Practice reports writing for tests and checklists.
		30	Prepare regulatory inspection reports, warning letters and recalls.
PILLAR 6: Quality Control of Pharmaceutical Products in EDA Labs			
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical**	**1-1-1** **1-1-3** **1-1-7** **2-2-2** **2-3-2** **2-5-1**	31	Identify the basic concepts of Total Quality Management (TQM) and Quality Management System (QMS).
	1-1-1 **1-1-3** **2-2-1** **2-2-2** **2-2-3**	32	Perform the physicochemical analysis of Pharmaceutical Products (Basics).
	2-3-1 **2-3-2** **2-5-1** **2-5-3**	33	Execute the microbiological analysis of pharmaceutical products (Basics).
	1-1-1 **1-1-3** **2-2-2**	34	Recognize good laboratory and inspection practices (Basics).

materials/products effectively and safely with respect to relevant laws and legislations. **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**2-3-2** **2-5-1**		
PILLAR 7: Over- The-Counter Marketing of drugs, Application, Approaches and Principals			
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-1** **Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.** **3-1** **Apply the principles of body functions to participate in improving health care services using evidence-based data.** **3-2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**1-1-1** **1-1-4** **1-1-5** **1-1-6** **2-1-1** **2-1-2** **2-1-3** **3-1-1** **3-1-2** **3-2-1** **3-2-2** **3-2-3** **3-2-5**	35	Define a pharmaceutical product as an OTC.
		36	Recognize the approved national list of OTC drugs.
		37	Know EDA regulations for the registration of OTC products.
		38	Identify the role of outpatient (community) Pharmacist in reporting emergency and medical errors.
		39	Understand the restrictions on dispensing antimicrobial agents on the OTC.
3-2 **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**3-2-1** **3-2-2** **3-2-3** **3-2-4** **3-2-5**	40	Realize pharmacy outpatient role in patient counseling on the OTC usage.

	3-2-6		
PILLAR 8: How to Regulate Insert Leaflet and Promotional material			
2-6 **Perform pharmacoeconomic analysis and develop promotion, sales, marketing, and business administration skills.**	**2-6-1** **2-6-2**	41	Define promotional materials and learn how to prepare and control them.
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.**	**1-1-1** **1-1-5** **1-1-6**	42	Identify SmPC and PIL: pillars of information.
		43	Recognize the most important pharmacological and drug references.
		44	Discern drug information resources and search approaches.
		45	State drug regulatory authorities in reference countries.
		46	Navigate through pharmaceutical references *via* practical training.

1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-1** **Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.** **2-4** **Actively share professional decisions and proper actions to save patient's life in emergency situations including poisoning with various xenobiotics, and effectively work in forensic fields.** **3-1** **Apply the principles of body functions to participate in improving health care services using evidence-based data.** **3-2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**1-1-1** **1-1-2** **1-1-4** **1-1-5** **1-1-6** **2-1-1** **2-1-2** **2-1-3** **2-4-3** **3-1-1** **3-1-2** **3-1-3** **3-1-4** **3-2-1** **3-2-2** **3-2-3** **3-2-4** **3-2-5** **3-2-6**	47	Determine pharmacy informatics application.
PILLAR 9: Regulatory Overview on Pharmacovigilance Practice			
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize**	**1-1-1** **1-1-2** **1-1-4**	48	Understand the importance of Pharmacovigilance regulation system for pharmaceutical companies and the impact on drug registration.

materials, formulate and manufacture products, and deliver population and patient-centered care. **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.** **3-2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**1-1-5** **1-1-6** **1-1-7** **2-5-1** **2-5-2** **3-2-1** **3-2-2** **3-2-3** **3-2-4**	49	Know the importance of Pharmacovigilance regulation to hospitals and health institutes.
		50	Recognize Pharmacovigilance regulatory system channels of reporting for the public.
		51	Tracking data of Pharmaceutical Products globally (new warnings or precautions).
		52	Identify Risk Management Plan (RMP).
		53	Recognize emerging safety issues (ESI) / Safety information.
		54	Fulfill causality assessment of individual case safety reports (ICSRs).
		55	Execute practical training on reporting to national database.
GENERAL			
4-1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-1** **4-1-2**	56	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.
4-2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	57	Demonstrate effective communication skills verbally, non-verbally with teamwork members.

B) Elective Rotations

Pharmaceutical Product Development Rotation

NARS Competencies	Key elements	Performance Evaluation Elements	
		No	Please rate the trainee's performance according to the mentioned activity
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate, and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.**	**1-1-3** **1-1-6** **2-2-1**	1	Review the specifications of raw materials and pharmaceutical products according to the latest editions of pharmacopoeias.
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate, and manufacture pharmaceutical products, and participate in systems for**	**1-1-1** **1-1-3** **1-1-6** **2-2-4** **2-3-2** **2-5-1** **2-5-2** **2-5-3**	2	Know and follow references and guidelines for conducting performance, stability, comparative dissolution, and bioequivalence studies on pharmaceutical products.
	1-1-1 **1-1-3** **1-1-6** **1-1-7**	3	Recognize the development process stages for new formulations, from initial planning to production.

dispensing, storage, and distribution of medicines. **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**2-2-2** **2-2-3** **2-3-1** **2-3-2** **2-5-1** **2-5-3**	4	Investigate any problem that appears during the production of new pharmaceutical products and take preventive measures (Troubleshooting).
	1-1-1 **1-1-3** **2-2-2** **2-2-3** **2-3-1** **2-3-2** **2-5-1** **2-5-3**	5	Participate in the design and conduct of laboratory experiments on different pharmaceutical dosage forms, for example, dissolution, disintegration, friability, hardness, content uniformity, weight variation, etc....
		6	Engage in conducting stability studies on finished products, follow-up them in stability chambers, and conduct the required stability tests.
		7	Participate in designing and conducting comparative dissolution and/or bioequivalence studies for pharmaceutical products (Generic *versus* Innovator).
		8	Collaborate in the analytical method development and validation.
	1-1-1 **1-1-3** **2-2-2** **2-3-2** **2-5-1**	9	Apply Good Laboratory Practices (GLP) and Good Pharmaceutical Manufacturing Practices (cGMP).
		10	Identify and prepare the Common Technical Document (CTD & eCTD files) and their components.
2-2 **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.**	**2-2-4**	11	Participate in recording, analyzing, and interpreting test results and processing them statistically.
4-1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-1** **4-1-2**	12	Demonstrate responsibility, cooperate, and integrate effectively with research team members.

4-2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	13	Demonstrate effective communication skills verbally, non-verbally with research team members.

Quality Management in Pharmaceutical Industry Rotation

NARS Competencies	Key elements	Performance Evaluation Elements	
		No	Please rate the trainee's performance according to the mentioned activity
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate, and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-1** **1-1-3** **2-2-1** **2-2-2** **2-2-3** **2-3-1** **2-3-2** **2-5-1** **2-5-3**	1	Identify and participate in QC tests of raw materials: procedures, significance, and troubleshooting.
		2	Recognize and collaborate in QC tests of finished products: procedures, significance, and troubleshooting.
		3	Engage in the analytical method development and validation.
	1-1-1 **1-1-3** **2-2-2** **2-3-2** **2-5-1**	4	Apply Good Laboratory Practices (GLP) and data integrity in QC.
	1-1-1 **1-1-3** **1-1-7** **2-2-2** **2-2-3** **2-3-2** **2-5-1**	5	Monitor different production lines.
	1-1-1 **1-1-3** **1-1-7** **2-2-2** **2-3-2** **2-5-1**	6	Understand the basic concepts of Total Quality Management (TQM), Quality Management System (QMS) and the risk management system (RMS).
		7	Apply standard operating procedures (SOPs) for deviation, complaint, recall, and change control.
		8	Execute internal auditing and prepare quality reports.

	1-1-1 1-1-3 2-2-2 2-2-3 2-3-1 2-3-2 2-5-1 2-5-3	9	Perform Process Validation: protocol, sampling, and final report.
		10	Perform Cleaning Validation: protocol, sampling, and final report.
		11	Participate in Room Qualification or Machine Qualification: protocol and final report.
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate, and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	1-1-1 1-1-3 2-2-2 2-5-1	12	Prepare quality control (QC) reports.
		13	Recognize Good Documentation Practice and Data Integrity.
		14	Prepare operating records for manufacturing products (Batch Records).
	1-1-1 2-2-3 2-5-3	15	Identify and apply standard operating procedures (SOPs) for operation, validation and calibration of different instruments and devices.
4-1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	4-1-1 4-1-2	16	Demonstrate responsibility, cooperate, and integrate effectively with research team members.

4-2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	17	Demonstrate effective communication skills verbally, non-verbally with research team members.

Pharmacovigilance Rotation

NARS Competencies	Key elements	Performance Evaluation Elements	
		No	Please rate the trainee's performance according to the mentioned activity
1-1 Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care. **2-1 Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.** **2-5 Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.** **3-2 Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**1-1-1 1-1-2 1-1-4 1-1-6 1-1-7 2-1-1 2-1-2 2-1-3 2-5-1 2-5-2 3-2-1 3-2-2 3-2-3 3-2-4**	1	Determine, measure, and compare the costs, risks, and benefits of different treatment programs.
		2	Monitor the safety, quality, and efficacy of marketed pharmaceutical products.
	1-1-2 1-1-4 1-1-6 2-1-1 2-1-2 2-1-3 2-5-1 2-5-2 3-2-1 3-2-4	3	Monitor the serious adverse drug reactions (ADRs) of drugs by following-up on marketed pharmaceutical products.
1-1 Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.	**1-1-1 1-1-2 1-1-4 1-1-5 1-1-6 1-1-7**	4	Receive and inspect follow-up reports on the quality of pharmaceutical products with decision-making in case of the occurrence of ADRs.

2-5 **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.** **3-2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**2-5-1** **2-5-2** **3-2-1** **3-2-4**		
	1-1-1 **1-1-2** **1-1-4** **1-1-5** **1-1-6** **1-1-7** **2-5-1** **2-5-2** **3-2-1** **3-2-2** **3-2-3** **3-2-4**	5	Prepare the Risk Management Plan (RMP) document.
		6	Prepare periodic safety update reports (PSUR) for pharmaceutical products.
		7	Understand the international vigilance guidelines and apply good pharmacovigilance practices (GPvP).
	1-1-1 **1-1-4** **2-5-1** **3-2-2**	8	Recognize the procedures of regulatory inspections and audits.
4-1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-1** **4-1-2**	9	Demonstrate responsibility, cooperate, and integrate effectively with healthcare team members.
4-2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	10	Demonstrate effective communication skills verbally, non-verbally with healthcare team members.

Regulatory Inspection Rotation

NARS Competencies	Key elements	Performance Evaluation Elements	
		No	Please rate the trainee's performance according to the mentioned activity
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-6** **2-5-1**	1	Identify the international institutions concerned with the registration and circulation of pharmaceuticals, such as WHO, EMA, FDA, EUDRA.
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-1** **2-3-2** **2-5-1**	2	Recognize current registration procedures of pharmaceutical and biological products, nutritional supplements, medical supplies, and cosmetics.
	1-1-1 **1-1-6** **1-1-7** **2-3-2** **2-5-1** **2-5-2**	3	Understand the pharmaceutical inspection process in compliance with WHO requirements, and pharmacy laws.

1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-1** **1-1-2** **1-1-3** **1-1-6** **1-1-7** **2-2-2** **2-5-1** **2-5-2**	4	Receive pharmaceutical products with physical examination and their certificates of analysis.
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.**	**1-1-1** **1-1-2** **1-1-3** **1-1-6** **1-1-7** **2-2-2** **2-3-2** **2-5-1** **2-5-2**	5	Prepare, cope, and manage the audit and inspection tools over pharmaceutical and biological products, nutritional supplements, medical supplies, and cosmetics, and their significance.
		6	Prepare regulatory inspection reports, warning letters, recalls and follow them up.

2-3 **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.**		7	Prepare and execute remediation plans.
2-5 **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-1** **1-1-2** **1-1-6** **1-1-7** **2-2-2** **2-3-2** **2-5-1** **2-5-2**	8	Prepare, cope, and manage the audit and inspection tools over pharmaceutical establishments (companies – drug distribution stores – pharmacies, etc...).
4-1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-1** **4-1-2**	9	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.
4-2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	10	Demonstrate effective communication skills verbally, non-verbally with teamwork members.

Drug Discovery and Development Rotation

NARS Competencies	Key elements	Performance Evaluation Elements	
		No	Please rate the trainee's performance according to the mentioned activity
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-1** **2-5-1**	1	Understand the drug discovery and development process in the light of legal and regulatory requirements.
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical**	**1-1-1** **1-1-3** **1-1-6** **2-2-1** **2-2-2** **2-2-3** **2-3-1** **2-3-2** **2-5-2** **2-5-3**	2	Discover and prepare lead compounds via chemical/biochemical synthesis, extraction from natural sources, fermentation, cell cultures, etc.

materials/products effectively and safely with respect to relevant laws and legislations. **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**			
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-1** **Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.** **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-1** **1-1-3** **1-1-4** **1-1-5** **1-1-6** **2-1-1** **2-1-2** **2-1-3** **2-2-1** **2-2-2** **2-2-3** **2-2-4** **2-5-2** **2-5-3**	3	Design and conduct *in vitro* experiments, preclinical and clinical studies on potential drugs.

1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-1** **1-1-3** **1-1-4** **1-1-5** **1-1-6** **2-2-1** **2-2-2** **2-2-3** **2-5-2** **2-5-3**	4	Apply computer-aided drug design or other suitable tools to enhance the safety and efficacy of potential drugs, and to reduce the production costs.
	1-1-1 **1-1-6** **2-2-3** **2-2-4** **2-5-2** **2-5-3**	5	Participate in recording, analyzing, and interpreting test results and processing them statistically.
		6	Practice literature search and writing of scientific reports and/or research articles.
4-1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-1** **4-1-2**	7	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.
4-2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	8	Demonstrate effective communication skills verbally, non-verbally with teamwork members.

Pharmaceutical Sales & Marketing Rotation

NARS Competencies	Key elements	Performance Evaluation Elements	
		No	Please rate the trainee's performance according to the mentioned activity
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-6** **Perform pharmacoeconomic analysis and develop promotion, sales, marketing, and business administration skills.**	**1-1-1** **2-6-1** **2-6-2**	1	Understand the basics of pharmaceutical business administration.
		2	Identify the marketing strategies and tactics.
		3	Recognize the concepts of individual and group communication skills.
		4	Understand the concepts of customer value satisfaction, pricing models, and budgeting.
		5	Know and identify clients and customers in the healthcare system.
		6	Understand market research data and forecasting tools.
		7	Develop market segmentation and targeting.
		8	Identify the types of economic analyses and studies used in the field of Pharmacoeconomics.
		9	Participate in recording, analyzing, and interpreting collected data and processing them statistically.
		10	Understand managing retailing, wholesaling, and logistics of good distribution practice (GDP).

1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-1** **Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.** **2-6** **Perform pharmacoeconomic analysis and develop promotion, sales, marketing, and business administration skills.** **3-2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**1-1-1** **1-1-2** **1-1-4** **2-1-1** **2-1-2** **2-1-3** **2-6-1** **2-6-2** **3-2-1** **3-2-2** **3-2-5**	11	Understand the art of medical advertising, and medicinal sales.
		12	Understand the work of scientific offices in medical advertising.
4-1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-1** **4-1-2**	13	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.
4-2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	14	Demonstrate effective communication skills verbally, non-verbally with teamwork members.

Pharmaceutical Production Rotation

NARS Competencies	Key elements	Performance Evaluation Elements	
		No	Please rate the trainee's performance according to the mentioned activity
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.**	**1-1-1** **1-1-3** **2-2-2** **2-2-3**	1	Identify the various production areas in the pharmaceutical manufacturing company: solid preparations (such as tablets and capsules), non-solid preparations (such as ointments, creams, and syrups), sterile preparations (such as ampoules and vials), gelatin capsules, and other products.
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.**	**1-1-1** **1-1-3** **2-2-2** **2-2-3** **2-3-1** **2-3-2**	2	Recognize the layout of production areas, and the workflow in different production facilities.
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize**	**1-1-1** **1-1-3** **2-2-1**	3	Determine the production process operations starting from receiving the raw materials through the various manufacturing stages until reaching the finished product.

materials, formulate and manufacture products, and deliver population and patient-centered care. **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**2-2-2** **2-2-3** **2-2-4** **2-3-1** **2-3-2** **2-5-1** **2-5-3**	4	Apply product control during manufacturing (in-process control 'IPC' Tests), and the significance of each test.
	1-1-1 **1-1-3** **1-1-6** **1-1-7** **2-2-1** **2-2-2** **2-2-3** **2-2-4** **2-3-1** **2-3-2** **2-5-1** **2-5-3**	5	Examine production-related problems that may occur during manufacturing (Troubleshooting) and how to overcome them.
	1-1-1 **1-1-3** **1-1-6** **2-2-2** **2-3-2** **2-5-1**	6	Apply good manufacturing practices (cGMP) and data integrity in production.
4-1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-1** **4-1-2**	7	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.
4-2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	8	Demonstrate effective communication skills verbally, non-verbally with teamwork members.

Quality by Design and Process Analytical Technology (QbD & PAT) Rotation

NARS Competencies	Key elements	Performance Evaluation Elements	
		No	Please rate the trainee's performance according to the mentioned activity
1-1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2-2** **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **2-5** **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-1** **1-1-3** **2-2-2** **2-2-3** **2-3-2** **2-5-1**	1	Recognize the concept of pharmaceutical quality by design (QbD) and describes its objectives.
		2	Identify the ICH guidelines Q8 (Pharmaceutical Development), Q9 (Quality Risk Management), and Q10 (Pharmaceutical Quality System).
	1-1-1 **1-1-3** **1-1-6** **1-1-7** **2-2-2** **2-2-3** **2-3-2** **2-5-1** **2-5-2** **2-5-3**	3	Design a quality product and its manufacturing process to consistently deliver the intended performance of the product to meet patient needs.
		4	Describe that critical material parameters (CMP) and critical process parameters (CPP) linked to the critical quality attributes (CQAs) of the product.
		5	Increase process capability and reduce product variability and defects by enhancing product and process design, understanding, and control.
		6	Analyze, evaluate, and interpret problems associated with the design of pharmaceutical products.
		7	Understand the quality risk management across the product lifecycle for drug products.
		8	Illustrate the principles and tools of quality risk management that can be applied to different aspects of pharmaceutical quality.
		9	Understand and analyze case studies related to Quality by design (QbD) approach for product development.

4-1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-1** **4-1-2**	10	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.
4-2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	11	Demonstrate effective communication skills verbally, non-verbally with teamwork members.

Clinical Rotations NARS Competencies

Pharmacy Based Rotation

Community Pharmacy Rotation

Competencies	Key elements	Performance Evaluation Elements	
		No	Objectives
1.1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.**	1-1-1 1-1-2 1-1-4 1-1-5 1-1-6	1.	receive the prescription and obtain all required information for its processing.
		2.	interpret the medication order completely, accurately, and efficiently and perform order entry accurately (if applicable).
2.1 **Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.**	2-1-1 2-1-2 2-1-3	3.	adhere to legal, and regulatory requirements.
		4.	prepare and dispense medications using appropriate techniques and follows applicable professional standards, laws, and regulations in accordance with patient needs.
		5.	complete all steps in the final check of filled prescriptions to ensure accuracy
		6.	take appropriate actions to refer patients for other health care services or care.
2.2 **Standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** 2.6. **Perform pharmacoeconomic analysis and develop promotion, sales, marketing, and business administration skills.**	2-2-2 2-6-1	7.	demonstrate understanding of the principles of inventory control, including cycle counts, audits, physical inventory, turnover rate, handling return of merchandise, drug recalls, and days-on-hand.
		8.	determine impact of the pharmaceutical return process.
		9.	understand and adheres to coding, billing, and reimbursement regulations.
		10.	identify patients' needs for appropriate available services in the practice to facilitate safe and effective use of medications (e.g., compliance packaging, delivery services, compounded formulations).
		11.	compound non-sterile products and extemporaneous preparations according to the physician order, using appropriate techniques and following applicable professional standards, laws and regulations.

	2-2-4		perform pharmaceutical calculations related to medication orders, including pediatric medications doses by weight.
1.1 **Integrate knowledge from basic and applied pharmaceutical and clinical sciences to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2.5** **Contribute to pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-6** **2-5-2**	**12.**	conduct effective and thorough literature search in many resources and utilize appropriate drug information resources
2.3 **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **2.4** **Actively share professional decisions and proper actions to save patient's life in emergency situations including poisoning with various xenobiotics, and effectively work in forensic fields.**	**2-3-2** **2-4-1**	**13.**	evaluate handling of narcotics and psychotropic medications and determine if modifications are needed to improve their security.
		14.	explain strategies for ensuring the integrity of the supply chain.
		15.	apply professional ethics as they relate to the practice of pharmacy.
	2-4-2 **2-4-3**	**16.**	participate in the formulation and selection of rational pharmacotherapeutic plan to include drug, route, dose, interval, therapeutic endpoint, and monitoring parameters in assigned patients.
		17.	select the most appropriate over the counter medication (OTC) according to the case evaluation.
3.1 **Apply the principles of body functions to participate in improving health care services using evidence-based data.**	**3-1-1** **3-1-4**	**18.**	Identify, clarify, and respond to drug information questions.
		19.	collect relevant patient information from different sources (patient interview, and patient chart).
		20.	identify patient's need and respond according to presented patient's symptoms.
		21.	conduct medication reconciliation thoroughly and effectively.
3.2 **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**3-2-1** **3-2-2**	**22.**	identify potential and actual medication-related problems and take appropriate actions on identified problems.
		23.	determine barriers to patient adherence and make appropriate adjustments.
		24.	identify adverse drug events interactions, and contra-indications of different pharmaceutical drug classes with treatment and prevention strategies.

	3-2-3 3-2-5 3-2-6	25.	provide effective medication counseling and patient education about safe and proper use of medicines including OTC preparations and medical devices
		26.	demonstrate knowledge of commonly used medications, formulations and drug products in Egypt, in terms of their generic name, trade name, indications, side effects, and counseling messages.
		27.	employ effective counseling techniques and educates the patient and/or caregiver effectively about both dispensed and self-care medications, showing empathy. a. Counsel patients on prescription/OTC medications. b. Counsel patients on appropriate use of inhalers c. Counsel patients on appropriate insulin injections techniques
		28.	conduct appropriate point of care testing, if applicable
		29.	participate in disease screening or health promotion activities or education of a group of patients, community groups or school trainees on disease/medication use.
4.1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	4-1-1 4-1-2	30.	work effectively as a team member in an efficient and interactive way to perform the required tasks.
		31.	manage time well and demonstrate an appropriate level of preparedness.
4.2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	4-2-1 4-2-2	32.	demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.
4.3 **Express self-awareness and be a life-long learner for continuous professional improvement.**	4-3-1	33.	accept constructive criticism; and respond to feedback to modify behaviors.

Hospital Pharmacy Rotation

Competencies	Key elements	Performance Evaluation Elements	
		No	Objectives
1.1 Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.	**1-1-1 1-1-2 1-1-4 1-1-5 1-1-6**	1.	receive the medication order/prescription and obtain all required information for its processing.
		2.	interpret the medication order/prescription completely, accurately, and efficiently and perform order entry accurately (if applicable).
2.1 Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.	**2-1-1 2-1-2 2-1-3**	3.	adhere to legal, and regulatory requirements.
		4.	prepare and dispense medications using appropriate techniques and follow applicable professional standards, laws, and regulations and in accordance with patient needs.
2.2 Standardize pharmaceutical materials, formulate, and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines. **2.3 Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **2.6. Perform pharmacoeconomic analysis and develop promotion, sales, marketing, and business administration skills.**	**2-2-2 2-3-2 2-6-1**	5.	assist in stock control within the pharmacies and coordinate with warehouse, clinics, nurse stations and physicians to prepare and dispense medications.
		6.	demonstrate understanding of the principles of inventory control, including cycle counts, audits, physical inventory, turnover rate, handling return of merchandise, drug recalls, and days-on-hand.
		7.	understand the different medication distribution systems within the hospital
		8.	explain strategies for ensuring the integrity of the supply chain.
		9.	determine impact of the pharmaceutical return process
		10.	practice intravenous (IV) admixture preparation, IV compatibility checking and compounding of sterile products according to the national and international standards
	2-2-3	11.	complete all steps in the final check of medication order to ensure accuracy.
	2-2-4	12.	perform pharmaceutical calculations related to medication orders, including pediatric medications doses by weight.
		13.	select the appropriate dosage form and regimen according to the patient's conditions and history.
1.1 Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.	**1-1-6 2-5-2**	14.	conduct an effective and thorough literature search in many resources and utilize appropriate drug information resources
		15.	Identify, clarify and respond to drug information questions.

2.5 **Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.**			
2.4 **Actively share professional decisions and proper actions to save patient's life in emergency situations including poisoning with various xenobiotics, and effectively work in forensic fields.** **3.1** **Apply the principles of body functions to participate in improving health care services using evidence-based data.**	**2-4-1** **3-1-1** **3-1-2**	16.	handle narcotics and psychotropic medications according to the applicable laws and regulation and determine if modifications are needed to improve their security.
		17.	implement and work according to the infection prevention and control requirements and standards.
3.1 **Apply the principles of body functions to participate in improving health care services using evidence-based data.** **3.2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**3-1-1** **3-1-2** **3-2-1** **3-2-2**	18.	collect, retrieve, and review relevant patient information from different sources (patient interview, patient chart, electronic system if available).
		19.	substitute appropriate generic products according to the formulary system
3.2 **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**3-2-1** **3-2-2** **3-2-3** **3-2-5** **3-2-6**	20.	identify potential and actual drug-related problems including, potential interactions with other drug therapy or disease states, contraindications, and duplicate therapy and recognize medication errors and act accordingly.
		21.	identify adverse drug events including drug allergies and prevention strategies.
		22.	provide effective medication counseling and patient education showing empathy.
		23.	demonstrate knowledge of commonly used medications, formulations, and drug products in Egypt, in terms of their generic name, trade name, indications, and side effects.
4.1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-1**	24.	manage time well and demonstrate an appropriate level of preparedness.
	4-1-2	25.	work effectively as a team member in an efficient and interactive way to perform the required tasks.
4.2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	26.	communicate properly verbally, non-verbally, and written being an active listener.

4.3 **Express self-awareness and be a life-long learner for continuous professional improvement.**	**4-3-1**	27.	accept constructive criticism; and respond to feedback to modify behaviors.

Intravenous (IV) Admixing Preparation Rotation

Competencies	Key elements		Performance Evaluation Elements
		No	Objectives
2.1 **Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.**	**2-1-1** **2-1-2** **2-1-3**	1.	apply professional ethics as they relate to the practice of pharmacy.
		2.	adhere to legal, and regulatory requirements.
		3.	assist in stock control within the pharmacies and coordinate with warehouse, clinics, nurse stations and physicians to prepare and dispense prepared medications whenever appropriate.
2.2 **Standardize pharmaceutical materials, formulate, and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **2-3** **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.**	**2-2-2** **2-2-3** **2-2-4** **2-3-1** **2-3-2**	4.	maintain sterile compounding and clinical competency in compliance to policy and sufficient to meet pharmacy standards for patient safety and effective therapy.
		5.	supervise technicians in aseptic compounding including parenteral nutrition.
		6.	practice intravenous (IV) admixture preparation, IV compatibility checking and compounding of sterile products according to the national and international standards
		7.	describe the various sterile compounding areas: anteroom, buffer room, clean room, and the compounding, storage, and cleaning requirements for each area.
		8.	recall the various types of hoods and isolators to determine the appropriate method required for cleaning each.
		9.	list the proper methods for documenting environmental quality control in the cleanroom.
		10.	demonstrate with 100% accuracy on process validation (PV) checklist aseptic technique in o handwashing, o proper gowning and sterile gloving technique, o proper horizontal hood cleaning technique, o proper vertical hood or barrier isolator cleaning technique (when applicable), o proper powder vial reconstitution technique and o proper liquid vial and ampule technique.

		11.	demonstrate appropriate pharmaceutical calculations as required to prepare a variety of sterile compounded preparations (Reconstitution, drug dose, IV flow rate, etc.)
2-3 **Handle and dispose biologicals and synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.**	**2-3-1** **2-3-2**	12.	handle cytotoxic medications and hazardous substances and preparing cancer treatment drugs in a way to maintain a sterile environment, including cleaning procedures and sterilization techniques, the use of appropriate personal protective equipment and procedures for the disposal of cytotoxic materials and supplies used in dealing with them (If available).
3.2 **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**3-2-1** **3-2-2**	13.	provide all needed interventions, report and discuss medication errors, and adverse drug reaction(s) (ADRs).
4.1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-1** **4-1-2**	14.	manage time well and demonstrate an appropriate level of preparedness.
		15.	refer pending and unresolved difficulties to senior level.
		16.	work effectively as a team member in an efficient and interactive way to perform the required tasks.
4.2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	17.	communicate properly verbally, non-verbally, and written being an active listener.

Clinical Pharmacy Rotation in Adult General Medicine (and other rotations viz. Cardiology and Cardiovascular/ Gastroenterology and Hepatology/ Nephrology and Urology/ Infectious Diseases/ Pediatrics and Neonates/ Geriatrics/ Neuropsychiatric/ Obstetrics and Gynecology Rotations

Competencies	Key elements	Performance Evaluation Elements	
		No	Objectives
1.1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.**	**1-1-1** **1-1-2** **1-1-4** **1-1-5**	1.	demonstrate appropriate understanding of disease state in terms of disease terminology, pathophysiology, symptomatology, and drug therapy.
2.1 **Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.**	**2-1-1** **2-1-2**	2.	work collaboratively with other healthcare professionals daily in various medical departments and respect each other's roles and responsibilities.
		3.	apply professional ethics as they relate to the practice of pharmacy, in terms of respecting patients' rights and confidentiality of their data.
		4.	adhere to legal, and regulatory requirements.
2.4 **Actively share professional decisions and proper actions to save patient's life in emergency situations including poisoning with various xenobiotics, and effectively work in forensic fields.** **3.1** **Apply the principles of body functions to participate in improving health care services using evidence-based data.** **3.2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**2-4-2** **2-4-3** **3-1-4** **3-2-1** **3-2-2**	5.	review and retrieve information from patient charts.
		6.	interpret vital signs and laboratory values and adjust medications accordingly.
		7.	assess patient/patient medical history to identify disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
		8.	participate in the formulation and selection of rational pharmacotherapeutic plan to include drug, route, dose, interval, therapeutic endpoint and monitoring parameters in assigned patients.
2.2 **Standardize pharmaceutical materials, formulate, and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.**	**2-2-4** **2-4-3** **3-2-2** **3-2-1** **3-2-2**	9.	evaluate and adjust doses of different medications and accurately perform pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on ideal body weight (IBW), and creatinine clearance (CrCl)).
		10.	perform therapeutic drug monitoring and pharmacokinetic based dosing.

2.4 **Actively share professional decisions and proper actions to save patient's life in emergency situations including poisoning with various xenobiotics, and effectively work in forensic fields.** **3.2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**		11.	consistently and accurately identify potential drug-related problems including potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
		12.	recognize and report adverse drug reactions (ADRs) on the appropriate ADR form as directed by the preceptor.
		13.	conduct medication reconciliation and drug use evaluation accurately and in a timely manner.
1.1 **Integrate knowledge from basic and applied pharmaceutical and clinical sciences to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2.5** **Contribute to pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-6** **2-5-2**	14.	identify and utilize appropriate drug information resources and demonstrate ability to research, review, and critically evaluate pertinent drug literature to respond to drug information questions.
		15.	respond proficiently to drug information requestsfrom available resources.
3.2 **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**3-2-5** **3-2-6**	16.	provide effective medication counseling and patient education about safe and proper use of medicines including OTC preparations and medical devices.
4.1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-1**	17.	manage time well and demonstrate an appropriate level of preparedness.
	4-1-2	18.	implement consistent scientific method for critical analysis of information and solving problems
4.2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	19.	communicate properly verbally, non-verbally, and in written being an active listener.
		20.	demonstrate sensitivity, respect, and show empathy during communication with patients
	4-2-2	21.	utilize technologies and media to demonstrate effective presentation skills
4.3 **Express self-awareness and be a life-long learner for continuous professional improvement.**	**4-3-1** **4-3-2**	22.	practice self-assessment, accept constructive criticism; and respond to feedback to modify behaviors.
		23.	accomplish assignments, tasks and topics research that require independent work and functioning for future professional development

Critical Care Clinical Pharmacy Rotation

Competencies	Key elements	Performance Evaluation Elements	
		No	Objectives
1.1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.**	**1-1-1** **1-1-2** **1-1-4** **1-1-5** **1-1-7**	**1.**	demonstrate appropriate understanding of disease state in terms of disease terminology, pathophysiology, symptomatology, and drug therapy.
2.2 **Standardize pharmaceutical materials, formulate, and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **3.2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**2-2-4** **3-2-2**	**2.**	evaluate and adjust doses of different medications and accurately perform pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on ideal body weight (IBW), and creatinine clearance (CrCl)).
		3.	perform therapeutic drug monitoring and pharmacokinetic based dosing.
2.4 **Actively share professional decisions and proper actions to save patient's life in emergency situations including poisoning with various xenobiotics, and effectively work in forensic fields.** **3.2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**2-4-2** **2-4-3** **3-2-1** **3-2-2**	**4.**	participate in the formulation and selection of rational pharmacotherapeutic plan to include drug, route, dose, interval, therapeutic endpoint, and monitoring parameters in assigned patients.
		5.	effectively present patient cases and therapeutic care plans to preceptors and peers.
2.4 **Actively share professional decisions and proper actions to save patient's life in emergency situations including poisoning with various xenobiotics, and effectively work in forensic fields.** **3.1** **Apply the principles of body functions to participate in improving health care services using evidence-based data.**	**2-4-2** **2-4-3** **3-1-3** **3-1-4**	**6.**	review and retrieve information from patient charts.
		7.	interpret vital signs and laboratory values and adjust medications accordingly.
		8.	assess critically patient/patient medical history to identify disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.

2.4 **Actively share professional decisions and proper actions to save patient's life in emergency situations including poisoning with various xenobiotics, and effectively work in forensic fields.** **3.2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**2-4-3** **3-2-1** **3-2-2**	**9.**	consistently and accurately identify potential drug-related problems including allergies, potential interactions with other drug therapy or disease states, and duplicate therapy and recognizing medication errors and prioritizing the problem list.
		10.	Recognize and report adverse drug reactions (ADRs) on the appropriate ADR form as directed.
		11.	conduct medication reconciliation and drug use evaluation accurately and in a timely manner.
1.1 **Integrate knowledge from basic and applied pharmaceutical and clinical sciences to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2.5** **Contribute to pharmaceutical research studies and clinical trials needed to authorize medicinal products.**	**1-1-6** **2-5-2**	**12.**	identify and utilize appropriate drug information resources and demonstrate ability to research, review, and critically evaluate pertinent drug literature to respond to drug information questions.
		13.	respond proficiently to drug information requests from available resources.
3.2 **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**3-2-5** **3-2-6**	**14.**	provide effective medication counseling and patient education about safe and proper use of medicines including OTC preparations and medical devices.
2.1 **Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.**	**2-1-1** **2-1-2**	**15.**	work collaboratively with other healthcare professionals daily in various medical departments and respecting each other's roles and responsibilities.
		16.	apply professional ethics as they relate to the practice of pharmacy, in terms of respecting patients' rights and confidentiality of their data.
		17.	adhere to legal, and regulatory requirements.
4.1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-1** **4-1-2**	**18.**	communicate properly verbally, non-verbally, and in written being an active listener.
		19.	demonstrate sensitivity, respect, showing empathy during communication with patients
		20.	manage time well and demonstrate an appropriate level of preparedness.
		21.	implement a consistent scientific method for critical analysis of information and solving problems

4.2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-2**	**22.**	utilize technologies and media to demonstrate effective presentation skills.
4.3 **Express self-awareness and be a life-long learner for continuous professional improvement.**	**4-3-1** **4-3-2**	**23.**	practice self-assessment, accept constructive criticism; and respond to feedback to modify behaviors.
		24.	accomplish assignments, tasks and topics research that require independent work and functioning for future professional development

Oncology and Hematology Clinical Pharmacy Rotation

Competencies	Key Elements	No	Performance Evaluation Elements
1.1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.**	1-1-1 1-1-2 1-1-4 1-1-5 1-1-7	1.	demonstrate appropriate understanding of oncologic disease state in terms of disease terminology, pathophysiology, symptomatology and chemotherapeutic protocols.
		2.	be familiar with the role of diagnostic, palliative, and curative radiation therapy and surgery in cancer management including the monitoring and management of the associated complications.
2.1 **Work collaboratively as a member of an inter-professional healthcare team to improve the quality of life of individuals and communities, and respect patients' rights.**	2-1-1 2-1-2	3.	practice collaboratively with healthcare professionals daily in the department of oncology and hematology.
		4.	apply professional ethics as they relate to the practice of pharmacy, in terms of respecting patients' rights and confidentiality of their data.
		5.	adhere to legal, and regulatory requirements.
2.2 **Standardize pharmaceutical materials, formulate, and manufacture pharmaceutical products and participate in systems for dispensing, storage and distribution of medicines.** 3.2 **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	2-2-2 2-2-4 3-2-2	6.	evaluate and adjust doses of different medications and accurately perform pharmaceutical calculations related to medication orders, including pediatric and renal patient orders (based on ideal body weight (IBW), and creatinine clearance (CrCl)).
		7.	performing therapeutic drug monitoring and pharmacokinetic based dosing.
2.4 **Actively share professional decisions and proper actions to save patient's life in emergency situations including poisoning with various xenobiotics, and effectively work in forensic fields.**	2-4-3		effectively present patient cases and therapeutic care plans to preceptors and peers.
3.1 **Apply the principles of body functions to participate in improving healthcare services using evidence-based data.**	3-1-1 3-1-4	8.	review and retrieve information from oncology patient charts.
		9.	interpret vital signs and laboratory values and adjust medications accordingly.
		10.	recognize typically presenting signs and symptoms of oncologic emergencies.

		11.	assess patient/patient medical history in order to identify disease/condition, other medical problems and/or therapies or potential drug therapy problems and organize information.
		12.	participate in the formulation of rational pharmacotherapeutic plan to include drug, route, dose, interval, therapeutic endpoint and monitoring parameters in assigned cancer patients.
3.2 **Provide counselling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**3-2-1** **3-2-2** **3-2-4** **3-2-5**	13.	provide effective medication counseling and patient education and patient education about safe and proper use of medicines including OTC preparations, herbal products, and medical devices.
		14.	consistently and accurately identify potential drug-related problems including, potential interactions with other drug therapy or disease states, and duplicate therapy, recognizing medication errors, and prioritizing the problem list.
		15.	recognizing and reporting adverse drug reactions (ADRs) on the appropriate ADR form, as pharmacovigilance reporting as directed by the preceptor.
2.4 **Actively share professional decisions and proper actions to save patient's life in emergency situations including poisoning with various xenobiotics, and effectively work in forensic fields.** **3.1** **Apply the principles of body functions to participate in improving healthcare services using evidence-based data.** **3.2** **Provide counselling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**2-4-3** **3-1-1** **3-2-3**	16.	conduct medication reconciliation and drug use evaluation accurately and in a timely manner.
		17.	plan for antimicrobial therapy in immunosuppressed patients, febrile neutropenia and develop plan for supportive care and pain control for these patients.
		18.	provide supportive care for oncological regimen to treat and relieve side effects and prevent toxicities of chemotherapy and radiation.
		19.	participate in the development of a nutritional support program for cancer patients.
1.1 **Integrate knowledge from basic and applied pharmaceutical and clinical sciences to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.** **2.5**	**1-1-6** **2-5-2**	20.	identify and utilize appropriate drug information resources and demonstrate ability to research, review, and critically evaluate pertinent drug literature to respond to drug information questions.
		21.	respond proficiently to drug information requestsfrom available resources.

Contribute to pharmaceutical research studies and clinical trials needed to authorize medicinal products.			
4.1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.**	**4-1-2** **4-1-3**	**22.**	manage time well and demonstrating an appropriate level of preparedness.
		23.	exhibit critical thinking and problem-solving skills.
		24.	demonstrate creativity and leadership capabilities.
4.2 **Effectively communicate verbally, non-verbally and in writing with individuals and communities.**	**4-2-1**	**25.**	communicate properly verbally, non-verbally, and in written being an active listener.
		26.	demonstrate sensitivity, respect, showing empathy during communication with patients
		27.	deal professionally with health care team, patients and communities.
	4-2-2	**28.**	utilize technologies and media to demonstrate effective presentation skills.
4.3 **Express self-awareness and be a life-long learner for continuous professional improvement.**	**4-3-1** **4-3-2**	**29.**	practice self-assessment, accept constructive criticism; and respond to feedback to modify behaviors.
		30.	accomplish assignments, tasks and topics research that require independent work and functioning for future professional development

Clinical Nutrition Support Rotation

Competencies	Key elements	Performance Evaluation Elements	
		No	Objectives
1.1 **Integrate basic and applied pharmaceutical and clinical sciences knowledge to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.**	**1-1-1** **1-1-2** **1-1-4** **1-1-5** **1-1-7**	1.	demonstrate understanding of knowledge of biochemical symptoms of malnutrition states, eating disorders and other nutritional diseases.
		2.	understand basic interpretation of blood gas values, especially as related to components of the parenteral nutrition formulation and appropriate changes in the parenteral nutrition formulation.
		3.	recognize differences between adult and pediatric parenteral nutrition guidelines and requirements in different disease states.
		4.	evaluate the appropriateness of enteral/parenteral nutrition as the route for nutritional intervention.
2.1 **Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.** **3.1** **Apply the principles of body functions to participate in improving health care services using evidence-based data.**	**2-1-1** **3-1-1** **3-1-4**	5.	gather necessary patient data from appropriate sources (nurse, patient, chart, physicians, etc.).
		6.	assess patient medical and medication history including active problems, Past Medical History (PMH), pertinent Physical Examination (PE), laboratory data and physical assessment and diagnostic measures
		7.	conduct a comprehensive nutritional assessment of the patient using validated tools, encompassing dietary, anthropometric, clinical, biochemical, and sociologic evaluations
		8.	estimate caloric and protein requirements for a patient and formulate a parenteral nutrition plan to meet these requirements.
		9.	discuss normal fluid and electrolyte balance.
		10.	recommend adjustments in electrolyte provision and the most appropriate route for adjustments (change total parenteral nutrition (TPN) versus change maintenance IV versus IV or oral (PO) supplemental dose).
2.1	**2-1-1** **2-1-2**	11.	applying professional ethics as they relate to the practice of pharmacy, and in terms of respecting patients' rights and confidentiality of their data.

Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights. **2.2** **Standardize pharmaceutical materials, formulate, and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.** **3.1** **Apply the principles of body functions to participate in improving health care services using evidence-based data** **3.2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**2-1-3** **2-2-4** **3-1-1** **3-1-4** **3-2-3**	12.	recognize, develop, and implement different nutrition plans and requirements in different disease states; hypertension, cardiovascular, hepatic, renal and oncologic diseases including recognizing the following. a. purposes and goals of parenteral nutrition therapy. b. contraindication for enteral/parenteral nutritional plan based on the comorbid chronic disease state. c. parameters to monitor efficacy and safety
		13.	provide effective nutrition counseling and patient education.
2.4. **Actively share professional decisions and proper actions to save patient's life in emergency situations including poisoning with various xenobiotics, and effectively work in forensic fields.** **3.2** **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**2-4-3** **3-2-1**	1.	discuss issues related to medications, tube feeding and potential drug nutrient interactions.
		2.	discuss issues related to medications and parenteral nutrition in terms of chemical stability and physical incompatibility.
		3.	consistently and accurately identify potential drug-related problems including, potential interactions with other drug therapy or disease states, and duplicate therapy, recognizing medication errors and prioritizing the problem list.
		4.	recognize and report ADRs on the appropriate ADR form as directed by the preceptor.
3.2 **Provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.**	**3-2-1** **3-2-2** **3-2-3** **3-2-5** **3-2-6**		discuss monitoring parameters for patients receiving parenteral nutrition including which parameters to use, how often they are checked, and interpretation of test results.
		5.	effectively present recommendations for changes in the enteral/parenteral nutrition therapy of a patient, both oral presentation and in writing.
4.2	**4-2-1**	6.	demonstrate sensitivity, respect, showing empathy during communication with patients

Effectively communicate verbally, non-verbally and in writing with individuals and communities.		7.	communicate effectively (verbally & written) with patients and other healthcare professionals regarding the nutritional formula; being an active listener.
		8.	effective present patient cases and nutritional care plans to preceptors and peers.
2.1 **Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights.**	**2-1-1** **2-1-2**	9.	work collaboratively with other healthcare professionals daily in various medical departments, respecting each other's roles and responsibilities.
		10.	comply with ethics, laws and regulations, respect patients' confidentiality and adhere to dress code.
4.1 **Express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.** **4.3** **Express self-awareness and be a life-long learner for continuous professional improvement.**	**4-1-1** **4-1-2** **4-3-1** **4-3-2**	11.	manage time well and demonstrate an appropriate level of preparedness.
		12.	demonstrate enthusiasm, able to undertake tasks, complete assignments, fulfill responsibilities in a timely manner, appropriately prioritize and organize tasks independently or in groups.
		13.	conduct self-assessment to identify the strengths and weaknesses, accepting constructive criticism for personal and professional development, responding to feedback to modify behaviors
		19.	accomplish assignments, tasks and topics research that require independent work and functioning for future professional development

Preceptors Eligibility Criteria, Roles, and Responsibilities

Introduction

Preceptor qualifications and caliber are crucial requirements of the Pharmacy Training Program and are critical for attainment of the program goals and objectives as well as the overall success and effectiveness. The program is committed to selecting and recruiting professionally and educationally qualified pharmacists who are committed to providing effective training and being exemplary role models for the trainees to ensure appropriate training, supervision, and guidance.

Qualifications

1. Must have a valid Pharmacy license of practice (Egyptian syndicate of pharmacy).
2. A (2-3) years at least of working as a practicing pharmacist.
   Criteria 1 and 2 are a must for inclusion
3. Attainment of any qualifications or training courses is an add on and contribute to their selection
4. Be able to take responsibility for the professional and legal supervision of the student during the experience.
5. Understands the goals and objectives of the pharmacy experiential program and its individual experiential courses.
6. Demonstrate the principles of professional ethics.

Criteria for Selecting/Nominating a Preceptor for Clinical Pharmacy – Patient Based Rotation

1. Preceptors must possess a current license to practice pharmacy in Egypt.
2. Preceptors must practice within the selected site during the time of the training rotation.
3. Preceptors must be in their current roles for at least 6 months.
4. Preceptors must have at least one of the following certifications:
   - Pharm D/Master/Ph.D. degree in clinical pharmacy with at least (1) year of full-time experience as a clinical pharmacist.
   - Board of Pharmacy Specialties (BPS)certification/Clinical Pharmacy diploma with at least (2) years of full-time experience as a clinical pharmacist.
   - Clinical Pharmacy Program graduate with at least (2) years of full-time experience as a clinical pharmacist.
   - Pharmacy Graduate with at least (3) years of full-time experience as a clinical pharmacist.
5. Preceptors must possess the time and capacity to fulfill the following requirements:
   - Willing to be a mentor.
   - Willing to assist the trainee in achieving the objectives of the rotations.
   - Provide a Preceptor: Trainee ratio for patient-based rotation of 1:5
   - Provide a Preceptor: Trainee ratio for non-patient-based rotation is 1:7
6. Preceptors must surpass the required preceptor training program and orientation in relation to teaching, evaluation and supervision.

Roles and Responsibilities of the Preceptor

1. Provides an effective and informative orientation for the trainees at the beginning of each rotation, explaining its objectives and the professional expectation with respect to the following: appearance, performance, site-specific processes, and patient care responsibilities.
2. Provides direct instructions appropriate for trainees and introduces them to the staff in the training facility and provide site orientation tour.

3. Provides modeling of practice skills described in the rotation objectives.
4. Provides coaching skills described in the rotation objectives, providing regular, on-going feedback.
5. Facilitates trainee learning and development by allowing trainees to assume increasing levels of responsibility for performance of skills with direct and indirect support of the preceptor as needed.
6. Provides sufficient opportunities and repetitions for trainees to achieve the program rotations' goals and objectives and progress towards independence.
7. Prepares and regularly updates learning experience descriptions as needed.
8. Continuously reviewing trainee development plans to modify learning experiences based upon trainee strengths and areas for improvement.
9. Provides timely, qualitative, formative, and on-going feedback to trainees about how they are progressing and how they can improve. This should be frequent, immediate, specific, and constructive.
10. Makes appropriate adjustments to trainees' learning activities in response to information obtained through day-to-day informal observations, interactions, and assessments.
11. Completes all summative evaluations (Midpoint/Final) within the evaluation system within ONE week of the completion of the learning experience.
12. Meets with the trainee to discuss summative, self, and preceptor/learning experience evaluations.
13. If multiple preceptors are involved in the individual rotation, one preceptor should be identified as the primary preceptor. The primary preceptor should seek consensus of preceptors to determine final ratings and co-sign evaluations.
14. Co-preceptors are encouraged to provide documentation in trainees' written evaluation.
15. Regularly communicates with faculty members assigned for trainee supervision for discussions related to trainees' progress, training plan modification and any obstacles related to trainees.