جامعه جنوب الوادي
كليه الصيدله

اللائحة الداخلية

لبرنامج

بكالوريوس الصيدلة (فارم دى- PharmD)

(صيدلة اكلينيكية)

طبقا لنظام الساعات المعتمدة

2019

الفهرس

رؤية و رسالة و أهداف كلية الصيدله - جامعة جنوب الوادي

الرؤيــة:

تسعي كلية الصيدلة جامعة جنوب الوادى ان تصبح مؤسسة معتمدة علي المستوي الاقليمي والدولي في مجال العلوم الصيدلية و ان تحتل مكانه رائده في انشطة البحث العلمي وخدمة المجتمع.

الرسـالة:

اعداد كوادر مهنية ذوى كفاءة عالية قادرة على التنافس على المستوى القومى من خلال برامج تعليمية متميزة ومواكبة تطور البحث العلمى فى تنمية المجتمع وخدمة البيئة. كما تقوم الكلية بتبنى بحوث صيدلية و طبية بالتعاون مع الفريق الطبى بحيث تتمشى هذه البحوث مع الاهداف القومية للوطن.

.أهـداف الكلية:

1- اعداد خريج متخصص فى العلوم الصيدلية ومؤهل للمناقسة الاقليمية والعالمية فى ممارسة مهنة الصيدلة
2- اجراء البحوث العملية والتطبيقية فى المجالات الصيدلية والطبية المرتبطة بخدمة وتنمية المجتمع
3- انشاء وحدات ذات طابع خاص لتقديم الاستشارات والخدمات العلمية والفنية للجهات المعنية بالنواحى الصحية والتصنيع الدوائى.
4- الإستمرار فى دعم كافة مجالات التعليم الصيدلى من أجل الإرتقاء بالمستوى العلمي للخريجين والوفاء بإحتياجات سوق العمل

الأقسام العلمية :

1. قسم الصيدلانيات
2. قسم العقاقير
3. قسم الكيمياء العضوية الصيدلية
4. قسم الكيمياء الطبية
5. قسم الكيمياء التحليلية الصيدلية
6. قسم الأدويه والسموم
7. قسم الميكروبيولوجي والمناعة
8. قسم الكيمياء الحيوية
9. قسم الصيدلة الاكلينيكية
10. قسم الصيدلة الصناعية

مواد اللائحة

مادة (1) :

رؤية البرنامج

التميز العلمي والتطوير المستمر لخدمة المنظومة الصحية العلاجية والوصول لمكانة مرموقة عالميا في مجال الصيدلة الإكلينيكية.

رسالة البرنامج

إعداد صيادلة مؤهلين بأحدث المفاهيم الصيدلية والطبية يمكنهم المساهمة في رفع كفاءة المنظومة العلاجية على المستوى المحلي والإقليمي من خلال التعامل مع الفريق الصحي في المستشفيات وتقديم الخدمات الصيدلية بمستوى مهاري محترف بالصيدليات العامة والخاصة وشركات الأدوية ومعامل الرقابة الدوائية وتحليل الأغذية بالإضافة إلى العمل في مجال الإعلام والتسويق الدوائي والمشاركة بفاعلية في البحث العلمي من خلال مراكز البحوث والجامعات لخدمة المجتمع.

أهداف البرنامج

- التركيز على دور الصيدلي في تقديم الرعاية الصحية المناسبة للمريض بداخل المستشفيات وخارجها من خلال متابعة النظام الدوائي له ودراسة مبادئ حركية الدواء الإكلينيكية وتطبيقاتها في العلاج في الحالات المرضية المختلفة وإيجاد الأنظمة العلاجية المناسبة وذلك بالتعاون مع الطبيب المعالج مما ينتج عنه تحسين الرعاية الصحية للمرضى وتقليل مخاطر وتفاعلات الأدوية.
- تخريج صيدلي متميز مؤهل للعمل بالصيدليات العامة والخاصة وشركات الأدوية ومعامل الرقابة الدوائية وتحليل الأغذية والعمل في مجال الاعلام والتسويق والبحوث والجامعات.
- زيادة القدرة التنافسية لخريجي البرنامج على المستوى الإقليمي من خلال البرامج الدراسية والتدريبية.
- المشاركة في خدمة المجتمع وتنمية البيئة وتوفير عائد إقتصادي ملموس من خلال ترشيد إستخدام الأدوية في المستشفيات.
- الإلتزام بتحقيق معايير الجودة في التعليم الصيدلي من خلال التعليم التفاعلي والإهتمام بالتعلم الذاتي.

مادة (2) :

الدرجة العلمية التي تمنح للخريجين

يمنح مجلس الجامعة بناءً على طلب مجلس كلية الصيدلة درجة بكالوريوس الصيدلة (فارم دي-PharmD) (صيدلة إكلينيكية) طبقا لنظام الساعات المعتمدة.

مادة (3) :

التأهيل للدرجات الأكاديمية الأعلى:

درجة بكالوريوس الصيدلة (فارم دي-PharmD) (صيدلة إكلينيكية) هى الدرجة الجامعية الأولى فى مجال الصيدلة الاكلينيكيه اللازمة للحصول على ترخيص ممارسة المهنة و ذلك للعمل في جميع المجالات الصيدليه المتاحه مع منح الخريج الخبره اللازمه التي تعطيه افضليه في العمل فى مجالات الصيدلة الإكلينيكية والتغذية العلاجية ، كما تؤهل الخريج للتسجيل لدرجة الماجستير فى أى من الأقسام العلمية فى الكلية و خاصه في مجال الصيدله الاكلينيكيه .

مادة (4) :

نظـام الدراسـة

مدة الدراسة بالبرنامج خمس سنوات دراسية (خمس مستويات على عشر فصول دراسية) طبقا لنظام الساعات المعتمدة وسنة تدريب متقدم (امتياز) فى مواقع العمل (5+1). بالإضافة إلى **عدد 100 ساعة** تدريب ميدانى فعلية فى الصيدليات الأهلية والحكومية وصيدليات المستشفيات تتم خلال الأجازات الصيفية لسنوات الدراسة بعد نهاية المستوى الثالث و قبل البدء فى سنة الامتياز.

ينقسم كل مستوى (عام) دراسي إلى فصلين دراسيين (الخريف والربيع) ومدة كل فصل دراسي خمسة عشر أسبوعا.

ويجوز طرح بعض المقررات في فصل دراسي صيفي مدته من ستة إلى ثمانية أسابيع من الدراسة المكثفة.

الساعة المعتمدة هي وحدة قياس دراسية وتعادل ساعة دراسية أسبوعية نظرية أو درساً عملياً لا تقل مدته عن ساعتين أسبوعياً وتدرس على مدى فصل دراسي واحد.

مادة (5) :

تصميم البرنامج الدراسي

تم تصميم البرنامج الدراسي بحيث يكون التعلم عن طريق المحاضرات النظرية وحلقات النقاش والدروس العملية و الإكلينيكية و ورش العمل والتدريبات الميدانية وإجراء بحوث و تقديم العروض بالإضافة إلى التعاون مع المجتمع المحيط بالجامعة.

و قد تم تصميم البرنامج الدراسي بحيث:

أولا : عدد الساعات المعتمدة **176** ساعة معتمدة ، بالإضافة إلى متطلبات الجامعة **6** ساعات معتمدة.

ثانيا : عدد المقررات الإختيارية أربعة مقررات (**8** ساعات معتمدة) يتم اختيارها من القائمة التى تحددها الكلية. هذا بالإضافة إلى **100** ساعة فعلية تدريب صيفى يبدأ بنهاية المستوى الثالث وقبل البدء فى سنة الإمتياز.

ثالثا: يجوز لمجلس الجامعة الموافقة على تحديث نسبة لا تتجاوز 20 % من محتوى المقررات الدراسية بناء على أقتراح مجلس الكلية وذلك بعد موافقة اللجنة المختصة بالإشراف على البرنامج ومجلس القسم العلمي المعني وبعد إبداء المبررات اللازمة.

مادة (6) :

التسجيل

تحدد الكلية لكل مجموعة من الطلاب مرشداً أكاديمياً من أعضاء هيئة التدريس يقوم بمهام الرعاية والإرشاد ويكون مسئولاً عن الطالب في الشئون العلمية والإجتماعية والنفسية وتوجيهه في كل ما يتعلق بحياته الجامعية ويقوم بمساعدة الطلاب في اختيار المقررات من قائمة المقررات التي تطرحها الكلية في كل فصل دراسي.

وعلى كل طالب أن يقوم شخصياً بتسجيل المقررات التي يرغب في دراستها في كل فصل دراسي مع ضرورة أن يتم اختيار المقررات وعدد الساعات المعتمدة بالتشاور والاتفاق مع المرشد الأكاديمي.

ويشترط لتسجيل المقرر أن يكون الطالب قد اجتاز بنجاح متطلب التسجيل لهذا المقرر.

ويجوز لمجلس الكلية في حالات الضرورة القصوى وبعد موافقة اللجنة المختصة بالاشراف على البرنامج السماح للطالب بتسجيل بعض المقررات بالتوازي مع متطلباتها التي لم يجتازها الطالب بنجاح إذا قل العبء الدراسي المتاح للطالب عن 12 ساعة معتمدة (أنظر التالي – فقرة أ – العبء الدراسي) ، على أن يتم كتابة إقرار بمعرفة ولي أمر الطالب بأنه لن يتم اعتماد نجاحه في هذا المقرر إلا بعد اجتياز متطلبه الذي سمح له بالتسجيل فيه بالتوازي.

وينبغى أن يملأ الطالب نموذج تسجيل المقررات في الأوقات المحددة حسب التقويم الجامعي المعلن لكل فصل دراسي ولا يجوز الانتظام في الدراسة إلا بعد انتهاء عملية التسجيل.

لا يسمح للطالب بالتسجيل المتأخر عن الأوقات المحددة إلا بعذر قهري يقبله عميد الكلية على ألا تزيد مدة التأخير عن أسبوع من نهاية فترة التسجيل.

أ) العـبء الدراسـي :

العبء الدراسي هو عدد الساعات المعتمدة التي يقوم الطالب بتسجيلها في الفصل الدراسي الواحد ويجب مراعاة ألا يقل العبء الدراسي المسجل للطالب في أي فصل دراسي عن 12 ساعة معتمدة وألا يزيد عن 22 ساعة معتمدة على الا يزيد العبء الدراسي للطالب المتعثر عن 12 ساعة معتمدة **(أنظر مادة 12) .**

العبء الدراسي خلال الفصل الصيفي بحد أقصى 10 ساعات معتمدة.

ويجوز لمجلس الكلية بعد موافقة اللجنة المختصة بالإشراف على البرنامج السماح للطالب في أخر فصلين دراسيين بزيادة العبء الدراسي عن الحد الأقصى وبما لا يتجاوز عدد 3 ساعات معتمدة (يستفيد منها الطالب لمرة واحدة)،.

ب) الإضافة والحذف والانسحاب :

يجوز للطالب بعد إستكمال إجراءات التسجيل أن يضيف أو يحذف إلى ساعاته المعتمدة مقرراً أو أكثر في أي فصل دراسي على أن يكون ذلك في خلال الفترات المحددة حسب التقويم الجامعي المعلن لكل فصل دراسي مع مراعاة الحد الأدنى والحد الأقصى للعبء الدراسي.

كما يجوز للطالب بعد تسجيله الإنسحاب من مقرر أو أكثر في أي فصل دراسي دون أن يعتبر راسباً في هذا المقرر وذلك إذا تقدم بطلب الانسحاب خلال الفترات المحددة حسب التقويم الجامعي المعلن لكل فصل دراسي. ومن ينسحب بعد هذه الفترة المحددة يعتبر راسباً.

مادة (7) :

أ) المواظــبة

على الطالب أن يواظب على حضور المحاضرات النظرية وحلقات النقاش والدروس العملية والتدريبات الميدانية والإكلينيكية ، ولمجلس الكلية بناءً على طلب مجالس الأقسام العلمية المختصة أن يحرم الطالب من التقدم للامتحان التحريري النهائي إذا تجاوزت نسبة غيابه 25% من إجمالي الساعات المعتمدة لكل مقرر.

ب) حضور الامتحانات والتغيب عنها والإخلال بنظامها

يجب على الطالب أداء الامتحانات التحريرية النهائية في المواعيد المقررة لها حسب التقويم الجامعي المعلن لكل فصل دراسي ، ويعتبر الطالب المتغيب عن الامتحان التحريري النهائي راسبا في المقررات التي تغيب عن أداء الامتحان فيها. لا يعتبر الطالب راسبا في حالة التغيب بعذر قهري يقبله مجلس الكلية.

مادة (8) :

لغــة الدراســة

الدراسة في البرنامج باللغة الانجليزية. ويجوز مع ذلك تدريس بعض المقررات باللغة العربية بناءً على توصية القسم العلمي المختص وموافقة مجلسي الكلية والجامعة.

مادة (9) :

التدريــب الميداني الأولى وسنة الأمتياز (التدريب الميدانى المتقدم)

- على الطالب أن يكمل فترة **تدريب ميدانى** فى الصيدليات الأهلية والحكومية وصيدليات المستشفيات تتم خلال الأجازات الصيفية لسنوات الدراسة بعد نهاية المستوى الثالث بواقع عدد **100 ساعة** ، بالإضافة إلى العام السادس من الدراسة اللذي يخصص للتدريب الميدانى بواقع 36 اسبوعا و تنقسم الى ست دورات تدريبية بواقع أربع دورات على الأقل داخل مستشفيات تقوم بتطبيق الممارسة الصيدلية الإكلينيكية ، وتخصص دورة

واحدة للتدريب فى المجال الدوائى (التصنيع -الرقابة الدوائية- ...الخ) ،كما يوضح فى البرنامج التدريبي الذى يشمل برنامج تدريبى متكامل وممنهج بطريقة دورية تناوبية مسجلة بالساعات والمهام التدريبية وتحت إشراف دقيق من الكلية وجهة التدريب. كما **يقدم مشروع تخرج** فى تخصص معين يساهم فى تمهيد وإعداد الطالب للتوجه لهذا التخصص. ويمكن للخريج العمل فى هذا المجال لمدة سنتين ليصبح بعدها صيدليا متخصصا قادرا على تقديم خدمات صيدلية إكلينيكية أو الممارسات الصيدلية المختلفة .

يتم تصميم البرنامج التدريبى فى تخصصات إكلينيكية مختلفة (مثل: امراض القلب – السرطان – الامراض النفسية و العصبية – التغذية – العناية الفائقة – وحدة معلومات الدواء - اقتصاديات الدواء - والأبحاث السريرية.....) حسب إمكانات الجامعة واحتياج المجتمع فى نطاق الجامعة

مادة (10) :

شروط القبول

يشترط فيمن يتقدم للالتحاق بالبرنامج أن يستوفي كافة الشروط التي يحددها المجلس الأعلى للجامعات.

يجوز قبول تحويل الطلاب المقيدين ببرنامج مماثل في إحدى كليات الصيدلة بالجامعات المصرية أو الأجنبية بشرط استيفاء الطالب لمتطلبات القبول بالكلية وتحتسب للطالب المقررات التي درسها في الكلية المحول منها وفقاً للقواعد التي يحددها مجلس الكلية.

مادة (11) :

نظـــام التقييـــم

تتكون الدرجة النهائية للمقرر من مجموع درجات الأعمال الفصلية والعملية والتحريرية والشفهية كما هو موضح بجداول الخطة الدراسية.

الحد الأدنى للنجاح في أي مقرر هو 60% من مجموع درجات هذا المقرر ، ولا يكون الطالب ناجحاً في أي مقرر إلا إذا حصل على 30% من درجة الامتحان التحريري النهائي ، وتكون النسبة المئوية للدرجات النهائية والتقديرات كما هو مبين بالجدول التالي.

نظـام التقيـــيم

النسبة المئوية	عدد النقاط	الرمز	التقدير
95 فأكثر	4	A^+	ممتاز
90 لأقل من 95	3.85	A	
85 لأقل من 90	3.7	A^-	
82.5 لأقل من 85	3.3	B^+	جيد جدا
77.5 لأقل من 82.5	3	B	
75 لأقل من 77.5	2.7	B^-	
72.5 لأقل من 75	2.3	C^+	جيد
67.5 لأقل من 72.5	2	C	
65 لأقل من 67.5	1.7	C^-	
62.5 لأقل من 65	1.3	D^+	مقبول
60 لأقل من 62.5	1	D	
أقل من 60	0.00	F	راسب
منسحب	-	W	منسحب
غير مكتمل	-	I*	غير مكتمل
غائب	-	Abs E**	غائب

*I : يحصل الطالب على هذا الرمز إذا كانت نسبة الحضور مستوفاة وتعذر عليه دخول الإمتحان التحريري النهائي والشفهي (إن وجد) لمقرر دراسي أو أكثر في ذات الفصل الدراسي لأسباب قهرية يقبلها مجلس الكلية ، وعليه أداء الإمتحان التحريري النهائي والشفهي (إن وجد) فقط في موعد أقصاه الأسبوع الثاني من الفصل الدراسي التالي مع الإحتفاظ بالتقدير.

**Abs E : يحصل الطالب على هذا الرمز إذا لم يتمكن من دخول الإمتحان التحريري النهائي والشفهي (إن وجد) في الموعد السالف ذكره في الفقرة السابقة (I) لعدم زوال السبب القهري ويتحتم على الطالب التسجيل في هذا المقرر عند طرحه مرة أخرى ودراسته كاملاً مع الاحتفاظ بالتقدير.

توجد رموز أخرى للتقييم لا تقابلها نقاط – تستخدم في بعض متطلبات التخرج - وهي:

S: مستوى مرضي
U: مستوى غير مرضي
T: درجات حصل عليها طالب محول من كلية صيدلة أخرى

يتم حساب المعدل الفصلي للطالب (GPA) والمعدل التراكمي (cGPA) على النحو التالي:

أ- يتم ضرب قيمة تقدير كل مقرر دراسي (النقاط الموضحة في الجدول السابق) في عدد الساعات المعتمدة لهذا المقرر لنحصل على عدد النقاط الخاصة بكل مقرر في الفصل الدراسي.

ب- يتم جمع نقاط كافة المقررات الدراسية التي سجل فيها الطالب في الفصل الدراسي الواحد.

ج- يتم قسمة مجموع نقاط كافة المقررات الدراسية على إجمالي الساعات المعتمدة المسجلة للطالب فى الفصل الدراسى الواحد وذلك بغرض الحصول على المعدل الفصلي كما يلي:

$$\text{المعدل الفصلي (GPA)} = \frac{\text{مجموع نقاط كافة المقررات الدراسية في الفصل الدراسي الواحد}}{\text{إجمالى الساعات المعتمدة المسجلة في الفصل الدراسي الواحد}}$$

ويتم حساب المعدل التراكمي كما يلي:

$$\text{المعدل التراكمي (cGPA)} = \frac{\text{مجموع نقاط كافة المقررات الدراسية لكافة الفصول الدراسية}}{\text{إجمالى الساعات المعتمدة المسجلة في كافة الفصول الدراسية}}$$

مادة (12) :

الرسـوب في المقـررات

- في حالة تغيب الطالب بدون عذر يقبله مجلس الكلية عن أداء الامتحان التحريري النهائي.
- إذا حصل الطالب على أقل من 30% من درجة الامتحان التحريري النهائي.
- عدم تحقيق 60 % على الأقل من مجموع درجات المقرر.
- إذا رسب الطالب في أي مقرر إجباري في أي فصل دراسى فعليه دراسة ذات المقرروالالتزام بالمواظبة على الحضوروالامتحان فيه عند طرحه مرة أخرى ، أما إذا رسب في مقرر إختياري فبإمكانه إعادة دراسته أو دراسة مقرر إختياري آخر بديل لإكمال متطلبات التخرج ، وذلك بعد موافقة المرشد الأكاديمي واعتماد لجنة الإشراف.

مادة (13) :

التعثر الأكاديمي

يعتبر الطالب متعثر اكاديميا إذا حصل على معدل فصلي (GPA) أقل من "1".

الطالب الذي يحصل على معدل فصلي (GPA) أقل من "1" لمدة ستة فصول دراسية متصلة أو في عشرة فصول دراسية غير متصلة يفصل من الكلية وذلك بعد العرض والموافقة من مجلس الكلية ولا يؤخذ في الإعتبار الفصول الصيفية إن وجدت.

يسمح للطالب المتعثر أن يعيد دراسة المقررات التي اجتازها بتقدير D وذلك لتحسين المعدل التراكمي وتحتسب الدرجة الأعلى التي يحصل عليها الطالب.

مادة (14) :

الانقطاع عن الدراسة

يعتبر الطالب منقطعاً عن الدراسة إذا لم يسجل في فصل دراسى أو انسحب من الفصل سواء ذلك بعذر أو بدون عذر.

ويجوز أن ينقطع الطالب فصلين دراسيين متتاليين أو ثلاثة فصول دراسية غير متتالية كحد أقصى بشرط الحصول على موافقة مجلس الكلية ، وفي حالة انقطاعه مدة أطول من ذلك بدون عذر يقبله مجلس الكلية ويوافق عليه مجلس الجامعة يطبق عليه النصوص الواردة باللائحة التنفيذية لقانون تنظيم الجامعات.

مادة (15) :

متطلبات الحصول على درجة بكالوريوس الصيدلة (فارم دي-PharmD) (صيدلة إكلينيكية)

يتطلب الحصول على درجة بكالوريوس الصيدلة (فارم دي-PharmD) (صيدلة إكلينيكية) طبقا لنظام الساعات المعتمدة ما يلي:

أولا : دراسة واجتياز إجمالى عدد الساعات المعتمدة **176** ساعة معتمدة موزعة على عشرة فصول دراسية وتشمل متطلبات الكلية الإجبارية **168 ساعه** (جدول توزيع المقررات) ومتطلبات الكلية الإختيارية وتمثل عدد **8 ساعات معتمدة** ، على ألا يقل المعدل التراكمي عن واحد.

ثانيا : اجتياز فترة تدريب ميداني أولى باجمالي عدد **100 ساعة** تدريب فعلية فى الصيدليات الأهلية والحكومية وصيدليات المستشفيات التي يقرها مجلس الكلية وذلك تحت إشراف عضو هيئة تدريس و يتم التدريب خلال الأجازات الصيفية لسنوات الدراسة بعد نهاية المستوى الثالث وأن يكمل سنة الأمتياز (عام أكاديمى- 9 أشهر) بعد الأنتهاء من سنوات الدراسة ، **طبقا للائحة التفصيلية الخاصة ببرنامج تدريب سنة الامتياز والتى تشمل مشروع التخرج فى إحدى التخصصات المطروحة.**

ثالثا : اجتياز ما قد تقرره الجامعة من متطلبات للتخرج على ألا يتضمنها حساب المعدل الفصلي أو التراكمي للطالب.

مادة (16) :

نظام تأديب الطلاب

الطلاب المقيدون بالبرنامج خاضعون للنظام التأديبى المبين في قانون تنظيم الجامعات المصرية ولائحته التنفيذية.

مادة (17) :

كود الأقسام ومتطلبات البرنامج الدراسي (أنظر ملحق رقم 1)

مادة (18) :

الخطة الدراسية (انظر ملحق 2)

مادة (19) :

محتوى المقررات الدراسية (أنظر ملحق 3)

مادة (20) :

تحديث المقررات الدراسية

يجوز لمجلس الجامعة الموافقة على تحديث نسبة لا تتجاوز 20% من محتوى المقررات الدراسية بناء على أقتراح مجلس الكلية وذلك بعد موافقة اللجنة المختصة بالإشراف على البرنامج ومجلس القسم العلمي المعني وبعد إبداء المبررات اللازمة.

مادة (21) :

برنامج التدريب لسنة الإمتياز

يتم وضع برنامج مفصل للتدريب للسنة النهائية (الأمتياز) فى شكل دورات تناوبية فى ملحق به لائحة برنامج التدريب التناوبى بصورة ممنهجة تفصيلية.

ماده (22) :

اشراف الكليه على المقررات التى لا تقع فى نطاق الأقسام العلميه بالكليه

يتم وضع المقررات التى لا تقع فى نطاق أى من الأقسام العلمية بالكلية تحت إشراف الكلية علي النحو التالي:

قسم الأدويه و السموم و يتولى الاشراف على مواد:

Human Rights and Fighting Corruption, Physiology, Pathophysiology, Scientific Writing and Communication skills

قسم الكيمياء التحليليه الصيدليه و يتولى الاشراف على مواد:

Information Technology, English Language, Psychology

قسم الصيدلانيات و يتولى الاشراف علي مواد:

Mathematics, Marketing & Pharmacoeconomics, Entrepreneurship

قسم الميكروبيولوجى و المناعه و يتولى الاشراف على مواد:

Anatomy& Histology, Pathology

ملحق 1

خاص بالمادة (17)

كود الأقسام ومتطلبات الجامعة والكلية والمقررات الإختيارية

1- كود الأقسام

Key for Course Codes

PB	Biochemistry
PC	Organic Pharmaceutical Chemistry
PD	Medicinal Chemistry
PA	Analytical pharmaceutical chemistry
PG	Pharmacognosy
PM	Microbiology and Immunology
PO	Pharmacology and Toxicology
PP	Clinical Pharmacy
PT	Pharmaceutics
PI	Industrial Pharmacy

Course code consists of two letters referring to department offering the course, and three numbers. The first number refers to the semester at which the course is studied while the two other numbers refer to course position within department courses

Example

PM301: This course is offered by Microbiology and Immunology Department in semester 3 and it is the first course among department courses.

MD: is used for medical courses
NP: is used for non-professional courses

2- متطلبات الجامعة

2. University Requirements:

قرر مجلس جامعه جنوب الوادي بتحديد متطلبات الجامعه (6 ساعات) علي النحو التالي:

A. English language: 1 credit hour

B. Information Technology: 2 credit hours

C. Human Rights and Fighting Corruption: 2 credits hours

D. Psychology: 1 credit hours

3- متطلبات الكلية

3. Faculty Requirements: See programme curriculum

4- مقررات اختيارية

4-Elective courses

The Faculty of Pharmacy offers elective courses from which the students are free to select eight credit hours.

Course Code	Course Title	Credit Hours		
		L	P/T	Total
PD E11	Drug Design	1	1	2
PA E11	Advanced Pharmaceutical Analysis – Spectroscopy	1	1	2
PA E12	Analysis of Food & Cosmetics	1	1	2
PA E13	LC/MS in Pharmaceutical Research	1	1	2
PA E14	Experimental Design and Research Methods In Health Care	1	1	2
PG E11	Complementary Therapies	1	1	2
PG E12	Production and Manufacture of Medicinal Plants	1	1	2
PG E13	Chromatography and Separation Techniques	1	1	2
PG E14	Processing of medicinal plants	1	1	2
PG E15	Aromatherapy and herbal cosmetics	1	1	2
PG E16	Biotechnology of medicinal plants	1	1	2
PI E11	Applied Industrial Pharmacy	1	1	2
PI E12	Good Manufacturing Practices	1	1	2
PI E13	Advanced pharmaceutical technology	1	1	2
PT E11	Cosmetic Preparations	1	1	2
PT E12	Veterinary pharmacy	1	1	2
PT E13	Medical devices	1	1	2
PT E14	Drug Metabolism and Transport	1	1	2
PT E15	Protein Pharmaceuticals	1	1	2
PO E11	Biological Standardization	1	1	2
PO E12	Veterinary Pharmacology	1	1	2
PP E11	Geriatric pharmacotherapy	1	1	2
PP E12	Interprofessional Skills	1	1	2

PM E11	Antibiotic stewardship	1	1	2
PM E12	Infection Control	1	1	2
PM E13	Bioinformatics	1	1	2

L: Lecture
P: Practical
T: Tutorial

- لمجلس الكلية طرح المقررات الإختيارية من الأمثلة المذكورة بالجدول السابق في كل مستوى/فصل دراسي وذلك بعد موافقة اللجنة المختصة بالإشراف وبعد أخذ رأي مجالس الأقسام المعنية. و يمكن للكلية إضافة مقررات إختيارية أخرى يشترط موافقة مجلس الجامعة بعد إبداء المبررات اللازمة.

ملحق 2

مادة (18) : الخطة الدراسية

17. PROGRAMME CURRICULUM

Table (1)

Semester (1)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks*				Total marks	Final Exam (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Pharmaceutical Analytical Chemistry I	PA 101	2	1	3	**Registration**	15	25	50	10	100	2
Pharmaceutical Organic Chemistry I	PC 101	2	1	3	**Registration**	15	25	50	10	100	2
Medicinal Plants	PG 101	2	1	3	**Registration**	15	25	50	10	100	2
Pharmacy Orientation	PT 101	1	-	1	**Registration**	15	-	75	10	100	1
Medical Terminology	PO 101	1	-	1	**Registration**	15	-	75	10	100	1
Mathematics	NP 101	1	-	1	**Registration**	25	-	75	-	100	1
Information Technology	NP 102	1	1	2	**Registration**	-	25	75	-	*	1
Human Rights and Fighting Corruption	NP 103	2	-	2	**Registration**	-	-	100	-	*	1
English Language	NP 104	1	-	1	**Registration**	-	-	100	-	*	1
Total		13	4	17						600	

Lect. = Lecture, Period. = Periodical, Pract. = Practical and Wr. = Written

* متطلب جامعة نجاح ورسوب ولا يضاف للمعدل الفصلي والتراكمي للطالب

Table (2)

Semester (2)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks*				Total marks	Final Exam (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Pharmaceutical Analytical Chemistry II	PA 202	2	1	3	**Pharmaceutical Analytical Chemistry I**	15	25	50	10	100	2
Pharmaceutical Organic Chemistry II	PC 202	2	1	3	**Pharmaceutical Organic Chemistry I**	15	25	50	10	100	2
Pharmacognosy I	PG 202	2	1	3	**Medicinal Plants**	15	25	50	10	100	2
Cell Biology	PB 201	1	1	2	**Registration**	15	25	50	10	100	1
Anatomy& Histology	MD 201	2	1	3	**Registration**	15	25	65	-	100	2
Physical Pharmacy	PT 202	2	1	3	**Registration**	15	25	50	10	100	2
Psychology	MD 202	1	-	1	**Registration**	-	-	100	-	*	1
Total		12	6	18						600	

Lect. = Lecture, Period. = Periodical, Pract. = Practical and Wr. = Written

*متطلب جامعة نجاح ورسوب ولا يضاف للمعدل الفصلي والتراكمي للطالب

Table (3)

Semester (3)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks*				Total marks	Final Exam (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Instrumental Analysis	PA 303	1	1	2	**Pharmaceutical Analytical Chemistry II**	15	25	50	10	100	1
Pharmaceutical Organic Chemistry III	PC 303	2	1	3	**Pharmaceutical Organic Chemistry II**	15	25	50	10	100	2
Pharmacognosy II	PG 303	2	1	3	**Pharmacognosy I**	15	25	50	10	100	2
Biochemistry I	PB 302	2	1	3	**Registration**	15	25	50	10	100	2
Pharmaceutical Dosage Forms I	PT 303	2	1	3	**Physical Pharmacy**	15	25	50	10	100	2
Physiology	MD 303	2	1	3	**Registration**	15	25	50	10	100	2
Pathophysiology	MD 304	2	-	2	**Registration**	15	-	75	10	100	2
Total		13	6	19						700	

Lect. = Lecture, Period. = Periodical, Pract. = Practical and Wr. = Written

Table (4)

Semester (4)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks*				Total marks	Final Exam (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Pharmacology I	PO 402	2	1	3	**Physiology and Pathophysiology**	15	25	50	10	100	2
Phytochemistry I	PG 404	2	1	3	**Pharmacognosy II**	15	25	50	10	100	2
General Microbiology and Immunology	PM 401	2	1	3	**Registration**	15	25	50	10	100	2
Pathology	MD 405	2	-	2	**Anatomy & Histology**	15	-	75	10	100	2
Pharmaceutical Dosage Forms II	PT 404	2	1	3	**Pharmaceutical Dosage Forms I**	15	25	50	10	100	2
Biochemistry II	PB 403	2	1	3	**Biochemistry I**	15	25	50	10	100	2
Pharmaceutical Legislations and Practice Ethics	PT 405	1	-	1	**Registration**	25	-	75	-	100	1
Total		13	5	18						700	

Lect. = Lecture, Period. = Periodical, Pract. = Practical and Wr. = Written

Table (5)

Semester (5)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks*				Total marks	Final Exam (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Pharmacology II	PO 503	2	1	3	**Pharmacology I**	15	25	50	10	100	2
Pharmaceutical Microbiology and Antimicrobials	PM 502	2	1	3	**General Microbiology and Immunology**	15	25	50	10	100	2
Pharmaceutical Dosage Forms III	PT 506	2	1	3	**Pharmaceutical Dosage Forms II**	15	25	50	10	100	2
Phytochemistry II	PG 505	2	1	3	**Phytochemistry I**	15	25	50	10	100	2
Community Pharmacy Practice	PP 501	2	1	3	**Pharmacology I**	15	25	50	10	100	2
Scientific Writing and Communication skills	NP 505	1	1	2	**Registration**	15	25	60	-	100	1
Total		11	6	17						600	

Lect. = Lecture, Period. = Periodical, Pract. = Practical and Wr. = Written

Table (6)

Semester (6)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks*				Total marks	Final Exam (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Medicinal Chemistry I	PD 601	2	1	3	**Pharmaceutical Organic Chemistry II**	15	25	50	10	100	2
Pharmacology III	PO 604	2	1	3	**Pharmacology II**	15	25	50	10	100	2
Advanced Drug Delivery Systems	PT 607	2	-	2	**Pharmaceutical Dosage Forms III**	15	-	75	10	100	2
Medical Microbiology	PM 603	2	1	3	**Pharmaceutical Microbiology and Antimicrobials**	15	25	50	10	100	2
Hospital Pharmacy	PP 602	2	1	3	**Community Pharmacy Practice**	15	25	50	10	100	2
Clinical Pharmacy Practice	PP 603	2	1	3	**Community Pharmacy Practice**	15	25	50	10	100	2
Parasitology	PM 604	1	1	2	**Registration**	15	25	50	10	100	1
Total		13	6	19						700	

Lect. = Lecture, Period. = Periodical, Pract. = Practical and Wr. = Written

Table (7)

Semester (7)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks*				Total marks	Final Exam (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Medicinal Chemistry II	PD 702	2	1	3	**Medicinal Chemistry I**	15	25	50	10	100	2
Public Health and Preventive Medicine	PM 705	2	-	2	**Medical Microbiology**	15	-	75	10	100	2
Biopharmaceutics and Pharmacokinetics	PT 708	2	1	3	**Pharmaceutical Dosage Forms-I**	15	25	50	10	100	2
Clinical Biochemistry	PB 704	2	1	3	**Biochemistry II**	15	25	50	10	100	2
Quality Control of Pharmaceuticals	PA 704	2	1	3	**Pharmaceutical Analytical Chemistry II**	15	25	50	10	100	2
First Aid and Basic Life Support (BLS)	PO 705	1	1	2	**Pharmacology II**	15	25	50	10	100	1
Elective Course I	EC 701	1	1	2	**Registration**	15	25	50	10	100	1
Total		12	6	18						700	

Lect. = Lecture, Period. = Periodical, Pract. = Practical and Wr. = Written

Table (8)

Semester (8)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks*				Total marks	Final Exam (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Clinical Nutrition	PB 805	2	-	2	**Biochemistry II**	15	-	75	10	100	2
Phytotherapy	PG 806	2	1	3	**Phytochemistry II**	15	25	50	10	100	2
Pharmaceutical Technology	PI 801	2	1	3	**Pharmaceutical Dosage Forms III**	15	25	50	10	100	2
Clinical Pharmacokinetics	PP 804	2	1	3	**Biopharmaceutics and Pharmacokinetics**	15	25	50	10	100	2
Drug Interactions	PO 806	2	-	2	**Pharmacology III**	15	-	75	10	100	2
Pharmaceutical Biotechnology	PM 806	2	1	3	**Medical Microbiology**	15	25	50	10	100	2
Elective Course II	EC 802	1	1	2	**Registration**	15	25	50	10	100	1
Total		13	5	18						700	

Lect. = Lecture, Period. = Periodical, Pract. = Practical and Wr. = Written

Table (9)

Semester (9)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks*				Total marks	Final Exam (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Basic & Clinical Toxicology	PO 907	2	1	3	**Pharmacology III**	15	25	50	10	100	2
Management of Critical Care Patients	PP 905	1	1	2	**Pharmacology III**	15	25	50	10	100	1
Management of Respiratory Diseases	PP 906	1	1	2	**Pharmacology III**	15	25	50	10	100	1
Management of Oncological Diseases and Radiopharmacy	PP 907	2	1	3	**Pharmacology III**	15	25	50	10	100	2
Management of Endocrine and Renal Diseases	PP 908	2	1	3	**Clinical Research, PV, PE**	15	25	50	10	100	2
Entrepreneurship	NP 906	1	-	1	**Registration**	25	-	75	-	100	1
Marketing & Pharmacoeconomics	NP 907	1	-	1	**Registration**	25	-	75	-	100	1
Pharmacotherapy 1	PP 909	2		2	**Pharmacology III**	15		75	10	100	2
Elective Course III	EC 903	1	1	2	**Registration**	15	25	50	10	100	1
Total		13	6	19						900	

Lect. = Lecture, Period. = Periodical, Pract. = Practical and Wr. = Written

Table (10)

Semester (10)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks*				Total marks	Final Exam (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Management of Dermatological, Reproductive and Musculoskeletal Diseases	PP 010	2	1	3	**Pharmacology III**	15	25	50	10	100	2
Management of Neuropsychiatric Diseases	PP 011	1	1	2	**Pharmacology III**	15	25	50	10	100	1
Management of Pediatric Diseases	PP 012	1	1	2	**Pharmacology III**	15	25	50	10	100	1
Management of Cardiovascular Diseases	PP 013	2	1	3	**Pharmacology III**	15	25	50	10	100	2
Management of Gastrointestinal Diseases	PP 014	2	1	3	**Pharmacology III**	15	25	50	10	100	2
Drug Information	PP 015	1	-	1	**Pharmacology III**	25	-	75	-	100	1
Clinical Research and Pharmacovigilance	PP 016	1	-	1	**Pharmacology III**	25	-	75	-	100	1
Pharmacotherapy II	PP 017	2		2	**Pharmacotherapy I**	15		75	10	100	2
Elective Course IV	EC 004	1	1	2	Registration	15	25	50	10	100	1
Total		13	6	19						900	

Lect. = Lecture, Period. = Periodical, Pract. = Practical and Wr. = Written

ملحق 3

خاص بالمادة (19)

محتوى المقررات الدراسية

Course Content

PA 101 Pharmaceutical Analytical Chemistry I (2+1)

Chemical Kinetics, rate of reaction, first Order reaction, rate law , Second order and third order of reaction, molecularity , Theories of reaction rate, activation energy and catalysis , Photochemistry, absorbed energy and quantum yield.

Introduction to qualitative and quantitative inorganic chemistry, acid-base theory, titration curve and buffer solutions. Precipitimetry factors affecting precipitate formation and pharmaceutical application.

PA 202 Pharmaceutical Analytical Chemistry II (2+1)

Acid-Base theory, pH, pKa, pKb, pKw, Acid Base Strength, Conjugate Acid, Conjugate Base, Buffer Solutions, Common Ion Effect, titration curves, indicators, applications. Titrations in non aqueous media, classification of solvents, theory, applications. Precipitimetric titrations: solubility product principle, titration curves, Mohr's method. volhard's method, Fajans' method, pharmaceutical application. Complexometric reactions, theory, reaction with EDTA, indicators, applications.

PA 303 Instrumental Analysis (1+1)

Spectroscopic methods of analysis which include uv/vis spectroscopy, principal, instrumentation, factors affecting absorption and applications in pharmaceutical analysis. Fluorimetric methods, principal instrumentation, factors affecting fluorescence intensity and applications in pharmaceutical analysis. Atomic spectroscopy; principal and instrumentation. In addition, infrared (IR), nuclear magnetic resonance (NMR) and mass spectrometry (MS) principal and instrumentation.

Chromatographic methods for analytical chemistry which includes: TLC, gel chromatography, column chromatography, HPLC, UPLC, gas chromatography, capillary electrophoresis..

PA 704 Quality Control of Pharmaceuticals (2+1)

The course is shared with departments: Microbiology & Chemistry:

I- Quality control & quality assurance of pharmaceuticals .

The **course** has to be designed for **quality control microbiology** professionals, **quality assurance** or regulatory affairs personnel who have responsibility for the performance of Bioburden, Endotoxin & Sterility Testing or for data review, pharmacists performing

sterile compounding.Principles, methods and procedures of different quality control tests used for evaluation of safety, potency and palatability of pharmaceutical products of small and large molecules drugs (biologicals) including herbal drugs have to be taught. The standard pharmacopeial methods and procedures as well as international guidelines as WHO, EMA, TGA should be discussed.

II-Good Analytical Practice and Sampling: Introduction, Sampling of pharmaceuticals and related materials, Type of sampling tools, Sampling plans.

III-Documentation

IV- Validation of analytical methods according to ICH Guidelines Q2 R1. Compendial testing, Validation of analytical methods, Data elements required for assay validation.

V- drug stability, stability studies and stability indicating methods Drug stability, Stability testing , Forced degradation studies , stability indicating assay methods for drugs according to ICH Q1 R2 Guidelines. Stress conditions for drug degradation according to ICH Q1 R2 Guidelines. Factors affecting drug degradation, Drug expiration, Drug withdrawal from the market. Pharmaceutical regulations according to FDA & EMA (European medicine agency) and ISO and BSI. Drug-excipient interactions and adduct formation; analytical techniques used to detect drug-excipient compatibility, mechanism of drug-excipient interactions, examples.

VI- Official methods of analysis applied to raw materials and end products.

PC 101 Pharmaceutical Organic Chemistry I (2+1)

The objective of this course is to provide students with the basic knowledge in pharmaceutical organic chemistry, which will serve as fundamentals for other courses offered during subsequent semesters. This course involves Electronic structure of atom, alkanes [nomenclature, synthesis and reactions (free radical reactions)], and cycloakanes. Stereochemistry (Optical isomers, racemic modification, nomenclature of configurations). Alkenes, alkadienes and alkynes. Alkyl halides (nomenclature, preparation and chemical reactions (S_N1, S_N2, E_1, E_2). Arenes and aromatic compounds (Kekule structure, Huckel rule, Electrophilic aromatic substitution and orientation).

PC 202 Pharmaceutical Organic Chemistry II (2 +1)

This course involves different classes of organic compounds: aryl halides, Alcohols, Phenols, ethers & epoxides, aldehydes, ketones, carboxylic acid & acid derivatives, sulphonic acids, and nitrogenous compounds.

PC 303 Pharmaceutical Organic Chemistry III (2+ 1)

This course involves: carbohydrates, amino acid & peptides, polynuclear and heterocyclic chemistry. In addition, it provides an introduction about the use of different spectroscopic tools, including UV, infrared (IR), nuclear magnetic resonance (NMR) and mass spectrometry (MS) for the structural elucidation of organic compounds.

PD 601 Medicinal Chemistry I (2+1)

This course is tailored to assist the students to gain the drugs affecting the autonomic nervous system (ANS), drugs acting on the cardiovascular system (CVS), CNS**.** The course handles different classes of antibiotics and antimicrobials (natural and synthetic), beside other synthetic chemotherapeutic agents (including antivirals, antifungals and antiparasitics). Additionally, various anticancer therapies, steroidal hormones and related drugs are also covered.

PD 702 Medicinal Chemistry II (2+ 1)

The course is tailored to assist the students to gain the drugs affecting neurodegenerative disorders. Moreover, endocrine-related drugs (Diabetes, thyroid and calcium-regulating agents), antihistamines (H1, H2 blockers and anti-ulcer PPIs), drugs controlling pain and inflammation (NSAIDs, local anaesthetics and rheumatoid drugs) are also handled.

PB 201 Cell Biology (1 + 1)

The course aims at studying the structure and function of prokaryotic and eukaryotic cells. In this course study will include many different areas of cellular biology involving: the synthesis and function of macromolecules such as DNA, RNA, and proteins; control of gene expression; membrane and organelle structure and function; bioenergetics; and cellular communication, transformation; transport, receptors, and cell signaling; the cytoskeleton, the extracellular matrix, and cell movements.

PB 302 Biochemistry I (2 + 1)

Structure of proteins – Biologically active peptides – Protein turnover – Amino acids as precursors for biosynthesis of biomolecules (e.g. neurotransmitters –nucleotides, …) – Structurally and physiologically important lipids – Lipoprotein metabolism – Carbohydrates and connective tissue – Enzymes (theories of enzyme action – enzyme kinetics – inhibition and regulation of enzyme activity – clinical correlations) – ATP synthesis from reduced metabolites (electron transport chain – inhibitors – uncouplers) – Hemoglobin and myoglobin (structure – synthesis and metabolism – clinical correlations).

PB 403 Biochemistry II (2 + 1)

Mobilization of body stores of glycogen and fats -Metabolism and tissue utilization of glucose, amino acids, and fatty acids – Regulation of blood glucose level and clinical correlations – Feed/fast cycle – Nitrogen metabolism and nitrogen balance – Inborn errors of metabolism – Second messengers and signal transduction – Biochemistry of cancer - Biochemistry of aging – Food biochemistry (milk – probiotics) – Oxidative stress and body defense mechanisms.

PB 704 Clinical Biochemistry (2 + 1)

Organ function and laboratory diagnostic tests (liver – kidney – heart – pancreas – bone) – Plasma proteins and albumin/globulin ratio – Types and lab differentiation of hyperlipidemia - Examples of different diseases (case study – interpretation of analytical data) - Handling, preservation, storage and analysis of biological samples - Abnormalities of urine analysis – Blood analysis and complete blood count – Tumor markers – Endocrinology (classification of hormones - mechanisms of action – dysfunction) - Electrolytes, blood gases and acid-base balance - Recent diagnostic biomarkers.

PB 805 Clinical Nutrition (2+0)

Measures of healthy life-style – Macronutrients and calculation of calories – Basal metabolic rate (BMR) - R**commended daily allowance (RDA) –** Nutritional requirement for pediatrics and geriatrics - Vitamins and minerals (role in metabolism – clinical significance) – Gut microbiota and human health – Enteral and parenteral nutrition - Dietary care for patients with obesity, diabetes mellitus, cardiovascular, renal and hepatic disorders – Dietary care for cancer patients - Dietary care for sports` men - Dietary care for pregnant and lactating women – Nutrigenomics.

PT 101 Pharmacy Orientation: (1+0)

This is a course to acquaint the beginning pharmacy student with the multiple aspects of the profession of pharmacy, including the mission of pharmacy, role of pharmacist in society and pharmacy careers, classification of medications, interpretation of prescriptions and medication orders, general dispensing procedure and factors affecting drug dosage, sources of drugs, different dosage forms and various routes of administration. In addition to the history of pharmacy practice in various civilizations

PT 202 Physical Pharmacy: (2+1)

This course provides students with knowledge of physical and chemical principles essential for the design and formulation of pharmaceutical products. Students are introduced to the fundamental concepts of states of matter, Phase equilibrium, colligative properties, isotonicity solubility, dissolution, partition coefficient, surface and interfacial phenomena, surface active agents, adsorption and its application in pharmacy and rheological behaviour of dosage forms

PT303 Pharmaceutical Dosage Forms I: (2+1)

This course is a study of the system of weights, measures, mathematical expertise and pharmaceutical calculations requisite to the compounding, dispensing, and utilization of drugs in pharmacy practice. It is also concerned with all manufacturing formulations

aspects, packaging, storage and stability of liquid dosage forms including solutions (aqueous and non-aqueous), suspensions, emulsions and colloids with emphasis on the technology and pharmaceutical rationale fundamental to their design and development. The incompatibilities occurring during dispensing are also considered.

PT 404 Pharmaceutical Dosage Forms II: (2+1)

This course covers the structure and function of the skin, target area of treatment after topical application to skin, basic principles of diffusion through membranes and factors affecting percutaneous absorption, enhancement of skin penetration, transdermal drug delivery systems (TDDS). It also describes the principles and techniques involved in the formulation and manufacturing of traditional dermatological semisolid dosage forms (creams, ointments, gels and pastes) and cosmetic products. Parenteral medications, and ophthalmic preparations.

PT 405 Pharmaceutical Legislations and Practice ethics (1 + 0)

A detailed presentation of law that governs and affects the practice of pharmacy, legal principles for non-controlled and controlled prescriptions, OTC drug requirements, opening new pharmacies, opening medical stores, opening factories, opening scientific offices, medicine registration, pharmacies and medicine stores management. Pharmacist duties and responsibilities, pharmacist-patient relationship, patient's rights and ethical principles and moral rules.

PT 506 Pharmaceutical Dosage Forms III: (2+1)

The course introduces the students to the kinetics of drug decomposition including rate and order of the reaction, determination of the half-life, expiry date and shelf-life by different methods, stability testing, and in-vitro possible drug/excipients interactions . It also describes the principles and techniques involved in the formulation, and manufacturing of solid dosage forms including powders, granules, tablets, capsules and suppositories.

PT 607 Advanced Drug Delivery Systems: (2+0)

A continued study of pharmaceutical dosage forms with emphasis on novel and targeted drug delivery systems. Discussions focusing on transforming proteins, genes, and other biotechnology driven compounds into therapeutic products including the role of molecular modeling and new drug therapies in fabricating rational drug delivery systems are included.

The course covers targeted nanocarrier-based delivery Systems and other advanced therapy medicinal products such as gene therapy medicinal products (GTMPs), somatic cell therapy medicinal products (sCTMPs), and tissue-engineered products (TEPs). In addition to formulation aspects of biotechnology derived pharmaceuticals, it also covers

the application of polymers and excipients to solve problems/issues concerning the optimization of absorption, selective transport, and targeting.

PT 708 Biopharmaceutics & Pharmacokinetics: (2+1)

The course is concerned with the exploration and examination of the physicochemical properties of drugs in the physiological environment and their impact on product performance. It explores the principles of biopharmaceutics and strategies for enhancing drug delivery and bioavailability .Also it introduces the students to basic pharmacokinetic parameters and mathematical aspects. General principles of pharmacokinetic models are presented as they pertain to the process of absorption, distribution and elimination of drugs in humans and the significance of these processes in drug therapy. Topics also emphasize linear and nonlinear metabolic clearance kinetics, drug-drug interaction mechanisms and kinetics, in vitro-in vivo predictions, pharmacogenetics and other sources of inter-individual variability.

PI 801 Pharmaceutical Technology: (2+1)

The course provides students with an introduction to industrial pharmacy. It deals with the principles of various unit operations such as heat transfer, evaporation, drying, distillation, filtration, centrifugation, crystallization, extraction, size reduction, size separation, size analysis and size enlargement. It focuses on the application of these unit operations in pharmaceutical industry with emphasis on the equipment and machines used during the production of different dosage forms.

PG 101 Medicinal Plants (2+1)

The aim of the course is to provide students with knowledge necessary to identify and prepare a crude drug from the farm to the firm. Students should acquire knowledge concerning dusting powders, plant cytology, physiology and medicinal leafy plants. In this course, the student will study: importance of natural products, preparation of natural products-derived drugs including collection, storage, preservation and adulteration. The course will introduce the students to the different classes of secondary metabolites. In addition, the course will discuss and address the variability in occurrence of pharmacologically active substances in certain official medicinal leafy plants according to their WHO monographs.

PG 202 Pharmacognosy I (2+1)

Based on the Egyptian flora and other florae of wild and cultivated medicinal plants that are used in the pharmaceutical, cosmetic and food industries in the global & Egyptian market. The course introduces students to some botanical drugs of leaves, flower, seeds,

bark and wood origin. During the lectures and practical sessions, students learn to identify examples of these drugs in their entire and powdered forms. Student will learn about the major constituents, folk uses, clinically proven uses, benefits, precautions of those medicinal plants.possible herbal-drug interactions of selected examples of these drugs.

PG 303 Pharmacognosy II (2+1)

Based on the Egyptian flora and other florae of wild and cultivated medicinal plants that are used in the pharmaceutical, cosmetic and food industries in the global & Egyptian market. The course introduces students to some botanical drugs of, fruits, subterreans, herbs, unorganized drugs of marine and animal origin. During the lectures and practical sessions, students learn to identify examples of these drugs in their entire and powdered forms. Student will learn about the major constituents, folk uses, clinically proven uses, benefits, precautions of those medicinal plants.possible herbal-drug interactions of selected examples of these drugs.

PG 404 Phytochemistry I (2+1)

Based on complementary medicine and Egyptian medicinal plants that can be used as natural extracts, bioactive raw materials and phytochemical standards to serve the pharmaceuticals, cosmetics and food industries in Egypt.. The course aims to gain the students the knowledge and experience those enable them to understand, describe and deal with the chemistry and Pharmaceutical uses of volatile oils, resins and resin combinations, carbohydrates, glycosides, and bitters of plant or animals as well as techniques for their, isolation, identification and determination from their respective sources.Clinical applications will be correlated with various clinical analyses.

PG 505 Phytochemistry II (2+1)

The course aims to enable students to demonstrate knowledge of basic concepts of chemistry and bioactivities of alkaloids, tannins and antioxidants as well as chromatographic techniques for their isolation and identification. The course emphasizes on drugs with valuable use in the Egyptian and worldwide markets, such as anti-cancer agents, drugs affecting CNS, drugs ameliorating liver diseases and anti-inflammatory agents. Finally, the course focuses on the structure activity relationships (SAR) of these natural products derived compounds and their pharmacophoric features. Clinical applications will be correlated with various clinical analyses.

PG 806 Phytotherapy (2+1)

The course aims to enable students to attain the systematic approach for herbal prescribing through a comparative study of both traditional and scientifically based uses of herbal drugs in the treatment of various clinical disorders. The course provides clinical pharmacy students with review of the available information on how botanicals may normalize an altered function. Approval by World Health Organization (WHO), German Federal Institute for Drugs and Medical Devices (Commission E) is the base for selection of the studied herbs. The herbal drugs treated in combined way relative to pharmacognosy, pharmacology and toxicology. Special concern is given to the possible mode of action of the herbal drugs based on experimental and clinical pharmacological studies.

Also the student should understand the basis of complementary and alternative medicine with emphasis on herbal remedies, nutritional supplements, homeopathies, aromatherapy & their effect on maintaining optimum health and prevention of chronic diseases.

PM 401 General Microbiology and Immunology (2+1)

The course provides students with a combination of laboratory and theoretical experience exploring the general aspects of microbiology. It includes knowledge of microorganisms, their morphology, diversity, cell structure and function, cultural characteristics, growth, metabolism, role of microorganisms in infectious diseases and microbial pathogenesis. It also clarifies different mechanisms of transport across bacterial cell membrane, metabolic pathways and physiology of bacteria. The course also covers the principles of genetic characters including DNA and RNA structures, replication, different forms of mutation and mutagenic agents. It also explores the basic concepts microbial growth , cultivation and reproduction. The course also provides students with the essential knowledge to recognize the epidemiology, mechanisms of pathogenesis, clinical picture, methods of laboratory diagnosis, treatment, prevention and control measures of RNA and DNA viral infections in humans.

Moreover it introduces the modern concepts of medical immunology, with an emphasis onHost parasite relationship, Non-specific and specific immunity, Mechanism of protective immunity. Molecular and cellular immunology, including antigen and antibody structure, function and reaction between them, effector mechanisms, complement, and cell mediated immunity. Active and passive immunization. Hypersensitivity and in vitro antigen antibody reactions, Immuno-deficiency disorders, Autoimmunity and auto-immune disease, organ transplantation.

PM 502 Pharmaceutical Microbiology and Antimicrobials (2+1)

This course is designed to provide student with basic, practical and professional knowledge on antimicrobial agents, either antibiotics or non-antibiotics. Different sterilization methods and their application scope will be studied in this course.

PM 603 Medical Microbiology (2+1)

To educate students about the basic features of general bacteriology, virology and mycology.

- To familiarize students with the common infections and diseases of medical importance, their microbial causes, as well as laboratory diagnosis, treatment, prevention and control of such diseases.

PM 604 Parasitology (1 +1)

This course will focus on parasitic infections of humans with knowledge concerning biological, epidemiological and ecological aspects of parasites causing diseases to humans. It concerns with different parasitological related diseases in in Egypt causing serious health problems.

This part of the course will discuss medical helminthology, protozoology and entomology concerning their morphological features, life cycle, pathogenesis, clinical manifestations, different diagnostic techniques, the most recent lines of treatment and prevention with control strategy for each parasitic infection. Moreover, it also cover laboratory diagnosis of human parasitic infections.

PM 705 Public Health and Preventive medicine (2+0)

The course introduces students to the global public health and the Sustainable Development Goals (SDGs). It also includes the fundamentals of epidemiology, communicable and non-communicable diseases and their control with special emphasis on antibiotic resistance and antibiotic stewardship as well as emerging pathogens. The course also covers nutritional health, occupational medicine and women's, children's and adolescent's health and the relationship between the environment and public health. It is anticipated that students will achieve an understanding of the optimal environmental conditions for improved public health such as air, food and water purity and sanitary water disposal. The ability to understand and evaluate the biological and chemical basis for health threats emanating from the environment is also gained.

PM 806 Pharmaceutical Biotechnology (2+1)

The biotechnology subject is crucial for pharmacy students. It mainly aims to provide sufficient foundation for the student on how to learn the concept of the biotechnology, its main components, optimization of fermentation, bioconversion biodegradation and

bioremediation – gene therapy and genetic engineering. It simply puts the student on the track of the hot topic and the coming near future of the pharmaceutical industries.

MD 201 Anatomy and Histology (2 +1)

The aim of the course is to provide the students with competency concerning the appropriate functions of cells, tissues, organs and body system. The course also enables the student to integrate physiological data and mechanisms with ongoing taught sciences: anatomy and histology. Histology part includes cytology, epithelium, C.T., blood, muscle, vascular, lymphatic, respiratory, gastrointestinal and endocrine systems. Anatomy part includes introduction to human anatomy, tissues of the body, skeletal system, articular system, muscular system, digestive system, cardiovascular, respiratory system, lymphatic system, urinary system, genital system, nervous and endocrine systems.

MD 202 Psychology (1+0)

The objective of this course is to help understand the behavior of the people around us. Topics include: Contemporary psychology: Psychological processes, sensation, perception, conditioned learning, motivation. Secondary psychological processes: learning, memory, language and cognition, intelligence, personality, developmental psychology, environmental and child psychology. Behavior dynamics: Groups, the individual, environmental, group problems, differentiation, density, handicaps, aggression, the media. Mental Health: signs of good mental health and disturbances (neuroses and psychoses), conflicts and frustration as precursors to the neuroses, genetic predisposition and diseases as precursors to the psychoses, some of the main therapies in psychology.

MD 303 Physiology (2+1)

Introduction to body water, homeostasis, transport of materials, nervous systems, neuron structure and function (reflex arc), cardiovascular system, blood, respiratory cycle, gastrointestinal, reproductive, and renal systems, endocrine glands and body temperature regulation.

MD 304 Pathophysiology (2+0)

Introduction to pathophysiology, cell injury, inflammation and immune response, autonomic nervous system in health and disease, endocrine disorders, pancreatic disorders, fluid and electrolyte imbalance, vascular and haematological disorders, disease of urinary, pulmonary and digestive systems.

MD 405 Pathology (2 + 0)

The study of biochemical, structural and functional changes in cells, tissues and organs, which are caused by diseases

PO 101 Medical Terminology (1 + 0)

Introduction to medical and pharmaceutical terminologies, medical abbreviations, medical idioms, suffixes and prefixes, medical terms pertaining to major body stems.

PO 402 Pharmacology I (2 + 1)

General principles of pharmacology, pharmacokinetics, pharmacodynamics, receptor theory, adverse drug reactions and interactions. Drugs affecting the autonomic nervous system and the respiratory system in addition to local hormones and their antagonists.

PO 503 Pharmacology II (2 + 1)

Drugs affecting the cardiovascular system and the gastrointestinal system, drugs used in thromboembolic disorders, dyslipidaemias, and anaemias, diuretics, local anesthetics, and skeletal muscle relaxants in addition to non-steroidal anti-inflammatory drugs.

PO 604 Pharmacology III (2 + 1)

Drugs affecting the central nervous system, anti-infective agents in addition to some endocrine disorders e.g. diabetes, thyroid, parathyroid and adrenal disorders.

PO 705 First Aid and Basic Life Support (BLS) (1 + 1)

Basic life support, bleeding, shock, medical emergencies, poisoning, bones and joints, soft tissue injuries, rescue and transportation.

PO 806 Drug Interactions (2+0)

Classification of drug interactions, high-risk groups and high-risk drugs, general mechanisms of drug interaction, significance of drug-drug, drug-herb, drug- food, drug-smoking, drug-alcohol, and drug-disease interactions, management of interactions, influence of pharmacogenetics on interactions, drug interactions of antibiotics, anti-arrhythmic, cardiotonics, anti-hypertensives, anti-coagulants, centrally acting drugs, immune-suppressants, anti-diabetics, and hormones.

PO 907 Basic & clinical Toxicology (2 + 1)

Introduction to toxicology, general management of poisoning, target organs and molecules, factors affecting toxicological effects, mutation and developmental toxicology, toxicities of heavy metals, plant and animal poisons, pesticides, environmental toxicology, lacrimators, drug abuse, clinical toxicology of specific drug groups.

PP 501 Community Pharmacy Practice (2+1)

This course includes the study of the clinical situations that can be handled by the pharmacist in the community pharmacy (referral or using OTC medications) including upper respiratory tract, gastrointestinal, and musculosketal symptoms, skin, eyes, and ears, and childhood symptoms.

PP 602 Hospital Pharmacy (2+1)

Organization and structure of a hospital pharmacy, hospital pharmacy facilities and services (inpatient and outpatient services), transfer of care, patient's medication record, and rational medication use, hospital formulary, pharmacy and therapeutic committee, I.V. admixtures and incompatibilities, parenteral nutrition, handling of cytotoxic drugs, therapeutic drug monitoring, patient counselling and safety, and risk management

PP 603 Clinical Pharmacy Practice (2+1)

This course includes the definition and concepts of clinical pharmacy and pharmaceutical care, case history and case presentation, medication history taking, clinical problem solving, and therapeutic planning, clinical rounding and assessment of patient compliance. Principles of special care populations (geriatric, pediatric, pregnancy, and lactation). Drug-related problems and drug interactions. Interpretation of clinical laboratory data and physical examination.

PP 804 Clinical Pharmacokinetics (2+1)

Introduction to clinical pharmacokinetics and its applications, pharmacokinetics, non-compartmental pharmacokinetics and moment analysis. Drug distribution and drug clearance mechanisms, IV infusion kinetics and kinetics following extra-vascular dosing, metabolite kinetics, multiple dose kinetics, non-linear pharmacokinetics, dosage regimen design, dosage individualization of drugs of narrow therapeutic index especially in patients with compromised renal and hepatic function.

PP 905 Management of critical care patients (1+1)

This course aims to provide the student with the knowledge in, pathophysiology, clinical interpretation, pharmacotherapy and management of critical care illness (e.g. medical and surgical crises, trauma patients, supportive care, ICU infections, burns, neuro-critical care, cardiovascular critical care, sepsis, septic shock, pain and analgesia, bleeding

disorders and anticoagulation, nutritional support and therapy, hemodynamic monitoring, fluid and electrolyte disorders).

PP 906 Management of Respiratory diseases (1+1)

Epidemiology, aetiology, pathophysiology, clinical manifestation, investigations, treatment, monitoring, and patient counseling of bronchial asthma, chronic obstructive pulmonary disease, pulmonary hypertension, cystic fibrosis, upper and lower respiratory tract infections, and drug-induced respiratory problems.

PP 907 Management of oncological diseases and radio pharmacy (2+1)

Cancer aetiology, risk factors, cancer staging and grading, diagnosis, prognosis, optimizing chemotherapeutic regimens, different types of tumours (solid and hematologic) and their management, toxicities of chemotherapy, supportive treatment, pharmaceutical care and patient's support measures. This course also includes studying radioactive isotopes which process medical applications and precautions of their usage.

PP 908 Management of endocrine &renal diseases (2+1)

This course includes the Pathophysiology, causes, clinical presentation, diagnosis and application of pharmaceutical care plans in different endocrinologic disorders (Diabetes, thyroid disorder, caushing syndrome,...) and different renal disorders and related fluid and electrolyte disturbances (acute and chronic renal failure, uremic syndrome, kidney stones, ..). The course develops the students' ability to design, monitor, refine safe and cost-effective treatment plans and provide appropriate information to patient, caregivers, and health professionals.

PP 909 Pharmacotherapy I (2+0)

Pharmacoeconomics: Principles, Methods, and Applications, Health Outcomes and Quality of Life, Evidence-Based Medicine, Pharmacogenetics, Pediatrics, Geriatrics, Pharmacoepidemiology, Stroke, Pharmacotherapy of Shock, Acute Renal Failure, Chronic Kidney Disease: Therapeutic Approach, Drug-Induced Kidney Disease, Drug Therapy Individualization for Patients with Renal Insufficiency. eye disorders.

PP 010 Management of dermatological, reproductive and musculoskeletal diseases (2+1)

Skin structure and function, primary and secondary lesions. Most popular skin diseases: infective and non-infective types and their differentiation. Sexually transmitted diseases, male infertility, and women health. Musculoskeletal disorders are also included.

PP 011 Management of neuropsychiatry diseases (1+1)

This course aims to provide the student with the knowledge in, pathophysiology, clinical interpretation, pharmacotherapy and management of neuropsychiatric diseases (e. .g mental health disorders, schizophrenia, depression, anxiety, seizure disorders,

parkinsonism, migraines, dementia and Alzheimer's disease). Sedative and hypnotics, general anesthetics, opioid analgesics and non-steroidal anti-inflammatory drugs.

PP 012 Management of Pediatric diseases (1+1)

Nutritional requirements in neonates and infants, nutritional disorders, neonatology, infectious diseases in pediatrics, congenital heart diseases, endocrine, neurological, haematologic, renal, and respiratory disorders, pediatric emergencies.

PP 013 Management of Cardiovascular diseases (2+1)

Main diseases affecting the cardiovascular system, symptoms, prognosis, pharmacological and non-pharmacological management, patient counseling and monitoring of dyslipidaemias, hypertension, coronary artery disease, acute coronary syndromes, heart failure, dysrhythmias, thromboembolic disorders, and stroke.

PP 014 Management of Gastrointestinal diseases (2+1)

Hepatic disorders including viral hepatitis, pancreatitis, gastrointestinal bleeding, peptic ulcer, gastro-esophageal reflux disease, inflammatory bowel diseases and irritable bowel syndrome as well as gastrointestinal symptoms including nausea, vomiting, constipation, and diarrhea.

PP 015 Drug information (1+0)

This course includes an advanced application of the science of drug information in terms of: its practice within the drug information centers and various clinical sites. The course will focus on Drug information and poison information centers, different drug information resources, use of the internet for drug and research information, evaluating information on the web. The classification of study design and clinical trials, data presentation, and basic statistical concepts are detailed. Basics of pharmacoeconomic literature are described.

PP 016 Clinical Research and Pharmacovigilance (1+0)

This course introduces the student to the basic principles of clinical research, design of research studies, types of research studies, clinical trials, statistical presentation of research data and ethical guidelines in drug research. This course also provides the student's with understanding of pharmacovigilance importance, concept, processes, systems, global safety standards and regulations and reporting systems.

PP 017 Pharmacotherapy II (2+0)

Childhood Disorders, Eating Disorders , Alzheimer’s Disease, Bipolar Disorder, Sleep Disorders, Adrenal Gland Disorders, Pituitary Gland Disorders, Pregnancy and Lactation: Therapeutic Considerations, Contraception, Hormone Therapy in Women, , Erectile Dysfunction, Management of Benign Prostatic Hyperplasia, , Osteoarthritis Gout and

Hyperuricemia, Allergic and Pseudoallergic Drug Reactions. Dermatologic Drug Reactions.

NP 101 Mathematics (1+0)

This course provides an essential guide to the mathematical concepts, techniques, and calculations, a student in the pharmaceutical sciences is likely to encounter. It includes definition of Number, Variable, Function, composition of functions, different types of functions. Definition of Limits of one variable functions, continuity, differentiability and applications of these concepts. Definition of the definite and indefinite integrals. The fundamental theorem of calculus and applications of definite integral. Determined the area arc length, volumes and surfaces of revolutions Differentiation and integrations of exponential, logarithmic, trigonometric and transcendental functions. Techniques of integrations, trigonometric and transcendental functions. Techniques of integrations. Matrix Algebra and system of linear equations.

NP 102 Information Technology (1+1)

This course tends to provide students with a brief introduction to the world of computers and the concept of information technology including: number systems and data representation, computer system components: hardware & software, storage and input/output systems, Operating systems and Utility Systems, software applications. Also it gives an overview about computer networks and internet: data communication, transmission modes, transmission media, computer networks, internet protocol, and internet services. It practices some computer applications in the laboratory such as Internet Access, word processing and power point. It gives students a practical experience on developing projects related to the specialty.

NP 103 Human Rights and Fighting Corruption (2 + 0)

يغطي هذا المقررالموضوعات التالية: حقوق الإنسان في القانون الجنائى، حق الإنسان فى تغيير جنسيته أو التخلى عن إحدى جنسياته، المواثيق الدولية المتعلقة بحماية حقوق الإنسان، علاقة العولمة والتنمية بالحقوق الاقتصادية والاجتماعية والثقافية، الحقوق الاقتصاديةوالاجتماعيةوالثقافية للإنسان، حقوق الإنسان فى الشريعة الإسلامية، حقوق المرأةفى قانونى العمل والتأمين الاجتماعى، حقوق الإنسان فى التقاضى، الحقوق المدنية والسياسية للإنسان

NP 104 English Language (1+0) Training in reading, comprehension, basic grammatical rules, writing and translation. The course adopts a systematic approach to proper essay writing, such as idea development, paragraph structure, introductions, support, and conclusions.

NP 505 Scientific Writing and Communication skills (1 + 1)

This course is designed to introduce students to the principles of good scientific writing, to be familiar with basic structure of scientific reports and research articles. It covers

methods of paraphrasing, common mistakes in scientific writing, different writing styles, how to write a scientific report, proposal and manuscript, appropriate use of tables and figures in data presentation and evaluation of literature and information sources. In addition it will help students develop necessary written and oral communication and presentation skills to improve inter- and intra-professional collaboration and communication with patients and other health care providers. The course will also deal with the underlying attitudes, which form an interpersonal skills. It focuses on concept and meaning of communication; verbal and nonverbal communication (body and vocal language); active listening skills; communication styles and presentation skills. Communication skills in diverse pharmacy practice setting will be discussed.

NP 906 Entrepreneurship (1 + 0)

This course outlines the process of designing, launching and running a new business, which is often initially a small business. The people who create these businesses are called entrepreneurs. Entrepreneurship has been described as the "capacity and willingness to develop, organize and manage a business venture along with any of its risks in order to make a profit. While definitions of entrepreneurship typically focus on the launching and running of businesses, due to the high risks involved in launching a start-up, a significant proportion of start-up businesses have to close due to "lack of funding, bad business decisions, an economic crisis, lack of market demand, or a combination of all of these

NP 907 Marketing & Pharmacoeconomics (1 + 0)

The objective of this course is to introduce students to the concepts, analyses, and activities that comprise marketing management, and to provide practice in assessing and solving marketing problems. The course is also a foundation for advanced electives in Marketing as well as other business/social disciplines. Topics include marketing strategy, customer behavior, segmentation, market research, product management, pricing, promotion, sales force management and competitive analysis.

The basic concepts of health economics, learning basic terms of health economics and understand key principles. Topics cover the economic mechanisms of health care markets as market failures, and government intervention. The course covers the key components of health care financing, and some methods of how to contain health care expenditure. Alongside the major definitions in health technology assessment, students should have an overview about different types of economic evaluation, budget impact analysis and their uses. Moreover, students should get familiar with different methods of pricing among which value-based pricing.

PD E11 Drug Design (1+1)

Structure activity relationships, quantum mechanical approaches, molecular connectivity, pharmacophore generation, molecular modification by isosteric replacement. Natural products leading to new pharmaceuticals, mathematical treatment serving prediction, defining sites and targets, molecular modeling, prodrugs and drug latentiation.

PA E11 Advanced Pharmaceutical Analysis – Spectroscopy (1+1)

Applications of instrumental methods of analysis (ultraviolet and infrared spectroscopy; NMR; mass spectrometry; atomic absorption spectroscopy) to pharmaceutical compounds.

PA E12 Analysis of Food & Cosmetics (1+1)

The purpose of this course is to expose students to the principles, methods, and techniques of qualitative and quantitative analyses of foods and cosmetics.

Throughout the course, major emphasis will be placed on understanding the basic principles of classical and instrumental methods of analysis, with lesser emphasis on details of specific methods. Criteria for the choice of various analytical methods will be presented. Methods of treating data and sampling techniques will be studied. Lecture topics will focus on common methods of proximate analysis and related techniques used in analysis of cosmetics, food and food ingredients.

PA E13 LC/MS in Pharmaceutical Research (1+1)

This course will introduce the theory and practical implementation of LC/MS and LC/MS/MS technology in the laboratory. It emphasizes problem-solving skills with examples encountered in industrial and academic research including characterization of trace level drug substance impurities and degradation products, identification of drug metabolites, and the analysis of natural products and bio-molecules. The interpretation of mass spectra will be illustrated. This course will cover analytical method development in protein mass spectrometry combined with separation techniques for analyzing proteins and peptides.

PA E14 Experimental Design and Research Methods in Health Care (1+1)

This course will provide an introduction to research designs and the process of conducting research in health outcomes and pharmacy practice.

It will cover the fundamentals of research and introduce students to the terminology, concepts, and processes used in designing and implementing a research project. Emphasis will be given to the application of research methodology concepts and principles.

PG E11 Complementary Therapies (1+1)

Widely used OTC herbal preparations, nutritional supplements, and homeopathies, food items for health promotion purposes (prevention/treatment of diseases) as well as selection of useful and safe products: role of pharmacist in patient counseling.

PG E12 Production and Manufacture of Medicinal Plants (1+1)

Commercial production of medicinal plants: cultivation, collection, drying, preservation, extraction, quality control, and final packaging of entire or powdered forms or extracts.

PG E13 Chromatography and Separation Techniques (1+1)

Introduction and modes of separation, gel filtration and permeation, ion exchange chromatography, type properties, ion exchange and non-ion exchange manifestation and applications. High-pressure liquid chromatography, gas liquid chromatography and their applications.

PG E14 Processing of medicinal plants (1+1)

General aspects of medicinal plants, definition of medicinal plant cultivation, the role and importance of medicinal plants, medicinal plant production in Egypt, biological aspects - heredity and variability of medicinal plants, active substances of medicinal plants, taxonomy of medicinal plants, environmental factors, plant breeding and variety control of medicinal plants, technical and technological conditions for medicinal plant cultivation - possibilities and conditions for mechanization, possibilities and conditions for introducing chemicals; primary processing of medicinal plants - drying, , extraction processes of essential oils, storage, packing and certification, The cultivation of medicinal plants.

PG E15 Aromatherapy and herbal cosmetics (1+1)

Common essential oils used in medical facilities and those commonly available in most pharmacies, the physiology of aromatherapy through the use of the sense of smell., the physiological uses of incense, perfume, and cosmetics., the chemistry of essential oils and its bioactivity., the beneficial effects of massage in the promotion of health., Predict interactions of essential oils, conventional medicine, and clinical studies, the ability to discuss the health and medical advantages of aromatherapy practice.

PG E16 Biotechnology of medicinal plants (1+1)

Biotechnology of medicinal plants : Recent advances and potential, Biotechnological approaches for the development of anticancer drugs from plants, Plant biotechnology in

aid of AIDS, Production of vaccines by transgenic plants, Role of plant biotechnology in production of secondary metabolites, Production of bioactive compunds from immobilized plant cells, Hairy root culture and secondary metabolite production.

PI E11 Applied Industrial Pharmacy (1+1)

Good manufacturing practice regulations and quality assurance with emphasis on process validation and sampling techniques.

PI E12 Good Manufacturing Practices (1+1)

Concepts, objectives and applicability, general provisions, organization and personal. Building and facilities, materials, equipment, production and process controls, packing and labeling, control, distribution, laboratory controls, records and reports, returned and salvaged drug products, repacking, inspections and recalls.

PI E13 Advanced pharmaceutical technology (1+1)

Controlled and modulated release drug delivery systems: theory and methods, e.g. microcapsules-bio-adhesives

PT E11 Cosmetic Preparations (1+1)

Definition and concepts, classification, hair, bath, fragrance, and make-up preparations, nail lacquers, shaving and after-shave preparations, skin care, anal hygiene products, anti-perspirants and deodorants, quality control tests and evaluation of cosmetic products.

PT E12 Veterinary Pharmacy (1+1)

Veterinary pharmaceutical products, veterinary prescribing, animal medicinal drug use clarification act, compounded pharmaceuticals guidance for veterinarians, important drug interactions, toxicity of human medications for pets, insulin dosing in veterinary species, animal ingestion of human medication.

PT E13 Medical devices (1+1)

Significance of medical devices, classification of medical devices, regulation of devices, role of pharmacist in regulation on use of devices, the medical devices pharmacists management role and pharmaceutical care, types of medical devices are sold in pharmacies, pharmaceuticals and medical devices safety information

PT E14 Drug Metabolism and Transport (1+1)

The biochemical aspects of drug metabolism in the drug discovery process and related pharmaceutical principles. Topics include pharmacokinetics, Phase I and II drug

metabolism, factors affecting drug metabolism, and recent advances in drug metabolizing and absorption technology. The goal of this course is to give students a full appreciation of the drug metabolism aspects of the NDA process as well as an ability to predict drug metabolism and distribution of new chemical entities.

PT E15 Protein Pharmaceuticals (1+1)

Preformulation studies as an essential guide to formulation development and manufacture of protein pharmaceuticals, formulation development of protein dosage forms, aseptic processing of protein pharmaceuticals, fundamentals of thermal sterilization processes, membrane filtration, fundamentals of freeze-drying, quality assurance and quality control for biopharmaceutical products, regulatory considerations in the development of protein pharmaceuticals

PO E11 Biological Standardization (1+1)

Introduction to concepts of screening and bioassay in the course of drug discovery. Testing for drug activities belonging to the following drug classes: central and autonomic nervous systems, cardiovascular system, hormones, analgesics, and anti-inflammatory drugs

PO E12 Veterinary Pharmacology (1+1)

Commonly used veterinary biological and pharmaceutical preparations, general sanitary and management procedures for the prevention and control of livestock diseases, brief review of infectious diseases and animal parasites.

PP E11 Geriatric pharmacotherapy (1+1)

Orientation & the Geriatric Medication Game, Biology of Aging, Geriatric Assessment, Polypharmacy and Inappropriate Medications, Nutrition in the Elderly, Dietary Supplement Use by the Elderly, Adverse Drug Events

PP E12 Interprofessional Skills (1+1)

Introduction to Interprofessional Education and its relationship to interprofessional practice and care, Ethics and its role in interprofessional practice, Roles and responsibilities of each healthcare team member and profession, Communication ,Team and teamwork (team function), Leadership, conflict management and negotiation , Health promotion

PM E11 Antibiotic stewardship (1+1)

Factors affecting choice of antimicrobial agent, types of antimicrobial compounds, types of antibiotics and synthetic antimicrobial agents, clinical uses of antimicrobial drugs,

manufacturing of antibiotics and other synthetic antimicrobial agents, principle methods of assaying antibiotics, mechanism of action antibiotics, bacterial resistance.

PM E12 Infection Control (1+1)

Infection prevention and control practices, the chain of infection, standard and transmission-based precautions, barriers and use of personal protective equipment (PPE), and strategies for preventing the spread of infectious disease to healthcare workers and patients.

PM E13 Bioinformatics (1+1)

Introduces bioinformatics concepts and practice. Topics include: biological databases, sequence alignment, gene and protein structure prediction, molecular phylogenetics, genomics and proteomics. Students will gain practical experience with bioinformatics tools and develop basic skills in the collection and presentation of bioinformatics data, as well as the rudiments of programming in a scripting language