جمهورية مصر العربية

وزارة التعليم العالي

الوزير

قرار وزاري
رقم (٢٤٤٩) بتاريخ ٢٠١٩/٩/١٢
بشأن إصدار اللائحة الداخلية لكلية الصيدلة جامعة حلوان (مرحلة البكالوريوس) بنظام الساعات المعتمدة

وزير التعليم العالي والبحث العلمي ورئيس المجلس الأعلى للجامعات

** بعد الإطلاع على القانون رقم ٤٩ لسنة ١٩٧٢ في شأن تنظيم الجامعات والقوانين المعدلة له.
** وعلى قرار رئيس الجمهورية رقم ٨٠٩ لسنة ١٩٧٥ بإصدار اللائحة التنفيذية لقانون تنظيم الجامعات والقرارات المعدلة له .
** وعلى قرار رئيس مجلس الوزراء رقم (٢١٤٥) لسنة ٢٠١٩ بشأن تعديل بعض احكام اللائحة التنفيذية لقانون تنظيم الجامعات .
** وعلى القرار الوزارى رقم (٩٨٨) بتاريخ ٢٠٠٣/٧/١٦ بشأن إصدار اللائحة الداخلية لكلية الصيدلة جامعة حلوان (مرحلة البكالوريوس) والقرارات المعدلة له .
** وعلى موافقة مجلس جامعة حلوان بجلسته بتاريخ ٢٠١٩/٨/٢٢ .
** وعلى موافقة لجنة قطاع الدراسات الصيدلية بجلستها بتاريخ ٢٠١٩/٨/٢١ .
** وعلى موافقة المجلس الأعلى للجامعات بجلسته بتاريخ ٢٠١٩/٨/٢٤ .

قرر

(المادة الأولى)

الموافقة على اللائحة الداخلية المرفقة والخاصة بدرجة بكالوريوس الصيدلة (فارم دى – Pharm D) بكلية الصيدلة جامعة حلوان طبقا لنظام الساعات المعتمدة ويلغى كل نص يخالف احكامها .

(المادة الثانية)

يلحق باللائحة الداخلية المرفقة والخاصة بكلية الصيدلة جامعة حلوان (مرحلة البكالوريوس) برنامج (فارم دى – Pharm D) صيدلة إكلينيكية بنظام الساعات المعتمدة باللائحة الداخلية المشار اليها بعاليه ويلغى كل نص يخالف احكامها .

(المادة الثالثة)

على جميع الجهات المختصة تنفيذ هذا القرار

وزير التعليم العالي والبحث العلمي
ورئيس المجلس الأعلى للجامعات

(أ.د/ خالد عبد الغفار)

المجلس الأعلى للجامعات
الإدارة المركزية لبحوث تطوير التعليم الجامعى
إدارة سكرتارية لجان التخطيط لقطاعات العلوم الأساسية

السيد الأستاذ الدكتور/ ماجد محمد فهمى نجم
رئيس جامعة حلوان

تحية طيبة وبعد...

أتشرف بأن أرسل لسيادتكم رفق هذا صورة من القرار الوزارى رقم (٤١٤٢) بتاريخ ٢٠١٩/٩/١٨ بشأن اصدار اللائحة الداخلية لكلية الصيدلة جامعة حلوان (مرحلة البكالوريوس) بنظام الساعات المعتمدة ٠

برجاء التفضل بالنظر والتكرم باتخاذ ما ترونه سيادتكم لازما فى هذا الشأن

وتفضلوا بقبول فائق الاحترام ،،،

أمين المجلس الأعلى للجامعات

(أ.د/ محمد مصطفى لطيف)

/ /٢٠١٩

عماد

صورة مبلغة إلى أ٠د/ عميد كلية الصيدلة حلوان

المجلس الأعلى للجامعات
حرم جامعة القاهرة – الجيزة
فاكس – ٣٥٧٠٦٤١٩ – ٣٥٧١٦٣٤٧
تليفون : ٣٥٧٠٤١٥٨ – ٣٥٧٣٥٤٠٥

Supreme Council of Universities
Cairo University Campus, Giza
URL:www.scu.eun.eg
e-mail: scu acc@mailer.eun.eg

المجلس الأعلى للجامعات
الإدارة المركزية لبحوث تطوير التعليم الجامعى
إدارة سكرتارية لجان التخطيط لقطاعات العلوم الأساسية

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برجاء التفضل بالنظر والتكرم باتخاذ ما ترونه سيادتكم لازما فى هذا الشأن

وتفضلوا بقبول فائق الاحترام ،،،

أمين المجلس الأعلى للجامعات

٢٠١٩/٩/٢١

(أ.د/ محمد مصطفى لطيف)

/ /٢٠١٩
عماد

صورة مبلغة إلى أ.د/ عميد كلية الصيدلة حلوان

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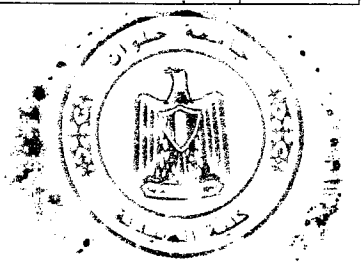
المجلس الأعلى للجامعات
حرم جامعة القاهرة – الجيزة
فاكس – ٣٥٧٠٦٤١٩ – ٣٥٧١٦٣٤٧
تليفون : ٣٥٧٠٤١٥٨ – ٣٥٧٣٥٤٠٥

لائحة برنامج بكالوريوس الصيـدلة
(فارم دى-Pharm D)
(صيـدلة إكـلينيـكيـة)
بنظام الساعات المُعـتـمـدة

سبتمبر 2019

المحتويات



أولاً :- رؤيـة ورسـالة وأهـداف كلية الصيدلة جامعـة حلــوان

رؤيــة الكـلـيــة:

كلية مُعتمدة دولياً ذات قدرة تنافسية في المجالات الصيدلية المختلفة.

رســالة الكـليــة:

كلية الصيدلة جامعة حلوان مؤسسة تعليمية وبحثية مُتطورة، مُعتمدة من الهيئة القومية لضمان جودة التعليم والاعتماد تقدم برامج أكاديمية مُتطورة لمرحلتي البكالوريوس والدراسات العليا تلبي احتياجات سوق العمل وتحقق معايير الجودة وتُقدم بحثاً علمياً متميزاً محلياً وإقليمياً ودولياً وتمد المجتمع بصيدلي وباحث مُتميز مُلتزم بأخلاقيات المهنة، وقادرعلى المشاركة الفعالة في رفع كفاءة خدمات الرعاية الصحية وتطوير الصناعات الدوائية والمساهمة في تنمية المجتمع المحلي والإقليمي.

الأهــداف الاستراتيجية للكـليــة

1-1- استمرارية تحقيق معايير الجودة والاعتماد وتعزيز القدرة المؤسسية

1-2- تطوير ودعم نظم ادارة الجودة والتقويم الشامل

1-3- التنمية المستدامة للموارد الذاتية للكلية ودعم العملية التعليمية والبحثية وتحسين بيئة العمل

2-1- زيادة القدرة التنافسية للخريج علي المستوي المحلي والقومي والإقليمي

3-1- تطوير برامج الدراسات العليا وتدعيم القدرة التنافسية للخريج

3-2- تعزيز التميز والارتقاء بمستوي مخرجات البحث العلمي

4-1- المساهمة الفعالة في حل مشكلات المجتمع وتنميته وبناء قدرات تنافسية للطالب

4-2- تحقيق شراكة مجتمعية تساهم بفاعلية في بناء قدرات تنافسية للطالب

4-3- تنمية شراكات استراتيجية مع دول حوض النيل

ثانيا :أقسام الكلية العلمية

Code	Department	القسم	مسلسل
PHT	Pharmaceutics and Industrial Pharmacy	الصيدلانيات والصيدلة الصناعية	1
PHG	Pharmacognosy	العقاقير	2
PHM	Microbiology and Immunology	الميكروبيولوجيا والمناعة	3
PHB	Biochemistry and Molecular Biology	الكيمياء الحيوية والبيولوجيا الجزيئية	4
PHL	Pharmacology and Toxicology	الأدوية والسموم	5
PCO	Pharmaceutical Organic Chemistry	الكيمياء العضوية الصيدلية	6
PCA	Pharmaceutical Analytical Chemistry	الكيمياء التحليلية الصيدلية	7
PCP	Pharmaceutical Chemistry	الكيمياء الصيدلية	8
PHP	Pharmacy Practice	ممارسة الصيدلة	9

ثالثاً: الأحكام الأنتقالية

1- تطبق أحكام هذه اللائحة اعتباراً من العام الدراسى 2020/2019 على الطلاب المُستجدين بالكلية للعام الدراسى 2020/2019 .

2- الطلاب المُقيدون بالفرق الأخرى من الأعوام السابقة تطبق عليهم اللائحة المقيدين عليها لحين تخرجهم.

رابعا: لائحة برنامج بكالوريوس الصيدلة (فارم دى-Pharm D) (صيدلة إكلينيكية)

مـــادة (1) :

رؤيـــة البـرنـامـج

التميز العلمي والتطوير المستمر لخدمة المنظومة الصحية العلاجية والصناعات الدوائية وتحقيق التنمية المستدامة من أجل الوصول لمكانة مرموقة عالمياً في مجال الصيدلة الإكلينيكية.

رســالة البـرنـامـج

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.

أهـداف البـرنـامـج

- 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 استخدام الأدوية في المستشفيات.
- الالتزام بتحقيق معايير الجودة في التعليم الصيدلي من خلال التعليم التفاعلي والاهتمام بالتعلم الذاتي.

مـــادة (2) :

الدرجة العلمية التي تُمنح للخريجين

يمنح مجلس الجامعة بناءً على طلب مجلس كلية الصيدلة درجة بكالوريوس الصيدلة (فارم دى-Pharm D) (صيدلة إكلينيكية) طبقا لنظام الساعات المُعتمدة.

مـــادة (3) :

التأهيل للدرجات الأكاديمية الأعلى:
درجة بكالوريوس الصيدلة (فارم دى-Pharm D) (صيدلة إكلينيكية) طبقاً لنظام الساعات المُعتمدة.

هى الدرجة الجامعية الأولى فى مجال الصيدلة اللازمة للحصول على ترخيص ممارسة المهنة فى جميع المجالات الصيدلية المتاحة، كما تؤهل الخريج للتسجيل للدراسات العليا فى أى من الأقسام العلمية فى الكلية.

مـــادة (4) :

نظـام الدراســة

مدة الدراسة بالبرنامج خمس سنوات دراسية (خمس مستويات على عشر فصول دراسية) طبقا لنظام الساعات المُعتمدة وسنة تدريب متقدم (امتياز) فى مواقع العمل (5+1). بالإضافة إلى عدد 100ساعة 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 المُعتمدةهي وحدة قياس دراسية وتعادل ساعة دراسية أسبوعية نظرية أو درساً عملياً لا تقل مدته عن ساعتين أسبوعياً وتدرس على مدى فصل دراسي واحد.

مـــادة (5) :

تصميم البرنامج الدراسي

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

وتم تصميم البرنامج الدراسي بحيث:

أولاً : يدرس الطالب ويجتاز عدد الساعات المُعتمدة للبرنامج **177** ساعة مُعتمدة منها **8** ساعات مُعتمدة مقررات اختيارية، بالإضافة إلى مُتطلبات الجامعة

ثانياً : المقررات الاختيارية تحقق للطالب الجدارات والمهارات التي تساعده على التوجه المهني والتخصصي

ثالثاً : يكمل الطالب **100** ساعة تدريب صيفي فعلية يبدأ بنهاية المستوى الثالث وقبل البدء في سنة الامتياز .

مـــادة (6) :

أ) العـبء الدراســي :

- العبء الدراسي هو عدد الساعات المُعتمدة التي يقوم الطالب بتسجيلها في الفصل الدراسي الواحد ويجب مراعاة ألا يقل العبء الدراسي المسجل للطالب في أي فصل دراسي عن **12** ساعة مُعتمدة وألا يزيد عن **22** ساعة مُعتمدة وعلى الا يزيد العبء الدراسي للطالب المتعثر عن **12** ساعة مُعتمدة
- العبء الدراسي خلال الفصل الصيفي بحد أقصى **10** ساعات مُعتمدة.
- ويجوز لمجلس الكلية السماح للطالب في أخر فصلين دراسيين بزيادة العبء الدراسي عن الحد الأقصى وبما لا يتجاوز عدد **3** ساعات مُعتمدة (يستفيد منها الطالب لمرة واحدة)، كما يجوز لمجلس الكلية السماح للطالب المُتعثر بزيادة العبء الدراسي عن الحد الأقصى خلال الفصل الصيفي وبما لا يتجاوز عدد 2 ساعة مُعتمدة.

ب) التسجيل

- تُحدد الكلية لكل مجموعة من الطلاب مرشداً أكاديمياً من أعضاء هيئة التدريس يقوم بمهام الرعاية والإرشاد ويكون مسئولاً عن الطالب في الشئون العلمية والاجتماعية والنفسية وتوجيهه في كل ما يتعلق

بحياته الجامعية ويقوم بمساعدة الطلاب في اختيار المقررات من قائمة المقررات التي تطرحها الكلية في كل فصل دراسي.

- على كل طالب أن يقوم شخصياً بتسجيل المقررات التي يرغب في دراستها في كل فصل دراسي مع ضرورة أن يتم اختيار المقررات وعدد الساعات المُعتمدة بالتشاور والاتفاق مع المرشد الأكاديمي.
- ويشترط لتسجيل المقرر أن يكون الطالب قد اجتاز بنجاح متطلب التسجيل لهذا المقرر.
- يجوز لمجلس الكلية في حالات الضرورة القصوى للطالب بتسجيل بعض المقررات بالتوازي مع متطلباتها التي لم يجتازها الطالب بنجاح إذا قل العبء الدراسي المتاح للطالب عن 12 ساعة مُعتمدة، على أن يعلم الطالب بأنه لن يتم اعتماد نجاحه في هذا المقرر إلا بعد اجتياز متطلبه الذي سمح له بالتسجيل فيه بالتوازي.
- ينبغي 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 مجلس الكلية وعلى ألا تزيد مدة التأخير عن أسبوع من نهاية فترة التسجيل.

ج) الإضافة والحذف والانسحاب:

يجوز للطالب بعد استكمال إجراءات التسجيل أن يضيف أو يحذف إلى ساعاته المُعتمدة 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 الانسحاب 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 المُعلن لكل فصل دراسي, ومن ينسحب بعد هذه الفترة المحددة يعتبر راسباً.

مـــادة (7) :

أ) المواظـــبة

على الطالب أن يواظب على حضور المحاضرات النظرية وحلقات النقاش والدروس العملية والتدريبات الميدانية والتكليفات، 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 المُعتمدة لكل مقرر.

ب) حضور الامتحانات والتغيب عنها والإخلال بنظامها

يجب على الطالب أداء الامتحانات التحريرية النهائية في المواعيد المُقررة لها حسب التقويم الجامعي المُعلن لكل فصل دراسي، ويُعتبر الطالب المتغيب عن الامتحان التحريري النهائي راسباً في المقررات التي تغيب عن أداء الامتحان فيها, ولا يعتبر الطالب راسبا في حالة التغيب بعذر قهري يقبله مجلس الكلية.

مـــادة (8) :

لغـة الدراســة

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

مـــادة (9) :

التدريـب الميداني الاولى و التدريب الميدانى المتقدم (سنة الامتياز)

أ-التدريب الميدانى الأولى:

على الطالب أن يُكمل فترة تدريب ميداني أولى بإجمالي عدد **100** ساعة تدريب فعلية فى الصيدليات الأهلية والحكومية وصيدليات المستشفيات التي يقرها مجلس الكلية وذلك تحت إشراف عضو هيئة تدريس ويتم التدريب خلال الاجازات الصيفية لسنوات الدراسة بعد نهاية المستوى الثالث وقبل البدء فى سنة الامتياز .

ب- التدريب الميدانى المتقدم (سنة الامتياز):

- على الطالب أن يكمل سنة الامتياز بعد اجتياز سنوات الدراسة (**177** ساعة مُعتمدة) بواقع **36** ساعة اسبوعيا 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) ، بحيث يكون البرنامج التدريبى متكامل وممنهج بطريقة دورية تناوبية مُسجلة بالساعات والمهام التدريبية وتحت إشراف دقيق من الكلية وجهة التدريب.

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

- كما يقدم مشروع تخرج فى تخصص مُعين يساهم فى تمهيد وإعداد الطالب للتوجه لهذا التخصص, ويُمكن للخريج العمل فى هذا المجال لمدة سنتين ليصبح بعدها صيدلياً متخصصاً قادراً على تقديم خدمات صيدلية إكلينيكية أو الممارسات الصيدلية المختلفة.

مـــادة (10) :

شروط القبول

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

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

مـــادة (11) :

نظـــام التقييـــم

تتكون الدرجة النهائية للمقرر من مجموع درجات الأعمال الفصلية والعملية والتحريرية والشفهية كما هو مُوضح 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	3.8	A	
85 لأقل من 90	3.6	A^-	
82.5 لأقل من 85	3.4	B^+	جيد جدا
77.5 لأقل من 82.5	3.2	B	
75 لأقل من 77.5	3.0	B^-	
72.5 لأقل من 75	2.8	C^+	جيد
67.5 لأقل من 72.5	2.6	C	
65 لأقل من 67.5	2.4	C^-	
62.5 لأقل من 65	2.2	D^+	مقبول
60 لأقل من 62.5	2.0	D	
أقل من 60	0.0	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 الامتحان التحريري النهائي والشفهي (إن وجد) لمقرر دراسي أو أكثر في ذات الفصل الدراسي لأسباب قهرية يقبلها مجلس الكلية، وعليه أداء الامتحان التحريري النهائي والشفهي (إن وجد) فقط في موعد أقصاه الأسبوع الثاني من الفصل الدراسي التالي مع الاحتفاظ بالتقدير.

**Abs E : يحصل الطالب على هذا الرمز إذا لم يتمكن من دخول الامتحان 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 مُرضي
U: مستوى غير مُرضي
T: درجات حصل عليها طالب محول من كلية صيدلة أخرى

حساب المعدل الفصلي للطالب (GPA) والمعدل التراكمي (cGPA)

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

أ- يتم ضرب قيمة تقدير كل مقرر دراسي (النقاط المُوضحة في الجدول السابق) في عدد الساعات المُعتمدة 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 المُعتمدة المسجلة للطالب في الفصل الدراسي الواحد وذلك بغرض الحصول على المعدل الفصلي كما يلي:

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

ويتم حساب المعدل التراكمي كما يلي:

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

مـــادة (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 المقرر والامتحان فيه عند طرحه مرة أخرى، أما إذا رسب في مقرر إختياري فبإمكانه إعادة دراسته أو دراسة مقرر إختياري آخر بديل لإكمال مُتطلبات التخرج، وذلك بعد موافقة المرشد الأكاديمي واعتماد مجلس الكلية.

مـــادة (13) :

التعثر الأكاديمي

يعتبر الطالب متعثر اكاديمياً إذا حصل على معدل فصلي (GPA) أقل من "2".

الطالب الذي يحصل على معدل فصلي (GPA) أقل من "2" 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 الاعتبار الفصول الصيفية إن وجدت.

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

مـــادة (14) :

الانقطاع عن الدراسة

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

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 يُطبق عليه النصوص الواردة باللائحة التنفيذية لقانون تنظيم الجامعات.

مـــادة (15) :

متطلبات الحصول على درجة بكالوريوس الصيدلة (فارم دى-Pharm D)(صيدلة إكلينيكية)

يتطلب الحصول على درجة بكالوريوس الصيدلة (فارم دى-Pharm D)(صيدلة إكلينيكية) طبقاً لنظام الساعات المُعتمدة أو ما يعادله ما يلي:

أولاً : دراسة واجتياز عدد **177** ساعة مُعتمدة موزعة تشمل متطلبات الكلية الاختيارية على ألا يقل المعدل التراكمي عن أثنين .

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

ثالثا :إجتياز فترة تدريب ميداني أولى بأجمالي 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 وقبل البدء في سنة الامتياز

رابعاً: اجتياز سنة الامتياز والتى تشمل مشروع التخرج فى إحدى التخصصات المطروحة للتسجيل.

مـــادة (16) :

نظام تأديب الطلاب

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

مـــادة (17) :
كود الأقسام ومتطلبات الجامعة والكلية والمقررات الاختيارية

Key for Course Abbreviations كود الأقسام

MTH	Mathematics
PHB	Biochemistry and Molecular Biology
PCA	Pharmaceutical Analytical chemistry
PCO	Pharmaceutical Organic chemistry
PCP	Pharmaceutical Chemistry
PHG	Pharmacognosy
PHM	Microbiology and Immunology
PHL	Pharmacology and Toxicology
PHP	Pharmacy Practice
PHT	Pharmaceutics and Industrial Pharmacy
MED	Medical Courses
NP	Non Pharmaceutical

2- مُتطلبات الجامعة*

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	P/T	Total		Period.	P/T	Wr	Oral		
Human Rights and Fighting Corruption	UR 101C	1	-	1	Registration	25	-	75	-	100	1
English Language	UR 102C	2	-	2	Registration	25	-	75	-	100	2

*مقررات متطلب الجامعة تقدير نجاح أو رسوب فقط دون إضافة درجات للمجموع ونسبة النجاح من 50%

- ***Lect.*** = Lecture
- ***Period.*** = Periodical
- ***P/T.*** = Practical / Tutorial
- ***Wr.*** = Written

3- متطلبات الكلية

1- قسم الصيدلانيات والصيدلة الصناعية

Course Title	Course Code	Credit Hours		
		Lect.	P/T	Total
Pharmacy Orientation	PHT 101C	1	-	1
Physical Pharmacy	PHT 202C	2	1	3
Pharmaceutical dosage forms I	PHT 303C	2	1	3
Pharmaceutical Dosage Forms-II	PHT 404C	2	1	3
Pharmacy Legislation and practice ethics	PHT 405C	1	-	1
Pharmaceutical Dosage Forms-III	PHT 506C	2	1	3
Biopharmaceutics and Pharmacokinetics	PHT 607C	2	1	3
Sterile Dosage Forms	PHT 608C	1	-	1
Pharmaceutical Technology	PHT 709C	2	1	3
Advanced Drug Delivery Systems	PHT 810C	2	-	2
Drug Targeting	PHT E11C	1	1	2
Cosmetics Preparations and Cosmeceuticals	PHT E12C	1	1	2
Good Manufacturing Practice	PHT E13C	1	1	2

يرمز الرقم الاول لكود المقرر من اليسار الى الفصل الدراسي والرقمين الاخرين لترتيب المقرر فى القسم العلمى ويرمز الحرف الاول (P) من اليسار الى المقررات التخصصية لكلية الصيدلة. والحرف (E) للمقررات الاختيارية والحرف (C) الي برنامج الصيدلة الإكلينيكية

L: Lecture
P: Practical
T: Tutorial

2- قسم العقاقير

Course Title	Course Code	Credit Hours		
		Lect.	P/T	Total
Medicinal Plants	PHG 101C	2	1	3
Pharmacognosy I	PHG 202C	2	1	3
Pharmacognosy II	PHG 303C	2	1	3
Phytochemistry-I	PHG 504C	2	1	3
Phytochemistry-II	PHG 605C	2	1	3
Phytotherapy	PHG 006C	2	1	3
Nutraceuticals	PHG E07C	1	1	2
Alternative Medicinal Therapies	PHG E08C	1	1	2
Production and Manufacture of Medicinal plants	PHG E09C	1	1	2
Chromatography and Separation Techniques	PHG E10C	1	1	2
Aromatherapy and Herbal Cosmetics	PHG E11C	1	1	2

3- قسم الميكروبيولوجيا والمناعة

Course Title	Course Code	Credit Hours		
		Lect.	P/T	Total
General Microbiology and Immunology	PHM 401C	2	1	3
Pharmaceutical Microbiology and Antimicrobials	PHM 502C	2	1	3
Parasitology and Virology	PHM 603C	2	1	3
Medical Microbiology	PHM 704C	2	1	3
Public Health and Preventive Medicine	PHM 805C	2	-	2
Biotechnology	PHM 906C	2	1	3
Antibiotic Stewardship	PHM E07C	1	1	2
Infection Control	PHM E08C	1	1	2
Bioinformatics	PHM E09C	1	1	2

4- قسم الكيمياء الحيوية والبيولوجيا الجزيئية

Course Title	Course Code	Credit Hours		
		Lect.	P/T	Total
Biochemistry I	PHB 301C	2	1	3
Biochemistry II	PHB 402C	2	1	3
Clinical Biochemistry	PHB 803C	2	1	3
Clinical Nutrition	PHB 904C	1	1	2
Fundamentals of Molecular Diagnostics	PHB E05C	1	1	2
Principles of Cancer Biology	PHB E06C	1	1	2

5- قسم الأدوية والسموم

Course Title	Course Code	Credit Hours		
		Lect.	P/T	Total
Basic Pharmacology	PHL 301C	2	1	3
Pharmacology –I	PHL 402C	2	1	3
Pharmacology-II	PHL 503C	2	1	3
Pharmacology-III	PHL 604C	2	1	3
Drug Information	PHL 705C	1	-	1
Basic and Clinical Toxicology	PHL 806C	2	1	3
Drugs of Abuse	PHL E07C	1	1	2
Bioassay and Biological Standardization)	PHL E08C	1	1	2
Biostatistics	PHL E09C	1	1	2

6- قسم الكيمياء العضوية الصيدلية

Course Title	Course Code	Credit Hours		
		Lect.	P/T	Total
Pharmaceutical Organic Chemistry I	PCO 101C	2	1	3
Pharmaceutical Organic Chemistry II	PCO 202C	2	1	3
Pharmaceutical Organic Chemistry-III	PCO 303C	2	1	3
Diagnostic Spectroscopy	PCO E04C	1	1	2

7- قسم الكيمياء التحليلية الصيدلية

Course Title	Course Code	Credit Hours		
		Lect.	P/T	Total
Pharmaceutical Analytical Chemistry I	PCA 101C	2	1	3
Pharmaceutical Analytical Chemistry II	PCA 202C	2	1	3
Quality Control of Pharmaceuticals	PCA 703C	2	1	3

8- قسم الكيمياء الصيدلية

Course Title	Course Code	Credit Hours		
		Lect.	P/T	Total
Pharmaceutical Chemistry-I	PCP 701C	2	1	3
Pharmaceutical Chemistry-II	PCP 802C	2	1	3
Drug Design	PCP E03C	1	1	2
Artificial Intelligence in Drug Design	PCP E04C	1	1	2
Radiopharmaceutical Chemistry	PCP E05C	1	1	2
Nanochemistry	PCP E06C	1	1	2
Application of Antigene and Antisense Therapy	PCP E07C	1	1	2

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9- قسم ممارسة الصيدلة

Course Title	Course Code	Credit Hours		
		Lect.	P/T	Total
Hospital Pharmacy	PHP 501C	2	1	3
Community Pharmacy Practice	PHP 502C	2	1	3
Clinical Pharmacy Practice	PHP 603C	2	1	3
Clinical Pharmacokinetics	PHP 704C	2	1	3
Pharmacotherapy of Endocrine and Renal Disorders	PHP 805C	2	1	3
Oncology Pharmacotherapy and Radiopharmacy	PHP 906C	2	1	3
Pharmacotherapy of Respiratory Diseases	PHP 907C	2	1	3
Pharmacotherapy of Gastrointestinal Diseases	PHP 908C	2	1	3
Critical Care Pharmacotherapy	PHP 009C	1	1	2
Pharmacotherapy of Dermatological, Reproductive and Musculoskeletal Diseases	PHP 010C	2	1	3
Pharmacotherapy of Pediatric	PHP 011C	2	1	3
Pharmacotherapy of Cardiovascular Diseases	PHP 012C	2	1	3
Pharmacotherapy of Neuropsychiatric Diseases	PHP 013C	1	1	2
Clinical Research and Pharmacovigilance	PHP 014C	1	-	1
Updates in Pharmacotherapy	PHP E15C	1	1	2
Advances in Pharmacy Practice	PHP E16C	1	1	2
Pharmacometrics	PHP E17C	1	1	2

المقررات الطبية وغير الصيدلانية ومُتطلبات الجامعة والاقسام المشرفة عليها*:

Course Title	Course Code	Credit Hours			Department responsible for supervision
		Lect.	P/T	Total	
Cell Biology	MED 201	1	1	2	مقرر يدرس بواسطة قسم الكيمياء الحيوية والميكروبيولوجي
Anatomy and Histology	MED 202	2	1	3	Pharmacy Practice
Medical Terminology	MED 203	1	-	1	Pharmacology and Toxicology
Physiology and Pathophysiology	MED 304	2	1	3	Pharmacology and Toxicology
Pathology	MED 405	1	1	2	Microbiology and Immunology
First Aid and Basic life Support	MED 006	1	-	1	Pharmacology and Toxicology
Information Technology	NP 101	1	1	2	Pharmaceutical Chemistry
Psychology	NP 202	1	-	1	Pharmacy Practice
Scientific Writing	NP 303	1	1	2	Biochemistry and Molecular Biology
Communication Skills	NP404	-	1	1	Biochemistry and Molecular Biology
Marketing and Pharmacoeconomics	NP 905	2	-	2	Pharmacy Practice
Entrepreneurship	NP 006	1	-	1	Pharmaceutics and Industrial Pharmacy
Professional Ethics	NP 007	1	-	1	Pharmaceutical Organic Chemistry
Mathematics	MTH 101	1	-	1	Pharmaceutics and Industrial Pharmacy
Human Rights and Fighting Corruption	UR 101	1	-	1	Pharmaceutical Organic Chemistry
English Language	UR 102	2	-	2	Pharmaceutical Analytical Chemistry

*يُرمز الرقم الاول لكود المقرر من اليسار الى الفصل الدراسي والرقمين الاخرين لترتيب المقرر في اللائحة طبقاً للكود الخاص به

4- مقررات اختيارية*

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

*Each elective course has its defined prerequisite illustrated in course contents

Course Title	Course Code	Credit Hours		
		L	P/T	Total
Drug Targeting	PHT E11C	1	1	2
Cosmetics Preparations and Cosmeceuticals	PHT E12C	1	1	2
Good Manufacturing Practice	PHT E13C	1	1	2
Nutraceuticals	PHG E07C	1	1	2
Alternative Medicinal Therapies	PHG E08C	1	1	2
Production and Manufacture of Medicinal plants	PHG E09C	1	1	2
Chromatography and Separation Techniques	PHG E10C	1	1	2
Aromatherapy and Herbal Cosmetics	PHG E11C	1	1	2
Antibiotic Stewardship	PHM E07C	1	1	2
Infection Control	PHME08C	1	1	2
Bioinformatics	PHM E09C	1	1	2
Fundamentals of Molecular Diagnostics	PHB E05C	1	1	2
Principles of Cancer Biology	PHB E06C	1	1	2
Drugs of Abuse	PHL E07C	1	1	2
Bioassay and Biological Standardization)	PHL E08C	1	1	2

Biostatistics	PHL E09C	1	1	2
Diagnostic Spectroscopy	PCO E04C	1	1	2
Drug Design	PCP E03C	1	1	2
Artificial Intelligence in Drug Design	PCP E04C	1	1	2
Radiopharmaceutical Chemistry	PCP E05C	1	1	2
Nanochemistry	PCP E06C	1	1	2
Application of Antigene and Antisense Therapy	PCP E07C	1	1	2
Updates in Pharmacotherapy	PHP E15C	1	1	2
Advances in Pharmacy Practice	PHP E16C	1	1	2
Pharmacometrics	PHP E17C	1	1	2

L: Lecture
P: Practical
T: Tutorial

- لمجلس الكلية طرح المقررات الاختيارية من الجدول السابق في كل مستوى/فصل دراسي وذلك بعد أخذ رأي مجالس الأقسام العلمية المُختصة ويمكن للكلية إضافة مقررات اختيارية أخرى بشرط موافقة مجلس الجامعة بعد إبداء المبررات اللازمة وإخطار لجنة القطاع.

مـــــادة (18) :

الخطة الدراسية (مرفق 1)

مـــــادة (19) :

محتوى المقررات الدراسية (مرفق 2)

مـــــادة (20) :

تحديث المقررات الدراسية

يجوز تحديث نسبة لا تتجاوز 20% من محتوى المقررات الدراسية بناءً على اقتراح مجلس القسم العلمى المُختص وموافقة مجلس الكلية واعتماد مجلس الجامعة بعد إبداء المبررات اللازمة.

مـــــادة (21) :

برنامج التدريب لسنة الامتياز:

يتم وضع برنامج مُفصل للتدريب للسنة النهائية (سنة الامتياز) فى دورات تناوبية فى ملحق به لائحة برنامج التدريب التناوبى بصورة ممنهجة تفصيلية.

مـــرفـق رقـــم 1

Programme Curriculum

الخطة الدراسية

Table (1)

Semester (1)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	P/T	Total		Period	P/T.	Wr	Oral		
Pharmaceutical Analytical Chemistry I	PCA 101C	2	1	3	Registration	15	25	50	10	100	2
Pharmaceutical Organic Chemistry I	PCO 101C	2	1	3	Registration	15	25	50	10	100	2
Pharmacy Orientation	PHT 101C	1	-	1	Registration	25	-	75	-	100	1
Medicinal Plants	PHG 101C	2	1	3	Registration	15	25	50	10	100	2
Information Technology	NP 101C	1	1	2	Registration	15	25	60	-	100	1
Mathematics	MTH 101C	1	-	1	Registration	25	-	75	-	100	1
Human Rights and Fighting Corruption	UR 101C	1	-	1	Registration	25	-	75	-	100	1
English Language	UR 102C	2	-	2	Registration	25	-	75	-	100	2
Total		9+3	4	13+3						600	

- *Lect.* = Lecture
- *Period.* = Periodical
- *P/T.* = Practical / Tutorial
- *Wr.* = Written

Table (2)

Semester (2)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect	P/T	Total		Period	P/T	Wr	Oral		
Pharmaceutical Analytical Chemistry II	**PCA 202C**	**2**	**1**	**3**	Pharmaceutical analytical Chemistry I	**15**	**25**	**50**	**10**	**100**	**2**
Pharmaceutical Organic Chemistry II	**PCO 202C**	**2**	**1**	**3**	Pharmaceutical Organic Chemistry-I	**15**	**25**	**50**	**10**	**100**	**2**
Cell Biology	**MED 201C**	**1**	**1**	**2**	Registration	**15**	**25**	**50**	**10**	**100**	**1**
Anatomy and Histology	**MED 202C**	**2**	**1**	**3**	Registration	**15**	**25**	**60**	**-**	**100**	**2**
Physical Pharmacy	**PHT 202C**	**2**	**1**	**3**	Registration	**15**	**25**	**50**	**10**	**100**	**2**
Pharmacognosy I	**PHG 202C**	**2**	**1**	**3**	Medicinal Plants	**15**	**25**	**50**	**10**	**100**	**2**
Medical Terminology	**MED 203C**	**1**	**-**	**1**	Registration	**25**	**-**	**75**	**-**	**100**	**1**
Psychology	**NP 202C**	**1**	**-**	**1**	Registration	**25**	**-**	**75**	**-**	**100**	**1**
Total		**13**	**6**	**19**						**800**	

- *Lect.* = Lecture
- *Period.* = Periodical
- *P/T.* = Practical / Tutorial
- *Wr.* = Written

Table (3)

Semester (3)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect	P/T	Total		Period.	P/T	Wr.	Oral		
Pharmaceutical Organic Chemistry-III	**PCO 303C**	**2**	**1**	**3**	Pharmaceutical Organic Chemistry-I	**15**	**25**	**50**	**10**	**100**	**2**
Biochemistry I	**PHB 301C**	**2**	**1**	**3**	Registration	**15**	**25**	**50**	**10**	**100**	**2**
Pharmacognosy II	**PHG 303C**	**2**	**1**	**3**	Medicinal plants	**15**	**25**	**50**	**10**	**100**	**2**
Basic Pharmacology	**PHL 301C**	**2**	**1**	**3**	Registration	**15**	**25**	**50**	**10**	**100**	**2**
Physiology and Pathophysiology	**MED 304C**	**2**	**1**	**3**	Registration	**15**	**25**	**50**	**10**	**100**	**2**
Pharmaceutical Dosage Forms I	**PHT 303C**	**2**	**1**	**3**	Physical Pharmacy	**15**	**25**	**50**	**10**	**100**	**2**
Total		**12**	**6**	**18**						**600**	

- *Lect.* = Lecture
- *Period.* = Periodical
- **P/T**= Practical/ Tutorial
- *Wr.* = Written

Table (4)

Semester (4)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	P/T	Total		Period.	P/T	Wr.	Oral		
Pharmacology –I	**PHL 402C**	**2**	**1**	**3**	Basic Pharmacology	**15**	**25**	**50**	**10**	**100**	**2**
General Microbiology and Immunology	**PHM 401C**	**2**	**1**	**3**	Registration	**15**	**25**	**50**	**10**	**100**	**2**
Scientific Writing and Communication Skills	**NP 403C**	**1**	**1**	**2**	Registration	**15**	**25**	**60**	**-**	**100**	**1**
Pathology	**MED 405C**	**2**	**-**	**2**	Registration	**25**	**-**	**75**	**-**	**100**	**2**
Pharmaceutical Dosage Forms-II	**PHT 404C**	**2**	**1**	**3**	Physical Pharmacy	**15**	**25**	**50**	**10**	**100**	**2**
Biochemistry II	**PHB 402C**	**2**	**1**	**3**	Biochemistry I	**15**	**25**	**50**	**10**	**100**	**2**
Pharmacy Legislation and Practice Ethics	**PHT 405C**	**1**	**-**	**1**	Registration	**25**	**-**	**75**	**-**	**100**	**1**
Total		**12**	**5**	**17**						**700**	

- ***Lect.*** = Lecture
- ***Period.*** = Periodical
- **P/T** = Practical/ Tutorial
- ***Wr.*** = Written

Table (5)

Semester (5)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	P/T	Total		Period.	P/T	Wr.	Oral		
Pharmacology-II	**PHL 503C**	**2**	**1**	**3**	Physiology and pathophysiology	**15**	**25**	**50**	**10**	**100**	**2**
Pharmaceutical Microbiology and Antimicrobials	**PHM 502C**	**2**	**1**	**3**	General Microbiology & Immunology	**15**	**25**	**50**	**10**	**100**	**2**
Hospital Pharmacy	**PHP 501C**	**2**	**1**	**3**	Pharmacology -I	**15**	**25**	**50**	**10**	**100**	**2**
Pharmaceutical Dosage Forms-III	**PHT 506C**	**2**	**1**	**3**	Pharmaceutical Dosage Forms-I	**15**	**25**	**50**	**10**	**100**	**2**
Phytochemistry-I	**PHG 504C**	**2**	**1**	**3**	Pharmacognosy II	**15**	**25**	**50**	**10**	**100**	**2**
Community Pharmacy Practice	**PHP 502C**	**2**	**1**	**3**	Pharmacology -I	**15**	**25**	**50**	**10**	**100**	**2**
Total		**12**	**6**	**18**						**600**	

- ***Lect.*** = Lecture
- ***Period.*** = Periodical
- **P/T** = Practical/ tutorial
- ***Wr.*** = Written

Table (6)

Semester (6)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	P/T	Total		Period.	P/T	Wr	Oral		
Pharmacology-III	**PHL 604C**	**2**	**1**	**3**	Pharmacology-II	**15**	**25**	**50**	**10**	**100**	**2**
Phytochemistry-II	**PHG 605C**	**2**	**1**	**3**	Phytochemistry-I	**15**	**25**	**50**	**10**	**100**	**2**
Biopharmaceutics and Pharmacokinetics	**PHT 607C**	**2**	**1**	**3**	Pharmaceutical Dosage Forms III	**15**	**25**	**50**	**10**	**100**	**2**
Parasitology and Virology	**PHM 603C**	**2**	**1**	**3**	General Microbiology and Immunology	**15**	**25**	**50**	**10**	**100**	**2**
Clinical Pharmacy Practice	**PHP 603C**	**2**	**1**	**3**	Hospital Pharmacy	**15**	**25**	**50**	**10**	**100**	**2**
First Aid and Basic Life Support	**MED 606C**	**1**	**1**	**2**	Physiology and Pathophysiology	**15**	**25**	**60**	**-**	**100**	**1**
Sterile Dosage Forms	**PHT 614C**	**1**	**-**	**1**	Pharmaceutical Dosage Forms-II	**15**	**-**	**75**	**10**	**100**	**1**
Total		**12**	**6**	**18**						**700**	

- ***Lect.*** = Lecture
- ***Period.*** = Periodical
- **P/T** = Practical/ Tutorial
- ***Wr.*** = Written

Table (7)

Semester (7)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect	P/T	Total		Period.	P/T	Wr.	Oral		
Pharmaceutical Chemistry-I	**PCP 701C**	**2**	**1**	**3**	Pharmaceutical Organic Chemistry-II	**15**	**25**	**50**	**10**	**100**	**2**
Drug Information	**PHL 705C**	**1**	**-**	**1**	Pharmacology-III	**15**	**-**	**75**	**10**	**100**	**1**
Clinical Pharmacokinetics	**PHP 704C**	**2**	**1**	**3**	Biopharmaceutics and Pharmacokinetics	**15**	**25**	**50**	**10**	**100**	**2**
Pharmaceutical Technology	**PHT 709C**	**2**	**1**	**3**	Pharmaceutical Dosage Forms-III	**15**	**25**	**50**	**10**	**100**	**2**
Medical Microbiology	**PHM 704C**	**2**	**1**	**3**	Pharmaceutical Microbiology	**15**	**25**	**50**	**10**	**100**	**2**
Quality Control of Pharmaceuticals	**PCA 703C**	**2**	**1**	**3**	Pharmaceutical Analytical Chemistry-II	**15**	**25**	**50**	**10**	**100**	**2**
Elective course	**PE -**	**1**	**1**	**2**	As Defined	**15**	**25**	**50**	**10**	**100**	**1**
Total		**12**	**6**	**18**						**700**	

- ***Lect.*** = Lecture
- ***Period.*** = Periodical
- **P/T.** = Practical/Tutorial
- ***Wr.*** = Written

Table (8)

Semester (8)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect.	P/T	Total		Period.	P/T	Wr.	Oral		
Pharmaceutical Chemistry-II	**PCP 802C**	**2**	**1**	**3**	Pharmaceutical Chemistry I	**15**	**25**	**50**	**10**	**100**	**2**
Pharmacotherapy of Endocrine and Renal Disorders	**PHP 805C**	**2**	**1**	**3**	Pharmacology III	**15**	**25**	**50**	**10**	**100**	**2**
Basic and Clinical Toxicology	**PHL 806C**	**2**	**1**	**3**	Pharmacology-III	**15**	**25**	**50**	**10**	**100**	**2**
Advanced Drug Delivery Systems	**PHT 810C**	**2**	**-**	**2**	Pharmaceutical Dosage Forms-III	**25**	**-**	**75**	**-**	**100**	**2**
Clinical Biochemistry	**PHB 803C**	**2**	**1**	**3**	Biochemistry-II	**15**	**25**	**50**	**10**	**100**	**2**
Public Health and Preventive Medicine	**PHM 805C**	**2**	**-**	**2**	Medical Microbiology	**25**	**-**	**75**	**-**	**100**	**2**
Elective Course	**PE -**	**1**	**1**	**2**	As Defined	**15**	**25**	**50**	**10**	**100**	**1**
Total		**13**	**5**	**18**						**700**	

- ***Lect.*** = Lecture
- ***Period.*** = Periodical
- **P/T.** = Practical/Tutorial
- ***Wr.*** = Written

Table (9)

Semester (9)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect	P/T	Total		Period	P/T	Wr.	Oral		
Oncology Pharmacotherapy and Radiopharmacy	PHP 906C	2	1	3	Pharmacology III	15	25	50	10	100	2
Pharmacotherapy of Respiratory Diseases	PHP 907C	2	1	3	Pharmacology-II	15	25	50	10	100	2
Biotechnology	PHM 906C	2	1	3	Pharmaceutical Microbiology	15	25	50	10	100	2
Pharmacotherapy of Gastrointestinal Diseases	PHP 908C	2	1	3	Pharmacology-II	15	25	50	10	100	2
Clinical Nutrition	PHB 904C	1	1	2	Biochemistry-II	15	25	50	10	100	1
Marketing and Pharmacoeconomics	NP 904C	2	-	2	Community pharmacy	25	-	75	-	100	2
Entrepreneurship	NP 905C	1	-	1	Registration	25	-	75	-	100	1
Elective Course	PE -	1	1	2	As Defined	15	25	50	10	100	1
Total		13	6	19						800	

- *Lect.* = Lecture
- *Period.* = Periodical
- **P/T** = Practical/ Tutorial
- *Wr.* = Written

Table (10)

Semester (10)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Exam. Hours
		Lect	P/T	Total		Period.	P/T	Wr.	Oral		
Critical Care Pharmacotherapy	**PHP 009C**	**1**	**1**	**2**	Pharmacology-III	**15**	**25**	**50**	**10**	**100**	**1**
Pharmacotherapy of Dermatological, Reproductive and Musculoskeletal Diseases	**PHP 010C**	**2**	**1**	**3**	Pharmacology I	**15**	**25**	**50**	**10**	**100**	**2**
Pharmacotherapy of Pediatric	**PHP 011C**	**2**	**1**	**3**	Pharmacology-III	**15**	**25**	**50**	**10**	**100**	**2**
Pharmacotherapy of Cardiovascular Diseases	**PHP 012C**	**2**	**1**	**3**	Pharmacology-I	**15**	**25**	**50**	**10**	**100**	**2**
Phytotherapy	**PHG 006C**	**2**	**1**	**3**	Phytochemistry-II	**15**	**25**	**50**	**10**	**100**	**2**
Pharmacotherapy of Neuropsychiatric Diseases	**PHP 013C**	**1**	**1**	**2**	Pharmacology-II	**15**	**25**	**50**	**10**	**100**	**1**
Clinical Research and Pharmacovigilance	**PHP 014C**	**1**	**-**	**1**	Drug Information	**25**	**-**	**75**	**-**	**100**	**1**
Elective	**PE -**	**1**	**1**	**2**	As Defined	**15**	**25**	**50**	**10**	**100**	**1**
Total		**12**	**7**	**19**						**800**	

- ***Lect.*** = Lecture
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- ***Wr.*** = Written

مرفق رقم (2) المحتوى العلمى

PHT 101C 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. The incompatibilities occurring during dispensing are also considered.

PHT 202C Physical Pharmacy (2+1)

This course provides students with knowledge of physicochemical 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 it also covers the rheological behavior of dosage forms.

PHT 303C 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.

PHT 404C 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, manufacturing and quality control of traditional dermatological semisolid dosage forms (creams, ointments, gels and pastes), principles of complexation and cosmetic products. It also describes the formulation, manufacturing, and quality control of aerosols.

PHT 405C Pharmacy Legislation 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.

PHT 506C 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, manufacturing and quality control of solid dosage forms including powders, granules, tablets, capsules and suppositories.

PHT 607C Biopharmaceutics and 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 enhaneing 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.

PHT 608C Sterile Dosage Forms (1+0)

The course covers the principals of formulation, development, sterilization, packaging and Q.C of sterile dosage forms.

PHT 709C 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.

PHT 810C 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 Nano carrier-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.

PHG 101C 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

PHG 202C 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.

PHG 303C 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, subterranean, herbs, and 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.

PHG 504C 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.

PHG 605C 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

PHG 006C 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.

PHM 401C General Microbiology and Immunology (2+1)

Eukaryotic and prokaryotic cells, nomenclature of microorganisms, cell structure and function, cultural characteristics, spores, viruses, fungi, microbial metabolism, microbial growth, bacterial genetics, molecular genetics, genetic variations and gene transfer in prokaryotes. Immunology: Host parasite relationship, non-specific and specific immunity, mechanism of protective immunity, molecular and cellular immunology, including antigen and antibody structure, function and interactions, effect or mechanisms, complement, and cell mediated immunity. Active and passive immunization. Hypersensitivity, Immunodeficiency disorders, Autoimmunity and auto-immune disease, organ transplantation, cancer immunology, and immunological tolerance and serological reactions.

PHM 502C Pharmaceutical Microbiology and Antimicrobials (2+1)

Topics that will be covered include definition and classification of antimicrobial agents as well as non-antimicrobial agents (biocides), mechanisms of action and mechanisms of resistance to antimicrobial agents and biocides. Clinical uses of antimicrobial agents and biocides. Evaluation of antimicrobial and no-antimicrobial agents. Sterilization: definition of sterilization, kinetic of microbial death. Various methods of sterilization including official and non-official methods and their applications. Validations of sterilization processes and use of sterilization indicators.

PHM 603C Parasitology and Virology (2+1)

Topics that will be covered include: Various parasitic infections of humans focusing on biological, epidemiological and ecological aspects of parasites causing diseases to humans including protozoology; amoebae; ciliate; flagellates; blood and tissue sporozoa. Medical helminthology; nematodes; cestodes; trematodes, and arthropods. 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. The other part of the course 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.

PHM 704C Medical Microbiology (2+1)

Topic covered include: Infections caused by medically-important bacteria (Gram-positive cocci and rods, Gram-negative cocci and rods, Mycobacteria, and atypical bacteria), and fungi affecting different systems of the human body. Route of transmission, clinical manifestations, laboratory diagnosis as well as treatment and prevention of such diseases.

PHM 805C Public Health and Preventive Medicine (2+0)

Topics that will be covered include : Introduction to epidemiology, epidemiological studies, communicable and non-communicable diseases, control of communicable diseases, immunization, occupational and zoonotic infections, environmental health, water-borne and food borne diseases, milk-borne diseases, nutrition and family health, environmental pollution, waste water treatment, waste disposal.

PHM 906C Biotechnology (2+1)

Topics that will be covered include Introduction to biotechnology, biology of industrially relevant microorganisms, biophysical and biochemical processes, upstream and downstream processing, optimization of fermentation, bioconversion biodegradation and bioremediations. Introduction to tissue culture and genetic engineering. Novel techniques used for improvement of economically important plants and animals. Manipulation of living organisms, especially at the molecular level, to produce novel biopharmaceuticals, monoclonal antibodies. Stem cells and gene therapy.

PHB 301C 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).

PHB 402C 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.

PHB 803C 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.

PHB 904C Clinical Nutrition (1+1)

Measures of healthy life-style – Macronutrients and calculation of calories – Basal metabolic rate (BMR) – Recommended 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.

PHL 301C Basic Pharmacology (2+1)

This course provides the principles underlying the actions of drugs; including pharmacokinetics, and pharmacodynamics of drugs action in addition to drug-receptor interactions, and drug metabolism. It explores the fundamental mechanism of drug action emphasizing the modulation of interactions between endogenous ligands and targets. Key target types include receptors, enzymes, transporter proteins, ion channels and nucleic acids. Key concepts include enzyme action, regulation, inhibition and signal transduction. In addition, the course provides the basic principles of drug absorption, distribution, metabolism and excretion. As well as drug interactions and adverse effects and toxicities of drugs

PHL 402C Pharmacology –I (2+1)

This course integrates principles of pharmacology with conceptual knowledge of physiology and pathophysiology to disease processes regarding the autonomic, neuromuscular, cardiovascular, endocrine systems. Blood, respiratory, digestive and renal systems. Additionally, autacoids and autacoids related agents are also studied.

PHL 503C Pharmacology-II (2+1)

This course integrates principles of pharmacology with conceptual knowledge of physiology and pathophysiology disease processes regarding drugs acting on central nervous system, cardiovascular system, gastro-intestinal and pulmonary systems. The anti-inflammatory, analgesics as well as gout treatments are also within the scope of the course.

PHL 604C Pharmacology-III (2+1)

This course integrates principles of pharmacology with conceptual knowledge of physiology and pathophysiology disease processes regarding drugs acting on endocrine system. Chemotherapeutic drugs including antimicrobials, antiviral, antifungal, antiprotozoal, anthelmintic as well as anticancer and immunomodulatory drugs or agents all are within the scope of the course. Stem cell therapy is also included.

PHL 705C 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. The course includes monitoring adverse drug reactions, drug and herbal product interactions, and medication errors. This course is intended to introduce students to drug information skills required to deliver pharmaceutical care. Students will be trained to develop the skills to obtain information from various literature and reference sources to answer drug information questions efficiently and educate the patients with their treatments. Basic pharmacoeconomics are also included.

PHL 806C Basic and Clinical Toxicology (2+1)

To ensure that the students have the necessary knowledge and skills, as well as comprehensive understanding of the basics of toxicology enabling them to have detailed knowledge and to develop professional competence in the recognition, solving, and discussion of different toxicological cases. It includes:basics and concepts of toxicology including the mechanism of toxicity, target organ and treatment of toxicity. Toxic groups including heavy metals, toxic gases, animal, plant and marine poisons, pesticides and radiation hazards are covered. In addition, toxicities of different drug groups and their antidotes are also within the scope of the course. Environmental, occupational, reproductive and genetic toxicology as well as drug abuse are also included. Postmortem sampling for detection of poisons, methods of detection, interpretation of results and writing of a report are also covered.

PCO 101C Pharmaceutical Organic Chemistry I (2+1) Basic concepts (nomenclature and structures) in addition to chemistry of the different aliphatic organic compounds (hydrocarbons, halogenated hydrocarbons, alcohols, ethers, carbonyl compounds, amines, carboxylic acids and their derivatives).
PCO 202C Pharmaceutical Organic Chemistry II (2+1) Chemistry of aromatic organic compounds including aromatic hydrocarbons, aryl halides, aromatic amines, phenols, aromatic carboxylic acids, aromatic aldehydes and ketones and polynuclear aromatic hydrocarbons. Introduction to use of spectroscopic methods in pharmaceutical organic chemistry (UV,IR, MS, NMR).
PCO 303C Pharmaceutical Organic Chemistry-III (2+1) Stereochemistry and Stereoisomerism. Stereochemistry of different organic reactions (substitutions,additions and eliminations). Chemistry of carbohydrates. Heterocyclic compounds (nomenclature, synthesis and reactions).
PCA 101C Pharmaceutical Analytical Chemistry I (2+1) Chemical equilibrium, Rate of reaction, Chemical Kinetics, , order of reaction, molecularity, Stechiometry. Types of chemical reactions – calculations of concentrations of substances. Introduction to qualitative and quantitative inorganic chemistry, acid-base theory, titration curve and buffer solutions. Precipitimetry factors affecting precipitate formation and pharmaceutical application
PCA 202C Pharmaceutical Analytical Chemistry II (2+1) Complexometric titrations and oxidation-reduction titrations (electrical properties of redox systems, Nernest equation factors affecting oxidation potential, redox titration curves, pharmaceutical application on redox reaction). Electrochemistry (potentiometry, conductometry; and polarography).
PCA 703C Quality Control of Pharmaceuticals (2+1) I-Quality control & quality assurance of pharmaceuticals. 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.

VII- Drug Q.C. (Chemical aspect).

VIII-Instrumental Analysis:Spectroscopic methods of analysis which include uv/vis spectroscopy and itsapplications in pharmaceutical analysis.Fluorimetric methods, principal and applications in pharmaceutical analysis. Atomic spectroscopy.Chromatographic methods

PCP 701C Pharmaceutical Chemistry-I (2+1)

This course will introduce the students to the field of medicinal chemistry and its application in drug discovery. The students will gain insight about different phases of drug metabolism and study different classes of cytotoxic agents as anti-infective agents (antibiotics, antimycobacterial antifungal, antiparasitic, antiviral agents and antiseptic agents) and anticancer agents.

PCP 802C Pharmaceutical Chemistry-II (2+1)

This course will focus on human health homeostasis and their relevant medications as central nervous system acting drugs, autonomic nervous system acting drugs, local anesthetics and analgesics. Additionally, different classes of cardiovascular system acting drugs, diuretics, steroids, antihistaminic, antidiabetics and antithyroid analogs will be discussed.

PHP 501C Hospital Pharmacy (2+1)

The course aims to introduce students to hospital pharmacy organization, structure, management and related activities on both technical and administrative levels. Administrative services include: the pharmacy, the pharmacy and therapeutic committee and policy making, the hospital formulary, medication purchasing, distribution and dispensing systems. The pharmaceutical (technical) services include preparation of Intravenous (IV) admixtures, parenteral nutrition and handling of cytotoxic drugs (TPN) fluids.

PHP 502C Community Pharmacy Practice (2+1)

The course provides concepts of pharmacy practice, clinical pharmacy, pharmaceutical care and the progress in pharmacy profession; principles of communication skills and counseling of patients. It covers steps of good prescription practice, qualifies students to interact professionally with patients over the counter and enable them to deal with common problems usually encountered such as diarrhea, constipation, PUD, common cold, influenza, sinusitis, allergic rhinitis, musculosketal symptoms, fever, headache., etc.

PHP 603C Clinical Pharmacy Practice (2+1)

This course provides principles of clinical pharmacy to introduce pharmacists to the health care delivery system as health care providers and strong members in health care team by increasing student knowledge regarding drug related needs for effective pharmacist therapeutic interventions. It provides knowledge and concepts regarding patient history, physical examination, clinical rounding and assessment of patient compliance, therapeutic planning for disease- and drug-related problems. The course also, covers principles of special care populations, types of drug related problems with detailed focus on drug induced diseases, clinically significant drug interactions and interpretation of patient sheet

PHP 704C Clinical Pharmacokinetics (2+1)

This course provides basic principles of clinical pharmacokinetics and their application to the clinical setting. Single Intravenous bolus and oral kinetics, IV infusion, multiple IV bolus, short infusion, intermittent infusion & oral dosing, non-linear pharmacokinetics, pharmacokinetic models. The course provides principles regarding TDM, dosage regimen design, dosage individualization of drugs with narrow therapeutic index and their therapeutic use, based on pharmacokinetic principles, respecting the disease state of patients.

PHP 805C Pharmacotherapy of Endocrine and Renal Disorders (2+1)

The course provides a patient-Centered pathophysiologic approach pharmacotherapy of different endocrinologic disorders [Diabetes, thyroid disorder, etc.] and different renal disorders [acute and chronic renal failure, uremic syndrome, etc.]. This is expanded through details on the etiology, pathogenesis, clinical presentation, investigations, differential diagnosis, prognosis, and diagnosis and treatment guidelines of the disease states. The students will be expected to use pathophysiologic information and drug therapy characteristics to develop and support a pharmacotherapeutic plan to treat each disease state. Integrated case-based learning will be provided to students with the opportunity to identify key subjective/objective information and to develop appropriate, evidence-based, assessments and cost-effective care plans. Emphasis will be on interpretation of clinical data pertinent to each disease state, identifying drug-related problems, identifying appropriate therapeutic goals, drug indications and regimens, and monitoring parameters for efficacy and toxicity.

PHP 906C Oncology Pharmacotherapy and Radiopharmacy (2+1)

The course provides a patient-Centered pathophysiologic approach pharmacotherapy of oncology. This is expanded through details on the etiology, staging, types, pathogenesis, clinical presentation, investigations, differential diagnosis, prognosis, diagnosis and treatment guidelines using chemo- /radio- or immune-therapeutic regimens. The course also, covers the principles of oncology supportive care in details. The students will be expected to use pathophysiologic information and chemotherapy and or radiotherapy together with adjuvant and palliative therapy to develop and support a pharmacotherapeutic plan management. Emphasis will be on interpretation of clinical data pertinent to each disease state, identifying drug-related problems, identifying appropriate therapeutic goals, drug indications and regimens, and monitoring parameters for efficacy and toxicity.

PHP 907C Pharmacotherapy of Respiratory Diseases (2+1)

The course provides a patient-Centered pathophysiologic approach pharmacotherapy of different pulmonary disorders [bronchial asthma, COPD, corpulmonal, pul HTN, Cystic fibrosis, etc.]. This is expanded through details on the etiology, pathogenesis, clinical presentation, investigations, differential diagnosis, prognosis, diagnosis and treatment guidelines of the disease states. The students will be expected to use pathophysiologic information and drug therapy characteristics to develop and support a pharmacotherapeutic plan to treat each disease state. Integrated case-based learning will be provided to students with the opportunity to identify key subjective/objective information and to develop appropriate, evidence-based, assessments and care plans. Emphasis will be on interpretation of clinical data pertinent to each disease state, identifying drug-related problems, identifying appropriate therapeutic goals, drug indications and regimens, and monitoring parameters for efficacy and toxicity.

PHP 908C Pharmacotherapy of Gastrointestinal Diseases (2+1)

The course provides a patient-Centered pathophysiologic approach pharmacotherapy of different gastrointestinal disorders [Hepatic disorders including viral hepatitis, portal HTN, peptic ulcer, gastro-esophageal reflux disease, inflammatory bowel diseases and irritable bowel syndrome, etc.]. This is expanded through details on the etiology, pathogenesis, clinical presentation, investigations, differential diagnosis, prognosis, diagnosis and treatment guidelines of the disease states. The students will be expected to use pathophysiologic information and drug therapy characteristics to develop and support a pharmacotherapeutic plan to treat each disease state. Integrated case-based learning will be provided to students with the opportunity to identify key subjective/objective information and to develop appropriate, evidence-based, assessments and cost-effective care plans.

PHP 009C Critical Care Pharmacotherapy (1+1)

The course provides a patient-Centered pathophysiologic approach pharmacotherapy of different critical care illness [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, etc.]. This is expanded through details on the etiology, pathogenesis, clinical presentation, investigations, differential diagnosis, prognosis, diagnosis and treatment guidelines of the disease states. The students will be expected to use pathophysiologic information and drug therapy characteristics to develop and support a pharmacotherapeutic plan to treat each disease state. Integrated case-based learning will be provided to students with the opportunity to identify key subjective/objective information and to develop appropriate, evidence-based, assessments and cost-effective care plans.

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PHP 010C Pharmacotherapy of Dermatological, Reproductive and Musculoskeletal Diseases (2+1)

The course provides a patient-Centered pathophysiologic approach pharmacotherapy of different dermatologic disorders[infective and non-infective skin diseases, sexually transmitted diseases, male infertility, and women health, etc.] and different musculoskeletal disorders. This is expanded through details on the etiology, pathogenesis, clinical presentation, investigations, differential diagnosis, prognosis, diagnosis and treatment guidelines of the disease states. The students will be expected to use pathophysiologic information and drug therapy characteristics to develop and support a pharmacotherapeutic plan to treat each disease state.

PHP 011C Pharmacotherapy of Pediatric (2+1)

The course provides a patient-Centered pathophysiologic approach pharmacotherapy of different pediatric disorders including nutritional disorders and infant feedings. This is expanded through details on the etiology, pathogenesis, clinical presentation, investigations, differential diagnosis, prognosis, diagnosis and treatment guidelines of the disease states. The students will be expected to use pathophysiologic information and drug therapy characteristics to develop and support a pharmacotherapeutic plan to treat each disease state.

PHP 012C Pharmacotherapy of Cardiovascular Diseases (2+1)

The course provides a patient-Centered pathophysiologic approach pharmacotherapy of different cardiovascular disorders [HTN, HF, arrhythmias, IHD including ACS, etc.]. This is expanded through details on the etiology, pathogenesis, clinical presentation, investigations, differential diagnosis, prognosis, diagnosis and treatment guidelines of the disease states. The students will be expected to use pathophysiologic information and drug therapy characteristics to develop and support a pharmacotherapeutic plan to treat each disease state. Integrated case-based learning will be provided to students with the opportunity to identify key subjective/objective information and to develop appropriate, evidence-based, assessments and care plans. Emphasis will be on interpretation of clinical data pertinent to each disease state, identifying drug-related problems, identifying appropriate therapeutic goals, drug indications and regimens, and monitoring parameters for efficacy and toxicity.

PHP 013C Pharmacotherapy of Neuropsychiatric Diseases (1+1)

The course provides a patient-Centered pathophysiologic approach pharmacotherapy of neuropsychiatric diseases (segmental health disorders, schizophrenia, depression, anxiety, seizure disorders, parkinsonism, migraines, dementia and Alzheimer's disease). This is expanded through details on the etiology, pathogenesis, clinical presentation, investigations, differential diagnosis, prognosis, diagnosis and treatment guidelines of the disease states. The students will be expected to use pathophysiologic information and drug therapy characteristics to develop and support a pharmacotherapeutic plan to treat each disease state. Integrated case-based learning will be provided to students with the opportunity to identify key subjective/objective information and to develop appropriate, evidence-based, care plans.

PHP 014C 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.

المقررات الطبية وغير الصيدلانية:

MED 201C Cell Biology (1+1)

مقرر يدرس بواسطة قسم الكيمياء الحيوية والميكروبيولوجى

The cell theory and cell structure (membranous and non- membranous organelles- cell inclusions and nucleus - macromolecules of the cell) – DNA and genetic code – cell cycle and control of cell number – from gene to protein (transcription, protein synthesis) - cellular energetic; and cellular communication, transformation; transport, receptors, and cell signaling.

MED 202C 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.

MED 203C Medical terminology (1+0)

To ensure that the students have the necessary competency enabling them to recognize, analyze, synthesize, and apply medical terms as well as universally approved abbreviations related to the health profession, medical and paramedical. This course deals with basic components of medical terms (roots, prefixes, suffixes, and linking or combining vowels) and how does the medical terminology work by combining these basic components. The course also includes commonly used prefixes, and roots of body system, as well as the commonly used medical abbreviations.

MED 304C Physiology and Pathophysiology (2+1)

Physiology

To ensure that the students have the necessary knowledge & skills enabling them to develop professional competency in the recognition & discussion of different physiological and Pathophysiology aspects of the major body organs and system pertinent to this course and in the application of such competencies in the specialist areas. This course covers the physiological function of different organs including physiology of body fluids, blood, nerve and muscle, central nervous system, special senses, autonomic nervous system, defense mechanisms. Physiology of cardiovascular, respiratory, excretory, endocrine and digestive systems; organic and energy metabolism; exercise and environmental stress are also included.

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Pathophysiology

The basic concepts of pathophysiology at the cellular level related to injury, the self-defense mechanism, mutation, and cellular proliferation, and the pathological factors that influence the disease process. Clinical manifestations associated with the diseased organ(s).

MED 405C Pathology (2+0)

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

MED 606C First Aid and Basic Life Support (1+1)

After completing the course, the student should be able to know how to deal with medical emergency based on the different courses. It includes: introduction & accidents, first aid ABCs, medical emergencies, effect of temperature, transportation of an injured casualty & first aid kit, respiratory emergencies, fractures and dislocations, bleeding and surgical emergencies, burns and scalds, animal bites or stings and poisoning.

NP 101C 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 202C Psychology (1+0)

The course introduces different principles, theories and vocabulary of psychology as a science. The course also aims to provide students with basic concepts of social psychology, medical sociology and interpersonal communication, which relate to the pharmacy practice system that involves patients, pharmacists, physicians, nurses and other health care professionals.

NP 403C 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 non verbal communication (body and vocal language); active listening skills; communication styles and presentation skills. Communication skills in diverse pharmacy practice setting will be discussed.

NP 904C Marketing and Pharmacoeconomics (2+0)

Marketing

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.

Pharmacoeconomics

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.

NP 905C 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

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MTH 101C 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.

متطلبات الجامعة:

UR 101C English Language (2+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, introduction, support and conclusions.

UR 102C Human Rights and Fighting Corruption (1+0)

يغطي هذا المقرر الموضوعات 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 الاقتصاديةوالاجتماعية والثقافية للإنسان, حقوق الإنسان فى الشريعة الإسلامية, حقوق المرأة فى قانونى العمل والتأمين الاجتماعى, حقوق الإنسان فى التقاضى, الحقوق المدنية والسياسية للإنسان

- مقررات اختيارية:

4-Elective courses

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

PHT E11C Drug Targeting (1+1) The course covers the different technologies that can be employed to enhance drug targeting at their sites. It emphasizes the limitations of drug transport across the membranes and how to improve the drug affinity to sites of action. **Prerequisite: Pharmaceutical Dosage Forms-III**
PHT E12C Cosmetics preparations and cosmeceuticals (1+1) The course deals with introduction to cosmetics, raw materials and cosmeceuticals) Skin care products (cleansing cream, hand cream, nourishing cream, night cream, shaving) Sunscreen and suntan preparations, Toilet powders Lipstick, Eye make-up, Hair Shampoos. Antiperspirants and Deodorants, Anti-aging preparations. Herbal cosmetics, Guidelines for herbal cosmetics, quality control test for herbal cosmetics. Advanced delivery systems in cosmetics. It also covers the quality control tests of cosmetic products. **Prerequisite: Pharmaceutical Dosage Forms-II**
PHT E13C Good Manufacturing Practice (1+1) This course involves the principles of the Current Good Manufacturing Practices (cGMP). It exposes students to all aspects of validation, calibration, inspection and the requirements for manufacturing facilities. It also provides students with a review of the process engineering, technology transfer, personnel management, training and hygiene, premises and contamination control, documentation and auditing, process deviation with emphasis on risk management, complaint handling and product recall theory. **Prerequisite: Pharmaceutical Technology**
PHG E07C Nutraceuticals (1+1) Functional food, classes of nutraceuticals. Nutraceutical used for prevention and treatment of certain diseases. Efficacy and safety of nutraceuticals. **Prerequisite: Phytochemistry-I**

PHG E08C Alternative Medicinal Therapies (1+1)
Therapies and evidence-based clinical applications for Complementary and Alternative Medicine , healing systems, massage, manual therapies and bodywork, chiropractic, osteopathy, herbal medicine, aromatherapy and essential oils therapy, "nature cure," naturopathy…..

Prerequisite: Phytochemistry-II

PHG E09C 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.

Prerequisite: Phytochemistry-II

PHG E10C 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.

Prerequisite: Phytochemistry-I

PHG E11C Aromatherapy and Herbal Cosmetics (1+1)
Application of volatile oils and aromatic compounds from natural resources in both treatment and cosmetic preparations.

Prerequisite: Phytochemistry-I

PHM E07C Antibiotic Stewardship (1+1)
Basic principles of appropriate antibiotic use including drug choice, dosing, route, and duration of administration, application of these principles to the management of common infections and understanding antibiotic resistance, and how antimicrobial stewardship can slow down or reduce it.

Prerequisite: Pharmaceutical Microbiology and Antimicrobials

PHM E08C Infection Control (1+1)
Pathogen transmission and spread, outbreak management in the healthcare setting, approach to control of bioterrorism agents, advanced occupational health, management and prevention of MDR organisms. Disinfection, sterilization and standard infection control precautions

Prerequisite: Pharmaceutical Microbiology and Antimicrobials

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PHM E09C Bioinformatics (1+1) Introduction to bioinformatics. Recent sources of bioinformatics data, including high-throughput sequencing and microarrays. Indexing and searching of sequence databases and alignment. Computational biomarker and drug discovery. **Prerequisite: Biotechnology**
PHB E05C Fundamentals of molecular diagnostics (1+1) Basics of modern genetics and its application in diseases, chromosomal structure, inherited disease, DNA polymorphism, DNA based tissue typing. **Prerequisite:Clinical Biochemistry**
PHB E06C Principles of Cancer Biology (1+1) Types of cancer, risk factors, basics of cancer biology, metastasis, treatment approaches, apoptosis. **Prerequisite:Cell Biology**
PHL E07C Drugs of Abuse (1+1) This course provides the basic concepts about habituation, addiction, dependence and withdrawal syndromes of different drugs of abuse This course provides also the general principles of neurochemistry and addiction of commonly abused drugs or agents including Alcohol, Opioids, Nicotine, Sedatives/Hypnotics (Benzodiazepines and barbiturates) Stimulants (Caffeine, Cocaine, Amphetamine), Hallucinogens (Cannabinoids, Marijuana, newly synthetic cannabinoids) Inhalants, Antidepressants and other drugs Mechanism of toxicities, adverse effects, overdose, identification, detection, intoxication and general treatment are the main goal of the course. **Prerequisite:Basic & clinical Toxicology**
PHL E08C Bioassay and Biological Standardization) (1+1) This course provides the general principles of screening and bioassay, different methods of biological evaluation and or standardizations of drugs or different agents (including autonomic acting drugs, CNS acting drugs, CVS acting drugs, neuromuscular blockers, autacoids, hormones, vaccines and antivenoms as well as cytotoxic drugs). **Prerequisite:Pharmacology III**

PHL E09C Biostatistics (1+1)
This course provides basic concepts of biostatistics and data analysis. It includes introduction to descriptive and inferential statistics, interpretation of estimates, confidence intervals and significance tests, elementary concepts of probability and sampling; binomial and normal distribution, basic concepts of hypothesis testing, estimation and confidence intervals, t-test and chi-square test, linear regression theory and the analysis of variance (one-way and Two way ANOVA). In addition, some non-parametric tests (Kruskal-Wallis and Mann-Whitney tests) will also studied.

Prerequisite: Registration

PCO E04C Diagnostic Spectroscopy (1+1)
This course focuses on the identification and structure determination of organic molecules by modern spectroscopic techniques. Problem solving and interpretation of 2D-NMR and mass spectrometry spectra will be emphasized.

Prerequisite: Pharmaceutical Organic Chemistry III

PCP E03C Drug Design (1+1)
This course provides an introduction on the principles of drug design and the development of new therapeutic agents from prototype compounds with special emphasis on drug action at the molecular level. The following topics will be addressed: Introduction to drug design, methods of lead discovery, lead optimization, Chirality in drug action, drug targets, enzymes and receptors, drug-receptor interactions, principles of molecular modeling, structure-based drug design, ligand based drug design, Pharmacophore model building, Virtual screening, Docking studies. Computational practical sessions will be applied in lab to support each theoretical theory.

Prerequisite: Pharmaceutical Chemistry-I

PCP E04C Artificial Intelligence in Drug Design (1+1)
This course provides an introduction to artificial intelligence, methods of artificial intelligence, structure-activity relationship (SAR), deep learning concepts in drug discovery as well as some applications of artificial intelligence. Prerequisite: Drug Design

Prerequisite: Pharmaceutical Chemistry-I

PCP E05C Radiopharmaceutical Chemistry (1+1)
This course introduces a basic background of nuclear pharmacy and nuclear medicine to the students. Besides, the course aims at making the students familiar with basics of nuclear chemistry, fundamentals of operating a nuclear pharmacy, the most common clinical applications of nuclear medicine, personnel protection from radiation sources and production, quality control and GMP procedures involved in nuclear pharmacy practice.

Prerequisite: Pharmaceutical Chemistry-I .

PCP E06C Nanochemistry (1+1)

By the end of this course the student will be able to distinguish between the different types of nanoparticles. Moreover, the student will have sufficient knowledge about the design, synthesis and formulation of the different kinds of organic nanoparticles such as (micelles, liposomes, dendrimers, lipid and polymeric nanoparticles, etc). In addition, how to load different drugs and how they are used in the specific drug delivery to certain organs and tissues. Also, the student will be familiar with the synthesis of metallic as well as polymeric nanoparticles, pharmacokinetics and pharmacodynamics of different nanoparticlesin addition to their clinical applications.

Prerequisite:Pharmaceutical Chemistry-I

PCP E07C Application of Antigene and Antisense Therapy (1+1)

By the end of this course the student will be able to distinguish between the concept of antisense and antigene therapies. Moreover, the student should study nucleic acid chemistry and its application in designing antisense and antigene drugs such as antisense oligonucleotides, aptamer, siRNA, ...etc.Also, the student should study the synthesis and medical application of non-natural DNA, peptide nucleic acids (PNA), triple helix forming oligonucleotides, ...etc. Finally, the student should be familiar with the FDA approved antisense and antigene therapies.

Prerequisite: Pharmaceutical Chemistry-I

PHP E15C Updates in Pharmacotherapy (1+1)

The course concentrates on the nature of the disease and how to manage. This is expanded through updated details on the etiology, pathogenesis, diagnosis and treatment of the major disease states of that organ system. Emphasis is placed on the disease updates considerations for the drug therapy used, therapeutic goals, plans of treatment, dosage regimens, therapeutic alternatives and therapeutic end points.

Prerequisite: Clinical Pharmacy Practice

PHP E16C Advances in Pharmacy Practice (1+1)

The course describes in advance, how to providing health care to patients in different practice settings through building a professional practice. The focus of the course considers drug related needs, including full details regarding appropriate, effective, safe, and convenient drug therapy for each patient.

Prerequisite: Clinical Pharmacy Practice

PHP E17C Pharmacometrics (1+1)

The course gives knowledge on how to build up models based on biology, pharmacology, disease, and physiology to describe and quantify interactions between drugs and patients, including beneficial effects and adverse effects. The course focuses on how to quantify and understand variability in drug response.

Prerequisite: Clinical Pharmacy Practice