BUE
The British University in Egypt
الجامعة البريطانية في مصر

The British University in Egypt (BUE)

Faculty of Pharmacy

اللائحة الداخلية لبرنامج

بكالوريوس الصيدلة (فارم دي- Pharm D) (صيدلة إكلينيكية)

Program of Pharm D (Clinical Pharmacy)

طبقاً لنظام النقاط المعتمدة

كلية الصيدلة

الجامعة البريطانية في مصر

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المحتوى

رؤية ورسالة وأهداف كلية الصيدلة - الجامعة البريطانية فى مصر

رؤيــة الكلية:

أن تكون كلية الصيدلة -الجامعة البريطانية في مصر نموذجاً متميزاً للتعليم الصيدلي على المستوى المحلي والإقليمي والدولي.

رسـالة الكلية:

تلتزم كلية الصيدلة -الجامعة البريطانية في مصر بتقديم مستوى تعليمي يحقق المعايير القومية الأكاديمية المرجعية من أجل تأهيل صيادلة أكفاء قادرين على المنافسة وتطوير مجال الرعاية الصحية وصناعة الدواء، مع الارتقاء بالبحث العلمي، والمشاركة الفعالة في خدمة المجتمع في ظل الالتزام بالقيم الأخلاقية والمهنية.

غايات وأهـداف الكلية:

الغاية الأولى: زيادة القدرة التنافسية في التعليم الصيدلي

الأهداف الاستراتيجية

1- تطوير البرنامج التعليمي بما يتوافق مع المعايير المرجعية الأكاديمية القومية لتحقيق احتياجات سوق العمل.
2- تطبيق استراتيجية متطورة للتدريس والتعلم تحقق أهداف البرنامج التعليمي.
3- تنمية وتطوير وسائل دعم ورعاية الطلاب والوافدين والخريجين.
4- تطوير كفاءة البنية الأساسية والإمكانيات المادية للكلية.
5- تطبيق نظم جودة التعليم لتحسين وتطوير الوضع التنافسي للكلية.

الغاية الثانية: الارتقاء بمستوى أداء الموارد البشرية

الأهداف الاستراتيجية

1- تحقيق كفاءة نظام القيادة والإدارة في ظل هيكل تنظيمي مكتمل وملائم لأنشطة الكلية.
2- ضمان كفاية وكفاءة أعضاء هيئة التدريس والهيئة المعاونة والجهاز الإداري.

الغاية الثالثة: الابتكار في البحث العلمي واستحداث برامج الدراسات العليا

الأهداف الاستراتيجية

1- تحقيق التميز وزيادة فاعلية البحث العلمي لحل المشاكل المجتمعية.
2- دعم الإنتاج البحثي والأنشطة العلمية المتنوعة.
3- استحداث برامج الدراسات العليا بالكلية وفق احتياجات سوق العمل.

الغاية الرابعة: تعزيز المشاركة المجتمعية وتنمية البيئة

الأهداف الاستراتيجية

1-التوسع في مجال خدمة المجتمع وتنمية البيئة.
2- زيادة فاعلية مشاركة الأطراف المجتمعية في أنشطة الكلية المختلفة.

الأقسام العلمية بالكلية:

تتكون الكلية من عدد (5) من الأقسام العلمية تشمل جميع تخصصات التعليم الصيدلي بما يضمن تحقيق المعايير الأكاديمية المرجعية المتبناه ومواكبة متطلبات سوق العمل الصيدلي بجميع مجالاته على المستوى المحلي والإقليمي. وتتمثل الأقسام العلمية بالكلية في الآتي:

1. Department of Pharmaceutical Chemistry (PMC)	1- قسم الكيمياء الصيدلية (PMC)
2. Department of Pharmacology (PCL) & Biochemistry (PBC)	2- قسم علم الأدوية (PCL) والكيمياء الحيوية (PBC)
3. Department of Pharmaceutics & Pharmaceutical Technology (PCT)	3- قسم الصيدلانيات والتكنولوجيا الصيدلية (PCT)
4. Department of Microbiology (PMB) & Pharmacognosy (PCG)	4- قسم علم الأحياء الدقيقة (PMB) والعقاقير (PCG)
5. Department of Clinical Pharmacy Practice (PCP)	5- قسم ممارسة الصيدلة الإكلينيكية (PCP)

مقدمة عن برنامج بكالوريوس الصيدلة (فارم دى- Pharm D) (صيدلة إكلينيكية)

Program of Pharm D (Clinical Pharmacy)

- تشتمل الدراسة بالبرنامج على مقررات دراسية متطورة تهدف لإكساب الطالب مهارات دراسية متنوعة ومواكبة تطورات سوق العمل الصيدلي. ويمكن تقسيم المقررات الدراسية بالبرنامج كالتالي:
  1. مقررات دراسية عامة تحقق متطلبات المرحلة الجامعية الأولى.
  2. مقررات دراسية للعلوم الأساسية الصيدلية والطبية.
  3. مقررات دراسية متخصصة في علوم الصيدلة والصيدلة الإكلينيكية والعلوم الطبية ذات الصلة.

- تطبيق استراتيجيات التدريس والتعلم المتطورة وتطوير أساليب التقييم بما يحقق إكساب الطالب الجدارات والمهارات في المجالات المختلفة والقدرة على قياسها في ضوء المعايير الأكاديمية المرجعية للتعليم الصيدلي.

- تم تصميم البرنامج بحيث يسمح للطالب ممارسة مهنة الصيدلة في أي من مجالات العمل الصيدلي مع إتاحة الفرصة للطالب التركيز على مجال العمل التخصصي الذي يرغب التوظف به بعد التخرج من خلال المقررات الاختيارية في المراحل النهائية للبرنامج مجال التدريب ومشروع التخرج.

- تصميم برنامج سنة الامتياز (التدريب التخصصي) في شكل دورات تدريبية بشكل دوري تناوبي ليتمكن الطالب من التدريب في العديد من مجالات الصيدلة الإكلينيكية المختلفة كما يشمل دورة تدريبية واحدة في مجال صناعة الدواء (التصنيع -الرقابة والتنظيم الدوائي-.... إلخ) مع التركيز على المجال الذي يرغب الطالب التخصص به، كما يقدم الطالب مشروع تخرج في تخصص معين يساهم في تمهيد وإعداد الطالب للتوجه لهذا التخصص.

- يشتمل البرنامج على تدريب ميداني أولي لمدة 100 ساعة تدريب فعلية في الصيدليات الأهلية والحكومية وصيدليات المستشفيات تتم خلال العطلات الصيفية لسنوات الدراسة بعد نهاية المستوى الثالث.

- **أماكن التدريب:** المستشفيات الحكومية والخاصة بأقسامها المختلفة والمراكز الطبية ومراكز الدراسات الإكلينيكية ومراكز البحوث الصيدلية والطبية والإتاحة الحيوية والدراسات السريرية وتخصص دورة واحده للتدريب في مجال الممارسات الصيدلية الأخرى مثل شركات ومصانع الأدوية البشرية والبيطرية والمستلزمات والأجهزة الطبية ويمكن لمن يرغب في التخصص في المجال الأكاديمي (التدريس والبحث) قضاء فترة تدريبية في كليات الصيدلة ومراكز البحوث.

- **المسار المهني ومجالات العمل:** يمكن لخريج هذا البرنامج العمل في مجال الصيدلة الإكلينيكية وأي من المجالات الصيدلية الأخرى ويمكنه العمل في مجال التخصص (الذي اختاره خلال فترة الامتياز ومشروع التخرج) لمدة عام/عامين ليصبح بعدها صيدلي متخصص في أحد التخصصات المهنية (التخصصات الإكلينيكية المختلفة بالإضافة إلى أي من مجالات الممارسة الصيدلية المختلفة بما في ذلك العمل في الصيدليات الأهلية أو الحكومية، ويمكنه العمل في المجال الأكاديمي (تدريس وبحث علمي) وتؤهله للعمل بالمسار الأكاديمي (ماجستير ودكتوراه).

رؤية ورسالة وأهداف برنامج بكالوريوس الصيدلة (فارم دي- Pharm D) (صيدلة إكلينيكية)

رؤية البرنامج:

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

رسالة البرنامج:

المساهـمة في رفع كفاءة المنظومة الصحية على المستوى المحلي والإقليمي من خلال إعداد كوادر من الصـيادلة المؤهلين بأحدث المفاهيم الصـيدلية والإكلينيكية التي تمكنهم من التعامل مع الفريق الطبي في المسـتشـفيات وأيضـا تقديم الخدمات الصـيدلية بمسـتوى متميز من المهارة والاحتراف بالصـيدليات العامة والخاصـة وشـركات الأدوية ومعامل الرقابة الدوائية وتحليل الأغذية بالإضـافة إلى العمل في مجال الإعلام والتسويق الدوائي والمشاركة الفعالة في البحث العلمي من خلال مراكز البحوث والجامعات لخدمة المجتمع.

أهـداف البرنامج:

- ترسيخ أهمية 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 الإعلام والتسويق الدوائي والبحوث والعمل الأكاديمي.
- زيادة القدرة التنافسية لخريجي البرنامج على المستوى المحلي والإقليمي من خلال تطبيق وسائل تدريس وتعلم مواكبة لمتطلبات سوق العمل ومن خلال زيادة فرص التدريب والممارسة الفعلية لمجالات مهنة الصيدلة.
- المشاركة في خدمة المجتمع وتنمية البيئة وتوفير عائد اقتصادي ملموس من خلال ترشيد استخدام الأدوية في المستشفيات وزيادة الوعي لدى المواطنين وتطوير أبحاث وصناعة الدواء.
- الالتزام بتحقيق جودة التعليم الصيدلي من خلال التعليم التفاعلي والاهتمام بالتعلم الذاتي.

مـــواد اللائحة

مادة (1): الدرجة العلمية التي تمنح للخريجين

يمنح مجلس الجامعة بناءً على طلب مجلس كلية الصيدلة درجة بكالوريوس الصيدلة (فارم دي-Pharm D) (صيدلة إكلينيكية) Program of Pharm D (Clinical Pharmacy) طبقا لنظام النقاط المعتمدة.

مادة (2): التأهيل للدرجات الأكاديمية الأعلى

تعتبر درجة بكالوريوس الصيدلة (فارم دي- Pharm D) (صيدلة إكلينيكية) هي الدرجة الجامعية الأولى في مجال الصيدلة اللازمة للحصول على ترخيص ممارسة المهنة في جميع المجالات الصيدلية المتاحة، كما تؤهل الخريج للتسجيل لدرجة الماجستير في أي من الأقسام الأكاديمية في الكلية أو في كليات مناظرة.

مادة (3): نظـام الدراســة

- مدة الدراسة بالبرنامج خمس سنوات دراسية (خمس مستويات دراسية على عشر فصول دراسية) طبقاً لنظام النقاط المعتمدة وسنة امتياز (تدريب تخصصي) في مواقع العمل (1+5). بالإضافة إلى عدد 100 ساعة تدريب ميداني أولي في الصيدليات الأهلية والحكومية والمستشفيات وشركات ومصانع الأدوية تتم خلال عطلات منتصف ونهاية العام الدراسي وذلك بعد نهاية المستوى الثالث وقبل البدء في سنة الامتياز.
- ينقسم كل مستوى (عام) دراسي إلى فصلين دراسيين ومدة كل فصل دراسي خمسة عشر أسبوعاً.
- يتضمن كل فصل دراسي 55-60 نقطة معتمدة (أي ما يعادل 16.5 – 18 ساعة معتمدة)، وعليه فإن دراسة البرنامج تتم باستكمال 590 نقطة معتمدة (وهو ما يعادل 177 ساعة معتمدة).

ملاحظة: النقطة المعتمدة هي وحدة تُستخدم لقياس عبء الدراسة كما تستخدم لتوفير دليل عن مقدار الجهد الذي قد يتطلبه المقرر الدراسي حيث تعادل النقطة المعتمدة الواحدة حوالي 10 ساعات جهد دراسي، بما في ذلك جميع أشكال الاتصال التدريسي المباشر ومهام التقييم والدراسة الخاصة لمستوى الطالب المتوسط. كما يمكن توضيح حساب النقاط المعتمدة وما يقابلها من ساعات معتمدة كالتالي:

10 نقطة معتمدة = 3 ساعة معتمدة ، 5 نقطة معتمدة = 1.5 ساعة معتمدة

- يجوز لمجلس الكلية بعد أخذ رأي القسم العلمي المختص وحسب طبيعة المقررات الدراسية أن يقرر تدريس مقرر أو أكثر بنمط التعليم الهجين، بحيث تكون الدراسة في المقرر بنسبة 50% وجهاً لوجه - مخصصة لمحاضرات الطلاب بالحرم الجامعي لكل نقطة – وبنسبة 50% بنظام التعليم عن بعد - مخصصة للمحاضرات

والدروس النظرية - أو بأي نسبة أخرى، وذلك وفقاً لمكونات المقرر الدراسي باللائحة الداخلية، على أن يتم عرض ذلك على مجلس شئون التعليم والطلاب بالجامعة للموافقة عليه ورفعه إلى مجلس الجامعة لاعتماده.

مادة (4): تصميم البرنامج الدراسي

تم تصميم البرنامج الدراسي بحيث يشمل أساليب تدريس وتعلم متنوعة تتمثل في: المحاضرات النظرية وحلقات النقاش والدروس العملية والإكلينيكية وورش العمل والتدريبات الميدانية وإجراء بحوث وتقديم العروض بالإضافة إلى التعاون مع المجتمع المحيط بالجامعة.

وتم تصميم البرنامج الدراسي ليتكون من: -

أولاً: عدد النقاط المعتمدة للبرنامج **570** نقطة معتمدة بما يعادل **171** ساعة معتمدة تتضمن هذه النقاط (30 نقطة معتمدة بما يعادل 9 ساعات معتمدة) مخصصة لعدد أربعة من المقررات الاختيارية. بالإضافة إلى متطلبات الجامعة والتي تمثل **20** نقطة معتمدة بما يعادل **6** ساعات معتمدة.

ثانياً: تم وضع وصف ومحتوى المقررات الدراسية (Module description & content) من خلال الأقسام العلمية بالكلية طبقاً للمعايير القومية الأكاديمية المرجعية للتعليم الصيدلي الإصدار الثاني NARS 2017.

ثالثاً: تم تصميم المقررات الاختيارية للطالب في المستويين الرابع والخامس بحيث تحقق له جدارات ومهارات تساعده على التوجيه المهني والتخصصي.

رابعاً: هذا بالإضافة إلى 100 ساعة فعلية تدريب ميداني أولي يبدأ بنهاية المستوى الثالث وقبل البدء في سنة الامتياز.

خامساً: سنة الامتياز (التدريب التخصصي) هي السنة السادسة للدراسة بالبرنامج.

مادة (5): العبء الدراسي

العبء الدراسي في السنة الدراسية الواحدة للطالب عبارة عن 110-120 نقطة معتمدة للانتهاء من المواد الدراسية المقررة له، وتوزع إلى 55-60 نقطة معتمدة (بما يعادل 16.5-18 ساعة معتمدة) لكل فصل دراسي.

يستوجب على الطلاب خلال فترة الدراسة (خمس سنوات) الالتزام بالحضور بنسبة محددة لكل من الدروس العملية والنظرية والمحاضرات وذلك حسب ما توافق عليه اللجان المختصة بالإشراف على البرنامج التعليمي

بالنسبة لكل مقرر ويتم تقييم الطلبة من جانب ممتحنين داخليين وخارجيين ويشمل التقييم أعمال السنة، امتحانات عملية، امتحانات تحريرية وشفوية.

مادة (6): المواظبة وحضور الامتحانات

أ) المواظـبة

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

ب) حضور الامتحانات والتغيب عنها والإخلال بنظامها

- يجب على الطالب أداء الامتحانات التحريرية النهائية في المواعيد المقررة لها حسب التقويم الجامعي المعلن لكل فصل دراسي، ويعتبر الطالب المتغيب عن الامتحان التحريري النهائي راسباً في المقررات التي تغيب عن أداء الامتحان فيها.
- إذا قدم الطالب عذرا قهرياً يقبله مجلس الكلية يعتبر غائباً بعذر مقبول ويحسب له تقدير النجاح الذي يحصل عليه عند التقدم للامتحان.

مادة (7): لغـة الدراسـة

الدراسة في البرنامج باللغة الإنجليزية لجميع المقررات الدراسية ما لم يذكر خلاف ذلك في توصيف المقرر.

مادة (8): التدريـب الميداني

أ-التدريب الميداني الأولي (الصيفي):

- على الطالب أن يكمل فترة **تدريب ميداني أولي** بإجمالي عدد 100 ساعة تدريب فعلية في الصيدليات الأهلية والحكومية والمستشفيات وشركات ومصانع الأدوية والجهات البحثية التي يقرها مجلس الكلية وذلك تحت إشراف عضو من أعضاء هيئة التدريس بالكلية ويتم التدريب خلال عطلات نهاية ومنتصف العام الدراسي وذلك بعد نهاية المستوى الثالث وقبل البدء في سنة الامتياز.

ب- التدريب الميداني المتقدم (سنة الامتياز):

- تعتبر سنة الامتياز هي العام الأكاديمي السادس من الدراسة بالبرنامج الذي يخصص للتدريب الميداني بواقع 36 أسبوعاً (سنة أكاديمية بما يعادل 9 أشهر) وتتكون من عدد ست دورات تدريبية بواقع أربع دورات على الأقل داخل مستشفيات تقوم بتطبيق ممارسة الصيدلة الإكلينيكية، وتخصص دورة واحدة للتدريب في مجال صناعة الدواء (التصنيع - الرقابة الدوائية - التسويق...الخ) ويشتمل التدريب على برنامج تدريبي متكامل وممنهج بطريقة دورية تناوبية مسجلة بالساعات والمهام التدريبية وتحت إشراف دقيق من الكلية وجهة التدريب. كما يقدم الطالب مشروع تخرج في تخصص معين يساهم في تمهيد وإعداد الطالب للتوجه لهذا التخصص.
- تم تصميم البرنامج التدريبي ليشتمل على تخصصات إكلينيكية مختلفة (مثل: أمراض القلب – السرطان – الأمراض النفسية والعصبية – التغذية – العناية الفائقة – وحدة معلومات الدواء – اقتصاديات الدواء -والأبحاث السريرية....) حسب إمكانات الجامعة وأولويات الاحتياجات المجتمعية. (يتم إعداد لائحة تفصيلية خاصة ببرنامج تدريب سنة الامتياز كملحق لهذه اللائحة).

مادة (9): شروط القبول بالبرنامج

يشترط فيمن يتقدم للالتحاق بالبرنامج أن يستوفي كافة الشروط التي يحددها المجلس الأعلى للجامعات واللائحة الداخلية للجامعة البريطانية في مصر.

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

مادة (10): نظـــام التقييـــم

- تتكون الدرجة النهائية للمقرر من مجموع درجات الأعمال الفصلية والعملية والتحريرية والشفهية كما هو موضح بجداول الخطة الدراسية. الحد الأدنى للنجاح في أي مقرر هو 60% من مجموع درجات هذا المقرر ما عدا مقرري اللغة الإنجليزية والرياضيات فيكون الحد الأدنى للنجاح هو 50% من مجموع الدرجات لكل منهما (BUE Undergraduate Academic Regulations). ولا يكون الطالب ناجحاً في أي مقرر

إلا إذا حصل على 30% من درجة الامتحان التحريري النهائي، وتكون النسبة المنوية للدرجات النهائية والتقديرات كما هو مبين بالجدول التالي:

نظـام التقيـــيم

Egyptian Standing	Letter Grade	Egyptian Equivalent %	GPA
Distinction	A^+	89 and above	4.0
	A	87-88	3.9
	A^-	85-86	3.7
Very Good	B^+	82-84	3.5
	B	79-81	3.1
	B^-	75-78	2.7
Good	C^+	72-74	2.5
	C	69-71	2.3
	C^-	65-68	2.0
Satisfactory	D^+	60-64	1.8
All modules except English and Mathematics			
Failed	F	Less than 60	0
For English and Mathematics only			
Satisfactory	D	55-59	1.6
	D^-	50-54	1.3
Failed	F	Less than 50	0

- يتم احتساب التقدير العام للطالب لكل مستوى من خلال متوسط علامات كل مقرر لهذا المستوى منسبة وفقاً لقيمة النقاط المعتمدة الخاصة بها.

مع مراعاة ألا يزيد تقدير الطالب على مقبول (D^+ 60%) في جميع المقررات الذي سبق أن رسب فيه أو تغيب عنه بعذر غير مقبول (عدا مقررات اللغة الانجليزية والرياضيات يحصل الطالب على مقبول D^- 50%)، أما إذا كان قد تغيب بعذر مقبول فيحسب له تقدير النجاح الذي يحصل عليه.

- يتم حساب المعدل العام النهائي الشامل والتقدير العام والذي يحدد تصنيف مرتبة الشرف اعتماداً على متوسط

كل مستويات الدراسة كما يتم ترتيبهم وفقاً لمتوسط النسبة المئوية العامة.

ويمنح الطالب مرتبة الشرف إذا كان تقديره النهائي ممتاز أو جيد جداً ، وعلى ألا يقل التقدير العام في أي مستوى من مستويات الدراسة عن جيد جداً (GPA 2.7 = %75) ويشترط لحصول الطالب على مرتبة الشرف ألا يكون قد رسب في أي امتحان تقدم له في أي مستوى، على أن لا يعتد بها عند ترتيب الطالب.

- حساب النسبة المئوية (للفصل/للعام/المجموع التراكمى الكلى) weighted average = [مجموع (نسبة نجاح كل مقرر x النقاط المعتمدة للمقرر)] / مجموع النقاط المعتمدة (للفصل/للعام/لكافة الفصول الدراسية) ويتم حساب المعدل التراكمى لكل الفصول وفقا للجدول السابق.

- يجوز لمجلس الكلية بعد أخذ رأي القسم العلمي المختص وحسب طبيعة المقررات الدراسية أن يقرر عقد الامتحان إلكترونيا في مقرر أو أكثر، كما يجوز عقد الامتحان في كل المقرر او جزء منه بما يسمح بتصحيحه إلكترونياً. كما يجوز لمجلس الكلية أن يقرر إجراء الامتحانات الشفهية مع الطلاب من خلال المنصات الإلكترونية الرسمية، على أن يتم عرض ذلك على مجلس شئون التعليم والطلاب بالجامعة للموافقة عليه ورفعه إلى مجلس الجامعة لاعتماده.

مادة (11): الحد الأقصى للفرص المتاحة للتقدم للامتحانات

وفقاً لقانون تنظيم الجامعات ولائحته التنفيذية واللائحة الداخلية للجامعة البريطانية في مصر لا يجوز للطالب أن يبقى في المستوى الأول (السنة الدراسية الأولى) لأكثر من عامين دراسيين. ويجوز لطلاب المستوى الثاني دخول الامتحانات لمدة سنتين منتظمتين وسنة من الخارج. ويجوز لطلاب المستويات الثالثة والرابعة والخامسة دخول الامتحانات لمدة سنتين منتظمتين وسنتين من الخارج ويستثنى من ذلك طلاب المستوى الخامس (السنة النهائية) الذين اجتازوا نصف عدد المقررات الدراسية الخاصة بالفرقة النهائية حيث يرخص لهم دخول الامتحانات حتى يتم النجاح.

وإذا تخلف الطالب عن دخول الامتحان بعذر قهري يقبله مجلس الكلية فلا يحسب غيابه رسوباً، ويعتبر الطالب المتغيب عن الامتحان بغير عذر مقبول راسباً.

مادة (12): الرسـوب في المقـررات

- في حالة تغيب الطالب بدون عذر يقبله مجلس الكلية عن أداء الامتحان التحريري النهائي.
- إذا حصل الطالب على أقل من 30% من درجة الامتحان التحريري النهائي.

- عدم تحقيق 60 % على الأقل من مجموع درجات المقرر ما عدا مقرري اللغة الإنجليزية والرياضيات فدرجة النجاح 50 % لكل منهما.

- إذا رسب الطالب في أي مقرر إجباري أو إختياري فعليه دراسة ذات المقرر حتى ينجح فيه طبقا للقواعد الأكاديمية بالجامعة (BUE – Undergraduate Academic Regulations).

مادة (13): امتحانات الدور الثاني (Resit Exam)

يسمح للطالب أن يؤدي الامتحان في أي مقرر أثناء العام الأكاديمي الواحد مرتين: مرة أثناء الفصل الدراسي الأساسي الذي يتم فيه دراسة المقرر ومرة أثناء امتحانات الدور الثاني. يسمح للطالب أن يؤدي امتحان الدور الثاني بحد أقصى 60 نقطة معتمدة مع مراعاة ألا يزيد تقدير الطالب على مقبول في المقرر الذي سبق أن رسب فيه أو تغيب عنه بعذر غير مقبول، أما إذا كان قد تغيب بعذر مقبول فيحسب له تقدير النجاح الذي يحصل عليه. مع مراعاة ما ورد في المادة (10).

مادة (14): النقل للمستوى الأعلى بمواد (Trailing)

يسمح للطالب الانتقال للمستويات الدراسية الأعلى بمواد بحد أقصى 20 نقطة معتمدة.

يجب على الطالب المنقول للمستوى الدراسي الأعلى بمواد أن يجتاز درجة النجاح في هذه المواد في العام الأكاديمي التالي مباشرة. مع مراعاة ما ورد في المادة (10).

مادة (15): البقاء للإعادة (Repeat)

يكون الطالب باقياً للإعادة إذا كان راسباً في أكثر من 20 نقطة معتمدة من نقاط الدراسة في أي مستوى. مع مراعاة ما ورد في المادة (10).

مادة (16): درجات الرأفة (Compensation)

لا يطبق نظام درجات الرأفة لرفع نتيجة الطلاب سواء على مستوى المقررات أو المستويات الدراسية.

مادة (17): متطلبات إتمام الحصول على درجة بكالوريوس الصيدلة (فارم دي- Pharm D) (صيدلة إكلينيكية) .

يتطلب الحصول على درجة بكالوريوس الصيدلة (فارم دي- Pharm D) (صيدلة إكلينيكية) طبقاً لنظام

أولاً: دراسة واجتياز إجمالي عدد النقاط المعتمدة 570 (بما يعادل 171ساعة معتمدة) بالإضافة إلى 20 نقطة معتمدة متطلبات جامعة بمجموع 590 نقطة معتمدة (بما يعادل 177 ساعة معتمدة) موزعة على عشرة فصول دراسية وتشمل المقررات الاختيارية والتي تمثل عدد 30 نقطة معتمدة (بما يعادل 9 ساعات معتمدة) على ألا يقل المجموع التراكمي عن 60 % (D^+).

ثانياً: اجتياز فترة التدريب الميداني الأولي بإجمالي عدد 100 ساعة تدريب فعلية في الصيدليات الأهلية والحكومية والمستشفيات ومصانع وشركات الأدوية والجهات البحثية التي يقرها مجلس الكلية وذلك تحت إشراف عضو من أعضاء هيئة التدريس بالكلية ويتم التدريب خلال عطلات نهاية ومنتصف العام الدراسي وذلك بعد نهاية المستوى الثالث. وأن يكمل سنة الامتياز (عام أكاديمي - 9 أشهر) بعد الانتهاء من سنوات الدراسة، طبقاً للائحة التفصيلية الخاصة ببرنامج تدريب سنة الامتياز والتي تشمل مشروع التخرج في إحدى التخصصات المطروحة.

مادة (18): نظام تأديب الطلاب

الطلاب المقيدون بالبرنامج خاضعون للنظام التأديبي المبين في اللائحة الداخلية للجامعة البريطانية في مصر وفقا لقانون تنظيم الجامعات المصرية ولائحته التنفيذية.

مادة (19): أكواد وتوزيع المقررات الدراسية بالبرنامج التعليمي (مرفق 1).

مادة (20): الخطة الدراسية (مرفق 2).

مادة (21): وصف المحتوى العلمي للمقررات الدراسية (مرفق 3).

مادة (22): تحديث المقررات الدراسية

يجوز لمجلس الكلية الموافقة على تحديث نسبة لا تتجاوز 20 % من محتوى المقررات الدراسية بناءً على اقتراح مجلس القسم العلمي المعني - بعد إبداء المبررات - وبموافقة اللجان المختصة بالإشراف على البرنامج التعليمي ومجلس الجامعة.

مادة (23): طرح المقررات الاختيارية

يقوم مجلس الكلية بطرح المقررات الاختيارية المحددة في هذه اللائحة خلال الفصلين الدراسيين للمستوى الرابع والخامس وذلك بعد موافقة مجالس الأقسام المعنية واللجان المختصة بالإشراف على البرنامج. ويمكن

للكلية إضافة مقررات اختيارية أخرى بعد موافقة مجلس الجامعة ووزارة التعليم العالي والبحث العلمي. ويتم طرح المقررات الاختيارية طبقاً لتوافر الإمكانيات البشرية والمادية اللازمة بالأقسام العلمية.

مادة (24): برنامج التدريب لسنة الامتياز

يتم وضع برنامج مفصل لسنة الامتياز (التدريب التخصصي) في شكل دورات تناوبية في أماكن العمل الصيدلي بصورة ممنهجة تفصيلية (سيقدم كملحق لهذه اللائحة).

مادة (25): تطبيق أحكام اللائحة

تطبق أحكام هذه اللائحة على الطلاب الملتحقين بالكلية عند الموافقة عليها ووفقاً لقرار المجلس الأعلى للجامعات.

مادة (26): أحكام عامة

ما لم يرد به نص في هذه اللائحة تطبق القواعد المعمول بها بالجامعة البريطانية في مصر (BUE – Undergraduate Academic Regulations) وكذلك أحكام قانون تنظيم الجامعات المصرية ولائحته التنفيذية.

مرفق 1

خاص بالمادة (19)

أكواد وتوزيع المقررات الدراسية بالبرنامج التعليمي

Key for Module Abbreviations

PMCcxxx	Pharmaceutical Chemistry
PCLcxxx	Pharmacology
PBCcxxx	Biochemistry
PCTcxxx	Pharmaceutics and Pharmaceutical Technology
PCGcxxx	Pharmacognosy
PMBcxxx	Microbiology
PCPcxxx	Clinical Pharmacy Practice

1. The code is presented as 4 letters and 3 digits.
2. The first letter "P" refers to modules offered to students of Pharmacy only.
3. The second and third letters refer to the specialty that offers the module.
4. The fourth letter "c" refers to the Program of Pharm D (Clinical Pharmacy).
5. The first digit represents the academic year number (1 – 5).
6. The second and third digits represent the module number.

1. University Requirements

Code	Module	Year/ Semester	CR	CH
PHENGL01	English for Academic Purposes	1/1	10	3
PHENGL02	English and Academic Writing	1/2	10	3
Total			**20**	**6**

CR: Credit Point, CH: The equivalent Credit Hours.

2. Faculty Requirements

Code	Module	Year/ Semester	CR	CH
MTH101	Mathematics	1/1	10	3
Total			**10**	**3**

CR: Credit Point,
CH: The equivalent Credit Hours

3. Core Modules (P)

- Pharmaceutical Chemistry (PMC)

Code	Module	Year/ Semester	CR	CH
PMCc101	Pharmaceutical Analytical Chemistry-1	1/1	10	3
PMCc102	Pharmaceutical Organic Chemistry-1	1/1	10	3
PMCc103	Pharmaceutical Organic Chemistry-2	1/2	10	3
PMCc204	Pharmaceutical Analytical Chemistry-2	2/1	10	3
PMCc205	Instrumental Analysis	2/2	10	3
PMCc206	Pharmaceutical Organic Chemistry-3	2/2	10	3
PMCc307	Medicinal Chemistry-1	3/2	10	3
PMCc408	Medicinal Chemistry-2	4/1	10	3
PMCc509	Quality Control of Pharmaceuticals	5/2	5	1.5
Total	**Core**		**85**	**25.5**

CR: Credit Point
CH: The equivalent Credit Hours

- Pharmacology (PCL)

Code	Module	Year/ Semester	CR	CH
PCLc101	Integrated Body System-1	1/1	10	3
PCLc102	Integrated Body System-2	1/2	10	3
PCLc203	Integrated Body System-3	2/1	10	3
PCLc204	Pharmacology-1	2/2	10	3
PCLc305	Pharmacology-2	3/1	10	3
PCLc306	Pharmacology-3	3/2	10	3
PCLc407	Toxicology	4/1	10	3
PCLc508	Research Methodology & Biostatistics	5/1	10	3
Total	**Core**		**80**	**24**

CR: Credit Point
CH: The equivalent Credit Hours

- **Biochemistry (PBC)**

Code	Module	Year/ Semester	CR	CH
PBCc201	Biochemistry-1	2/1	10	3
PBCc202	Biochemistry-2	2/2	10	3
PBCc303	Clinical Biochemistry	3/1	10	3
PBCc504	Clinical Nutrition	5/2	5	1.5
Total	**Core**		**35**	**10.5**

CR: Credit Point
CH: The equivalent Credit Hours

- **Pharmaceutics & Pharmaceutical Technology (PCT)**

Code	Module	Year/ Semester	CR	CH
PCTc101	Pharmacy Orientation, legislation & Ethics	1/1	5	1.5
PCTc102	Physical Pharmacy	1/2	10	3
PCTc203	Pharmaceutics-1	2/1	10	3
PCTc204	Pharmaceutics-2	2/2	10	3
PCTc305	Pharmaceutics-3	3/1	10	3
PCTc406	Biopharmaceutics & Pharmacokinetics	4/1	10	3
PCTc407	Pharmaceutical Technology	4/2	10	3
PCTc408	Dosage Form Design	4/2	10	3
Total	**Core**		**75**	**22.5**

CR: Credit Point
CH: The equivalent Credit Hours

- **Microbiology (PMB)**

Code	Module	Year/ Semester	CR	CH
PMBc201	General Microbiology and Immunology	2/2	10	3
PMBc302	Pharmaceutical Microbiology	3/1	10	3
PMBc303	Public Health & Preventive Medicine	3/1	5	1.5
PMBc304	Medical Microbiology-1 (Parasitology & Virology)	3/2	10	3
PMBc405	Medical Microbiology-2 (Bacteriology & Mycology)	4/2	10	3
PMBc506	Biotechnology	5/1	5	1.5
Total	**Core**		**50**	**15**

CR: Credit Point
CH: The equivalent Credit Hours.

- **Pharmacognosy (PCG)**

Code	Module	Year/ Semester	CR	CH
PCGc101	Pharmacognosy-1	1/2	10	3
PCGc202	Pharmacognosy-2	2/1	10	3
PCGc303	Phytochemistry-1	3/1	10	3
PCGc304	Phytochemistry-2	3/2	5	1.5
PCGc505	Phytotherapy & Aromatherapy	5/1	5	1.5
Total	**Core**		**40**	**12**

CR: Credit Point, CH: The equivalent Credit Hours.

- **Clinical Pharmacy Practice (PCP)**

Code	Module	Year/ Semester	CR	CH
PCPc101	Scientific Thinking & Communication skills	1/2	5	1.5
PCPc102	Human Rights & Fighting Corruption	1/2	5	1.5
PCPc203	Psychology	2/1	5	1.5
PCPc304	First Aid & Basic Life Support (BLS)	3/1	5	1.5
PCPc305	Pharmacotherapy of Cardiovascular Diseases	3/2	10	3
PCPc306	Pharmacotherapy of Respiratory Diseases	3/2	5	1.5
PCPc307	Community Pharmacy Practice	3/2	10	3
PCPc408	Pharmacotherapy of Endocrine and Renal Diseases	4/1	10	3
PCPc409	Pharmacotherapy of Gastrointestinal Diseases	4/1	10	3
PCPc410	Hospital Pharmacy	4/2	10	3
PCPc411	Pharmacotherapy of Neuropsychiatric Diseases	4/2	10	3
PCPc512	Drug Information & Pharmacovigilance	5/1	10	3
PCPc513	Pharmacotherapy of Dermatological, Reproductive and Musculoskeletal Diseases	5/1	10	3
PCPc514	Pharmacotherapy of Pediatric Diseases	5/1	10	3
PCPc515	Entrepreneurship	5/1	5	1.5
PCPc516	Marketing & Pharmacoeconomics	5/2	10	3
PCPc517	Clinical Pharmacokinetics	5/2	10	3
PCPc518	Pharmacotherapy of Oncological Diseases and Radiopharmacy	5/2	10	3
PCPc519	Pharmacotherapy of Critical Care Patients	5/2	5	1.5
PCPc520	Clinical Pharmacy Practice	5/2	10	3
Total	**Core**		**165**	**49.5**

CR: Credit Point, CH: The equivalent Credit Hours.

4- Optional Modules (O)

4- المقررات الاختيارية

The Faculty of Pharmacy offers optional modules from which the students are free to select 30 credit points equivalent to 9 credit hours.

Department	Module Code	Module Title	Year	Credit Hours		
				L	P/T	Total
Pharmaceutical Chemistry	PMCcO10	Advanced Pharmaceutical Analysis	4	2	1	3
	PMCcO11	Radiopharmaceutical Chemistry	5	1	0.5	1.5
	PMCcO12	Nanochemistry	5	1	0.5	1.5
	PMCcO13	Drug Design	4	2	1	3
Pharmacology & Biochemistry	PBCcO05	Molecular Biology & Gene Therapy	4	2	1	3
	PCLcO09	Biological Screening of Drug Activities	4	2	1	3
	PCLcO10	High-Throughput Screening of Drug activities	5	1	0.5	1.5
	PCLcO11	Evaluation of Safety of Drugs	5	1	0.5	1.5
	PCLcO12	Neuroscience-1	4	2	1	3
	PCLcO13	Neuroscience-2	5	1	0.5	1.5
Pharmaceutics & Pharmaceutical Technology	PCTcO09	Advanced Drug Delivery & Nanopharmaceuticals	4	2	1	3
	PCTcO10	Cosmetics	4	2	1	3
	PCTcO11	Veterinary Pharmacy	5	1	0.5	1.5
Microbiology & Pharmacognosy	PMBcO07	Infection Control & Antimicrobial Stewardship	5	1	0.5	1.5
	PMBcO08	Biopharmaceuticals & Immunological Products	5	1	0.5	1.5
	PMBcO09	Bioinformatics, Genomics & Pharmacomicrobiomics	5	1	0.5	1.5
	PMBcO10	Diagnostic Microbiology	5	1	0.5	1.5
	PCGcO06	Aromatherapy & Herbal Cosmetics	5	1	0.5	1.5
Clinical Pharmacy Practice	PCPcO21	Health Media	5	1	0.5	1.5
	PCPcO22	Precision Medicine	5	1	0.5	1.5
	PCPcO23	Palliative Care	4	2	1	3

L: Lecture, P: Practical, T: Tutorial

مرفق رقم 2

خاص بالمادة رقم (20)

الخطة الدراسية

Table (1)

Semester (1)

المستوى الأول

Code	Module tittle	Credit Hours			Credits	Examination Marks %				Total Marks	Final Exam. Hours
		L	P/T	Total		CW	P/T	U	O		
PHENGL01	English for Academic Purposes	3	-	3	10	50	-	50	-	100	2
MTH101	Mathematics	2	1	3	10	40	10	50	-	100	2
PMCc101	Pharmaceutical Analytical Chemistry-1	2	1	3	10	15	25	50	10	100	2
PMCc102	Pharmaceutical Organic Chemistry-1	2	1	3	10	15	25	50	10	100	2
PCLc101	Integrated Body System-1	2	1	3	10	15	25	60	-	100	2
PCTc101	Pharmacy Orientation, Legislation & Ethics	1 + 1*	-	1.5	5	25	-	75	-	100	2
Total	6			16.5	55						

*: One-hour lecture and one-hour tutorial for all students in the Lecture Hall

CW: Course work; P/T: Practical/Tutorial; U: Unseen final written exam; O: Oral.

Table (2)

Semester (2)

المستوى الأول

Code	Module tittle	Credit Hours			Credits	Examination Marks %				Total Marks	Final Exam. Hours
		L	P/T	Total		CW	P/T	U	O		
PHENGL02	English and Academic Writing	3	-	3	10	50	-	50	-	100	2
PMCc103	Pharmaceutical Organic Chemistry-2	2	1	3	10	15	25	50	10	100	2
PCGc101	Pharmacognosy-1	2	1	3	10	15	25	50	10	100	2
PCTc102	Physical Pharmacy	2	1	3	10	15	25	50	10	100	2
PCLc102	Integrated Body System-2	2	1	3	10	15	25	60	-	100	2
PCPc101	Scientific Thinking & Communication Skills	1 + 1*	-	1.5	5	25	-	75	-	100	2
PCPc102	Human Rights & Fighting Corruption	1 + 1*	-	1.5	5	25	-	75	-	100	2
Total	7			18	60						

*: One-hour lecture and one-hour tutorial for all students in the Lecture Hall
CW: Course work; P/T: Practical/Tutorial; U: Unseen final written exam; O: Oral.

Table (3)

Semester (1)

المستوى الثاني

Code	Module tittle	Credit Hours			Credits	Examination Marks %				Total Marks	Final Exam. Hours
		L	P/T	Total		CW	P/T	U	O		
PCPc203	Psychology	1	0.5	1.5	5	15	25	60	-	100	2
PBCc201	Biochemistry-1	2	1	3	10	15	25	50	10	100	2
PCTc203	Pharmaceutics-1	2	1	3	10	15	25	50	10	100	2
PCGc202	Pharmacognosy-2	2	1	3	10	15	25	50	10	100	2
PCLc203	Integrated Body System-3	2	1	3	10	15	25	60	-	100	2
PMCc204	Pharmaceutical Analytical Chemistry-2	2	1	3	10	15	25	50	10	100	2
Total	6			16.5	55						

CW: Course work; P/T: Practical/Tutorial; U: Unseen final written exam; O: Oral.

Table (4)

Semester (2)

المستوى الثاني

Code	Module tittle	Credit Hours			Credits	Examination Marks %				Total Marks	Final Exam. Hours
		L	P/T	Total		CW	P/T	U	O		
PCLc204	Pharmacology-1	2	1	3	10	15	25	50	10	100	2
PMBc201	General Microbiology & Immunology	2	1	3	10	15	25	50	10	100	2
PMCc205	Instrumental Analysis	2	1	3	10	15	25	50	10	100	2
PCTc204	Pharmaceutics-2	2	1	3	10	15	25	50	10	100	2
PBCc202	Biochemistry-2	2	1	3	10	15	25	50	10	100	2
PMCc206	Pharmaceutical Organic Chemistry-3	2	1	3	10	15	25	50	10	100	2
Total	6			18	60						

CW: Course work; P/T: Practical/Tutorial; U: Unseen final written exam; O: Oral.

Table (5)

Semester (1)

المستوى الثالث

Code	Module tittle	Credit Hours			Credits	Examination Marks %				Total Marks	Final Exam. Hours
		L	P/T	Total		CW	P/T	U	O		
PMBc302	Pharmaceutical Microbiology	2	1	3	10	15	25	50	10	100	2
PCGc303	Phytochemistry-1	2	1	3	10	15	25	50	10	100	2
PBCc303	Clinical Biochemistry	2	1	3	10	15	25	50	10	100	2
PCLc305	Pharmacology-2	2	1	3	10	15	25	50	10	100	2
PCTc305	Pharmaceutics-3	2	1	3	10	15	25	50	10	100	2
PMBc303	Public Health & Preventive Medicine	1	0.5	1.5	5	15	25	60	-	100	2
PCPc304	First Aid & Basic Life Support (BLS)	1	0.5	1.5	5	15	25	60	-	100	2
Total	7			18	60						

CW: Course work; P/T: Practical/Tutorial; U: Unseen final written exam; O: Oral.

Table (6)

Semester (2)

المستوى الثالث

Code	Module tittle	Credit Hours			Credits	Examination Marks %				Total Marks	Final Exam. Hours
		L	P/T	Total		CW	P/T	U	O		
PMBc304	Medical Microbiology-1 (Parasitology & Virology)	2	1	3	10	15	25	50	10	100	2
PMCc307	Medicinal Chemistry-1	2	1	3	10	15	25	50	10	100	2
PCPc305	Pharmacotherapy of Cardiovascular Diseases	2	1	3	10	15	25	50	10	100	2
PCPc306	Pharmacotherapy of Respiratory Diseases	1	0.5	1.5	5	15	25	50	10	100	2
PCGc304	Phytochemistry-2	1	0.5	1.5	5	15	25	50	10	100	2
PCLc306	Pharmacology-3	2	1	3	10	15	25	50	10	100	2
PCPc307	Community Pharmacy Practice	2	1	3	10	15	25	60	-	100	2
Total	7			18	60						

CW: Course work; P/T: Practical/Tutorial; U: Unseen final written exam; O: Oral.

Table (7)

Semester (1)

المستوى الرابع

Code	Module tittle	Credit Hours			Credits	Examination Marks %				Total Marks	Final Exam. Hours
		L	P/T	Total		CW	P/T	U	O		
PCLc407	Toxicology	2	1	3	10	15	25	50	10	100	2
PCTc406	Biopharmaceutics & Pharmacokinetics	2	1	3	10	15	25	50	10	100	2
PCPc408	Pharmacotherapy of Endocrine and Renal Diseases	2	1	3	10	15	25	50	10	100	2
PCPc409	Pharmacotherapy of Gastrointestinal Diseases	2	1	3	10	15	25	50	10	100	2
PMCc408	Medicinal Chemistry-2	2	1	3	10	15	25	50	10	100	2
PXXcO??	Optional-1	2	1	3	10	15	25	60	-	100	2
Total	6			18	60						

CW: Course work; P/T: Practical/Tutorial; U: Unseen final written exam; O: Oral.

Table (8)

Semester (2)

المستوى الرابع

Code	Module tittle	Credit Hours			Credits	Examination Marks %				Total Marks	Final Exam. Hours
		L	P/T	Total		CW	P/T	U	O		
PMBc405	Medical Microbiology-2 (Bacteriology & Mycology)	2	1	3	10	15	25	50	10	100	2
PCTc407	Pharmaceutical Technology	2	1	3	10	15	25	50	10	100	2
PCPc410	Hospital Pharmacy	2	1	3	10	15	25	60	-	100	2
PCTc408	Dosage Form Design	2	1	3	10	15	25	50	10	100	2
PCPc411	Pharmacotherapy of Neuropsychiatric Diseases	2	1	3	10	15	25	50	10	100	2
PXXcO??	Optional-2	2	1	3	10	15	25	60	-	100	2
Total	6			18	60						

CW: Course work; P/T: Practical/Tutorial; U: Unseen final written exam; O: Oral.

Table (9)

Semester (1)

المستوى الخامس

Code	Module tittle	Credit Hours			Credits	Examination Marks %				Total Marks	Final Exam. Hours
		L	P/T	Total		CW	P/T	U	O		
PCPc512	Drug Information & Pharmacovigilance	2	1	3	10	15	25	50	10	100	2
PMBc506	Biotechnology	1	0.5	1.5	5	15	25	60	-	100	2
PCGc505	Phytotherapy & Aromatherapy	1	0.5	1.5	5	15	25	50	10	100	2
PCPc513	Pharmacotherapy of Dermatological, Reproductive and Musculoskeletal Diseases	2	1	3	10	15	25	50	10	100	2
PCPc514	Pharmacotherapy of Pediatric Diseases	2	1	3	10	15	25	50	10	100	2
PCPc515	Entrepreneurship	1 + 1*	-	1.5	5	25	-	75	-	100	2
PCLc508	Research Methodology & Biostatistics	2	1	3	10	15	25	60	-	100	2
PXXcO??	Optional-3	1	0.5	1.5	5	15	25	60	-	100	2
Total	8			18	60						

*: One-hour lecture and one-hour tutorial for all students in the Lecture Hall
CW: Course work; P/T: Practical/Tutorial; U: Unseen final written exam; O: Oral.

Table (10)

Semester (2)

المستوى الخامس

Code	Module tittle	Credit Hours			Credits	Examination Marks %				Total Marks	Final Exam Hours
		L	P/T	Total		CW	P/T	U	O		
PCPc516	Marketing & Pharmacoeconomics	2	1	3	10	15	25	60	-	100	2
PCPc517	Clinical Pharmacokinetics	2	1	3	10	15	25	50	10	100	2
PBCc504	Clinical Nutrition	1 + 1*	-	1.5	5	25	-	75	-	100	2
PCPc518	Pharmacotherapy of Oncological Diseases and Radiopharmacy	2	1	3	10	15	25	50	10	100	2
PCPc519	Pharmacotherapy of Critical Care Patients	1	0.5	1.5	5	15	25	60	-	100	2
PCPc520	Clinical Pharmacy Practice	2	1	3	10	15	25	60	-	100	2
PMCc509	Quality Control of Pharmaceuticals	1 + 1*	-	1.5	5	25	-	75	-	100	2
PXXcO??	Optional-4	1	0.5	1.5	5	15	25	60	-	100	2
Total	8			18	60						

*: One-hour lecture and one-hour tutorial for all students in the Lecture Hall
CW: Course work; P/T: Practical/Tutorial; U: Unseen final written exam; O: Oral.

مرفق 3

خاص بالمادة (21)

وصف المحتوى العلمي للمقررات الدراسية

1. Core Modules Content

PHENGL01 English for Academic Purposes: (3+0)

The aim of this module is to develop students` English Language and academic skills necessary to meet the demands of undergraduate courses in an English-speaking academic environment. The module will focus on listening and lecture note-taking, reading strategies, academic writing and oral communication skills.

MTH101 Mathematics: (2+1)

This unit of study provides mathematical tools that are needed for other units of study in this degree. In the calculus component, the emphasis is on the behaviour of functions of various kinds, leading to the solution of differential equations. In all this provision, relevance to pharmacy applications as in pharmacokinetics of drugs will be elucidated.

PMCc101 Pharmaceutical Analytical Chemistry-1: (2+1)

Introduction to general chemistry, types of chemical reactions, electrolytes, equilibrium, calculations of concentrations of substances, stoichiometry, analysis of anions, analysis of cations and analysis of mixture of anions and cations are all topics to be studied in this module.

PMCc102 Pharmaceutical Organic Chemistry-1: (2+1)

The objective of this module is to provide students with the basic knowledge in pharmaceutical organic chemistry, which will serve as fundamentals for other modules offered during subsequent semesters. This module involves electronic structure of atom, chemistry of alkanes [nomenclature, synthesis and reactions (free radical reactions)], cycloalkanes, alkenes, alkadienes, alkynes, aromatic hydrocarbons (Kekule structure, Huckel rule, Electrophilic aromatic substitution and orientation) and arenes, alkyl halides (nomenclature, preparation and chemical reactions (S_N1, S_N2, E_1, E_2), and aryl halides, alcohols, phenols, ethers and epoxides.

PCLc101 Integrated Body System-1 : (2+1)

This module introduces human anatomy, physiology, pathophysiology and medical terminology to students as integrated body system-1.

The aspect of this module focuses on health and normal structure and function. The taught sessions and learning materials will outline the core principles of human anatomy and histology. The physiology part will cover the physiology of body fluids, nerve and muscle, central and peripheral nervous system, special senses and autonomic nervous system. The anatomy and the histology component will be integrated in the module as an introduction to the physiology of different organ system: tissues of the body, skeletal system, articular system, muscular system, central and peripheral nervous system and special senesces. The pathophysiology will focus on cellular level related to injury, the self-defense mechanism, mutation, cellular proliferation and the pathological factors that influence the disease process.

In addition to clinical manifestations associated with the diseased organ(s). The module also contains related elements of medical terminology.

PCTc101 Pharmacy Orientation, Legislation & Ethics: (1+1*)

The first part of the module is 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, incompatibilities, sources of drugs, different dosage forms and various routes of administration. Also, pharmaceutical calculations. In addition to the history of pharmacy practice in various civilizations

The second part of the module will give 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.

PHENGL02 English and Academic Writing: (3+0)

The module will develop students` English language, reading, academic writing and presentation skills necessary to meet the demands of undergraduate courses in an English-speaking academic environment.

PMCc103 Pharmaceutical Organic Chemistry-2: (2 +1)

The aims of this module are to ensure that students continue to acquire basic knowledge in organic chemistry in addition to that taught in pharmaceutical organic chemistry-1. This module involves different classes of organic compounds: aldehydes, ketones, carboxylic acid & acid derivatives, amino acid & peptides, sulphonic acids, and nitrogenous compounds. The module also aims to give the student principles in stereochemistry (Isomerism, optical isomers, racemic modification, nomenclature of configurations, geometrical isomerism and conformation of cyclohexane) and chemistry of carbohydrates.

PCGc101 Pharmacognosy-1: (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. Students should acquire knowledge concerning plant cytology, physiology. In this module, the student will study: importance of natural products, preparation of natural products-derived drugs including collection, storage, preservation and adulteration. Furthermore, the module will introduce the students to the different classes of primary & secondary metabolites. The module also deals with botanical drugs of leaves, flower and bark. 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.

PCTc102 Physical Pharmacy: (2+1)

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

PCLc102 Integrated Body System-2 : (2+1)

This module introduces human anatomy, physiology, pathophysiology and medical terminology to students as integrated body system-2. The aspect of this module focuses on health and normal structure and function. The taught sessions and learning materials will outline the core principles of human anatomy and histology. The physiology part will cover the normal physiology of cardiovascular, respiratory and excretory systems. The anatomy and the histology component will be integrated in the module as an introduction to the physiology of different organ system: cardiovascular, respiratory, excretory systems. The pathophysiology will focus on clinical manifestations associated with the diseased organ(s) and cancer. The module also contains related elements of medical terminology.

PCPc101 Scientific Thinking & Communication Skills: (1+1*)

The aim of this module is to focus on the value of scientific thinking and its relation to society, to foster an appreciation of scientific concepts and to understand their importance of functioning effectively in modern society.

Moreover, the module aims to focus on concept and meaning of communication; verbal and nonverbal communication; active listening skills; communication styles and presentation skills. Communication skills in diverse pharmacy practice setting will be discussed.

PCPc102 Human Rights & Fighting Corruption: (1+1*)

This module covers the following topics: human rights in criminal law, human right to change nationality or abandon one of its nationalities, international agreements related to the protection of human rights. Moreover, it will highlight human rights in Islamic law; women's rights in labor law and social insurance; human rights in litigation, civil and political rights.

PCPc203 Psychology: (1+0.5)

The aim of this module is to deliver different principles, theories and vocabulary of psychology as a science. The module also aims to provide students with basic concepts of social psychology, medical sociology and interpersonal communication which relate to the pharmacy practice system. Moreover, it aims to explore the strategies available in the treatment of psychological disorder.

PBCc201 Biochemistry-1: (2+1)

The aim of this module is to demonstrate the basic concepts and fundamentals of Biochemistry. The chemical and biological importance of amino acids & proteins are studied in details. The module also focuses on enzyme action, kinetics and regulation. Structures and chemistry of carbohydrates and lipids are also highlighted in the module. Nucleotides and

nucleic acids (DNA and RNA) are studied in details with brief emphasis on biological important processes such as replication, transcription and translation. An overview of the bioenergetics and oxidative phosphorylation will be covered. The module also includes porphyrin & bile pigment structure, synthesis, and metabolism. The laboratory work deals with the study of some biological fluids and secretions along with enzyme kinetics.

PCTc203 Pharmaceutics-1: (2+1)

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

PCGc202 Pharmacognosy-2: (2+1)

The module introduces students to some botanical drugs of seeds, fruits, subterranean, herbs, unorganized drugs of marine and animal origin. This will be taught 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. During the lectures and practical sessions, students will learn to identify examples of these drugs in their entire and powdered forms. Students will learn about the major constituents, folk uses, clinically proven uses, benefits, precautions of those medicinal plants and possible herbal-drug interactions of selected examples of these drugs.

PCLc203 Integrated Body System-3 : (2+1)

This module introduces human anatomy, physiology, pathophysiology and medical terminology to students as integrated body system-3.

The aspect of this module focuses on health and normal structure and function. The taught sessions and learning materials will outline the core principles of human anatomy and histology. The physiology part will cover the physiology of endocrine, digestive and reproductive systems. In addition to organic and energy metabolism; exercise and environmental stress. The anatomy and the histology component will be integrated in the module as an introduction to the physiology of different organ system: endocrine, digestive and reproductive systems. The pathophysiology will focus on the clinical manifestations associated with the diseased organ(s). The module also contains related elements of medical terminology.

PMCc204 Pharmaceutical Analytical Chemistry-2: (2+1)

This module explains acid-base theory, titration curves, indicators, and applications. The precipitimetric titrations, solubility product principle, titration curves and Mohr's method will be studied. The module will introduce Volhard's method, Fajans' method and pharmaceutical applications. 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) will also be explained.

PCLc204 Pharmacology-1: (2+1)

This module provides students with the general principles of pharmacodynamics and pharmacokinetics together with detailed study of drugs acting on the autonomic nervous system and neuromuscular junction. The module will also introduce some drugs acting on renal and cardiovascular systems.

PMBc201 General Microbiology and Immunology: (2+1)

This module will introduce the students to the vast world of microorganisms, including both laboratory and theoretical experience. A basic understanding of the kingdoms of life, prokaryotic and eukaryotic cell structure, function and cellular metabolism and methods of reproduction. The module also covers the principles of genetic characters including DNA and RNA structures, replication, different forms of mutation and mutagenic agents. It also explores the basic concepts of microbial growth, cultivation and reproduction. The module also includes description of the profiles of the structure and functions of the human immune system in health and disease. This module will introduce the students to the modern concepts of medical immunology, with emphasis on host parasite relationship, non-specific and specific immunity, mechanism of protective immunity. In addition to molecular and cellular immunology, including antigen and antibody structure, function and reaction between them, effector mechanisms, complement, and cell mediated immunity. Other topics introduced include active and passive immunization, hypersensitivity, in-vitro antigen antibody reactions, immuno-deficiency disorders, autoimmunity and auto-immune diseases and organs

transplantation. In addition, the module will introduce students to the different serological reactions.

PMCc205 Instrumental Analysis: (2+1)

This module introduces Electrochemistry (potentiometry, conductometry), spectroscopic methods of analysis which include uv/vis spectroscopy, its principal, instrumentation, factors affecting absorption and applications in pharmaceutical analysis. This module will also cover fluorimetric methods, principal instrumentation, factors affecting fluorescence intensity and applications in pharmaceutical analysis. Atomic spectroscopy; principal and instrumentation will also be introduced. This module describes the chromatographic methods for analytical chemistry which includes: TLC, gel chromatography, column chromatography, HPLC, UPLC, TLC, gas chromatography and capillary electrophoresis.

PCTc204 Pharmaceutics-2: (2+1)

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

PBCc202 Biochemistry-2: (2+1)

The aim of this module is to provide students with basic information about metabolic pathways and tissue utilization of carbohydrates, lipids and proteins, including mobilization of body stores of glycogen and fats, and regulation of blood glucose level and clinical correlations as well as integration of metabolism during feeding and fasting cycle across various organs of the body. The laboratory work deals with the study of blood parameters, assessment of disorders of plasma proteins, carbohydrates and lipid metabolism and how to interpret the changes in these parameters' levels related to different human pathologies.

PMCc206 Pharmaceutical Organic Chemistry-3: (2+1)

The module aims to provide the student with an introduction to the use of different spectroscopic tools, including UV, infrared (IR), nuclear magnetic resonance (NMR) and mass spectrometry (MS) for the structural elucidation of organic compounds. The module also aims to give the student principles of heterocyclic chemistry.

PMBc302 Pharmaceutical Microbiology: (2+1)

This module is designed to provide student with basic, practical and professional knowledge on antimicrobial agents, different sterilization methods and their application. The module explains the different groups of therapeutic antimicrobials which include antibacterial, antifungal and antiviral agents in addition to non-antibiotic antimicrobial agents (biocides). The module involves studying antimicrobials in relation to their classification,

mechanism of action and resistance of microbes in addition to the new categories and new approaches to overcome bacterial resistance & antibiotics clinical abuse. This module also describes in detail the physical and chemical methods of bacterial eradication and how to effectively control microbial growth in the field of pharmaceutical industry/hospitals. It further describes the means of preservation of pharmaceutical products, as well as cosmetics, followed by the proper tests of quality control and sterility assurance. Moreover, the module involves the study of sterilization, sterilization indicators, sterility testing, aseptic area, the microbiological quality of pharmaceuticals and validation of sterilization process.

PCGc303 Phytochemistry-1: (2+1)

Based on complementary medicine and naturopathic medicine, Egyptian medicinal plants rich in carbohydrates, glycosides, and volatile oils that can be used as natural therapies in the form of extracts, bioactive raw materials and phytochemical standards to serve the pharmaceuticals, cosmetics and food industries in Egypt will be illustrated. The module aims to gain the students the knowledge and experience that enable them to understand, describe and recognize the chemistry and pharmaceutical uses of carbohydrates, glycosides and volatile oils of plant or animals as well as techniques for their preparation, isolation, identification and determination from their respective sources. In addition, special emphasis on the biosynthesis of the different classes is also concerned. Moreover, their application in medicine and pharmaceutical industries. Clinical applications will be correlated with various clinical analyses.

PBCc303 Clinical Biochemistry: (2+1)

The aim of this module is to acquaint students with the biochemical mechanisms and changes associated with different diseases such as liver, cardiovascular and kidney in addition to lipids and carbohydrates disorders. The module will also include the inborn errors of metabolism, clinical enzymology, tumor markers, electrolytes, blood gases and acid-base balance with inclusion of various case studies. Students will also be familiar with the use of various biomarkers in diagnosis, monitoring and prognosis of those diseases. Further information on techniques and applications of basic molecular biology and advances in clinical biochemistry will also be elaborated. Topics shall discuss the basic principles of qualitative and quantitative analyses that are utilized in common clinical laboratory tests.

PCLc305 Pharmacology-2: (2+1)

The module will cover the rest of drugs acting on the cardiovascular system. It will illustrate the pharmacology of drugs acting on the central nervous and respiratory systems. In addition to different classes of analgesics, anti-histaminics as well as drugs used for the treatment of gout and migraine.

PCTc305 Pharmaceutics-3: (2+1)

The module describes the principles and techniques involved in the formulation, and manufacturing of solid dosage forms including powders, granules, tablets, capsules and suppositories. It also concerns with principle of aerosols.

PMBc303 Public Health & Preventive Medicine: (1+0.5)

The provision of this module defines the framework concept of health and understanding all scientific disciplines required for health education and promotion directed to the community health. Further, it illustrates how diseases occur, spread and transfer. It also includes the fundamentals of epidemiology, communicable and non-communicable diseases and their control. Also, the module explains the significance of immunity and immunization, types of immunological products and their dose schedules. improving mental, social, environmental, occupational, geriatric and family health, use of sufficient and balanced food and nutrition, supplying safe drinking water, treating and disposing wastes and proper intervention during disasters are all topics to be studied. Furthermore, it delineates the principles of disease control and prevention, hospital acquired infection, prevention and control. Besides, students will also gain insight into disinfection and its role in limiting infections and contamination.

PCPc304 First Aid & Basic Life Support (BLS): (1+0.5)

The aim of this module is to get the students acquainted with induced human body changes in response to sudden/ emergent health disorders like chock, trauma & poisoning. Students will also learn necessary general first aid procedures of providing quick, effective & professional life saving premedical aid in case of respiratory emergencies, fractures and dislocations, bleeding and surgical emergencies, burns and scalds, animal bites and poisoning.

PMBc304 Medical Microbiology-1 (Parasitology & Virology): (2+1)

This module acquaints the students with parasitic and viral infections of humans with knowledge concerning etiological, epidemiological and ecological aspects of parasites causing diseases to humans with emphasis on the different infestations or infections related diseases in Egypt.

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

The other part of the module 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 human viral infections caused by DNA and RNA viruses.

PMCc307 Medicinal Chemistry-1: (2+1)

This module introduces the chemistry and the basis of structural activity relationship of autonomic nervous system drugs, cardiovascular drugs. CNS drugs and opoid analgesics, neurodegenerative disorder drugs antihistamines local anesthetics non-steroidal (NSAIDs) and other drugs controlling pain and inflammation will also be studied.

PCPc305 Pharmacotherapy of Cardiovascular Diseases: (2+1)

This module aims to provide the student with the knowledge in epidemiology, etiology, pathophysiology, clinical manifestation, investigations, treatment, monitoring, and patient counseling of cardiovascular disorders including dyslipidemias, hypertension, coronary artery disease, acute coronary syndromes, heart failure, dysrhythmias, thromboembolic disorders, and stroke.

PCPc306 Pharmacotherapy of Respiratory Diseases: (1+0.5)

This module aims to provide the student with the knowledge in epidemiology, etiology, pathophysiology, clinical manifestation, investigations, treatment, monitoring, and patient counseling of bronchial asthma, chronic obstructive pulmonary disease, pulmonary hypertension, cystic fibrosis, upper and lower respiratory tract infections, and drug-induced respiratory problems.

PCGc304 Phytochemistry-2: (1+0.5)

The module aims to enable students to demonstrate knowledge of basic concepts of chemistry and bioactivities of volatile oils & alkaloids, applying different chromatographic techniques for their isolation and identification. The module 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 module 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.

PCLc306 Pharmacology-3: (2+1)

This module deals with the basic principles of chemotherapy including antibacterial, antiviral and anticancer agents. A part of the module is devoted to endocrine disorders and drugs used to treat them. Moreover, this module will include pharmacology of GIT disorders such as peptic ulcer, diarrhea, constipation and vomiting.

PCPc307 Community Pharmacy Practice: (2+1)

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

PCLc407 Toxicology: (2+1)

The aim of this module is to set-up the concept of toxicology with relation to defining its general rules, measurement, types of toxic agents; environmental pollutants, drugs; house-hold stuff; heavy metals, animal, plant and marine poisons, pesticides as well as drug abuse are included. Antidotes and measures/regulations to minimize toxicity will be likewise driven. Identification and managements of toxic agents will be also studied. Also, an overview will be provided on teratology and common drugs posing such a risk during pregnancy. Postmortem sampling for detection of poisons, methods of detection, interpretation of results are also covered.

PCTc406 Biopharmaceutics & Pharmacokinetics: (2+1)

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

PCPc408 Pharmacotherapy of Endocrine and Renal Diseases: (2+1)

This module aims to provide the student with the knowledge in epidemiology, etiology, pathophysiology, clinical manifestation, investigations, treatment, monitoring, and patient counseling of different endocrinology disorders (Diabetes, thyroid disorder, Cushing syndrome). Moreover, it will provide information about different renal disorders and related fluid and electrolyte disturbances (acute and chronic renal failure, uremic syndrome, kidney stones...). The module develops the students' ability to design, monitor, refine safe and cost-effective treatment plans and provide appropriate information to patient, caregivers, and health professionals.

PCPc409 Pharmacotherapy of Gastrointestinal Diseases: (2+1)

The aims of this module are to enable the students to understand hepatic disorders including viral hepatitis, pancreatitis, gastrointestinal bleeding, peptic ulcer, gastro-esophageal reflux disease, inflammatory bowel diseases and irritable bowel syndrome as well as gastrointestinal symptoms including nausea, vomiting, constipation, and diarrhea.

PMCc408 Medicinal Chemistry-2: (2+1)

This module provides information about the chemistry and the bases of structural activity relationship of antibiotics and antimicrobials, chemotherapeutic agents including antifungal, antiviral, antiparasitic, and anticancer agents. Moreover, PPIs and other GIT drugs, steroid hormones, endocrine related drugs (Diabetes, thyroid, ... etc) will also be studied.

PMBc405 Medical Microbiology-2 (Bacteriology & Mycology): (2+1)

This module presents a systematic clinical description of bacterial and fungal diseases and their characteristics. It explains etiology and clinical manifestation, mode of transmission, management, control and techniques in detection and identification of pathogenic microorganisms. Gram positive cocci & bacilli, Gram negative cocci & bacilli and mycobacteria as well as other types of bacteria of major significance to public health will be studied. In the same way the most common mycotic infections will be studied.

PCTc407 Pharmaceutical Technology: (2+1)

The module provides students with an introduction to industrial pharmacy. It deals with the principles of various unit operations such as coating, heat transfer, drying, distillation, filtration, 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, as well as the materials used for plant construction.

PCPc410 Hospital Pharmacy: (2+1)

This module aims to provide the student with the knowledge about the organization and structure of a hospital pharmacy, hospital pharmacy facilities and services (inpatient and outpatient services). Moreover, the module will provide information about hospital formulary, pharmacy and therapeutic committee, I.V. admixtures and incompatibilities. It will also cover parenteral nutrition, enteral feeding, handling of cytotoxic drugs and outline the procedure of controlling acid base and electrolytes.

PCTc408 Dosage Form Design: (2+1)

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. and gene delivery systems, and to understand how to represent molecules in

computers, and describe how bio/chemo informatics tools can be used in drug delivery and targeting research. Study of the basics of computer assisted dosage form design as a new approach in drug delivery will also be tackled, with calculation of the properties (descriptors) of potential drugs, and their correlation to target protein interactions through bio/chemo-informatical modeling. It also covers the application of polymers and excipients to solve problems/issues concerning the optimization of absorption, selective transport, and targeting.

PCPc411 Pharmacotherapy of Neuropsychiatric Diseases: (2+1)

This module aims to provide the student with the knowledge in epidemiology, etiology, pathophysiology, clinical manifestation, investigations, treatment, monitoring, and patient counseling of neuropsychiatric diseases (dissociative disorders, mental health disorders, schizophrenia, depression, anxiety, seizure disorders, parkinsonism, migraines, dementia and Alzheimer's disease). Also, it will cover the appropriate use of sedative and hypnotics, general anesthetics, and opioid analgesics.

PCPc512 Drug Information & Pharmacovigilance: (2+1)

This module aims to provide the students with the knowledge to be able to identify the concept of drug information services and to utilize skills in receiving, classifying and analysing a drug information request in a logical order in drug and poison information centre. The module will enable the students to understand different drug information resources (primary, secondary, and tertiary sources), use of the internet for drug and research

information, and evaluating information on the web. The module will enable the students to retrieve, analyse, and interpret professional and scientific literature and define clinical practice guidelines & evidence-based medicine.

This module also provides the students with basic knowledge on pharmacovigilance and risk benefit balance of marketed products based on their knowledge of the pharmacological background of the drugs. Also, students are educated about the different drug-related problems, adverse drug reactions reporting, drug safety signals, safety communication and risk minimization strategies for the best therapeutic outcomes. Applying the aforementioned knowledge should allow the students to cope with the new era of medicines control.

PMBc506 Biotechnology: (1+0.5)

This module aims to provide students with the fundamentals, scope and applications in biotechnology through studying fermentation technology, upstream, downstream, scaling up and down processes and use of molecular techniques. This module will emphasize on the use of biotechnology in pharmaceutical production of drugs (cytokines, growth factors, hormones, and antibodies) and their clinical applications, in addition to other major classical biotechnological products, biotransformation, bioremediation, bioleaching, bioinsecticides, biosurfactants and biopolymer production. The module further provides the recent advances techniques in applied genetic engineering focusing on their uses in the medical field.

PCGc505 Phytotherapy & Aromatherapy: (1+0.5)

Upon successful completion of this module, the students should be able to know guidelines for prescribing herbal medicinal drugs on the basis of the pharmacological properties of these drugs including therapeutic uses, mechanism of action, dosage, adverse reactions, contraindications & drug interactions. The module also allows students understand pharmacotherapeutic principles applied to the treatment of different diseases, pharmacovigilance and rational use of drugs. 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. It includes studying of medicinal plants portfolios in relation to phytopharmaceuticals in the Egyptian market.

PCPc513 Pharmacotherapy of Dermatological, Reproductive and Musculoskeletal Diseases: (2+1)

The aims of this module are to enable the students to understand skin structure and function, primary and secondary lesions, most popular skin diseases; infective and non-infective types and their differentiation. Sexually transmitted diseases, male infertility, and women health, as well as musculoskeletal disorders are also included.

PCPc514 Pharmacotherapy of Pediatric Diseases: (2+1)

The aims of this module are to enable the students to understand the nutritional requirements in neonates and infants, nutritional disorders, neonatology, infectious diseases in pediatrics, congenital heart diseases,

endocrine, neurological, hematologic, renal, and respiratory disorders, pediatric emergencies.

PCPc515 Entrepreneurship: (1+1*)

This module is designed to enhance a student's knowledge in leadership, business, and financial skills in pharmacy practice while learning the traits of an entrepreneur, current topics in entrepreneurship with a specific focus on pharmacy practice and patient care programs. This module will teach the participants a comprehensive set of critical skills needed to develop a profitable business project. This module is designed to provide the students the personal and business tools including risk-taking, strategic planning, marketing, competitiveness, and social responsibility to make the transition from the academic environment to the daily practice of pharmacy now and in the future, with an emphasis on entrepreneurship.

PCLc508 Research Methodology & Biostatistics: (2+1)

This module aims to train students to conduct biomedical pharmaceutical research whether basic or clinical. It is tailored to deliver the fundamental steps for any research project to enable the students to explore resources and literature, addressing questions and filling in the scientific gaps for generation of hypotheses. The module will also include the basics of various study designs. It will also introduce students to fundamentals of biostatistics such as data analysis, descriptive statistics, elementary probability theory, sampling methods, statistical inference, hypothesis testing, correlation and regression, analysis of variance, etc. This module will enable students to execute their graduation research project in year 5.

PCPc516 Marketing & Pharmacoeconomics: (2+1)

The aim of this module is to develop the appropriate knowledge and implementation of marketing research, specifically in the pharmaceutical field and to apply marketing principles in organizational decision-making. This module will outline the process of designing, launching and running a new business. The module will also deal with pharmacoeconomics within a wider range of health economics due to the fact that health care reform and rising costs are driving a demand for resources that better inform health care decisions. This module will provide the students with a comprehensive set of theories, tools and analytic approaches to understand health care markets and systems. The students will be able to apply health economics principles to health care practices and policies and evaluate the cost and effectiveness of medical treatments, interventions and technologies through outcomes research. Upon completion of this module students will be able assess the strengths and weaknesses of the different methods for economic evaluation in health care; evaluate approaches to preference-based measures of patient quality of life; understand cost and outcomes modeling techniques for economic evaluation; create an introductory Decision Analysis Model and Markov Model using spreadsheet software; critically evaluate cost-effectiveness studies; develop effective presentations of economic evaluations; and understand the role of economic evaluation in healthcare decision-making and health policy.

PCPc517 Clinical Pharmacokinetics: (2+1)

The aims of this module are to enable the students to understand the kinetics of drug absorption, distribution, metabolism and elimination. Different pharmacokinetic models of different drugs (e.g. antibiotics, cardiovascular medications, antiepileptic, chemotherapy and immunosuppressant) will be discussed. This module prepares the students to utilize dosage individualization of drugs of narrow therapeutic index especially in patients with compromised renal and hepatic function. Specialized software applications will be employed to assess doses, their time intervals and frequency via various routes of administration.

PBCc504 Clinical Nutrition: (1+1*)

In this module the students will understand the relationship between nutrition and human wellbeing and how to develop a healthy lifestyle. The module will cover the different types of macronutrients and micronutrients and their recommended daily allowance (RDA) and how they provide the body energy needs and their role in health and disease. Students will be acquainted with the basal metabolic rate (BMR) and the difference between nutritional and caloric values, along with the food pyramid. Students will learn how to nutritionally manage problematic weight, diabetic, hepatic, renal, cardiovascular, and cancer patients. The assessment and nutritional management of ICU patients as well as the principles of the use of various nutrition supplements in different clinical situations will be covered. By the end of this module, students will learn how to deal with complicated and advanced cases to achieve the best results in disease management.

A detailed description of how counseling and behavior modification can affect nutrition in different situations is also explained. The nutritional needs of different critical life cycle stages are examined, such as maternal nutrition throughout pregnancy and lactation, as well as the pediatric and the geriatric stage. The role of nutritional support in different sports and physical activities is recognized and examined. Guidelines for dietary planning are also explained and discussed.

PCPc518 Pharmacotherapy of Oncological Diseases and Radiopharmacy: (2+1)

The aims of this module are to enable the students to understand cancer etiology, risk factors, cancer staging and grading, diagnosis, prognosis, optimizing chemotherapeutic regimens, different types of tumours and their management, toxicities of chemotherapy, supportive treatment, pharmaceutical care and patient's support measures (nutritional and psychological support). This module also includes studying radioactive isotopes which process medical applications and precautions of their usage.

PCPc519 Pharmacotherapy of Critical Care Patients: (1+0.5)

This module aims to provide the student with the knowledge in pathophysiology, clinical interpretation, pharmacotherapy and management of critical care illness (e.g. medical and surgical crises, trauma patients, supportive care, ICU infections, burns, neuro-critical care, cardiovascular critical care, sepsis, septic shock, pain and analgesia, bleeding disorders and anticoagulation, nutritional support and therapy, hemodynamic monitoring, fluid and electrolyte disorders).

PCPc520 Clinical Pharmacy Practice: (2+1)

The aim of this module is to promote the standards of professionalism in pharmacy practice and to educate students about various aspects of patient-centered pharmaceutical care including performing different pharmacy practice-related calculations, physical examination and diagnostic procedures, drug administration techniques, adherence and compliance issues, managing adverse drug reactions and allergies, clinical drug monitoring, patient counseling, pain management and immunizations. It will also provide information about principles of special care populations, drug-related problems, drug interactions and interpretation of clinical laboratory data and physical examination.

PMCc509 Quality Control of Pharmaceuticals: (1+1*)

Quality control & quality assurance of pharmaceuticals, good analytical practice and sampling; sampling of pharmaceuticals and related materials, types of sampling tools, sampling plans, documentation and its types, validation and drug stability studies are all topics to be studied in this module.

2. Optional Modules:

PMCcO10 Advanced Pharmaceutical Analysis: (2+1)

This module presents many applications related to analytical methods as water analysis, lipids, cosmetics, food, vitamins, pharmaceuticals and biological samples in addition to principles of method development and new advanced techniques.

PMCcO11 Radiopharmaceutical Chemistry: (1+0.5)

This course aims at introducing the students to a basic background of nuclear pharmacy and nuclear medicine. 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.

PMCcO12 Nanochemistry: (1+0.5)

This course aims at introducing the students to basics of nano-medicine and organometallic chemistry. Besides, the course aims at making the students familiar with basics of metal chemistry, synthesis of metallic nanoparticles, synthesis of polymeric nanoparticles, pharmacokinetics and pharmacodynamics of nanoparticle and clinical applications of nanoparticles.

PMCcO13 Drug Design: (2+1)

The prime objective of this module is to prepare the students for professional practice by understanding how the drugs' biological and

toxicological activities are strongly correlated to their chemical structures (Structure-activity relationship; SAR), physicochemical properties and metabolic pathways. Focusing on patient-directed clinical care, the molecular aspects governing drugs' pharmacokinetics (ADME), pharmacodynamics, optimization of drug action, possible side effects, in addition to understanding drug interactions are targeted. In terms of chemistry, SAR, mechanism of action and side effects. The module is also designed to familiarize the students with drug design and molecular modelling covering structure-based and ligand-based drug design. This also includes the process of drug discovery and development from target identification until approval of a new drug. Much concern is given to lead structure identification, optimization and targeting certain receptors and enzymes active sites. Additionally, the module addresses the study of molecular docking, pharmacophore generation, and molecular modifications including prodrug design, stereochemistry alterations, isosteric replacement, drug metabolism and Quantitative Structure-activity relationship (QSAR).

PBCcO05 Molecular Biology & Gene Therapy: (2+1)

This module provides students with basic information about gene therapy as a promising tool for treating various gene dysregulation associated diseases such as cancer. FDA approved drugs for gene therapy will also be discussed. The module also covers a wide range of recent molecular biology tools that have been introduced for DNA manipulation. Genetic mutations and SNPs, chromosomal abnormalities, DNA repair, DNA and RNA extraction and PCR related techniques will be explained

PCLcO09 Biological Screening of Drug Activities: (2+1)

This module develops the appropriate knowledge, skills and understanding of the role and techniques of pharmacological assays in the process of drug discovery. It deals with the biological methods employed in the identification (screening) and quantitative estimation (bioassay) of the different pharmacological activities of new molecules. The students will understand the theoretical aspects of these assays as well as apply this knowledge to evaluate and criticise the results of published research papers utilising these biological screening methods.

PCLcO10 High-Throughput Screening of Drug activities: (1+0.5)

This module provides students with the basic and applied information about high-throughput screening (HTS), which is a method for scientific experimentation especially used in drug discovery. High-Throughput Screening allows a researcher to quickly conduct millions of chemical, genetic or pharmacological tests. Through this process one can rapidly identify active compounds, antibodies or genes which modulate a particular biomolecular pathway. The results of these experiments provide starting points for drug design and for understanding the interaction or role of a particular biochemical process in biology. A screening facility typically holds a library of stock plates, whose contents are carefully catalogued, and each of which may have been created by the lab or obtained from a commercial source.

PCLcO11 Evaluation of Safety of Drugs: (1+0.5)

This module will deal with all required preclinical experimental studies performed on new investigational drugs and chemicals. This include acute, dermal, sub-acute, chronic toxicity tests including testing for mutagenic, teratogenic and carcinogenic potential of chemicals and drugs.

PCLcO12 Neuroscience-1: (2+1)

The module describes how the brain works and how much there is still to learn. Its study involves scientists and medical doctors from many disciplines, ranging from molecular biology through to experimental psychology, as well as the disciplines of anatomy, physiology and pharmacology as well as neuro degenerative diseases. Their shared interest has led to a new discipline called neuroscience – the science of the brain.

PCLcO13 Neuroscience-2: (1+0.5)

This module complements Neuroscience-I. It discusses how the brain develops; especially clear insights have emerged in recent years by virtue of the genetic revolution. Special focus is also given to elucidating various mechanisms of plasticity, the neurobiology of memory and learning as well as the information retrieval. Shedding light upon the brain-immune system interactions, besides how the brain generates a coordinated chemical response to stress. Explaining the importance of the sleep/wake cycle as one of a number of rhythmic activities of the body and brain.

PCTcO09 Advanced Drug Delivery & Nanopharmaceuticals: (2+1)

Nanosciences and nanotechnologies are at the forefront of today's science and technology, engineering both matter and living systems at the scale of molecules and atoms. Their unique applications, products, markets and profitable revenue sources can bring new benefits and challenges to both society and economy.

This module explains the differences between classical and quantum physics that distinguish the different non-intentionally nanomaterials in nature, accordingly describes the physicochemical principles controlling the formulation and performance of nanocarriers. Discusses different methods of preparation & evaluation of nanovesicles, in addition, explains the differences between microcapsules, niosomes, liposomes, silver nanoparticles & nanoemulsions and their applications in Pharmacy, Pharmaceutical industry and regenerative medicine.

PCTcO10 Cosmetics: (2+1)

The module aims not only to provide the student a good knowledge about how to formulate different types of cosmetics and cosmeceutical preparations and their applications but also the physiology and pathophysiology behavior behind each condition like acne, cellulite, sun burn, dandruff, hair loss and how these could affect cosmetics products formulation, ingredients and selection.

PCTcO11 Veterinary Pharmacy: (1+0.5)

This module prepares students for specialized activity in the field of veterinary pharmacy including general features of veterinary dosage forms,

routes of veterinary drugs administration, economic aspects of veterinary drug usage, health-hygienic aspects of veterinary drug usage, and biological data on the important animal species. In addition to veterinary dose calculation.

PMBcO07 Infection Control & Antimicrobial Stewardship: (1+0.5)

This module aims to provide students with comprehensive information pertaining to infection control, including the guidelines of how to minimize a healthcare provider's risk for acquiring a communicable disease and identifying the elements of the chain of infection. It will also discuss factors that influence the transmission of infections and describe the procedures for cleaning, disinfecting and sterilizing items used in patient care, in addition it will identify the standard precautions for blood and body fluids and body-substance isolation in hospitals and the associated pharmacist and patient implications. The module is designed also to introduce students to the principles of antimicrobial stewardship to facilitate rational antimicrobial selection, stewardship interventions that have been reported in the literature, quality improvement methods, as well as program development, implementation and evaluation.

PMBcO08 Biopharmaceuticals & Immunological Products: (1+0.5)

This module will focus on the pharmaceutical industry and market switching to one with great weight placed on biological products (protein/ recombinant protein drugs, and monoclonal antibodies, other immunological products such as whole and partial). This module covers also the biological

action, mechanism of action, production (small and large scale), quality assurance and quality control of biological pharmaceutical and immunological products. It emphasizes on their clinical importance and the application of each of these drugs.

PMBcO09 Bioinformatics, Genomics & Pharmacomicrobiomics: (1+0.5)

This module covers the basic principles of bioinformatics and sequence analysis, with emphasis on the microbiological and pharmaceutical aspect and application of the field. It places emphasis on the bioinformatics of infectious diseases, tracing epidemics, drug target analysis and computational drug design. This module also covers the emerging fields of genomics and metagenomics, with a pharmaceutical and pharmacological focus. Thus, it covers the principles of DNA sequencing, high-throughput sequencing, genome analysis starting from sequence quality control to pre-processing to assembly and ending with annotation and comparative genomics. The module also includes a part about pharmacogenomics and pharmacomicrobiomics, which are the impact of human genome and microbiome variations, respectively, on drug action, predisposition and toxicity.

PMBcO10 Diagnostic Microbiology: (1+0.5)

This module is completely dedicated to diagnostic techniques in a laboratory setting. The module prepares the student to manage and conduct all possible microbiological, serological and parasitology laboratory tests,

with focus on good laboratory practices, quality control and quality assurance.

PCGcO06 Aromatherapy & Herbal Cosmetics: (1+0.5)

This optional module aims to enable students to attain the systematic approach for evidenced based herbal drugs rich in volatile oil in the treatment of various clinical disorders & herbal cosmetics. All the studied herbal drugs should be approved by World Health Organization (WHO). This module also covers the isolation of the volatile oil from their respective herbs by different techniques as well as their identification. The students will also acquire knowledge for incorporation of the volatile oil in suitable dosage forms i.e. nanoparticles, creams, lotion, soaps...etc.

PCPcO21 Health Media: (1+0.5)

This module offers students the opportunity to critically examine the intersection of the fields of health communication. The module will critically evaluate the impact of communication and media on the health communication process from different perspectives. This Module focuses on the use of mass media to help health workers expand their audience reach, which is crucial considering the fact that face-to-face channels of communication often require too many human resources and reach only a small number of people in large, underserved rural areas.

PCPcO22 Precision Medicine: (1+0.5)

This module provides pharmacy students with an overview of precision medicine. The content of the course covers all aspects of precision medicine

with an emphasis on Pharmacogenomics. Students will learn the basics of molecular genetic basis of disease and molecular diagnostic methods to diagnose germline and somatic mutations and apply these strategies across a wide range of clinical conditions including diagnostic testing and health forecasting. The module will include detailed instruction on how to interpret genomic variation and how to effectively communicate this information to patients in ways that are effective, efficient, and that scale. The module will address questions of clinical implementation, including measuring cost-effectiveness, clinical utility and will address the ethical, legal, and social issues presented by precision medicine. Finally, the module will give clinical examples for how the pharmacist recommend specific alternative therapies and/or doses of specific medications based on pharmacogenomics results.

PCPcO23 Palliative Care: (2+1)

The module will focus on the philosophy and principles of hospice and palliative care that can be integrated across settings to improve symptoms, management and quality of care through chronic illness and at the end of life. It will also cover pain management, communication strategies and ethical issues that occur at the end-of-life.