معاهـد طيبة العليـا

دليل الطالب

معهد طيبة العالي للهندسة

لائحـة 2017

Student Guide Handbook

Bylaws 2017

العام الدراسي

2024 / 2023

أبنائي وبناتي الطلاب
من معهد طيبة للهندسة

تهنئة قلبية و ترحيب بكم في بداية التحاقكم بالمعهد و الذي يفتح ذراعيه لكم متضمنا كل الانشطة الطلابية و الاكاديمية.

أبنائي الطلاب وبناتي الطالبات ، إنكم الشموع التى تضئ مستقبل هذا الوطن والنجوم الزاهرة التى ستسطع فى سمائه ، وإن لكم أن تشعروا بالفخر والزهو مرتين : مرة لأنكم من أبناء أعظم أمة على مدى القرون والأزمان ، ومرة أخرى لأنكم من أبناء معهد طيبة للهندسة،

وإنكم أصبحتم جزء من اسرة الأكاديمية المترابطة و المتعاونة لبعضها البعض و نعمل علي توفير متطلبات العمل الدراسي داخل قاعات الدرس و تقديم كافة التسهيلات الممكنة لجميع ابنائنا الطلاب بشان الانشطة الثقافية و الرياضية و العلمية و انشطة الجوالة و غيرها من الانشطة الطلابية التي تحقق نوع جيد من الصلة و التواصل بين الطلاب و اعضاء هيئة التدريس بالمعهد .

آمل ان تكون هذه البداية في التعليم العالي هي نقطة الانطلاق لكل منكم نحو تحقيق مستقبل واعد و مميز في النواحي العلمية و الطلابية تمهيدا لتحقيق تطلعاتكم في العمل و المساهمة في تدعيم هذا الوطن الحبيب مصر.

أبنائي الطلاب أسال الله تعالي أن يشملكم دائما برعايته و يديم علي وطننا الحبيب مصر كل العزة و التقدم و الرقي .

رئيس مجلس الإدارة

أ.د. صديق عفيفي

أبنائي الطـلاب

يسعدني ويسعد أسرة معهد طيبة العالي للهندسة أن نرحب بكم ونهنئكم بانضمامكم لنا.

نقدم لكم هذا الدليل ليتسنى لكم التعرف على معهدكم من خلاله حيث يمكنكم الاطلاع على رؤية ورسالة وأهداف المعهد.

كما يمكنكم معرفة البرامج والمناهج الدراسية خلال فترة دراستكم في المعهد، بالإضافة الى التعرف على أنشطة المعهد المختلفة التي تخدم العملية التعليمية.

أهلاً بأبنائي الطلاب مهندسي المستقبل في معهد طيبة العالي للهندسة.

مع خالص تمنياتي لكم بالتوفيق ومستقبل كله ازدهار ونجاح.

عميد المعهد

أ.د. عبد الغني محمد

رؤية المعهد

الريـــادة والتميز في التعليم الهندسي والبحث العلمي وخدمة المجتمع محليا وإقليميا و دوليا.

رسالة المعهد

يهـدف معهـد طيبـة العالي للهندسة إلى إعداد خريج مهندس مؤهل علميا ومهنيا واخلاقيا وقادر على المنافسة في سـوق العمـل محليـــا وإقليميـــا مواكبا للتطور العلمي من خلال توفير بيئة مهيأة وصالحـة للتعليـم والبحـث العلمي. عـلاوة على الإسهـام بشكل فعـال في خـدمة المجتمـع وتحقيـق التنميـــة المستـــدامة.

الغايات

تمثل الغايات العامة للمعهد مؤشرات النجاح لتحقيق رسالته و تسهم إسهاما مباشرا في النهوض به. كما يقاس مدى تحقيق المعهد لرسالته بمقدار تحقيقه للغايات في التطبيق العملي، وقد تحددت الغايات العامة للمعهد على النحو التالي:

- الحصول على مكانة متميزة في منظومة التعليم محليا و إقليميا من خلال تحقيق المعايير الأكاديمية القومية والدولية و تطبيق معايير الجودة.
- تعزيز و تنمية القدرات البشرية للمعهد وإعلاء القيم و المثل العليا
- تعزيز و تطوير التعليم و التعلم و البحث العلمي و تأهيل الخريج القادر على العمل الجماعي والابتكار والابداع ومواصلة البحث العلمي
- إعداد خريج مبتكر يواكب العصر وذو شخصية سوية قادرة على القيادة والمنافسة في سوق العمل.
- تعزيز دور المعهد في خدمة البيئة والمجتمع من أجل مجتمع متحضر وبيئة متطورة ومستدامة.

نبذة عن معهد طيبة العالي للهندسة

معهد طيبة العالي للهندسة بالمعادي – جمعية أكاديمية طيبة المتكاملة للعلوم والخدمات، يعتبر وحدة مالية وإدارية وتعليمية مستقلة وله شخصية اعتبارية، وأمواله مستقلة عن أموال الجمعية وتصرف فقط في الأغراض العلمية والتعليمية والتدريبية لتحقيق أهداف المعهد.

يخضع معهد طيبة العالي للهندسة بالمعادي لأحكام القانون ٥٢ لسنة ١٩٧٠ واللائحة الصادرة بالقرار الوزاري ١٠٨٨ لسنة ١٩٨٧ فيما لم يرد فيه نص بهذه اللائحة

الأقسام العلمية بالمعهد

يحتوى المعهد على ثلاث اقسام وهى:

١. **قسم هندسة الإتصالات والإلكترونيات**
٢. **قسم الهندسة المعمارية**
٣. **قسم الهندسة المدنية**

ولمجلس إدارة المعهد اقتراح إضافة أى قسم أو شعبة بما يتوافق مع احتياجات سوق العمل ويعرض الأمر على وزير التعليم العالى للموافقة والإعتماد.

الدرجات العلمية التى يمنحها المعهد

تمنح وزارة التعليم العالي بناء على طلب عميد المعهد درجة البكالوريوس في أحد التخصصات التالية:

- بكالوريوس هندسة الاتصالات و الإلكترونيات.
- بكالوريوس الهندسة المعمارية.
- بكالوريوس الهندسة المدنية

تُمنح درجة البكالوريوس بعد أن يكمل الطالب دراسة الساعات التالية:

- بكالوريوس هندسة اتصالات و الكترونيات ٢٨٠ ساعة.
- بكالوريوس هندسة معمارية ٢٨٠ ساعة.
- بكالوريوس هندسة مدنية ٢٨٠ ساعة.

أهداف المعهد

- تخريج مهندسين قادرين على مواكبة التطور فى العلوم الهندسية.
- اعداد الكوادر القادرة على إيجاد حلول للمشاكل الهندسية وأتخاذ القرارات.
- إعداد مهندسين قادرين على المنافسة فى سوق العمل.
- تنمية القيم الأخلاقية والتربوية للخريجين بخلق مناخ تعليمى وتربوى متكامل.
- الإسهام في التطوير والدعم الهندسى اللازم للقطاعات الصناعية والخدمية وخدمة المجتمع.
- توفير ودعم وسائل النشر والبحث العلمى فى مختلف التخصصات.

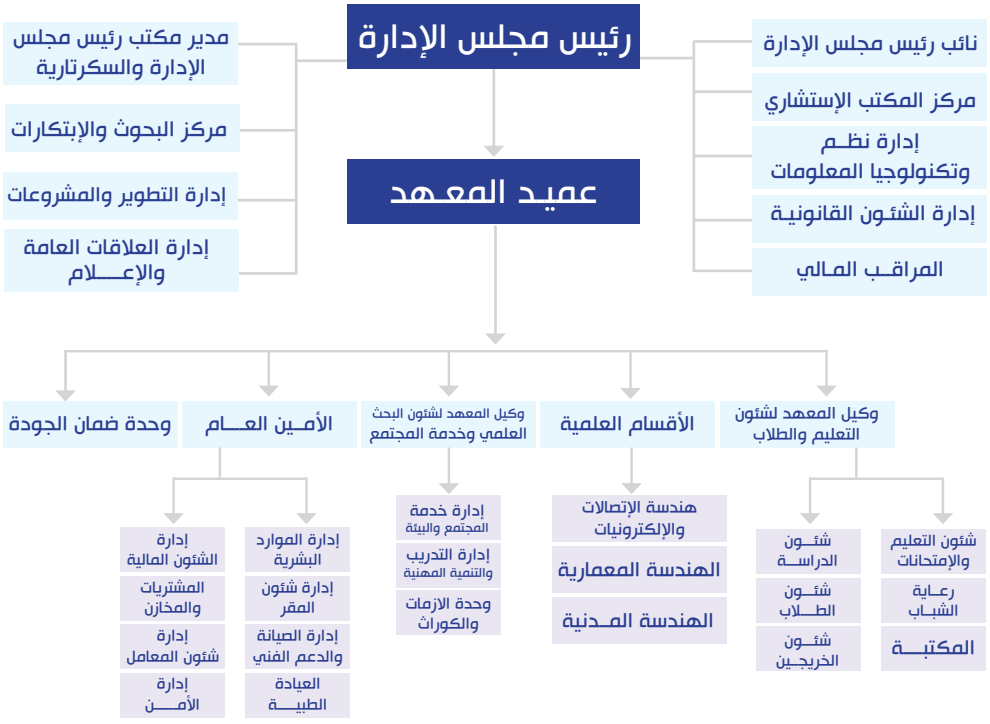
مدة الدراسة

نظام الدراسة بالمعهد هو نظام الفصول الدراسية، ومدة الدراسة بالمعهد خمس سنوات دراسية تبدأ بسنة إعدادية عامة لجميع الطلاب ويكون التخصص بعد إنقضاء السنة الإعدادية طبقا لما هو وارد فى جداول المقررات الدراسية.

لغة الدراسة

لغتا التعليم بالمعهد هما اللغتان العربية والإنجليزية ، ويكون أداء الامتحان باللغة التي يدرس بها المقرر.

الهيكل الأكاديمي والتنظيمي للمعهد



تشكيل مجلس الإدارة واختصاصاته

يشكل مجلس ادارة المعهد بقرار من وزير التعليم العالي وطبقا للقانون، ويكون تشكيل مجلس الادارة طبقا لأحكام القوانين والقرارات المنظمة علي النحو التالي:

1	عميـد المعهـد
2	وكيـل أو وكيليـن
3	ثلاثة علي الاكثر يمثلون أعضاء هيئة التدريس بالمعهد من رؤساء الأقسام أو التخصصات المختلفة بصفة دورية
4	خمسة من المهتمين بشئون التعليم العالي والمتخصصين في مجال الدراسة بالمعهد

شئون التعليم والدراسة والأمتحانات

يحتوى هذا الباب على القواعد المنظمة لشئون الدراسة، والتي تتبع نظام الفصول الدراسية، وتوضح شروط القبول والتحويل ، وكافة القواعد المنظمة لشئون الدراسة والإمتحان.

نظام القبول:

يكون ترشيح الطلاب النظاميين من أبناء جمهورية مصر العربية بالمعهد عن طريق مكتب تنسيق القبول للجامعات المصرية ما لم يصدر قرار من وزير التعليم العالي بغير ذلك .

يشترط لقبول الطلاب بالمعهد مايلى:

الحصول على أحد المؤهلات الآتية :

١. الثانوية العامة علمي رياضة أو ما يعادلها من الشهادات العربية والأجنبية.
٢. الثانوية الصناعية نظام ٣ سنوات.
٣. الثانوية الصناعية نظام ٥ سنوات.
٤. دبلوم المعاهد الفنية الصناعية.
٥. الثانوية الأزهرية علمي.

– أن يثبت الكشف الطبي خلوه من الأمراض المعدية وصلاحيته لمتابعة الدراسة.

– أن يكون الطالب محمود السيرة وحسن السمعة.

– أن يكون الطالب متفرغاً للدراسة بالمعهد .

إعادة القيد:

يجوز قيد (أو إعادة قيد) الطالب في الحالات الآتية:

- الطالب الذي سحب أوراقه وقدم عذراً (يقبله مجلس إدارة المعهد) الطالب الذي لم يتقدم لمكتب التنسيق في سنة حصوله على الثانوية العامة بسبب عذر مقبول
- الطالب المفصول من المعهد بسبب استنفاذ عدد مرات الرسوب.
- يجوز قيد الطلاب المفصولين بغير الطرق التأديبية من الكليات العسكرية كلية أو كلية الشرطة لعدم الصلاحية للحياة العسكرية

مستجدين بالفرقة الإعدادية ويشترط لذلك أن يكون الطالب حاصلاً على أحد المؤهلات المذكورة فى مادة سابقا والمجموع الكلي الذي وصل إليه القبول بالمعهد سنة حصوله على المؤهل.

نظام التحويل:

- يجوز تحويل ونقل الطلاب إلى المعهد من كليات جامعية أو معاهد مماثلة داخل الجمهورية وفقا للضوابط التي يقررها مجلس إدارة المعهد وبما لا يتعارض مع الضوابط المقررة في قانون تنظيم المعاهد العالية الخاصة وفي المواعيد التي تحددها وزارة التعليم العالي.
- يجوز تحويل الطالب المنقول إلي فرقة أعلي من الفرقة الأولي من معهد غير مناظر إلي المعهد (أو بأي من الكليات الجامعية الغير مناظرة) بشرط أن يكون حاصلا على الحد الأدنى لمجموع الدرجات الذي وصل إليه القبول في المعهد سنة حصوله علي الشهادة أو السنة الجارية أيهما أفضل للطالب وذلك بموافقة عميدي المعهدين وفي هذه الحالة يقيد الطالب بالفرقة الإعدادية.
- يقبل المعهد الطلاب الذين استنفذوا مرات الرسوب في الكليات والمعاهد المناظرة وفقا للقواعد التالية :
- أن يكون مقيدا في الكلية أو المعهد العالي في السنة الدراسية السابقة علي السنة التي يلتحق فيها بالمعهد .
- أن يكون حاصلا علي أحد المؤهلات المذكورة فى بند (نظام القبول) وحاصلا على مجموع يؤهله للالتحاق بالمعهد في عام حصوله علي تلك الشهادة أو في عام التحاقه بالمعهد أيهما أفضل للطالب .
- أن يكون إلتحاق هؤلاء الطلاب بالسنة الإعدادية مستجدين وتقدم أوراق هؤلاء الطلاب إلى المعهد لإرسالها للإدارة المختصة بالوزارة ويكون قبولهم بموافقة مجلس إدارة المعهد ويعتمد قرار مجلس إدارة المعهد من رئيس الإدارة المركزية المختص بوزارة التعليم العالى.

العبء الدراسي:

- يتلقى الطالب مجموعة من المقررات في كل فصل تتألف من المحاضرات النظرية والتدريبات بالفصول الدراسية والورش والمعامل.
- يتلقى الطالب تدريبين عمليين بالمصانع والشركات وفى نطاق تخصص الطالب خلال مدة الدراسة فى العطلات الصيفية.
- يمتحن الطالب في نهاية كل فصل في جميع المقررات التي درسها اثناء نفس الفصل الدراسي.
- يصدر مجلس إدارة المعهد بناء على طلب مجالس الأقسام المختصة قرارا بحرمان الطالب من التقدم للإمتحان فى المقررات التى لم يستوف فيها نسبة الحضور وهى ٧٥ ٪ وفى هذه الحالة يعتبر الطالب راسبا فى المقررات التى حرم من التقدم للإمتحان فيها إلا إذا قدم عذرا يقبله مجلس إدارة المعهد فيعتبر الطالب غائبا بعذر مقبول.
- ينقل الطالب من الفرقة المقيد بها إلى

الفرقة الأعلى التي تليها إذا كان ناجحا في جميع المقررات، ويسمح بالنقل أيضا إذا كان راسبا أو غائبا في ما لا يزيد عن مقررين أساسيين من مقررات فرقته أومن مقررات فرقة أدنى.

- بالإضافة إلى المقررين المشار إليهما في الفقرة السابقة، يسمح للطالب الراسب في مقرر من مقررات الثقافة العامة ، سواء من فرقته أو فرقة أدنى، بالنقل إلى الفرقة التالية، ويشترط النجاح في جميع المقررات قبل الحصول على درجة البكالوريوس.
- إذا كان الطالب ناجحا وراسب في مقررات سابقة، يؤدي الطالب امتحان مواد الرسوب مع طلاب الفرقة التي تدرس هذه المواد (أو طبقاً للجدول المحدد للامتحانات) وعند نجاحه في مقررات الرسوب (التخلف) يعتبر نجاحه في هذه المواد بتقدير مقبول (بحد أقصى ٦٤٪)، وفى حالة غياب الطالب فى المرة السابقة بعذر مقبول يحسب له التقدير الفعلى الذى حصل عليه فى المقرر.
- وفي حالة رسوب الطالب في أكثر من مقررين من المقررات الدراسية ماعدا تخصص مقررات الثقافة العامة، لا ينقل الطالب إلى الفرقة الأعلى ويدرس المقررات السابقة التي لم ينجح فيها حتى يحقق شروط النقل للفرقة الأعلى.
- إذا رسب الطالب في مشروع التخرج أو كان متغيباً، يعتبر راسبا فيه وباقياً للإعادة.
- يتبع المعهد قواعد الرأفة في الامتحانات وجميع التوصيات والتعليمات الصادرة من وزارة التعليم العالي بهذا الشأن.
- لا يكون النقل من فرقة إلى أخرى إلا فى نهاية العام الجامعى ولا يعاد إمتحان الطالب فى المقرر الذى نجح فيه.
- يعقد لطلبة السنة النهائية الراسبون بحد أقصى في مقررين من المقررات الدراسية ومقرر من مقررات الثقافة العامة امتحان دور ثاني وذلك بعد انتهاء السنة الدراسية فى شهر سبتمبر وطبقاً للجدول المحدد من قبل مجلس إدارة المعهد، فإذا تكرر رسوبهم امتحنوا فيما رسبوا فيه مع طلاب الفصل الدراسي الذى يدرس فيه هذا المقرر حتى يتم نجاحهم فيما رسبوا فيه، ولا يعقد إمتحان دور ثانى فى مقرر مشروع البكالوريوس.
- إذا تضمن الإمتحان فى أحد المقررات إمتحانا تحريريا وآخر عمليا أوشفهيا فإن تقدير الطالب فى هذا المقرر يحسب على أساس مجموع درجات الإمتحان التحريرى والعملى أوالشفهى وأعمال الفصل وامتحان منتصف الفصل، ويعتبر الطالب الغائب فى الإمتحان التحريرى غائبا فى المقرر ويكون راسباً فيه.
- يعتبر الطالب المتغيب عن الإمتحان التحريرى بغير عذر مقبول راسبا بتقدير ضعيف جدا.
- تبين الجداول الدراسية توزيع مبدئي للمقررات الدراسية اللازمة للحصول على درجة البكالوريوس في كل تخصص، منها المقررات الإجبارية والإختيارية على مراحل الدراسة المختلفة ، كما تبين جداول

الفصول الدراسية توزيع المقررات بين الفرق الدراسية الخمسة من الفرقة الإعدادية وحتى الفرقة الرابعة في جميع التخصصات، ويتم أخذ ذلك في الاعتبار عند وضع الجداول الدراسية لكل فصل دراسي للفرق المختلفة والتخصصات المتاحة

التسجيل:

يتم تسجيل المواد تلقائيا طبقا للجداول الدراسية المعلنة لكل فصل دراسي، ويشترط للتسجيل الطالب ناجحا في مواد السنة الدراسية السابقة أو إذا رسب فس مادتين علي حد أقصى طبقاً للفقرتين ٥ ، ٦ من البند السابق.

قواعد قبول الإعتذار عن عدم دخول الامتحان:

أ- الأعذار المرضية:

١. يكون النظر فى الأعذار المرضية من اختصاص طبيب المعهد، وتعرض على الطبيب الشهادات الصادرة عن المستشفيات الحكومية العامة ، كما تعرض عليه الشهادات الطبية الواردة من الخارج بشرط أن تكون معتمدة من القنصلية المصرية وطبيبها إن وجد ولا يعتد بالشهادات الطبية الصادرة عن الأطباء أو المستشفيات الخاصة.

٢. يقدم طلب الاعتذار عن عدم دخول الامتحان قبل نهاية امتحانات الفصل الدراسى ، وذلك بتقرير طبى معتمدا من طبيب المعهد، ولا يلتفت إلى أي طلب يقدم بعد هذا التاريخ, ويقدم الطلب باسم عميد المعهد بعد سداد الرسوم المقررة عن الاعتذار.

٣. لا يجوز تشكيل لجان امتحان خاصة بالمرضى إلا بمقر المعهد.

٤. لا يجوز أن يزيد عدد الأعذار المرضية لعدم دخول الامتحان عن ثلاث مرات خلال سنوات الدراسة إلا فى حالة التقدم بعذر يقبله مجلس إدارة المعهد.

ب- الأعذار الاجتماعية:

١. يجب على الطالب أن يرفق بطلب عدم دخول الامتحان لعذر اجتماعي شرحا لهذا العذر مصحوبا بكافة الأوراق الرسمية الدالة على حقيقة العذر المقدم منه، ولا يعتد في ذلك بأي أوراق أو مستندات صادرة عن جهات غير حكومية

٢. الانقطاع عن الدراسة :

- يعتبر الطالب منقطعاً عن الدراسة إذا لم يسجل في أي فصل دراسي أو إنسحب من جميع مقررات الفصل الدراسي بدون عذر يقبله مجلس إدارة المعهد .
- يجوز للطالب الإنقطاع عن الدراسة بعذر يقبله مجلس إدارة المعهد بحد أقصى فصلين دراسيين متتالين.
- يفصل الطالب من المعهد إذا إنقطع عن الدراسة لفترة أطول من فصلين دراسيين متتاليين دون عذر يقبله مجلس إدارة المعهد .
- يجوز للطالب أن يتقدم لإيقاف القيد بالمعهد لمدة عام دراسي حسب الشروط والضوابط التي يضعها مجلس إدارة المعهد .

التعثر الدراسي:

- لايجوز للطالب أن يبقى بالفرقة أكثر من سنتين ويتم فصله فى هذه الحاله.
- يجوز لمجلس إدارة المعهد الترخيص لطلاب الفرقة الأولى (الذين قضوا فيها سنتين) بفرصة إضافية (سنة دراسية إضافية) للتقدم للإمتحان من الخارج فى المقررات التى رسبوا فيها .
- يجوزلمجلس إدارة المعهد أيضا الترخيص لطلاب الفرق الثانية وحتى الرابعة (الذين قضوا في فرقتهم سنتين) بفرصتين إضافيتين للتقدم إلى الإمتحان من الخارج فى المقررات التى رسبوا فيها .
- كما يجوز للمجلس أن يمنح فرصا إضافية لطلاب الفرقة الرابعة للتقدم إلى الإمتحان من الخارج (بالاضافة للفرصتين الإضافيتين بالفقرة السابقة) بعد موافقة وزارة التعليم العالى بحد أقصى فرصتان للطالب الذى يتعرض للفصل.

التحويل بين الأقسام العملية :

يمكن للطالب المنتظم بأحد أقسام المعهد تحويل قيده الي قسم اخر وذلك بشرط استيفاء شروط القبول بالقسم المحول اليه مع عمل مقاصة داخلية ويتم اعفاؤه من المقررات التى يتم معادلتها ولا تحسب ضمن المجموع التراكمى، ويعتمدها مجلس إدارة المعهد .

التدريب الميداني:

١. يؤدى الطالب التدريبين الميدانيين الأول والثانى خلال العطلات الصيفية بعد امتحان الفصل الدراسي الثانى للفرقة الثانية والثالثة ، على الترتيب ، وذلك لمدة ٦ أسابيع لكل من التدريبين بواقع ٦ ساعات يوميا ، علي ان يتم التدريب بالمصانع والشركات الهندسية التي تلائم التخصص العام للطالب ، ويهدف التدريب إلى ربط ما درسه الطالب فى المعهد بالتطبيقات العملية، وكذلك إلى أكتساب بعض المهارات في مجال التخصص، ويقدم الطالب شهادة معتمدة

للمعهد بإتمام التدريب بنجاح وتقريرا عن ما قام به ، ويكون توزيع درجة التدريب علي النحو التالي ٢٥ ٪ من النهاية العظمي على حضور التدريب و٢٥ ٪ على التقرير المقدم من الطالب، ٥٠ ٪ على مناقشة الطالب فى التقرير المقدم منه.

٢. يشرف على التدريب عضو هيئة تدريس وأحد معاونيه ويعاون فى تنظيم التدريب إدارى من المعهد لكل ٢٠ طالبا، بالإضافة إلى مهندس من المصنع، ويقوم الطالب بتسديد رسوم التدريب الذى يقررها مجلس إدارة المعهد.

٣. الرحلات و الزيارات الميدانية.

٤. يتم تنظيم رحلات علمية لزيارة المراكز الصناعية والانشائية والخدمية تحت اشراف أعضاء هيئة التدريس لطلاب السنوات النهائية بمختلف الأقسام العلمية طبقا للنظام الذى يقرره مجلس إدارة المعهد بناء على توصيات مجالس الأقسام العلمية.

مشروع التخرج:

يقوم طلاب الفرقة الرابعة بإعداد مشروع البكالوريوس ، وتحدد مجالس الأقسام موضوعاته ويتم توزيع الطلاب على المشاريع من قبل رؤساء الأقسام، ويمتد إعداد المشروع أربعة أسابيع بعد الأمتحان التحريري للفصل الدراسي الثاني وفى نهاية هذه المدة يتم تقديم تقرير للمشروع ، ويتم مناقشتهم من خلال لجنة يتم تشكيلها بقرار من عميد المعهد ويتم اختيارها من أعضاء هيئة التدريس بالمعهد ومن الجامعات والمؤسسات التعليمية والبحثية ورجال الأعمال والصناعة.

نظام تقويم الطلاب:

يُقيم عمل الطالب بصفة مستمرة خلال الفصل الدراسي بالإضافة لإمتحانى منتصف الفصل وآخر الفصل الدراسي في كافة المقررات النظرية والتطبيقية والعملية ، ويعتبر الطالب راسبا في المقرر اذا حصل علي اقل من ٥٠٪ من النهاية العظمي للمقرر أو ٤٠ ٪ من درجة الإمتحان النهائي للمقرر مهما كان مجموع درجات الطالب فى المقرر.

يقدر نجاح الطالب في المقررات وفي التقدير العام بأحد التقديرات التالية :

ممتـــاز	من ٨٥٪ فأكثر من مجموع الدرجات
جيد جداً	من ٧٥٪ حتى أقل من ٨٥٪ من مجموع الدرجات
جيد	من ٦٥٪ حتى أقل من ٧٥٪ من مجموع الدرجات
مقبول	من ٥٠٪ حتى أقل من ٦٥٪ من مجموع الدرجات
أما رسوب الطالب فيقدر بأحد التقديرين التاليين	
ضعيف	من ٣٠٪ حتى أقل من ٥٠٪ من مجموع الدرجات
ضعيف جدا	أقل من ٣٠٪ من مجموع الدرجات

ويحسب التقـدير العـــام للتخرج كـــالآتى

- يحتسب التقدير العام للتخرج للطلاب في مرحلة البكالوريوس على أساس المجموع الكلي للدرجات التي حصلوا عليها في جميع سنوات الدراسة (المجموع التراكمى). ويتم ترتيب الطلاب بناء على هذا المجموع، ويمنح الطالب التقدير العام للتخرج طبقاً للنسب المذكورة عاليه.

- يمنح الطالب مرتبة الشرف إذا كان تقديره النهائي ممتاز أو جيد جداً على أن لا يقل تقديره العام في أي فرقة من الفرق الدراسية عدا الفرقة الإعدادية عن جيد جداً، ويشترط لحصول الطالب على مرتبة الشرف أن لا يكون قد رسب في أي امتحان تقدم له في أي فرقة عدا الفرقة الإعدادية.
- يعتمد مجلس إدارة المعهد نتائج أمتحانات الفصول الدراسية وتعتمد وزارة التعليم العالي نتائج إمتحانات الفرقة النهائية للحصول علي درجة البكالوريوس بناء علي اقتراح مجلس إدارة المعهد، ولا تعلن نتائج الإمتحان الا اذا كان الطالب مسدداً للمصروفات الدراسية والرسوم الأضافية المقررة ، ويقوم المعهد بتحرير شهادات مؤقتة لخريج المعهد يعتمدها عميد المعهد لحين صدور الشهادات الرسمية المعتمدة من وزارة التعليم العالي .

نظام تأديب الطلاب

يخضع الطلاب المقيدون بالمعهد والمرخص لهم بتأدية الامتحانات من الخارج للنظام التأديبي وطبقاً للائحة المعاهد الصادرة بقرار وزيرالتعليم العالي «القرار الوزاري رقم ١٠٨٨ لسنة ١٩٨٧م»،

وتعتبر الاعمال والافعال الاتية مخالفات تاديبية:

- الأعمال المخلة بنظام المعهد أو تعطيل الدراسة أو التحريض عليه وكذلك

الإمتناع المدبر عن حضور الدروس والمحاضرات وغيرها التي تقتضي اللوائح بالمواظبة عليها.

- كل فعل مخل بالشرف والكرامة أو مخل بحسن السير والسلوك داخل المعهد أو خارجة.
- كل اخلال بنظام الامتحان أو الهدوء الواجب له وكل غش في الامتحان أو الشروع فيه.
- كل إتلاف للمنشأة أوالأجهزة أو المواد أو الكتب الجامعية أو تبديدها.
- كل تنظيم داخل المعهد والإشتراك فيه بدون ترخيص سابق من مجلس إدارة المعهد.
- توزيع النشرات و اصدار جرائد حائط للمعهد أو جمع توقيعات بدون ترخيص سابق من عميد المعهد.
- الإعتصام داخل مباني المعهد أو الاشتراك في مظاهرات مخالفة للنظام العام والاداب واللياقة.
- كل طالب يرتكب غشا فى إمتحان أو شروعا فيه ويضبط فى حالة تلبس يخرجه رئيس عام الإمتحانات أو من ينوب عنه من لجنة الإمتحان ويحرم من دخول الإمتحان فى باقى المقررات ويعتبر الطالب راسبا فى جميع المقررات ويحال إلى مجلس التأديب، وفى حالة أنه تم منح الدرجة العلمية قبل كشف واقعة الغش فيبطل الإمتحان بتوصية من مجلس إدارة المعهد معتمدة بقرار من السيد أ.د. وزير التعليم العالى، ويترتب عليه بطلان الدرجة العلمية.
- يشكل مجلس التأديب برئاسة عميد المعهد أو من يقوم مقامه وعضوية ثلاثة من أعضاء هيئة التدريس بالمعهد (اثنان منهم من مجلس الإدارة)، على أن يحضر المجلس المستشار القانونى للمعهد، ويجوز للطالب المحال لمجلس التأديب أن يصطحب معه أحد المحامين لحضور المجلس.

العقوبات التاديبية التي توقع علي الطالب:

- التنبيه شفاهة او كتابة.
- الانذار.
- الحرمان من حضور دروس احد المقررات لمدة لاتجاوز شهراً.
- الفصل من المعهد لمدة لا تجاوز شهراً.
- الغاء امتحان الطالب في مقرر او اكثر.
- الفصل من المعهد لمدة عام دراسي أو أكثر.
- الحرمان من تأدية الإمتحان النهائى فى جميع المقررات لمدة سنة دراسية أو أكثر.
- الفصل النهائي من المعهد، ويترتب عليه الغاء قيد الطالب بالمعهد وحرمانه من التقدم للامتحان، ويبلغ هذا القرار الى الجامعات والمعاهد الاخري.

ويجوز لإدارة المعهد إعلان القرار الصادر بالعقوبة التأديبية داخل المعهد، ويجب إبلاغ القرار إلي ولي أمر الطالب، وتحفظ القرارات الصادرة بالعقوبات التأديبية عدا التنبيه الشفهي في ملف الطالب.

ولوزير التعليم العالى ان يعيد النظر في القرار الصادر بالفصل النهائي قبل مضى ثلاث سنوات على الأكثر من تاريخ صدور القرار.

الهيئات المختصة بتوقيع العقوبات هي:

- أعضاء هيئة التدريس بالمعهد ولهم توقيع العقوبتين الاولي والثانية، وذلك فيما يقع من الطلاب اثناء المحاضرات والتمرينات العملية والأنشطة المختلفة.
- عميد المعهد أو الوكيل وله توقيع العقوبات الأربعة الاولي.
- مجلس التأديب وله توقيع جميع العقوبات.
- وفي جميع الاحوال لا يجوز توقيع العقوبة التأديبية الرابعة وما بعدها إلا بعد التحقيق مع الطالب كتابة وسماع أقواله فيما هو منسوب إليه فإذا لم يحضر في الموعد المحدد للتحقيق سقط حقه في سماع أقواله، وتوقع عليه العقوبة التأديبية المناسبة بقرار مجلس التأديب.

الدعم الطلابي:

يقدم المعهد خدمات لدعم الطلاب في مجالات متعددة كالاتي:

١. الدعم الأكاديمي و الريادة العلمية من خلال دراسة الإحتياجات الأكاديمية للطلاب , دعم ورعاية المتفوقين و رعاية الطلاب المتعثرين دراسياً.

٢. الدعم المادي والإجتماعى للطلاب الغير قادرين و المتعثرين في سداد الرسوم الدراسية.

٣. دعم الأنشطة الطلابية و رعاية الموهوبين والمتميزين علميا و رياضيا و فنيا

٤. دعم للطلاب ذو الاحتياجات الخاصة و توفير تجهيزات خاصة لهم

٥. توجيه الطلاب لكيفية تلقى الرعاية الصحية عند الحاجة.

٦. شكاوى الطلاب:

يتم تقديم الشكاوى داخل صندوق الشكاوى من خلال إستمارة ورقية أو عن طريق الموقع.

الخدمات الطلابية:

- إتحاد الطلاب

- يتم تشكيل اتحاد الطلاب من طلاب المعهد النظاميين المقيدين بها والمسددين لرسوم المعهد ورسوم الاتحاد ويكون للطلاب الوافدين الذين يسددون رسوم الاتحاد حق ممارسة اوجه النشاط الخاص بالاتحاد بدون حق الانتخاب او الترشيح.
- يهدف إتحاد الطلاب الي تحقيق ما يأتي:
- تنمية القيم الروحية والاخلاقية والوعي الوطنى والقومي لدي الطلاب وإكسابهم مهارة القيام بواجباتهم وإتاحة الفرص لهم للتعبير المسئول عن ارائهم.
- بث الروح الاخوية السليمة بين الطلاب وتوثيق الروابط بينهم وبين القائمين بالتدريس والعاملين.
- اكتشاف وصقل مواهب الطلاب وقدراتهم ومهاراتهم.
- نشر وتشجيع تكوين الأسر والجمعيات التعاونية الطلابية ودعم نشاطها.
- نشر وتنظيم الانشطة الرياضية والاجتماعية والكشفية والفنية والثقافية والارتفاع

بمستواها وتشجيع المتفوقين فيها .

- تنظيم الإفادة من طاقات الطلاب في خدمة المجتمع بما يعود علي الوطن بالخير .
- يعمل مجلس اتحاد طلاب المعهد علي تحقيق أهداف الإتحاد من خلال اللجان الاتية :

١. لجنة الأسر.
٢. لجنة النشاط الرياضي.
٣. لجنة النشاط الثقافي.
٤. لجنة النشاط الفني.
٥. لجنة الجوالة والخدمات العامة.
٦. لجنة النشاط الاجتماعي والرحلات.
٧. اللجنة العلمية

لجنة الأسر:

تختص لجنة الأسر بما يلي:

- تشجيع تكوين الأسر بالمعهد ودعم نشاطها .
- التنسيق بين نشاط الأسر المختلفة بالمعهد .

لجنة النشاط الرياضي:

تختص لجنة النشاط الرياضي بما يلي:

- بث الروح الرياضية بين الطلاب وتشجيع المواهب الرياضية والعمل علي تنميتها .
- تنظيم النشاط الرياضي بالمعهد بما في ذلك تكوين الفرق الرياضية وإقامة المباريات والمسابقات والحفلات والمهرجانات الرياضية .

لجنة النشاط الثقافي:

تختص لجنة النشاط الثقافى بما يأتي:

- تنظيم أوجه النشاط الثقافي التي تؤدي إلي تعريف الطالب بخصائص المجتمع واحتياجات تطوره والعمل علي تنمية الهوايات الادبية للطلاب .
- العمل علي تنمية الطاقات الأدبيه والثقافيه للطلاب .

لجنة النشاط الفني:

تختص لجنة النشاط الفني بما يأتي:

- تنمية المواهب الفنية المختلفة للطلاب والإرتفاع بمستواها بما يتفق مع أغراضها السامية وإقامة الحفلات والمعارض التي تبرز النشاط الفني للطلاب .
- تشجيع الأنشطة الفنية والهوايات للطلاب ودعمها .

لجنة النشاط الجوالة:

- تختص لجنة الجوالة والخدمة العامة بتنظيم أوجه نشاط حركة الكشف .

لجنة النشاط الاجتماعي:

تختص لجنة النشاط الاجتماعي والرحلات بما ياتي :

- العمل علي تنمية الروابط الاجتماعية بين الطلاب وبين القائمين بالتدريس والعاملين وإشاعة روح التعاون والإخاء بينهم وذلك بكل الوسائل المناسبة .
- تنظيم الرحلات والمعسكرات الاجتماعية والثقافية والترويحية التي تساعد الطلاب علي التعرف علي معالم الوطن

اللجنة العلمية:

يتبع اللجنة العلمية نادي العلوم بالمعهد وتختص هذه اللجنة بالآتي:-

- تشجيع الطلاب علي تنمية مهاراتهم العلمية والعملية .
- الدخول في المسابقات العلمية التي تنظمها وزارة التعليم العالي علي مستوي الجامعات محلياً وإقليمياً .

- تشكل كل لجنة من اللجان السابقة بريادة رائد من أعضاء هيئة التدريس بالمعهد يصدر بتعيينه قرار من عميد المعهد وعضوية طالبين عن كل فرقة دراسية ينتخبها سنويا طلاب فرقتها الدراسية بطريق الاقتراع السري ، وممثل الجهاز الفني لرعاية الطلاب بالمعهد وتنتخب كل لجنة أميناً وأميناً مساعداً لها من بين أعضائها من الطلاب .

يختص مجلس اتحاد طلاب المعهد بما يلي :

١. رسم سياسة اتحاد طلاب المعهد في ضوء البرامج المقدمة من اللجان.
٢. اعتماد برامج عمل لجان مجلس الاتحاد المختلفة ومتابعة تنفيذها .
٣. توزيع الاعتمادات المالية علي اللجان ووضع الموازنة السنوية للمجلس ولجانه
٤. اعتماد الحسابات الختامية للاتحاد .
٥. تنسيق العمل بين لجان مجلس الاتحاد المختلفة.
٦. انتخاب أمين مجلس الاتحاد وأمين مساعد من بين أعضائه من الطلاب.

تشكيل الاتحادات الطلابية:

يشكل مجلس اتحاد طلاب المعهد سنوياً بريادة عميد المعهد أو من ينيبه في ذلك من القائمين بالتدريس وعضوية:

- رواد لجان مجلس الاتحاد من أعضاء هيئة التدريس.
- رئيس الجهاز الفني لرعاية الطلاب بالمعهد .
- وينتخب المجلس أميناً وأميناً مساعداً من بين أعضائه من الطلاب ويكون رئيس الجهاز الفني لرعاية الطلاب بالمعهد أمينا لصندوق المجلس .
- يحضر ممثلو الجهاز الفني لرعاية الطلاب بالمعهد اجتماعات لجان الاتحاد ومجلس اتحاد المعهد ويشتركون في مناقشاتها وليس لهم حق التصويت.
- يتولى رواد لجان الاتحاد ورائد مجلس اتحاد المعهد إبداء المشورة للجان والمجلس بما يؤكد عميق الصلة بين أعضاء هيئة التدريس والطلاب وبما يتيح إدارة شئونهم بأنفسهم .
- يصدر رئيس الإدارة المركزية المختص بالوزارة القرارات اللازمة لتنظيم الأنشطة الرياضية والفنية والأدبية وأنشطة الجوالة والخدمة العامة التي تتنافس فيها منتخبات المعاهد رسميا فيما بينها، وكذلك تلك التي تتنافس أو تشترك فيها المنتخبات القومية الموحدة مع الهيئات والدول الأخرى،ويتابع رئيس الإدارة المركزية المختص ومدير عام رعاية الطلاب سلامة تنفيذ تلك القرارات .
- لا يجوز إقامة تنظيمات أو تشكيلات على أساس فئوي أو سياسي أو عقائدي بالمعاهد أو وحداتها، كما لا يجوز تنظيم أي نشاط لمجالس الاتحادات ،أو لجانها أو باسمها علي أساس فئوي أو عقائدي ، ويجب الحصول على موافقة عميد المعهد على إقامة الندوات أو المحاضرات أو المؤتمرات أو المعارض وعلى دعوة المتحدثين من خارج المعهد، وفي هذه الحالة الأخيرة توجه الدعوة إلى المتحدثين من عميد المعهد، ويبطل كل قرار يصدر عن أي مجلس من مجالس اتحادات الطلاب أو لجانها إذا كان مخالفاً للقوانين أو اللوائح ويوقف كل أثر له ويحق لعميد المعهد إيقاف أي قرار يصدر عن أي مجلس من مجالس اتحادات الطلاب أو لجانها يكون مخالفاً للتقاليد والنظام .

المباني والخدمات داخـل المعهد

المكتبـة: يوجد بالمعهد مكتبة و تبلغ إجمالى مساحة المكتبة ٣٢٤ م٢ ، وملحق بها مكتبة الكترونية، وقاعة للإطلاع تسع ١٠٪ من اجمالى عدد طلاب المعهد بمعدل ٢ م٢ تقريبا لكل طالب.

الكافيتـريا: يوجد بالمعهد كافيتريا في اتجاه بوابة دار السلام و كافيتريا أخرى في مبنى الهندسة في اتجاه بوابة كورنيش المعادي و الكافيتريات مجهزة بالتجهيزات المناسبة علي مستوي جيد من النظافة.

العيـادة الطبيـة: توجد عيادتين طبيتين بالمعهد، ويتواجد بكل عيادة طبيب يلازمه ممرضة بصفة دائمة.

الملاعـب: ملعب خماسي ومساحته ١٥٥٠ م٢ واماكن لمزاولة الانشطة الثقافية والفنية بمسطح ١٥٠ م٢ بمقر رعاية الشباب.

المسجـد: يوجد بالمعهد مسجدان لأداء الصلوت في اتجاه بوابة دار السلام و بوابة الكورنيش.

الأقســـام العلميــة

- تختص الأقسام العلمية بتدريس المقررات التي تقع ضمن اختصاصاتها، طبقا للائحة، وعلى أن يتم تدريس المقررات الهندسية التي تقع خارج نطاق هذه الأقسام ومقررات الإنسانيات والعلوم الاجتماعية من أعضاء هيئة تدريس متخصصين.
- ويتم وضع رمز لكل مقرر باللائحة الداخلية للمعهد، ويتكون رمز المقرر من رمز القسم ورقم المقرر طبقا للنظام التالي:

القســم / التخـصص	رمــز القســم
العلوم الأساسية والمعاونة	BAS
قسم هندسة الاتصالات والالكترونيات	CEE
قسم الهندسة المعمارية	ARC
قسم الهندسة المدنية	CVE
الإنسانيات والعلوم الاجتماعية	HUM

رمز القسم	يمثل رمز القسم أو التخصص الذى يطرح المقرر.
الفـــرقــة	التى يدرس فيها المقرر.
التخصص الدقيق	يمثل المجموعة التخصصية للمقرر داخل القسم.
المسلســل	ويمثل مسلسل للمقررات داخل القسم فى نفس المجموعة التخصصية.

قسـم
هنـدسة الاتصـالات والالكتـرونيات

Communication & Electronics Engineering Department

مستقبلك يبدأ هِنا!

Program Specification
توصيف البرامج الدراسية

مواصفات الخريج – قسم هندسة الاتصالات والالكترونيات

أولا: مواصفات الخريج

بالإضافة إلى السمات العامة للمهندس، يتمتع الخريج ببعض المهارات التي تخدمها المقررات علي النحو التالي:

١- معرفة تامة بالأساسيات الرياضية والفيزيائية والكيميائية حتى يمكنه استيعاب المقررات التخصصية واكسابه الخبرة التحليلية لحل المشكلات التي تواجهه.

رياضيات(١) – رياضيات(٢) – فيزياء(١) – فيزياء(٢) – ميكانيكا(١) – ميكانيكا(٢) – كيمياء هندسية– رياضيات(٣) – رياضيات(٤) – فيزياء حديثة – ميكانيكا(٣) – تحليل عددي – رسم وإسقاط هندسى(١) – رسم وإسقاط هندسى(٢) – تكنولوجيا إنتاج.

٢- القدرة على تحليل وتصميم الدوائر الإلكترونية وإجراء الصيانة والإصلاح لها وتصميم نظم للإختبار.

الكترونيات(١) – الكترونيات(٢) – الكترونيات (٣) – دوائر كهربية (١) – دوائر كهربية (٢) – تصميم دوائر المنطق – دوائر الكترونية (١) – دوائر الكترونيه(٢) – دوائر إلكترونية (٣) – دوائر الكترونية (٤) – معماريات الحاسب – النظم المدمجة – دوائر رقمية – نظم الدوائر المتكاملة – الدوائر المتكاملة – إليكترونيات القدرة – التدريب الميداني.

٣- القدرة على تصميم وإستخدام أنظمة التحكم ونظم القياس وتحويل الإشارات والرادارات والهوائيات.

قياسات إلكترونية(١) – قياسات إلكترونية(٢) – المجالات الكهرومغناطيسية – معالجة الإشارات الرقمية – التحكم الآلي – موجات كهرومغناطيسية – المتحكمات المنطقية المبرمجة – هندسة الموجات الدقيقة – هوائيات – اجهزة الموجات الدقيقة والراديو.

٤- القدرة على إتقان التعامل مع الحاسبات والبرامج الجاهزة وكتابة البرامج.

مقدمة الحاسب والبرمجة – تطبيقات برمجة الحاسب – نظم تشغيل الحاسبات – المعالجات المصغره والتواجه – التصميم بالحاسب – شبكات الحاسب – برمجة الحاسب.

٥- الإلمام بنظريات عمل وتصميم أجهزة الإتصالات والشبكات وتأمين البيانات.

آلات ومحولات كهربية – نظرية المعلومات والترميز – شبكات الإتصال – نظم إتصالات (١) – نظم إتصالات (٢).

٦- الإلمام بنظريات عمل وطرق إستخدام الألياف الضوئية في مجالات الإتصالات.

الإلكترونيات الضوئية – الآلياف الضوئية – نظم الاتصالات الضوئية.

٧- القدرة على فهم التطورات المتلاحقة في مجال الإلكترونيات والإتصالات وإستخدام الأساليب المناسبة لحل المشكلات.

موضوعات مختارة في مجال الإتصالات – موضوعات مختارة في مجال الإلكترونيات – الإتصالات المتحركة – الإتصالات عبر الأقمار الصناعية –المشروع.

٨- القدرة على وضع المواصفات الفنية للأجهزة المطلوبة لأي مشروع في مجال الإتصالات.

جميع المقررات التخصصية السابق دراستها.

٩- القدرة على التواصل مع الآخرين وإعداد التقارير الفنية.

لغة الإنجليزية(١) – لغة الإنجليزية(٢) – لغة إنجليزية فنية – مهارات العرض والتواصل – التفكير العلمي .

١٠- القدرة على إدارة المشروعات في مجال الإتصالات.

إقتصاد هندسي وإدارة المشروعات – دراسات الجدوي وبحوث العمليات – حقوق الإنسان – المدخل إلي العلوم الهندسية – الأثر البيئي للمشروعات – التشريعات الهندسية

Communication and Electronics Engineering Department

Specifications of Graduate

In addition to the general features of the engineer, the graduate must have the following qualities

Full knowledge of mathematical, physical and chemical basics so that they can accommodate the specialized courses and improves their analytical expertise to solve the problems it faces

The ability to design, analyze, build, operate and maintain electronic system

The ability to realize and use of systems, measurement systems, signal conversion, conditioning, and processing

The ability to deal with computers hardware, software, operating systems and interfacing

The ability to understand the theory of operation of communication devices, networks and information security
The ability to deal with fiberoptics and opto-electronics in communication systems

The ability to take advantage of all knowledge collected by various scientific aspects to understand the evolution in electronic and communication Fields

The ability to communicate with others effectively and writing technical reports

The ability to manage communication projects

The ability to write the technical specifications of the devices required for communication projects

متطلبات التخرج لقسم هندسة الاتصالات و الالكترونيات

Graduation Requirements for Communication and Electronics Engineering Program

A. The Topics of the Program

Humanities and Social Sciences

Compulsory

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM011	English Language (1)	2	--	--	2
2	HUM012	English Language (2)	2	--	--	2
3	HUM031	Introduction to Engineering Sciences	2	--	--	2
4	HUM113	Technical English	2	--	--	2
5	HUM321	Human Rights	2	--	--	2
6	HUM332	Technical Report Writing	2	--	--	2
7	HUM422	Population, Reproductive Health and Family Planning	2	--	--	2
8	HUM423	Environmental Impact of Projects	2	--	--	2
Total			**16**			**16**

Elective (1): Student Selects Two Courses 4)Contact Hours (

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM133	Study Skills	2	--	--	2
2	HUM134	Scientific Thinking	2	--	--	2
3	HUM135	Presentation and Communication Skills	2	--	--	2
4	HUM136	Professional Marketing Skills	2	--	--	2
Total			**8**			**8**

Elective (2): Student Selects One Course 2)Contact Hours (

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM341	Recent Egypt's History	2	--	--	2
2	HUM342	Islamic History	2	--	--	2
Total			**4**			**4**

Business Management

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM211	Feasibility Studies and Operations Research	2	1	--	3
2	HUM212	Engineering Economics and Project Management	2	--	--	2
3	HUM 413	Engineering Legislations	2		--	2
Total			**6**	**1**	**--**	**7**

Mathematics, Basic and Assistance Sciences

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	BAS011	Mathematics (1)	2	2	--	5
2	BAS021	Physics (1)	3	1	1	5
3	BAS031	Mechanics (1)	2	2	--	4
4	BAS012	Mathematics (2)	3	2	--	5
5	BAS022	Physics (2)	3	1	1	5
6	BAS032	Mechanics (2)	2	2	--	4
7	BAS061	Production Technology	2	--	3	5
8	BAS051	Engineering Drawing and Projection (1)	2	3	--	5
9	BAS052	Engineering Drawing and Projection (2)	1	3	--	4
10	BAS041	Engineering Chemistry	2	--	2	4
11	BAS113	Mathematics (3)	2	2	--	4
12	BAS114	Mathematics (4)	2	1	--	3
13	BAS123	Modern Physics	2	1	2	5
14	BAS115	Numerical Analysis	2	1	--	3
Total			**31**	**21**	**9**	**61**

Engineering Culture

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CEE041	Introduction to Computer and Programming	2	--	2	4
2	CVE286	Civil Engineering	2	--	1	3
3	BAS262	Mechanical Engineering	2	1	1	4
Total			**6**	**1**	**4**	**11**

Basic Engineering Sciences

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CEE111	Electric Circuits (1)	2	2	1	5
2	CEE112	Electric Circuits (2)	2	2	1	5
3	CEE121	Electronics (1)	2	2	1	5
4	CEE122	Electronics (2)	2	1	2	5
5	CEE142	Operating Systems	2	1	2	5
6	CEE143	Logic Circuits Design	2	2	2	6
7	CEE151	Electromagnetic Field	2	2	--	4
8	CEE213	Electronic Measurements (1)	2	1	2	5
9	CEE214	Electronic Measurements (2)	2	1	2	5
10	CEE215	Electronic Circuits (1)	2	2	1	5
11	CEE216	Electronic Circuits (2)	2	2	2	6
12	CEE223	Electronics (3)	2	2	1	5
13	CEE244	Computer Architectures	2	2	--	4
14	CEE261	Communication Systems (1)	2	1	1	4
15	CEE262	Communication Systems (2)	2	1	1	4
16	CEE282	Electrical Machines and transformers	2	1	1	4
17	CEE371	Digital Signal Processing	2	2	--	4
18	CEE383	Automatic Control	2	2	--	4
Total			**36**	**29**	**20**	**85**

Applied engineering and design

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CEE317	Electronic Circuits (3)	2	2	2	6
2	CEE318	Electronic Circuits (4)	2	2	2	6
3	CEE345	Microprocessor and Interfacing	2	1	2	5
4	CEE352	Electromagnetic Wave	2	2	--	4
5	CEE372	Antennas	2	2	1	5
6	CEE374	Digital Communication Systems (1)	2	2	2	6
7	CEE433	Embedded Systems	2	2	--	4
8	CEE447	Programmable Logic Controller	2	1	--	4
9	CEE448	Neural Networks	2	1	--	4
10	CEE453	Microwave Engineering	2	2	2	6
11	CEE464	Satellite Communication	2	2	--	4
12	CEE465	Optical Communication Systems	2	2	2	6
		Total				**60**

Compulsory

Elective (1): Student Selects Two Courses 8)Contact Hours (

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CEE346	Computer Programming	2	2	--	4
2	CEE348	Computer Networks	2	2	--	4
3	CEE363	Communication Systems (3)	2	2	--	4
4	CEE373	Information Theory and Coding	2	2	--	4

Elective (1): Student Selects 4 courses from one group 16)Contact Hours (

Group A

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CEE346	Power Electronics	2	2	--	4
2	CEE454	Microwave and RF Devices	2	2	--	4
3	CEE466	Communication Networks	2	2	--	4
4	CEE467	Selected Topics in Communications Engineering	2	2	--	4
5	CEE468	Mobile Communication	2	2	--	4
6	CEE475	Digital Communication Systems (2)	2	2	--	4
7	CEE484	Biomedical instrumentations	2	2	--	4

Elective (1): Student Selects 4 courses from one group 16)Contact Hours (

Group B

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CEE419	Digital Circuits	2	2	--	4
2	CEE424	Optical Electronics	2	2	--	4
3	CEE425	Selected Topics in Electronics Engineering	2	2	--	4
4	CEE431	Integrated Circuits	2	2	--	4
5	CEE432	Integrated Circuit Systems	2	2	--	4
6	CEE434	Design of VLSI Integrated Circuit Systems	2	2	--	4
7	CEE449	Computer Aided Design	2	2	--	4

Project and field training

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CEE291	Field Training(1)	--	--	2	2
2	CEE392	Field Training(2)	--	--	2	2
3	CEE493	Project	2	--	4	6
Total			**2**	--	**8**	**10**

B. Groups of the Program

Public culture requirements

The number of 29 contact hours (23 compulsory hours + 6 elective hours) represents %10.4 of the graduation requirements, covering humanities, social sciences and business management for the construction of the student's personality and develop their abilities

Compulsory

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM011	English Language (1)	2	--	--	2
2	HUM012	English Language (2)	2	--	--	2
3	HUM031	Introduction to Engineering Sciences	2	--	--	2
4	HUM113	Technical English	2	--	--	2
5	HUM321	Human Rights	2	--	--	2
6	HUM332	Technical Report Writing	2	--	--	2
7	HUM422	Population, Reproductive Health and Family Planning	2	--	--	2
8	HUM423	Environmental Impact of Projects	2	--	--	2
9	HUM211	Feasibility studies and operations research	2	1	--	2
10	HUM212	Engineering Economics and Project Management	2	--	--	2
11	HUM413	Engineering Legislations	2	--	--	2
		Total	**22**	**1**	--	**23**

Elective (1): Student Selects Two Courses 4)Contact Hours (

Elective

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM133	Study Skills	2	--	--	2
2	HUM134	Scientific Thinking	2	--	--	2
3	HUM135	Presentation and Communication Skills	2	--	--	2
4	HUM136	Professional Marketing Skills	2	--	--	2
		Total	**8**			**8**

Elective (2): Student Selects One Courses 2)Contact Hours (

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM341	Recent Egypt's History	2	--	--	2
2	HUM342	Islamic History	2	--	--	2
Total			**4**			**4**

Engineering institute requirements: A number of 76 contact hours represents 27.1 % of the graduation requirements, covering humanities, social sciences and business management

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	BAS011	Mathematics (1)	3	2	--	5
2	BAS012	Mathematics (2)	3	2	--	5
3	BAS021	Physics (1)	3	1	1	5
4	BAS022	Physics (2)	3	1	1	5
5	BAS031	Mechanics (1)	2	2	--	4
6	BAS032	Mechanics (2)	2	2	--	4
7	BAS041	Engineering Drawing and Projection (1)	2	--	2	4
8	BAS051	Engineering Drawing and Projection (2)	2	3	--	5
9	BAS052	Production Technology	1	3	--	4
10	BAS061	Engineering Chemistry	2	--	3	5
11	BAS113	Mathematics (3)	2	2	--	4
12	BAS114	Mathematics (4)	2	1	--	3
13	BAS115	Numerical Analysis	2	1	--	3
14	BAS123	Modern Physics	2	1	2	5
15	BAS262	Mechanical Engineering	2	1	1	4
16	CEE041	Introduction to Computer and Programming	2	--	2	4
17	CEE291	Field Training(1)	--	--	2	2
18	CEE392	Field Training(2)	--	--	2	2
19	CVE286	Civil Engineering	2	--	1	3
Total			**37**	**22**	**17**	**76**

General Specialization Requirements

A number of 85 contact hours represents %30.4 of the graduation requirements. It covers the basic engineering sciences of specialization.

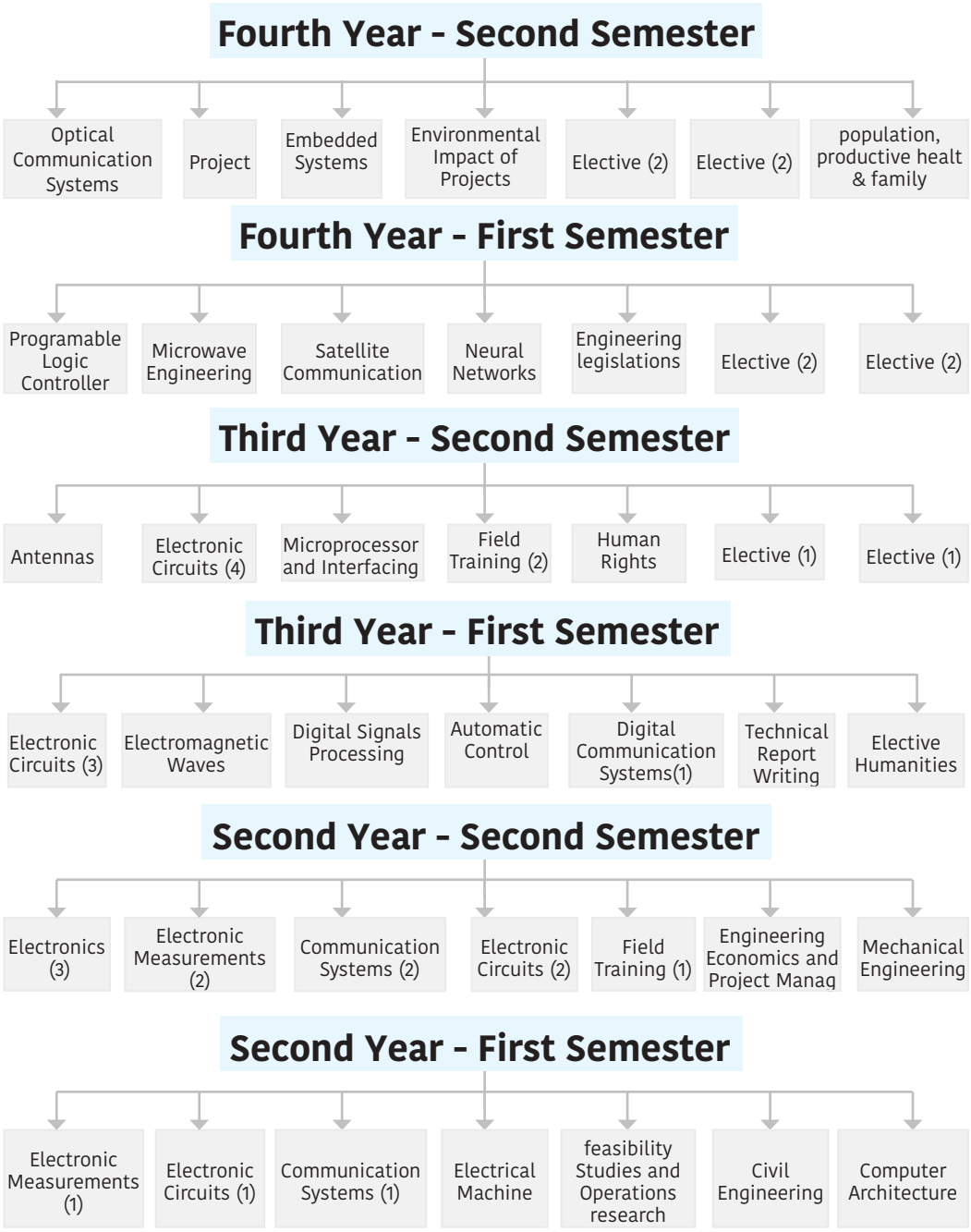
No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CEE111	Electric Circuits (1)	2	2	1	5
2	CEE112	Electric Circuits (2)	2	2	1	5
3	CEE121	Electronics (1)	2	2	1	5
4	CEE122	Electronics (2)	2	1	2	5
5	CEE142	Operating Systems	2	1	2	5
6	CEE143	Logic Circuits Design	2	2	2	6
7	CEE151	Electromagnetic Field	2	2	--	4
8	CEE213	Electronic Measurements (1)	2	1	2	5
9	CEE214	Electronic Measurements (2)	2	1	2	5
10	CEE215	Electronic Circuits (1)	2	2	1	5
11	CEE216	Electronic Circuits (2)	2	2	2	6
12	CEE223	Electronics (3)	2	2	1	5
13	CEE244	Computer Architectures	2	2	--	4
14	CEE261	Communication Systems (1)	2	1	1	4
15	CEE262	Communication Systems (2)	2	1	1	4
16	CEE282	Electrical Machines and transformers	2	1	1	4
17	CEE371	Digital Signal Processing	2	2	--	4
18	CEE383	Automatic Control	2	2	--	4
Total			**36**	**29**	**20**	**85**

Major Specialization Requirements

A number of 90 contact hours (66 compulsory hours + 24 elective hours) gives %32.1 of the graduation requirements, and covers the applied engineering, design and project.

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CEE317	Electronic Circuits (3)	2	2	2	6
2	CEE318	Electronic Circuits (4)	2	2	2	6
3	CEE345	Microprocessor and Interfacing	2	1	2	5
4	CEE352	Electromagnetic Wave	2	2	--	4
5	CEE372	Antennas	2	2	1	5
6	CEE374	Digital Communication Systems (1)	2	2	2	6
7	CEE433	Embedded Systems	2	2	--	4
8	CEE447	Programmable Logic Controller	2	2	--	4
9	CEE448	Neural Networks	2	2	--	4
10	CEE453	Microwave Engineering	2	2	2	6
11	CEE464	Satellite Communications	2	2	--	4
12	CEE465	Optical Communication Systems	2	2	2	6
13	CEE3XX	Elective (1)	2	2	--	4
14	CEE3XX	Elective (1)	2	2	--	4
15	CEE4XX	Elective (2)	2	2	--	4
16	CEE4XX	Elective (2)	2	2	--	4
17	CEE4XX	Elective (2)	2	2	--	4
18	CEE4XX	Elective (2)	2	2	--	4
19	CEE493	Project	2	--	4	6
Total			**38**	**35**	**17**	**90**

C-Courses Tree



First Year - Second Semester

- Electronics (2)
- Logic Circuits Design
- Electromagnetics Field
- Electric Circuits (2)
- Elective (Humanities)
- Mathematics (4)
- Numerical Analysis

First Year - First Semester

- Electronics (1)
- Operating Systems
- Electric Circuits (1)
- Modern Physics
- Technical English
- Mathematics (3)
- Elective (Humanities)

Primary Year - Second Semester

- Mathematics (2)
- Physics (2)
- Mechanics (2)
- Engineering Drawing & Projection (2)
- Engineering Chemistry
- Introduction To Computer & Programming
- English Language (2)

Primary Year - First Semester

- Mathematics (1)
- Physics (1)
- Mechanics (1)
- Engineering Drawing & Projection (1)
- Production Technology
- Introduction To Engineering Sciences
- English Language (1)

قسـم
الهنـدسة المعمارية

Architectural Engineering Department

مستقبلك يبدأ هِنا!

Program Specification
توصيف البرامج الدراسية

مواصفات الخريج – قسم الهندسة المعمارية

أولا: مواصفات الخريج

بالإضافة إلى السمات العامة للمهندس، يتمتع الخريج ببعض المهارات التي تخدمها المقررات علي النحو التالي:

١- أن يكون لدية معرفة تامة بالأساسيات الرياضية والفيزيائية والكيميائية حتى يمكنه استيعاب المقررات التخصصية واكسابه الخبرة التحليلية لحل المشكلات التي تواجهه.
رياضيات(١) – رياضيات(٢) – فيزياء(١) – فيزياء(٢) – ميكانيكا(١) – ميكانيكا(٢) – كيمياء هندسية– رسم وإسقاط هندسى(١) – رسم وإسقاط هندسى(٢) – تكنولوجيا إنتاج.

٢- القدرة على إتقان الفني.
وسائل التعبير المعماري – أسس التصميم والرسم المعماري.

٣- مهارة البحث والتحليل، والقدرة على التخيل والإبداع والابتكار فى التصميم فى اطار مواكبة الاتجهات المعمارية المحلية والعالمية.
تصميم معمارى (١) – تصميم معمارى (٢) – تصميم معمارى (٣) – تصميم معمارى (٤) – تصميم معمارى (٥) – تصميم معمارى (٦) – تصميم معمارى (٧).

٤- له شخصية متميزة متفاعلة مع شخصية المجتمع وهويتة وخصائصه الثقافية.
نظريات وتطور العمارة – تاريخ وفلسفة العمارة الحديثة و المعاصرة
٥- القدرة على التعامل مع المشاكل الانشائية، و فهم شامل لطرق تقنيات البناء المرتبطة بالعمارة.
إنشاء معماري (١) – إنشاء معماري (٢) – تصميمات تنفيذية (١) – تصميمات تنفيذية (٢) – تصميمات تنفيذية (٣) – التكنولوجيا المتقدمة والمبانى ذات البحور الواسعة.
٦- يتميز بعقل تحليلى لفهم العلاقة التبادلية بين المبانى والمجتمع والبيئة المحيطة، الحفاظ على البيئة، والقدرة على العمل ضمن فريق واحد.
تخطيط عمرانى (١) – تخطيط عمرانى (٢) – الاسكان وتخطيط المناطق السكنية
٧- مهارة التنسيق بين الكتل المعمارية والتعامل مع الفراغات الخارجية والداخلية.
تنسيق المواقع – تصميم حضرى .
٨- القدرة على تحقيق تصاميم مستدامة تحافظ على البيئة وتعمل على راحة المستخدمين.
صوتيات واضاءة صناعية – تصميم وتحكم بيئي – العمارة الخضراء – التنمية العمرانية المستدامه.
٩- القدرة على استخدام التقنيات الحديثة والبرامج الحاسوبية المتطورة فى مجال الهندسة المعمارية.
تطبيقات الحاسب في العمارة – طرق الاظهار الرقمي للمشروعات المعمارية – نظم المعلومات الجغرافية.
١٠- القدرة على عمل تصميمات للمبانى التى عليها مشاكل انشائية، بيئية وتشريعية.
المساحة – تحليل منشآت – منشآت خرسانية – منشآت معدنية – هندسة صحية – الكميات والمواصفات وتشريعات المبانى.
١١- القدرة على الاستفادة من كل المعارف التى حصلها فى مختلف المناحى العلمية فى ضوء مواكبة التقدم العلمى والتكنولوجى والبرامج الحاسوبية التى تساعد على الابداعى والابتكار فى التصميم.
مشروع (١) – مشروع (٢).

١٢- القدرة على التواصل مع الآخرين وإعداد التقارير الفنية.
لغة الإنجليزية(١) – لغة الإنجليزية(٢) – لغة إنجليزية فنية – مهارات العرض والتواصل – التفكير العلمي .

١٣- القدرة على إدارة المشروعات في مجال الهندسة المعمارية.
إقتصاد هندسي وإدارة المشروعات – دراسات الجدوي وبحوث العمليات – حقوق الإنسان – المدخل إلي العلوم الهندسية – الأثر البيئي للمشروعات – التشريعات الهندسية.

Architecture Engineering Department

Specifications of Graduate

In addition to the general features of the engineer, the graduate must have the following qualities:

1. **Full knowledge** of mathematical, physical and chemical basics so that it can accommodate the specialized courses and improves their analytical expertise to solve the problems it faces.
2. **The ability** to artistic perfection.
3. **The skill** of research and analysis, and the ability of imagination, creation and innovation in design with respect of local and world architectural trends.
4. **A distinct** personality interacting with the community character and identity and cultural characteristics.
5. **The ability** to deal with structural problems, and the realization of construction techniques in the framework of a comprehensive understanding of construction methods related to architecture.
6. **Characterized** by analytical mind to understand the correlation between the buildings and the community and the surrounding environment, preserving the environment, and the ability to work within team work.
7. **Skills** of correlation between the architectural building masses and external and internal spaces.
8. **The ability** to achieve sustainable designs preserves the environment and works to achieve comfort to users.
9. **The ability** to use developed technology and software in the field of architecture.
10. **The ability** to design buildings by construction, environmental and legislative problems.
11. **The ability** to take advantage of all knowledge collected by the various scientific aspects in order to keep up with scientific and technological progress and computer programs that help creation and innovation in design.
12. **The abilit**y to communicate with others effectively and writing technical reports.
13. **The ability** to manage architecture projects.

متطلبات التخرج لقسم الهندسة المعمارية

Graduation Requirements fofor Architecture Engineering Program

A. The Topics of the Program

1 Humanities and Social Sciences

Compulsory

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM011	English Language (1)	2	--	--	2
2	HUM012	English Language (2)	2	--	--	2
3	HUM031	Introduction to Engineering Sciences	2	--	--	2
4	HUM113	Technical English	2	--	--	2
5	HUM321	Human Rights	2	--	--	2
6	HUM332	Technical Report Writing	2	--	--	2
7	HUM422	Population, Reproductive Health and Family Planning	2	--	--	2
8	HUM423	Environmental Impact of Projects	2	--	--	2
		Total	**16**			**16**

Elective (1): Student Selects Two Courses 4)Contact Hours (

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM133	Study Skills	2	--	--	2
2	HUM134	Scientific Thinking	2	--	--	2
3	HUM135	Presentation and Communication Skills	2	--	--	2
4	HUM136	Professional Marketing Skills	2	--	--	2
		Total	**8**			**8**

Elective (2): Student Selects One Course 2)Contact Hours (

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM341	Recent Egypt's History	2	--	--	2
2	HUM342	Islamic History	2	--	--	2
Total			**4**			**4**

2 Business Management

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM211	Feasibility Studies and Operations Research	2	1	--	3
2	HUM212	Engineering Economics and Project Management	2	--	--	2
3	HUM 413	Engineering Legislations	2		--	2
Total			**6**	**1**	**--**	**7**

3 Mathematics, Basic and Assistance Sciences

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	BAS011	Mathematics (1)	3	2	--	5
2	BSC012	Mathematics (2)	3	2	--	5
3	BSC021	Physics (1)	3	1	1	5
4	BSC022	Physics (2)	3	1	1	5
5	BSC031	Mechanics (1)	2	2	--	4
6	BSC032	Mechanics (2)	2	2	--	4
7	BSC061	Production Technology	2	--	3	5
8	BSC051	Engineering Drawing and Projection (1)	2	3	--	5
9	BSC052	Engineering Drawing and Projection (2)	1	3	--	4
10	BSC041	Engineering Chemistry	2	--	2	4
Total			**23**	**16**	**7**	**46**

4 Engineering Culture

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CEE041	Introduction to Computer and Programming	2	--	2	4
2	CVE118	Structure analysis	2	3	--	5
3	CVE185	Surveying	2	1	1	4
Total			**6**	**4**	**3**	**13**

5 Basic Engineering Sciences

Compulsory

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	ARC111	Architectural Presentation Techniques	2	3	--	5
2	ARC112	Architectural Drawing and Design Fundamentals	2	3	--	5
3	ARC113	Computer Application of Architecture	1	--	3	4
4	ARC121	Theories and Evolution of Architecture	3	--	--	3
5	ARC214	Digital Presentation of Architectural Projects	1	--	2	3
6	ARC222	History and Philosophy of Modern Architecture and Contemporary	3	--	--	3
7	ARC241	Acoustics and Artificial Illumination	2	2	--	4
8	ARC242	Design and Environmental Control	2	2	--	4
9	ARC471	Quantities, Specifications and Buildings Legislation	2	2	--	4
10	CVE238	Concrete Structures	2	2	--	4
11	CVE169	Sanitary Engineering and Fixtures	2	2	--	4
12	CVE339	Steel Structure	2	2	--	4
13	CVE126	Properties and Testing of Materials	2	1	2	5
14	CVE259	Soil Mechanics and Foundations	2	1	1	4
Total			**28**	**20**	**8**	**56**

Elective: Courses from each elective group 2 Student selects 28)Contact Hours(

Elective)1(

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	ARC343	Environmental Studies	2	2	--	4
2	ARC358	Green Architecture	2	2	--	4
3	ARC337	Building and Construction Economics	2	2	--	4
4	ARC344	Energy Management and Sustainable Development	2	2	--	4

Elective)2(

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	ARC459	Studies of Modern and Contemporary Architecture	3	2	--	5
2	ARC469	Visual Studies of City	3	2	--	5
3	ARC421	Study of Islamic Architecture	3	2	--	5
4	ARC466	Sustainable Urban Development	3	2	--	5

Elective)3(

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	ARC467	GIS (Urban Planning)	2	3	--	5
2	ARC455	Theories of Architectural Form	2	3	--	5
3	ARC436	Advanced Technology and Buildings with Large Span	2	3	--	5
4	ARC438	Maintenance and Restoration of Buildings	2	3	--	5

6 Applied engineering and design

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	ARC131	Building Construction (1)	2	3	--	5
2	ARC232	Building Construction (2)	2	3	--	5
3	ARC233	Working Drawings (1)	2	4	--	6
4	ARC334	Working Drawings (2)	2	3	--	5
5	ARC335	Working Drawings (3)	2	4	--	6
6	ARC151	Architectural Design (1)	2	3	--	5
7	ARC152	Architectural Design (2)	2	3	--	5
8	ARC253	Architectural Design (3)	2	3	--	5
9	ARC254	Architectural Design (4)	2	4	--	6
10	ARC355	Architectural Design (5)	2	4	--	6
11	ARC356	Architectural Design (6)	2	4	--	6
12	ARC457	Architectural Design (7)	2	5	--	8
13	ARC261	Urban planning (1)	2	3	--	5
14	ARC362	Urban planning (2)	2	3	--	5
15	ARC363	Landscape Architecture	2	2	--	4
16	ARC364	Housing and Planning of Residential Districts	2	2	--	4
17	ARC465	Urban Design	2	3	--	5
Total			**35**	**56**	**--**	**91**

7 Project and field training

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	ARC291	Field Training (1)	--	--	2	2
2	ARC392	Field Training (2)	--	--	2	2
3	ARC493	Project (1)	3	--	--	3
4	ARC494	Project (2)	3	7		10
Total			**6**	**7**	**7**	**17**

B. Groups of the Program

Public culture requirements

A number of 29 contact hours (23 compulsory hours + 6 elective hours) represents %10.4 of the graduation requirements and covers humanities, social sciences and business management for the construction of the student's personality and develop their abilities.

Compulsory

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM011	English Language (1)	2	--	--	2
2	HUM012	English Language (2)	2	--	--	2
3	HUM031	Introduction to Engineering Sciences	2	--	--	2
4	HUM113	Technical English	2	--	--	2
5	HUM321	Human Rights	2	--	--	2
6	HUM332	Technical Report Writing	2	--	--	2
7	HUM422	Population, Reproductive Health and Family Planning	2	--	--	2
8	HUM423	Environmental Impact of Projects	2	--	--	2
9	HUM211	Feasibility studies and operations research	2	1	--	2
10	HUM212	Engineering Economics and Project Management	2	--	--	2
11	HUM413	Engineering Legislations	2	--	--	2
		Total	**22**	**1**	--	**23**

Elective (1): Student Selects Two Courses 4)Contact Hours (

Elective

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM133	Study Skills	2	--	--	2
2	HUM134	Scientific Thinking	2	--	--	2
3	HUM135	Presentation and Communication Skills	2	--	--	2
4	HUM136	Professional Marketing Skills	2	--	--	2
		Total	**8**			**8**

Elective (2): Student Selects One Courses 2)Contact Hours (

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM341	Recent Egypt's History	2	--	--	2
2	HUM342	Islamic History	2	--	--	2
Total			**4**			**4**

Engineering institute requirements:

A number of 63 contact hours represents 22.5 % of the graduation requirements and covers humanities, social sciences and business management.

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	BAS011	Mathematics (1)	3	2	--	5
2	BAS012	Mathematics (2)	3	2	--	5
3	BAS021	Physics (1)	3	1	1	5
4	BAS022	Physics (2)	3	1	1	5
5	BAS031	Mechanics (1)	2	2	--	4
6	BAS032	Mechanics (2)	2	2	--	4
7	BSC061	Production Technology	2	--	3	5
8	BSC051	Engineering Drawing and Projection (1)	2	3	--	5
9	BSC052	Engineering Drawing and Projection (2)	1	3	--	4
10	BSC041	Engineering Chemistry	2	--	2	4
11	CEE041	Introduction to Computer and Programming	2	--	2	5
12	CVE118	Structure Analysis	2	3	--	5
13	CVE185	Surveying	2	1	1	4
14	ARC291	Field Training (1)	--	--	2	2
15	ARC392	Field Training (2)	--	--	2	2
Total			**29**	**20**	**14**	**63**

General Specialization Requirements

A number of 98 contact hours (70 compulsory hours + 28 elective hours) represents %35 of the graduation requirements. It covers the basic engineering sciences of specialization.

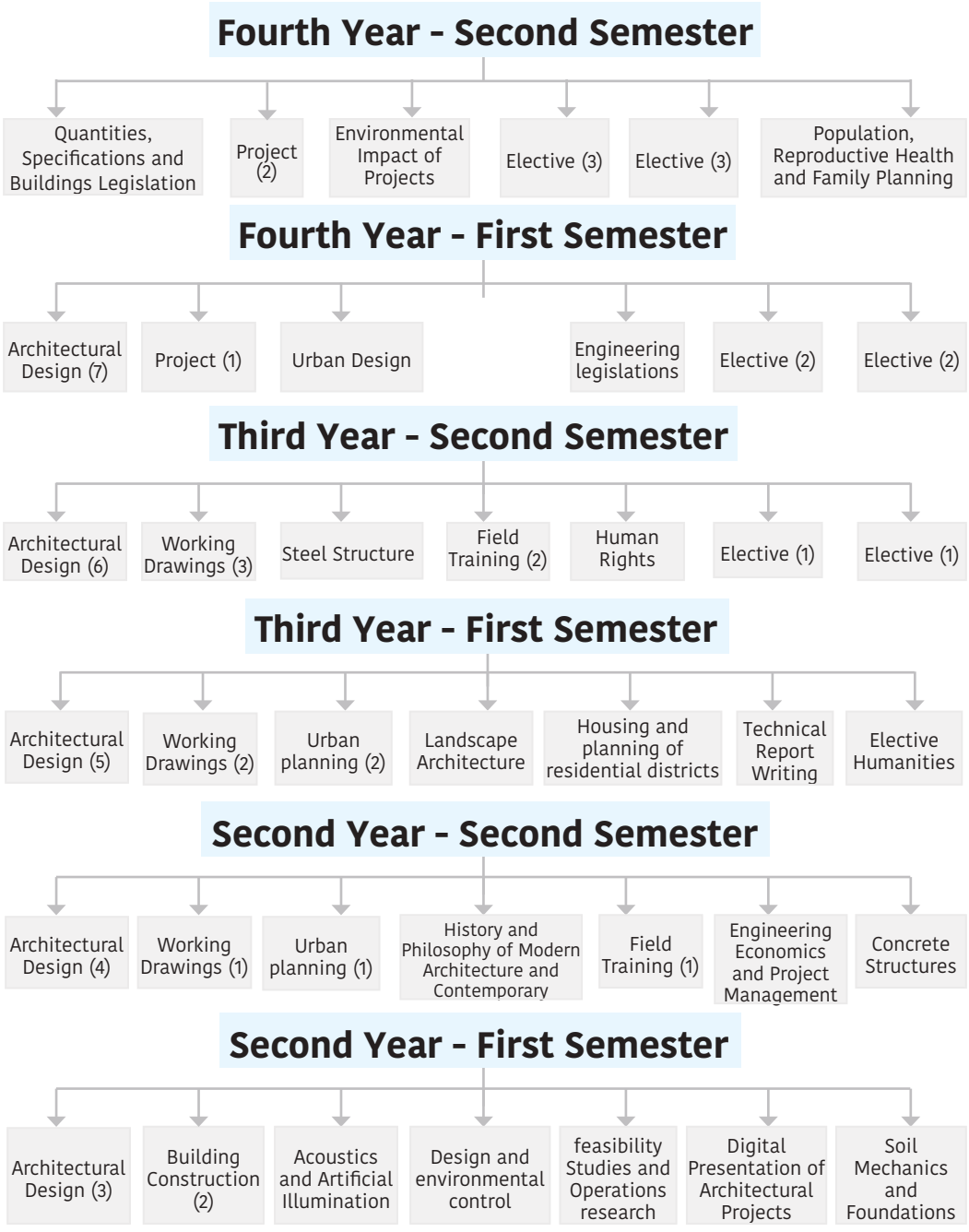
No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	ARC111	Architectural Presentation Techniques	2	3	--	5
2	ARC112	Architectural Drawing and Design fundamentals	2	3	--	5
3	ARC113	Computer Application of Architecture	1	--	3	4
4	ARC121	Theories and Evolution of Architecture	3	--	--	3
5	ARC214	Digital Presentation of Architectural Projects	1	--	2	3
6	ARC222	The History and Philosophy of Modern Architecture and Contemporary	3	--	2	3
7	ARC131	Building Construction (1)	2	3	--	5
8	ARC232	Building Construction (2)	2	3	--	5
9	ARC241	Acoustics and Artificial Illumination	2	2	--	4
10	ARC242	Design and Environmental Control	2	2	--	4
11	ARC363	Landscape Architecture	2	2	--	4
12	ARC471	Quantities, Specifications and Buildings Legislation	2	2	--	4
13	CVE238	Concrete Structures	2	2	--	4
14	CVE169	Sanitary Engineering and Fixtures	2	2	--	4
15	CVE339	Steel Structure	2	2	--	4
16	CVE126	Properties and Testing of Materials	2	1	2	5
17	CVE259	Soil Mechanics and Foundations	2	1	1	4
18	ARC3XX	Elective (1)	2	2	--	4
19	ARC3XX	Elective (1)	2	--	2	4
20	ARC4XX	Elective (2)	3	2	--	5
21	ARC4XX	Elective (2)	2	3	--	5
22	ARC4XX	Elective (3)	2	--	3	5
23	ARC4XX	Elective (3)	2	3	--	5
Total			**48**	**42**	**8**	**98**

Major Specialization Requirements

A number of 90 contact hours gives 32.1 % of the graduation requirements, and covers the applied engineering, design and projects.

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	ARC233	Working Drawings (1)	2	4	--	6
2	ARC334	Working Drawings (2)	2	3	--	5
3	ARC335	Working Drawings (3)	2	4	--	6
4	ARC151	Architectural Design (1)	2	3	--	5
5	ARC152	Architectural Design (2)	2	3	--	5
6	ARC253	Architectural Design (3)	2	3	--	5
7	ARC254	Architectural Design (4)	2	4	--	6
8	ARC355	Architectural Design (5)	2	4	--	6
9	ARC356	Architectural Design (6)	2	4	--	6
10	ARC457	Architectural Design (7)	3	5	--	8
11	ARC261	Urban Planning (1)	2	3	--	5
12	ARC362	Urban Planning (2)	2	3	--	5
13	ARC364	Housing and Planning of Residential Districts	2	2	--	4
14	ARC465	Urban Design	2	3	--	5
15	ARC493	Project (1)	3	--	--	3
16	ARC494	Project (2)	3	7	--	10
Total			**35**	**55**	**--**	**90**

C-Courses Tree



First Year - Second Semester

- Architectural Design (2)
- Architectural Presentation Techniques
- Computer Application of Architecture
- Theories and Evolution of Architecture
- Elective (Humanities)
- Properties and testing of materials
- Sanitary Engineering and fixtures

First Year - First Semester

- Architectural Design (1)
- Building Construction (1)
- Architectural Drawing and Design fundamentals
- Elective (Humanities)
- Engineering Technical English
- Structure analysis
- Surveying

Primary Year - Second Semester

- Mathematics (2)
- Physics (2)
- Mechanics (2)
- Engineering Drawing & Projection (2)
- Engineering Chemistry
- Introduction To Computer & Programming
- English Language (2)

Primary Year - First Semester

- Mathematics (1)
- Physics (1)
- Mechanics (1)
- Engineering Drawing & Projection (1)
- Production Technology
- Introduction To Engineering Sciences
- English Language (1)

قسـم
الهنـدسة المـدنيـة

Civil Engineering Department

مستقبلك يبدأ هِنا!

Program Specification
توصيف البرامج الدراسية
مواصفات الخريج – قسم الهندسة المدنية

أولا: مواصفات الخريج

با ضافة إلى السمات العامة للمهندس، يتمتع الخريج ببعض المهارات التي تخدمها المقررات علي النحو التالي:

١- معرفة تامة وقاعدة صلبة با ساسيات الرياضية والفيزيائية والكيميائية حتى يمكنه استيعاب المقررات التخصصية واكسابه الخبرة التحليلية لحل المشكلات التي تواجهه.

رياضيات(١) – رياضيات(٢) – فيزياء(١) – فيزياء(٢) – ميكانيكا(١) – ميكانيكا(٢) – كيمياء – رياضيات(٣) – تحليل عددي – رسم وإسقاط هندسى(١) – رسم وإسقاط هندسى(٢).

٢- تحليل وتصميم المنشأت و ا شراف علي جميع ا عمال المدنية.

تحليل منشأت (١) – تحليل منشأت (٢) – تحليل منشأت (٣) – تصميم منشأت خرسانية (١) – تصميم منشأت خرسانية (٢) – تصميم منشأت خرسانية (٣) – تصميم منشأت خرسانية (٤) – تصميم منشأت.

٣- تصميم و إنشاء المنشأت الخاصة و الكباري.

تصميم منشأت حديدية (٢) – تصميم منشأت حديدية (٣) – تصميم أعمال الري – تحليل متقدم لكباري الخرسانة المسلحة – تصميم المنشأت الخاصه والسابقة الاجهاد.

٤- معرفة بأنواع المواد المختلفة المستخدمة فى مجال الهندسة المدنية.

خواص و اختبار المواد (١) – خواص و اختبار المواد (٢) – خواص و اختبار المواد (٣).

٥- معرفة بأنواع التربة وتأثيرها علي المنشأت.

هندسة جيوتقنية (١) – هندسة جيوتقنية (٢) – هندسة ا ساسات – التربة و الصخور في المناطق الجافة.

٦- القدرة على تصميم وتخطيط وإنشاء وتشغيل وصيانة الطرق و المطارت والسكك الحديدية.

تخطيط النقل و هندسة المرور – هندسة الطرق والمطارات – هندسة السكك الحديدية – هندسة السكك – الحديدية المتقدمة – صيانة الطرق والمطارات – هندسة المطارات – تكنولوجيا إنشاء الطرق

٧- القدرة على تصميم المنشآت التى يمكن أن تتعرض خطار البيئة الغير متوقعة (الزلازل – الاعاصير).

هندسة الز زل – تحليل منشأت باستخدام الحاسب

٨- القدرة على استخدام البرامج الحاسوبية الجاهزة التى تخص الهندسة المدنية.

تحليل منشأت باستخدام الحاسب – التحليل الجيوتقني باستخدام الحاسب الي – منهاجية استخدام النماذج في التحليل ا نشائي – طريقة العناصر المحددة.

٩- القدرة على وضع البرامج الزمنية ال زمة لتنفيذ جميع الاعمال المدنية.

إدارة مشروعات التشييد – اقتصاد هندسي و إدارة مشروعات – كميات و عقود و مواصفات – دراسة الجدوى و بحوث العمليات.

١٠- القدرة على إنشاء و ترميم و تدعيم جميع المنشأت المدنية.

طرق تشييد المنشأت الخرسانية – ترميم و تدعيم المنشأت – المنشأت ذات الحوائط الحاملة.

١١- القدرة على تصميم محطات المياه والصرف والرى وقياس جوده المياه.

تصميم أعمال الرى – ميكانيكا الموائع – هندسة الرى والصرف – هندسة صحية – هيدروليكا – هندسة صحية متقدمة – قياس جودة المياه و المخلفات الصناعية – هندسة بيئية.

١٢- القدرة على استخدام الأجهزة الميدانية بدقة وأمان.

مساحة مستوية – مساحة طبوغرافية – نظم المعلومات الجغرافية وا ستشعار عن بعد – مساحة جيوديسية و تصويرية.

١٣- القدرة على وضع المواصفات الفنية للأجهزة المطلوبة في مشروع في مجال الهندسة المدنية.
جميع المقررات السابق دراستها .

١٤- التواصل مع الآخرين وإعداد التقارير الفنية.
لغة ا نجليزية (١) – لغة ا نجليزية (٢) – لغة إنجليزية فنية – مهارات العرض والتواصل.

١٥- إدارة المشروعات في مجال الهندسة المدنية.
اقتصاد هندسي وإدارة مشروعات – دراسات الجدوي وبحوث العمليات – حقوق الأنسان – المدخل إلي العلوم الهندسية – ا ثر البيئي للمشروعات – التشريعات الهندسية.

Civil Engineering Department

Specifications of Graduate

In addition to the general features of the engineer, the graduate must have the following qualities:

1. **Full knowledge** of mathematical, physical and chemical basics so that they can accommodate the specialized courses and improves their analytical expertise to solve the problems it faces.
2. **The ability** to analyze and design structures and to supervise All civil works.
3. **The abilit**y to design and construct special structures and bridges.
4. **Full knowledge** of different types of materials.
5. **Full knowledge** of soil behavior and its effect on structures.
6. **The ability** to design, plan, construct, operate and maintain highways , airports and railways.
7. **The ability** to design against the unexpected environmental risks (Earthquakes).
8. **The ability** to use software programs which are related to civil engineering.
9. **The ability** to prepare schedules to plan and construct all civil works.
10. **Full knowledge** of constructing methods, repairing and supporting all civil structures.
11. **The ability** to design water, drainage and irrigation stations. measure water quality.
12. **Full knowledge** of survey and its equipment.
13. **The ability** to take advantage of all knowledge collected by various scientific topics in order to understand the evolution in civil engineering.
14. **The abilit**y to communicate with others effectively and writing technical reports.
15. **The ability** to manage civil engineering projects.
16. **The ability** to write the technical specifications of the devices required for civil projects.

متطلبات التخرج لقسم الهندسة المدنية

Graduation Requirements for Civil Engineering Program

A. The Topics of the Program

1 Humanities and Social Sciences

Compulsory

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM011	English Language (1)	2	--	--	2
2	HUM012	English Language (2)	2	--	--	2
3	HUM031	Introduction to Engineering Sciences	2	--	--	2
4	HUM113	Technical English	2	--	--	2
5	HUM321	Human Rights	2	--	--	2
6	HUM332	Technical Report Writing	2	--	--	2
7	HUM422	Population, Reproductive Health and Family Planning	2	--	--	2
8	HUM423	Environmental Impact of Projects	2	--	--	2
		Total	**16**			**16**

Elective (1): Student Selects Two Courses 4)Contact Hours (

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM133	Study Skills	2	--	--	2
2	HUM134	Scientific Thinking	2	--	--	2
3	HUM135	Presentation and Communication Skills	2	--	--	2
4	HUM136	Professional Marketing Skills	2	--	--	2
		Total	**8**			**8**

Elective (2): Student Selects One Course 2)Contact Hours (

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM341	Recent Egypt's History	2	--	--	2
2	HUM342	Islamic History	2	--	--	2
Total			**4**			**4**

2 Business Management

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM211	Feasibility Studies and Operations Research	2	1	--	3
2	HUM212	Engineering Economics and Project Management	2	--	--	2
3	HUM 413	Engineering Legislations	2		--	2
Total			**6**	**1**	**--**	**7**

3 Mathematics, Basic and Assistance Sciences

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	BAS011	Mathematics (1)	3	2	--	5
2	BAS021	Physics (1)	3	1	1	5
3	BAS031	Mechanics (1)	2	2	--	4
4	BAS012	Mathematics (2)	3	2	--	5
5	BAS022	Physics (2)	3	1	1	5
6	BAS032	Mechanics (2)	2	2	--	4
7	BAS061	Production Technology	2	--	3	5
8	BAS051	Engineering Drawing and Projection (1)	2	3	--	5
9	BAS052	Engineering Drawing and Projection (2)	1	3	--	4
10	BAS041	Engineering Chemistry	2	--	2	4
11	BAS113	Mathematics (3)	2	2	--	4
12	BAS116	Probability and Statistics	2	1	--	3
Total			**27**	**19**	**7**	**53**

4 Engineering Culture

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CEE041	Introduction to Computer and Programming	2	--	2	4
2	CEE181	Electrical Engineering	2	1	1	4
	BAS262	Mechanical Engineering	2	1	1	4
3	ARC136	Building Construction	2	3	--	5
Total			**8**	**6**	**4**	**17**

5 Basic Engineering Sciences

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CVE111	Structural Analysis (1)	3	2	--	5
2	CVE112	Structural Analysis (2)	3	2	--	5
3	CVE121	Properties and Testing of Materials (1)	2	1	1	4
4	CVE122	Properties and Testing of Materials (2)	2	1	1	4
5	CVE161	Civil Drawing	2	4	--	6
6	CVE162	Fluid Mechanics	3	1	1	5
7	CVE181	Plane Surveying	2	1	2	5
8	CVE213	Structural Analysis (3)	3	2	--	5
9	CVE214	Structural Analysis using Computer	3	2	2	7
10	CVE223	Properties and Testing of Materials (3)	2	1	1	4
11	CVE231	Design of Reinforced Concrete Structures (1)	3	2	--	5
12	CVE232	Design of Reinforced Concrete Structures (2)	3	2	--	5
13	CVE251	Geotechnical Engineering (1)	2	--	1	3
14	CVE263	Irrigation and Drainage Engineering	2	2	--	4
15	CVE264	Hydraulics	3	1	1	5
16	CVE282	Topographical Surveying	2	1	1	4
17	CVE371	Transportation Planning and Traffic Engineering	3	2	--	5
18	CVE334	Steel Structures Design (1)	3	2	--	5
Total			**46**	**29**	**11**	**86**

6 Applied engineering and design

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CVE252	Geotechnical Engineering (2)	2	--	--	3
2	CVE333	Design of Reinforced Concrete Structures (3)	3	2	--	5
3	CVE335	Design of Reinforced Concrete Structures (4)	3	2	--	5
4	CVE336	Steel Structures Design (2)	3	2	--	5
5	CVE365	Design of Irrigation Works	3	2	--	5
6	CVE366	Sanitary Engineering	2	2	--	5
7	CVE372	Highway and Airport Engineering	3	3	--	4
8	CVE415	Earthquake Engineering	2	2	--	6
9	CVE437	Steel Structures Design (3)	3	2	--	5
10	CVE442	Construction Projects Management	2	2	--	4
11	CVE453	Foundation Engineering	3	2	--	5
12	CVE454	Design of Special Structures and Prestressed Concrete	2	2	--	4
13	CVE474	Railway Engineering	2	2	--	4
Total			**33**	**25**	**1**	**59**

Elective (1): Student Selects Two Courses 8)Contact Hours (

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CVE324	Repair and Strengthening of Structures	2	2	--	4
2	CVE325	Characteristics of Wastewater & Industrial Wastes	2	2	--	4
3	CVE341	Quantities, Contracts and Specifications	2	2	--	4
4	CVE373	Highways Construction Technology	2	2	--	4

Elective (2): courses from one group 4 Student selects)contact hours 16(

Group - A

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CVE416	Finite Elements Method	2	2	--	4
2	CVE417	The Concept of Using Models in Structural Analysis	2	2	--	4
3	CVE443	Construction Techniques For Concrete Structures	2	2	--	4
4	CVE455	Masonry Structures	2	2	--	4
5	CVE456	Soil & Rocks in Dry Regions	2	2	--	4
6	CVE457	Geotechnical Analysis Using Computer	2	2	--	4
7	CVE458	Advanced Analysis of Reinforced Concrete Bridges	2	2	--	4

Group - B

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CVE467	Advanced Sanitary Engineering	2	2	--	4
2	CVE468	Environmental Engineering	2	2	--	4
3	CVE475	Maintenance of Roads & Airports	2	2	--	4
4	CVE476	Advanced Railway Engineering	2	2	--	4
5	CVE477	Airport Engineering	2	2	--	4
6	CVE483	Geographic Information Systems and Remote Sensing	2	2	--	4
7	CVE484	Geodetic and Photogrammetric Survey	2	2	--	4

7 Project and field training

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CVE252	Field Training (1)	--	--	2	2
2	CVE333	Field Training (2)	--	--	2	2
3	CVE335	Project	4	4	--	8
Total			**4**	**4**	**4**	**12**

B. Groups of the Program

Public culture requirements

A number of 29 contact hours (23 compulsory hours + 6 elective hours) represents %10.4 of the graduation requirements, covering humanities, social sciences and business management for the construction of the student's personality and develop their abilities.

Compulsory

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM011	English Language (1)	2	--	--	2
2	HUM012	English Language (2)	2	--	--	2
3	HUM031	Introduction to Engineering Sciences	2	--	--	2
4	HUM113	Engineering Technical English	2	--	--	2
5	HUM321	Human Rights	2	--	--	2
6	HUM332	Technical Report Writing	2	--	--	2
7	HUM422	Population, Reproductive Health and Family Planning	2	--	--	2
8	HUM423	Environmental Impact of Projects	2	--	--	2
9	HUM211	Feasibility studies and operations research	2	1	--	2
10	HUM212	Engineering Economics and Project Management	2	--	--	2
11	HUM413	Engineering Legislations	2	--	--	2
		Total	**22**	**1**	--	**23**

Elective (1): Student Selects Two Courses 4)Contact Hours (

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM133	Study Skills	2	--	--	2
2	HUM134	Scientific Thinking	2	--	--	2
3	HUM135	Presentation and Communication Skills	2	--	--	2
4	HUM136	Professional Marketing Skills	2	--	--	2
		Total	**8**			**8**

Elective (2): Student Selects One Courses 2)Contact Hours (

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	HUM341	Recent Egypt's History	2	--	--	2
2	HUM342	Islamic History	2	--	--	2
Total			**4**			**4**

Engineering institute requirements:

A number of 74 contact hours represents 26.4 % of the graduation requirements, covering humanities, social sciences and business management.

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	BAS011	Mathematics (1)	3	2	--	5
2	BAS021	Physics (1)	3	1	1	5
3	BAS031	Mechanics (1)	2	2	--	4
4	BAS012	Mathematics (2)	3	2	--	5
5	BAS022	Physics (2)	3	1	1	5
6	BAS032	Mechanics (2)	2	2	--	4
7	BSC061	Production Technology	2	--	3	5
8	BSC051	Engineering Drawing and Projection (1)	2	3	--	5
9	BSC052	Engineering Drawing and Projection (2)	1	3	--	4
10	BSC041	Engineering Chemistry	2	--	2	4
11	CEE041	Mathematics (3)	2	2	--	4
12	CEE181	Probability and Statistics	2	1	--	3
13	CEE041	Introduction to Computer and Programming	2	--	2	4
14	CEE181	Electrical Engineering	2	1	1	4
15	BAS262	Mechanical Engineering	2	1	1	4
16	ARC136	Building Construction	2	3	--	5
17	CVE291	Field Training (1)	--	--	2	2
18	CVE392	Field Training (2)	--	--	2	2
Total			**35**	**24**	**15**	**74**

General Specialization Requirements

A number of 86 contact hours represents 30.7 % of the graduation requirements. It covers the basic engineering sciences of specialization.

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CVE111	Structural Analysis (1)	3	2	--	5
2	CVE112	Structural Analysis (2)	3	2	--	5
3	CVE121	Properties and Testing of Materials (1)	2	1	1	4
4	CVE122	Properties and Testing of Materials (2)	2	1	1	4
5	CVE161	Civil Drawing	2	4	--	6
6	CVE162	Fluid Mechanics	3	1	1	5
7	CVE181	Plane Surveying	2	1	2	5
8	CVE213	Structural Analysis (3)	3	2	--	5
9	CVE214	Structural Analysis using Computer	3	2	2	7
10	CVE223	Properties and Testing of Materials (3)	2	1	1	4
11	CVE231	Design of Reinforced Concrete Structures (1)	3	2	--	5
12	CVE232	Design of Reinforced Concrete Structures (2)	3	2	--	5
13	CVE251	Geotechnical Engineering (1)	2	--	1	3
14	CVE263	Irrigation and Drainage Engineering	2	2	--	4
15	CVE264	Hydraulics	3	1	1	5
16	CVE282	Topographical Surveying	2	1	1	4
17	CVE371	Transportation Planning and Traffic Engineering	3	2	--	5
18	CVE334	Steel Structures Design (1)	3	2	--	5
Total			**46**	**29**	**11**	**86**

Major Specialization Requirements

A number of 91 contact hours (67 compulsory hours + 24 elective hours) gives 32.5 % of the graduation requirements, and covers the applied engineering, design and project.

No.	Course Code	Course Title	Hours			
			Lec	Tut	Lab	Total
1	CVE252	Geotechnical Engineering (2)	2	--	1	3
2	CVE333	Design of Reinforced Concrete Structures (3)	3	2	--	5
3	CVE335	Design of Reinforced Concrete Structures (4)	3	2	--	5
4	CVE336	Steel Structures Design (2)	3	2	--	5
5	CVE365	Design of Irrigation Works	3	2	--	5
6	CVE366	Sanitary Engineering	2	2	--	4
7	CVE372	Highway and Airport Engineering	3	3	--	6
8	CVE415	Earthquake Engineering	2	2	--	4
9	CVE437	Steel Structures Design (3)	3	2	--	5
10	CVE442	Construction Projects Management	2	2	--	4
11	CVE453	Foundation Engineering	3	2	--	5
12	CVE454	Design of Special Structures and Prestressed Concrete	2	2	--	4
13	CVE474	Railway Engineering	2	2	--	4
14	CVE 3XX	Elective (1)	2	2	--	4
15	CVE 3XX	Elective (1)	2	2	--	4
16	CVE 4XX	Elective (2)	2	2	--	4
17	CVE 4XX	Elective (2)	2	2	--	4
18	CVE 4XX	Elective (2)	2	2	--	4
19	CVE 4XX	Elective (2)	2	2	--	4
20	CVE493	Project	4	4	--	8
		Total	**49**	**41**	**1**	**91**

C-Courses Tree

Fourth Year - Second Semester

- Earthquake Engineering
- Design of Special structures and Prestressed Concrete
- Population, Reproduction Health and Family Planning
- Environmental Impact of Projects
- Elective (2)
- Elective (2)
- Project

Fourth Year - First Semester

- Steel Structures Design (3)
- Construction Projects Management
- Foundation Engineering
- Railways Engineering
- Engineering legislations
- Elective (2)
- Elective (2)

Third Year - Second Semester

- Design of Reinforced Concrete Structures (4)
- Steel Structures Design (2)
- Highway and Airport Engineering
- Field Training (2)
- Human Rights
- Elective (1)
- Elective (1)

Third Year - First Semester

- Design of Reinforced Concrete Structures (3)
- Steel Structures Design (1)
- Design of Irrigation Works
- Sanitary Engineering
- Transportation Planning and Traffic Engineering
- Technical Report Writing
- Elective Humanities

Second Year - Second Semester

- Structural Analysis using Computer
- Design of Reinforced Concrete Structures (2)
- Geotechnical Engineering (2)
- Hydraulics
- Field Training (1)
- Engineering Economics and Project Manag
- Mechanical Engineering

Second Year - First Semester

- Structural Analysis (3)
- Properties and Testing of Materials (3)
- Design of Reinforced Concrete Structures (1)
- Geotechnical Engineering (1)
- Irrigation and Drainage Engineering
- Topographical Surveying
- Feasibility studies and operations research

First Year - Second Semester

- Structural Analysis (2)
- Properties and Testing of Materials (2)
- Fluid Mechanics
- Plane Surveying
- Elective (Humanities)
- Numerical Analysis
- Electrical Engineering

First Year - First Semester

- Structural Analysis (1)
- Properties and Testing of Materials (1)
- Civil Drawing
- Elective (Humanities)
- Technical English
- Mathematics (3)
- Building Construction

Primary Year - Second Semester

- Mathematics (2)
- Physics (2)
- Mechanics (2)
- Engineering Drawing & Projection (2)
- Engineering Chemistry
- Introduction To Computer & Programming
- English Language (2)

Primary Year - First Semester

- Mathematics (1)
- Physics (1)
- Mechanics (1)
- Engineering Drawing & Projection (1)
- Production Technology
- Introduction To Engineering Sciences
- English Language (1)

جداول المقررات الدراسية
لائحـــــة2017

Tables of The Semesters

Preparatory Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	BAS011	Mathematics (1)	3	2	--	5	3	40	35	--	75	150
2	BAS021	Physics (1)	3	1	1	5	3	25	25	25	75	150
3	BAS031	Mechanics (1)	2	2	--	4	3	25	25	--	50	100
4	BAS051	Engineering Drawing and Projection (1)	2	3	--	5	3	30	30	--	65	125
5	BAS061	Production Technology	2	--	3	5	3	20	20	20	65	125
6	HUM031	Introduction to Engineering Sciences	2	--	--	2	2	15	10	--	25	50
7	HUM011	English Language (1)	2	--	--	2	2	15	10	--	25	50
Total						**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	BAS012	Mathematics (2)	3	2	--	5	3	40	35	--	75	150
2	BAS022	Physics (2)	3	1	1	5	3	25	25	25	75	150
3	BAS032	Mechanics (2)	2	2	--	4	3	25	25	--	50	100
4	BAS052	Engineering Drawing and Projection (2)	1	3	--	4	3	30	30	--	50	100
5	BAS041	Engineering Chemistry	2	--	2	4	3	20	20	20	40	100
6	CEE041	Introduction to Computer and Programming	2	--	2	4	3	20	20	20	40	100
7	HUM012	English Language (2)	2	--	--	2	2	15	10	--	25	50
Total						**28**						**750**

Communications & Electronics Engineering Department

First Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CEE121	Electronics (1)	2	2	1	5	3	25	35	25	75	150
2	CEE142	Operating systems	2	1	2	5	3	20	10	20	50	100
3	CEE111	Electric Circuits (1)	2	2	1	5	3	25	25	25	75	150
4	HUM13X	Elective	2	--	--	2	2	15	10	--	25	50
5	HUM 113	Technical English	2	--	--	2	2	15	10	--	25	50
6	BAS113	Mathematics (3)	2	2	--	4	3	25	25	--	50	100
7	BAS123	Modern Physics	2	1	2	5	3	25	25	25	75	150
Total						**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CEE122	Electronics (2)	2	1	2	5	3	20	20	20	65	125
2	CEE143	Logic Circuits Design	2	2	2	6	3	25	25	25	75	150
3	CEE112	Electric Circuits (2)	2	2	1	5	3	20	20	20	65	125
4	CEE151	Electromagnetic Field	2	2	--	4	3	25	25	--	50	100
5	HUM13X	Elective	2	--	--	2	3	15	10	--	25	50
6	BAS114	Mathematics (4)	2	1	--	3	3	25	25	--	50	100
7	BAS115	Numerical Analysis	2	1	--	3	2	25	25	--	50	100
Total						**28**						**750**

Communications & Electronics Engineering Department

Second Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CEE213	Electronic Measurements (1)	2	1	2	5	3	25	25	25	75	150
2	CEE215	Electronic Circuits (1)	2	2	1	5	3	25	25	25	75	150
3	CEE261	Communication Systems (1)	2	1	1	4	3	20	20	20	65	125
4	CEE282	Electrical Machine and transformers	2	1	1	4	3	20	15	15	50	100
5	CEE244	Computer Architectures	2	2	--	4	3	25	25	--	50	100
6	HUM211	Feasibility studies and operations research	2	1	--	3	2	15	10	--	25	50
7	CVE286	Civil Engineering	2	--	1	3	3	15	15	15	30	75
Total						**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CEE223	Electronics (3)	2	2	1	5	3	25	25	25	75	150
2	CEE214	Electronic Measurements (2)	2	1	2	5	3	25	25	25	75	150
3	CEE262	Communication Systems (2)	2	1	1	4	3	20	20	20	65	125
4	CEE216	Electronic Circuits (2)	2	2	2	6	3	25	25	25	75	150
5	CEE291	Field Training (1)	--	--	2	2	--	--	25	25	--	50
6	HUM212	Engineering Economics and Projects Management	2	--	--	2	2	15	10	--	25	50
7	BAS262	Mechanical Engineering	2	1	1	4	3	15	15	15	30	75
Total						**28**						**750**

Communications & Electronics Engineering Department

Third Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CEE317	Electronic Circuits (3)	2	2	2	6	3	25	25	25	75	150
2	CEE352	Electromagnetic Waves	2	2	--	4	3	30	30	--	65	125
3	CEE371	Digital Signal Processing	2	2	--	4	3	30	30	--	65	125
4	CEE383	Automatic Control	2	2	--	4	3	25	25	--	50	100
5	CEE374	Digital Communication Systems (1)	2	2	2	6	3	25	25	25	75	150
6	HUM332	Technical Report Writing	2	--	--	2	2	25	10	--	25	50
7	HUM34X	Elective	2	--	--	2	2	25	10	--	25	50
Total						**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CEE372	Antennas	2	1	1	5	3	25	25	25	75	150
2	CEE318	Electronic Circuits (4)	2	2	2	6	3	25	25	25	75	150
3	CEE345	Microprocessor and Interfacing	2	1	2	5	3	25	25	25	75	150
4	CEE392	FieldTraining(2)	--	--	2	2	--	--	25	25	--	50
5	HUM321	Human Rights	2	--	--	2	2	15	10	--	25	50
6	CEE3XX	Elective (1)	2	2	--	4	3	25	25	--	50	100
7	CEE3XX	Elective (1)	2	2	--	4	3	25	25	--	50	100
Total						**28**						**750**

Communications & Electronics Engineering Department

Fourth Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CEE447	Programmable logic controllers	2	2	--	4	3	25	25	--	50	100
2	CEE453	Microwave Engineering	2	2	2	6	3	25	25	25	75	150
3	CEE464	Satellite Communications	2	2	--	4	3	30	30	--	65	125
4	CEE448	Neural Networks	2	2	--	4	3	30	30	--	65	125
5	HUM413	Engineering Legislations	2	--	--	2	2	15	10	--	25	50
6	CEE4XX	Elective (2)	2	2	--	4	3	25	25	--	50	100
7	CEE4XX	Elective (2)	2	2	--	4	3	25	25	--	50	100
Total						**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CEE465	Optical Communication Systems	2	2	1	5	3	25	25	25	75	150
2	CEE493	Project	2	1	2	5	3	25	25	25	75	150
3	CEE433	Embedded Systems	2	1	1	4	3	20	20	20	65	125
4	HUM423	Environmental Impact of Projects	2	2	2	6	3	25	25	25	75	150
5	HUM422	Population, Reproductive Health 2 and Family Planning	--	--	2	2	--	--	25	25	--	50
6	CEE4XX	Elective (2)	2	--	--	2	2	15	10	--	25	50
7	CEE4XX	Elective (2)	2	1	1	4	3	15	15	15	30	75
Total						**28**						**750**

Architecture Engineering Department

First Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	ARC112	Architectural Drawing and Design fundamentals	2	3	1	5	4	25	50	--	50	125
2	ARC131	Building Construction (1)	2	3	2	5	4	25	50	--	50	125
3	ARC151	Architectural Design (1)	2	3	1	5	6	40	80	--	80	200
4	CVE118	Structure analysis	2	3	--	5	3	25	25	--	50	100
5	CVE185	Survey	2	1	1	4	3	20	20	20	40	100
6	HUM113	Technical English	2	--	--	2	2	15	10	--	25	50
7	HUM13X	Elective	2	--	--	2	2	15	10	--	25	50
Total						**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	ARC111	Architectural Presentation Techniques	2	3	--	5	2	20	40	--	40	100
2	ARC113	Computer Applications of Architecture	1	--	3	4	2	20	20	20	40	100
3	ARC121	Theories and Evolution of Architecture	3	--	--	3	3	25	25	--	50	100
4	ARC152	Architectural Design (2)	2	3	--	5	3	40	80	--	80	200
5	CVE126	Properties and testing of materials	2	1	2	5	3	20	20	20	40	100
6	CVE169	Sanitary Engineering and fixtures	2	2	--	4	3	25	25	--	50	100
7	HUM13X	Elective	2	--	--	2	2	15	10	--	25	50
Total						**28**						**750**

Architecture Engineering Department

Second Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	ARC232	Building Construction (2)	2	3	--	5	4	25	50	--	50	125
2	ARC241	Acoustics and Artificial Illumination	2	2	--	5	2	25	25	--	50	100
3	ARC242	Design and Environmental Control	2	2	--	4	2	20	40	--	40	100
4	ARC253	Architectural Design(3)	2	3	--	5	6	40	80	--	80	200
5	ARC214	Digital Presentation of Architectural Projects	1	--	2	3	3	15	30	--	30	75
6	CVE259	Soil Mechanics and Foundations	2	2	--	4	3	20	20	20	40	100
7	HUM211	Feasibility Studies and Operations Research	2	--	1	3	2	15	10	--	25	50
Total						**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	ARC222	History and Philosophy of Modern Architecture and Contemporary	3	--	--	3	3	25	25	--	50	100
2	ARC233	Working Drawings (1)	2	4	--	6	4	25	50	--	50	125
3	ARC254	Architectural Design (4)	2	4	--	6	6	40	80	--	80	200
4	ARC261	Urban planning (1)	2	3	--	5	4	25	25	--	50	125
5	CVE238	Concrete Structures	2	2	--	4	3	25	25	--	50	100
6	HUM212	Engineering Economics and Projects Management	2	--	--	2	2	15	10	--	25	50
7	ARC291	FieldTraining(1)	--	--	2	2	--	--	25	25	--	50
Total						**28**						**750**

Architecture Engineering Department

Third Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	ARC355	Architectural Design (5)	2	4	2	6	6	40	80	25	80	200
2	ARC334	Working Drawings (2)	2	3	--	4	4	25	50	--	50	125
3	ARC362	Urban Planning (2)	2	3	--	4	4	25	50	--	50	125
4	ARC363	Landscape Architecture	2	2	--	4	4	20	40	--	40	100
5	ARC364	Housing and Planning of Residential Districts	2	2	--	4	4	20	40	--	40	100
6	HUM332	Technical Report Writing	2	--	--	2	2	15	10	--	25	50
7	HUM34X	Elective	2	--	--	2	2	15	10	--	25	50
Total						**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	ARC335	Working Designs (3)	2	4	--	6	4	30	60	--	60	150
2	ARC356	Architectural Design (6)	2	4	--	6	6	40	80	--	80	200
3	ARC3XX	Elective (1)	2	2	--	4	3	25	25	--	50	100
4	ARC3XX	Elective (1)	2	2	--	4	3	25	25	--	50	100
5	CVE339	Steel Structure	2	2	--	4	3	25	25	--	50	100
6	HUM 321	Human Rights	2	--	--	2	2	15	10	--	25	50
7	ARC392	FieldTraning(2)	--	--	2	2	--	--	25	--	--	50
Total						**28**						**750**

Architecture Engineering Department

Fourth Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	ARC457	Architectural Design (7)	3	5	--	8	8	50	100	--	100	250
2	ARC465	Urban Design	2	3	--	5	4	30	60	--	60	150
3	ARC493	Elective (1)	3	--	--	3	--	--	50	--	--	50
4	ARC4XX	Elective (2)	3	2	--	5	3	30	30	--	65	125
5	ARC4XX	Elective (2)	3	2	--	5	3	30	30	--	65	125
6	HUM413	Engineering Legislations	2	--	--	2	2	15	10	--	25	50
Total						**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	ARC494	Project (2)	2	7	--	10	--	--	150	150	--	300
2	ARC471	Quantities, Specifications and Buildings Legislation	2	2	--	4	3	25	25	--	50	100
3	ARC4XX	Elective (3)	2	3	--	5	3	30	30	--	65	125
4	ARC4XX	Elective (3)	2	3	--	5	3	30	30	--	65	125
5	HUM422	Population, Reproductive Health 2 and Family Planning	2	--	--	2	2	15	10	--	25	50
6	HUM423	Environmental Impact of 2 Projects	2	--	--	2	2	15	10	--	25	50
Total						**28**						**750**

Civil Engineering Department

First Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CVE111	Structural Analysis (1)	3	2	--	5	3	30	30	--	65	125
2	CVE121	Properties and Testing of Materials (1)	2	1	1	4	3	20	20	20	65	125
3	CVE161	Civil Drawing	2	4	--	6	3	40	35	--	75	150
4	HUM113	Technical English	2	--	--	2	2	15	10	--	25	50
5	HUM 13X	Elective	2	--	--	2	2	15	10	--	25	50
6	BAS113	Mathematics (3)	2	2	--	4	3	25	25	--	50	100
7	ARC139	Building Construction	2	3	--	5	3	40	50	--	60	150
		Total				**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CVE112	Structural Analysis (2)	3	2	--	5	3	30	30	--	65	125
2	CVE122	Properties and Testing of Materials (2)	2	1	1	4	3	20	20	20	65	125
3	CVE162	Fluid Mechanics	3	1	1	5	3	20	20	20	65	125
4	CVE181	Plane Surveying	2	1	2	5	3	25	25	25	75	150
5	HUM 13X	Elective	2	--	--	2	2	15	10	--	25	50
6	BAS116	Probability and Statistics	2	1	--	3	3	25	25	--	50	100
7	CEE181	Electrical Engineering	2	1	1	4	3	15	15	15	30	75
		Total				**28**						**750**

Civil Engineering Department

Second Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CVE213	Structural Analysis (3)	3	2	--	5	3	30	30	20	65	125
2	CVE223	Properties and Testing of Materials (3)	2	1	1	4	3	20	20	20	65	125
3	CVE231	Design of Reinforced Concrete Structures (1)	3	2	--	5	3	40	35	20	75	150
4	CVE251	Geotechnical Engineering (1)	2	--	1	3	3	20	20	20	40	100
5	CVE263	Irrigation and Drainage Engineering	2	2	--	4	3	25	25	--	50	100
6	CVE282	Topographical Surveying	2	1	1	4	3	20	20	20	40	100
7	HUM211	Feasibility Studies and Operations Research	2	1	--	3	2	15	15	--	25	50
Total						**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CVE214	Structural Analysis using Computer	3	2	2	7	3	30	30	40	100	200
2	CVE232	Design of Reinforced Concrete Structures (2)	3	2	--	5	3	40	35	--	75	150
3	CVE252	Geotechnical Engineering (2)	2	--	1	3	3	20	20	20	40	100
4	CVE264	Hydraulics	3	1	1	5	3	20	20	20	65	125
5	CVE291	Field Training (1)	--	--	2	2	--	--	25	25	--	50
6	HUM212	Engineering Economics and Project Management	2	--	--	2	2	15	10	--	25	50
7	BAS262	Mechanical Engineering	2	1	1	4	3	15	15	15	30	75
Total						**28**						**750**

Civil Engineering Department

Third Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CVE333	Design of Reinforced Concrete Structures (3)	3	2	--	5	3	40	35	--	75	150
2	CVE334	Steel Structures Design (1)	3	2	--	5	3	40	35	--	75	150
3	CVE365	Design of Irrigation Works	3	2	--	5	3	30	30	--	65	125
4	CVE366	Sanitary Engineering	2	2	--	4	3	30	30	--	65	125
5	CVE371	Transportation Planning and Traffic Engineering	3	2	--	5	3	25	25	--	50	100
6	HUM332	Technical Report Writing	2	--	--	2	2	15	10	--	25	50
7	HUM34X	Elective	2	--	--	2	2	15	10	--	25	50
Total						**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CVE335	Design of Reinforced Concrete Structures (4)	3	2	--	5	3	40	35	--	75	150
2	CVE336	Steel Structures Design (2)	3	2	--	5	3	40	35	--	75	150
3	CVE372	Highway and Airport Engineering	3	3	--	6	3	40	35	--	75	150
4	CVE392	FieldTraining(2)	--	--	2	2	--	--	25	25	--	50
5	HUM321	Human Rights	2	--	--	2	2	15	10	--	25	50
6	CVE 3XX	Elective (1)	2	2	--	4	3	25	25	--	50	100
7	CVE 3XX	Elective (1)	2	2	--	4	3	25	25	--	50	100
Total						**28**						**750**

Civil Engineering Department

Fourth Year

First Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CVE437	Steel Structures Design (3)	3	2	--	5	3	40	25	--	75	150
2	CVE442	Construction Projects Management	2	2	--	4	3	25	25	--	50	100
3	CVE453	Foundation Engineering	3	2	--	5	3	30	30	--	65	125
4	CVE474	Railways Engineering	2	2	--	4	3	30	30	--	65	125
5	HUM413	Engineering Legislations	2	--	--	2	2	15	10	--	25	50
6	CVE4XX	Elective (2)	2	2	--	4	3	25	25	--	50	100
7	CVE4XX	Elective (2)	2	2	--	4	3	25	25	--	50	100
Total						**28**						**750**

Second Semester

No.	Course Code	Course Title	Hours				Exam time)Hr(	Examination marks				
			Lec	Tut	Lab	Total		Mid term	Class work	Prac/Oral	Final exam	Total
1	CVE415	Earthquake Engineering	2	2	--	4	3	25	25	--	50	100
2	CVE454	Design of Special structures and Prestressed Concrete	2	2	--	4	3	25	25	--	50	100
3	HUM422	Population, Reproduction Health and Family Planning	2	--	--	2	2	15	10	--	25	50
4	HUM423	Environmental Impact of Projects	2	--	--	2	2	15	10	--	25	50
5	CVE4XX	Elective (2)	2	2	--	4	3	25	25	--	50	100
6	CVE4XX	Elective (2)	2	2	--	4	3	25	25	--	50	100
7	CVE493	Project	4	4	--	8	--	--	125	125	--	250
Total						**28**						**750**

Description of Courses Syllabus

توصيـف المقـــررات

Basic and Assistance Sciences Department

BAS011 Mathematics (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	40	35	-	75	150

Differentiation and integration: Limits and continuity, derivatives and their applications, Indefinite and definite integrals, Integration by substitution, derivatives and integrals of transcendental functions. Geometry and Algebra: Conic sections including parabola, ellipse, circle, and hyperbola, theory of algebraic equations and inequalities, partial fractions, functions and inverse functions.

BAS012 Mathematics (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	40	35	-	75	150

Techniques of integration; by substitution, by parts, and by partial fractions. Geometry and algebra: Linear algebra including determinants and matrices, systems of linear equations and eigenvalues and eigenvectors. Complex numbers, including polar form, De Moivre's theorem and its applications, sequence and series.

BAS021 Physics (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	1	1	5	25	25	25	75	150

Measurements, Dimensions and Units. Physical mechanics, Linear motion. Free fall and gravitational motion. forces, Momentum, energy concept and elastic, inelastic collisions. Circular motion and projectiles. Properties of matter: Mechanical properties of matter, Elastic properties of materials. Hydrostatics and surface tension, Hydrodynamics, Viscosity, with applications. Oscillatory motion, simple harmonic oscillator, Analogy of motions and applications. Electricity and Magnetism: Electrostatics, Electric forces, Electric field, Dipole-moment and maximum electric energy, Gauss law and applications, Electric potential, Capacitors. Electrodynamics, Electric current, electromotive force and resistivity. Direct current electric circuits, Kirchhoff's rules, Magnetic forces, Electromagnetic induction and Ampere's law.

Laboratory: *(Physics Lab)*

No.	Experiment Name
1	Fine measurements of length vernier
2	Micrometer
3	Spherometer
4	The simple pendulum
5	Verification of Hook's law
6	Spiral spring, determination of the force constant
7	Determination of the viscosity of glycerin
8	Verification of Ohm's law parallel and series law of resistors
9	Wheatstone bridge
10	Charging and discharging a capacitor R-C circuits parallel and series law of capacitors
11	Pulling power of an electromagnet

BAS022 Physics (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	1	1	5	25	25	25	75	150

Heat: heat energy, temperature, measurements and scales, thermal expansion, heat transfer, heat and thermal work, kinetic theory of gases, first law of thermodynamics, Molar specific heat, Carnot-cycle and entropy, second law of thermodynamics with applications. Waves: types of waves, sinusoidal and standing waves, mechanical waves and sound waves, Doppler effect, electromagnetic oscillations, Maxwell's equations, electromagnetic waves, light, electromagnetic spectrum with applications.

Laboratory: (*Physics Lab*)

No.	Experiment Name
1	Specific heat of a solid by mixture method
2	Newton's low of cooling
3	Specific heat of liquid
4	Joule equivalent (joule constant)
5	Thermal conductivity of a bad conductor by lee's method
6	Power of convex lens by general method
7	Power of convex lens by coincident method
8	Power of concave lens
9	Power of convex mirror
10	Speed of sound in air

BAS031 Mechanics (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Concurrent force systems, vector algebra, moments, couples, resultants of general, coplanar, and parallel force systems, frames and machines, trusses. Friction: dry friction, sliding and tipping, wedges friction, belt friction. Kinematics of a particle: rectilinear motion, curvilinear motion (cylindrical and rectangular components), orbital motion, projectile motion, relative motion. Kinetics of a particle: energy method, work, forces, fields, gravitational force, force, potential energy, kinetic energy, work - energy principle, conservation of energy. Linear impulse and momentum impact.

BAS032 Mechanics (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Equilibrium of a rigid body in two dimensions, free body diagrams, center of gravity, center of mass and centroid of a system of particles and rigid bodies. Moment of inertia of an area: parallel- axis theorem, radius of gyration, composite areas, moments of inertia about inclined axes. Planar kinematics of a rigid body: translation motion, rotation motion and general plane motion about a fixed axis, instantaneous center of zero velocity. Kinetics of rigid bodies: energy principle, work, potential energy, kinetic energy, field forces, energy conservation principles, linear impulse - momentum relation, angular impulse - momentum relations, impulsive forces.

BAS041 Engineering Chemistry:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	2	4	20	20	20	40	100

Equations of state, general properties of solutions, introduction to chemical thermos-dynamic and thermos-chemistry, balance in fuel combustion and chemical processes, basic principles in electro chemistry, introduction to corrosion engineering, environmental chemistry, selected topics in process chemical industries (chemistry of cement, petrochemical industries, building materials, dyes and dying industry).

Laboratory: (*Chemistry Lab*)

No.	Experiment Name
1	Laboratory orientation and safety practices
2	Determination of the normality of an acid (or abase) by titration of Acid Base
3	Acid base titration using the PH meter
4	Factors affecting on reaction rate (effect of concentration)
5	Determination of the solubility product constant (KSP)
6	Dilute hydrochloric acid group and identification of all acidic radicals in it
7	Concentrated sulphuric acid group and identification of all acidic radicals in it
8	Miscellaneous group and identification of all Acidic Radicals in it
9	Identification of basic radicals of inorganic salts

BAS051 Engineering Drawing and Projection (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	30	30	-	65	125

Drawing technology and skills, drawing equipment, Engineering operations, Geometric construction, Theory of projection, Orthographic projection, Representation of the bodies, Isometric and oblique representation, writing dimensions, predicting missing views, Introduction to engineering sectioning.

BAS052 Engineering Drawing and Projection (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
1	3	-	4	20	30	-	50	100

- Sections of solids, intersection of surfaces, development of solids, sectional views, auxiliary projection.
- Drawing of fastening means: bolts, nuts, pivots and welding, drawing of steel sections and connections, Electrical circuits drawing.

BAS061 Production Technology:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	3	5	20	20	20	65	125

Properties of engineering materials and material selection, Casting and joining metals, Forming processes, Basic machining processes, Measurements, Standardization, International measuring systems, Cost analysis and estimation, Maintenance (systems, types, and programming), Organization structure of production.

Workshop:

Doing exercises in carpentry, lather ,Casting, Forging, electrical and gas welding drilling shaper, measurement and filing workshops.

BAS113 Mathematics (3):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

- Calculus: Functions of several variables. Differential equations with some applications. Double, Triple, Linear, and surface integrals, and Green's theorem.
- Analytic Geometry: Polar coordinates, Polar coordinate equations of some basic curves ,Intersections of polar curves and plane areas in polar coordinates.

BAS114 Mathematics (4):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	-	3	25	25	-	50	100

Calculus: complex functions, special functions, Laplace equation, Laplace transform and its use in solving differential and integral equations, Dirac function and periodic functions, with some applications to engineering problems. Probability theory. Numerical methods of finding roots of nonlinear equations, Approximation of functions and curves using Lagrange method, the divided- differences method. Numerical differentiation and integration methods.

BAS115 Numerical Analysis:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	-	3	25	25	-	50	100

Theory of linear equations- Solving a system of linear equations using matrices with Gauss method, Gauss-Jordan method and Gauss-Seidel iteration method- Numerical methods of finding roots of nonlinear equations of nth degree including Newton-Raphson' method- Perpendicular projection and realizing the sum of least squares of errors- Approximation of functions and curves using Lagrange's method, the divided-differences method, and the least squares method- Methods of numerical differentiation and integration, Numerical solution of a system of differential equations.

BAS116 Probability and Statistics:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	-	3	25	25	-	50	100

Introduction in statistics, definition and functions of statistics, collection and organization of statistical data. Sets and Probabilities. Tendency and dispersion measures. Random variables of discrete random variables, continuous random variables. Moments, Skewness measures, kurtosis measures. Sampling theory and inferences statistic. Types of hypothesis testing and confidence limits. linear regression and correlation.

BAS123 Modern Physics:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	2	5	25	25	25	75	100

Optical physics: geometrical optics, physical optics, interference, diffraction and polarization of waves, Lasers. Relativistic physics: Michelson, Morely experiment, special theory of relativity, time dilation and length contraction, relativistic mass and energy, with applications. Quantum physics: Planck's theory of quantization of energy of radiation, the photoelectric effect, X-rays and Compton's effect. Atomic physics: wave properties of matter and wave function, Principles of quantum mechanics and Schrödinger's equation, atomic structure, quantum theory for free electrons in metals. Nuclear physics: lattice vibrations and thermal properties of solids, superconductivity.

Laboratory: (*Physics Lab*)

No.	Experiment Name
1	Determination of the wavelength of sodium light.
2	Determination of the characteristics of photo-resistors.
3	Determination of the characteristics of photo-diode.
4	The absorption coefficient of glass.
5	Determination of the wavelength of sodium light using Newton's rings.
6	Verification of fourth power law of radiation.
7	Determination of the plateau curve of G.M.counter.
8	The absorption coefficient of load to gamma radiation.

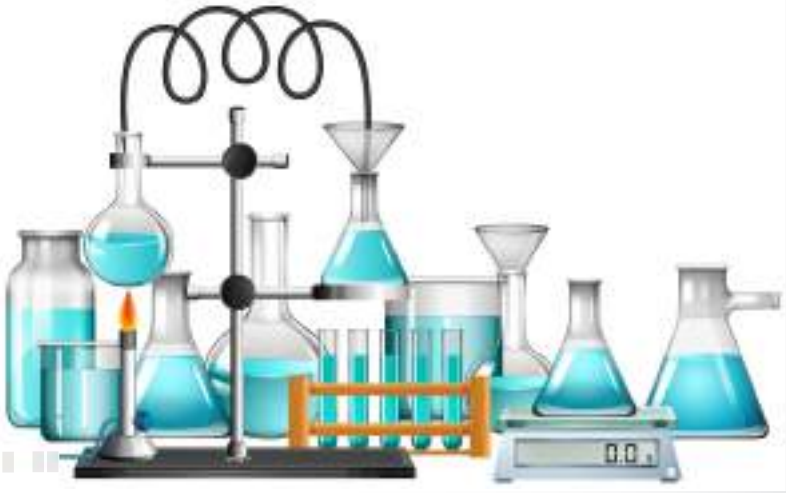
BAS262 Mechanical Engineering:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	1	4	15	15	15	30	150

Types of fluid, fluid statics, fluid dynamics, energy equation, pipelines. The ideal gas, the first law of thermodynamics, the second law of thermodynamics, Carnot cycle, thermal cycles. Refrigeration cycle and air-conditioners. Heat transfer by conduction, forced convection, heat transfer by radiation, heat exchangers. Power generation plants. pumps, gas turbines. Internal combustion engines and diesel engine units. Hydraulic cycles.

Laboratory: (*Hydraulics Lab*)

No.	Experiment Name
1	Flow measurement using venturi meter
2	Flow measurement using orifice meter
3	measurement using nozzle meter
4	Losses in pipes
5	Verification of 1st law of thermodynamics
6	Verification of 2nd law of thermodynamics
7	Measurement of Reynold's number of fluid
8	Pressure measurement and Bourdon gage calibration.



HUM011 English Language (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Basic Verbs (to Be /Must/Might/Can/Do/May/Would...etc), basic nouns (Animal/Table/ Chair/ People.....etc), list of words with arabic translation related to engineering, writing basic sentences, introducing and holding short basic conversations in English, Past simple tense, present simple tense, future simple tense, irregular verbs (Begin/ Become/Bring/Buy/Drive ...etc), List of nouns more advanced, list of words with Arabic translation related to Engineering, Writing a paragraph and short story, past continuous tense, present continuous tense future continuous tense, list of words with arabic translation related to engineering, writing a curriculum vitae and official letters, holding a presentation in English, identifying proper and common nouns, reading a simple english book and writing a book report about it

HUM012 English Language (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Identifying Concrete and Abstract Nouns,advanced list of words with arabic translation related to engineering, helping verbs (primary auxiliaries) revision of the past continuous tense, revision of the present continuous tense revision of the future continuous tense, presentation in english, reading an intermediate english book and writing a book review, identifying collective, countable and uncountable nouns, helping verbs (modal auxiliaries), finite verb phrases, advanced list of words with arabic translation related to engineering, past perfect tense, present perfect tense, future perfect tense, participles, pronouns, past perfect continuous tense, present perfect continuous tense, future perfect continuous tense, advanced list of words with arabic translation related to engineering, verbal (non finites verbs). Reading an intermediate english book and writing a book report.

HUM031 Introduction to Engineering Sciences:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Defining engineering disciplines in the institutes, introduction to engineering terminologies and industry standards and moral laws for engineers, technology transfer process and methods, optimal time and space of elements of the decision making, information revolution in the twenty first century, upgrading the curriculum of engineering sectors .

HUM113 Technical English:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Introduction, specialized engineering subjects, contents of technical report. How to write specialized technical report? Analysis of technical and engineering reports.

HUM133 Study Skills:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Introduction to learning skills, self-learning, active learning and effective study skills

HUM134 Scientific Thinking:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Introduction to Thinking Skills, axial thinking skills, creative thinking and methods of development and critical thinking and strategies.

HUM135 Presentation and Communication Skills:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Course aims to providing the student with the latest knowledge about the concepts, characteristics, and types of managerial and interpersonal communications, as well as the concepts and requirement of good listening and presentation and developing the student's abilities and skills of effective communication, and good listening, as well as how to use the interpersonal and managerial communication methods and the presentation techniques in performance and dealing with others inside and outside the organization. Course Contents: Concept and nature of communication - Communication model - Formal and informal communications - Interpersonal and managerial communications - Body language - Written communications (Reports and memos) - Ten Commandments of effective communication - Good listing - Elements of effective presentation model - Preparation of good presentation - Carrying out presentations - Discussion and dealing with objections - Evaluating presentation performance.

HUM136 Professional Marketing Skills:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Methods of documentation and presentation of management, technical and engineering data - Careful analysis of the documents, reports and articles ,the best ways to write and display Biography – types of correspondence art ,modern ways to present and discuss information ,information exchange ,management of personal and public interviewing ,management and ethics of professional meetings ,tools and methods of supply and marketing ,measuring return on marketing.

HUM211 Feasibility Studies and Operations Research:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	-	3	15	10	-	25	50

Feasibility studies

Introduction to feasibility studies ,globalization and privatization ,initial feasibility studies ,strategic analysis ,the mechanics of marketing feasibility ,financial and economic feasibility ,generating Projects and Applications.

Operations research

Identify the problem ,decision analysis ,identifying data and targets ,mathematical simplification - use linear programming to solve the problem and achieve goals.

HUM212 Engineering Economics and Projects Management

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Origin of engineering economics, principles of engineering economics, design and manufacturing processes, cost terminologies and cost estimation, accounting, budgeting and balance sheet, profit/loss statement, equivalence, money value of time, applications, simple and compound interest rates, present value, internal rate of return, payback period, evaluation of alternatives for useful life periods, depreciation methods, replacement analysis, determination of the economic life of projects for replacement, engineering economic techniques for evaluating public projects. Project management: Definitions, project life cycle, project stages, relationship among different project parties, execution phase responsibilities, productivity and quality management.

HUM321 Human Rights

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

The course aims to make the student recognizes the rights of the law of human nature and sources and explains the nature of the restrictions and differentiates between individual rights and collective rights and shows the rights of the areas of human educational and intellectual world and determine the duties and responsibilities partisan, professional and shows women and children with special needs.

HUM332 Technical Report Writing:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Essential elements of a technical report: Abstract - Summary - Contents - Objectives - Details of the report including figures, images, video ...etc, - Conclusions - Recommendations - References using a standard format and the different electronic sources. Report Classification: Technical (Requirement specification, analysis, design and implementation). Administrative (directed to different operational and management levels). Levels of confidentiality for the different reports. Report Composition: Logical presentation of the report and coordination between its components. Importance of using correct grammar and punctuation. Enhancing communication effectiveness by the use of different media. Report Implementation: Use of the appropriate software packages including any graphics or multimedia packages.

HUM341 Recent Egypt's History:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Egypt under Ottoman rule (1798 - 1571) (conquest - governance and socio-economic conditions) - French invasion of Egypt and its effects (1801-1798) (occupation-governance and control - national resistance - failure of colonial project - Outcomes of occupation) Muhammad Ali's regime (1848-1805) (political conflict - the rule of the Muhammad Ali –the modern state - building foreign policy) - national movement - Orabi revolution - (the successors of Muhammad Ali era - Ismael- national movement and the Orabi revolution). Egypt during the British occupation (1914-1882)) occupation policy - emission of the national movement) - Egypt during the reign of the british protectorate and World war I - authorship the delegation group and the revolution of 28 - 1919 Fberaar1922 announcement - Constitution of 1923 - evolving of the national case and the treaty of 1936 - Egypt during World war II). The political and social crises of Egypt and the way to revolution - the July revolution and change the political system - British evacuation 1954 - triple aggression in 1956.

HUM 342 Islamic History:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Features of Islamic history since the prophetic mission - Through the era of the Caliphs - Islamic conquest expansions - The Umayyad - Abbasid state and its culture through those times.

HUM413 Engineering Legislations:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

The rights and liabilities governing work in all engineering specializations according to valid laws and regulations. Reviewing and explaining the engineering legislations. Regulations and laws governing engineering union, different syndicates, contractors and the environmental protection.

HUM422 Population, Reproductive Health and Family Planning:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

Policy and health services in Egypt - Child and adolescent health - Areas of cooperation with the international organizations in the field of health and population - Family planning and reproductive health - Endemic diseases and how to combat it - Population activities in Egypt - Demographic Indicators.

HUM423 Environmental Impact of Projects:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	-	2	15	10	-	25	50

The Environment, Human surroundings. Human Influences of projects: Upgrading, development, economic factors, social factors, cultural factors, aesthetic factors, hygienic and psychological factors. Types of projects: Urban projects, infrastructure projects, industrial projects. Environmental impact of projects: Negative impact, positive impact, direct impact, indirect impacts. Assessment of projects: National assessment, international assessment. Approved rates and criteria for the compatibility of projects, environmental topics.

Textbook: John Glasson, Riki Therivel and Andrew Chadwick, Introduction to environmental impact assessment, Routledge, 2005.

Communications and Electronics Engineering Department

CEE041 Introduction to Computer and Programming:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	2	4	20	20	20	40	100

Computer structure, central processing unit (CPU),memory (types – characteristics),input / output devices, computer interconnections, Microsoft windows, Microsoft office programs (Word – Access – Excel – Power point – Internet explorer) and programming with high level language (C++).

Laboratory: *(Physics Lab)*

No.	Experiment Name
1	Microsoft Word-Examples
2	Microsoft Excel- Examples
3	Microsoft Power Point- Examples
4	Microsoft Access- Examples
5	Programming Language C++
6	Control statements(IF)
7	Control statements(Switch-case)
8	Control statements(For-Loop)
9	Control statements(While-Loop)
10	Control statements(Do-While-Loop)

CEE111 Electric Circuits (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	1	5	25	25	25	75	150

Electrical circuit variables and elements, simple resistive circuits, circuit theorems and analysis of electrical circuits, source transformation network theorems, Thevenin theorem, Kirchhoff's voltage law, Kirchhoff's current law, star-delta transformation, complex power calculations, power factor, series and capacitor and parallel- mutual electro magnetic.

Laboratory: *(Electric Circuits Lab)*

No.	Experiment Name
1	Resistors and resistors network
2	Current and voltage measurements in series and parallel resistors
3	Thevenin's theorem application
4	Electric power measurements
5	Capacitors ,series and parallel connections and time constant
6	Electromagnetic induction and inductor

CEE112 Electric Circuits (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	1	5	25	25	25	75	150

Sinusoidal steady state analysis, phasor diagram representation, application of network theorems on alternating current circuits, circuits with non-linear resistance. Transients in electrical circuits, polyphase circuits, magnetically coupled circuits, mutual Inductance, resonance in electric circuits, electric filters, two-port networks, locus of phasor diagrams at variable frequency, analysis of electric circuits with non-sinusoidal alternating currents, higher, harmonics and Fourier series.

Laboratory: *(Electric Circuits Lab)*

No.	Experiment Name
1	Superposition Theorem
2	RMS Value of an AC Waveform
3	AC Reactive (Capacitor and Inductive) Circuits.
4	Series CR- And LR- Circuits
5	Concept of Impedance of series LCR Circuits
6	Impedance of series LCR- Circuits Admittance and Parallel Circuits
7	Series and Parallel Resonance
8	Measurement of current, voltage and power in polyphaser network

CEE121 Electronics (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	1	5	25	25	25	75	150

Theory of semiconductor, intrinsic semiconductor, extrinsic semiconductor. Semiconductor P-N junction diode. Forward and reverse diode biasing. Half wave rectification – full wave rectification Zener diodes – Bipolar junction transistor – The common base (C.B) characteristics – The common Emitter configuration (C.E). Transistor biasing.

Laboratory: *(Electronics Lab)*

No.	Experiment Name
1	Familiarization
2	The semiconductor diode
3	Testing semiconductor diode
4	Half-wave rectification
5	Full wave rectification
6	The zener diode
7	Transistor feminization
8	Testing bipolar transistor
9	The common emitter transistor
10	The field effect transistor

CEE122 Electronics (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	2	5	25	20	20	65	125

Field effect transistor, The junction field effect transistor (JFET). The JFET volt – ampere characteristic. The JFET transfer characteristic. The enhancement MOSFET. The depletion biasing of FET. The FET as switch – CMOS Devices. Basic amplifier stage at low frequencies, small signal (FET & BJT) models, linear analysis of transistor circuits, the common emitter amplifier, the emitter follower amplifier, the common base amplifier, comparison of BJT amplifiers FET amplifier stage, cascaded transistor amplifier. The differential amplifier, the operational amplifier and feedback amplifier.

Laboratory: *(Electronics Lab)*

No.	Experiment Name
1	Junction FET characteristics
2	Thermal stability
3	Small signal amplifiers
4	Amplifier coupling, loading, and feedback
5	DC amplifiers
6	The differential amplifiers
7	Operational amplifiers

CEE142 Operating Systems:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	2	5	20	10	20	50	100

Processor organization and operation, system programs, operating system, memory management, processor management, input / output management, information management, computer languages (High level languages, assembly language, machine language), compiler and programming using visual basic.

Laboratory: *(Computer Lab Visual Basic Programming)*

No.	Experiment Name
1	Defining Toolbox - menu
2	Calculations Program
3	Control Statements(IF)
4	Control Statements(Switch-case)
5	Control Statements(For-Loop)
6	Control Statements(While-Loop)
7	Control Statements(Do-While-Loop)
8	Application Programs
9	Application Programs
10	Application Programs

CEE143 Logic Circuits Design:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	2	6	25	25	25	75	150

Numbering Systems (Binary,octal,hexadecimal,BCD,non-weighted codes), binary addition and subtraction, BCD addition, boolean algebra, karnough-map, logic gates, combinational logic circuits (Decoder/Encoder, Multiplexer/Demultiplexer, Parity generator/ checker, Gray code converter), flip-flops (types and applications),registers, Counters and sequential circuits.

Laboratory: *(Logic Circuit Lab)*

No.	Experiment Name
1	Realization of logic gates using resistors and diodes
2	Realizing of ordinary gates (AND-OR-NOT). using the universal gates (NAND-NOR).
3	Realization of logic Circuits.
4	Realization of full adder circuits using ordinary logic gates.
5	Multiplexer and Demultiplexer.
6	Design a S-R flip-flop using ordinary logic gates (Asynchronous).

CEE151 Electromagnetic Field:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Vector analysis: Divergence of a vector field Cartesian coordinate and curl of a vector. Orthogonal coordinate systems: Divergence, Gradient and curl in Cylindrical and spherical coordinate. Stokes's Theorem, divergence theorem, Helmholtz theorem. Static electric fields: Coulombs law, charge densities and electric field intensity. Static electric fields: Moving charges current: Conductors, ohm's law, resistance, semiconductors, conductor under static conditions. Dielectrics and capacitance: Polarization in dielectrics. Boundary conditions: Static magnetic field: BIOT SAVART law, ampere's circuital law. Vector magnetic potential: Flux density vector, static maxwell equations. Magnetic force and magnetic materials: force between conductors.

CEE181 Electrical Engineering:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	1	4	15	15	15	30	75

Dc circuits, kirchoff's Laws, magnetic circuits, operation theory and construction of DC machines, operation theory of Dc generators and Dc motors, single phase circuits, -3phase balanced circuits, cables selection for different loads, operation theory of transformers, operation theory of Ac motors.

Laboratory: *(Electronics Lab)*

No.	Experiment Name
1	Current and Voltage Measurement in Series and Parallel Resistors
2	Current and Voltage Measurement in loop (KVL)
3	Electric Power Measurement
4	EMF Generation in Separately Excited DC generator
5	Operation of Shunt and Series DC Motor
6	Check up of RMS Values of Current and Voltage using Oscilloscope
7	No load Test and Short Circuit Test of Transformer

CEE213 Electronic Measurements (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	2	5	25	25	25	75	150

Analog Instruments, precautions, data converters, digital Instruments, testing of linear systems, wave analyzers, transducers, noise effects, optical fiber measurements, cathode ray-oscilloscopes application and electronic and communication experiments to support the theoretical aspects of the course material.

Laboratory: *(Electronic Measurements Lab)*

No.	Experiment Name
1	Measuring voltage
2	Measuring current
3	Measuring Resistance characteristics
4	Light Dependent resistor
5	Verifying Ohm's Law
6	Power
7	Determining the sensitivity of your voltmeter
8	Extending voltmeter range
9	Loading effects of the voltmeter
10	Multimeters

CEE214 Electronic Measurements (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	2	5	25	25	25	75	150

Electrical measurements, measurement errors, accuracy, statistical analysis. Static calibration, resolution and precision, dynamic response. Units: systems, dimensions and standards. Moving- coil instruments, moving iron instruments, electro-dynamic instruments, induction-type instruments, current and voltage measurements, measurement of power, measurement of energy and charge, measurement of frequency and power factor, measurement of non-electrical parameters. DC bridges, AC bridges, resistance and capacitance measurement, allocation of cable faults. Strain gauges, temperature transducers, displacement, velocity and acceleration transducers, force and pressure transducers, light transducers, data converters, voltage-to- frequency converters. Digital devices: digital voltmeters and digital frequency meters.

Laboratory: *(Electronic Measurements Lab*

No.	Experiment Name
1	Linear ramp A/D converter
2	Segmented displays
3	Oscilloscope control operation
4	Lissajour measurement
5	Constructing a main gate and decade counter circuit
6	Signal generator calibration check
7	Performance check of oscilloscope vertical circuit
8	Performance check of oscilloscope sweep speed calibration

CEE215 Electronic Circuits (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	1	5	25	25	25	75	150

Frequency response: Amplifier frequency response, system transfer function, frequency response bipolar transistor, frequency response FET transistor. miller effect capacitance. high frequency response of transistor circuit, multistage frequency effect, square wave testing. wave generators and wave shaping: sinusoidal oscillators, the phase shift oscillator, the wein bridge oscillator, LC oscillator, crystal oscillator, multivibrator components, square wave generation from a sinusoidal, Schmitt trigger circuit, square wave and triangle wave generators, pulse generators, the 555 IC timer and voltage time base generators.

Laboratory: *(Electronic Circuits Lab)*

No.	Experiment Name	No.	Experiment Name
1	RC Time constant	6	Parallel Resonance
2	RC circuits	7	LC Filters PART (1)
3	RL circuits PART (1)	8	LC Filters PART (2)
4	RL circuits PART (2)	9	Active Filters
5	Series Resonance		

CEE216 Electronic Circuits (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	2	56	25	25	25	75	150

Integrated circuit biasing and active loads, bipolar transistor current sources, FET current sources, circuit with active loads. semiconductor devices for digital circuits, digital logic circuit, logic circuit characteristics (logic level, fan out, propagation delay, power dissipation, noise immunity), integrated circuit classification. bipolar digital circuit, emitter coupled logic (EEL), diode transistor logic circuit (DTL), transistor logic circuit (TTL), MOSFET digital circuit, NMOS inverters, NMOS logic circuits, CMOS Inverters and CMOS logic circuits.

Laboratory: *(Electronic Circuits Lab)*

No.	Experiment Name	No.	Experiment Name
1	BJT inverter function using p spice	5	CMOS inverter function
2	BJT NOR and OR Logic functions	6	CMOS NOR and OR Logic functions
3	BJT NAND and AND Logic functions	7	CMOS NAND and AND Logic functions
4	BJT Boolean` algebra functions	8	CMOS Boolean algebra functions

CEE223 Electronics (3):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	1	5	25	25	25	75	150

Power supply and regulators: AC to DC conversion, rectifiers and capacitor filter, regulated power supply. monolithic regulators, switching regulators. large signal amplitude: harmonic distortion, amplifier classification, efficiency of A class amplitude, class B push pull amplitude, class AB operation. Integration of circuit power amplifier, thermal design consideration, power field effect transistor. Power semiconductor devices: power diodes, thyristors, SCR, TRIAC, DIAC, shochely diode and Unijunction transistor (U.J.T), (PU.J. T).

Laboratory: *(Electronic Lab)*

No.	Experiment Name	No.	Experiment Name
1	Unregulated power supplies	6	Rectangular-wave generators
2	Voltage regulation	7	Ramp generator
3	IC voltage regulator	8	The practical Tank circuit
4	Complimentary power amplifiers	9	LC oscillator
5	Driven rectangular-wave shaping	10	Crystal oscillator

CEE244 Computer Architectures:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Design of digital system methodologies, design levels (gate level, register level, processor level), Instruction cycle, addressing techniques, arithmetic operations , control unit design (hardwire and microprogramming) , memory hierarchy , computer input/output operation , computer buses.

CEE261 Communication Systems (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	1	4	20	20	20	65	125

Introduction to communication system, analysis of amplitude modulation, frequency modulation, phase modulation, pulse modulation systems, transmitters and receivers, detectors, mixers, automatic gain control, automatic frequency control, phase-locked-loop, applications of RF power amplifiers, limiters, harmonic generators and AM modulators, stereo coder and decoder, FM stereo broadcast transmitters and receivers, color TV systems (Pal/SECAM/NTSC), color TV transmitters and receivers, alignment of color TV receivers.

Laboratory: *(Communication Systems Lab)*

No.	Experiment Name	No.	Experiment Name
1	The signal sources	7	The ring modulator, the collector modulator
2	The tuned circuits		
3	The crystal oscillators	8	AM Radio Superheterodyne
4	The amplifiers	9	AM Detection
5	The familiarization of the Filters	10	FM Modulation
6	AM Modulation (Balanced modulator)	11	FM Detection

CEE262 Communication Systems (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	1	4	20	20	20	65	125

Sampling process, pulse amplitude modulation, quantization noise, conditions for optimality of scalar quantizes, pulse code modulation, time division multiplexing. digital multiplexers, random processes: stationary process, mean, covariance and correlation functions, ergodic processes, transmission of random processes through linear time invariant filter: power spectral density. Noise: Gaussian process and central limit theorem, white noise, narrow band noise. Noise effect on CW modulation systems: DSB-SC, AM envelope, FM. Baseband Pulse.

Laboratory: *(Communication Systems Lab)*

No.	Experiment Name	No.	Experiment Name
1	Harmonic analysis of square wave	6	Sample and hold
2	Harmonic analysis of modulated wave form	7	Aliasing and multiplex signaling
3	Super – Heterodyne Receiver	8	Pulse Code Modulation
4	Amplitude modulation with / without carrier	9	Noise in PCM system
5	Single – Sideband	10	Delta and Delta – Segma Modulation

CEE282 Electrical Machines and Transformers:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	1	4	20	15	15	50	100

Magnetic circuits, DC machines, transformers, induction motors, fractional horse power motors.

Laboratory: *(Electrical Machine Lab)*

No.	Experiment Name
1	The no load characteristic of DC Generators
2	Load characteristic of a separately excited generator
3	Load characteristic of shunt generator
4	Load characteristic of series generator
5	Shunt and series DC motor operation
6	Speed control of DC motor
7	No load test for transformer
8	Short circuit test for transformer

CEE291 Field Training (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
-	-	2	2	-	25	25	-	50

Students should spend 6 weeks in field training, after completing the second year, in any engineering institution or engineering firms. Students should demonstrate the professional and practical skills they acquired during discussion with their assigned tutors.

CEE317 Electronic Circuits (3):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	2	6	25	25	25	75	150

Introduction to frequency selective circuit: Passive filters, LPF, HPF, BPF, and BRF circuit. Active filter circuits. First order low pass and high pass filters, scaling, Op-Amp band pass and Band Reject amplifier, higher order Op-Amp filters, cascading identical filters, butter worth filters, narrow band and band pass and band reject filters, all pass filter, state variable filters, types of active filters.

Laboratory: *(Electrical Machine Lab)*

No.	Experiment Name
1	Assigned the bandwidth of LPF, HPF using passive elements
2	Assigned the bandwidth of BPF, BRF using passive elements
3	Assigned and check the bandwidth gain of LPF, HPF using OP-Amp
4	Assigned and check the bandwidth gain of BPF, BRF using OP-Amp
5	Assigned the bandwidth for different filters by Butter worth method
6	Assigned the bandwidth for different filters by cheby shave

CEE318 Electronic Circuits (4):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	2	6	25	25	25	75	150

Modulation and demodulation, amplitude modulation, types of amplitude modulation, comparison of various AM systems, block diagram of AM transmitter, transistor AM modulation, square low diode modulation, generation of DSB-SC signal, single side band generation, frequency modulation, phase modulation, AM detection, FM detection, phase difference detector. pulse modulation, pulse amplitude modulation, pulse time modulation, pulse code modulation. Phased Locked Loop (PLL), operating principles, monolithic Phased Locked Loop (PLL) IC's, PLL operation, PLL applications.

Laboratory: *(Electronic Circuits Lab)*

No.	Experiment Name	No.	Experiment Name
1	Phase Locked Loop (PLL)	4	PCM Multi / DE multiplexing
2	Frequency Synthesizing	5	FDM Multi / DE multiplexing
3	PAM Multi / DE multiplexing	6	MODEM

CEE345 Microprocessor and Interfacing:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	2	5	25	25	25	75	150

Microprocessor structure, instruction types, microprocessor memory, input/output system, transducers, sampling of analog signals, A/D and D/A converters, parallel interfacing, serial interfacing, programmable peripheral interfacing (example 8255).

Laboratory: *(Microprocessor and Interfacing Lab)*

No.	Experiment Name	No.	Experiment Name
1	Programming ARDUINO C	6	APPLICATIONS WITH MOTORS&RELAYS
2	IDE Program& component knowledge	7	Applications with display (LCD, 7segment)
3	Applications with LEDs	8	Applications with buzzers, keypads
4	Applications with Sensors	9	serial communication
5	Motors, Drive circuit	10	Voice syntheses

CEE346 Computer Programming:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Benefits of using Java programming language, how to write and execute a java program, how the program compiles and stores in memory, how to use (If- switch Case – For loop – Do-while), matrices (sort- store-addition and multiplication of two matrices two dimensions), classes, methods, object oriented, construct Database

Laboratory: *(Computer Lab Java Programming language)*

No.	Experiment Name	No.	Experiment Name
1	Defining menu of Netbeans	6	Matrices
2	Printing and Inputting and calculating Programs	7	Object oriented
3	Control Statements(IF) (Switch-case)	8	Classes and methods
4	Control Statements(For-Loop)	9	Functions
5	Control Statements(While-Loop) (Do-While-Loop)	10	Create Database

CEE345 Microprocessor and Interfacing:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	30	30	-	65	125

Time varying fields: Faraday's law, displacement current, transformer and motional EMF's. Maxwell's equations: electromagnetic wave propagation: plane waves in lossless medium, wave propagation in lossy medium. Power and pointing vector: wave propagation, power dissipation. boundary conditions: group velocity & phase velocity. Reflection of waves: waves at normal incidence, waves at oblique incidence. Transmission line: transmission line parameters, transmission line equations. transmission line reflections: Input impedance, SWR. Smith chart and applications.

CEE345 Microprocessor and Interfacing:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Transmission: line codes, equalizers, filters, probability of errors in baseband, intersymbol interference, Nyquist criterion for distortion less baseband transmission, raised cosine spectrum. M-Ary probability of error, regenerative repeaters, eye pattern, power spectrum of pulse amplitude modulation. Signal space analysis, correlation receiver. Passband data transmission, BPSK, QPSK, Pe, spectrum, generation, M-Ary, FSK, No coherent binary FSK. Differential phase shift keying. Comparison of digital modulation schemes using a single carrier. Application: Modems.

CEE371 Digital Signal Processing:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	30	30	-	65	125

Digital filter design: finite impulse response, Infinite impulse response. Adaptive digital filters: concepts, algorithms, applications. Speech coders: speech signal analysis, waveform coders, vocoders, hybrid coders. Image processing: image coding, image enhancement, image compression.

CEE372 Antennas:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	1	5	25	25	25	75	150

Fundamental parameters of antennas: radiation pattern, isotropic, directional and Omni directional patterns, radiation power density, directivity, gain, antenna efficiency. Fundamental parameters of antennas: vector potential for electric and magnetic current sources, electric and magnetic fields for electric and magnetic currents. Far field radiation, duality and reciprocity theorem. Linear wire antennas: infinitesimal dipole, small dipole. Finite length dipole: half-wavelength dipole, linear elements on perfect conductor. Applications: antenna for mobile communication systems. Loop antennas: small circular loop, circular loop with constant current, circular loop with variable current. Antenna arrays: end fire array, phased array. design of antenna arrays: planer arrays, array factor, micro-strip antenna characteristics.

Laboratory: *(Antennas Lab)*

No.	Experiment Name
1	Half-wave dipole antenna
2	Folded dipole antenna
3	Drooping antenna
4	Full-wave loop antenna
5	Yagi antenna
6	Helical antenna
7	Horn antenna

CEE373 Information Theory and Coding:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Introduction: uncertainty, information, entropy and its properties. Source coding: shannon coding, prefix coding, Kraft-Mcmillan inequality, Huffman coding, Lempel Ziv coding. Discrete memoryless channels: transition probability, binary symmetric channel, mutual information and its properties. Channel capacity: definition, binary symmetric channel. Channel coding theorem. Channel capacity theorem. Compression of information. linear block codes: syndrome decoding, minimum distance considerations. Cyclic codes: generator polynomial, parity check polynomial, encoder for cyclic, hamming codes, Bose Chaudhuri-Hocquenghem (BCH) codes, Reed-soloman codes. Convolutional codes: code tree, Trellis and state diagram. Maximum likelihood decoding of convolutional codes.

CEE374 Digital Communication Systems (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	2	6	25	25	25	75	150

Sampling, digital modulation transmission, digital system, digital signal, error and noise, synchronization techniques, coding and encoding, pulse coding modulation, amplitude shift keying, phase shift keying, delta modulation, differential delta modulation.

Laboratory: *(communication Lab)*

No.	Experiment Name	No.	Experiment Name
1	Introduction to digital signaling	6	Frequency Shift Key (FSK)
2	Dealing with noise in a digital system	7	Phase Shift Key (PSK)
3	Clock regeneration 1 (NRZ data)	8	Further techniques fopr PSK/DSBSC demodulation
4	Amplitude Shift Key (ASK)	9	Generation of QPSK signals
5	Clock regeneration 2 (Bi-phase code)	10	Reception of QPSK signals

CEE383 Automatic Control:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Introduction to linear control system theory , closed loop control system , feedback control systems , performance of control systems , standard test signals , transient response , response of first and second order systems, the frequency response plots , estimation of transfer functions, stability of linear systems , controllability and observability , non linear control and describing functions , the course must cover preliminaries on intelligent controls.

CEE392 Field Training (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
-	-	2	2	-	25	25	-	50

Students should spend 6 weeks in field training, after completing the Third year, in any engineering institution or engineering firms. They should prepare a technical report implying a full description of the processes they joined for training. Students should demonstrate the professional and practical skills they acquired during discussion of report with their assigned tutors.

CEE419 Digital Circuits:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

CMOS inverter: noise margin, propagation delay, power dissipation, CMOS combinational circuits: static design, pass transistors and transmission gates, dynamic design, CMOS sequential circuits: latches, Flip-flops, counters, finite-state, machines, pipelined structure, non-bistable CMOS circuits: monostable, ring oscillator.

CEE424 Optical Electronics:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Interaction of radiation and atomic systems, theory of laser oscillation: fabry-perot laser, oscillation, frequency, power output, some laser system, electro-optic modulation of laser, OPTO- electronic semiconductor devices, DC and AC characteristics, PIN and avalanche photodiode, applications: OPTO isolator types, parameters and characteristics, circuit applications, solar cells, LCD's.

CEE425 Selected Topics in Electronics:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Selected topics related to recent development in micro- and nano-electronics, Mems and Mems technologies, integrated circuit design, computer aided design techniques and design automation.

CEE431 Integrated Circuits:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

IC Processing, post processing, processing economics, design of basic digital IC building blocks, NMOS inverter: noise margin propagation delay, power dissipation, NMOS and CMOS gate circuits, GaAs digital circuits, IIL, TTL, EEL, gates, BiCMOS digital circuits, Memory cores: ROM, EPROM, EEPROM, Flash ROM, SRAM, DRAM, Memory peripheral Circuitry: Row and column decoders, Array structure: PLA, PAL, PLD.

CEE432 Integrated Circuit Systems:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Defining items, technology roadmap, basic silicon processes, fabrication of passive and active components, process integration and standard technologies, process simulation, layout design rules, layout parasitic, typical examples, layout techniques, interconnect modeling, substrate coupling issues, ESD protection techniques, packaging.

CEE433 Embedded Systems:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

The importance of embedded systems, embedded processor structure, programming of embedded system , I/O and device driver interface to embedded processors with networks, scheduling, communication and synchronization, structure and implementation of microcontroller, the microcontroller basic instruction set, real time operating system and their testing, illustrative examples of microelectromechanical systems as embedded systems.

CEE433 Embedded Systems:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Design of VLSI, structural design of VLSI analog and digital circuits, evolution of VLSI, concepts of system design, techniques of IC design, inputting of digital variables and implementation techniques, VLSI testing techniques and its applications.

CEE447 Programmable Logic Controllers:

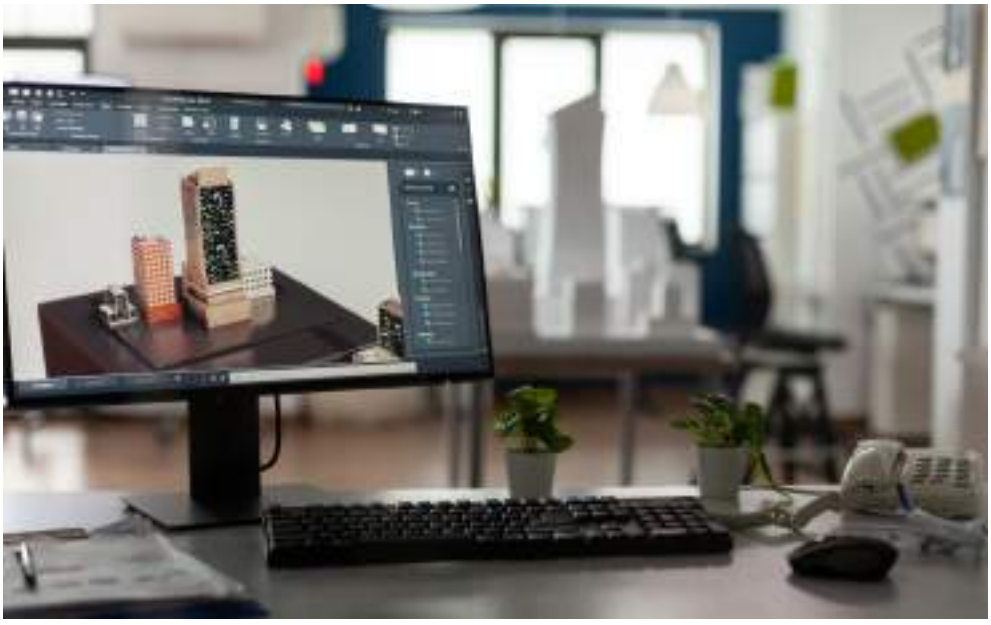
Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Introduction to PLC and its advantages in controls , the structure of PLC , types of sensors used with PLC , types of output devices controlled by PLC , symbols used with PLC ladder diagrams , design a PLC ladder diagrams , restrictions imposed on PLC ladder diagrams , solving control problems using PLC , representation and implementation of boolean functions using PLC , programming languages used to program PLC devices , application of PLC in control processes , application of analog PLC in control processes.

CEE448 Neural Networks:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	30	30	-	65	125

Introduction to human neural network, arithmetic model of a neuron, representation of ANN, ANN architecture, knowledge representation, learning processes, single layer perceptron, multi- layer perceptron's, linear associative networks, learning matrix networks, recurrent associative networks, back propagation networks, dynamic back propagation networks, counter propagation networks, Boltzmann machine, solving engineering problems using ANN.



CEE449 Computer Aided Design:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Introduction to CAD , tools for design analog, digital and mixed circuits, Nodal analysis and matrix map, VLSI circuit design, modeling hardware, hardware description language, programming technologies, digital circuit testing, design for testability, generating output data for manufacturing, design of printed circuit board.

CEE453 Microwave Engineering:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	2	6	25	25	25	75	150

Waveguides TEM (Transverse electromagnetic wave). Transverse magnetic waves (TM), transverse electric waves (TE). Rectangular waveguides: TE and TM waves in rectangular waveguides. Power, Attenuation in rectangular waveguide. Circular Waveguide: Bessel's differential equation and Bessel's functions TE & TM, waves in circular waveguide. Cavity resonators: rectangular cavity quality factor and cavity circular cavity. Microwave network analysis: impedance and admittance matrices, scattering matrix, reciprocal and lossless networks. Impedance transformation and matching: single stub and double stub matching networks. Passive microwave devices: variable short circuit, attenuators, phase shifters, hybrid junctions, power dividers. Directional coupler.

Laboratory: *(Microwave Lab)*

No.	Experiment Name	No.	Experiment Name
1	Gun oscillator	5	Directional coupler
2	Variable attenuator	6	Cavity resonator
3	Slotted measuring line	7	Smith chart for matching
4	Complex reflection coefficient		

CEE454 Microwave / RF Devices:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Microwave frequencies, microwave devices, microwave systems, electron motion in an electromagnetic field, uniform plane waves and reflection, transmission-line equations and solutions, microwave coaxial connectors, couplers, dividers, attenuators, circulators, RF / Microwave amplifier Design, RF filters, RF / Microwave semiconductors

CEE464 Satellite Communication:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	30	30	-	65	125

Communication satellite system, orbiting satellites, the satellite channel, link calculation, satellite electronics, frequency division multiple access, time division multiple access and code division multiple access, on board processing, ground and central station.

CEE465 Optical Communication Systems

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	2	6	25	25	25	75	150

Overview of optical fiber communication, optical fiber power launching and coupling, optical receiver operation, digital and analog detectors and preamplifiers, digital transmission systems, point to point links, systems considerations, power and rise time budgets, analog systems, carrier to noise ratio, multichannel transmission techniques, coherent optical fiber communication, WDM multiplexing, optical amplifiers.

Laboratory: *(Optical Fiber Lab)*

No.	Experiment Name
1	V-I characteristics of Photo LED
2	V-I characteristics of Photo Detector
3	Study of 650 nm Fiber Optic Analog and digital link.
4	Study of Characteristics of Fiber Optic Communication Link
5	To obtain Intensity Modulation of the Analog and digital Signal & Demodulation
6	Study of Frequency Modulation (FM) and Pulse Width Modulation
7	Study of Voice Communication through fiber Optic cable using Amplitude Modulation
8	Demonstration of Voice Transmission through optical fiber using FM and Pulse Width Modulation
9	Measurement of Optical Power using optical power meter
10	Study of Characteristics of E-O converter using optical power meter
11	Measurement of Propagation or Attenuation Loss in the optical fiber and Bending Loss
12	Study of Bending Loss

CEE466 Communication Networks:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Introduction to telecommunication, telegraph and telephone, switching: telegraph, telephone, telex, data, signaling, ISDN, broadband, private switching. Management network multiplexing: analog, digital, wavelength division. Data transmission interface equipment: modems, digital data interface equipment, Code: audio, video. Copper lines: open wire, twisted pair cable, coaxial cable. Optical fiber technology: types of optical fibers, cables, applications. Radio relay technology, systems. Mobile radio: service mode technology. Satellites: services, technology, digital subscriber lines.

CEE467 Selected Topics in Communication Engineering:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Selected topics related to current development in communication systems. Radar systems data, Communication and signal processing.

CEE468 Mobile Communication:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Basic concepts of mobile communication: cell site planning: traffic engineering, principles of base station provisioning, cell site configurations. RF propagation characteristics: fading phenomena, free space propagation, two path model, RF coverage for mobile station inside buildings, noise in cellular systems. GSM cellular system: features, multiple access techniques, GSM architecture, TDMA frame structure, types of bursts, mapping of logical channels on physical channels, modulation, frequency hopping, power control, carrier and burst synchronization, hand over processing, authentication encryption, CDMA spread spectrum systems, the performance of DS- SSS, CDMA air links. Types of codes used in CDMA, power control in CDMA, hand-Off process in CDMA.

CEE475 Digital Communication Systems (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Digital communication systems, performance analysis of basic digital communication techniques, power efficiency and spectral efficiency comparisons of digital communication systems, M-array digital modulation techniques, coherent and non-coherent digital modulation techniques. Applications in mobile and satellite communication systems.

CEE484 Biomedical Instrumentations

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Introduction to biomedical instrumentations, models of artificial organs (artificial lung, artificial kidney, heart lung machine), clinical laboratory instruments (blood chemistry instruments, hematology instruments, blood bank instruments, microbiology instruments), radiology instruments (X-ray, gamma camera, computer axial tomography (CAT , scan), magnetic resonance imaging MRI).

CEE493 Project:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	4	6	-	100	100	-	200

The students are grouped according to the project title with the supervisors in the first term. In the second term, the student uses the fundamentals, principles and skills he gained during his study to analyze and design an engineering system to perform a specified task either individually or through a group work depending on the supervisor task. The detailed analysis and design must be included in the student report. The data collected and the design performed for the project in the first part is the core of the final practical project. The fundamental principles, Equations of design, analysis, circuits and programs, execution and testing steps and results for the project must be collected in a technical report.

CVE286 Civil Engineering

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	1	3	15	15	15	30	75

Distance measurements using tape and electronic devices – Scale and maps numbering - Leveling- Measuring angles using theodolites – Area calculation – Levels calculation – Longitudinal and cross sections – Traverse analyzing and controlling – Setting out – Verticality of structures – Determinate structures analysis: loads and reactions – Axial forces – Shear and bending forces - Determinate frames – Foundations – Impact loads.

Laboratory: *(Survey Lab)*

No.	Experiment Name
1	Taping: instruments and techniques
2	Leveling: equipment, techniques, field observation and office data processing
3	Theodolite and Horizontal/Vertical angle Observations

Architecture Engineering Department

ARC111 Architectural Presentation Techniques

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	20	40	-	40	100

The Course aims to identify principles of basics of drawing and architectural expressions. It develops imagination and the use of presentation techniques. It improves capabilities of using drawing tools and student's freehand drawing. The course emphasizes on the importance of light and shadow in the architectural expression - ratios and different relations of the surfaces and masses – as well as the study of the shadows on the facades of buildings and how shadow appear in the various protrusions and folds. It contains the principles of perspective – perspective types - shadows in perspective. Applications on different levels and forms with the application of shadows in perspective.

ARC112 Architectural Drawing and Design Fundamentals

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	25	50	-	50	125

The course is an introduction to study the basics of form, mass and space. The course includes study of different design elements: (point, line direction, size, texture, and color) - principles of architectural composition: (the central unit, control, balance, symmetry, harmony, rhythm and repetition, the gradient, diversity within unity) - the study of ratios: (the golden ratio and Modular). The study emphasis on the principles of design process: (a preliminary simple project focuses on design process and presentation).

ARC113 Computer Applications of Architecture:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
1	-	3	4	20	20	20	40	100

The use of computers in the field of architecture, the study of architectural two-dimensional drawing programs “CAD", and get to know the basic tools that helps in preparing the architectural working drawings - preparation of architectural design projects using computer aided programs – Training on the above elements.

ARC214 Digital Presentation of Architectural Projects

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
1	-	2	3	15	30	-	30	75

Introduction to three-dimensional programs through two Themes: Identify the most important programs which gives aid to the work of the three-dimensional architectural models and presentation, focusing on the study of one of those programs to deal with the software needed for the work of virtual models graphics of three-dimensions with finishes materials, lighting, shadows and animation realistically.

ARC121 Theories and Evolution of Architecture

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	-	-	3	25	25	-	50	100

The course contains analytical study of ancient civilizations and the most important aesthetic values that characterized the architecture in every culture, and the structural systems in: the prehistoric architecture, the ancient Egyptian civilization, the West Asiatic architecture. It studies classical ages: Greek civilization, Romania, the early Christianity, and Byzantine architecture The course also illustrates the elements of architecture, the governing rules which relates the different elements of architecture, the visual and functional aspects of the different building types, also deals with the study of philosophy of global architecture in the early twentieth century and focuses on modern architecture.

ARC222 History & Philosophy of Modern & Contemporary Architecture

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	-	-	3	25	25	-	50	100

The course includes the study of introduction to the emergence of Islamic Architecture and the arts and it’s development during different eras, also deals with the study of Western Christian architecture across different ages: Romanesque architecture - Gothic architecture, Renaissance architecture, in terms of features and study the structural evolution of architectural elements that characterized each period .
The course also aims to increase student’s ability to analyze the different schools of architecture, recognize the characteristics of the different architectural schools, realize the interaction between scientific and technological evolutions and the architectural schools in (modern, postmodern.....till contemporary architecture).

ARC131 Building Construction (1)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	25	50	-	50	125

Identify building constructions systems (wall bearing, skeleton building systems, and building methods by using bricks and stones).The study of insulating materials, floors, stairs. The study of the different layers of building materials. Study implementation various phases of the establishment theoretically and practically (practical research, emphasis on the symbols of architectural building and construction materials).

ARC232 Building Construction (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	25	50	-	50	125

The course aims to develop detailed drawing skills, the study of different types of foundations and various methods of roofing systems, and its details. Architectural study of displacement and expansion joints - the study of the timber: the carpentry of wood and its details - the study of metal acts - decoration works of: (finishing, plastering, and paints) and the study of the glass works (security details).
(The course emphasizes on practical field advantages and disadvantages of the previous topics throughout studies of theoretical researches and in the practical field).

ARC233 Working Drawings (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	4	-	6	25	50	-	50	125

The course aims to study the project general framework and linking working drawings for a project already designed by sequence of the executive drawings sheets with symbols and executive terminology of the project as a whole. Preparing an architectural working drawing for a medium-sized skeleton structural building (for ground and first floor: Residential Villa, or A small medical health unit.....etc.). Thus, with the study of the Executive elementary documents for the (Drawings of habitual architectural executive drawings for: Plans, Sections, Elevations and Layout, The basic architectural details, Model types of doors, windows and finishing tables). Also studying in a research work the various finishing types.

ARC334 Working Drawings (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	25	50	-	50	125

Student learn how to Prepare an executive working drawings for skeleton structural building more than the median size (Multi-story: ground floor/ multiple floors). The study of how to set up the Executive elementary documents from the habitual architectural drawings (such as: Plans, Sections, Elevations, Layout, dimensions and levels). Studying the structural system and the construction working drawings for the project, sanitary, electrical circuits and wiring working drawings, finishing materials, the basic architectural details, model types of doors and windows with sophisticated systems and its details. Architectural detailing:(Stairs, flowerboxes, fixing marble and cladding.....etc).

ARC335 Working Designs (3):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	4	-	6	30	60	-	60	150

The course studies constructions using modern technology methods of wide spanning, prefabricated elements and curtain walls. The student assigns numbers of architectural and constructional working drawings sheets for a multi-story building, he prepares details and technical drawings for the same building, in addition to the sanitary and electrical working drawings.

ARC139 Building Construction:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	40	50	-	60	150

Methods of building construction brick and stonework (bearing walls, skeleton buildings) and the study of types of foundations, buffer layers, floors, stairs, and to study how to implement the stages of construction theory and site practice (Practical research work, to emphasize the architectural and construction material symbols).

ARC241 Acoustics and Artificial Illumination:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Definitions and determinants, audio units, the behavior of sound waves in enclosed spaces, sound absorption, reflection of sound, sound insulation, acoustic defects, the foundations of noise control and achieve considerations and objectives of the successful audio design and successful criteria on planning levels. Light of units, industrial lighting and electrical wiring calculations, measurement of light intensity, light sources, design standards for the quality and quantity of lighting, integration with natural lighting.

ARC242 Design and Environmental Control:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	20	40	-	40	100

The course Includes the studies of recognition surrounding environment with its aspects and the interactions between the parts of this system, this is through the thermal environmental studies: elements and factors that affecting the climate in the site - climate data presented in thermal comfort map - solar radiation - the study of the sun path - designing means of shading - the heat exchange between inside the building and the surroundings outside it- ventilation and air movement around the building and inside it - orientation – opening slots. A study of design goals aims to control the thermal environment, architectural treatments used to gain thermal comfort.

ARC151 Architectural Design (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	40	80	-	80	200

The course aims to raise design student efficiency through knowledge of methods of functional designs for simple buildings. This will be achieved through designing simple architectural projects, "relatively" small, which consists of one building. The course focuses on achieving optimal functional relationships between the constituent elements of the project, best orientation of project's elements and the study of the suitable design of forms and facades of these buildings. Project examples: (a separate dwelling, a small rest house, small restaurant, public cafeteria ... etc.).

ARC152 Architectural Design (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	40	80	-	80	200

In the design studio a great care to be given to develop student's capabilities in the architectural design process. Dealing with small types of projects that contain many elements or prototype designs. The student studies the functional relationships between the project elements in respect with the site and surrounded environment. Projects examples: (nursery, Primary School, small shopping center, a small touristic village..... etc.).

ARC253 Architectural Design (3):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	40	80	-	80	200

The study of architectural medium-sized and large-sized projects consists of one building that has many elements and various spaces, taking into account developing the virtual capabilities of student to create architectural forms coping with different architectural trends. The course focuses on solving circulation problems inside the building, methods of appropriate constructional systems and how to adapt them. Examples of projects such as: (children primary and nursery schools, gallery, social house club, children's library, a small health center, a small apartment building ..... etc.).

ARC254 Architectural Design (4):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	4	-	6	40	80	-	80	200

The course is concerned with developing skills of solving composite problems including different functions, circulation system and construction system. Studying of architectural projects relatively big in size, with medium heights, and with a variety of attached or separated buildings with a focus on the building form of these projects -how to solve the spatial relationship between buildings - the relationship between the internal and external spaces. Types of the projects such as:.....(Primary and preparatory school, An integrated rest house on the highway , A branch of the bank building , public library , A small museum , Cultural Palace – Commercial Mall.....etc.).

ARC355 Architectural Design (5):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	4	-	6	40	80	-	80	200

The study of architectural projects of multiple elements and roles, consisting of a single building or group of buildings, with a focus on finding alternatives and the method of logical thinking in solving various movement paths – spatial relationships between buildings - the relationship between the components of the project in a public site and respect of the site environmental framework. Types of the projects, such as: (a Cultural Center, Administrative Center, a Shopping mall, Union Building, Cinemas Complex, a general or specialized Secondary School..... etc).

ARC356 Architectural Design (6):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	4	-	6	40	80	-	80	200

Rapporteur directs students to adopted a trend from different architectural schools of design: "technological architecture - environmental - green - digital – smart and vernacular architecture." This is applied to design complex buildings. Environmental concerns in design within site limitations. Types of the projects such as: Office Buildings, Commercial, Hotel, Residential .. etc.).

ARC457 Architectural Design (7):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	5	-	8	50	100	-	100	250

The study of architectural complex projects with multiple functions and complex circulation systems, with a focus on the development of a design idea for the project which reflects in turn on the existence of a clear architectural design trend in terms of form and function and respect of natural environmental factors. Take advantage of the capabilities of the student on the use of electronic multi-media, and using them to present the project and it's idea. The types of the projects, such as: (a Public or a Specialized Large Hospital, Airport, Hotel or Tourist Resort 5/4 star hotel, a Museum of Civilization, the Exhibition land area, Conference Center, the center of Scientific or Environmental studies etc ...)

ARC261 Urban planning (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	25	50	-	50	125

History of Town Planning before and after the Industrial Revolution – Objectives and Principles of Town Planning - objectives – Planning levels– Trends – Theories - Models of city - city components - planning criteria and standards. A field study for one of the cities to introduce and clarify the city components and structure through the site data survey and analysis - explore solutions for the upgrading of urban area.

ARC362 Urban planning (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	25	50	-	50	125

City structure - elements and characteristics – basic standards criteria affects city - Identify the existing and new cities - introduction of urban and sustainable planning – impact of several factors (environment, economics and social) – Planning methodology (comprehensive pl. and strategic ....) – Planning steps and its implementation on existing and new cities – City types and classifications – local and international experience. New city Project - with research for one new city in Egypt.

ARC363 Landscape Architecture:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	20	40	-	40	100

Definition of Landscape and its importance - design approaches from classic to design with the nature – stages of Landscape design process - elements - the principle of design - hardscape elements and softscape elements – landform –plantation – water – pavement - site constriction. Case study application deals with from site analysis, ideas and alternatives, proposal design, design and working drawing.

ARC362 Urban planning (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	20	40	-	40	100

Housing definitions - housing principals and components - types and levels – factors affecting housing – problems and constrains - methods of identifying the needs of the target population of residential units - development and implementation phases of residential communities. Research or project to apply the design considerations and the determinants of assembly residential groups in the district or in the neighborhood.

ARC465 Urban Design:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	30	60	-	60	150

Definitions and concepts of urban design – character, type and urban identity - elements of urban design (buildings, spaces, the streets, transportation, landscape) - masses - open spaces and activities - elements of visual form and how to draw a visual map - urban spaces identification - typologies and open spaces principle design – policies and strategies for the urban areas development physically and visually. Case study application on an area to apply visual and urban development polices.

ARC471 Quantities, Specifications and Building Legislation:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Study the general terms and conditions for tendering, lay the tender, contracting, extracts, calculating the quantities of different items from the nature, a study of technical specifications for the implementation of projects, quality control of different building materials, costing the building materials and employment. Case studies. discussing the building codes and its implementing regulations and applied examples.

ARC491 Filed Training (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
-	-	2	2	-	25	25	-	50

Students should spend 6 weeks in field training, after completing the second year, in any engineering institution or engineering firms. Students should demonstrate the professional and practical skills they acquired during discussion with their assigned tutors.

ARC492 Filed Training (2)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
-	-	2	2	-	25	25	-	50

Students should spend 6 weeks in field training, after completing the third year, in any engineering institution or engineering firms. They should prepare a technical report implying a full description of the processes they joined for training. Students should demonstrate the professional and practical skills they acquired during discussion of report with their assigned tutors.

ARC493 Project (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	-	3	-	-	50	-	50

The course includes data collection about the site and the project elements which will be designed. Comparative study about Similar projects: projects design concept - elements - circulation studies - functional studies and architectural character...etc. At the end of the course the student presents a technical report deals with: study and analysis of the chosen location for the project, identify the environmental, climatic determinants, and functional aspects. The search concludes to a final architectural program for the project, and determinations of functional relationships between project elements in order to use it in the graduation project.

ARC494 Project (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	7	-	10	-	150	150	-	300

A technical report is prepared by the student for the graduation project. Student is supposed to benefits of engineering skills which he gained during the different years of his study. Graduation project submitted by the student includes of analysis and design steps and details which he relied on, the project also includes illustration of design idea. The student must demonstrate full understanding to the project board when discussing the principles, fundamentals and elements based on his project and proves his ability to apply it in his future career work.

ARC343 Environmental Studies:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

The course identifies problems facing the environment, it`s different causes, as well as means of monitoring and analysis of these problems, the recent trends which aims to find solutions. Also includes the study of the environmental pollution problems, whether inside or outside the buildings, different damages from it, and the role of architect to solve these problems. It deals with the study of sustainable development, and the role of the social system in solving the problems they are facing. An application for these studies to be applied on a case study building or an existing area to prepare a comprehensive study about it and find a solution to the local environmental problems which face them.

ARC337 Construction Economics:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

The Course aims to study the economic aspects of the buildings and awareness of the elements and features of the cost during the design, implementation, operation, demolition, provide skills and techniques to control the cost of construction in addition to the definition of a feasibility study for the project and its components.

ARC358 Green Architecture:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

The cource sets the foundations and principles of green architecture; in order to gain deep understanding of the systems and the basic concepts and ideas for green architecture appropriate and compatible with various design problems. This happens through the study of selected global, regional and local architectural projects in general and in developing countries in particular. This study discusses global trends and attempts towards green architecture.

ARC344 Energy Management and Sustainable Development:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

The course discuses concepts of building management systems and energy management systems at different levels. It analyzes the key objectives of development and its various aspects and methods to control energy consumption, procedures for assessing and evaluating energy systems in buildings. It discusses the relationship of energy management systems with building management systems and their applications in buildings.

ARC459 Studies of Modern and Contemporary Architecture:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	30	30	-	65	125

The course discusses the architectural design processes that affect the formulation of design goals and criteria for evaluating projects. The course demonstrates models of cultural, social, political and economical problems. In addition, it discusses the Problems of the environment and urbanization, resources. It includes the analysis and evaluation of projects contemporary design.

ARC461 Visual Studies of City:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	30	30	-	65	125

The course Includes image of the city and the mental map of the city through the identification visual form elements (landmark, nodes, identity and character of distracts, edges, gates) and identification of factors and characterize the elements of the visual image (differentiation, exposure, structure, meaning)

ARC421 Islamic Architecture Studies:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	30	30	-	65	125

The course is concerned with the study of Islamic architecture in the early ages of Islam. It demonstrates the elements and characteristics distinguishes it. By studying examples of various kinds of religious and civil buildings. It studies the architectural patterns and development of mosques - the first Islamic city planning –urban tissue in Islamic city. With a focus on Egypt in each of the ages: Tulunid - Fatimid - Ayyoubid - Mamluk and Ottoman.

ARC466 Sustainable Urban Development:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	30	30	-	65	125

The course Includes the concepts and the main approaches to basics and principals of sustainable urban development related to environment and its importance – Problems - issues and solutions - Impact of the urban development process and the environment -systems and tools (upgrading, development, urban revival, renewal, urban control, conservation, re-use, restoration ....) with some local and international examples to clarify the most important projects in this field. Practical study to apply one or more these methods to develop an informal urban area.

ARC467 GIS Urban Planning:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	30	30	-	65	125

Basics, definition, theories and applications of GIS in urban planning - Analysis and evaluation – national and international co-ordinates - system components and operations - The importance and usage of GIS to support the planning process - basic functions and basic concepts of data and information manipulating - types and stages of dealing with information of input and output operations (Data in and out, presentation) - Hardware and software components.

ARC455 Theories of Architectural Form:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	30	30	-	65	125

The course studies concepts and generation of architectural form, the effect of functional, structural, aesthetic and cultural aspects. Also deals with the relationship between principles of form, aesthetics of architecture and urbanism, and spaces. It studies historical approaches of forming architecture. Using these grounds as a backdrop for studies in the student's assignments and field work.

ARC436 Advanced Technology and Wide Span Buildings:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	30	30	-	65	125

The course scheduled to study modern building materials, and their use in accordance with the local environmental conditions, as well as studying the modern systems of construction, manufacturing building systems which need special requirements. The course also aims to train the student to prepare working drawings for internal and external details of wide span buildings(roof construction systems) as: shell structures – folded roofs–suspended and tent roofs - by using methods and new techniques of construction. Also preparation of working drawings and sanitary, electrical connections and air conditioning works, the usual basic details for the project, and the openings types of advanced systems.

ARC438 Maintenance and Restoration of Buildings:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	30	30	-	65	125

To study the impacts of environmental, chemical, and biological factors such as heat, humidity, pollution and fungi on buildings. It identifies the principles of maintenance - maintaining methods - the rehabilitation of buildings and facilities and construction materials.

CVE118 Structural Analysis:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	3	-	5	25	25	-	50	100

Plane statics theory , loads and reactions , normal forces , shear forces , bending moment , statically determinate frames , properties of plane surfaces , introduction to normal stresses , stresses due to shear forces and torsion , statically and main stresses , deflection of beams , continuous beams , live loads on beams , introduction to instability , buckling.

CVE126 Properties and Testing of Materials:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	2	5	20	20	20	40	100

Standard specifications of engineering materials and products , Test machines and their calibration and dial gauges , main properties of engineering materials (physical, chemical, mechanical,.. Etc). Tests for getting different properties. Behavior of different materials under effect of statical tension test, properties of concrete materials , cement properties and standard tests , aggregates properties and standard tests , sieve analysis ,concrete industry .Properties and tests of fresh concrete: consistency, workability, cohesion, segregation, bleeding. Properties and tests of hardened concrete: compressive strength, tensile Strength ,shear strength , bond strength , bending strength ,volumetric changes of concrete , elasticity and creep, durability and permeability.

Laboratory:

No.	Experiment Name
1	Finesse of cement the sieve no.170
2	Determination of fineness cement using Blaine apparatus
3	Density of cement
4	Water required for cement paste of standard consistency
5	Initial and setting times of cement paste using vacates apparatus
6	LE Chatelier expansion of cement
7	Compressive strength of cement mortars
8	Test method for the determination of sieve analysis of aggregates
9	Test method to determine the percentage of absorption for aggregate
10	Apparent specific gravity of aggregate

CVE185 Survey

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	1	4	20	20	20	40	100

Study the types of maps - Scales – Survey with chain - Longitudinal measurements and their corrections - Verniers– Area calculation and dividing –The planimeter - Compass - Polygons - Levelling - Sections - Contour lines – Cut and fill Quantities - Plane surveying- Theodolites– Tachymetry principles.

Laboratory: *(Survey Lab)*

No.	Experiment Name
1	Taping: instruments and techniques
2	Leveling: equipment, techniques, field observation and office data processing
3	Theodolite and Horizontal/Vertical angle Observations

CVE169 Sanitary Engineering and Fixtures:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Introduction - The fields of sanitary engineering and environment - Cities water supply - Liquid waste disposal- Buildings water supply - Planning of sanitation facilities for buildings- Sanitary installations for buildings- Liquid waste disposal in isolated regions.

CVE238 Reinforced Concrete Structures:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

A history of concrete and its uses study of physical and mechanical properties of concrete and steel reinforcement, Load distribution on different supporting elements. Behavior of reinforced concrete elements under flexure, Design and Drawing details of reinforced concrete beams under bending moments, Normal and shearing forces using the ultimate limit state design method. Design and drawing details of rectangular and square solid slabs and cantilever slab under different types of loads, Design of one and two way hollow block slabs, design of paneled beams , design of short columns, concrete structures and formations suitable for architectural structures.

CVE169 Sanitary Engineering and Fixtures:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Steel structures industry technology: Steel grades, Structural behavior and models of steel elements failure, fatigue. Design synthesis: Structural systems, Lateral resistance and bracing systems, codes and specifications. Elements design: Structural behaviour of members, Introduction to design philosophies, Local buckling and cross section classification, tension members, struts and columns, Bending of beams, Torsion of beams, Beam-columns and frame structures. Connection design: bolts (types of bolts, analysis and design) welds: types of welds, analysis and design of welded connections.

CVE259 Soil Mechanics and Foundations:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	1	4	20	20	20	40	100

Classified properties of the soil - Soil classification - Sandy soil -Transmission of stresses through The soil - Soil consolidation - The theory of consolidation - Lateral earth pressure - Shallow foundation design - Piles foundations - Retaining walls - Soil field researches – Foundation type selection.

Laboratory:

No.	Experiment Name	No.	Experiment Name
1	Sieve analysis	3	Standard proctor test
2	Hydrometer	4	Modified proctor test

Civil Engineering Department

CVE 111 Structural Analysis (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	30	30	-	65	125

Types of loads, types of supports, reactions for beams and frames, stability of statically determinate structures (beams, frames and arches). Internal forces in statically determinate structures (beams, frames and arches) and analyses of statically determinate trusses. Influence lines for statically determinate beams, frames, arches and trusses.

CVE 121 Properties and Testing of Materials (1)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	1	4	20	20	20	65	125

Specifications of engineering materials and products, machines test, equipment for reactions measuring, main properties of engineering materials (physical, chemical, mechanical... etc). Tests for specification different properties. non-metallic building materials, building stones, lime, gypsum, timber, bricks, tiles and isolation materials for moisture, heat and sound. Advanced composite materials, glass, plastics.
Metallic building materials and units: structural and reinforcing steel, welded and welded connections, aluminum (types, uses and tests). Behavior of metals under static loads: tension, compression, flexure and shear. Behavior of metals under dynamic loads (fatigue–creep).

Laboratory:

No.	Experiment Name
1	Finesse of cement the sieve no.170
2	Determination of fineness cement using Blaine apparatus
3	Density of cement
4	Initial and final setting times of cement paste using vacates apparatus
5	LE Chatelier expansion of cement
6	Test method for the determination of sieve analysis of aggregates
7	Test method to determine the percentage of absorption for aggregate and percentage of voids for aggregate
8	Apparent and Bulk specific gravity of aggregate
9	Determination of clay and other fine materials in aggregates

CVE 161 Civil Drawing:

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	4	-	6	40	35	-	75	150

Irrigation structures: earth works, retaining walls, bridges, culverts, syphons, regulators, weirs, dams, symmetrical and unsymmetrical locks. Steel constructions: column base, riveted joints, connections between girders and beams, columns and beams. Steel bridges: truss connections, main girders (upper and lower chords, verticals and diagonals), cross girders and stringers. Reinforced concrete constructions: footings, columns, slabs and beams.

CVE 112 Structural Analysis (2)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	30	30	-	65	125

Properties of sections, normal stresses distribution in homogeneous sections, normal stresses distribution in non-homogeneous sections and composite sections, cores determination for sections, shear stresses in homogeneous sections due to shearing forces, shear stresses due to torsional moments, shear forces in bolts and welds, analytical and graphical determination of combined stresses. Deformations of elastic bodies, evaluation of deflection values: double integration method, conjugate beam method.

CVE 122 Properties and Testing of Materials (2)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	1	4	20	20	20	65	125

Concrete materials: cement, aggregate, mixing water and admixtures. Concrete manufacturing: storage materials, mixing, transportation, pouring, compacting, curing and construction joints, shrinkage and movement joints, formwork and ready mixed concrete. Properties and tests of fresh concrete: consistency, workability, cohesion, segregation and bleeding. Properties and tests of hardened concrete: compressive strength, tensile strength, shear strength, bond strength, bending strength, volumetric changes of concrete, elasticity and creep, guaranty, insurance and permeability.

Laboratory:

No.	Experiment Name
1	Compressive strength of cement mortars
2	Test method for determination of coarse aggregate crushing value
3	Water required for cement paste of standard consistency
4	Test method for determination of fresh concrete slump
5	Test method for determine compacting factor of fresh concrete
6	Test method for determination air content of fresh concrete by pressure method
7	Determination of tensile splitting strength of hardened concrete.
8	Determination of flexural strength of hardened concrete.

CVE 162 Fluid Mechanics

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	1	1	5	20	20	20	65	125

Review of fluid properties and hydrostatics, fluid motion: fluid flow, flow lines, continuity equation. flow of incompressible fluid: one-dimensional flow, Euler's equation in three dimensions, Bernoulli's, energy equation, T.E.L and H.E.L, applications of Bernoulli's equation , pipe flow: laminar and turbulent flow, Reynolds number, moody curves , velocity distribution, main losses, secondary losses, single pipe, pipe connections (parallel and series), pipe branching, tank problems. The impulse-momentum equations, applications of pipes elbow and mechanical pushing, introduction for hydraulic machines. Effective forces on hydraulic structures .

Laboratory: *(Hydraulics Lab)*

No.	Experiment Name	No.	Experiment Name
1	Flow measurement using ventury meter	4	Losses in pipes
2	Flow measurement using orifice meter	5	Measurement of Reynold's number of fluid
3	Flow measurement using nozzle meter	6	Pressure measurement and Bourdon gage calibration.

CVE181 Plane Surveying

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	2	5	25	25	25	75	150

Introduction of mapping and surveying science: historical background, definitions and branches of surveying science. source and types of errors , scales and measurements units ,graphic scales , types of surveying maps .discovery and manual survey drawing , total stations , distances measurement and their associated errors , types of bearings , methods of observing angles and their associated errors. Traverses and their adjust, area calculation, land division. Introduction to theory of errors in plane surveying. introduction of vertical control , different methods for height difference determination, ordinary levelling, survey level and survey staff, calculation of ordinary levelling, precise level and precise staff, calculations of precise levelling, applications of levelling, longitudinal levelling, cross section levelling and grid levelling.

Laboratory: *(Survey Lab)*

No.	Experiment Name
1	Taping: instruments and techniques
2	Leveling: equipment, techniques, field observation and office data processing
3	Theodolite and Horizontal/Vertical angle Observations
4	Total stations and Electronic Tachometry
5	Intersection and Resection.
6	Control Surveys – Traversing Data Processing.

CVE181 Plane Surveying

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	30	30	-	65	125

Virtual work method, analysis of statically indeterminate structures and calculations of internal forces in elements of structure under different type of loads, temperature change, support settlement, horizontal displacement by: consistent deformations method, virtual work method, three moment equation method, slope deflection method, moment distribution method, envelopes of internal forces. Euler theory for buckling of compressive members.

CVE223 Properties and Testing of Materials (3)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	1	4	20	20	20	65	125

Concrete mix design: engineered methods and empirical methods. Non-destructive: Schmidt hammer, ultrasonic pulse velocity, core test, steel detection and radiation test statistical quality control: to judge the concrete quality. Special concretes: polymer concrete, light-weight concrete and fiber concrete. Cast concrete at hot atmosphere, definitions hot atmosphere, mix concrete in hot atmosphere problems and precautions. Concrete floors: types of floors, properties of materials and execution methods of joints.

Laboratory: *(Survey Lab)*

No.	Experiment Name
1	Procedure for obtaining and testing drilled cores.
2	Recommendations for surface hardness testing rebound hammer.
3	Preparation of concrete test cubes, cylinders and beams.
4	Determination of compressive strength of concrete test cubes, cylinders and beams.
5	Test of metals under static loads: tension – compression and flexure.
6	Determination of static modulus of elasticity of hardened concrete.

CVE231Designof Reinforced Concrete Structures (1)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	40	35	-	75	150

Study of physical and mechanical properties of concrete and steel reinforcement, load distribution on different supporting elements. Behavior of reinforced concrete elements under flexure. Design and drawing details of reinforced concrete beams under bending moments, normal and shearing forces using the ultimate limit state design method. study of serviceability (deflection and cracks width), design of structure elements using the working stress design method, study of bond between concrete and steel, the development length of reinforcement.

CVE251 Geotechnical Engineering (1)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	1	3	20	20	20	40	100

Physical properties of soil: definitions, laboratory tests, basic relationships and soil classification. Hydraulic soil properties: soil water, laboratory and field soil permeability. Stress distribution within the soil mass: stresses under point and line loads, stress distribution under distributed load. Compressibility and consolidation: soil compression, estimation of settlement and consolidation theory of consolidation. Shear strength of soil: definitions, mohr's strength theory and types of shear tests. Subsurface exploration and sampling: methods of boring and basic field tests.

Laboratory:

No.	Experiment Name	No.	Experiment Name
1	Sieve analysis	3	Standard proctor test
2	Hydrometer	4	Modified proctor test

CVE263 Irrigation and Drainage Engineering

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Introduction for the water resources, irrigation water requirements, irrigation efficiency and calculating periods between irrigations, flow rates computation and irrigation time. Different types of field water, advantages, specifications, and selection of suitability method for common conditions, surface irrigation methods, sprinkler and drip irrigation, subsurface irrigation. Planning, design, management, operation and maintenance for different methods. Canal lining. An overview for the irrigation structures for control and distribution of water on the canals and field levels, crossing works, navigation works and water lifting devices. Introduction of the drainage, types, factors influencing selection and design. Design of open, subsurface and vertical drains. Artificial works for drainage execution: how can dispose of drainage water. Design irrigation system: main, secondary and farm systems. Planning and design of distribution networks from open channels and pipes, design of lined canals.

CVE282 Topographic Surveying

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	1	1	4	20	20	20	40	100

Create and use topographic maps, errors resulting from spherical earth and refraction of rays in the atmosphere to determine the heights, setting points using integrated meteorological station, the indirect ways to determine elevations, tacheometric, and triangulation leveling. Cartesian coordinates and geodetic coordinates, converting coordinates from one system to another. data projection on reference surfaces: types and methods of projection surfaces and types of reference surfaces. Introduction for monitoring the global satellite system (GPS), the basics of the GPS monitoring and different ways, the ways to calculate the coordinates in the GPS system, the planning of gps operations in civil projects.

Laboratory: *(Survey Lab)*

No.	Experiment Name
1	Topographic mapping: lab exercise and drawing.
2	Topographic Surveys: field exercise and drawing.
3	Route Surveying: route layout: plan, control surveys and calculation (part 1: Preparation of the road staking-out data).
4	Route Surveying: route layout: plan, control surveys and calculation (part 1 cont'd and part 2: Road staking out in field).
5	Route Surveying: route layout: plan, control surveys and calculation (part 1 cont'd and part 2: Road staking out in field (.

CVE214 Structural Analysis using Computer

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	2	7	30	30	40	100	200

Analysis of plane frames and space trusses using the stiffness method, degrees of freedom and sign convention, element stiffness matrix in element local axes, transformation matrix for forces and displacements in global axes, equilibrium equations in global axes, internal forces in members of the structure, influence of temperature change and settlement of supports, effect of axial force on the stiffness of structures [p-delta effect], stability functions and equations of stability, buckling of trusses and frames, applications, structural dynamics, definitions, classification of structural systems, free vibration of SDOF systems, undamped vibration, damped vibration, forced vibration of SDOF systems, response to constant and harmonic forces, response to general type of forces (using double integration). Study of theoretical models for frames analysis – selection of suitable models to analyze different second-hand elements (beams and their types – frames and their types – arches and trusses) – developing simple programs using theses models. Training on the use of some building analysis programs – applications of different elements analysis.

CVE232 Design of Reinforced Concrete Structures (2)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	40	35	-	75	150

Design and drawing details of rectangular and square solid slabs and cantilever slab under different types of loads, design of one and two way hollow block slabs, design of paneled beams, flat slab: structural analysis, statical system , field usage , different methods , code limitations , analysis of internal stress of flat slab, punching of flat slab and columns with flat slab , openings in slabs, reinforcement details , design of slabs , analysis of concrete slabs by yield line , design of beams under torsional moment and taking into consideration the effect of shear stresses, design of short and long columns under centric and eccentric loads , design of columns under biaxial moments. Design of stairs with different types.

CVE252 Geotechnical Engineering (2)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	-	1	3	20	20	20	40	100

Soil compaction: relative density, laboratory compaction tests, field compaction, compaction equipment, site control of compaction. Seepage: flow net diagram, uplift pressure, critical hydraulic gradient. Slope stability: infinite slope, finite slope, mass methods, method of slices, design charts. Lateral earth pressure: active and passive earth pressure, water pressure. Gravity retaining structures: acting forces, rotational siding, block stability, foundation contact stresses. Bearing capacity: shear strength parameters, bearing capacity loads equation, eccentric loads and inclined loads.

Laboratory:

No.	Experiment Name	No.	Experiment Name
1	Sand cone test	3	Constant head test
2	Atterberg limits test	4	Falling head test

CVE264 Hydraulics

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	1	1	5	20	20	20	65	125

Pipe networks: analysis, design and optimal design. open channel flow: introduction, types of open channel flow, states of open channel flow, properties of open channels flow, velocity distribution, equations for uniform steady flow, energy equation, gradually varied flow, rapidly varied flow, roughness coefficient, design of open channels cross sections, applications. Water hammer in pipes: unsteady flow equations, rigid water hammer theory, elastic water hammer theory, wave celerity, water hammer effects and control. Hydraulic machines: introduction, turbines, types of turbines, types of pumps, pump characteristics and performance, operation of pumps, cavitation phenomena..

Laboratory: *(Hydraulics Lab)*

No.	Experiment Name	No.	Experiment Name
1	Open channel flow	4	Constant head test
2	Flow under sluice gate	5	Falling head test
3	Hydraulic jump		

CVE291 Field Training (1):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
-	-	2	2	-	25	25	-	50

Students should spend 4 weeks in field training, after completing the second level, in any engineering institution or engineering firms. Students should demonstrate the professional and practical skills they acquired during discussion with their assigned tutors.

CVE333 Design of Reinforced Concrete Structures (3)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	40	35	-	75	150

Design of simple and continuous beams for large hall , design and drawing details of different concrete frames (statically determinate and indeterminate structures) under normal forces , bending , shear and torsion , design of connections for frames and supports with different types , design of radial frames and ring beams , design of trusses, Vierendeel and arches with two types (slab and beam), design of saw tooth slabs with two types (slab and beam) . Structural system for resisting wind loads for frames.

CVE264 Hydraulics

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	40	35	-	75	150

Metallurgy of steel, steel fracture, steel grades, fatigue. Design synthesis: structural systems, lateral resistance and bracing systems, codes and specifications. Elements design: structural behavior of members, introduction to design philosophies, local buckling and cross section classification, tension members, compression member, struts and columns, bending of beams, torsion of beams, beam-columns and frame structures, light-gauge steel members. Connection design: bolts: types of bolts. Analysis and design of group welds: types of welds, analysis and design of welded connections. Composite structures: composite beams and composite columns. Construction: tolerances, fabrication, erection, fire protection and corrosion resistance.

CVE365 Design of Irrigation Works

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	30	30	-	65	125

Irrigation structures: types and their functions, the style of design, the design basics, design steps, field Studies, alternatives, hydraulic design of the irrigation structures entrances and exits, design of roadway – waterway intersections : reinforced concrete bridges, culverts, siphons, locks. structural design of slope pipes and their foundation layers , waterway supplies , control structures : types , design basics , seepage, scour, pools of calm and weirs : types and functions , types of gates , the hydraulic design of gates , structural design of the barrage, operation of barrage and hydraulic control of canals.

CVE366 Sanitary Engineering

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	30	30	-	65	125

Introduction of water supply works: sources of water, precipitation, ground water, surface water, pollutants, water quality of each source, drinking water standards. Rate of water consumption: required studies to estimate water demands for different water uses. Collection works: types of intake structures, surface water intakes, criteria for intake location, design of intake conduit and low lift pumps. Water purification works: rapid mixing, coagulation, sedimentation, slow and rapid filtration, chlorine disinfection. Storage works: elevated and ground storage. Water distribution works: high lift pumps, design of distribution networks using method of sections.

CVE371 Transportation Planning and Traffic Engineering

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	25	25	-	50	100

Introduction: definition, traffic management, planning and management of traffic, traffic operation factors, one-way streets, coordinated traffic signals, restricting u-turn movements, tidal and reversible flow, monitoring of traffic, metering ramps. Management measures for public transport, pedestrians, and bicycles. Management of heavy goods vehicles and parking control. Traffic volumes: annual average daily traffic, design hourly volume, peak hour factor. level of service of different roads: freeway road, multilane road and two-way two-lane road. transportation planning: economic and social surveys, trip generation, trip distribution, modal-split and traffic assignment.

CVE335 Design of Reinforced Concrete Structures (4)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	40	35	-	75	150

Type of water tanks: (elevated, ground and underground tanks) with different types (shallow and deep), analysis and design of deep beam using different types of analysis and design. Different circular tanks forces affective on tanks, methods of loading, calculation of internal forces, arrangement of steel bars in cross section and horizontal plan.

CVE336 Steel Structures Design (2)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	40	35	-	75	150

Structural system of bridges: types of bridges: structural systems in longitudinal and transverse directions, material of construction, design philosophy. Design loads: road way loading, railway loading, other loads on bridges. Design of floor beams systems: stringer, cross girders, floor connections. Design of plate girder bridges: general design considerations, fatigue considerations, buckling of plates, actual strength of plate girder elements, flange to web weld, stiffeners, splices, curtailment of flange plates, details.

CVE372 Highway and Airport Engineering

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	3	-	6	40	35	-	75	150

Classification of roads, planning and route selection. Geometric design criteria: sight distances, horizontal alignment, vertical alignment, cross section elements and planning and design of intersections. Pavement and construction materials: design and characteristics of asphalt mixes, characterization of pavement materials, testing and specifications, stresses in flexible and rigid pavements, load and truck considerations and pavement design (flexible and rigid). Planning and geometric design of airports: wind rose, selection of runway direction, measurement of standard and actual runway length.

CVE324 Repair & Strengthening of Structures

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Causes of deterioration of concrete structures, evaluation of concrete structures. Repair and strengthening materials (types, selection and handling) and its tests. Bond between repair and strengthening materials and substrate concrete. Different repair and strengthening techniques. Protection and maintenance of concrete structures. Repair and strengthening of some concrete elements (footing, column, beam, slab... etc). Structural analysis of repair and strengthening, design of repair and strengthening, cases studies.

CVE325 Characteristics of Wastewater & Industrial Wastes

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Industrial wastewater characteristics, effects of industrial wastes on streams and municipal wastewater treatment plants, pre-treatment regulations, management strategies for pollution and waste minimization. Pre-treatment technologies: physical pre-treatment, chemical pre-treatment, biological pre-treatment. Major industrial wastes: characteristics and treatment, food processing industries, energy industries (fuel, oil and coal), textile industries, rubber and plastic wastes, pulp and paper mill industries, steel industries, chemical industries , oil and fuel products

CVE341 Quantities, Specifications and Contracts

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Contracts: definitions, tendering and relation between stockholders. calculations of quantities: excavation and filling quantities, calculation of plain and reinforced concrete for foundation, insulation works , reinforced concrete works , masonary works , painting works , plumbing works ,carpentry works and ceramic works. Pricing, abstracts preparation, training on different documents during project stages like specifications. Conflicts solution. Steel reinforcement quantities for different structure elements. Calculation of brick walls quantities with different types.

CVE372 Highways Construction Technology

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Technology of embankment construction, technology of pavement construction. Lay down of asphalt mixes: compaction of asphalt mixes. operation and supervision of asphalt mixing plants, equipment, inspection, quality control, surface treated pavements and methods of soil stabilization. Rigid pavements: technology of construction, quality control. Construction requirements for modified additives: polymers, sulphur, mineral filler and other additives. use of asphalt in hydraulic structures: paint dams and tanks with asphalt, canal lining, embankment protection and coastal structures.

CVE392 Field Training (2):

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
-	-	2	2	-	25	25	-	50

Students should spend 4 weeks in field training, after completing the third level, in any engineering institution or engineering firms. They should prepare a technical report implying a full description of the processes they joined for training. Students should demonstrate the professional and practical skills they acquired during discussion of report with their assigned tutors.

CVE437 Design of Steel Structures (3)

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	40	35	-	75	150

Design of truss bridges: general design considerations, fatigue considerations, buckling of truss members, actual strength of truss members , connections , general details , design details for bridge members : different bracings, bearings, design of railway bridges , topics relevant to bridge design: beam grids, curved and skew bridges, deflection , camber of beams , high heat affection , composite bridge.

CVE442 Construction Projects Management

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	30	30	-	65	125

Definitions used in project management, the project life cycle, project stages, relationships and responsibilities of the different project parties, execution phase responsibilities, productivity, quality management. Development of a project manual detailed and conceptual cost estimating and construction scheduling analysis. Case studies on management of construction projects from implementation to completion (estimates, role of network pre-planning, project monitoring and control) manually and using computer. Projects planning methods: network planning , bar chart ,line of balance method , arrow method .

CVE453 Foundation Engineering

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
3	2	-	5	30	30	-	65	125

Analysis and design of shallow foundations: isolated and combined footings, strip foundation, strap beams, raft foundation. Deep foundations: types, classification of piles, bearing capacity of a single pile, pile groups, settlement of piles, pile load tests, design of pile caps and laterally loaded piles. Supported deep excavation: types of in-situ walls, analysis and design of in-situ walls, struts and tiebacks, waling beams and braced supported excavation. Interaction of shallow foundations with elastic soil: subgrade reaction model, half-space model, contact pressure distribution, settlement. Soft ground tunneling: construction of tunnels, analysis of lining, calculation of settlement. earth dams and earth embankments: classification, empirical dimensioning, analysis and design

CVE474 Railways Engineering

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	30	30	-	65	125

Railway dynamics: tractive effort and resistance, acceleration and braking, line capacity. Railway alignment: longitudinal and cross sections, railway path, vertical and horizontal curve design, cumulative curve. Structural design of track: wheel - rail interaction, forces acting on the rail, joined and welded rail design, sleeper and ballast design, unballasted track technology, turnouts, stations and signals, renewal and maintenance. Horizontal curve design: superelevation, transition length and superelevation attainment.

CVE415 Earthquake Engineering

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Introduction, reasons of earthquakes occurrence and influence of earthquakes, affective factors on behavior of structures subjected to earthquakes , structural analysis and design of concrete structures subjected to earthquakes and classification of seismic zones in egypt ,seismological background ,different methods of analysis structures under influence of earthquakes ,calculate and distribution of horizontal forces at different levels and different design methods for earthquakes resistance : multi degree of freedom system– response spectrum analysis – applications.

CVE454 Design of Special Structures and Prestressed Concrete

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Surfaces of revolution (SOR): different types of sor (domes, cones) , introduction to analysis surfaces of revolution structure theory and internal stresses under different loads , prestressed concrete: introduction, types of prestressing steel, material properties, analysis of statically determinate prestressed beams, calculation of prestressing forces, eccentricity of cables, calculation of losses design of end block and final stresses in different works stages without cracks .

CVE416 Finite Elements Method

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Assemblage of discrete elements, elastic continua, triangular elements for plane stress, rectangular elements for plane stress, transformation matrix, assembling the structure stiffness matrix, rectangular elements in bending, various elements for two- and three-dimensional analyses.

CVE417 The Concept of using Models in Structural Analysis

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Direct and indirect aspects, indirect models (displacement models) influence line diagrams for deflection, influence line diagrams for stress resultant, scale factors, practical applications of the indirect method, experimental procedure in the indirect method, direct method of model analysis, applications, influence surfaces for deformations and internal forces.

CVE443 Construction Techniques for Concrete Structures

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

The course includes the presentation of the different construction methods used in construction of concrete structures. Different shuttering system are introduced, e.g. wooden shuttering, metallic shuttering, (scaffolding system) tunnel forms, climbing forms and slipforms for construction of concrete structures, e.g. buildings and bridges. Practical examples for these construction, specification and design of amount of wooden shuttering

CVE455 Masonry Structures

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Introduction: history of masonry, masonry elements, types of masonry construction, analysis and design methods. Masonry materials: masonry units, mortar, grout, reinforcement. masonry assemblages: compression, flexural, shear in plane tensile strength. Reinforced beams and lintels: flexural behaviour and design, shear behaviour and design, load distribution on lintel beams. Flexural walls: load resisting mechanisms, flexural behaviour, analysis and design of reinforced flexural walls. Load bearing walls under axial load and out of plane bending overview, effects of bending on the capacity of walls, effect of wall height, interaction between axial load and bending, linear elastic analysis of unreinforced and reinforced sections, effects of slenderness, moment magnification, special provisions for slender reinforced walls.

CVE456 Soil and Rocks in Dry Places

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Expansive soils: origin and position, mineralogy, identification and classification, laboratory testing, swelling pressure, swelling potential, foundations ways on swelling soils. Collapsible soils: origin and position, soil structure, classification and identification, laboratory testing, collapsibility potential, foundations on collapsible soils. Rock mechanics: classification of rocks, hard rock, geological structures, rock mass, laboratory testing, engineering classification of rocks, engineering applications on rock mechanics.

CVE457 Geotechnical Analysis using Computer

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Selection of geotechnical parameters for computer analysis. Software applications: slope stability, seepage analysis, settlement of shallow foundations, beams on elastic foundations, piles under lateral loads. Geotechnical applications using excel program: bearing capacity of shallow foundations, capacity of axially loaded piles.

CVE458 Advanced Analysis of Reinforced Concrete Bridges

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

The course includes the conceptual design of concrete bridges and hybrid material bridges, for which various concrete sections are adopted. Different structural systems will be introduced, e.g. girder type bridges, box girder bridges, arch bridges. Analysis and design of different structural elements, decks, bearings, piers and footing are involved. The influence of the construction techniques and construction details on the design are included in design.

CVE467 Advanced Sanitary Engineering

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Modern systems for water purification: accelerator, pulsator, pressure and rapid sand filters, direct filtration. Design of under drainage system of filters: systems of back wash, measuring and control equipment, arrangement of filter building. methods of water disinfection: chlorine, breakpoint chlorination, getting rid of excessive chlorine, chloramines, ozone, ultra-violet rays. Design of water distribution system using method of circle. Design of wastewater pump stations: h-q curve, efficiency curve, system curve, types of pumps and motors, flow measuring and control equipment. Design of biological treatment works using activated sludge system: aerobic and anaerobic stabilization processes, types and growth kinetics of micro-organisms, fundamentals of microbiology, design criteria, determination of aeration volume and air flow, control methods, process technologies of activated sludge.

CVE468 Environmental Engineering

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Water pollution: introduction to water resources and its types, common impurities in water, water born diseases , sources of water pollution , water pollution categories , effect of oxygen demanding wastes on rivers , self-purification. Air pollution: definition, sources and effects of air pollution, classification and control of air pollution. Solid waste: sources, characteristics, management, methods of collection and transportation of the collected refuse, disposal of solid waste by sanitary land filling method.

CVE475 Highways and Airport Maintenance

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Assessment of pavement distresses: assessment of flexible pavement distresses and assessment of rigid pavement distresses, tests of pavement evaluation, methods of pavement evaluation, road maintenance, maintenance of flexible pavement. Maintenance of rigid pavement, maintenance of pedestrian crossing routes, road curbs and pitching, maintenance of unpaved roads, maintenance of drainage system, maintenance of opened and covered ditches, maintenance of surface water drainage system, recycling of road pavement materials, reconstruction works, pavement management systems.

CVE476 Advanced Railway Engineering

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Turnouts and switches: switch, diamond crossing, crossover, scissor crossover, slip, double junction. stations and yards: passenger and freight stations, locomotive and stabling yards, sorting and marshalling yard. Railway cost: price and subsidy. Signals: classification and types, mechanical devices of interlocking, train traffic control, automatic block system (ABS), centralized traffic control system (C.T.C), automatic train control (ATC) system.

CVE477 Airport Engineering

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Airport planning: wind rose, elements of airport, runway orientation and defining landing and take-off positions. Aircraft characteristics, aircraft apron layout. design of runway length based on height , temperature and pavement slope. Selection of airport site. Geometric design of airports components: dimensions of runway , main taxiway dimensions, exit taxiway design and aprons dimensions . Structural design of pavement (flexible and rigid) . Signs and pavement marking. Airport operational capacity. Definition of runway number, imaginary surfaces.

CVE483 Geographic Information Systems and Remote Sensing

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Introduction to geographic information system (GIS), types of used data, transforming the analogue drawings to digital maps and study of the errors resulting from the process of transforming and merging, building database and linking it with the graphic data. methods of data input, storage and output. introduction to remote sensing basics and principals. Elements of imaging process. Introduction to aerial photos and satellite images interpretations. Thermal and spectral scanning. Remote sensing by microwave and radar. Introduction to satellites: ocean monitoring, metrological monitoring, terrestrial monitoring. digital image processing. Application of remote sensing. Land- use, mapping, wet land, geological maps, soil maps and environmental assessment.

CVE484 Geodetic and Photogrammetric Survey

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

Introduction to geometric geodesy, introduction to map projection, introduction to grid coordinates and their transformation. astronomic coordinates and their relation to geographic coordinates, astronomic latitude and azimuth determination from astronomic triangle, least squares principles and its applications, different reference ellipsoids and geodetic datum. Introduction to different kinds of photos: terrestrial, aerial, and satellite. coordinates computations in photogrammetry, flight mission. the instruments used in processing, photos characteristics. Analytical photogrammetry: theories and applications. Digital photogrammetry: theories, applications. Method of digital aerial photos and satellite images processing: radio-metrical, geometrical. Methods of processing ortho-photos. Production of digital mapping and digital terrain models.

CVE493 Project

Lec	Tut	Lab	Total Hours	Mid Term	Class work	Prac / Oral	Final Exam	Total Degrees
2	2	-	4	25	25	-	50	100

The Student uses the fundamentals, principles and skills he gained during his study to analyze and design an engineering system to perform a specified task either individually or through a group work depending on the supervisor task. The detailed analysis and design must be included in the student report. The student deals with the analysis and design of a complete engineering project using the fundamentals principles and skills he gained during his study .The project report presented by the student should include the details of the analysis and design satisfying the concerned codes requirements ,the computer applications as well as the experimental work when necessary, in addition to the technical engineering drawing of his design. The student should prove his complete understanding of the elements of the project and his capability to apply them in his future engineering.

الرموز

الكافيتريا	الإسعاف	مسطحات
دور عبادة	أماكن التجمع	أماكن انتظار السيارات
مكتبة بيع الكتب	محطة أوتوبيس	دورات مياه
مطعم فيوتشر	دورات مياه للمعاقين	ماكينات الصراف الآلي

Zone A

١ شئون طلاب هندسة
٢ شئون دراسة هندسة
٣ مركز بلس للتدريب
٤ مدرج رمسيس
٥ مدرج أخناتون
٦ مدرج الفراعنة
٧ مدرج حورس
٨ رعاية الشباب
٩ أعضاء هيئة التدريس
١٠ الهيئة المعاونة
١١ قاعات دراسية
١٢ الورش الميكانيكية

Zone B

١ شئون طلاب حاسب
٢ شئون دراسة حاسب
٣ مكاتب الإدارة العليا
٤ الخـزينة
٥ شئون الخريجين
٦ أعضاء هيئة التدريس
٧ قاعات دراسية
٨ المكتبة
٩ مدرج الجبرتي
١٠ مدرج المقريزي
١١ مدرج مشرفة
١٢ مدرج زويل
١٣ مدرج الخوارزمي
١٤ مدرج ابن رشد
١٥ مدرج ابن خلدون
١٦ مدرج ابن سينا
١٧ قاعات ومعامل (مدني)
١٨ رعاية الشباب
١٩ مكاتب الأمن

Zone C

١ مدرج الشهداء
٢ مدرج د. صديق عفيفي
٣ قاعات ومعامل دراسية
٤ مراسم
٥ الإدارة العليا هندسة

مبنى علوم الحاسب وشعبة اللغة الإنجليزية

٦ ٤ مدرجات للفرق
٧ ٥ قاعات دراسية
٨ معامل اللغة
٩ قسم علوم الحاسب CS
١٠ قسم MIS
١١ قسم MGT & ACT
١٢ مكاتب إدارية
١٣ مكاتب شئون الطلاب
١٤ رعاية الشباب

● بيانات الاتصال : القاهرة - أول كورنيش المعادي ص ب ١١٤٣٤ - تليفون : ١٦٠٤٧ - فاكس : (٠٢)٢٥٢٤٧٨٨٤ - www.thebes.edu.eg

المحتويات