## Study Plan

### Academic Year-1

#### Level-1

Study Plan – Level 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | | **Contact Unit** | | | | | | **Type of Requirements** | | **Course Name in Arabic** |
| **Theory** | | **Lab** | | Other | |
| 1101-101 | General Physics I | R |  | 4 | | 3 | |  | | 3 | | College | | فيزياء عامة 1 |
| 1104-111 | Engineering Mathematics 1 | R |  | 4 | | 3 | |  | | 2 | | College | | رياضيات هندسية 1 |
| 1403-101 | Engineering Drawing | R |  | 3 | | 1 | |  | | 5 | | College | | رسم هندسي |
| 1405-101 | Introduction to Engineering Design | R |  | 2 | | 1 | |  | | 3 | | College | | مقدمة في التصميم الهندسي |
| 1601-101 | Islamic Culture 1 | R |  | 2 | | 2 | |  | |  | | College | | الثقافة الإسلامية1 |
| 1606-114 | Reading (I) |  |  | 2 | | 2 | |  | |  | |  | | قراءة1 |
| **Total** | | | | | 17 | |  | |  | |  | | **الإجمالي** | | |

R/E: Required/ Elective. Type of requirements: Institution/ College/ Program. Other: can be Tutorial/Clinical

#### Level-2

Study Plan – Level 2

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | | **Contact Unit** | | | | | | **Type of Requirements** | | **Course Name in Arabic** |
| **Theory** | | **Lab** | | Other | |
| 1101-203 | General Physics 3 | R | 1101-101 | 4 | | 3 | |  | | 3 | | College | | فيزياء عامة 3 |
| 1102-101 | General Chemistry (I) | R | --- | 4 | | 3 | |  | | 3 | | College | | كيمياء عامة 1 |
| 1104-212 | Engineering Mathematics (II) | R | 1104-111 | 4 | | 3 | |  | | 2 | | College | | رياضيات هندسية 2 |
| 1402-120 | Structured Computer Programing | R | --- | 2 | | 1 | |  | | 2 | | Institution | | برمجة الحاسب المهيكلة |
| 1403-111 | Basic Workshop |  | 1403-101 | 2 | | 1 | |  | | 3 | |  | | ورش اساسية |
| 1602-101 | Arabic Language |  | --- | 2 | | 2 | |  | |  | |  | | لغه عربيه |
| **Total** | | | | | 18 | |  | |  | |  | | **الإجمالي** | | |

### Academic Year-2

#### Level-3

Study Plan – Level 3

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | | **Contact Unit** | | | | | | **Type of Requirements** | | **Course Name in Arabic** |
| **Theory** | | **Lab** | | Other | |
| 1401-200 | Eng. Mechanics (Statics) | R | 1101-101 | 3 | | 2 | |  | | 3 | | Program | | ميكانيكا هندسية (استاتيكا) |
| 1403-231 | Engineering Materials | R | 1102-101 | 3 | | 2 | | 2 | | 3 | | Program | | مواد هندسية |
| 1403-221 | Fundamentals of Fluid Mechanics | R | 1101-101 | 3 | | 2 | |  | | 3 | | Program | | اساسيات ميكانيكا الموائع |
| 1405-202 | Engineering Economy |  | 1104-111, | 2 | | 1 | |  | | 2 | |  | | اقتصاد هندسي |
| 1405-204 | Probability and Statistics |  | 1104-212 | 3 | | 2 | |  | | 2 | |  | | احتمالات واحصاء |
| 1606-110 | Writing (I) |  | ------ | 2 | | 2 | |  | |  | |  | | كتابة |
| **Total** | | | | | 18 | |  | |  | |  | | **الإجمالي** | | |

#### Level-4

Study Plan – Level 4

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | | **Contact Unit** | | | | | | **Type of Requirements** | | **Course Name in Arabic** |
| **Theory** | | **Lab** | | Other | |
| 1104-313 | Engineering Mathematics 3 | R | 1104-212 | 4 | | 3 | |  | | 2 | | Program | | رياضيات هندسية 3 |
| 1402-207 | Basic Elect. Engineering | R | ------ | 3 | | 2 | |  | | 2 | | Program | | اساسيات الهندسة الكهربائية |
| 1403-252 | Mechanics of Solids | R | 1403-231 | 3 | | 2 | |  | | 3 | | College | | ميكانيكا الجوامد |
| 1403-232 | Mechanical Drawing | E | 1403-101 | 2 | | 1 | |  | | 3 | | Institution | | رسم ميكانيكي |
| 1403-241 | Fundamentals of Thermodynamics |  | 1104-212 | 3 | | 2 | |  | | 3 | |  | | اساسيات ديناميكا حرارية |
| 1403-251 | Engineering Mechanics (Dynamics) |  | 1401-200 | 3 | | 2 | |  | | 3 | |  | | ميكانيكا هندسية (ديناميكا) |
| **Total** | | | | | 18 | |  | |  | |  | | **الإجمالي** | | |

### Academic Year-3

#### Level-5

Study Plan – Level 5

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | | **Contact Unit** | | | | | | **Type of Requirements** | | **Course Name in Arabic** |
| **Theory** | | **Lab** | | Other | |
| 1402-300 | Numerical Methods in Eng. | R | 1104-313 | 3 | | 2 | |  | | 2 | | Program | | طرق حسابية في الهندسة |
| 1403-313 | Measurements and Instrumentations | R | 1402-207, 1405-204 | 2 | | 1 | |  | | 3 | | Program | | قياسات وأجهزة قياس |
| 1403-342 | Heat and Mass Transfer |  | 1101-203, 1403-241 | 3 | | 2 | |  | | 3 | |  | | انتقال الحرارة والكتلة |
| 1403-312 | Manufacturing Processes |  | 1403-11,  1403-231 | 3 | | 2 | |  | | 3 | |  | | عمليات تصنيع |
| 1403-333 | Machine Element Design | R | 1403-232, 1403-252 | 3 | | 2 | |  | | 3 | | Program | | تصميم عناصر الالة |
| 1405-203 | Engineering Management |  | --- | 2 | | 1 | |  | | 2 | |  | | إدارة هندسية |
| 1601-201 | Islamic Culture 2 | R | --- | 2 | | 2 | |  | |  | | Institution | | ثقافة إسلامية 2 |
| **Total** | | | | | 18 | |  | |  | |  | | **الإجمالي** | | |

#### Level-6

Study Plan – Level 6

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | | **Contact Unit** | | | | | | **Type of Requirements** | | **Course Name in Arabic** |
| **Theory** | | **Lab** | | Other | |
| 1104-314 | Engineering Mathematics 4 | R | 1104-111 | 3 | | 2 | |  | | 2 | | Program | | رياضيات هندسية 4 |
| 1403-335 | Mechanical Design | R | 1403-333, 1403-252 | 3 | | 2 | |  | | 3 | | Program | | تصميم ميكانيكي |
| 1403-353 | Machine Dynamics |  | 1403-251 | 3 | | 2 | |  | | 3 | |  | | ديناميكا الالة |
| 1403-334 | Experimental design and Analysis |  | 1402-120, 1403-313 | 2 | | 1 | |  | | 3 | |  | | تصميم تجارب وتحليلها |
| 1403-343 | Applied Thermodynamics |  | 1403-342 | 3 | | 2 | |  | | 3 | |  | | ديناميكا حرارية تطبيقية |
| 1606-111 | Writing (II) | R | 1606-110 | 2 | | 2 | |  | |  | | Program | | كتابة 2 |
| **Total** | | | | | 17 | |  | |  | |  | | **الإجمالي** | | |

### Academic Year-4

#### Level-7

Study Plan – Level 7

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | | **Contact Unit** | | | | | | **Type of Requirements** | | **Course Name in Arabic** |
| **Theory** | | **Lab** | | Other | |
| 1403-436 | Computer Aided Design | R | 1403-335 | 2 | | 1 | |  | | 3 | | Program | | التصميم بالحاسب الالى |
| 1403-454 | Mechanical Vibrations | R | 1402-120, 1104-313 | 2 | | 1 | |  | | 2 | | Program | | اهتزازات ميكانيكيه |
| 1403-4xx\* | Elective Course 1 | R | Dept. Prog. | 3 | | 2 | |  | | 3 | | College | | اختيارى تخصصى 1 |
| 1505-101 | Principles of Law |  | --- | 3 | | 3 | |  | |  | |  | | مبادئ القانون |
| 1601-xxx | Elective Islamic Culture 1\* |  | --- | 2 | | 2 | |  | |  | |  | | ثقافة اسلاميه ( اختيارى 1) |
| 1403-492 | B.SC. Project 1 |  | Completion of 96 Credits | 2 | | 1 | |  | | 3 | |  | | مشروع تخرج 1 |
| 1405-405 | Engineering Ethics | E | 1405-101 | 1 | | 1 | |  | | --- | | Institution | | اخلاقيات هندسيه |
| **Total** | | | | | 15 | |  | |  | |  | | **الإجمالي** | | |

#### Level-8

Study Plan – Level 8

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | | **Contact Unit** | | | | | | **Type of Requirements** | | **Course Name in Arabic** |
| **Theory** | | **Lab** | | Other | |
| 1403-422 | Applied Fluid Mechanics | R | 1403-221 | 3 | | 2 | |  | | 3 | | Program | | ميكانيكا موائع تطبيقيه |
| 1403-455 | Control Systems | R | 1403-251, 1104-313 | 2 | | 1 | |  | | 3 | | Program | | انظمة التحكم |
| 1403-4xx\* | Elective Course 2 | R | Dept. Prog. | 3 | | 2 | |  | | 3 | | Program | | اختيارى تخصصى 2 |
| 1403-4xx\* | Elective Course 3 |  | Dept. Prog. | 3 | | 2 | |  | | 3 | |  | | اختيارى تخصصى 3 |
| 1601-xxx | Elective Islamic Culture 2\* |  | --- | 2 | | 2 | |  | |  | |  | | ثقافة اسلاميه ( اختيارى 2) |
| 1403-493 | B.SC. Project 2 | R | 1403-492 | 2 | | 1 | |  | | 3 | | Institution | | مشروع تخرج 2 |
| **Total** | | | | | 15 | |  | |  | |  | | **الإجمالي** | | |

### Summer Training

#### Summer Training

Study Plan – summer training

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | | **Contact Unit** | | | | | | **Type of Requirements** | | **Course Name in Arabic** |
| **Theory** | | **Lab** | | Other | |
| 1403-391 | Summer Training | R | Completion of 90 Credits and Department Approval | 2 | |  | |  | |  | | Program | | التدريب الميدانى |
| **Total** | | | | | 2 | |  | |  | |  | | **الإجمالي** | | |

### Elective Courses

#### University Elective Courses

University Elective Courses\*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Course Name in Arabic** |
| **Theory** | **Lab** | **Other** |
| 1601301 | Islamic Culture 3 | ---- | 2 | 2 |  |  | الثقافة الإسلامية3 |
| 1601302 | Islamic Culture 4 | ---- | 2 | 2 |  |  | الثقافة الإسلامية4 |
| 1601401 | Islamic Culture 5 | ---- | 2 | 2 |  |  | الثقافة الإسلامية5 |
| 1601402 | Islamic Culture 6 | ---- | 2 | 2 |  |  | الثقافة الإسلامية6 |
| 1601303 | Islamic Culture 7 | ---- | 2 | 2 |  |  | الثقافة الإسلامية7 |
| 1601403 | Islamic Culture 8 | ---- | 2 | 2 |  |  | الثقافة الإسلامية8 |

\*The student chooses two courses out of 5 courses.

#### Program Elective Courses

Program Elective Courses

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Course Name in Arabic** |
| **Theory** | **Lab** | **Tutorial** |
| 1403-461 | Power plants | 1403-342 / 1403-343 | 3 | 2 |  | 3 | محطات الطاقة |
| 1403-462 | Internal combination engine | 1403-342 | 3 | 2 |  | 3 | محركات الاحتراق الداخلي |
| 1403-444 | Refrigeration and air conditioning | 1403-342 / 1403-343 | 3 | 2 |  | 3 | التبريد والتكييف |
| 1403-423 | Turbo machinery | 1403-221 | 3 | 2 |  | 3 | آلات توربينيه |
| 1403-464 | Gas turbine | 1403-342 | 3 | 2 |  | 3 | توربينات غازية |
| 1403-463 | Renewable energy | 1403-342 | 3 | 2 |  | 3 | الطاقة المتجددة |
| 1403-424 | Fire systems and safety | 1403-342  1403-343 | 3 | 2 |  | 3 | انظمة الامان واطفاء الحريق |

1. **New Curriculum**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Program Structure** | **Required/ Elective** | **No. of courses** | **Credit**  **Hours** | **Percentage** |
| **Institution Requirements** | **Required** | 5 | 10 | 6.5% |
| **Elective** | 2 | 4 | 2.6% |
| **College Requirements** | **Required** | 12 | 37 | 23.9% |
| **Elective** | ----- | ------ | 0.0% |
| **Program Requirements** | **Required** | 29 | 78 | 54.8% |
| **Elective** | 3 | 9 | 5.8% |
| **Capstone Course/Project** |  | 2 | 4 | 2.6% |
| **Field Training/ Internship** |  | 1 | 0 | 1.3% |
| **Residency year** |  | ------ | ------ | 0.0% |
| **Others (Free Courses)** | **Elective** | 2 | 4 | 2.6% |
| **Total** | | **55** | **155** | **100.0%** |

## Study Plan

### Academic Year-1

#### Level-1

Study Plan – Level 1

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Type of Requirements** | **Course Name in Arabic** |
| **Theory** | **Lab** | Other |
| MATH101 | Calculus 1 | R |  | 4 | 3 | 0 | 2 | College | حساب التفاضل و التكامل 1 |
| LNGT101 | English 1 | R |  | 4 | 20 | 0 | 0 | College | لغه انجليزيه 1 |
| IT100 | Digital Culture | R |  | 2 | 2 | 0 | 0 | Institution | الثقافة الرقمية |
| ISLSXXX | Islamic Culture 1 | R |  | 2 | 2 | 0 | 0 | Institution | ثقافة إسلامية (1) |
| **Total** | | | | 12 | 27 | 0 | 2 | **الإجمالي** | |

R/E: Required/ Elective. Type of requirements: Institution/ College/ Program. Other: can be Tutorial/Clinical

#### Level-2

Study Plan – Level 2

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Type of Requirements** | **Course Name in Arabic** |
| **Theory** | **Lab** | Other |
| MATH202 | Calculus 2 | R | MATH101 | 4 | 3 | 0 | 2 | College | حساب التفاضل و التكامل 2 |
| LNGT102 | English 2 | R | LNGT101 | 4 | 20 | 0 | 0 | College | لغه انجليزيه 2 |
| GNCR100 | University Skills | R |  | 2 | 2 | 0 | 0 | Institution | المهارات الجامعية |
| LNGT103 | English for Scientific and Engineering Purposes | R |  | 2 | 4 | 0 | 0 | College | لغه انجليزيه للاغراض العلميه و الهندسية |
| **Total** | | | | 12 | 29 | 0 | 2 | **الإجمالي** | |

### Academic Year-2

#### Level-3

Study Plan – Level 3

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | | **Contact Unit** | | | | | | **Type of Requirements** | | **Course Name in Arabic** |
| **Theory** | | **Lab** | | Other | |
| CHEM101 | General Chemistry 1 | R |  | 4 | | 3 | | 2 | | 0 | | Program | | كيمياء عامه 1 |
| EE200 | Introduction to Computer Programming | R |  | 3 | | 2 | | 2 | | 0 | | College | | مقدمة في برمجة الحاسب |
| MATH203 | Calculus 3 | R | MATH202 | 4 | | 3 | | 0 | | 2 | | Program | | حساب التفاضل و التكامل 3 |
| PHYS101 | General Physics 1 | R |  | 4 | | 3 | | 2 | | 0 | | College | | فيزياء عامه 1 |
|  | University Elective 1 | E |  | 2 | | 2 | | 0 | | 0 | | Institution | | اختيارى جامعه 1 |
| **Total** | | | | | 17 | | 12 | | 6 | | 4 | | **الإجمالي** | | |

#### Level-4

Study Plan – Level 4

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | | **Contact Unit** | | | | | | **Type of Requirements** | | **Course Name in Arabic** |
| **Theory** | | **Lab** | | Other | |
| ME211 | Engineering Drawing | R |  | 3 | | 2 | | 0 | | 2 | | Program | | رسم هندسى |
| ISLSxxx | Islamic Culture s | R |  | 2 | | 2 | | 0 | | 0 | | Institution | | ثقافة إسلامية (2) |
| MATH241 | Differential Equations 1 | R | MATH202 | 3 | | 3 | | 0 | | 0 | | College | | المعادلات التفاضلية |
| ME221 | Fundamentals of Fluid Mechanics | R | PHYS101 | 3 | | 2 | | 2 | | 0 | | Program | | اساسيات ميكانيكا الموائع |
| CE200 | Eng. Mechanics (Statics) | R | PHYS101 | 3 | | 2 | | 0 | | 2 | | Program | | ميكانيكا هندسيه ( ساكنه) |
| ME231 | Engineering Materials | R | CHEM101 | 3 | | 2 | | 0 | | 2 | | Program | | هندسه المواد |
| **Total** | | | | | 17 | | 12 | | 2 | | 8 | | **الإجمالي** | | |

### Academic Year-3

#### Level-5

Study Plan – Level 5

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | | **Contact Unit** | | | | | | **Type of Requirements** | | **Course Name in Arabic** |
| **Theory** | | **Lab** | | Other | |
| PHYS203 | General Physics 3 | R | PHYS101 | 4 | | 3 | | 2 | | 0 | | Program | | فيزياء عامه 3 |
| ME312 | Basic Workshop | R | ME211 | 2 | | 1 | | 0 | | 2 | | Program | | الورش الاساسيه |
| HR100 | Entrepreneurship | R |  | 2 | | 2 | | 0 | | 0 | | Institution | | ريادة أعمال |
| MATH222 | Linear Algebra | R | MATH101 | 3 | | 3 | | 0 | | 0 | | Program | | الجبر الخطى |
| ME332 | Mechanics of Solids | R | ME231 | 3 | | 2 | | 0 | | 2 | | Program | | ميكانيكا الجوامد |
| ME351 | Engineering Mechanics (Dynamics) | R | CE200 | 3 | | 2 | | 0 | | 2 | | Program | | ميكانيكا هندسيه (ديناميكا) |
| **Total** | | | | | 17 | | 12 | | 2 | | 8 | | **الإجمالي** | | |

#### Level-6

Study Plan – Level 6

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Type of Requirements** | **Course Name in Arabic** |
| **Theory** | **Lab** | Other |
| EE207 | Basic Elect. Engineering | R | PHYS101 | 3 | 2 | 0 | 2 | Program | اساسيات الهندسه الكهربائيه |
|  | University Elective 2 | E |  | 2 | 2 | 0 | 0 | Institution | اختيارى جامعه 2 |
| EE323 | Numerical Methods in Eng. | R | MATH241 | 3 | 2 | 0 | 2 | Program | الطرق الحسابيه فى الهندسه |
| ME313 | Manufacturing Processes | R | ME231 | 3 | 2 | 0 | 2 | Program | عمليات التصنيع |
| ME341 | Fundamentals of Thermodynamics | R | PHYS203 / MATH203 | 3 | 2 | 2 | 0 | Program | اساسيات الديناميكا الحراريه |
| ME333 | Machine Element Design | R | ME332 | 3 | 2 | 0 | 2 | Program | تصميم عناصر الماكينات |
| **Total** | | | | 17 | 12 | 2 | 8 | **الإجمالي** | |

### Academic Year-4

#### Level-7

Study Plan – Level 7

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Type of Requirements** | **Course Name in Arabic** |
| **Theory** | **Lab** | Other |
|  | Free Course 1 | R |  | 2 | 2 | 0 | 0 | Institution | مقرر حر 1 |
| ME422 | Applied Fluid Mechanics | R | ME221 | 3 | 2 | 2 | 0 | Program | ميكانيكا الموائع التطبيقيه |
| ME434 | Mechanical Design | R | ME333 | 3 | 2 | 0 | 2 | Program | تصميم ميكانيكى |
| ME442 | Heat and Mass Transfer | R | PHYS203 | 3 | 2 | 2 | 0 | Program | انتقال الحراره و الكتله |
| ME471 | Measurements and Instrumentations | R | EE207 | 3 | 2 | 2 | 0 | Program | القياسات واجهزه القياس |
| ME452 | Mechanical Vibrations | R | MATH203 | 3 | 2 | 0 | 2 | Program | اهتزازات ميكانيكيه |
| **Total** | | | | 17 | 12 | 6 | 4 | **الإجمالي** | |

#### Level-8

Study Plan – Level 8

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Type of Requirements** | **Course Name in Arabic** |
| **Theory** | **Lab** | Other |
| CE201 | Computer Aided Drawing | R |  | 2 | 0 | 4 | 0 | College | الرسم بمساعدة الحاسوب |
|  | Free Course 2 | R |  | 2 | 2 | 0 | 0 | Institution | مقرر حر 2 |
| ME453 | Machine Dynamics | R | ME351 | 3 | 2 | 0 | 2 | Program | ديناميكا الاله |
| ME435 | Computer Aided Design | R | ME434 | 3 | 2 | 0 | 2 | Program | التصميم بالحاسب الالى |
| ME472 | Experimental design and analysis | R | ME471 | 3 | 2 | 0 | 2 | Program | تصميم التجارب وتحليلها |
| ME443 | Applied Thermodynamics | R | ME341 | 3 | 2 | 2 | 0 | Program | ديناميكا حراريه تطبيقيه |
| **Total** | | | | 16 | 10 | 6 | 6 | **الإجمالي** | |

### Summer Training

#### Summer Training

Study Plan – summer training

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Type of Requirements** | **Course Name in Arabic** |
| **Theory** | **Lab** | Other |
| ME491 | Field Training | R | Completion of 110 | 0 | 0 | 0 | 240 | Program | التدريب الميدانى |
| **Total** | | | | 0 | 0 | 0 | 240 | **الإجمالي** | |

### Academic Year-5

#### Level-9

Study Plan – Level 9

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Type of Requirements** | **Course Name in Arabic** |
| **Theory** | **Lab** | Other |
| ME544 | Refrigeration and air conditioning | R | ME442 / ME443 | 3 | 2 | 2 | 0 | Program | تبريد و تكييف الهواء |
| ME5xx | Elective Course I | E | Depart. Approval | 3 | 2 | 0 | 2 | Program | اختيار تخصصى 1 |
| ME5xx | Elective Course II | E | Depart. Approval | 3 | 2 | 0 | 2 | Program | اختيارى تخصصى 2 |
| ME592 | Capstone Project I | R | Completion of 120 | 2 | 1 | 0 | 2 | Program | مشروع التخرج 1 |
| IE522 | Engineering Professionalism and Ethics | R |  | 2 | 2 | 0 | 0 | Program | الاحتراف الهندسي والأخلاق |
| IE222 | Engineering Management | R |  | 3 | 2 | 0 | 2 | Program | اداره هندسيه |
| **Total** | | | | 16 | 12 | 2 | 8 | **الإجمالي** | |

#### Level-10

Study Plan – Level 10

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **R/E** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Type of Requirements** | **Course Name in Arabic** |
| **Theory** | **Lab** | Other |
| ME523 | Turbo Machine | R | ME221 | 3 | 2 | 2 | 0 | Program | الات تربينيه |
| ME561 | Internal combination engine | R | ME442 / ME443 | 3 | 2 | 2 | 0 | Program | محركات احتراق داخلى |
| ME573 | Control Systems | R | ME351 / MATH203 | 3 | 2 | 0 | 2 | Program | انظمه تحكم |
| ME5xx | Elective Course III | E | Depart. Approval | 3 | 2 | 0 | 2 | Program | اختيارى تخصصى 3 |
| ME593 | Capstone Project II | R | ME592 | 2 | 1 | 0 | 2 | Program | مشروع التخرج 2 |
| **Total** | | | | 14 | 9 | 4 | 10 | **الإجمالي** | |

### Elective Courses

#### University Elective Courses

University Elective Courses\*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Course Name in Arabic** |
| **Theory** | **Lab** | **Other** |
| GNCR103 | Kingdom & Its Pioneering Role | ----- | 2 | 2 |  |  | المملكة ودورها الريادي |
| ARAB103 | Academic Writing Skills | ----- | 2 | 2 |  |  | مهارات الكتابة الأكاديمية |
| GNCR104 | Fitness and Sport Science | ----- | 2 | 2 |  |  | اللياقة البدنية وعلوم الرياضة |
| BIO104 | Sustainable Development | ----- | 2 | 2 |  |  | التنمية المستدامة |
| CUET101 | Lifelong learning skills | ----- | 2 | 2 |  |  | مهارات التعلم مدى الحياة |

\*The student chooses two courses out of 5 courses.

#### Program Elective Courses

Program Elective Courses

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Course Name in Arabic** |
| **Theory** | **Lab** | **Tutorial** |
| ME562 | Power Plant | ME442 / ME443 | 3 | 2 |  | 2 | محطات الطاقه |
| ME514 | Computer Aided Manufacturing | ME313 | 3 | 2 |  | 2 | التصنيع باستخدام الحاسب |
| ME536 | Machine Tool Design | ME333 | 3 | 2 |  | 2 | تصميم الادوات الاليه |
| ME525 | Piping System design | ME221 | 3 | 2 |  | 2 | تصميم انظمه الانابيب |
| ME563 | Gas Turbine | ME442 / ME443 | 3 | 2 |  | 2 | توربينات غازيه |
| ME574 | Quality Control | ME471 | 3 | 2 |  | 2 | رقابة جودة |
| ME537 | Modern Engineering Materials | ME332 | 3 | 2 |  | 2 | مواد هندسيه حديثه |
| ME538 | Tribology | ME332 | 3 | 2 |  | 2 | ترايبولوجى |
| ME564 | Renewable Energy | ME442 | 3 | 2 |  | 2 | طاقه متجدده |
| ME524 | Fire Systems and Safety | ME442 / ME443 | 3 | 2 |  | 2 | انظمه الحريق والسلامه |
| ME554 | Mechanisms | ME453 | 3 | 2 |  | 2 | الاليات |
| ME545 | Thermal Desalination Systems | ME221 / ME442 | 3 | 2 |  | 2 | انظمه التحليه الحراريه |

#### Free Courses

Free Courses

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Course Name in Arabic** |
| **Theory** | **Lab** | **Tutorial** |
| IS101 | Digital transformation | --- | 2 | 2 |  |  | التحول الرقمي |
| ELP102 | Leadership and change management | --- | 2 | 2 |  |  | القيادة وإدارة التغيير |
| GNCR105 | Volunteering and social responsibility | --- | 2 | 2 |  |  | التطوع والمسؤولية المجتمعية |
| PSY115 | Skills to deal with people with disabilities | --- | 2 | 2 |  |  | مهارات التعامل مع ذوي الإعاقة |

#### Islamic Elective Courses

Islamic Elective Courses

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Pre-Requisite Courses Code** | **Credit Unit** | **Contact Unit** | | | **Course Name in Arabic** |
| **Theory** | **Lab** | **Tutorial** |
| ISLS100 | The origins of Islamic culture | --- | 2 | 2 |  |  | أصول الثقافة الإسلامية |
| ISLS102 | Studies in the Prophet's biograph | --- | 2 | 2 |  |  | دراسات في السيرة النبوية |
| ISLS109 | Medical jurisprudence | --- | 2 | 2 |  |  | الفقه الطبي |
| ISLS104 | The family in Islam | --- | 2 | 2 |  |  | الأسرة في الإسلام |
| ISLS105 | Professional ethics | --- | 2 | 2 |  |  | أخلاقيات المهنة |
| ISLS106 | Women and their developmental role | --- | 2 | 2 |  |  | المرأة ودورها التنموي |
| ISLS107 | Economic system | --- | 2 | 2 |  |  | النظام الاقتصادي |
| ISLS108 | Contemporary issues | --- | 2 | 2 |  |  | قضايا معاصرة |