

## Mathematics Department

### General college courses (22 Units):

| No           | Module Name        | Credits   | Code  | Requirement |
|--------------|--------------------|-----------|-------|-------------|
| 1            | Computer Science   | 3         | 011CS | -           |
| 2            | National culture   | 2         | NL100 | -           |
| 3            | University skills  | 3         | 022US | -           |
| 4            | English Language 1 | 2         | 011EL | -           |
| 5            | English Language 2 | 2         | EL121 | 101EL       |
| 6            | Arabic Language 1  | 2         | AR011 | -           |
| 7            | Arabic Language 2  | 2         | AR121 | AR011       |
| 8            | General Physics    | 3         | PH011 | -           |
| 9            | General Statistics | 3         | ST011 | -           |
| <b>Total</b> |                    | <b>22</b> |       |             |

### Compulsory specialized courses in the department (97 units):

| No | Module Name                         | Code  | Credits | Requirement |
|----|-------------------------------------|-------|---------|-------------|
| 1  | General Mathematic I                | MA011 | 4       | --          |
| 2  | General Mathematic II               | MA121 | 4       | MA011       |
| 3  | Plane Analytic Geometry             | MA122 | 3       | -           |
| 4  | Fundamental of Mathematics          | MA123 | 3       | -           |
| 5  | Advanced of Calculus and Analysis I | MA211 | 4       | MA121       |
| 6  | Linear Algebra I                    | MA212 | 3       | --          |
| 7  | Ordinary Differential Equations I   | MA213 | 3       | --          |
| 8  | Matlab Programming                  | MA214 | 3       | CS011       |

|    |                                      |       |   |       |
|----|--------------------------------------|-------|---|-------|
| 9  | Advanced of Calculus and Analysis II | MA221 | 4 | MA211 |
| 10 | Linear Algebra II                    | MA222 | 3 | MA212 |
| 11 | Space Analytic Geometry              | MA223 | 3 | MA122 |
| 12 | Ordinary Differential Equations II   | MA224 | 3 | MA213 |
| 13 | Linear Programming                   | MA225 | 3 | MA212 |
| 14 | Real Analysis I                      | MA311 | 3 | MA221 |
| 15 | Abstract Algebra I                   | MA312 | 3 | MA222 |
| 16 | Numerical Analysis I                 | MA313 | 3 | MA214 |
| 17 | Partial Differential Equations       | MA314 | 3 | MA224 |
| 18 | Statics                              | MA315 | 3 | --    |
| 19 | Real Analysis II                     | MA321 | 3 | MA311 |
| 20 | Abstract Algebra II                  | MA322 | 3 | MA312 |
| 21 | Numerical Analysis II                | MA323 | 3 | MA313 |
| 22 | Theory of numbers                    | MA324 | 3 | MA123 |
| 23 | Dynamics                             | MA325 | 3 | MA315 |
| 24 | Integral Equations                   | MA411 | 3 | MA314 |
| 25 | Topology I                           | MA412 | 3 | MA321 |
| 26 | Complex Analysis I                   | MA413 | 3 | MA221 |
| 27 | Graduation Project                   | MA414 | 3 | -     |
| 28 | Differential Geometry                | MA421 | 3 | MA314 |
| 29 | Topology II                          | MA422 | 3 | MA412 |

|       |                     |       |    |              |
|-------|---------------------|-------|----|--------------|
| 30    | Complex Analysis II | MA423 | 3  | MA413        |
| 31    | Optimization Theory | MA424 | 3  | MA225& MA214 |
| Total |                     |       | 97 |              |

**Elective courses (9 units) :**

| No | Module Name               | Code  | Credits | Requirement     |
|----|---------------------------|-------|---------|-----------------|
| 1  | Special functions         | MA410 | 3       | -               |
| 2  | Functional Analysis       | MA411 | 3       | -               |
| 3  | Fluid Mechanics           | MA412 | 3       | MA223           |
| 4  | Coding Theory             | MA413 | 3       | MA312           |
| 5  | Computational Mathematics | MA414 | 3       | -               |
| 6  | Measure Theory            | MA415 | 3       | MA321           |
| 7  | Bio Mathematics           | MA416 | 3       | MA312           |
| 8  | Graph Theory              | MA417 | 3       | MA322           |
| 9  | Mathematical Methods      | MA418 | 3       | MA312           |
| 10 | Operations Research       | ST313 | 3       | ST211&<br>MA211 |
| 11 | Statistics Method         | ST202 | 3       | ST111           |

|              |                         |       |           |       |
|--------------|-------------------------|-------|-----------|-------|
| 12           | C++ Programing Language | MA310 | 3         | CS011 |
| <b>Total</b> |                         |       | <b>36</b> |       |

**Compulsory supporting courses :**

| <b>No</b>    | <b>Module Name</b>             | <b>Code</b> | <b>Credits</b> | <b>Requirement</b> |
|--------------|--------------------------------|-------------|----------------|--------------------|
| 1            | Computer Science               | CS011       | 3              | -                  |
| 2            | General Physics I              | PH011       | 3              | -                  |
| 3            | General Statistics             | ST011       | 3              | -                  |
| 4            | An Introduction to Probability | ST111       | 3              | ST011              |
| 5            | Mathematical Statistic I       | ST201       | 3              | ST111              |
| 6            | Mathematical statistic II      | ST211       | 3              | ST201              |
| 7            | Theory of Probabilities        | ST403       | 3              | MA211& ST211       |
| <b>Total</b> |                                |             | <b>21</b>      |                    |