



**Bachelor of Science in Mathematics (MATH)**

**First Year**

**Fall Semester**

| Code    | Title                            | Credits | Prerequisites   | Corequisites |
|---------|----------------------------------|---------|---|--------------|
| MATH210 | Calculus II                      | 3       | MATH161 - MATH160                                     |              |
| ARAB200 | Arabic Language and Literature   | 3       |   |              |
| PHYS210 | Mechanics                        | 3       | PHYS161 - MATH161 -<br>PHYS160 - MATH160 -<br>ENGL051 |              |
| CSCI200 | Introduction to Computers        | 3       | ENGL051   |              |
| ENGL201 | Composition and Research Skills  | 3       | ENGL151   |              |
| MATH225 | Linear Algebra with Applications | 3       | ENGL051 - MATH161                                     |              |
| Total   |                                  | 18      |   |              |

**Spring Semester**

| Code     | Title                           | Credits | Prerequisites | Corequisites       |
|----------|---------------------------------|---------|---------------|--------------------|
| MATH260L | Discrete Mathematics Lab        | 1       | MATH225       | MATH260            |
| ENGL251  | Communication Skills            | 3       | ENGL201       |                    |
| MATH270  | Ordinary Differential Equations | 3       | MATH210       | MATH225            |
| MATH220  | Calculus III                    | 3       | MATH210       |                    |
| MATH260  | Discrete Mathematics            | 3       | MATH225       | MATH260L           |
| CSCI250  | Introduction to Programming     | 3       | CSCI200       | ENGL101 - CSCI250L |
| CSCI250L | Introduction to Programming Lab | 1       | CSCI200       | ENGL101 - CSCI250  |
| Total    |                                 | 17      |               |                    |

**Second Year**

**Fall Semester**

| Code    | Title   | Credits | Prerequisites     | Corequisites |
|---------|---|---------|-------------------|--------------|
| MATH310 | Probability & Statistics for Scientists & Engineers | 3       | MATH210 - ENGL201 |              |
| MATH315 | Advanced Linear Algebra                             | 3       | MATH225           |              |
| MATH305 | Programming Languages for Scientist                 | 3       | MATH260           |              |
| MATH345 | Introduction to Real Analysis                       | 3       | MATH270 - MATH220 |              |
|         | Elective  | 3       |                   |              |
| CULT200 | Introduction to Arab - Islamic Civilization         | 3       |                   |              |
| Total   |   | 18      |                   |              |

**Spring Semester**

| Code    | Title  | Credits | Prerequisites   | Corequisites |
|---------|--|---------|---|--------------|
| MATH385 | Introduction to Topology                     | 3       | MATH345   |              |
| PHYS250 | Thermodynamic and Waves                      | 3       | PHYS161 - MATH161 -<br>ENGL051 - MATH160 -<br>PHYS160 |              |
| MATH380 | Complex Variables                            | 3       | MATH220   |              |
| MATH375 | Numerical Methods for Scientists & Engineers | 3       | ENGL051 - MATH270 -<br>MATH225                        |              |
| MATH365 | Abstract Algebra                             | 3       | MATH315   |              |
| Total   |  | 15      |   |              |

**Third Year**

**Fall Semester**

| Code    | Title                          | Credits | Prerequisites                  | Corequisites |
|---------|--------------------------------|---------|--------------------------------|--------------|
| MATH330 | Partial Differential Equations | 3       | MATH270                        |              |
|         | Elective                       | 3       |                                |              |
| PHYS280 | Electricity and Magnetism      | 3       | PHYS210 - MATH161 -<br>MATH160 |              |
| MATH420 | Differential Geometry          | 3       | MATH345                        |              |
| MATH405 | Number Theory                  | 3       | MATH315                        |              |
| Total   |                                | 15      |                                |              |

### Spring Semester

| Code    | Title                    | Credits | Prerequisites                  | Corequisites |
|---------|--------------------------|---------|--------------------------------|--------------|
| MATH490 | Modern Topics in Algebra | 3       | MATH365                        |              |
| MATH455 | Mathematical Analysis    | 3       | MATH345                        |              |
| PHYS360 | Analytical Mechanics     | 3       | PHYS210 - MATH270 -<br>MATH220 | PHYS250      |
|         | Elective                 | 3       |                                |              |
| MATH492 | Mathematical Seminar     | 1       | MATH385                        |              |
|         | Elective                 | 3       |                                |              |
| Total   |                          | 16      |                                |              |

### Major Elective Courses

| Code    | Title  | Credits | Prerequisites   | Corequisites |
|---------|--|---------|---|--------------|
| BMGT200 | Introduction to Business Management          | 3       |   | ENGL201      |
| EDIT250 | Educational Technology for Teachers          | 3       | CSCI200   |              |
| EENG250 | Electric Circuits I                          | 3       | PHYS161 - PHYS160 -<br>MATH161 - MATH160 -<br>ENGL051 | MATH210      |
| MATH400 | Special Functions                            | 3       | MATH270   |              |
| MATH460 | Functional Analysis                          | 3       | MATH345   |              |
| MATH465 | Selected Topics in Undergraduate Mathematics | 3       | MATH260   |              |
| MATH475 | Computational Mathematics                    | 3       | MATH375   |              |
| MATH495 | Mathematics Senior Project                   | 3       | MATH380 - MATH330                                     |              |
| MENG250 | Statics                                      | 3       | MATH161 - MATH160 -<br>PHYS161 - PHYS160 -<br>ENGL051 | MATH210      |
| MENG370 | Fluid Mechanics I                            | 3       |   | MATH375      |
| PHYS330 | Electromagnetic Fields and Waves I           | 3       | PHYS280 - PHYS250                                     |              |
| PHYS340 | Modern Physics                               | 3       | PHYS250   |              |
| PHYS350 | Physical Optics                              | 3       | PHYS250   |              |
| PHYS370 | Nuclear Physics                              | 3       | PHYS340   |              |
| PHYS390 | Astronomy                                    | 3       | PHYS280 - PHYS250 -<br>ENGL251                        |              |
| PHYS420 | Quantum Mechanics                            | 3       | PHYS360 - PHYS340                                     |              |
| PHYS430 | Thermal Physics I                            | 3       | PHYS340 - PHYS330                                     |              |