**The American University in Cairo**
**Department of Computer Science & Engineering**

# Five-Year Plan of Study - Fall 2020/Spring 2021
## Computer Engineering Major

*Updated October 2020*

## First Year

| Semester 1 | | | Crs. |
|---|---|---|---|
| CSCE | 106/1001 | Fundamentals of Computing I | 3 |
| ENGR | 101/1001 | Introduction to Engineering | 1 |
| PHYS | 111/1011 | Classical Mechanics, Sound and Heat | 3 |
| PHYS | 123L/1012 | General Physics Laboratory I | 1 |
| RHET | 110/1010 | Freshman Writing | 3 |
| CORE | 110/1010 | Freshman Seminar | 3 |
| SCI | 120/1020 | Scientific Thinking | 3 |
| | | | |
| | | | |
| **Total Credit Hours** | | | **17** |

| Semester 2 | | | Crs. |
|---|---|---|---|
| CSCE | 110/1101 | Fundamentals of Computing II | 3 |
| CSCE | 000/1102 | Fundamentals of Computing II Lab (1 cr.) | 1 |
| CHEM | 105/1005 | General Chemistry I | 3 |
| CHEM | 115L/1015 | General Chemistry Laboratory | 1 |
| PHYS | 112/1021 | Electricity and Magnetism | 3 |
| PHYS | 124L/1022 | General Physics Laboratory II | 1 |
| MACT | 132/1122 | Calculus II | 3 |
| RHET | 120/1020 | Research Writing | 3 |
| LALT | 101/1020 | Libraries & Learning Technologies | 0 |
| **Total Credit Hours** | | | **18** |

## Second Year

| Semester 3 | | | Crs. |
|---|---|---|---|
| CSCE | 321/2202 | Analysis & Design of Algorithms | 3 |
| CSCE | 000/2203 | Analysis & Design of Algorithms Lab | 1 |
| PHYS | 215/2211 | Introduction to Electronics | 3 |
| PHYS | 222L/2213 | Electronics Lab for Computer Scientists & Computer Engineers | 1 |
| MACT | 200/2131 | Discrete Mathematics | 3 |
| MACT | 231/2123 | Calculus III | 3 |
| PHIL | 220/2100 | Philosophical Thinking | 3 |
| **Total Credit Hours** | | | **17** |

| Semester 4 | | | Crs. |
|---|---|---|---|
| CSCE | 253/2501 | Fundamentals of Database Systems | 3 |
| CSCE | 230/2301 | Digital Design I | 3 |
| CSCE | 239L/2302 | Digital Design I Lab | 1 |
| CSCE | 332/3303 | Fundamental Microelectronics | 3 |
| ENGR | 115/1005 | Descriptive Geometry and Engineering Drawing | 2 |
| MACT | 240/2132 | Linear Algebra | 3 |
| XXXX | XXXX | Pathways 2: Cultural Explorations | 3 |
| **Total Credit Hours** | | | **18** |

## Third Year

| Semester 5 | | | Crs. |
|---|---|---|---|
| CSCE | 231/2303 | Computer Organization & Assembly Language Prog | 3 |
| CSCE | 341/3701 | Software Engineering | 3 |
| CSCE | 337/3304 | Digital Design II | 3 |
| MACT | 233/2141 | Differential Equations | 3 |
| ENGR | 212/2102 | Engineering Mechanics I (Statics) | 3 |
| XXXX | XXXX | Global Studies | 3 |
| | | | |
| **Total Credit Hours** | | | **18** |

| Semester 6 | | | Crs. |
|---|---|---|---|
| CSCE | 330/3301 | Computer Architecture | 3 |
| CSCE | 339L/3302 | Computer Architecture Lab | 1 |
| CSCE | 345/3401 | Operating Systems | 3 |
| CSCE | 000/3402 | Operating Systems Lab | 1 |
| CSCE | 363/3611 | Digital Signal Processing | 3 |
| MACT | 317/3224 | Probability and Statistics | 3 |
| XXXX | XXXX | Humanities/Social Sciences (Secondary Level) | 3 |
| **Total Credit Hours** | | | **17** |

## Fourth Year

| Semester 7 | | | Crs. |
|---|---|---|---|
| CSCE | 445/4411 | Fundamentals of Distributed Systems | 3 |
| CSCE | 435/3312 | Computer Networks | 3 |
| CSCE | 439L/3313 | Computer Networks Lab | 1 |
| CSCE | XXXX | Concentration Elective | 3 |
| ENGR | 214/2104 | Engineering Mechanics II (Dynamics) | 3 |
| XXXX | XXXX | Arab World Studies 1 | 3 |
| **Total Credit Hours** | | | **16** |

| Semester 8 | | | Crs. |
|---|---|---|---|
| CSCE | 432/4301 | Embedded Systems | 3 |
| CSCE | 438L/4302 | Embedded Systems Lab | 1 |
| CSCE | XXXX | Concentration Elective | 3 |
| ENGR | 313/3202 | Engineering Analysis and Computation I | 3 |
| MGMT | 307/3201 | Management Fundamentals | 3 |
| XXXX | XXXX | Arab World Studies 2 | 3 |
| **Total Credit Hours** | | | **16** |

## Fifth Year

| Semester 9 | | | Crs. |
|---|---|---|---|
| CSCE | 490/4950 | Industrial Training | 1 |
| CSCE | 491/4980 | Senior Project I (Core Capstone I) | 1 |
| CSCE | XXXX | Concentration Elective | 3 |
| CSCE | XXXX | Concentration Elective | 3 |
| ENGR | 345/3222 | Engineering Economy | 3 |
| ENGR | 364/3322 | Fundamentals of Thermofluids | 3 |
| **Total Credit Hours** | | | **14** |

| Semester 10 | | | Crs. |
|---|---|---|---|
| CSCE | 492/4981 | Senior Project II (Core Capstone I) | 2 |
| CSCE | XXXX | Concentration Elective | 3 |
| XXXX | XXXX | Core Capstone II | 3 |
| XXXX | XXXX | General Elective | 3 |
| | | | |
| | | | |
| **Total Credit Hours** | | | **11** |

**1) Major Requirements are according to Fall 2020/Spring 2021 Catalog Admission &/or Declaration.**

**2) Core Curriculum Requirements are according to Fall 2013 Admission and later.**