



## Bachelor's degree Plan of **Computer Engineering (CENG)**

### First Year

| Level 1 (18 Credits) |                          |     |     |     |              | Level 2 (16 Credits) |                                      |     |     |     |              |
|----------------------|--------------------------|-----|-----|-----|--------------|----------------------|--------------------------------------|-----|-----|-----|--------------|
| Code                 | Title                    | Crd | Lec | Lab | Co-requisite | Code                 | Title                                | Crd | Lec | Lab | Prerequisite |
| ENGL 100             | English Language         | 2   | 2   | 0   |              | MATH 102             | Calculus II                          | 4   | 4   | 0   | MATH 101     |
| AINT 115             | Introduction to AI       | 2   | 2   | 0   |              | ENGL 1005            | Intermediate English                 | 4   | 4   | 0   | ENGL 1004    |
| MATH 101             | Calculus I               | 4   | 4   | 0   |              | ENG 0023             | Engineering Drawings and Modelling   | 2   | 1   | 3   | ENG 0013     |
| PHYS 101             | General Physics I        | 4   | 3   | 3   | MATH 101     | CSCE 0213            | Critical Thinking and Study Skills   | 2   | 2   | 0   |              |
| ENGL 1004            | Pre-intermediate English | 4   | 4   | 0   | ENGL 100     | CSCE 0313            | Creativity and Innovation            | 2   | 2   | 0   |              |
| ENG 0013             | Engineering Principles   | 2   | 2   | 0   |              | CSCE 0323            | Interactive and Communication Skills | 2   | 2   | 0   |              |
| Total =              |                          | 18  | 17  | 3   |              | Total =              |                                      | 16  | 15  | 3   |              |

### Second Year

| Level 3 (15 Credits) |                        |     |     |     |              | Level 4 (15 Credits) |                         |     |     |     |              |
|----------------------|------------------------|-----|-----|-----|--------------|----------------------|-------------------------|-----|-----|-----|--------------|
| Code                 | Title                  | Crd | Lec | Lab | Prerequisite | Code                 | Title                   | Crd | Lec | Lab | Prerequisite |
| CSCE 101             | Computer Programming I | 4   | 2   | 4   |              | CSCE 102             | Computer Programming II | 4   | 2   | 4   | CSCE 101     |
| ENGL 109             | English for Computer   | 2   | 2   | 0   |              | CENG 231             | Electric Circuits       | 3   | 2   | 2   | PHYS 101     |
| CENG 121             | Digital Logic          | 4   | 3   | 2   | PHYS 101     | MATH 201             | Calculus III            | 3   | 3   | 0   | MATH 102     |
| CSCE 121             | Discrete Structures    | 3   | 3   | 0   | MATH 101     | CRCL 115             | University Life Skills  | 3   | 3   | 0   |              |
| ARB 100              | Arabic Language Skills | 2   | 2   | 0   |              | IC 111               | Islamic Culture         | 2   | 2   | 0   |              |
| Total =              |                        | 15  | 12  | 6   |              | Total =              |                         | 15  | 12  | 6   |              |





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### Third Year

| Level 5 (15 Credits) |                              |     |     |     |              | Level 6 (15 Credits) |                                    |     |     |     |                    |
|----------------------|------------------------------|-----|-----|-----|--------------|----------------------|------------------------------------|-----|-----|-----|--------------------|
| Code                 | Title                        | Crd | Lec | Lab | Prerequisite | Code                 | Title                              | Crd | Lec | Lab | Prerequisite       |
| CENG 232             | Computer Architecture        | 3   | 3   | 0   | CENG 121     | CENG 241             | Computer Organization              | 4   | 3   | 2   | CENG 121           |
| SENG 232             | Data Structures & Algorithms | 4   | 3   | 2   | CSCE 102     | CENG 242             | Electronic Circuits                | 4   | 3   | 2   | CENG 231           |
| CSCE 232             | Software Engineering         | 3   | 3   | 0   | CSCE 101     | CENG 243             | Data and Computer Communications   | 3   | 2   | 2   | CENG 232 & MATH102 |
| CSCE 233             | Probability & Statistics     | 3   | 2   | 2   | CSCE 121     | MATH 260             | Intro. to Diff. Eq. & Lin. Algebra | 3   | 3   | 0   | MATH 102           |
| EDUC 115             | Work Values and Ethics       | 2   | 2   | 0   |              | EDUC 125             | Entrepreneurship                   | 2   | 2   | 0   |                    |
| Total =              |                              | 15  | 13  | 4   |              | Total =              |                                    | 16  | 13  | 6   |                    |

### Fourth Year

| Level 7 (16 Credits) |                           |     |     |     |                    | Level 8 (18 Credits) |                               |     |     |     |              |
|----------------------|---------------------------|-----|-----|-----|--------------------|----------------------|-------------------------------|-----|-----|-----|--------------|
| Code                 | Title                     | Crd | Lec | Lab | Prerequisite       | Code                 | Title                         | Crd | Lec | Lab | Prerequisite |
| CENG 351             | Systems & Signal Analysis | 3   | 3   | 0   | CENG 242 & MATH260 | CENG 361             | Microcomputer System Design   | 3   | 2   | 2   | CENG 352     |
| CENG 352             | Microprocessors           | 3   | 2   | 2   | CENG 241           | CENG 362             | Embedded Systems              | 3   | 2   | 2   | CENG 352     |
| CENG 353             | Distributed Computing     | 2   | 2   | 0   | CENG 241           | CENG 363             | Computer and Network Security | 3   | 3   | 0   | CENG 354     |
| CENG 354             | Computer Networks         | 4   | 3   | 2   | CENG 243           | CENG 364             | VLSI Design                   | 3   | 3   | 0   | CENG 242     |
| CSCE 352             | Operating Systems         | 4   | 3   | 2   | CENG 241           | SENG 351             | Database Management Systems   | 4   | 3   | 2   | SENG 232     |
|                      |                           |     |     |     |                    | CENG 244             | Computer Engineering Seminar  | 1   | 1   | 0   | CENG 354     |
| Total =              |                           | 16  | 13  | 6   |                    | Total =              |                               | 17  | 14  | 6   |              |





Bachelor's

degree Plan of

## Computer Engineering (CENG)

| Summer Session |                 |     |     |     |                              |
|----------------|-----------------|-----|-----|-----|------------------------------|
| Code           | Title           | Crd | Lec | Lab | Prerequisite                 |
| CNEG 400       | Summer Training | 2   | 2   | 0   | CENG 354 & CENG 361 & 85 Crd |

| Fifth Year           |                               |     |     |     |        |                              |                       |                       |     |     |     |              |
|----------------------|-------------------------------|-----|-----|-----|--------|------------------------------|-----------------------|-----------------------|-----|-----|-----|--------------|
| Level 9 (12 Credits) |                               |     |     |     |        |                              | Level 10 (16 Credits) |                       |     |     |     |              |
| Code                 | Title                         | Crd | Lec | Lab | Others | Prerequisite                 | Code                  | Title                 | Crd | Lec | Lab | Prerequisite |
| CENG 401             | COOP Training                 | 8   | 6   | 0   | 4      | CENG 354 & CENG 361 & 85 Crd | CENG 480              | Graduation Project II | 4   | 1   | 6   | CENG 470     |
| CENG 470             | Graduation Project I (online) | 2   | 2   | 0   | 0      | CENG 354 & CENG 361 & 85 Crd | Elective              | CENG Elective I       | 3   | 3   | 0   |              |
|                      |                               |     |     |     |        |                              | Elective              | CENG Elective II      | 3   | 3   | 0   |              |
|                      |                               |     |     |     |        |                              | Elective              | CENG Elective III     | 3   | 2   | 2   |              |
|                      |                               |     |     |     |        |                              | Elective              | Free Course           | 3   | 3   | 0   |              |
| Total =              |                               | 10  | 8   | 0   | 4      |                              | Total =               |                       | 16  | 12  | 8   |              |

**Total Requirements (156 credit hours)**





## Bachelor's degree Plan of **Computer Engineering (CENG)**

### List of CENG Electives

| Code     | Title                                                      | Crd | Lec. | Lab | Prerequisite        |
|----------|------------------------------------------------------------|-----|------|-----|---------------------|
| CENG 490 | Special Topics in Computer Engineering                     | 3   | 3    | 0   | Department Approval |
| CENG 491 | Introduction to AI and ML for Computer Engineering         |     |      |     | CSCE233 & CENG361   |
| CENG 492 | Advanced Computer Architecture                             | 3   | 3    | 0   | CENG 361            |
| CENG 493 | ASIC and FPGA Design                                       | 3   | 2    | 2   | CENG 361 & CENG 364 |
| CENG 494 | IoT System Design and Applications                         | 3   | 2    | 2   | CENG 354 & CENG 362 |
| CENG 495 | Robotics                                                   | 3   | 2    | 2   | CENG361 & CENG 351  |
| CENG 496 | Parallel Computing                                         | 3   | 3    | 0   | CENG 353 & CENG 354 |
| CENG 497 | Cloud and Edge Systems                                     | 3   | 3    | 0   | CENG354             |
| CENG 498 | Introduction to Quantum Computing for Computer Engineering | 3   | 3    | 0   | CENG 351            |
| CENG 499 | Digital Control                                            | 3   | 3    | 0   | CENG 351            |

### List of Free Electives

| Code     | Title                        | Crd | Lec. | Lab | Prerequisite |
|----------|------------------------------|-----|------|-----|--------------|
| ECN 103  | Principles of Microeconomics | 3   | 3    | 0   |              |
| ECON 403 | Engineering Economics        | 3   | 3    | 0   |              |
| MGT 103  | Principles of Management     | 3   | 3    | 0   |              |
| MGT 212  | Legal Environment            | 3   | 3    | 0   |              |
| MKTB 103 | Principles of Marketing      | 3   | 3    | 0   |              |
| SCOL 101 | Principles of Sociology      | 3   | 3    | 0   |              |

