



## Computer Science Track

### First Level:

| Course Code        | Course Title                | Credit Hours | Prerequisite | Course Type |
|--------------------|-----------------------------|--------------|--------------|-------------|
| ENGL 101           | English Language –1         | 2            |              | Required    |
| COCS 100           | Computer skills             | 3            |              | Required    |
| COCS 111           | Introduction to Programming | 3            |              | Required    |
| MATH 101           | Calculus –1                 | 3            |              | Required    |
| PHYS 101           | General Physics –1          | 3            |              | Required    |
| STAT 101           | Probability and Statistics  | 3            |              | Required    |
| Total Credit Hours |                             |              | 17           |             |

### Second Level:

| Course Code        | Course Title                | Credit Hours | Prerequisite | Course Type |
|--------------------|-----------------------------|--------------|--------------|-------------|
| ENGL102            | English Language –2         | 2            | ENGL 101     | Required    |
| ISLM 100           | Islamic Culture –1          | 2            |              | Required    |
| COCS 121           | Computational Discrete Math | 3            | MATH 101     | Required    |
| COCS 122           | Object Oriented Programming | 4            | COCS 111     | Required    |
| COCS 123           | Introduction to Database    | 3            | COCS 111     | Required    |
| MATH 211           | Calculus –2                 | 3            | MATH 101     | Required    |
| Total Credit Hours |                             |              | 17           |             |

### Third Level:

| Course Code        | Course Title                           | Credit Hours | Prerequisite | Course Type |
|--------------------|----------------------------------------|--------------|--------------|-------------|
| ENGL 201           | Academic Writing                       | 2            | ENGL 102     | Required    |
| COCS 211           | Data Structures                        | 4            | COCS 122     | Required    |
| COCS 212           | Digital Logic Design                   | 3            | COCS 121     | Required    |
| MATH 221           | Linear Algebra                         | 3            | MATH 101     | Required    |
| COCS 213           | Computer Organization and Architecture | 3            | COCS 212     | Required    |
| COCS 214           | Computer Ethics                        | 2            |              | Required    |
| Total Credit Hours |                                        |              | 17           |             |



#### Fourth Level:

| Course Code        | Course Title                       | Credit Hours | Prerequisite | Course Type |
|--------------------|------------------------------------|--------------|--------------|-------------|
| COCS 221           | Visual Programming                 | 3            | COCS 122     | Required    |
| COCS 222           | Design and Analysis of Algorithms  | 3            | COCS 211     | Required    |
| COCS 223           | Principles of Software Engineering | 3            | COCS 122     | Required    |
| COCS 224           | Operating Systems                  | 3            | COCS 313     | Required    |
| COCS 226           | Human Computer Interaction         | 3            | COCS 122     | Required    |
| COCS 225           | Computer Networks                  | 3            | COCS 322     | Required    |
| Total Credit Hours |                                    |              | 18           |             |

#### Fifth Level:

| Course Code        | Course Title                         | Credit Hours | Prerequisite | Course Type |
|--------------------|--------------------------------------|--------------|--------------|-------------|
| XXXX               | Free Course –1                       | 3            |              | Required    |
| COCS 311           | Artificial Intelligence fundamentals | 3            | COCS 211     | Required    |
| COCS 312           | Web Development                      | 3            | COCS 122     | Required    |
| COCS 313           | Computer Graphics                    | 3            | COCS 221     | Required    |
| COCS 314           | Software project management          | 3            | COCS 311     | Required    |
| COCS 315           | Introduction to Machine Learning     | 3            | STAT 101     | Required    |
| Total Credit Hours |                                      |              | 18           |             |

#### Sixth Level:

| Course Code        | Course Title                      | Credit Hours | Prerequisite | Course Type |
|--------------------|-----------------------------------|--------------|--------------|-------------|
| COCS 321           | Simulation and Modelling          | 3            | COCS 311     | Required    |
| COCS 322           | Design and Principles of robotics | 3            | COCS 414     | Required    |
| COCS 323           | Theory of Computing               | 3            | COCS 311     | Required    |
| COCS 324           | Compiler Construction             | 3            | COCS 311     | Required    |
| Elec I             | Elective Course –1                | 3            |              | Elective    |
| Total Credit Hours |                                   |              | 15           |             |



### Seventh Level:

| Course Code        | Course Title                       | Credit Hours | Prerequisite | Course Type |
|--------------------|------------------------------------|--------------|--------------|-------------|
| XXXX               | Free Course –2                     | 3            |              | Required    |
| COCS 411           | Parallel and Distributed Computing | 3            | COCS 321     | Required    |
| COCS 412           | Cloud Computing                    | 3            | COCS 212     | Required    |
| COCS 413           | Mobile Application Development     | 3            | COCS 321     | Required    |
| Elec II            | Elective Course –2                 | 3            |              | Elective    |
| COCS 419           | Project –1                         | 2            |              | Required    |
| Total Credit Hours |                                    |              | 17           |             |

### Eighth Level:

| Course Code        | Course Title | Credit Hours | Prerequisite | Course Type |
|--------------------|--------------|--------------|--------------|-------------|
| COCS 429           | Project –2   | 3            | COCS 419     | Required    |
| COCS 428           | Internship   | 8            | COCY 419     | Required    |
| Total Credit Hours |              |              | 11           |             |

**Total Credit Hours: 130**

### List of elective courses

| Course Code | Course Title                        | Credit Hours | Prerequisite | Course Type |
|-------------|-------------------------------------|--------------|--------------|-------------|
| COCS 431    | Cybersecurity Fundamentals          | 3            | COCS 212     | Elective    |
| COCS 432    | Mixed Reality                       | 3            | COCS 414     | Elective    |
| COCS 433    | Data Mining                         | 3            | STAT 100     | Elective    |
| COCS 434    | Multi-agent Systems                 | 3            | COCS 416     | Elective    |
| COCS 435    | Advanced topics in Computer Science | 3            |              | Elective    |