# Department of Computer Science and Engineering

## a) Year-1 Semester-1

| Course Code | Course Title | Contact Hours/Week | | Credits | Prerequisite |
|---|---|---|---|---|---|
| | | Theory | Lab | | |
| 02321101 | Bangla Language and Literature | 3.0 | | 3.0 | |
| 02311103 | Developing Language Skills I | 3.0 | | 3.0 | |
| 05411101 | Calculus I | 3.0 | | 3.0 | |
| 05331101 | Physics I | 3.0 | | 3.0 | |
| 05331102 | Physics I Laboratory | | 3.0 | 1.0 | |
| 06111101 | Computer Fundamentals | 3.0 | | 3.0 | |
| 06111102 | Computer Fundamentals Laboratory | | 3.0 | 1.5 | |
| 06131103 | Discrete Mathematics | 3.0 | | 3.0 | |
| | Total | 18.0 | 6.0 | 20.5 | |
| | Total credits of semester-1 | 20.5 | | | |
| | Total contact hours per week | 18.0+6.0 = 24.0 | | | |
| | Total contact hours of semester-1 | 24 x 14 = 336.0 | | | |

## b) Year-1 Semester-2

| Course Code | Course Title | Contact Hours/Week | | Credits | Prerequisite |
|---|---|---|---|---|---|
| | | Theory | Lab | | |
| 02221205 | Emergence and History of Bangladesh | 3.0 | | 3.0 | |
| 02311207 | Developing Language Skills II | 3.0 | | 3.0 | |
| 05411203 | Calculus II | 3.0 | | 3.0 | 05411101 |
| 05331203 | Physic II | 3.0 | | 3.0 | 05331101 |
| 06131205 | Structured Programming | 3.0 | | 3.0 | 06111101 |
| 06131206 | Structured Programming Laboratory | | 3.0 | 1.5 | 06111102 |
| 07131201 | Electrical Circuits Analysis | 3.0 | | 3.0 | |
| 07131202 | Electrical Circuits Analysis Laboratory | | 3.0 | 1.5 | |
| | Total | 18.0 | 6.0 | 21.0 | |
| | Total credits of semester-2 | 21.0 | | | |
| | Total contact hours per week | 18.0+6.0 = 24.0 | | | |
| | Total contact hours of semester-2 | 24 x 14 = 336.0 | | | |

## c) Year-2 Semester-1

| Course Code | Course Title | Contact Hours/Week | | Credits | Prerequisite |
|---|---|---|---|---|---|
| | | **Theory** | **Lab** | | |
| 07142131 | Electronics I | 3.0 | | 3.0 | 07131201 |
| 07142132 | Electronics I Laboratory | | 3.0 | 1.5 | 07131202 |
| 05412105 | Differential Equation, Geometry and Complex Variables | 3.0 | | 3.0 | 05411203 |
| 07322110 | Engineering Drawing | | 3.0 | 1.5 | |
| 03142111 | Introduction to Sociology | 3.0 | | 3.0 | |
| 06132107 | Object Oriented Programming | 3.0 | | 3.0 | 06131205 |
| 06132108 | Object Oriented Programming Laboratory | | 3.0 | 1.5 | 06131206 |
| 06132109 | Data Structures | 3.0 | | 3.0 | 06131205 |
| 06132110 | Data Structures Laboratory | | 3.0 | 1.5 | 06131206 |
| | **Total** | 15.0 | 12.0 | 21.0 | |
| | **Total credits of semester-3** | **21.0** | | | |
| | **Total contact hours per week** | 15.0+12.0 = **27.0** | | | |
| | **Total contact hours of semester-3** | 27 x 14 = **378.0** | | | |

## d) Year-2 Semester-2

| Course Code | Course Title | Contact Hours/Week | | Credits | Prerequisite |
|---|---|---|---|---|---|
| | | **Theory** | **Lab** | | |
| 05412207 | Linear Algebra and Statistics | 3.0 | | 3.0 | 05412105 |
| 04112201 | Basic Accounting | 3.0 | | 2.0 | |
| 05312205 | Chemistry | 3.0 | | 3.0 | |
| 05312206 | Chemistry Laboratory | | 3.0 | 1.0 | |
| 07142207 | Digital Logic Design | 3.0 | | 3.0 | 07142131 |
| 07142208 | Digital Logic Design Laboratory | | 3.0 | 1.5 | 07142132 |
| 06132211 | Design and Analysis of Algorithm | 3.0 | | 3.0 | 06132109 |
| 06132212 | Design and Analysis of Algorithm Laboratory | | 3.0 | 1.5 | 06132110 |
| 07142213 | Computer Architecture and Organization | 3.0 | | 3.0 | |
| | **Total** | 18.0 | 9.0 | 21.0 | |
| | **Total credits of semester-4** | **21.0** | | | |
| | **Total contact hours per week** | 18.0+9.0 = **27.0** | | | |
| | **Total contact hours of semester-4** | 27 x 14 = **378.0** | | | |

## e) Year-3 Semester-1

| Course Code | Course Title | Contact Hours/Week | | Credits | Prerequisite |
|---|---|---|---|---|---|
| | | Theory | Lab | | |
| 07143113 | Data communication | 3.0 | | 3.0 | |
| 05413109 | Numerical Methods | 3.0 | | 3.0 | |
| 04133102 | Fundamentals of Business | 3.0 | | 3.0 | |
| 06133117 | Operating System | 3.0 | | 3.0 | 06132211 |
| 06133118 | Operating System Laboratory | | 3.0 | 1.5 | 06132212 |
| 07143119 | Microprocessor, Microcontroller and Assembly Language Programming | 3.0 | | 3.0 | 06131205 07142213 |
| 07143120 | Microprocessor, Microcontroller and Assembly Language Programming Laboratory | | 3.0 | 1.5 | 06131206 |
| | Total | 15.0 | 6.0 | 18.0 | |
| | Total credits of semester-5 | 18.0 | | | |
| | Total contact hours per week | 15.0+6.0 = 21.0 | | | |
| | Total contact hours of semester-5 | 21 x 14 = 294.0 | | | |

## f) Year-3 Semester-2

| Course Code | Course Title | Contact Hours/Week | | Credits | Prerequisite |
|---|---|---|---|---|---|
| | | Theory | Lab | | |
| 07143222 | Microcontroller and Interfacing Laboratory | | 3.0 | 1.0 | 07143120 |
| 06123223 | Computer Networks | 3.0 | | 3.0 | 07143113 |
| 06123224 | Computer Networks Laboratory | | 3.0 | 1.5 | |
| 06133225 | Theory of Computation | 3.0 | | 3.0 | 06131103 |
| 06123227 | Database Management Systems | 3.0 | | 3.0 | 06132211 |
| 06123228 | Database Management Systems Laboratory | | 3.0 | 1.5 | 06132212 |
| 06133229 | Software Engineering | 3.0 | | 3.0 | 06132107 06132211 |
| 06133230 | Software Engineering Laboratory | | 3.0 | 1.0 | 06132108 06132212 |
| 06883200 | Seminar | | 3.0 | 1.0 | |
| | Total | 12.0 | 15.0 | 18.0 | |
| | Total credits of semester-6 | 18.0 | | | |
| | Total contact hours per week | 12.0+15.0 = 27.0 | | | |
| | Total contact hours of semester-6 | 27 x 14 = 378.0 | | | |

## g) Year-4 Semester-1

| Course Code | Course Title | Contact Hours/Week | | Credits | Prerequisite |
|---|---|---|---|---|---|
| | | Theory | Lab | | |
| 06194133 | Artificial Intelligence | 3.0 | | 3.0 | 06132211 |
| 06194134 | Artificial Intelligence Laboratory | | 3.0 | 1.0 | 06132212 |
| ****415* | Option I | 3.0 | | 3.0 | |
| ****416* | Option II | 3.0 | | 3.0 | |
| ****416* | Option II Laboratory | | 3.0 | 1.0 | |
| ****416* | Option II | 3.0 | | 3.0 | |
| ****416* | Option II Laboratory | | 3.0 | 1.0 | |
| 06884100 | Thesis/Capstone Project | | 3.0 | 3.0 | |
| | **Total** | 12.0 | 12.0 | 18.0 | |
| | **Total credits of semester-7** | **18.0** | | | |
| | **Total contact hours per week** | 12.0+12.0 = **24.0** | | | |
| | **Total contact hours of semester-7** | 24 x 14 = **336.0** | | | |

## h) Year-4 Semester-2

| Course Code | Course Title | Contact Hours/Week | | Credits | Prerequisite |
|---|---|---|---|---|---|
| | | Theory | Lab | | |
| 02234213 | Engineering Ethics | 3.0 | | 3.0 | |
| 06124235 | Android and Web Programming | 3.0 | | 3.0 | 06132107 06123227 |
| 06124236 | Android and Web Programming Laboratory | | 3.0 | 1.5 | 06132108 06123228 |
| ****425* | Option III | 3.0 | | 3.0 | |
| ****426* | Option IV | 3.0 | | 3.0 | |
| ****426* | Option IV Laboratory | | 3.0 | 1.0 | |
| 06884100 | Thesis/Capstone Project | | 3.0 | 3.0 | |
| | **Total** | 12.0 | 9.0 | 17.5 | |
| | **Total credits of semester-8** | **17.5** | | | |
| | **Total contact hours per week** | 12.0+9.0 = **21.0** | | | |
| | **Total contact hours of semester-8** | 21 x 14 = **294.0** | | | |

### i) Elective Courses

#### i) Option I

| Course Code | Course Title | Contact Hours/Week | | Credits | Prerequisite |
|---|---|---|---|---|---|
| | | Theory | Lab | | |
| 06124151 | Information Security and Cryptography | 3.0 | | 3.0 | |
| 06134153 | Mathematical Analysis for Computer Science | 3.0 | | 3.0 | |
| 06194155 | Data Mining | 3.0 | | 3.0 | 06123227 |

#### ii) Option II

| Course Code | Course Title | Contact Hours/Week | | Credits | Prerequisite |
|---|---|---|---|---|---|
| | | Theory | Lab | | |
| 06134161 | Compiler Design | 3.0 | | 3.0 | 06133225 |
| 06134162 | Compiler Design Laboratory | | 3.0 | 1.0 | |
| 06134163 | Computer Graphics | 3.0 | | 3.0 | |
| 06134164 | Computer Graphics Laboratory | | 3.0 | 1.0 | |
| 06134165 | Distributed Systems | 3.0 | | 3.0 | 06123227 |
| 06134166 | Distributed Systems Laboratory | | 3.0 | 1.0 | 06123228 |
| 06134167 | Human Computer Interaction | 3.0 | | 3.0 | |
| 06134168 | Human Computer Interaction Laboratory | | 3.0 | 1.0 | |

#### iii) Option III

| Course Code | Course Title | Contact Hours/Week | | Credits | Prerequisite |
|---|---|---|---|---|---|
| | | Theory | Lab | | |
| 06124251 | Wireless Networks | 3.0 | | 3.0 | 06123223 |
| 06194253 | Bioinformatics | 3.0 | | 3.0 | 06194133 |
| 06134255 | Digital Image Processing | 3.0 | | 3.0 | |

#### iv) Option IV

| Course Code | Course Title | Contact Hours/Week | | Credits | Prerequisite |
|---|---|---|---|---|---|
| | | Theory | Lab | | |
| 06194261 | Machine Learning | 3.0 | | 3.0 | 06194133 |
| 06194262 | Machine Learning laboratory | 3.0 | | 1.0 | 06194134 |
| 07144263 | Digital Signal Processing | 3.0 | | 3.0 | |

| 07144264 | Digital Signal Processing Laboratory | 3.0 | | 1.0 | |
|---|---|---|---|---|---|