



## DEPARTAMENT OF COMPUTER SCIENCE AND ENGINEERING

## BS Computer Science and Engineering

## First Semester

## First Year

## Second Semester

| Course Code | Course Title                     | Prerequisites                                    | Cr |  | Course Code | Course Title         | Prerequisites                                                 | Cr |
|-------------|----------------------------------|--------------------------------------------------|----|--|-------------|----------------------|---------------------------------------------------------------|----|
| *MATE 3031  | Calculus I                       | MATE 3005 or MATE 3143 or MATE 3172 or MATE 3174 | 4  |  | MATE 3032   | Calculus II          | MATE 3031                                                     | 4  |
| QUIM 3131   | General Chemistry I              |                                                  | 3  |  | QUIM 3132   | General Chemistry II | QUIM 3131 and (QUIM 3133 or QUIM 3001)                        | 3  |
| QUIM3133    | Gen Chemistry Lab I              |                                                  | 1  |  | QUIM 3134   | Gen Chemistry Lab II | QUIM 3133 and (QUIM 3131 or QUIM 3001) QUIM 3132(corequisite) | 1  |
| **INGL 3--- | English First Year               |                                                  | 3  |  | **INGL 3--- | English First Year   |                                                               | 3  |
| **ESPA 3101 | Spanish I Basic                  |                                                  | 3  |  | **ESPA 3102 | Spanish I Basic II   | ESPA 3101                                                     | 3  |
| CIIC 3011   | Intro. to Computer Programming I |                                                  | 3  |  | CIIC 4010   | Advanced Programming | CIIC 3011 or INGE 3016                                        | 4  |
|             |                                  | Total Credits                                    | 17 |  |             |                      | Total Credits                                                 | 18 |

## First Semester

## Second Year (BS)

## Second Semester

| Course Code | Course Title             | Prerequisites                          | Cr |  | Course Code | Course Title                  | Prerequisites                                                      | Cr |
|-------------|--------------------------|----------------------------------------|----|--|-------------|-------------------------------|--------------------------------------------------------------------|----|
| MATE 3063   | Calculus III             | MATE 3032                              | 3  |  | CIIC 4020   | Data Structures               | (CIIC 4010 or ICOM4015) and (CIIC 3075 or ICOM 4075) and MATE 3031 | 4  |
| FISI 3171   | Physics I                | Mate 3031 or Mate 3144                 | 4  |  | FISI 3172   | Physics II                    | FISI 3171                                                          | 4  |
| FISI 3173   | Physics Lab I            | FISI 3171 (corequisite)                | 1  |  | FISI 3174   | Physics Lab II                | FISI 3173 FISI 3172- (corequisite)                                 | 1  |
| INGE 3011   | Engineering Graphics     |                                        | 2  |  | INEL 3105   | Electrical Systems Analysis I | MATE 3032 Coreq: FISI 3172 and MATE 3063                           | 3  |
| CIIC 3075   | Foundations of Computing | CIIC 3011 or INGE 3016 Coreq: MATE3031 | 3  |  | INEL 4115   | Electrical Measurements Lab   | INEL 3105 (corequisite)                                            | 1  |
| **INGL 3--- | English Second Year      |                                        | 3  |  | **INGL 3--- | English Second Year           |                                                                    | 3  |
|             |                          | Total Credits                          | 16 |  |             |                               | Total Credits                                                      | 16 |

## First Semester

## Third Year (BS)

## Second Semester

| Course Code | Course Title                              | Prerequisites                                       | Cr |  | Course Code | Course Title                           | Prerequisites                                        | Cr |
|-------------|-------------------------------------------|-----------------------------------------------------|----|--|-------------|----------------------------------------|------------------------------------------------------|----|
| INSO 4101   | Intro to Software Engineering             | CIIC 4020 or ICOM 4035                              | 3  |  | CIIC 4025   | Algorithm Design and Analysis          | CIIC 4020 or ICOM 4035                               | 3  |
| CIIC 3081   | Computer Archietcture I                   | INEL 3105 & (CIIC 4010 or ICOM 4015)                | 3  |  | CIIC 4082   | Computer Archietcture II               | CIIC 3081                                            | 3  |
| MATE 4145   | Lineal Algebra and Differential Equations | MATE 3063 and (CIIC 3011 or INGE 3016)              | 4  |  | INGE 3045   | Engineering Materials                  | (QUIM 3002 or QUIM 3132) and QUIM 3134 and FISI 3172 | 3  |
| INGE 3035   | Engineering Mechanics                     | MATE 3031 or MATE 3144 or MATE 3183 FISI3171(coreq) | 3  |  | ININ 4010   | Engineering Probability and Statistics | INGE 3016 and MATE 3032                              | 3  |
| ----        | Socio-Humanistic Elective                 |                                                     | 3  |  | ----        | Socio-Humanistic Elective              |                                                      | 3  |
|             |                                           | Total Credits                                       | 16 |  |             |                                        | Total Credits                                        | 15 |

## First Semester

## Fourth Year (BS)

## Second Semester



## DEPARTAMENT OF COMPUTER SCIENCE AND ENGINEERING

## BS Computer Science and Engineering

| Course Code | Course Title                         | Prerequisites                                         | Cr |  | Course Code            | Course Title                  | Prerequisites                                                | Cr |
|-------------|--------------------------------------|-------------------------------------------------------|----|--|------------------------|-------------------------------|--------------------------------------------------------------|----|
| CIIC 4050   | Operating Systems                    | (ICOM 4035 or CIIC 4020) and (CIIC 4082 or INEL 4206) | 4  |  | CIIC 4060              | Database Systems              | (ICOM 4035 or CIIC 4020)<br>Co-Req. (ICOM 5007 or CIIC 4050) | 3  |
| CIIC 4030   | Programming Languages                | CIIC 4020 or ICOM 4035                                | 3  |  | CIIC 4070              | Computer Networks and the WWW | ICOM 5007 or CIIC 4050                                       | 3  |
| CIIC 5045   | Formal Languages and Automata Theory | CIIC 4025 or ICOM 4038                                | 3  |  | CIIC 5xxx<br>INSO 5xxx | Technical Elective***         |                                                              | 3  |
| ININ 4015   | Engineering Economics                | MATE 3032                                             | 3  |  | INME 4045              | Thermodynamics                | FISI 3172 and QUIM 3002 or QUIM 3132 and QUIM 3134           | 3  |
| ----        | Socio-Humanistic Elective            |                                                       | 3  |  | ----                   | Socio-Humanistic Elective     |                                                              | 3  |
|             |                                      | Total Credits                                         | 16 |  |                        |                               | Total Credits                                                | 15 |

## First Semester

Fifth Year<sup>1</sup> (BS)

## Second Semester

| Course Code            | Course Title                | Prerequisites | Cr |  | Course Code            | Course Title                | Prerequisites | Cr |
|------------------------|-----------------------------|---------------|----|--|------------------------|-----------------------------|---------------|----|
| CIIC 5xxx              | CIIC Capstone               |               | 3  |  | CIIC 5xxx<br>INSO 5xxx | Technical Elective***       |               | 3  |
| CIIC 5xxx<br>INSO 5xxx | Technical Elective***       |               | 3  |  | INSO 5xxx<br>CIIC 5xxx | Technical Elective***       |               | 3  |
| -----                  | Free Elective               |               | 3  |  | -----                  | Free Elective               |               | 3  |
| -----                  | Free Elective               |               | 3  |  | -----                  | Free Elective               |               | 3  |
| EDFI -----             | Physical Education Elective |               | 1  |  | EDFI ----              | Physical Education Elective |               | 1  |
|                        |                             | Total Credits | 13 |  |                        |                             | Total Credits | 13 |

Total Credits BS: 155

## \*\*\* Approved Technical Electives

|           |                                     |           |                                                            |
|-----------|-------------------------------------|-----------|------------------------------------------------------------|
| INSO 4115 | Software Requirements               | CIIC 5018 | Cryptography and Network Security                          |
| CIIC 5019 | High Performance Computing          | CIIC 5015 | Artificial Intelligence                                    |
| INSO 5118 | Software Project Management         | CIIC 5017 | Operating Systems and Network Administration and Security  |
| INSO 5111 | Intro to Computer Human Interaction | CIIC 5029 | Compiler Design                                            |
| INSO 4115 | Software Engineering Requirements   | CIIC 4998 | Undergraduate Research in Computer Science and Engineering |
| INSO 4116 | Software Design                     | INSO 4998 | Undergraduate Research in Software Engineering             |
| INSO 4117 | Software Testing                    | CIIC 5995 | Selected Topics in Computer Science and Engineering        |
| CIIC 5110 | Bioinformatics Algorithms           | CIIC 5120 | Virtual Machines                                           |
| CIIC 5130 | Cloud Computing Infrastructures     | CIIC 5140 | Big Data Analytics                                         |