**Generic Study Plan for BSc. In Computer Engineering**

**Cohort fall 2019 and after - Total = 144 credit hours**

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| Year 1 - First Semester  | Year 1 - Second Semester  |
| **Course #.** | **Course Title** | **Pre-req.** | **Cr.** | **Course #.** | **Course Title** | **Pre-req.** | **Cr.**  |
| MATH105 | Calculus I |  | 3 | MATH110 | Calculus II | MATH105 | 3 |
| PHYS105 | General Physics I |  | 3 | CENG205 | Digital Design & Computer Org. |  | 3 |
| GEIT112 | Fourth Industrial Revolution |  | 3 | CENG202 | Discrete Mathematics | MATH105 | 3 |
| CSBP119 | Algorithms and Problem Solving |  | 3 | CSBP219 | Object-Oriented Programming | CSBP119 | 3 |
| ESPU1081 | Intro to Acad. English for IT |  | 3 | HSS105 | Emirates Studies |  | 3 |
| CSBP121 | Programming Lab I |  CSBP119 (co) | 1 | CSBP221 | Programming Lab II | CSBP121 ,CSBP219 (co) | 1 |
|  PHYS135 |  General Physics Lab I | Co PHYS105 | 1 |  |  |  |  |
|  | Semester Credit Hours | 17 |  | Semester Credit Hours | 16 |
| **Year 2 - First Semester**  | **Year 2 - Second Semester**  |
| **Course #.** | **Course Title** | **Pre-Req.** | **Cr.**  | **Course #.** | **Course Title** | **Pre-Req.** | **Cr.** |
| GESU121 | Sustainability |  | 3 | MATH 275 | Ordinary Differential Equation or Differential Equations for Eng. | MATH110 & MATH140 | 3 |
| CENG201 | Circuits Fundamentals | PHYS105 | 3 | CENG221 | Computer Architecture | CENG205 | 3 |
| PHYS110 | General Physics II | PHYS 105 | 3 | PHYS231 | Electronics Fundamentals | PHYS110 or PHYS1120 | 3 |
| PHYS140 | General Physics Lab II | PHYS135 & PHYS110 (Co) | 1 | CENG210 | Communication & NetworksFundamentals | CENG205 (co/pre)&PHYS105 | 3 |
| CENG231 | Circuits Lab | Pre/Co CENG201 | 1 | ISLM1103 | Islamic Culture  |  | 3 |
| CSBP319 | Data Structures | CSBP219 | 3 | BIOC100/ CHEM111 | Basic Bio. I or General Chem. I |  | 3 |
| MATH140 | Linear Algebra |  | 3 |  |  |  |  |
|  | Semester Credit Hours | 17 |  | Semester Credit Hours | 18 |
| **Year 3 - First Semester**  | **Year 3 - Second Semester**  |
| **Course #.** | **Course Title** | **Pre-Req.** | **Cr.**  | **Course #.** | **Course Title** | **Pre-Req.** | **Cr.**  |
| ELEC370 | Electronic Circuits | PHYS231 & CENG201 | 3 | CENG320 | Signals & Systems I | MATH 275 | 3 |
| ELEC375 | Electronic Circuits Lab | Pre/Co ELEC370 | 1 | CENG324 |  Digital System Design | CENG205 | 3 |
| CENG328 | Introduction to Embedded Systems  | CENG 221 | 3 | CENG325 |  Digital Design Lab  | Pre/Co CENG324 | 1 |
| CENG329 | Introduction to Embedded Systems Lab  | Pre/Co CENG328  | 1 | CSBP315 | Operating Systems Fundamentals  | CENG205 | 3 |
| ITBP301 | Security Principles and Practice | CENG210 | 3 | CENG xxx | Major Elective Lab \*\* |  | 1 |
| STAT210 | Probability and Statistics | MATH110 | 3 | CENG xxx | Major Elective 2\*\* |  | 3 |
| CENG xxx | Major Elective 1\*\* |  | 3 |  Elective |  Cultural Elective 1 |  | 3 |
|  | Semester Credit Hours | 17 |  | Semester Credit Hours | 17 |
| **Year 4 - First Semester**  | **Year 4 - Second Semester**  |
| **Course #.** | **Course Title** | **Pre-Req.** | **Cr.**  | **Course #.** | **Course Title** | **Pre-Req.** | **Cr.**  |
| ITBP418 | Entrepreneurship in IT | ITBP301  | 3 |  Elective |  Cultural Elective 2 |  | 3 |
| SWEB300 | Software Engineering Fundamentals  | CSBP219 | 3 |  | Free Elective 1 |  | 3 |
| ITBP480 | Senior Graduation Project I\* | STAT210 | 3 |  | Free Elective 2 |  | 3 |
| CENG xxx | Major Elective 3 \*\* |  | 3 | ITBP481 | Senior Graduation Project II | ITBP480 | 3 |
| CENG xxx | Major Elective 4\*\* |  | 3  | ITBP370 | Professional Responsibility in IT | ESPU1081 | 3 |
|  | Semester Credit Hours | 15 |  | Semester Credit Hours | 15 |
| **Year 5 - First Semester**  |  |
| ITBP495: Internship (12 credit hours)*(Students are not Allowed to register any additional courses during their internship without the approval of the College)* |

\*Students must have finished 94 Cr. Hr to register in ITBP480

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| Major electives Courses\*\* | Pre-req. | Major electives Courses\* | Pre-req. |
| CENG 513 Hardware Test &Fault Tolerance | CENG 324 |  CENG521 Hardware/Software Integration |  CENG324, CENG 328, SEWB300 |
| CENG529 Networking Lab | Co (CENG 530) |  CENG533 Advanced Network Services |  CENG 530 |
| CENG518 VLSI Design | ELEC 370  |  CENG580 Selected. Topics in Comp Eng. |  |
| CENG530 Computer Network Protocols | CENG 210 |  CENG532 Network Security or ISEC311 |  CENG 530, ITBP 301 |
| CENG531 Wireless Comm & Sensor Net | CENG 210 |  |  |

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| **Cultural Elective Courses** |
| **Social and Behavioral Sciences (3 Cr. Hrs. )** |
|   | AGRB 210 | Introduction to Agribusiness |
|   | ECON 110 | Principles of Economics |
|   | HSR 140 | Introduction to Society and Behavior  |
|   | HSR 150 | Introduction to Government, Policy, and Urban Studies  |
|   | PSY 100 | Introduction to Psychology  |
|   | GEO 200 | World Regional Geography |
|  | GHEP111 | Happiness and Wellbeing |
| **Humanities/Fine Art (3 Cr. Hrs. )** |
|   | ARCH 366 | History and Theory of Architecture |
|   | HSR  120 | Introduction to Heritage and Culture |
|   | HSR  130 | Introduction to Language and Communication |
|   | PHI101 | Introduction to Philosophy  |
|  | HIS 130 | Sheikh Zayed; History, Found.& Dev. |
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