**Generic Study Plan for BSc. in Computer Science & Software Eng.**

**Cohort fall 2019 and after - Total = 130 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.**  |
| ESPU1081 | ESP1 |  | 3 | CENG202 | Discrete Mathematics | MATH105 | 3 |
| MATH105 | Calculus I  | - | 3 | MATH110 | Calculus II  | MATH105 | 3 |
| CSBP119 | Algorithms and Prob. Solving  | - | 3 | CSBP219  | Object-Oriented Prog. | CSBP119 | 3 |
| PHYS105 | General Physics I | - | 3 | CENG205 | Digital Design & Com Org. |  | 3 |
| GEIT112 | Fourth Industrial Revolution  |  | 3 | CSBP221 | Programming Lab II | CSBP219(co) | 1 |
| CSBP121 | Programming Lab I | CSEB119 (Co) | 1 | Math140 | Linear Algebra |  | 3 |
|  |  |  |  |  |  |  |  |
|  | Semester Credit Hours | 16 |  | Semester Credit Hours | 16 |
| **Year 2 - First Semester**  | **Year 2 - Second Semester**  |
| **Course #.** | **Course Title** | **Pre-Req.** | **Cr.**  | **Course #.** | **Course Title** | **Pre-Req.** | **Cr.** |
| Elective | Cultural Elective 1 |  | 3 | CSBP340 | Database Systems | CSBP319 | 3 |
| BIOC100 or CHEM111 | Basic Bio. I or Gen. Chemistry |  | 3 | ITBP370 | Prof. Res. In IT | ESPU1081 | 3 |
| CENG210 | Comm. & Net. Fund | CEN205(co/pre) & PHYS105 | 3 | STAT210 | Probability and Statistics | MATH110 | 3 |
| CSBP315 | Operating Systems Fundamentals | CENG205 | 3 | SWEB300 | Software Eng. Fundamentals | CSBP219 | 3 |
| CSBP319 | Data Structures | CSBP219  | 3 | ITBP301  | Sec. Principles and Practice | CENG210 | 3 |
|  |  |  |  |  |  |  |  |
|  | Semester Credit Hours | 15 |  | Semester Credit Hours | 15 |
| **Year 3 - First Semester**  | **Year 3 - Second Semester**  |
| **Course #.** | **Course Title** | **Pre-Req.** | **Cr.**  | **Course #.** | **Course Title** | **Pre-Req.** | **Cr.**  |
| Elective | Cultural Elective 2 |  | 3 | CSBP461 | Internet Computing | CSBP340 | 3 |
| CSBP316 | Human Computer Interaction | CSBP219 | 3 | CSBP400 | Modeling and Simulation | STAT210 | 3 |
| HSS105 | Emirates Society |   | 3 | CSBP301 | Artificial Intelligence | CSBP319 | 3 |
| SWEB450 | Analysis of Algorithms | CSBP319 | 3 | ITBP321 | Web App. Development Lab | Co/Pre CSBP340 | 1 |
| ITBP418 | Entrepreneurship in IT | ITBP301  | 3 | GESU121 | Sustainability |  | 3 |
|  |  |  |  |  |  |  |  |
|  | Semester Credit Hours | 15 |  | Semester Credit Hours | 13 |
| **Year 4 - First Semester**  | **Year 4 - Second Semester**  |
| **Course #.** | **Course Title** | **Pre-Req.** | **Cr.**  | **Course #.** | **Course Title** | **Pre-Req.** | **Cr.**  |
| CSBP411 | Machine Learning | CSBP301 | 3 | CSBPxxx | Major Elective 2\*\* |   | 3 |
| CSBP421 | Smart Computer Graphics | CSBP319 | 3 | CSBPxxx | Major elective 3\*\* |   | 3 |
| ISLM100 | Islamic Culture |   | 3 | CSBPxxx | Major Elective 4\*\* | - | 3 |
| ITBP480 | Senior Graduation Project I | STAT210 | 3 | PHYS135 | Gen. Physics Lab I |  | 1 |
| CSBPxxx | Major elective 1\*\* |  | 3 | ITBP481 | Senior Graduation Project II | ITBP480 | 3 |
|  | Semester Credit Hours | 15 |  | Semester Credit Hours | 13 |
| **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 80 CrHr to register in ITBP480

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| Major electives Courses\*\* | Pre-req. | Major electives Courses\* | Pre-req. |
| CSBP320 Data Mining | STAT210 | **CSBP487 Computer Animation and Visualization** | CSBP319 |
| CSBP483 Mobile Web. | CSBP340 | **SWEB451 Game Development** | CSBP319 |
| CSBP499 Special Topics in CS | CSBP301 &STAT210 | **CSBP476 Robotics and Intelligent Systems** | CSBP301 |
| CSBP431 Bioinformatics | SWEB450 | **CSBP491 Computational Intel. Data Management** | CSBP319 |

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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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| **Minor in AI** |
| **Required Courses** |
| **Course**  | **Title** | **Prerequisite** |
| CSBP301 | Artificial Intelligence | CSBP319 |
| **Elective Courses (9 Hrs. )** |
| CSBP411 | Machine Learning | CSBP301 |
| CSBP476 | Robotics and Intelligent Systems  | CSBP301 |
| CSBP441 | Applied Computer Vision | CSBP301 |
| CSBP491 | Computational Intelligence for Data Management | CSBP319 |
| CSBP499 | Special Topics in Computer Science | CSBP319 |