# **Semester-wise road map**

**BS (IOT): 4-year Program, 8 Semesters, 41 Courses, 135 Credit Hours**

## **First Year (1st Semester)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Cr. Hrs** | **Pre-requisite** |
| CC1021 | Programming Fundamentals | 3 |  |
| CC1021L | Programming Fundamentals Lab | 1 |  |
|  | Supporting Elective I (Basic Electronics) | 2 |  |
|  | Supporting Elective I (Basic Electronics Lab) | 1 |  |
|  | Supporting Elective II (Calculus and Analytical Geometry) | 3 |  |
| EN111 | English Grammar & Comprehension | 3 |  |
| IT1091 | Introduction to Information and Communication Technologies | 2 |  |
| IT1091L | Introduction to Information and Communication Technologies Lab | 1 |  |
|  | **Semester Credit Hours** | **16** |  |

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## **First Year (2nd Semester)**

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| **Course Code** | **Course Title** | **Cr. Hrs** | **Pre-requisite** |
| CC2031 | Digital Logic Design | 3 |  |
| CC2031L | Digital Logic Design Lab | 1 |  |
| CC1041 | Discrete Structure | 3 |  |
| AI312 | Signal and Systems | 2 |  |
| AI312L | Signal and Systems LAB | 1 |  |
| CC1022 | Object Oriented Programming | 3 | CC1021, CC1021L |
| CC1022L | Object Oriented Programming Lab | 1 | CC1021, CC1021L |
| POL101 | Pakistan Studies | 3 |  |
|  | **Semester Credit Hours** | **17** |  |

## **2nd Year (3rd semester)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Cr. Hrs** | **Pre-requisite** |
| CC2042 | Data Structure & Algorithms | 3 | CC1022, CC1022L |
| CC2042L | Data Structure & Algorithms Lab | 1 | CC1022, CC1022L |
| MA150 | Probability and Statistics  | 3 |  |
| ISL101 |  Islamic Studies | 3 |  |
| IOT2077 | Communication Theory | 2 |  |
| IOT2077L | Communication Theory Lab | 1 |  |
| MA210 | Linear Algebra | 3 |  |
|  | **Credit Hours** | **16** |  |

## **2nd Year (4th Semester)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Cr. Hrs** | **Pre-requisite** |
| IOT2077 | Wireless Communication Networks | (2+1) |  |
| CC2101 | Software Engineering | 3 |  |
| IOT4176 | Internet of Things | 3 |  |
| IOT4176L | Internet of Things Lab | 1 |  |
| CC2141 | Database Systems | 3 | CC2042, CC2042L |
| CC2141L | Database Systems Lab | 1 | CC2042, CC2042L |
| CC3071 | Computer and Communication Network  | 3 |  |
| CC3071L | Computer and Communication Network  | 1 |  |
|  | **Semester Credit Hours** | **18** |  |

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## **3rd Year (5th Semester)**

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| --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Cr. Hrs** | **Pre-requisite** |
|  | University Elective 1 | 3 |  |
| AI3159 | Introduction to Data Analytics | 3 |  |
|  | Supporting Elective (Artificial Intelligence) | 3 |  |
|  | IOT Elective 1 | 3 |  |
| CC3121 | Information Security | 3 |  |
| CC3011CC3011L | Operating System | (3+1) |  |
|  | **Semester Credit Hours** | **19** |  |

## **3rd Year (6th Semester)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Cr. Hrs** | **Pre-requisite** |
| EN125 | Composition and Communication | 3 | EN 111 |
|  | IOT Elective II | 3 |  |
| IOT3128 | Internet of Things Security essentials (IOTSE) | (2+1) |  |
|  | IOT Elective-III  | 3 |  |
| IOT3244 | Internet of Robotics | 3 |  |
| IOT3244L | Internet of Robotics | 1 |  |
|  | **Semester Credit Hours** | **16** |  |

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## **4th Year (7th semester)**

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| --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Cr. Hrs** | **Pre-requisite** |
| CC4181 | Final Year Project-I | 3 |  |
| EN220 | Communication and Presentation Skills | 3 |  |
| HU4092 | Professional Practices | 3 |  |
|  | IOT Elective IV  | 3 |  |
| CS4173 | Cloud Computing | 3 |  |
|  | **Semester Credit Hours** | **15** |  |

## 4th Year (8th Semester)

|  |  |  |  |
| --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Cr. Hrs** | **Pre-requisite** |
| CC4182 | Final Year Project-II | 3 | CC4181 |
|  | University Elective II | 3 |  |
|  | University Elective III | 3 |  |
|  | University Elective IV | 3 |  |
|  | IOT Elective V | 3 |  |
|  | **Semester Credit Hours** | **15** |  |