

# UNDERGRADUATE PROGRAMS

## BS SOFTWARE ENGINEERING (BSSE)

Our undergraduate program is designed to equip the students with technical knowledge of the fundamentals of computing, their mathematical foundations and applications. A sequence of courses is designed so that theoretical study is combined with practical on ground exercises. We believe that teaching should not be confined to the class room walls, rather it should be activity driven combining lectures, assigning real life projects and imparting soft skills. This experience of beyond class room education prepares the students with computing skills, ability to solve problems, and to face the challenges in team work environment.

**Duration** 8 Semesters (4 Years)

### Eligibility:

The minimum requirements for admission in a Bachelor degree program in Software Engineering, is at least 50% or above marks in Intermediate (HSSC) examination with Mathematics or equivalent qualification.

The candidates for BS Software Engineering with at least 50% or above marks in Intermediate with Pre-

Medical background (without Mathematics) will be required to pass deficiency courses of Mathematics of 6 credit hours within one year of their regular studies.

### Admission Criteria:

Academic Qualification 60%

Test / Interview 40%

**Class Timings:** (Monday – Friday)

**Scholarships:** Talent & need based scholarship (upto 100% on tuition fee)

**Degree Completion:** For award of BS degree, a student must have:

- Passed courses totaling at least 134 credit hours, including six credit hours of Final Year Project.
- Obtained a CGPA of 2.0 or more.

### Study Plan for BS (Software Engineering)

4-Year Program (8 Regular Semesters of 18 weeks each)



## Study Plan for BS (Software Engineering)

| Semester 1<br>16 Credit Hrs.                                  | Semester 2<br>17 Credit Hrs.               | Semester 3<br>18 Credit Hrs.                      | Semester 4<br>18 Credit Hrs.                                      | Semester 5<br>18 Credit Hrs.           | Semester 6<br>17 Credit Hrs.              | Semester 7<br>17 Credit Hrs.        | Semester 8<br>11 Credit Hrs. |
|---------------------------------------------------------------|--------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------|----------------------------------------|-------------------------------------------|-------------------------------------|------------------------------|
| Programming Fundamentals (3+1)                                | Object Oriented Programming (3+1)          | Data Structures (3+1)                             | Analysis of Algorithms (3)                                        | Operating Systems (2+1)                | Computer Networks (2+1)                   | Final Year Project-I (3)            | Final Year Project-II (3)    |
| Discrete Structures (3)                                       | Digital Logic Design (2+1)                 | Computer Organization and Assembly Language (2+1) | Database Systems (3+1)                                            | Software Design & Architecture (3)     | Artificial Intelligence (2+1)             | Information Security (2+1)          | Professional Practices (2)   |
| Functional English (3)                                        | Ideology and Constitution of Pakistan (2)  | Multivariable Calculus (3)                        | Software Requirement Engineering (2+1)                            | Parallel & Distributed Computing (2+1) | Software Quality Engineering (2+1)        | Software Project Management (2+1)   | Domain Elective 6            |
| Applied Physics (2+1)                                         | Calculus and Analytic Geometry (3)         | Technical & Business Writing (3)                  | Linear Algebra (3)                                                | Probability & Statistics (3)           | Software Construction & Development (2+1) | Introduction to Hadith & Seerah (2) | Domain Elective 7            |
| Application of Information & Communication Technologies (2+1) | Expository Writing (3)                     | Software Engineering (3)                          | Domain Elective 1                                                 | Domain Elective 2                      | Domain Elective 4                         | Domain Elective 5                   | Social Sciences (2)          |
|                                                               | Islamic Studies (2)                        | Introduction to Basic Teachings of Quran (2)      | Civics and Community Engagement (Family Life in 21st Century) (2) | Domain Elective 3                      | Entrepreneurship (2)                      | Elective Supporting Courses (3)     |                              |
|                                                               |                                            |                                                   |                                                                   |                                        |                                           |                                     |                              |
| Computing Core<br>46 Credit Hrs.                              | Mathematics & Supporting<br>12 Credit Hrs. | General Education Requirement<br>34 Credit Hrs.   | Elective Supporting Courses<br>3 Credit Hrs.                      | Domain Core<br>18 Credit Hrs.          | Domain Elective<br>21 Credit Hrs.         |                                     | 134                          |

