

BSc (Software Engineering)

Introduction

Software Engineering is the discipline of creating high-quality software environment in a systematic, controlled and efficient manner, while maintaining it affordably. It involves the application of engineering concepts, techniques, and methods to develop the software systems. A software engineering program develops professionals who have a mastery of software development principles, theory, practice, and process. The goal of Software Engineering is to use the science and technology already available to create products and tools for use. Software Engineering derives its essence from computer science as other engineering disciplines do from natural or life sciences, with an emphasis on issues of process, design, measurement, analysis and verification providing a strong foundation in engineering principles and practices as applied to software development. The curriculum for the bachelor degree program is designed, keeping in view the recommendations of the Higher Education Commission (HEC) and the Pakistan Engineering Council (PEC), to cover all essentially needed areas, e.g., Software Engineering, Computer Sciences and Software Quality and Testing while paying special attention towards Mathematics, Physics and Communication Skills.

The Program curriculum ensures breadth across allied disciplines and supporting subjects; and depth in most areas of the software engineering body of knowledge. The department puts forth the following educational objectives for the students entering the Software Engineering program;

Vision

Department of Software Engineering aspires to be Nationally top-ranking center of excellence that serves society through continual innovation in education, research, creativity, and entrepreneurship.

Mission

To produce graduates with a broader knowledge and skills in the field of Software Engineering who can impact society in a transformative way – regionally, nationally, and globally.

Definitions and Keywords used in this Document.

- **Pre Requisites**

It is the subject or course that is essential to complete before taking the required subject or course.

- **Credits Hours**

A lecture of one hour duration per week per semester for a subject countable towards a student's Cumulative Grade Point Average will be considered as one credit hour. However, in case of seminars, tutorials and laboratory work, one credit hour may require three contact hours depending upon the nature of subject.

- **Contact Hours**

A lecture of one credit hour duration per week is equal to one contact hour per week.

- **Lab Contact Hours**

A lab of one credit hour duration per week is equal to Three contact hours (3 contact hours) per week.

- **Cumulative**

Sum of contact hours for a lectures and its essential lab work for particular subject or course.

- **Subject or Course**

A "Subject" or "Course" means a topic or a subject related to an academic program, which is to be studied by a student for a fixed number of hours during a semester. Each subject will carry a specific Course code and number.

- **Prefixes and Course Codes**

- **CS** Computer Sciences Courses
- **SE** Software Engineering Courses
- **MA** Mathematics Courses
- **HU** Humanities