



**University of Petra**

**Faculty of Information Technology**

# BSc of Software Engineering



2023 - 2022



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Software Engineering is the most in-demand specialization in the information technology industry. Software Engineering is concerned with managing information technology projects and developing and designing high-quality software. The program aims to:

- **Provide students with up-to-date educational programs in the field of Software Engineering and information technology.**
- **Equip students with the necessary knowledge and skills to become leaders and innovators in the field of Software Engineering.**
- **Prepare graduates to be successful and professional in their field, and to conduct themselves in a professional and ethical manner to provide services that support the community and the region.**
- **Prepare graduates to adapt to new technologies and to remain at the leading edge of Software Engineering practice, and to be able to pursue advanced education and research opportunities.**

**To be distinguished in software engineering field according to international standards and to educate engineers who can create effective and innovative solutions by using modern technologies in the Software Engineering field.**

## ***Our Mission***

The mission of the Software Engineering Department is to supply local and international IT industries with highly qualified competitive graduates by equipping them with the necessary knowledge and skills to become leaders and innovators in the field of Software Engineering. And establish a vibrant scientific environment respecting diversity, equality and inclusion.



## Our Educational objectives

**Professional Career:** The ability to assume successful professional career in the Software Engineering Industry relying on the broad understanding of the fundamental concepts, tools and methodologies of software development and maintenance.

**Lifelong Learning and Graduate Studies:** Be able to adapt to new technologies and to remain at the leading edge of Software Engineering practice, and to be able to pursue postgraduate studies in modern research areas.

**Leadership and Community Service:** Be able to use effective communication skills, innovative thinking, and technical background to conduct themselves in a professional and ethical manner to provide services that support the community and the region.

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. The ability to apply processes that support Software development and process improvement in organization [SE].
7. Apply knowledge of computing and understanding of wide range of theoretical basics, principles, concepts, and advanced topics of information technology appropriate to the program's student outcomes and to the discipline.

Year 1- First Semester	CH
Calculus (1)	3
Information Technology Fundamentals	3
National Education	3
Introduction to Web Design	*3
Life skills	2

Year 1- Second Semester	CH
Discrete Mathematics (1)	3
General Elective (1)	3
Communication Skills in English	3
Programming Language (1)	3*
Introduction to Data Communication & Networking	3

Year 2- First Semester	CH
Principles of Statistics	3
Communication Skills in Arabic (1)	3
Communication Skills for IT	3
Programming Language (2)	3*
Computer Logic Design	3*
Entrepreneurship and innovation	2

Year 2- Second Semester	CH
Visual Programming	3
Numerical Analysis (1)	3
Database (1)	3*
Data Structures	3*
Information & Network Security	3
Leadership and social responsibility	2

Year 3- First Semester	CH
Internet Programming	3*
Algorithms Design & Analysis	3
Computer Organization & Architecture	3
Database Administration	3
Systems Analysis & Design	3
Department Elective (1)	3

Year 3- Second Semester	CH
Software Engineering	3
Software Testing	3
IT Project Management	3
Advanced Software Engineering	3
Department Elective (2)	3
General Elective (2)	3

Year 4- First Semester	CH
Operating Systems	3
Field Training	3
Software Development & Documentation	3
Requirements Engineering and Specification	3
Graduation Project 1	3
Military Science	3

Year 4- Second Semester	CH
Professional Ethics for Information Technology	1
Quality Management & Process Improvement	3
Graduation Project 2	3
Software Architecture & Design	3
Department Elective (3)	3
Community Service	0
Free Requirement	3

“\*”: The course contains a laboratory of two working hours per week. Course’s Laboratory is scheduled as zero credit hours and should be registered simultaneously with the theoretical course.