

The Department of Software Engineering

The Software Engineering Department at Philadelphia University was founded in 2000 as one of the first Software Engineering Departments (SE) offering honor degree in Software Engineering in Jordan. This newly established undergraduate program addresses the growing need for professionals in this sophisticated field.

The strategies of the Department are set to meet the demands of a rapidly evolving world, and to meet the needs of a developing job market. The curriculum is regularly reviewed to maintain quality of teaching and relevant content. The teaching program is fully modularized and a semester-based teaching structure is followed by the Department.



Why Software Engineering?

Graduates of this program will work with the engineering of software with special attention devoted to large and critical systems. Recent surveys and data from the Bureau of Labor Statistics indicate that the need for trained software engineers will increase significantly during the next decade. This program addresses both analytic and practical skills required by students to develop robust and efficient computer software systems for manufacturing, industrial, medical, government, and business applications. They will have individual and team hands-on experience with timely, cost-effective and state-of-the-art processes, methods and tools. This curriculum aims to prepare students for careers in software engineering, software project management, and software development and integration. Software engineering comprises the core principles consistent in software construction and maintenance. This mainly covers the fundamental software processes and life-cycles, mathematical foundations of software engineering, requirements analysis, software engineering methodologies and standard notations, principles of software architecture and reuse, software quality frameworks and validation, software development, and maintenance environments and tools. This program will provide graduates with the depth and breadth necessary for satisfying possible future software engineering accreditation or certification requirements.

Goals of the Software Engineering Program

1. Enable students to understand a broad knowledge in information technology and in the fundamentals of software components and systems, and apply the scientific and engineering methodology in the analysis, design, implementation and evaluation of information and real-time software systems.
2. Prepare students for successful and productive careers as software systems engineers in both industry and government.
3. Prepare students to use their IT knowledge in addressing the society in efficiency and professionalism.

The Program Outcome

1. Apply the formal methods and techniques in the analysis, design, development, and testing of software components and systems.
2. Efficiently utilize software tools such as requirement analysis, modeling and development, software configuration management, and quality assurance control throughout software projects lifecycle.
3. Assess business, do feasibility studies, time and resources management, risk analysis and project evaluation.
4. Lead groups of developers and manage projects in orderly manner.
5. Identify the needs of society for IT in business and industry and explore the opportunities and resources for implementation.
6. Re-engineer existing organization's software systems and business processes for more efficient and economical utilization of available resources.
7. Work within groups in multi-discipline projects and communicate in a professional and skillful manner.
8. Appreciate ethical issues inherent to software engineering practices.



Teaching

The Department turns out highly qualified graduates with sound understanding of Software Engineering. The state-of-the-art teaching framework we have including the internationally distinguished staff, the most modern curriculum, top-niche labs and the ever evolving and dynamic environment all contributes to an outstanding teaching outcome for our software engineering program. Software Engineering curriculum is highly based on teaching with tools using Rational and other applications.



Staff and Students

There are 8 full-time members of academic staff in the Department, in addition to the administrative and technical support staff. Although teaching is our first concern at software engineering department, our staff is internationally distinguished for their research activities and many of them have publications that are cited all over the world. We could be one of the few Departments in Jordan that have several faculty members in the rank of full professor and associate professors.

Staff members are mainly recruited from Jordan and other countries. The part-time staff varies with the number of students and the needs of the Department. The Department applies a rigorous and effective recruitment procedure (each applicant should qualify for an interview and give a presentation). The number of students are approximately 269. Accordingly, we are one of the largest Software Engineering Departments in the country.

The first class of software engineers in Jordan graduated from our department in the year 2002/2003. We have two active programs; the day program and the evening program. Academically both programs are identical.

Research

The Department has achieved a consistently high score in international research assessment and believes that there is a strong correlation between excellence in research and excellence in teaching. In the fields of IT, it is impossible to offer a leading edge of technology curriculum without continuous research that has open links with latest advances in the world. The relatively high research output of the staff is a good indication of the Departments experience. One of the most important merits of the software Engineering Department is the large amount and the high quality of research conducted by the faculty members and, in some cases, with the aid of the students through their graduation projects. Research covers several aspects of theory and application, with strong emphasis on formal methods, intelligent evolving software, object-oriented software engineering, reliability of software using neural networks, fuzzy logic, multi media, parallel processing, and many other subjects. The Department provides research grants and financial support to publish research work, enabling staff members to attend local and international scientific conferences and seminars. Five per cent of the total annual budget of the University is allocated for funding research by staff and scientific conferences. The University offers an annual subsidy for research projects which includes expenses for references, research requirements and travel expenses.