In 1985, the first independent Department of Computer Engineering in the country was established at Sharif University of Technology. Initial undergraduate programs were “Software” and “Hardware” majors. Corresponding masters programs were initiated in 1987. The portfolio was later expanded by the PhD program in 1997. MSc in Artificial Intelligence, BSc and MSc in Information Technology were added in 1998 and 2002 respectively. In 2016, the department unified all its undergraduate majors under BSc in Computer Engineering. The department boasts several Gold Medals in regional ACM ICPC programming contests, RoboCup Robots Soccer World Championships, and establishing national initiatives such as FPGA design contests and AI Challenge among others. The department is famous for its large-scale industrial projects in addition to excellence in research.

**Undergraduate Course Structure**

<table>
<thead>
<tr>
<th>1st year</th>
<th>2nd year</th>
<th>3rd year</th>
<th>4th year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math. (I), (II)</td>
<td>Data Structures and Algorithms</td>
<td>Operating Systems</td>
<td>Data and Network Security</td>
</tr>
<tr>
<td>Physics (I), (II)</td>
<td>Engineering Math. or Linear Algebra</td>
<td>Compiler Design</td>
<td>Operating Systems LAB</td>
</tr>
<tr>
<td>Discrete Structures</td>
<td>Technical Presentation</td>
<td>Digital System Design</td>
<td>BSc project</td>
</tr>
<tr>
<td>English Language</td>
<td>Digital Design LAB</td>
<td>Digital System Design LAB</td>
<td>Internship</td>
</tr>
<tr>
<td>Digital Design</td>
<td>Fundamentals of Electrical and Electronic circuits</td>
<td>Database Systems</td>
<td>Four courses from Group I</td>
</tr>
<tr>
<td>General Workshop</td>
<td>Computer Architecture</td>
<td>Computer Networks</td>
<td>Four courses from Group II</td>
</tr>
<tr>
<td>Computer Workshop</td>
<td>Probability &amp; Statistics</td>
<td>Computer Networks LAB</td>
<td></td>
</tr>
<tr>
<td>Physics (II) LAB</td>
<td>Advanced Programming</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>Computer Programming</td>
<td>English Language for Computer Engineers</td>
<td>Computer Architecture LAB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diff. Equations</td>
<td>System Design and Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Computer Structure and Language</td>
<td>Three courses from Group I</td>
<td></td>
</tr>
</tbody>
</table>

---

Sharif University of Technology
Group I: Advanced and Specialist Courses


Group II: Elective Courses


Graduate Programs

M.Sc.
• Software Engineering
• Computer Architecture
• Artificial Intelligence and Robotics
• Computer Networks
• Secure Computing
• Algorithms and Computation
• Bioinformatics

Ph.D.
• Computer Engineering

Graduate Research Fields and Facilities

To facilitate in-depth practical study of different aspects of computer engineering, several educational laboratories are devoted to providing hands-on laboratory experience to undergraduate and graduate students. A number of these laboratories are listed below:

• Algorithms and Combinatorics
• Architectural Support for Emerging Technologies
• Bioinformatics
• Circuit and VLSI Design
• Cloud and Green Computing
• Computer Vision, Graphics, and Visualization
• Database Systems
• Dependability and Fault-Tolerant Systems
• Distributed and Pervasive Computing
• Electronic Design Automation and HW/SW Co-design
• Embedded and Real-time Systems
• Energy and Environment-Aware Systems
• Hardware Security
• High Performance Computing and Parallel Processing
• Human-Computer Interaction (HCI)
• Image and Video Processing
• Information Retrieval
• Low-Power Design
• Machine Learning
• Memory Systems
• Micro-Architecture and Multicore Processors
• Natural Language Processing (NLP)
• NoC, SoC, and Interconnection Networks
• Programming Languages and Compilers
• Reconfigurable Computing
• Security, Privacy and Cryptography
• Smart Buildings (Cyber Physical Systems)
• Speech and Audio Processing
• Storage, SSD, NVMS, and I/O systems
• Systems and Networking

Career Opportunities

Graduates of the department are capable of identifying and analyzing
the present day computer systems around the world, so that they can come up with strategies to better deploy, maintain, troubleshoot, upgrade, and improve the efficiency of systems of this kind. They are equipped with the necessary knowledge and tools to propose innovative methods to improve the existing solutions for new challenges. The graduates of the department are highly employable, and perhaps more importantly, have co-founded some of the most successful startups of the country.