



**University of Tehran**  
**School of Electrical and Computer Engineering**

<b>Course:</b>	<b>8101991 – Fundamentals of Network Security</b>		
<b>Course type:</b>	Elective/non-Elective	IT* and CE	Credit: 3
<b>Level:</b>	Undergraduate		
<b>Co-requisite(s):</b>			
<b>Prerequisite(s):</b>	Computer Networks		
<b>Prerequisite by topic:</b>			
<b>Textbook(s):</b>	[1] “Network Security Essentials: Applications and Standards”, William Stallings, 6th ed., Pearson, 2017		
<b>Coordinator:</b>	Mohammad Sayad Haghighi		
<b>Goals:</b>	Learning the fundamentals of cryptography Learning the security protocols used in computer networks Learning how security protocols are broken and hacked		
<b>Outcome:</b>	Upon successful completion of the course, students will be able <ol style="list-style-type: none"> <li>1. Do basic encryption/decryptions</li> <li>2. Design secure protocols</li> <li>3. Analyze security of protocols</li> <li>4. Use existing standards to secure the computer networks</li> </ol>		
<b>Topics:</b>	1- Fundamentals of Cryptography 2- Fundamentals of Computer Networks 3- Key Management 4- Authentication 5- Internet Security <ul style="list-style-type: none"> <li>- Web</li> <li>- Firewall</li> <li>- Email</li> <li>- IDS</li> <li>- VPN / IPSec</li> <li>- DNS Security</li> </ul> 6- Wireless Security 7- Access Control 8- Malwares and Attacks		

<b>Computer usage:</b>											
<b>Assignments:</b>	3 series + 1 quiz										
<b>Projects:</b>	1 short research project										
<b>Grading:</b>	<table> <tr> <td>Assignments and Quiz:</td> <td>15%</td> </tr> <tr> <td>Research Project</td> <td>5%</td> </tr> <tr> <td>Class Attendance</td> <td>5%</td> </tr> <tr> <td>Midterm exams:</td> <td>25%</td> </tr> <tr> <td>Final exam:</td> <td>50%</td> </tr> </table>	Assignments and Quiz:	15%	Research Project	5%	Class Attendance	5%	Midterm exams:	25%	Final exam:	50%
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<b>Further readings:</b>	<p>[1] “Cyptography &amp; Network Security: principles and practice”, William Stallings, 5th ed., Pearson, 2011.</p> <p>[2] “Cyptography &amp; Network Security”, B. Forouzan, McGraw-Hill, 2008.</p>										
<b>Prepared by:</b>	Mohammad Sayad Haghighi										
<b>Date:</b>	1st of Aug. 2017										

\*EE: Electrical Engineering CE: Computer Engineering IT: Information Technology