

	Topic	#lec	outline	reading and homework
1	Introduction and overview: threats and challenges	1	Security trends; history of hacking; some examples: phishing, buffer overflows, Code injection; network spoofing, mobile phones, and more	Chapter 1 and 2 from SE2; pick a tools from sectools.org and prepare a 5 minute talk for next lecture (preferably an open source tool); if you have time <a href="https://youtu.be/V6_kmFCEzZM">https://youtu.be/V6_kmFCEzZM</a> ; <a href="http://www.theguardian.com/world/2013/jun/08/nsa-prism-server-collection-facebook-google">www.theguardian.com/world/2013/jun/08/nsa-prism-server-collection-facebook-google</a> ; <a href="http://en.wikipedia.org/wiki/2013_mass_surveillance_disclosures">en.wikipedia.org/wiki/2013_mass_surveillance_disclosures</a> ;
2	Cryptography and cryptographic protocols	2	Protocols, cryptography and access control. Closely follows outline of SE2 chapters	Chapters 3, 4, and 5 from SE2; <a href="http://www.tml.tkk.fi/Opinnot/Tik-110.501/199">http://www.tml.tkk.fi/Opinnot/Tik-110.501/199</a> ; ; <a href="http://wwwhome.cs.utwente.nl/~sape/sse/ban.pdf">http://wwwhome.cs.utwente.nl/~sape/sse/ban.pdf</a> ; ; <a href="http://www.cse.msu.edu/~cse914/F02/.../BAN/BANLogic2">www.cse.msu.edu/~cse914/F02/.../BAN/BANLogic2</a> ; ; work on proof example tbd;
3	Secure design principles	1	Based on: Saltzer, J.H.; Schroeder, M.D., "The protection of information in computer systems," Proceedings of the IEEE , vol.63, no.9, pp.1278,1308, Sept. 1975 Smith, R.E., "A Contemporary Look at Saltzer and Schroeder's 1975 Design Principles," Security & Privacy, IEEE , vol.10, no.6, pp.20,25, Nov.-Dec. 2012 See also: <a href="http://www.cryptosmith.com/book/export/html/365">http://www.cryptosmith.com/book/export/html/365</a>	Parts of Chapters 6 and 18 from SE2
4	Threat modeling and it's applications in secure system design	1		TBD
5	Network and Telecom Security	3		Chapters 6 and 21 of SE2
6	Security economics and game theory	1		Chapter 7 from SE2
7	Trust and trust management	1		TBD
8	Assessment and assurance	1		Chapter 26 of SE2
	Case studies:	3		TBD
	Secure cloud systems and storage			
	Network security, massive attacks, and epidemics			
	Mobile and IoT security			
	Industrial systems security			
	Privacy and social networks			