

Syllabus Version 5

This syllabus is *tentative* and will undoubtedly continue to change as the quarter progresses. If there is a topic you're interested in but not shown, please let me know; I may well change things to cover it. All readings are from the text unless otherwise indicated.

- Week 1:** **Dates:** Sep 22, Sep 24
Lec 1–2 **Topics:** Introduction, principles of secure design, threats and policies
 Reading: *text*, §1, 14
- Week 2:** **Dates:** Sep 27, Sep 29, Oct 1
Lec 3–5 **Topics:** Basic policy models: Bell-LaPadula, Biba, Clark-Wilson
 Reading: *text*, §5.2.1–5.2.2, 5.3, 6.2, 6.4
- Week 3:** **Dates:** Oct 4, Oct 6, Oct 8
Lec 6–8 **Topics:** Symmetric and public key cryptography
 Reading: *text*, §10
 Due: Oct 6: homework 1; Oct 8: project selection
- Week 4:** **Dates:** Oct 11, Oct 13, Oct 15
Lec 9–11 **Topics:** Protocols, authentication
 Reading: *text*, §12.3, 12.5, 13
- Week 5:** **Dates:** Oct 18, Oct 20, Oct 22
Lec 12–14 **Topics:** Access control mechanisms, confinement problem, reference monitor
 Reading: *text*, §16.1–16.3, 18.1–18.2, 20.1.2.2
 Due: Oct 22: homework 2
- Week 6:** **Dates:** Oct 25, Oct 27, Oct 29 **[No class on Oct 29]**
Lec 15–16 **Topics:** Confinement problem, vulnerabilities
 Reading: *text*, §18.2, 24.3–24.4
- Week 7:** **Dates:** Nov 1, Nov 3, Nov 5
Lec 17–19 **Topics:** Penetration testing, malware
 Reading: *text*, §24.1–24.2, 23.1–23.6.1
 Due: Nov 5: progress report
- Week 8:** **Dates:** Nov 8, Nov 10, Nov 12
Lec 20–22 **Topics:** Malware, network security, firewalls, intrusion detection; Spectre
 Reading: *text*, §23.6.2–23.7, 23.9, 26.1–26.3, 28.1, 28.3
 Due: Nov 8: homework 3
- Week 9:** **Dates:** Nov 15, Nov 17, Nov 19
Lec 23–25 **Topics:** Malware, entropy, information flow
 Reading: §23.9.7, C, 17.1, 17.3–17.6
- Week 10:** **Dates:** Nov 22, Nov 24, Nov 26 **[Nov 26 is Thanksgiving (a university holiday)]**
Lec 26–27 **Topics:** Identity
 Reading: §15
 Due: Nov 22: homework 4
- Week 11:** **Dates:** Nov 30, Dec 1, Dec 3 **[Dec 3 is the last class]**
Lec 28–30 **Topics:** Anonymity, onion routing, elections and e-voting
 Reading: papers
 Due: Dec 3: homework 5
- Dec 7:** **Due:** Completed project due at 3:00pm