Syllabus

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**: Mar 30, Apr 1, 3
Topics: Reference monitor, access control matrix, safety question, take-grant model, SPM
Reading: *text*, §1, 2, 3–3.4, 20.1.2.2; papers [TL13, Z+05]

Week 2: **Dates**: Apr 6, 8, 10
Topics: Expressive power of models, comparing models, security policies
Reading: *text*, §3.4–3.7, 4; paper [Bi96]
Due: Apr 10: homework 1

Week 3: **Dates**: Apr 13, 15, 17
Topics: Confidentiality policies, Bell-LaPadula Model, Tranquility, System Z, integrity models, Biba, Clark-Wilson
Reading: *text*, §5, 6.1–6.2, 6.4, A; paper [Sa93]
Due: Apr 17: project selection

Week 4: **Dates**: Apr 20, 22, 24
Topics: Trust models, availability models, hybrid models, Chinese Wall model, CISS model, ORCON
Reading: *text*, §6.5, 7, 8.1–8.3; papers [A+10,J+11,LO10]
Due: Apr 24: homework 2

Week 5: **Dates**: Apr 27, 29, May 1
Topics: RBAC, break-the-glass policies, traducement, basic policy composition, noninterference
Reading: *text*, §8.4–8.5, 9.1–9.2; papers [E+03,KR02,WB04]

Week 6: **Dates**: May 4, 6, 8
Topics: Noninterference, unwinding theorem, nondeducibility, restrictiveness
Reading: *text*, §7.3–7.4, 8; papers [D+11, WB04]
Due: May 8: homework 3

Week 7: **Dates**: May 11, 13, 15
Topics: Assurance overview, assurance in building systems, assurance in design
Reading: *text*, §9; paper [B+07,D+06]
Due: May 11: project progress report

Week 8: **Dates**: May 18, 20, 22
Topics: Entropy, information flow
Reading: *text*, §17, C; paper [B+07,SA06]
Due: May 22: homework 4

Week 9: **Dates**: May 25, 27, 29 **[May 25 is a University holiday (Memorial Day)]**
Topics: Principles of secure design, confinement problem, isolation
Reading: §14, 18–18.2; papers [E+03,S+06,KR02]

Week 10: **Dates**: Jun 1, 3
Topics: Covert channel analysis, malware
Reading: §18.3, 23.8
Due: Jun 4: homework 5

Jun 8: **Due**: Completed project due at 5:30pm

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[Bi96] M. Bishop, "Conspiracy and Information Flow in the Take-Grant Protection Model," *Journal of Computer Security* **4**(4) pp. 331–359 (1996).
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[LO10] G. Loukas and G. Öke, "Protection Against Denial of Service Attacks: A Survey," *The Computer Journal* **53**(7) pp. 1020–1037 (2010).
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