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: Jan 10, 12
- Topics: Reference monitor, access control matrix, safety question, take-grant model, SPM
- Reading: text, §2, 3–3.4, 20.1.2.2; papers [TL13, Z+05]

Week 2:
- Dates: Jan 17, Jan 19
- Topics: Expressive power of models, comparing models, security policies
- Reading: text, §3.4–3.7, 4; paper [Bi96]

Week 3:
- Dates: Jan 24, Jan 26
- Topics: Confidentiality policies, Bell-LaPadula Model
- Reading: text, §5.1–5.2, A; paper [Sa93]
- Due: Jan 24: homework 1; Jan 26: project selection

Week 4:
- Dates: Jan 31, Feb 2
- Topics: Tranquility, System Z, assurance overview, assurance in building systems, assurance in design
- Reading: text, §5.3–5.6, 19, 20–20.2; papers [D+06, Mi79]

Week 5:
- Dates: Feb 7, Feb 9 [No class on Feb 9]
- Topics: Assurance in implementation, integrity models, Biba, Clark-Wilson, trust models, availability models
- Reading: text, §20.2–20.4, 6 (except 6.2), 7–7.2; papers [J+11, LO10]
- Due: Feb 7: homework 2

Week 6:
- Dates: Feb 14, Feb 16
- Topics: Availability models, hybrid models, Chinese Wall model, CISS model, ORCON, RBAC, Traducement
- Reading: text, §7.3–7.4, 8; papers [A+10, E+03, WB04]
- Due: Feb 14: project progress report

Week 7:
- Dates: Feb 21, Feb 23
- Topics: Basic policy composition, noninterference, unwinding theorem, nondeducibility, restrictiveness
- Reading: text, §9; paper [B+07]
- Due: Feb 21: homework 3

Week 8:
- Dates: Feb 28, Mar 2
- Topics: Entropy, information flow
- Reading: text, §17, C; paper [SA06]

Week 9:
- Dates: Mar 7, Mar 9
- Topics: Principles of secure design, confinement problem, isolation
- Reading: §14, 18–18.2; papers [S+06, KR02]

Week 10:
- Dates: Mar 14, Mar 16 [Mar 16 is last class]
- Topics: Covert channel analysis, malware
- Reading: §18.3, 23.8; paper [D+11]
- Due: Mar 14: homework 4

Mar 24: Due: Completed project due at 10:00am

References


