

**Revised Schedule** (Subject to change over the semester. The reading assignments should be completed by the date on which they appear.)

1	Tues 1/28. <i>Part I: Entropy and Information</i> Carnot and Heat Engines. Background: [F93] Chap 3.	Thurs 1/30. <i>Formulations of the 2nd Law.</i> [F93] Chap 4.
2	2/4. <i>Thermodynamic Entropy.</i> [F93] Chap 5.	2/6. <i>Thermodynamic Entropy, cont.</i> hw1 due.
3	2/11. <i>Maxwell's Demon.</i> [EN98] pp. 435-464.	2/13. <i>Maxwell's Demon, cont.</i>
4	2/18. <i>Boltzmann Entropy.</i> [G01].	2/20. <i>Boltzmann Entropy, cont.</i> hw2 due.
5	2/25. <i>Shannon Information.</i> [T04].	2/27. <i>Demons and Information.</i> [EN99] pp. 1-20.
6	3/3. <i>Thermodynamics of Computation.</i> [B01].	3/5. <i>Part II: Computation and Spacetime</i> Turing Machines. [DM18]. hw3 due.
7	3/10. <i>Turing Machines, cont.</i>	3/12. Midterm
8	3/17. <i>Spring Break</i>	3/19. <i>Spring Break</i>
9	3/24. <i>Classical Spacetimes.</i> Paper 1 due.	3/26. <i>Relativistic Spacetimes.</i> hw4 due.
10	3/31. <i>Malament-Hogarth Spacetimes.</i> [EN93].	4/2. <i>Turing Machines in M-H Spacetimes.</i> [H94].
11	4/7. <i>Part III. Quantum Information</i> Quantum Mechanics: Motivation.	4/9. <i>Quantum Mechanics: Formalism.</i> [RP00] pp. 1-16. hw5 due.
12	4/14. <i>Qubits and Cryptography</i> [T08] pp. 1-13.	4/16. <i>Dense Coding and Teleportation</i> [T08] pp. 13-20; [RP00] pp. 17-19.
13	4/21. <i>Quantum Computation.</i> [T08] pp. 20-22; [RP00] pp. 19-23.	4/23. <i>Part IV: Info-Theoretic Physics</i> Physics from Quantum Info. [T08] pp. 38-45; [B04]. hw6 due.
14	4/28. <i>Physics from Quantum Information, cont.</i>	4/30. <i>Physics from Fisher Information.</i> [Fr99].
15	5/5. <i>Physics from Fisher Information, cont.</i>	5/7. <i>Overflow/Review.</i> Paper 2 due. hw7 due.
16	Final (date to be announced by Registrar)	