Syllabus Math 109 Winter 2004

The page numbers given are from the text and indicate where to find the related material therein.

1. $\wedge$ (and), $\vee$ (or), $\neg$ (not), $\rightarrow$ (implies or conditional), $\leftrightarrow$ (if and only if or biconditional) pp. 1-7.
2. Truth tables pp.3-5.
4. Logical expressions and equivalence. Here our usage is that two expressions $A$ and $B$ are equivalent if $A \leftrightarrow B$ is always true (i.e. a tautology) pp. 9-17.
5. Proof by contrapositive or by contradiction pp.24-33.
6. Basic set theory $\in$ (element of), $\cup$ (union), $\cap$ (intersection), $\subseteq$ or $\subset$ (subset), $\complement$ (complement) pp.41-53.
10. Relations and equivalence relations pp. 103-108, 116-117
11. Partitions and equivalence classes pp.122-127
15. Cardinality pp.211-214 and notes on web.
17. Combinations and arrangements pp. 185-188.
18. Binomial theorem and inclusion exclusion pp. 194-200
19. Pigeon hole principle pp.191-193