

DEPARTMENT OF MATHEMATICS
SYLLABUS

Course # & Name: Math 108, Introduction to Abstract
Mathematics

Recommended Text(s) & Price: "A Transition to Advanced
Mathematics" by Smith, Eggen,
and St. Andre, about \$92

Prepared by: J. Milton and E. Silvia UPC Approval Date: Spring,
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Lecture(s)	Sections	Comments/Topics
1 - 6	1.1 - 1.7, 7.1	logic and proofs - lighter on the initial material, emphasis on proof techniques, use material from 7.1 for examples of different proof types
7 - 11	2.1 - 2.5	sets and induction - emphasis on mathematical induction and equivalent principles
12 - 14	3.1 - 3.3	equivalence relations and partitions
15 - 19	4.1 - 4.4	functions - emphasis on onto and 1-1 functions and induced set functions
20 - 23	5.1 - 5.3	cardinality - do in full detail up through Theorem 5.21 and lightly afterward in section 5.3.

24	5.4 and 5.5	order of cardinals, comparability - emphasis on section 5.4 but omit proof of Cantor-Schroeder-Bernstein Theorem and do 5.5 lightly.
25-27	7.1 and 7.2	ordered fields, the Heine-Borel Theorem - finish 7.1 and emphasize 7.2

Additional Notes:

This is a total of 27, which leaves 3 for exams, introduction, etc., in quarters in which there are 30 lectures. This syllabus is constructed with the use of the Tuesday class as a discussion section. If Tuesdays are used for lecture the number of lectures on the topics above must be expanded proportionately. Additional information for instructors is available in the Department office.