MATH 245 OUTLINE
A TRANSITION TO ADVANCED MATHEMATICS
TEXT: A Transition to Advanced Mathematics, 6th Ed. Smith/Eggen/St. Andrew

Approved: FALL 2005   **Effective: SUMMER 2006**

MATERIAL TO BE COVERED	SECTIONS FROM TEXT	TIME LINE
Propositions and connectives, conditionals and biconditionals, quantifiers, mathematical proofs, proves involving quantifiers.	1.1 - 1.7	7 Hours
Notations of set theory, set operations, DeMorgan's Laws, induction.	2.1 - 2.5	7 Hours
Cartesian product, relations, equivalence relations, partitions.	3.1 - 3.4	8.5 Hours
Functions, onto functions, one-to-one functions, induced set functions, sequences.	4.1 - 4.5	8.5 Hours
Equivalent sets, finite sets, countable sets, uncountable sets, Schroder-Bernstein Theorem, The Axiom of Choice, The Zorn's Lemma.	5.1 - 5.5	13 Hours
Properties of real numbers, completeness of real numbers, the Heine-Borel Theorem, the Bolzano-Weierstrass Theorem.	7.1 - 7.3	3 Hours

The above outline allows for one week of review and exams (not counting holidays).

NOTES:
   At least 80% of the exam questions should test the capability of the student's to construct proofs.

** See reverse side for important Department Policy**

Submitted by: Kojima