Course Objective:

We will examine the systems of logic called propositional logic and (first order) predicate logic. We will emphasize applying these systems to English arguments. We will cover truth table techniques, formal proofs (direct, indirect, and conditional), and strategies for translating English statements into a formal language.

Course requirements:

1. Course grade is determined primarily by mid-term and final exams, each worth about 50% of the grade. The mid-term will be given on Friday of the 5th week (April 7, 2000). The final will be given at the regularly scheduled time (no earlier). The final for Section 1 (9 a.m.) is Wednesday, May 17, 1999, at 7:45 a.m., and for Section 2 (10 a.m.) it is Tuesday, May 16 at 5:15 p.m.

2. There will be five or six quizzes. Quiz average will have minimal impact on the course grade. Quizzes are intended to give you an indication of how well you are mastering the material.

3. There will be regular homework assignments which are to be turned in. Homework will not be graded, but a record of completion will be kept. Your homework record will be used in borderline cases. Ample opportunity to inquire about homework will be given in class.

4. Regular class attendance is expected.

Sequence of readings and topics:

Week 1: Basic concepts (validity, soundness, etc.); the formal language (Chap 1)
Week 2: Logical connectives; truth tables; truth functions (Chap 2, sections 1, 2)
Week 3: Truth tables and validity; short cut truth table technique (Chap 2, sec 3, Chap 3, sections 3, 8)
Week 4: Statement types; statement forms; argument forms; substitution instances; deduction systems; proofs; rules of inference (Chap 2, sections 3, 4; Chap 3, section 1)
Week 5: Replacement rules; proof strategies; common subproofs (Chap 3, section 2)
Week 6: Conditional and indirect proofs; proofs of tautologies (Chap 3, sections 5, 4, 7, 6)
Week 7: Singular statements; quantifiers; singly general statements, categorical statements; squares of opposition (Chap 4, section 1)
Week 8: Preliminary quantifier rules; proofs with quantifiers; invalidity with quantifiers (Chap 4, sections 2,3)
Week 9: Multiply general statements; final quantifier rules (Chap 4, sections 4,5)
Week 10: Relations; properties of relations; beyond predicate logic (Chap 5, sections 1,2,3,5)

*Americans with Disabilities Act*

If you have a disability that could affect your performance in this class or that requires an accommodation under the Americans with Disabilities Act, please see me as soon as possible so that we can make appropriate arrangements. The Affirmative Action Office has asked that you be made aware of the following:

Michigan Technological University complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disability Act of 1990 (ADA). If you have a disability and need a reasonable accommodation for equal access to education or services at MTU, please call Dr. Gloria Melton, Associate Dean for Students (487-2212). For other concerns about discrimination, you may contact your advisor, department head, or the Affirmative Action Office (487-3310).