Instructor: Filix Maisch  
e-mail: maischf@math.oregonstate.edu  
phone: 541-737-7127 (I never check voicemail.)  
Meetings: MWF 4 - 4:50 PM  (and a 50-min. recitation on Tue)  
Room: KIDD 364  
office: BEXL 429  
Off. hrs: MWF 9 - 9:50 AM (and by appt.)  
Web: people.oregonstate.edu/~maischf/  

Enforced Prerequisites: Math 112 with a C- or better ... or ... an ALEKS math placement test score of 75% ... or ... a math placement test score of 33 ... or ... instructor permission.

Attendance: Regular attendance to lecture and recitation is expected.

Honor Code: Students are expected to be familiar with Oregon State University’s Student Conduct Code. Please review this statement at the following web link:  
http://studentlife.oregonstate.edu/studentconduct/university-policies

Accommodations: Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term. Students who believe they are eligible for accommodations should contact DAS immediately at 737-4098.

Course Description: This course is a survey of elementary logic and set theory, functions, direct proof techniques, contradiction and contraposition, mathematical induction and recursion, elementary combinatorics, basic graph theory and minimal spanning trees.

Schedule: See the course web page for a tentative term schedule.

Evaluation: Your grade is determined by recitation activities, homework checks (to occur in recitation), unannounced in-class true-false discussion quizzes, two evening midterms, and a final. Your final performance, scaled from 160 to 80, can replace the worst of your two midterms. Here is the point breakdown:

- Homework Checks ...... 40 (Top 8 of 9 homework checks worth 5 points each.)  
  -Lowest one dropped
- Recitation Activities .. 120 (Top 6 of 8 activities worth 20 points each.)  
  -Lowest two dropped
- T/F Quizzes .................. 30 (Top three of four true-false quizzes worth 10 points each.)
- Midterm 1 ................. 80 (8 : 30 - 9 : 50 PM, Tuesday, Feb. 3rd, Location: TBA)
- Midterm 2 ................. 80 (8 : 30 - 9 : 50 PM, Tuesday, Feb. 24th, Location: TBA)
- Final ......................... 160 (4 - 5 : 50 PM, Tuesday, March 17th. Location: TBA)

Grades will not be harder than:

I do not use blackboard/canvas. At the end of this syllabus you have a page on which you can record and track your scores.
**Resources:** The *Math Learning Center* is in Kidder 108H and is a great place to drop in for help. It is open from 9 AM to 4 PM, Monday through Friday, from the second week onward. I volunteer there for an hour on Fridays at 2 PM. Treat this as an additional office hour.

**Homework Checks:** Homework is assigned, and you are expected to do it, but it is not collected. On the course web page there is a list of suggested homework exercises from the text corresponding to weekly recitation homework checks (starting in the second week’s recitation). A homework check will be a piece of paper with 1 or 2 problems drawn directly from these homework exercises. You can use your already completed homework and copy over your solution or you can re-work the problem. You cannot use the book nor the internet (your phone, etc.). Each homework check is worth 5 points and the lowest one is dropped. Homework check make-ups are at the discretion of your recitation instructor (late penalty may apply).

**Tests:** Note that no calculators of any kind are allowed on either midterm nor the final. You are allowed both sides of one 3x5 inch handwritten note card for each midterm and both sides of one 4x6 inch handwritten note card for the final. Scaled by 0.5, your final exam can replace your worst midterm if your performance on the final is better than your worst midterm. Tests cannot be taken early/late unless there are exceptional circumstances.

**Note:** For each Tuesday evening midterm a lecture must be canceled (dates TBA).

**T/F Quizzes:** No calculators nor resources (notes, internet, etc.) are allowed on the unannounced in-class true-false discussion quizzes, but you are intended to share your reasoning with fellow students and discuss the questions out loud! These quizzes can occur anytime during class, so try not to be late to lecture. No make-ups are allowed unless you can prove you missed class for an OSU-based obligation. The lowest score is dropped.

**Recitation Activities:** No recitation will occur during the first week. Starting with the second week’s recitation, a series of 8 activities worth 20 points each will be due in the following week’s recitation. It your responsibility to print each activity (from the course web page). Late activities are accepted at the discretion of your recitation instructor (late penalty may apply). The lowest two scores are dropped.

**Specific Learning Outcomes:** A successful student in Math 231 will be able to...

1. Apply basic set operations and DeMorgan’s Laws. Apply propositional calculus.
2. Negate compound and quantified statements. Form contrapositives.
3. Construct direct proofs (from definitions) of simple statements.
4. Apply the Principle of Mathematical Induction.
5. Demonstrate an understanding of the construction of proofs by contradiction and contra-position.
6. Demonstrate an understanding of basic properties of binary relations and functions.
7. Construct complete explanations for solutions to counting problems.
8. Demonstrate an understanding of the matrix representation of finite graphs.
9. Use at least one algorithm for finding a minimal spanning tree in a connected graph.
Write down your scores!

(1) HW check 1 : ......out of 5
(2) Activity 1 : ......out of 20
(3) HW check 2 : ......out of 5
(4) Activity 2 : ......out of 20
(5) HW check 3 : ......out of 5
(6) Activity 3 : ......out of 20
(7) HW check 4 : ......out of 5
(8) Midterm 1 : ......out of 80
(9) Activity 4 : ......out of 20
(10) HW check 5 : ......out of 5
(11) Activity 5 : ......out of 20
(12) HW check 6 : ......out of 5
(13) Activity 6 : ......out of 20
(14) HW check 7 : ......out of 5
(15) Midterm 2 : ......out of 80
(16) Activity 7 : ......out of 20
(17) HW check 8 : ......out of 5
(18) Activity 8 : ......out of 20
(19) HW check 9 : ......out of 5
(20) Best 6 of 8 Activities: ......out of 120
(21) Best 8 of 9 HW checks: ......out of 40
(22) True-False Quiz 1 : ......out of 10
(23) True-False Quiz 2 : ......out of 10
(24) True-False Quiz 3 : ......out of 10
(25) True-False Quiz 4 : ......out of 10
(26) Best 3 of 4 True-False Quizzes: ......out of 30
(27) Final: ......out of 160