Course Syllabus for Math 216 Section 2: Discrete Structures, Spring 2014

Instructor: Jeanette Martin
Office: Neill 313
Phone: 335-4308
Office Hours: MWF 10:10 – 11 AM, M 1:30 – 3, Tu 10:30 – 11:45, Tu 1:30 – 2:30
E-mail: martin@math.wsu.edu

Web page: http://www.math.wsu.edu/faculty/martin/Math216/Math216.html
Class Meetings: MWF 9:10 – 10 AM, Todd 307

Credits: 3
Prerequisites: Math 107 with a C or better.


COURSE ASSIGNMENTS AND GRADING
The total points you accumulate throughout the semester on the items below will determine your grade:

- 3 Exams @ 20% each: 60%
- Final Exam: 20%
- Homework: 20%

Your course grade will be determined by the following scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
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<tbody>
<tr>
<td>A</td>
<td>93 - 100%</td>
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<tr>
<td>A-</td>
<td>90 - 92.9%</td>
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<tr>
<td>B+</td>
<td>87 - 89.9%</td>
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<tr>
<td>B-</td>
<td>80 - 82.9%</td>
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<tr>
<td>C+</td>
<td>77 - 79.9%</td>
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<tr>
<td>C-</td>
<td>70 - 72.9%</td>
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<tr>
<td>D+</td>
<td>67 - 69.9%</td>
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<tr>
<td>D</td>
<td>60 - 66.9%</td>
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<tr>
<td>C</td>
<td>57 - 59.9%</td>
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<tr>
<td>B</td>
<td>53 - 57%</td>
</tr>
<tr>
<td>A</td>
<td>49 - 53%</td>
</tr>
<tr>
<td>F</td>
<td>0 - 49%</td>
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</tbody>
</table>

HOMEWORK: Math is not a spectator sport. It is learned by doing. Thus, homework is critical to your success in this course. It will be assigned each day and collected in class on the following Wednesday. Three problems will be graded for two points each (or occasionally two problems for three points each); the remaining four points will be based on the neatness and completeness of the remaining problems. **Late homework will NOT be accepted.** However, your two lowest homework scores will be dropped.

Assignments are due in class. Assignments will not receive credit if they are pinned to the bulletin board or slid under the door to either the TA’s office or mine. Points will be deducted for homework that cannot be read, is not stapled together or does not show a reasonable amount of work. A guideline for how much work to include would be to show the work for all steps that cannot be done in your head. Also, in this course we will often be just as interested in the process of solving a problem as we are in finding the actual answer, so explaining your steps is important. If you are in doubt about how much work to show, include all steps and explain your reasoning. As long as your work is correct, organized, and legible, you will not lose points for showing “too much” work.

In emergencies only, homework can be placed in my mailbox at Neill 103 during class time. However, this will only be accepted if arrangements are made in advance, so contact me via e-mail or phone if you need to do this.

EXAMS: Exams will be 50 minutes long and will be given in class on the dates shown on the course schedule. Exams will be closed book, closed notes. Calculators may be allowed for some exams or parts of exams. **No make-ups will be allowed for exams except for prearranged absences with appropriate documentation.**

FINAL EXAM: There will be a comprehensive final exam on Thursday, May 8th, from 8 – 10 AM in Todd 307. **Early finals will not be given for any reason.** Please make your travel plans accordingly.

LATE WORK: Late homework will not be accepted.
ATTENDANCE: It is strongly recommended that you do not miss class. You are responsible for all material covered in this course and for turning in all assignments, regardless of attendance.

If you find that you must miss class, there are two ways to arrange excused absences for this course.

1. If you have an emergency situation resulting in an extended absence (illness or family emergency resulting in an absence longer than one day), contact the Office of Student Affairs (335-4531) immediately. They will issue letters to all of your instructors to notify them of the absence.
2. Appropriate letters documenting excused university absences (such as participation in athletic events) will be accepted if arranged before missing class.

TECHNOLOGY: You may need a scientific calculator for some exams and quizzes. There may be some exams or parts of exams where calculators are not allowed.

Part of the learning experience in this course will also involve the use of the internet. If you do not have internet access, consider arranging an account at one of the campus labs. Information is available from Student Computing Services at the Information Technology Building (ITB), room 2091, 335-0534. Please see me if you are not able to arrange internet access.

A NOTE ABOUT E-MAIL: In general, I find e-mail to be a great communication tool - but it has limitations. Unless you receive a reply from me you should NOT assume I received your message; it is safer to leave a message for me on my office phone. I will not discuss homework problems through e-mail, but I can answer questions about what is expected on an assignment. Also note that e-mail is not always an immediate communication method. I will get back to you as quickly as I can.

WSU REASONABLE ACCOMMODATION: Reasonable accommodations are available for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call the Access Center (Washington Building 217; 509-335-3417) to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center. Additional information is available on the Access Center website at www.drc.wsu.edu.

WSU SAFETY MEASURES: Washington State University is committed to maintaining a safe environment for its faculty, staff, and students. Please visit http://safetyplan.wsu.edu and http://oem.wsu.edu/emergencies to access the Campus Safety Plan and emergency information. You should also become familiar with the WSU Alert Site (http://alert.wsu.edu) where information about emergencies and other issues affecting WSU will be found.

ACADEMIC INTEGRITY: All assignments are to be done by you, not someone else. I encourage you to work together and to discuss homework assignments by asking questions such as, "How do you do this type of problem again?" or "What is the idea here?" But you should not sit down with someone else's paper in front of you and refer to it to get your work done. This is cheating and will not benefit you. Complicity (providing answers for another student) is also a form of cheating. If I see even questionable evidence of cheating on an assignment or exam, all involved students will receive a zero on the assignment and I will keep the evidence while further action is considered. If I am strongly convinced that a student has cheated the situation will be referred to Student Affairs, which could result in failure of this course or even expulsion from the university. It is strongly suggested that you read and understand these definitions: http://conduct.wsu.edu/Content/Files/conduct/studenthandbookweb.pdf.

CLASS CANCELLATIONS: If a class meeting is ever cancelled for any reason, whatever was scheduled for the cancelled day will be done the next time we meet. This includes scheduled exams, quizzes, and homework submissions. If a cancellation occurs, I will post a note on the course web site explaining what is happening.
KEEPPING TRACK: All graded work will be returned to you with the exception of the final exam. Keep all of your returned work for reference and for the resolution of grade discrepancies. A password-protected grade web page will be maintained so that you may periodically check your points. However, you are expected to keep track of scores for your own information; the web page should only serve as a quick reference and as a check for accuracy. The web page will be updated approximately once every two weeks.

EXPECTATIONS: Learning is an active process and is not accomplished by sitting and observing. Thus I expect you to work hard to accomplish our objectives. I expect you to take responsibility for your own learning by studying the textbook sections in advance. You should come to class prepared with questions about the reading, and ready to work problems from the topic covered by the reading. If you do not put forth this effort you will not learn, and you may expect that your final grade will reflect this. However, you are not alone in this venture -- please get help if you are having trouble with the material, rather than giving up!

GETTING HELP: Why struggle? Successful students make use of available resources, so don't struggle when help is just a few steps away! We want you to succeed, we're here for you, and we have FREE tutoring available in the Math Learning Center (Cleveland 130) and the computing lab in Thompson Hall (Room 1). Check it out! Tutoring begins January 20th with the following hours:

Cleveland 130 is open 4-9pm Sunday, 10am-9pm Monday-Thursday, 10am-5pm Friday

Thompson 1 is open 12pm-9pm Monday-Thursday

For more information please go to:
http://www.math.wsu.edu/studyhalls/welcome.php

COVERAGE: We will cover the following chapters of the text:

2.1 Logical Form and Logical Equivalence
2.2 Conditional Statements
2.3 Valid and Invalid Arguments
2.4 Application: Digital Logic Circuits
2.5 Application: Number Systems and Circuits
3.1 Predicates and Quantified Statements I
3.2 Predicates and Quantified Statements II
3.3 Statements with Multiple Quantifiers
3.4 Arguments with Quantified Statements
4.1 Direct Proof & Counterexample I: Introduction
4.2 Direct Proof & Counterexample II: Rational Numbers
4.3 Direct Proof & Counterexample III: Divisibility
4.4 Direct Proof & Counterexample IV: Cases, Quotient-Remainder Theorem
4.5 Direct Proof & Counterexample V: Floor and Ceiling
4.6 Indirect Argument: Contradiction and Contraposition
4.7 Indirect Argument: Two Classical Theorems
4.8 Application: Algorithms
5.1 Sequences
5.2 Mathematical Induction I
5.3 Mathematical Induction II
5.4 Strong Mathematical Induction
5.6 Defining Sequences Recursively
6.1 Set Theory: Definitions
6.2 Set Identities
8.1 Relations on Sets
8.2 Reflexivity, Symmetry, and Transitivity
8.3 Equivalence Relations
9.1 Counting and Probability: Introduction
9.2 The Multiplication Rule
9.3 The Addition Rule
9.4 The Pigeonhole Principle
9.5 Combinations
9.6 r-Combinations with Repetition Allowed
9.7 Pascal's Formula & Binomial Theorem
9.8 Probability Axioms and Expected Value
9.9 Conditional Probability, Bayes' Formula, and Independent Events
10.1 Graphs: Definitions and Properties
10.2 Trails, Paths, and Circuits
10.3 Matrix Representations of Graphs
10.4 Isomorphisms of Graphs
10.5 Trees
10.6 Rooted Trees
10.7 Spanning Trees and Shortest Paths
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<th>Week of</th>
<th>Monday</th>
<th>Wednesday</th>
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<tr>
<td>1/20</td>
<td><strong>No Class</strong></td>
<td>HW 1 due</td>
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<td>--- Spring Break ---</td>
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