Math 311W: Discrete Mathematics  
Penn State University  
Fall 2009  
Sections 1,2,4  

Instructor: David Little  
Office: 403 McAllister  
Office Hours: MW 10-11, TR 4-5:30 and by appointment  

Course Description:  
This course will serve as an introduction to modern mathematics. Topics will be taken from chapters 1 through 5 of our text and will include: mathematical logic and proof techniques, elementary set theory, number theory including modular arithmetic, and group theory.

Textbook:  

Course Website:  
The course website is located at the following address:  
[http://www.math.psu.edu/dlittle/m311f09](http://www.math.psu.edu/dlittle/m311f09)  
The course syllabus, announcements, daily schedule of class topics, homework, and solutions to suggested homework, written homework and exams can be obtained at this website. Please use posted solutions appropriately. That is, use them only after you have attempted to solve the problem several different ways and have gotten stuck each time. A solution will not mean as much if you do not first struggle with the problem yourself.

Grading Policy:  
The overall grade will be based on the following point distribution.  

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Group Project</td>
<td>15%</td>
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<tr>
<td>Homework</td>
<td>20%</td>
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<tr>
<td>First Midterm</td>
<td>20%</td>
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<tr>
<td>Second Midterm</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td>25%</td>
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Unless otherwise announced, homework will follow the usual 10 point scale. Scales for each midterm will be announced after exams have been returned to the students.

Homework Policy:  
Written homework will be assigned and collected on a regular basis throughout the semester. If you are absent for any reason, then you must submit your work early or have a classmate turn it in for you. Late homework will not be accepted. Additionally, suggested problems will be posted on the class website. These suggested problems are not to be turned in, however, students should make sure they know how to do them.

While students are encouraged to collaborate with each other on the homework assignments, every student is responsible for writing up solutions on their own. Students may not copy complete and/or portions of solutions from any source. I reserve the right to question a student about their solution before giving full credit.

Homework should be written neatly and legibly and must include all necessary work. A correct answer will only receive credit if it is properly justified. The reader/grader should not have to fill in any missing steps or struggle to understand your reasoning. Correct answers with no work shown will receive no credit. Do not under any circumstances turn in scratch work or paper ripped out of a spiral bound notebook. Multiple pages should be stapled together with your name appearing at the top of each page.

Exam Policy:  
In-class exams will be based primarily on the written and suggested homework problems. Makeup exams will only be given in the case of a documented illness or official university business. If you are unable to attend a scheduled exam, please inform me as soon as possible prior to the exam.

Our final exam will be held during the final exam period of Dec. 14 through Dec. 18. Do not make plans to leave the university for summer vacation until after this week. A makeup final exam will not be given to accommodate a student’s travel plans.
Group Project:
The group project will be designed to use the methods of this class to investigate a modern application of number theory. Specific details of this project will be made available later in the semester.

Flu Policy:
Special Fall 2009 Flu Protocols - In compliance with Pennsylvania Department of Health and Centers for Disease Control recommendations, students should NOT attend class or any public gatherings while ill with influenza. Students with flu symptoms will be asked to leave campus if possible and to return home during recovery. The illness and self-isolation period will usually be about a week. It is very important that individuals avoid spreading the flu to others.

Most students should be able to complete a successful semester despite a flu-induced absence. Faculty will provide students who are absent because of illness with a reasonable opportunity to make up missed work. Ordinarily, it is inappropriate to substitute for the missed assignment the weighting of a semester’s work that does not include the missed assignment or exam. Completion of all assignments and exams assures the greatest chance for students to develop heightened understanding and content mastery that is unavailable through the weighting process. The opportunity to complete all assignments and exams supports the university’s desire to enable students to make responsible situational decisions, including the decision to avoid spreading a contagious virus to other students, staff, and faculty, without endangering their academic work.

Students with the flu do not need to provide a physician’s certification of illness. However, ill students should inform their teachers (but not through personal contact in which there is a risk of exposing others to the virus) as soon as possible that they are absent because of the flu. Likewise students should contact their instructors as quickly as possible to arrange to make up missed assignments or exams.

If you have questions about academic policy-related issues, please call the Associate Dean/Chief Academic Officer of your college. For health-related questions you can email Dr. Margaret Spear, director, University Health Services, at uhsinfo@sa.psu.edu.

Academic Integrity:
Penn State students are expected to adhere to the University’s Code of Conduct. For this course, while collaboration on homework is encouraged, each student is responsible for writing up his/her own solutions without help of any kind. Students may not use solutions from any source, including publicly available solution manuals and the internet. For additional information regarding academic integrity, please see the Eberly College of Science Academic Integrity homepage.

Students with Disabilities:
Penn State welcomes students with disabilities into the University’s educational programs. If you have a disability-related need for modifications or reasonable accommodations in this course, contact the Office for Disability Services, ODS located in room 116 Boucke Building at 814-863-1807(V/TTY). For further information regarding ODS, please visit their website at http://www.equity.psu.edu/ods.

Instructors should be notified as early in the semester as possible regarding the need for modification or reasonable accommodations.

Suggestions to the student:
*Come to class prepared.* Before coming to class, read the material that is to be covered. Make a note of any definitions, concepts, and/or examples that you did not understand. During the course of the lecture, these concepts should become more clear. If not, you will have already formulated the exact question you want answered. Also, having read the section ahead of time should eliminate the need to write down everything I put on the board, allowing you to listen more attentively.

*Keep up to date with the class.* Review your notes on a daily basis. One suggestion would be to spend ten minutes before class to remind yourself what we did last time and ten minutes after class to review what we just covered. Also consider re-reading and rewriting your notes on a daily basis. This should reduce the time and anxiety of studying for exams.

*Do your exercises.* Homework problems will be assigned, but it is always recommended to attempt as many problems as possible, assigned or not. A list of suggested problems is available on the course website. Make sure that you at least attempt each homework assignment the day it is assigned. Do not wait until the night before the due date to start an assignment.