Course Description: A course is designed to prepare math (MA), computer science (CS), economics (ECON) and engineering majors (EGR) for a background in abstraction, notation and critical thinking for the mathematics. Topics include logic and proof, basic set theory, functions, matrix algebra, elementary number theory, combinatorics, discrete probability, relations, graph theory and Boolean algebra.

We will be covering as much of the materials in Chapters 1, 2, 4, 6, 7, 9, 10 and 12. As our class will be meeting only three days per week, this means we will be covering about one section per day. Falling behind will be detrimental to your grade. Keep up with the course.


- **Goal of this course**
  - Understand and construct mathematical arguments.
  - Know basic properties of relations.
  - Know essential concepts in graph theory.
  - Understand basic concepts in basic probability theory.

- **List of course topics**
  - Logic and Proof (Chapter 1, related to MA, CS).
  - Set theory (Chapter 2 (Sec 2.1,2.2,2.5), related to MA, CS, ECON, EGR).
  - Functions (Chapter 2 (Sec 2.3), related to MA, CS, ECON, EGR).
  - Matrix Algebra (Chapter 2 (Sec 2.6), related to MA, CS, EGR).
  - Number Theory (Chapter 4, related to MA, CS).
  - Combinatorics (Chapter 6, related to MA, CS).
  - Probability (Chapter 7, related to MA, ECON).
  - Relations (Chapter 9, related to MA).
  - Graph Theory (Chapter 10, related to MA, CS, ECON, EGR).
  - Boolean Algebra (Chapter 12, related to CS).
Important Dates:
At the completion of this course, students will be able to:

1. Last day to withdraw with a W is Friday Oct. 27th.
2. The final exam will be held on Dec. 15th 8:30am-10:30am.
3. The 3 exams in this class will take place on Sep. 22nd, Oct. 27th, Nov. 17th, 9:10am-10:00am.

Grade Distribution:

<table>
<thead>
<tr>
<th>Component</th>
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<tbody>
<tr>
<td>Attendance</td>
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<tr>
<td>Assignments</td>
<td>10%</td>
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<tr>
<td>Quizzes</td>
<td>15%</td>
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<tr>
<td>Midterm Exam</td>
<td>40%</td>
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<tr>
<td>Final Exam</td>
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Letter Grade Distribution:

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<tr>
<td>A-</td>
<td>90.00 - 92.99</td>
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<tr>
<td>B+</td>
<td>87.00 - 89.99</td>
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<tr>
<td>B</td>
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<tr>
<td>B-</td>
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<tr>
<td>C+</td>
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<td>C-</td>
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<tr>
<td>D-</td>
<td>&lt;= 59.99</td>
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Course Policies:

- **General**
  - Attend the class in time.
  - Cell phones are not to be used unless instructed to do so.
  - Quizzes and exams are closed book, closed notes.
  - Index Card will be allowed on the exam.
  - **No makeup quizzes or exams will be given.** (Lowest Score of 3 tests will be dropped).

- **Grades**
  - Grades in the C range represent performance that **meets expectations**; Grades in the B range represent performance that is **substantially better** than the expectations; Grades in the A range represent work that is **excellent**.
  - Grades will be maintained in the Moodle. Students are responsible for tracking their progress by referring to the online gradebook.

- **Attendance and Absences**
  - Attendance is expected and will be taken each class. You are allowed to miss **3** class during the semester without penalty. Any further absences will result in point and/or grade deductions.
– Students are responsible for all missed work, regardless of the reason for absence. It is also the absentee’s responsibility to get all missing notes or materials. (You can find lecture note in the Moodle which help you to catch up the missed class.)

• Assignments

– Students are expected to work independently. Offering and accepting solutions from others is an act of plagiarism, which is a serious offense and all involved parties will be penalized according to the Academic Honesty Policy. Discussion amongst students is encouraged, but when in doubt, direct your questions to the professor, tutor, or lab assistant.

– No late assignments will be accepted under any circumstances.

• Quizzes

– There will be a 10 min or 15 min quiz on almost all Friday (See the schedule in detail in the uploaded calender on the Moodle). The problems will be based on the homeworks and exercises in the class. It helps students to remind of the concepts we have learned on the week.

– 2 Lowest Scores of quizzes will be dropped.

• Tests (3 Exams and Final)

– There will be a 3 Exams and Final of this course on this Fall semester (See the schedule in detail in the uploaded calender on the Moodle).

– 3 Exams are 50 min and Final are 2 hours.

– Exams and Final are closed book, closed notes.

– Index Card will be allowed on the exam (Allowed size is about one side of letter).

– 1 Lowest Score of 3 exams will be dropped but Final never dropped.

Studying Tips and Extra Help:

Have a Growth Mindset. Intelligence is not fixed and continuous challenges can give us opportunities for growth. Thus please do not give up easily keeping up with the course.

Study with classmate. Your class mates are a good teacher for you. If possible, please make a group to study together, discuss about which parts hard to understand and get help from your classmate. This will give synergy effect to each other.

Use Moodle. I will upload all of materials related to the class such as solutions of Homework, Quizzes, and Tests. You can download them which play a crucial in studying this course.
Use Office Hour. Eventhough you could not understand every contents of my lecture in class, do not worry about that. Stop by my office and tell me where you do not figure out. Always, welcome to my office.

Check the calander. You may find the calender of this course I made. It tells you about the schedules of this course such as due date of homework, dates of quizzes, exams, and final. I recommend you see this calender if you have a question about the future schedule of this course.

Religious Accommodations: In accordance with DePauw policy, I am happy to accommodate students who are adherents of a religious tradition and wish to fulfill obligations of that religious tradition on holy days. Please notify me of your intent to fulfill the obligations of your religious tradition well in advance of these days. For the sake of this policy, holy days are defined as periods of time in which either: activities required by normal class participation are prohibited by a religious tradition, or a special worship obligation is required by a religious tradition. For this class, I ask that you notify me by e-mail at least 14 days in advance of the date in question, and include in the email the time you will be missing class and the reason for this missed class, and I will excuse you from class on those days and provide extended deadlines for assignments due on those days and re-scheduled exams given on those days.

ADA Syllabus Statement: It is the policy and practice of DePauw University to provide reasonable accommodations for students with properly documented disabilities. Written notification from Student Disability Services is required. If you are eligible to receive an accommodation and would like to request it for this course, please contact Student Disability Services. Allow one week advance notice to ensure enough time for reasonable accommodations to be made. Otherwise, it is not guaranteed that the accommodation can be provided on a timely basis. Accommodations are not retroactive. Students who have questions about Student Disability Services or who have, or think they may have, a disability (psychiatric, attentional, learning, vision, hearing, physical, medical, etc.) are invited to contact Student Disability Services for a confidential discussion in Union Building Suite 200 or by phone at 658-6267.