Syllabus for Math 216 Section 2 – Discrete Structures
Late Session, Summer 2020

Instructor: Rachel Perrier
Office: Neill 316
Office Hours: TTh 3:00-4:30 pm, or by appointment. All office hours will be held over Zoom, with the meeting information posted on Blackboard.
Email: rachel.perrier@wsu.edu

Grader: Henry Ogu
Email: henry.ogu@wsu.edu
MLC Hours: MWTh 12:00-4:00 pm. All these hours will be held over Zoom, with the meeting information posted on Blackboard.

Class Meetings: MTWThF 1:30-2:45 pm
Web Page: Log in to Blackboard at http://learn.wsu.edu
WebAssign: https://www.webassign.net/

Credits: 3
Prerequisites: MATH 108 with a C or better, or MATH 140, 171, 172, 182, or 202 or concurrent. Discrete mathematics, trees, graphs, elementary logic, and combinatorics with application to computer science. Recommended preparation: Programming course.


Course Description: This course will go through a lot of topics, all of which can be greatly expanded upon. We will start with basic logic and expand that to formal statements and proofs. This will then be applied to number theory, counting and probability, set theory, and graph theory.

Learning Outcomes: Students will be able to:

- Understand and apply simple logical statements, predicates, quantified statements, and arguments.
- Elements of number theory, rational numbers, divisibility, sequences.
- Expand upon arguments to create proofs of several types: including cases, indirect proofs, and mathematical induction proofs.
- Understand set theory, equivalence relations, modular arithmetic and applications.
- Understand and apply ways of counting the number of elements in a set from a description of the set.
- Apply counting to applications and discover probabilities of events.
Course Assignments and Grading: The total points you accumulate throughout the semester on the items below will determine your grade:

<table>
<thead>
<tr>
<th>Assignment Type</th>
<th>Points</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Assignments (6 in total, 13 pts each)</td>
<td>78 pts</td>
<td>~14.1%</td>
</tr>
<tr>
<td>WebAssign (Drop lowest 2, 3 pts each)</td>
<td>66 pts</td>
<td>~11.9%</td>
</tr>
<tr>
<td>Participation &amp; Attendance</td>
<td>36 pts</td>
<td>~6.5%</td>
</tr>
<tr>
<td>Exams (3 in total, 125 pts each)</td>
<td>375 pts</td>
<td>~67.5%</td>
</tr>
<tr>
<td>Total</td>
<td>555 pts</td>
<td>100%</td>
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</tbody>
</table>

Your course grade will be determined by the following scale:

- **A** (93% – 100%)
- **A-** (90% – 92.9%)
- **B+** (87% – 89.9%)
- **B** (83% – 86.9%)
- **B-** (80% – 82.9%)
- **C+** (77% – 79.9%)
- **C** (73% – 76.9%)
- **C-** (70% – 72.9%)
- **D+** (67% – 69.9%)
- **D** (60% – 66.9%)
- **F** (0% – 59.9%)

**Written Assignments:** Check Blackboard for written assignments. They will be due at 5:00 pm on the stated due dates. **DO NOT EMAIL YOUR HOMEWORK. HOMEWORK MUST BE SUBMITTED TO CROWDMARK.** There are no make-ups for missing homework. Late assignments will be given a score of zero. Use your written homework assignments to review for exams. Just because it is done, does not mean it was done correctly.

Before you start any homework assignment, review your notes and read the book. There is a lot of notation in this book, and the only way to get familiar with it is to read. If you get stuck on a homework problem, do a problem that is quite similar to it, for which the answer is in the back of the book. **SHOW YOUR WORK:** Any homework problem that is just an answer will score a 0. On the other hand, don’t use half a page for a simple problem.

It is suggested that you do all your homework on a computer. There are some mathematical symbols used here, but you will quickly learn to use them. Save your HW as a pdf file, and upload that. You may scan and upload your written work, but again, scan as a pdf file.

Not every section for which there is work will be covered in class. This is deliberate—you will be expected to read and understand these sections of the book yourself.

**WebAssign:** Webassign is a way to do much of the homework on-line. These systems provide immediate feedback on your work. There will be approximately one assignment per day of class. Some material (such as written proofs) have limited ability for computer grading. Check the calendar often for when materials are due.

**Class Key is:** wsu 0630 8897

**Participation & Attendance:** It is important to attend every class session in order to understand the course material. There will be topics to discuss in groups, as well as polls during class time to assess the understanding of the topics. Points will be granted based on this participation and attendance in class. You will be assigned to a specific role in your group, and these roles will rotate through the group. The groups will change about every two weeks.
Exams:

- Calculators, internet resources, other resources, and other people are not allowed resources on exams.
- Make-up exams will only be granted due to extenuating circumstances and must be cleared with the instructor as soon as possible before the exam occurs. There will be no late Exam 3 given.

**NO LATE WORK WILL BE ACCEPTED!**

I encourage you to form study groups and discuss homework problems with classmates, tutors, and with me, but only after you have made a serious attempt at the problem. Watching someone else solve problems negates the benefits of homework. Don’t get caught in the trap of relying on others to get through homework assignments.

**No form of cheating will be tolerated in this class.** You must use your own words. If two or more people turn in the same or almost the same homework, all students involved will receive one warning. If it happens a second time all involved will receive a zero on the assignment. The excuse “but we worked together” will not be accepted. You may collaborate with classmates on assignments, with the instructor's permission. However, the guiding principle of academic integrity shall be that your submitted work, examinations, reports, and projects must be your own work.

If caught cheating on an exam, you will have the exam taken immediately away and be given a zero. You will also be reported to the Office of Student Conduct.

**Attendance Policy:** You are expected to attend every class period. When you miss class, you miss important material. You are responsible for learning any material you miss when absent; I will not individually re-teach the material. Be sure to consider this when thinking about skipping class.

The minimum time commitment for independent study is 3 hours of work per week for each credit hour. So you are expected to do at least 9 hours of work outside of class time for this course.

**Communication:** E-mail is usually the best tool to reach me outside of my office hours and class time. However, I may not get your email right away, so please be patient for me to reply. If you need to communicate with me the night before class, please note that I may not see messages after 8:30 pm until the next morning. I will contact you as soon as possible, and I will look out for anything regarding emergencies that come up.

**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 your campus Access Center (see contact information listed below) to schedule an appointment. All accommodations MUST be approved through the Access Center of your campus. For more information, contact a Disability Specialist on your campus:

- **Pullman or WSU Online:** 509-335-3417, Washington Building 217, accesscenter.wsu.edu, Access.Center@wsu.edu
- **Spokane:** 509-358-7757, Academic Center 145F, spokane.wsu.edu/studentaffairs/access-resources, tera.lessard@wsu.edu
- **Tri-Cities:** 509-372-7352, Floyd 269C; tricities.wsu.edu/current-students/disability, gabriella.corona@wsu.edu
- **Vancouver:** 360-546-9238, Classroom Building 160, studentaffairs.vancouver.wsu.edu/access-center, yan.access.center@wsu.edu
**WSU Safety Measures:** Classroom and campus safety are of paramount importance at Washington State University, and are the shared responsibility of the entire campus population. WSU urges students to follow the “Alert, Assess, Act,” protocol for all types of emergencies and the “Run, Hide, Fight” response for an active shooter incident. Remain ALERT (through direct observation or emergency notification), ASSESS your specific situation, and ACT in the most appropriate way to assure your own safety (and the safety of others if you are able).

Please sign up for emergency alerts on your account at MyWSU. For more information on this subject, campus safety, and related topics, please view the FBI’s [Run, Hide, Fight video](https://www.fbi.gov/investigate/human-trafficking/rund-hide-fight) and visit the [WSU safety portal](https://provost.wsu.edu/classroom-safety/).

Full details can be found at [https://provost.wsu.edu/classroom-safety/](https://provost.wsu.edu/classroom-safety/)

**Academic Integrity:** Academic integrity is the cornerstone of higher education. As such, all members of the university community share responsibility for maintaining and promoting the principles of integrity in all activities, including academic integrity and honest scholarship. Academic integrity will be strongly enforced in this course. Students who violate WSU’s Academic Integrity Policy (identified in Washington Administrative Code (WAC) 504-26-010(3) and -404) will receive a failing grade for the assignment or the course, will not have the option to withdraw from the course pending an appeal, and will be reported to the Office of Student Conduct.

Cheating includes, but is not limited to, plagiarism and unauthorized collaboration as defined in the Standards of Conduct for Students, WAC 504-26-010(3). You need to read and understand all of the definitions of cheating: [http://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010](http://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010). If you have any questions about what is and is not allowed in this course, you should ask course instructors before proceeding.

If you wish to appeal a faculty member’s decision relating to academic integrity, please use the form available at [conduct.wsu.edu](http://conduct.wsu.edu).

**Accommodation for Religious Observances or Activities:** Washington State University reasonably accommodates absences allowing for students to take holidays for reasons of faith or conscience or organized activities conducted under the auspices of a religious denomination, church, or religious organization. Reasonable accommodation requires the student to coordinate with the instructor on scheduling examinations or other activities necessary for course completion. Students requesting accommodation must provide written notification within the first two weeks of the beginning of the course and include specific dates for absences. Approved accommodations for absences will not adversely impact student grades. Absence from classes or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the period of absence. Students who feel they have been treated unfairly in terms of this accommodation may refer to Academic Regulation 104 – Academic Complaint Procedure.

**Class Cancelations:** 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, activities, and homework submissions. If a cancellation occurs, I will send an email prior to the beginning of class and place a post on Blackboard explaining what is happening.

**Expectations:** I expect that you come prepared to class each day to learn the material and to accomplish the objectives of this course. This includes having reviewed information from the previous lecture and
reading textbook sections prior to lecture. You should bring questions to class and have an openness and willingness to learn the material. If you are struggling, though, please seek out help, as there are resources to assist you. This is also an environment where mistakes will be made, and we will learn from them. I ask that you remain respectful to all ideas and suggestions so that you can learn and not prohibit others from learning.

**Math Learning Center:** 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 (MLC). MLC summer hours are 9 am - 5 pm Monday through Friday. The Zoom information for these tutoring hours will be posted to Blackboard.
<table>
<thead>
<tr>
<th>Week</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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<tbody>
<tr>
<td>June 22 – 26</td>
<td>Syllabus &amp; 1.1 – 1.4</td>
<td>2.1 &amp; 2.2</td>
<td>2.3</td>
<td>3.1 &amp; 3.2</td>
<td>3.3 &amp; 3.4</td>
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<tr>
<td></td>
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<td>Module 0 due</td>
<td>Module 1 due</td>
<td>Module 2 due</td>
<td>Module 3 due</td>
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<td></td>
<td>Written HW 1 due</td>
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<tr>
<td>June 29 – July 3</td>
<td>4.1 &amp; 4.2</td>
<td>4.3 &amp; 4.4</td>
<td>4.4 &amp; Review</td>
<td>Exam 1</td>
<td>NO CLASS for Independence Day Holiday</td>
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<tr>
<td></td>
<td>Module 4 due</td>
<td>Module 5 due</td>
<td>Module 6 due</td>
<td>Written HW 2 due</td>
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<tr>
<td>July 6 – 10</td>
<td>4.5 &amp; 4.7</td>
<td>4.8 &amp; 4.9</td>
<td>4.10 &amp; 5.1</td>
<td>5.2 &amp; 5.3</td>
<td>5.3 &amp; 5.4</td>
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<td>Module 7 due</td>
<td>Module 8 due</td>
<td>Module 9 due</td>
<td>Module 10 due</td>
<td>Module 11 due</td>
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<td>Written HW 3 due</td>
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<td>July 13 – 17</td>
<td>5.7 &amp; 5.8</td>
<td>6.1 – 6.3</td>
<td>6.4 &amp; 7.1</td>
<td>Review</td>
<td>Exam 2</td>
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<tr>
<td></td>
<td>Module 12 due</td>
<td>Module 13 due</td>
<td>Module 14 due</td>
<td>Module 15 due</td>
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<td>Written HW 4 due</td>
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<td>July 20 – 24</td>
<td>7.2 &amp; 7.3</td>
<td>7.3 &amp; 8.1</td>
<td>8.2 – 8.4</td>
<td>8.5 &amp; 9.1</td>
<td>9.2 &amp; 9.3</td>
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<td>Module 16 due</td>
<td>Module 17 due</td>
<td>Module 18 due</td>
<td>Module 19 due</td>
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<td>Written HW 5 due</td>
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<tr>
<td>July 27 – 31</td>
<td>9.4 &amp; 9.5</td>
<td>9.6 &amp; 10.1</td>
<td>10.3 &amp; 10.4</td>
<td>10.5 &amp; Review</td>
<td>Exam 3</td>
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<tr>
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<td>Module 20 due</td>
<td>Module 21 due</td>
<td>Module 22 due</td>
<td>Module 23 due</td>
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<td>Written HW 6 due</td>
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Course Schedule
(Subject to Change)