Syllabus

Instructor: Dr. Brian W. Rague
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Use my CS2130 course website email address for all course related correspondence.

Web Page: http://faculty.weber.edu/brague

Texts: Discrete Mathematical Structures (6th ed.) by Kolman, Busby, & Ross (KBR)

Course Objectives:

Understand and apply mathematical reasoning in order to read, comprehend, and construct mathematical arguments.

Understand combinatorial analysis to solve counting problems.

Understand how to work with discrete structures, including sets, permutations, relations, graphs, trees, and finite state machines.

Understand how to specify and verify computing algorithms, and construct computer programs implementing those algorithms.

Understand how to develop and construct mathematical models for application to other fields of study.

Academic Honesty:

Academic honesty is highly valued at Weber State University and within this class. A student must always submit work that represents his or her original words or ideas. If any words or ideas are used that do not represent the student's original words or ideas, the student must cite all relevant sources. The student should also make clear the extent to which such sources were used. Words or ideas that require citations include, but are not limited to, all hardcopy or electronic publications, whether copyrighted or not, and all verbal or visual communication.
when the content of such communication clearly originates from an identifiable source.

Individuals involved in any acts of cheating or plagiarism will be given a failing grade for the course. In addition, names of these individuals will be submitted for disciplinary action by the department and the university.

Academic dishonesty in an online learning environment involves any and all of the following:

- Having a tutor or friend complete a portion of your assignments
- Having a reviewer make extensive revisions to an assignment
- Copying work directly from another student
- Using information from online information services without proper citation

If detail source code is duplicated from another’s program into yours, it will be deemed as cheating and severe action will be taken against persons who knowingly have participated. Source code that doesn't match the output results may also be deemed as cheating which may result in severe penalties.

Students are expected to be familiar with the WSU Student Code and abide by it. The Code may be reviewed online at http://www.weber.edu/ppm/6-22.htm (pay specific attention to Section 4D). All necessary steps will be taken to enforce the Student Code to guarantee fairness to all students.

CS Department policy dictates that any verifiable evidence of student academic cheating, as defined and determined by the instructor, will result in: 1) an automatic failing grade for the class and 2) a report to the Dean of Students that will include the student's name and a description of the student's dishonest conduct.

**Students with Disabilities:** Any student requiring accommodations or services due to a disability must contact Services for Students with Disabilities (SSD) in room 181 of the Student Services Center. SSD can also arrange to provide course materials (including this syllabus) in alternative formats if necessary.

For more information about the SSD contact them at 801-626-6413, ssd@weber.edu, or departments.weber.edu/ssd

**Allocated Time:** You should anticipate spending two to three hours of study per week for each credit hour of a university course. Computer and programming classes typically require time in the upper range.
Homework Problems: Homework is administered as 5 programming projects/modules which will consist of reading the text, assimilating the key concepts, and submitting working programs on a regular basis as suggested by the course schedule below. Projects must be entirely a student's own work. You are allowed to discuss project requirements but not project implementations with other students. Further important details about course and project structure are given here.

Late Policy: Please note that a late assignment will be accepted only within the first five days following its original due date. The maximum grade possible for a late assignment will be automatically reduced by an amount equal to 10% of the original total point value for each day it is late, and, as stipulated, will not be accepted at all after five days. This policy will be strictly enforced.

“I really, really need to get a C” Policy: The most effective method for obtaining a C or above in this class is to submit assignments when they are due and to stay current with course topics. The curriculum is carefully designed to fit the number of course weeks. In order to uphold academic rigor and integrity, student grades must be based on the degree to which the course requirements listed in the syllabus are fulfilled. Extra credit assignments are not allowed. If you approach me anytime during the term claiming that special allowance should be made because you need a C to move forward in the program, graduate, receive financial aid, etc., I will decline your request and refer you to this clearly worded policy.

Discussion Questions: Questions on reading and programming projects should be posted to the appropriate online Classroom Discussion Groups where the instructor and all students have access. Instructor and student responses will be visible to all and all may learn from the interactions.

System Accounts: Homework problems can be completed at the WSU Computer Science lab. If you have access to a standard Java compiler, you may complete the assignments at your own desired location. In this situation, it would not be necessary to visit the WSU Computer Science lab.

Full versions of Microsoft Windows Server, Windows 7, Windows XP, and other Microsoft products are available to students for home use through Weber State University's MSDN Academic Alliance (MSDNAA). These products are available FREE to students who agree to abide by the terms of use of the MSDNAA.
The website for the MSDNAA is [http://msdnaa.cs.weber.edu](http://msdnaa.cs.weber.edu). If DNS issues prevent the site from being visible outside of the main campus labs, alternatively you can try [http://137.190.19.14](http://137.190.19.14).

Various software applications are also available remotely through a Windows Terminal Server hosted by the Computer Science Department. The terminal server can be accessed at [athena.cs.weber.edu:53243](http://athena.cs.weber.edu:53243) using your CS lab username and password. Questions regarding the operation and usage of Terminal Server should be directed to CS Lab Personnel.

**Disclaimer:**

The instructor reserves the right to amend the syllabus in any way deemed necessary.

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**Grading Policy:**

<table>
<thead>
<tr>
<th></th>
<th>Percent of Final Grade</th>
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<tbody>
<tr>
<td>Midterm Exam</td>
<td>25%</td>
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<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Projects</td>
<td>50%</td>
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</tbody>
</table>

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**Quizzes & Exams:**

Midterm Exam will be held during week 3 and will cover Math modules 1 and 2. Final Exam will be held during week 7 and will be comprehensive. Because the exams are “take-home”, the questions on these exams will require detailed application of course concepts. Please follow your syllabus closely for the due dates for exams. As long as you read and do the required programming projects, you should have no problem receiving a good score on exams.

The quizzes and exams are not to be shared or discussed with other students. If I find out or discover that there has been any cheating, it will result in an automatic failure for the course!
Letter Grades:

Total >= 93.3% ... A
73.3% <= Total < 76.7% ... A-
70% <= Total < 73.3% ... C-
66.7% <= Total < 70% ... D+
63.3% <= Total < 66.7% ... D
86.7% <= Total < 90% ... B+
83.3% <= Total < 86.7% ... B
80% <= Total < 83.3% ... B-
76.7% <= Total < 80% ... C+
Total < 60% ... F

The instructor reserves the right to grade according to the above schedule. It is possible that more natural breaks in the scores could alter the above schedule. If it is altered, it will always be in the student's favor. Incompletes can only be given in extraordinary and unusual circumstances.

Schedule:

<table>
<thead>
<tr>
<th>Week (Starting)</th>
<th>Reading Assignments/Topics</th>
<th>Suggested Homework Problems</th>
<th>Group Discussion</th>
<th>Projects</th>
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</thead>
<tbody>
<tr>
<td>1 (May 11)</td>
<td><strong>Module 1:</strong> Ch 1, Sec 1-2: Introduction, Sets</td>
<td>Sec 1.1 - Sets: 3, 5, 10, 11, 15, 16&lt;br&gt;Sec 1.2 - Operations on Sets: 1, 7ef, 8cdef&lt;br&gt;Sec 1.3 - Sequences: 1, 4, 5, 8, 12, 16, 17, 18, 21, 22&lt;br&gt;Sec 1.4 - Properties of Integers: 5, 7, 9, 11, 13, 41, 42a&lt;br&gt;Sec 5.1 - Functions: 1, 7, 11, 13, 19a, 20b, 22, 24, 25&lt;br&gt;Sec 5.2 - Functions for CS: 3, 5ab, 6ab, 9, 11, 13, 15, 21, 23, 25, 49a, 50</td>
<td>Introductions/Class Discussion/Project One</td>
<td>Send &quot;Hello&quot; Post to Introductions Discussion Group&lt;br&gt;Project One due by Saturday (5/16) at midnight</td>
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<td>2 (May 18)</td>
<td><strong>Module 2:</strong> Ch 2, Sec 1-2: Propositional Logic Quantifiers/Predicate Logic&lt;br&gt;Ch 6, Sec 5-6: Digital Logic</td>
<td>Sec 2.1 - Propositions: 9, 28, 30, 32, 36&lt;br&gt;Sec 2.2 - Conditional Statements: 12, 21, 27 (distributive), 28 (DeMorgan), 34 (modus ponens), 35 (syllogism)&lt;br&gt;Sec 6.5 - Boolean Polynomials: 1, 3, 5, 6, 15a, 16a, 18 (Boolean polynomial and truth table), 21 (logic diagram, Boolean polynomial, and truth table)&lt;br&gt;Sec 6.6 - Circuit Design: 1, 3, 5, 8, 13, 15, 17, 19, 21, 24</td>
<td>Class Discussion/Project Two</td>
<td>Project Two due by Saturday (5/23) at midnight</td>
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<td>3 (May 25)</td>
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<td>Midterm Exam on Modules 1 &amp; 2&lt;br&gt;Begin/Continue</td>
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<tr>
<td>Day</td>
<td>Module 3</td>
<td>Module 4</td>
<td>Module 5</td>
<td>Work on Projects 3-5</td>
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<td>4 (Jun 1)</td>
<td>Ch 3, Sec 1-2: Counting Rules Ch 3, Sec 4: Discrete Probability Ch 3, Sec 4: Random Variables</td>
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<td>5 (Jun 8)</td>
<td>Ch 4, Sec 2-5, 7-8: Relations and Digraphs Ch 7, Sec 1: Trees</td>
<td>Ch 1, Sec 5: Matrix Operations and Boolean Matrices</td>
<td>Ch 7, Sec 1: Trees</td>
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<td>6 (Jun 15)</td>
<td>Ch 10, Sec 1: Grammars Ch 10, Sec 3-5: Finite State Machines</td>
<td>Ch 1, Sec 3: Languages and Regular Expressions Ch 10, Sec 1: Grammars Ch 10, Sec 3-5: Finite State Machines</td>
<td>Ch 1, Sec 3: Languages and Regular Expressions Ch 10, Sec 1: Grammars Ch 10, Sec 3-5: Finite State Machines</td>
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<td>7 (Jun 22)</td>
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<td>Final Exam</td>
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