Spring 2019

CS2148: **Discrete Structures** Prerequisites: CS 2012, MATH2120. An introduction to discrete mathematics with applications to Computer Science; fundamentals of logic and set theory, counting techniques, relations, induction and recursion; graphs and trees; probability theory. Lecture 75 minutes. Graded ABC/NC

Class Time and Location: 

T/Th 3:00 – 4:15 pm  FA 219

Instructor: Yuqing Zhu
Email: yuqing.zhu@calstatela.edu
Office: ET A-327
Office Hours: M/W: 3:00 - 4:00 pm, T: 1:30-2:30 pm.

By: Susanna S. Epp

Chapters Covered: 1.2, 1.2, 1.3 and 2.1, 2.2, 2.3 and 3.1, 3.2, 3.3, 3.4 and 4.1, 4.2, 4.3, 4.4, 4.6, and 5.1, 5.2, 5.6, 5.7 and 6.1 and 7.1, 7.2 and 8.1, 8.2, 8.3 and 9.1, 9.2, 9.3, 9.4, 9.5, 9.8, 9.9 and 10.1, 10.5 (as time permits)

Student learning outcomes: Students who successfully complete this course will be able to:
Create truth tables for symbolic statements in propositional logic
Translate English statements into symbolic logic
Determine whether an argument is valid or not
Solve simple problems in set theory involving basic set operations
Use Venn diagrams to solve real world problems involving sets
Understand the principle of counting, permutations and combinations
Understand the basic concepts of probability theory
Solve problems in probability theory, including conditional probability
Understand the concept of independent events and solve problems involving independent events
Understand the concepts of number theory, methods of proof, sequences, mathematical induction, and recursion
Understand the concepts of functions and relations
Understand the basic concepts of graphs and Trees
Find the mode, median, and mean of a set of data
Understand the concept of variance
Find the variance and standard deviation of a set of data
Understand the normal distribution

This course satisfies General Education Area A4
College Facilitated Workshop

This semester, College of ECST will join to help students in CS2148 to achieve better performance. The college will hold facilitated to help students better understand the course material. Students who attend this series of workshops will get up to 5% extra credits, and also, the student whose performance is below average in midterm exams **MUST** attend workshops at least once a week until he or she does better than average.

Classroom Exercises

There will be some class meetings where students are requested to solve exercise problems on board. The students will be grouped. When a student solves the problem on board, all group members get the full credit. When a student cannot solve the problem, other members from the group can help him/her, and if the problem is solved, all members still get the full credit. However, please note that, a student cannot “save” the group for more than twice.

Homework:

Homework are mandatory and will be assigned for every section.

**NOTE:** If you miss any mandatory problem set, you will lose up to 20 points of your final grade.

Tests:

One midterm exam and one final exam.

Grading:

**This course is graded ABC/NC**

- Midterm Exam: 30 points
- Final Exam: 40 points
- Homework: 10 points
- Classroom Exercises: 20 points
- Extra credit for College Facilitated Workshop:
  - 5 points (you get 0.5 points for attending one workshop (maximum) a week, up to 5 points totally in the semester)
- Total: 105 points

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<th>Grade</th>
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<tr>
<td>0 - 60</td>
<td>NC</td>
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<td>61 - 80</td>
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<td>81 - 90</td>
<td>B</td>
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<td>91 - 105</td>
<td>A</td>
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Final Exam:

To be announced

**ADA statement:** Reasonable accommodation will be provided to any student who is registered with the Office of Students with Disabilities and requests needed accommodation.

**Academic honesty statement:** Students are expected to do their own work and to abide by the University Policy on academic honesty, which is stated in the Schedule of Classes. Copying the work of others, cheating on exams, and similar violations will be reported to the University Discipline Officer, who has the authority to take disciplinary actions against students who violate the standards of academic honesty.
**Student responsibilities:** Students are responsible for being aware of all announcements that are made in class, such as changes in exam dates, due dates of homework and papers, and cancellation of class due to instructor’s absence. Students are responsible for announcements made on days that they are absent.

Students must check their CSULA email account regularly for information from the instructor and the Department. Failure to do so may result in missed deadlines or other consequences that might adversely affect students. Note that you can forward this email account to any other account of your choosing.

**NO MAKE-UP EXAMS, NO LATE HOMEWORK, AND NO INCOMPLETES!!!**