CSCI 2824-300

Discrete Structures

MTWRF, 11am-12pm, ECCR 211

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Moodle - coming
CSEL
Office Hours: TBD

This syllabus represents a rough guide of what should be expected from this course. Everything is subject to change as necessary.

Course Description: Covers foundational materials for computer science that is often assumed in advanced courses. Topics include set theory, Boolean algebra, functions and relations, graphs, propositional and predicate calculus, proofs, mathematical induction, recurrence relations, combinatorics, discrete probability. Focuses on examples based on diverse applications of computer science.
Basically – math, I'll be teaching you math.
Prerequisite(s): Data-Structures (CSCI 2270) and *the ability to program* **well** *is some programming language*, preferably `C++` or `Python`.
Credit Hours: 3

Why Discrete Structures:
Computer science is all about solving problems, specifically with computers. This course will provide the background information necessary for computer scientists to talk intelligibly about the area. Specifically we will garner the knowledge necessary to answer *real* problems from topics such as:

1. Logic – Propositional and First order logic, Boolean algebras.
2. Proofs – Primer on writing proofs.
3. Sets, Relations, and Functions – Basic properties, paradoxes! Infinite sets.
4. Recursion – Recursive functions and recursively defined structures.
5. Combinatorics – Counting, binomial theorem.
6. Trees – Definition and properties
7. Graphs – Definition and properties

Grade Distribution:

Assignments	20%
Programs	20%
Quizzes	10%
Midterm Exam	25%
Final Exam	25%

Course Work:

- **General** This is a summer course, and as such we have very little time to do a lot of work. You should expect to be doing a lot of work everyday for this course.
- **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**.
- **Labs and Assignments**
  - There will be at least one homework assignment every week, usually two. You are expected to work through these assignments and understand the material that is being tested by them.
  - There will also be at least 2 programming assignments in a language of your choice.
  - **No late assignments will be accepted under any circumstances**.
- You are expected to solve all problems and write all programs yourself. Working with others in the class is encouraged in order to find solutions but everything that is submitted must be your own. **You** must write your homework up and program your programs. Passing other's work off as your is plagiarism.

Instructor's Intended Purpose

The student's work must match the instructor's intended purpose for an assignment. While the instructor will establish the intent of an assignment, each student must clarify outstanding questions of that intent for a given assignment.

Unauthorized/Excessive Assistance

The student may not give or get any unauthorized or excessive assistance in the preparation of any work.

Authorship

The student must clearly establish authorship of a work. Referenced work must be clearly documented, cited, and attributed, regardless of media or distribution.

Declaration

Online submission of, or placing one's name on an exam, assignment, or any course document is a statement of academic honor that the student has not received or given inappropriate assistance in completing it and that the student has complied with the Academic Honesty Policy in that work.