CS 230 --- Fall 2016

Discrete Computational Structures

PREREQUISITES: Basic **Data Structures** (CS 228) and High School Math.

GOALS: Introduce fundamental concepts techniques of Discrete Mathematics (DM) for applications in Computer Science (CS). Learn rigorous approaches to problem solving. The material should provide most of the mathematical prerequisites to other CS courses. There will be significant emphasis on reasoning and proofs. The following quote from **David Hilbert** (the preeminent mathematician of the 19th and 20th centuries) is enlightening and instructive:

> **"The instrument that mediates between theory and practice, between thought and observation, is mathematics; it builds the bridge and makes it stronger and stronger. Thus it happens that our entire present day culture, to the degree that it reflects intellectual achievement and the harnessing of nature, is founded on mathematics."**

TEXTBOOK: **I will use my own Lecture Notes which will be made available to students.**

TOPICS: Set theory, functions, induction, counting methods and basic combinatorics, relations, logic, and, if time permits: graph theory, and basic probability.

HOMEWORK: Homeworks are due on Fridays,5 pm, on Blackboard. **The homework files must be in one of formats: pdf, doc, or docx**. **No late homeworks are accepted!**

GRADING PROCEDURES: Your final grade will be determined by the formula:

G = 20%Homeworks + 40%Midterm(2) + 30%Final(1) + 20%Quizzes(Several).

LETTER GRADE: The final letter grade will be determined by "hashing" G into the following scale with fractional scores rounded up.

IT WILL BE UNSHAKABLY ADHERED TO.

00-49	*50-52*	*53-56*	*57-59*	*60-65*	*66-70*	*71-74*	*75-77*	*78-83*	*84-86*	*87-89*	*90-100*
F	**D-**	**D**	**D+**	***C-***	***C***	***C+***	***B-***	***B***	***B+***	***A-***	***A***