COMPUTER SCIENCE 5446

INSTRUCTOR: Tom Altman
OFFICE: 814 Lawrence Building
OFFICE HOURS: M 9:30-12:30 F 4:00-6:00 (Friday hours will be adjusted during the semester)
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and “Essentials of Theoretical Computer Science”, F. Lewis, available online at http://cse.ucdenver.edu/~cscialtman/

SYLLABUS:

We will digest most of the Lecture Notes with a special emphasis on the chapters dealing with grammars and automata and ambiguity. In addition, materials on selected topics from other sources will be provided to you (usually online). The course will be directed towards the theory and formal proofs. High level of mathematical maturity is expected of the students. Participation in class discussions is strongly encouraged. There will be three major homework assignments.

SIX FUNDAMENTAL TOPICS - about two weekly lectures per TOPIC:

1. COMPUTABILITY: Turing Machines, Equivalence of Models, Church's Thesis, Set Cardinality
2. UNSOLVABILITY: Halting Problem, Diagonalization, Universal Turing Machine, Reducibility
3. AUTOMATA: Finite State, Regular Expressions, Pushdown, Linearly Bounded Automata
4. LANGUAGES: Regular, Context Free, Context Sensitive, Recursive, Recursively Enumerable
5. GRAMMARS: Chomsky hierarchy, CFG Normal Forms, Grammars/Languages/Automata types
6. AMBIGUITY: Algebraic, Union, Concatenation, Post’s Correspondence Problem.

EXAMS will be held on every fifth week, after a SUMMARY & REVIEW lecture.

PREREQUISITE COURSES for CSC 5446 are: CSC 3412 and CSC 3415 or my permission.

GRADING POLICY:

There will be three in-class exams, each worth 30%.
Class participation and homework will account for 10% of the final grade.
Exams are closed book/notes, with a one page note-sheet. Results posted on Canvas.
A standard 100-90 = A, 89-80 = B, 79-70 = C,... scale will be used.
All homeworks will be posted and submitted via Canvas.

CSE POLICY ON CHEATING: Please read online at www.ucdenver.edu
ALSO, LOOK AT: UCD – Downtown Dates and Deadlines ACADEMIC CALENDAR