CMPS 512 Theory of Computing

3.0 hours credit, TR @ 12:30 pm ~ 1:50 pm, N209, Thurman Hall.

Instructor: Shizhong Yang, E113 Thurman Hall, Phone: 225-771-3113.
       Class hours: Tue/Thur: 12:30 pm - 1:50 pm
       Office hours: Tue/Thr: 2:00 pm - 5:00 pm
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Textbooks:

1. (Recommended) An Introduction to Formal Languages and Automata, 2016 (6th edition), Peter Linz, published by Jones and Bart Leaning, ISBN: 9781284077247, 2016.

Specifics:

A. The course covers theoretical topics including determinism versus non-determinism, Chomsky hierarchy, relationship amongst grammars, languages and automata, regular sets, context free and context sensitive sets, recursive and recursively enumerable sets, finite state machines, pushdown machines, linearly bounded machines, Turing machines, universal Turing machine and programming language, halting problems, decidability problems, models of computation, polynomial and exponential time algorithms.

B. Prerequisites: CMPS-200 (Discrete Structures) or equivalent.

C. Is a required core course.

Educational Objectives:

Educational objective related to this course is to produce graduates who are thoroughly trained in methods of analysis, including the mathematical and computational skills appropriate for abstract problem solving.

Student Learning Outcomes:

Each student, after completion of this course, should be able to demonstrate (a) an ability to apply knowledge of computing and mathematics appropriate to the discipline, (b) an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution, (c) recognition of the need for and an ability

to engage in continuing professional development, and (d) an ability to use current techniques, skills, and tools necessary for computing practice.

Course Work Grading and Scale:

	Approx. weight in grade
Assignments, projects	10%
Midterm	40%
Final	40%
Attendance	10%

Range	Grade
90%-100%	A
80%-89%	B
70%-79%	C
60%-69%	D
59% and less	F