

University of North Alabama
Departmental Syllabus

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| COURSE: | CS 421 |
| COURSE TITLE: | Automata Theory and Compiler Construction |
| CREDITS: | 3 Semester hours |
| PREREQUISITE: | CS 355 |
| COURSE DESCRIPTION: | Definition of formal grammars, mathematical machines and their relationships. Description of compiler writing techniques and their application on a simple language. |
| COURSE OBJECTIVE: | To recognize the relationship between languages, the grammars that generate them and the mathematical machines that recognize them. To recognize the steps in compiler design. |
| COURSE CONTENT: | Chomsky Hierarchy, Regular, Context-Free, Context-Sensitive and Recursively Enumerable Grammars, Finite State Automata, Push-down Automata, Linear-Bounded Automata and Turing Machines. Steps in compilation, type of parsers compiler writing tools. |
| COURSE REQUIREMENTS: | Class attendance. Midterm and final exams. Homework problems and programming assignments. Graduate students will be expected to write a research paper on an agreed upon topic. |
| EVALUATION: | Students will be evaluated on the basis of midterm, final exam, homework and programming grades. (<i>Graduate students will also be graded on a research paper</i>). |

Accommodation Statement: In accordance with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973, the University offers reasonable accommodations to students with eligible documental learning, physical and/or psychological disabilities. Under Title II of the Americans with Disabilities Act (ADA) of 1990 and Section 504 of the Rehabilitation Act of 1973, a disability is defined as a physical or mental impairment that substantially limits one or more major life activities as compared to an average person in the population. It is the responsibility of the student to contact Developmental Services prior to the beginning of the semester to initiate the accommodation process and to notify instructors within the first three class meetings to develop an accommodation plan. Appropriate, reasonable accommodations will be made to allow each student to meet course requirements, but no fundamental or substantial alteration of academic standards will be made. Students needing assistance should contact Development Services.