Syllabus
CSCI 510, Automata and Formal Language Theory, Fall 2016

- **Instructor:** Geoffrey Matthews, x3797, `geoffrey dot matthews at wwu dot edu`
- **Office hours:** MTWF 10:00, CF 469
- **Text:** *Introduction to the Theory of Computation*, Michael Sipser, any edition. Note that the 3rd edition in paperback is only $39 from Amazon.
- **Webpage:** `wwu.instructure.com`: homework assignments, grades
- **Repository:** `https://github.com/geofmatthews/csci510`: handouts, lectures, code
- **Lectures:** CF224, MTWF 9:00
- **Content:** We will cover regular languages, context free languages, and recursive languages by examining the properties of the languages and also the types of machines that recognize them. Such machines include finite state machines, pushdown automata and Turing Machines. We will also look at undecidable problems, the theory of NP-completeness, and discuss other meaningful ways to classify problems.
- **Exams:** One midterm and one final. You may bring two double-sided pages of notes to use during the exams.
- **Homework:** Homework assignments will be passed out regularly through the quarter. Homework will be due at midnight on the due date. Late work is accepted at a penalty of 25% per each fraction of 24 hours late. There may be an assignment due during dead week.
- **Grading:**

  $0 \leq F < 60 \leq D < 70 \leq C < 80 \leq B < 90 \leq A$

Homework	Midterm	Final
50%	20%	30%

- **Academic dishonesty:** Academic dishonesty policy and procedure is discussed in the University Catalog, Appendix D. All students should read this section of the catalog. Academic dishonesty consists of misrepresentation by deception or other fraudulent means.
- **Collaboration:** Collaboration with your fellow students is a good way to learn. Feel free to share ideas, solve problems, and discuss your programs with other students. However, collaboration is *not* copying.
- **Approximate Schedule:** The following schedule may be adjusted radically depending on interests and problems as they occur.

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   September 2016
Su Mo Tu We Th Fr Sa
18 19 20 21 22 23 24  Chapters 0, Mathematical concepts
    October 2016
25 26 27 28 29 30  1  Chapters 1, Regular languages
 2  3  4  5  6  7  8  Chapters 2, Context-free languages
 9 10 11 12 13 14 15  Chapters 3, Church-Turing Thesis
16 17 18 19 20 21 22  Chapters 4, Decidability
23 24 25 26 27 28 29  Review and Catchup, Midterm Friday October 28
   November 2016
30 31  1  2  3  4  5  Chapters 5, Reducibility
 6  7  8  9 10 11 12  Chapters 6, Advanced topics
13 14 15 16 17 18 19  Chapters 7, Time complexity
20 21 22 23 24 25 26  Chapters 8, Space complexity
   December 2016
27 28 29 30  1  2  3  Review and Catchup
 4  5  6  7  8  9 10  Final Monday December 5 8:00am
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