

# CPT S 317: Automata and Formal Languages



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Spring 2017

School of EECS

Washington State University,  
Pullman

MWF 10:10-11:00

SLOAN 169



# Instructor Contacts

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- Instructor:

**Ananth** Kalyanaraman

(pronounced: “An-anth” “Kal-ya-na-ra-man”)

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335-6760

*Weekly* Office Hours: **Wednesdays 2:30-3:30pm**



# Objectives

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- Introduce concepts in automata theory and theory of computation
- **Identify different formal language classes and their relationships**
- Design grammars and recognizers for different formal languages
- **Prove or disprove theorems in automata theory using its properties**
- Determine the decidability and intractability of computational problems



# Course Organization

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- Very broadly, the course will contain three parts:
  - Part I) Regular languages
  - Part II) Context-free languages
  - Part III) Turing machines & decidability



# Teaching Assistants

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- TA1
  - TBD
- TA2:
  - TBD
- Check course website for any updates



# Pre-requisites

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- CPT S 122/132: Data Structures
- Math 216: Discrete Structures



# Required Textbook

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- Introduction to Automata Theory, Languages and Computation
  - By J.E. Hopcroft, R. Motwani, J.D. Ullman
  - 3<sup>rd</sup> Edition
  - Addison Wesley/Pearson
- Course book homepage:  
<http://infolab.stanford.edu/~ullman/ialc.html>
  - Solutions to starred exercises in the textbook & Errata
- **OSBLE+ (Online Studio-Based Learning Environment):** <http://plus.osble.org>
- **The Gradiance Resource** (optional)



# Course Webpage

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- <http://www.eecs.wsu.edu/~ananth/CptS317>

## *Why do I need to check the webpage?*

- Lecture Notes
- Homeworks will be posted on the webpage
- A tentative schedule will also be posted and maintained
- Misc. static information about the course

## *How frequently do I need to keep checking the course webpage?*

- Ideally once every day, and if not at least once before/after each class (for lecture notes)





# The OSBLE+ Web Portal

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- We will use OSBLE+ for discussions, class announcements, and for email communication with instructor.
- Every student needs to register in OSBLE+ and should check the portal regularly. All important (dynamic) announcements will be made through this portal.
- Registration instructions are on the course website.



# How to get in touch with the instructor and the TA(s)?

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- OSBLE+ (for email and dashboard public discussion forums)
- Office hours
  - Weekly once
  - preferred way to meet one-on-one
  - No need for prior appointment if meeting during the office hour
- In addition, the instructor will be available outside of office hours to meet (appointments preferred for this mode).



# Grading

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- 8 homeworks (60%) - (best 7 policy)
- 2 midterms (20%)
- 1 final (20%)

## Grading Policy:

- Curved



# Homework Submission Policy

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- Hardcopy to be submitted *in class* on the due date
  - Early submissions allowed
- *No late submissions*
- Extensions *may* be permitted under extraordinary circumstances
  - Contact the instructor *at least 1 week prior*
- Homeworks will be posted on the course website



# Homework Policy

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- All homework must be done *individually*
- Cheating:
  - Helping others, getting help, looking up website for solutions, etc.
- Students caught cheating will be awarded an **F** grade, and will be subjected to the WSU academic dishonesty policy.
- If something is not clear, on what constitutes and what does not, please consult the instructor in advance.



# Exam Policy

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- 2 Midterms and 1 Final exam.
- Closed book, closed notes, comprehensive
- Make-ups will be rare and only under extraordinary circumstances
- Seek prior permission from instructor (at least 2 weeks in advance)



# Course Schedule

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- A tentative schedule has been posted and will be maintained on the course website
  - Subject to change as course progresses
  - Bookmark & keep checking
    - Recommended frequency: once a week
  - Look for exam schedules as well here



# Lecture basics

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- Classes will involve *both Slides + Board* (to roughly equal degrees)
- Lecture slides available online
  - However, no scribes from class will be made available
  - So, take your own notes in class
- For latest/updated slides, download before each use
- **Use of laptops and smart phones not allowed in classroom.**