

Automata Theory/Formal Languages

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Text: *Introduction to Formal Languages and Automata* by Peter Linz, 5th edition. The course will cover most of the material in Chapters 1 thru 9 and some of Chapter 11. The major topics covered will be: **Regular Languages** (Finite Automata, Regular Expressions, Non-determinism, Properties of Regular Languages, and Applications), **Context Free Languages** (Context Free Grammars, Pushdown Automata, Grammars and Equivalences, and Properties of Context Free Languages), and **Turing Machines** (Turing Machine examples, Variations of Turing Machines, and Recursive Languages).

Course Objectives: The objective of this course is to introduce you to the basic theoretical concepts and mathematical models that are foundational to computer science. Please keep in mind that this course is really part of discrete mathematics and the emphasis will be on problem solving.

Course Evaluation: Two exams will be held. Exam 1 is tentatively worth 50 points, and Exam 2 is tentatively worth 60 points. There are seven homeworks each worth 20 points. Some extra credit may be given. All points are equally weighted. Tentative grade distribution (scaled to 100 points) is:

A: 90 and above; **B:** 80 and above; **C:** 70 and above; **D:** 60 and above; **E:** less than 60

Student Learning Outcomes: At the conclusion of the course, students will be expected to get a clear and in-depth understanding of the fundamentals of the theory of computing.

Standard Policies

Information regarding these policies are standard items, many of which can be included as a hyperlink (<http://usf.edu/undergrad/standard-policies.aspx>) if so desired. Some are only necessary if applicable.

1. Final Examinations Policy

All final examinations are to be scheduled in accordance with the University's final examination policy.

<http://www.ugs.usf.edu/policy/FinalExams.pdf>

2. General Attendance Policy

<http://www.ugs.usf.edu/policy/GeneralAttendance.pdf>

3. Early Notification Requirement for Observed Religious Days

Students who anticipate the necessity of being absent from class due to the observation of a major religious observance must provide notice of the date(s) to the instructor, in writing, at the beginning of the term.

<http://www.ugs.usf.edu/policy/ReligiousDays.pdf>

4. Academic Integrity of Students

<http://www.ugs.usf.edu/policy/AcademicIntegrityOfStudents.pdf>

5. Disruption of the Academic Process

<http://www.ugs.usf.edu/policy/DisruptionOfAcademicProcess.pdf>

6. Gender-Based Crimes

USF has a commitment to the safety and well-being of our students. Please be aware that educators must report incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence that come to their attention. I am required to report such incidents in order for the Office of Student Rights and Responsibilities or the Office of Diversity, Inclusion, and Equal Opportunity can investigate the incident or situation as a possible violation of the USF Sexual Misconduct/Sexual Harassment Policy and provide assistance to the student making the disclosure. If you disclose in class or to me personally, I must report the disclosure and will assist you in accessing

available resources.

The Center for Victim Advocacy and Violence Prevention, the Counseling Center and Student Health Services are confidential resources where you can talk about such situations and receive assistance without the incident being reported.

- *Center for Victim Advocacy and Violence Prevention:*
 - (813) 974-5757
 - <http://sa.usf.edu/advocacy>
- *Counseling Center*
 - (813) 974-2831
 - <http://usf.edu/student-affairs/counseling-center>
- *Student Health Services*
 - (813) 974-2331
 - <http://usf.edu/student-affairs/student-health-services>

7. Student Academic Grievance Procedures

<http://www.ugs.usf.edu/policy/StudentAcademicGrievanceProcedures.pdf>

8. Students with Disabilities

Students with disabilities are responsible for registering with Students with Disabilities Services (SDS) in order to receive academic accommodations. SDS encourages students to notify instructors of accommodation needs at least 5 business days prior to needing the accommodation. A letter from SDS must accompany this request.

- See student responsibilities: <http://www.usf.edu/student-affairs/student-disabilities-services/>
- See instructor responsibilities: **Student with Disabilities Services Faculty/Staff Handbook**

9. Turnitin Privacy Policy

In order to comply with privacy laws, students are not required to include personal identifying information, such as name, in the body of the document. Turnitin provides an originality report letting the instructor know how much of the assignment is original. Please follow your instructor's instructions carefully regarding what identifying information to include.

- **How do I submit a Turnitin Assignment?**

10. University Emergency Policy

In the event of an emergency, it may be necessary for USF to suspend normal operations. During this time, USF may opt to continue delivery of instruction through methods that include but are not limited to: Canvas, Elluminate, Skype, and email messaging and/or an alternate schedule. It's the responsibility of the student to monitor Canvas site for each class for course specific communication, and the main USF, College, and department websites, emails, and MoBull messages for important general information.