

1. General Information

	<u>Instructor: H. K. Dai</u>	<u>Teaching Assistants: S. Babu Thippireddy</u>
Office Location:	Mathematics, Statistics, and Computer Science Building Room 209	Room 312
Office Hours:	Monday 8:30 – 10:30 (or by appointment)	Thursday 3:00 – 4:00
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Universal Resource Locator:	http://www.cs.okstate.edu/~dai/	

2. Course Description in Current University Catalog

CS 3613: Theoretical Foundations of Computing. Prerequisites: CS 2133 (Computer Science II) and CS 3653 (Discrete Mathematics for Computer Science). Introduction to the classical theory of computer science. Sequential machines and their applications to devices, processes and programming. Models of computation: finite-state automata, push-down automata, Turing machines. The role of non-determinism. Limits of digital computation. Computability and unsolvability. The Church-Turing Thesis.

3. Course Goals

The goal of CS 3613 is to give students an ability to develop and rigorously reason about abstract formal models of computations, and to learn the powers and limitations of such formalism. “Classical” models, such as finite automata / regular expressions, pushdown automata / context-free grammars, and Turing machines will be studied in depth.

4. Course Materials and References

1. Text: [Sip06] M. Sipser. *Introduction to the Theory of Computation*. Thomson Course Technology, Recent Edition (2006).
2. Reference: [Mar03] J. A. Martin. *Introduction to Languages and the Theory of Computation*. McGraw-Hill, Recent Edition, 2003.
3. Lecture notes (sketchy): from course instructor.
4. Class pages (<http://www.cs.okstate.edu/~dai/course/CS3613/2009spring/2009spring.html>).

5. Homework and Examinations

There will be about 7 homework assignments, 2 tests, and 1 final examination.

6. Course Grade

The course grade is based on the homework (35%), two tests (17.5% each), and final examination (30%). The passing letter-grade is determined by the following partition of the course grades:

D : [50, 60); C : [60, 70); B : [70, 85); and A : [85, 100]

7. Miscellaneous

1. **Lectures:** Lectures are not mandatory, but historically, students with active attendance have done significantly better on examinations than their less frequently attending classmates.
2. **Homework:** Problem sets form an important part of the learning in the course, and thus, you are required to do them in order to pass.
3. **Collaboration:** You are encouraged to collaborate in study groups on the solution of the homework. If you do collaborate you must write up solutions on your own and acknowledge your collaboration in the write-up for each problem. If you obtain a solution with help (e.g., through library work, another student, etc.), acknowledge your source, and write up the solution on your own.

8. Student Disability Services

Student Disability Services and other Student Services are committed to providing support services to students with physical and learning disabilities. Please advise the instructor of desired academic accommodations, and notify Student Disability Services.

9. Academic Dishonesty or Misconduct

Refer to the section in “University Academic Regulations” in current University Catalog (<http://www.okstate.edu/registrar/Catalogs/Catalog.html>)

10. Adding/Dropping/Withdrawing, Important Dates, and Syllabus Attachment

1. **Tests and Final Examination:** Tentative dates for the tests are February 16 (Monday) and March 30 (Monday), 2009.

Adopting “Spring 2009 Final Examination Schedule” in University Class Schedule for Spring 2009, the firm time/date for final examination is 10:00 – 11:50 am, May 6 (Wednesday), 2009 in regular class meeting place.

Refer to:

<http://www.okstate.edu/registrar/AcademicCalendar/AcademicCalendarMain.html>

2. **Adding/Dropping/Withdrawing and Important Dates:** Refer to:
<http://www.okstate.edu/registrar/AcademicCalendar/AcademicCalendarMain.html>
3. **Syllabus Attachment:** Refer to:
<http://osu.okstate.edu/acadafr/aa/CurrentStudents.htm>