

CSI/MAT 350 – Theory of Computation – Spring 2018

Professor: Shaun D. Ramsey, Ph.D. (Dr. Ramsey he/him)

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Office: DUNN N102

Office Hours: W 10:30 - 11:20, Tu 3-4pm, F 2:30-3:30

(or by drop-in and appointment)

Tentative QSC Drop-In Hours: Tu 7-8pm, Th 4-5pm in DUNN N103

Class meetings: 201-10 MWF 11:30-12:20PM DUNN N103

Text: Introducing the Theory of Computation by Wayne Goddard

Web: <http://shaunramsey.com/class/18SPRING/350>

Overview and Advising: Theory of computation is the study in the fundamentals of computer science. A computer scientist should understand the notions of tractable, intractable and complexity before attempting to tackle any problem. By first examining simple languages and building up to higher and more complex languages, we develop a method of understanding complexity. By the end of the course, one should be able to identify different languages (and prove their classifications) and understand the limits of computability and complexity.

Suggestions: Get into a group and make sure to hack away at all the problem sets. That's where a lot of the true learning in the course will happen. Come to extra problem solving sessions that I hold! Solving problems is the best way to learn! The natural tendency is to procrastinate on these suggested homework problems. Do not do so. You will need to practice, fail, try again and get help in order to succeed. As an advanced course, I expect this diligence of each of you.

Grade Breakdown:

Exam I:	20%
Exam II:	25%
Exam III:	25%
Final:	25%
Participation, Classwork and Citizenship:	5%

Exams: Our tentative exam dates are: 2/16, 3/21, and 4/13 with a finals during finals week.

Attendance: Attendance is mandatory in this course. On your sixth absence in a MWF course or your fourth absence in a TTh course, you automatically fail the course. As a matter of courtesy, you are expected to notify Dr. Ramsey before class describing the reason of your absence. You must be present on the day of an exam or you will receive a 0. There is no distinction between excused and unexcused absences. It is quite likely that I will email you to discuss the reasons you have missed the class, but it is ultimately your duty to keep track of your absences and to contact me. Missing a class may result in missed classwork and/or quizzes. There are no make-up quizzes or classwork. It is your responsibility to obtain assigned homework, announcements and class notes from a classmate. Coming late (or leaving early) to class will also count against you. In this case, every two late arrivals (lates) count as an absence. Missing more than 15 minutes of a class counts as a full absence. Thus, for MWF, you fail the course with 12 lates or 6 absences or any mix of the two that add up to 6. Examples are: 2 lates and 5 absences, 4 lates and 4 absences, 6 lates and 3 absences, and so on.

Grading: I do not handle late assignments. Late assignments receive a score of 0.

Accommodations: If you have an accommodation that has been reported to the college, please let me know as soon as possible so I can work to meet your accommodation. Please notify me of any necessary accommodation at least two weeks prior to the requirement so we can make it happen. If you suspect you might need an accommodation, I recommend that you speak with OAS as soon as possible.

Academic Honesty: You are always subject to the Honor Code of Washington College. Always sign the honor code on materials that you hand in (including homework and exams). All work must be your own. When handing in any assignment, including a program, you are required to cite every reference, including webpages. Failure to do so will be considered plagiarism. For exams in this course, you will be expected to sign the honor code and you may be audio, image, or video recorded.

General Tentative Schedule:

Week 1	FAs, REs
Week 2	NFAs, Properties and Closure
Week 3	GNFA*, PL
Week 4	PL, Review, Exam
Week 5	CFG, PDA
Week 6	Properties
Week 7	CNF, PL
Week 8	Review, Exam
Week 9	TMs, Variations
Week 10	Properties, r and r.e.
Week 11	Diagonalization, Halting Problem
Week 12	Review, Exam
Week 13	Reduction
Week 14	P, NP, PSPACE, NPSPACE

Note: This document and a tentative week by week schedule are available from the website listed above.