

# Syllabus for COMP314, Theoretical Foundations of Computer Science

Spring 2011  
Dickinson College  
Instructor: John MacCormick

## Goals

- Understand what types of computations can be performed by certain types of abstract computers
- Acquire practical skills for working with regular expressions and finite state machines, which are both important in computer-related professions
- Increase mathematical maturity by making rigorous mathematical arguments about computations
- Acquire an elementary understanding of how compilers parse computer programs

## Teaching methods

- required reading in advance of most lectures
- lectures and class discussions covering textbook content and other material
- in-class mini-labs using computers to experiment with concepts covered in lectures
- programming projects (both homework and in-class)
- homework, exams, and quizzes to reinforce understanding of concepts

## When and where

- Classes: Monday and Thursday 1:30–2:45pm, Tome 231
- Office hours: see the instructor's webpage

## Book

*An Introduction to Formal Languages and Automata*, by Peter Linz  
Publisher: Jones & Bartlett  
4th edition  
ISBN: 0763737984

## Assessment and grading

- Final grade will comprise:

Homework assignments (5 x 5% each)	25%
Programming assignments (3 x 3.33% each)	10%
EZquizzes (6 x 3.33% each)	20%
Midterm exam	15%
Final exam	30%

- Homework assignments:** There will be 5 homework assignments, due at the start of class on 2/10, 3/3, 4/4, 4/18 and 5/5. Homework assignments must be submitted in hard copy; they may not be submitted electronically. Neatly handwritten solutions are acceptable.
- Programming assignments:** There will be 3 programming assignments, due at the start of class on 2/17, 3/24, and 4/25. Programming assignments must be submitted electronically to Moodle as a single ZIP file of the relevant source code.
- EZquizzes:** An EZquiz is a brief in-class quiz, typically 15 minutes or less. The quiz is “EZ” (i.e. easy) because a list of the questions, together with the solutions, is provided in advance. (Only a subset of the published questions are on each quiz.) EZquizzes are closed book: no materials of any kind may be consulted. There will be six EZquizzes, administered at the start of class on 2/7, 2/21, 3/7, 3/28, 4/11 and 5/2.
- Midterm exam:** There will be a 75-minute midterm exam in class on 3/10.
- Final exam:** The final exam will take place 2pm-5pm on Tuesday, May 10.
- Both the midterm and final exams are open note. Students may consult any printed or handwritten materials brought into the exam. The class web pages and JFLAP software may also be used. No other electronic device or electronic materials may be used without the prior permission of the instructor.

## What should I take notes on?

Generally speaking, there is no need to take notes during lectures, as all concepts are explained clearly either in the textbook or in the resources provided on the course website. On rare occasions, when you are specifically instructed to do so in class, you will need to take notes during a lecture. You are of course welcome to take notes at other times, but you should only do so if you are sure this helps you to understand the material better. For most students, it is better to concentrate on understanding the material during a lecture, without diverting any attention to notetaking.

You will frequently be asked to work on problems in class, so you should always have writing materials ready.

## **What will be on the exam?**

Technically speaking, any material covered in any lecture is eligible to appear in the midterm or final exams. In practice, a strong majority of exam questions will be similar to a homework question or an EZQuiz question.

## **Amount of work**

College policy recommends approximately 3 hours of independent work for every hour of class time. Our class meets for 2.5 hours per week. Therefore, you should expect to spend 7-9 hours per week (outside of class time) on this course.

## **Plagiarism, copying, and collaborating**

The College's standard policy on plagiarism applies and you should be familiar with it, but here are some key points that apply particularly to this course:

- All work must be your own.
- Never copy work from someone else or allow your own work to be copied.
- You may not copy or consult assignment solutions from any source, including online repositories or solutions provided for previous instances of the course.
- If you use exact words taken from any source, you must use quotation marks and cite the source. Exception: in this course, you may quote freely from the textbook, and from EZquiz solutions, without using quotation marks or a citation.
- Students are encouraged to help each other understand concepts, including concepts that apply to homework and programming assignments. However, all work must still be your own. So if you discuss a problem with someone, you must destroy any written or electronic material that results from the discussion, and re-create it later on your own.
- Be especially careful not to copy computer code from another student, or from the Internet (excluding the exceptions given in the next bullet point). Sharing or copying a computer code is easy and often tempting, but it is not permitted and will suffer the same penalties as any other form of cheating.
- In this course, you are permitted to copy snippets of code from two sources: (i) the Java tutorials and documentation on sun.com, and (ii) the course webpages, and any additional sources specifically permitted for a given assignment as listed on those webpages. However, you must clearly attribute any code copied from any source, whether or not you subsequently alter it.

## **Accommodations**

The instructor will follow college policy on accommodations for students who need them.

## **Late Work Policy**

Each student is permitted a total of three no-penalty days of lateness for submitted work over the entire semester; every subsequent day of lateness incurs up to a 25% penalty for the late assignment. Late days can be used only in whole day units. Accounting for late days is mostly via an honor system: students should keep count of their late day usage. To use one or more late days on a given assignment, state clearly at the start of your submission how many days you are using, and the total used so far in the semester.