

The Science of Programing (CSC171)

Ted Pawlicki

Computer Studies Building 722

Office Hours : Wednesdays 11am-1pm

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COURSE DESCRIPTION:

This course is a *hands on* introduction to computer programming using the JAVA computer language. You will largely learn to program a computer by writing computer programs. Topics covered will include:

- Computer Systems Architecture
- Software development process
- Development tools and environments
- Creative Problem Solving
- Data representation
- Expressions for calculation
- Use of classes and objects
- Conditional expressions
- Iterative programming constructs
- Object oriented design of software
- Graphics
- Applets and Applications
- Packages
- Use of arrays
- Inheritance
- Polymorphism
- Exception handling
- Simple recursion
- Introduction to Data Structures

PREREQUISITES:

There are no formal prerequisites for this course.

No computer programming experience is required.

What you do need is a sense of scientific curiosity.

READINGS:

Assigned readings will be from :

How To Think Like a Computer Scientist by Downey

Java How To Program 8th ed. by Deitel & Deitel

WEB PAGE: Blackboard system : my.rochester.edu

GRAD TA: Jansen Orfan<[orfan](#)>

LECTURES: T-R 3:25PM-4:40PM, Hutch 140

LABS:

M 12:30PM-1:45PM Gavet 244

T 6:15PM-7:70PM Gavet 244

R 6:15PM-7:70PM Gavet 244

GRADING

- | | |
|----------------|-------|
| • Midterm Exam | = 10% |
| • Projects (4) | = 40% |
| • Final Exam | = 20% |
| • Labs | = 30% |

REQUIREMENTS:

Class attendance and participation are expected.

Labs will be short exercises, intended to be completed during the lab session, based on the previous week's reading and lecture.

Projects are larger, longer term (2 week), take home assignments involving the combination of the techniques learned in labs with some creative design.

Late policy: 2% per hour late (approximately 2 day maximum).

ACADEMIC HONESTY : Students are strongly encouraged to collaborate, work together, and share ideas. However, each assignment must be the unique product of an

individual. No group projects. Standard academic honesty principles apply – in short, never claim that someone else's work was your own. Do not electronically copy, cut/paste any code that you did not first type in yourself. All sources not your own must be properly referenced in program comments and written documentation. Any and all cases of academic misconduct must be reported to the board of academic honesty.

PLANNED COURSE OUTLINE: (subject to change)

Class 00 : Introduction/Organization

Class01 : Deitel & Deitel 2.1 – 2.4, Downey Chap 1

Class 01: D&D 2.4-2.9, Downey 2.1-2.6

Class 02: D&D 3.1-3.5, Downey 2.6-2.11

Class 03: D&D 3.6-3.10, Downey 3.1-3.4

Class 04: D&D 4.1-4.6, Downey 3.5-3.8

Class 05: D&D 4.7-4.15 , Downey 3.9-3.13

Class 06: D&D 5.1-5.7, Downey 4.1-4.6

Class 07: D&D 5.8-5.11, Downey 4.6-4.11

Class 08: D&D 7.1 – 7.8 , Downey Chap 5

Class 09: D&D 7.9-7.16 , Downey 6.1-6.6

Class 10: D&D 8.1-8.7, Downey 6.7-6.12

Class 11: D&D 8.8-8.17 , Downey 7.1-7.4

Class 12: D&D 9.1-9.4 , Downey 7.5-7.8

Class 13: D&D 10.1-10.5 , Downey 7.9-7.12

Class 14: MIDTERM EXAM

Class 15: D&D 11.1 – 11.5, Downey 8.1-8.6

Class 16: D&D 11.6-11.14 , Downey 8.7-8.12

Class 17: D&D 14.1-14.10 , Downey 9.1-9.7

Class 18: D&D 14.10-14.21 , Downey 9.8-9.14

Class 19: D&D 15.1-15.4 , Downey Chap 10

Class 20: D&D 15.5-15.9 , Downey 11.1-11.6

Class 21: D&D 16.1-16.4 , Downey 11.7-11.13

Class 22: D&D 16.5-16.8 , Downey 12.1-12.7

Class 23: D&D 17.1-17.5 , Downey 12.8-12.12

THANKSGIVING

Class 24: D&D 17.5- 17.9 , Downey 13.1-13.5

Class 25: D&D 20.1-20.7 , Downey 13.6-13.11

Class 26: D&D 20.8-20.16, Downey 14.1-14.5

Class 27: D&D 21.1-21.5, Downey 14.6-14.9

Class 28: D&D 21.6-21.10, Downey Chap 15