Objects Analysis
Threads
Design
15-214

Principles of Software Construction:
Objects, Design, and Concurrency

Course Organization

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**School of
Computer Science**

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Course preconditions

- 15-122 or equivalent
  - 2 semesters of programming, knowledge of C-like languages

- Specifically:
  - Basic programming skills
  - Basic reasoning about programs
  - Basic algorithms and data structures

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Course postconditions

- OO concepts and skills
  - Objects, classes, types
  - Java development skills

- Tools for developing larger-scale software
  - Design methodologies and patterns
  - The design and use of libraries and frameworks

- Modeling and analysis
  - Use of development, testing, and analysis tools

- Concurrent and distributed systems
  - Scaling and performance
  - Safe programming practices for explicit concurrency

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Important features of this course

- The team
    - Instructors
        - Jonathan Aldrich aldrich@cs.cmu.edu
        - Charlie Garrod charlie@cs.cmu.edu
    - TAs
        - Beth Anne Katz bkatz@andrew.cmu.edu [Section A]
        - Alex Lockwood alockwoo@andrew.cmu.edu [Section B]
        - Bailey Forrest bcforres@andrew.cmu.edu [Section C]
        - Shannon Lee sjl1@andrew.cmu.edu [Section D]
        - Mat Gray mhgray@andrew.cmu.edu [Section E]
        - Dan Lu dylu@andrew.cmu.edu [Section F]

- The schedule
    - Lectures
        - Tues, Thurs 3:00 – 4:20pm DH 2315
    - Recitations
        - A: Weds 9:30-10:20am GHC 4211
        - B: Weds 10:30-11:20am WEH 5310
        - C: Weds 11:30-12:20pm WEH 5310
        - D: Weds 12:30-1:20pm BH 235B
        - E: Weds 9:30-10:20pm PH A20
        - F: Weds 3:30-4:20pm PH 226C
    - Office hours
        - *To be announced – see course web page*

Recitations are required

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Important features of this course

- Course website
  - Schedule, assignments, lecture slides, policy documents
        http://www.cs.cmu.edu/~charlie/courses/15-214

- Tools
  - Git
    - Assignment distribution, handin, and grades
  - Piazza
    - Discussion site – link from course page
  - Eclipse
    - Recommended for developing code

- Assignments
  - Homework 0 available tomorrow via Git
    - Ensure all tools are working together
    - Git, Java, Eclipse

- First recitation is tomorrow
  - Introduction to Java and the tools in the course
  - *Bring your laptop, if you have one!*
    - Install Git, Java, Eclipse beforehand – instructions on Piazza

Course policies

- Grading (*subject to adjustment*)
  - 60% assignments
  - 15% midterm
  - 20% final exam
  - 5% participation

- Collaboration policy is on the course website
  - We expect your work to be your own
  - Ask if you have any questions
  - If you are feeling desperate, please reach out to us
    - Always turn in any work you've completed *before* the deadline

- Texts
  - Alan Shalloway and James Trott. *Design Patterns Explained: A New Perspective on Object-Oriented Design* (2nd Ed).
  - Several free online texts (Java, etc.)

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Course policies

- Late days for homework assignments
  - 5 total late days for the semester
    - A separate budget of 2 late days for assignments done in pairs
    - Late days beyond the budget cost 10% per day
  - May use a maximum of 2 late days per assignment
    - Work submitted more than 2 days late is not accepted, except under extreme circumstances

- Recitations
  - Practice of lecture material
  - Discussion, presentations, etc.
  - Attendance is required
  - In general, bring a laptop if you can

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Section availability and diversity

- There is space in the course for everyone on the waitlist
  - But not necessarily if you are waiting for section C or D
  - Current availability:

<div align="center">

E   F   B   A   D   C

$\longleftrightarrow$

space available   full

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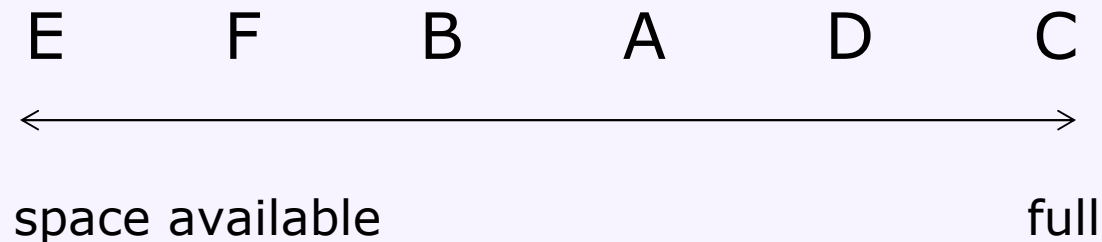
  - Typically more spots open up in the next 2 weeks

- Diversity of experience
  - Java & OO experience varies dramatically
  - If you know Java well, the first 3-4 weeks will be slow
    - Stay with us—it will get interesting and challenging soon!
  - If you have never seen Java, don't worry
    - You will need to work, but we have designed the course for you to learn quickly

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