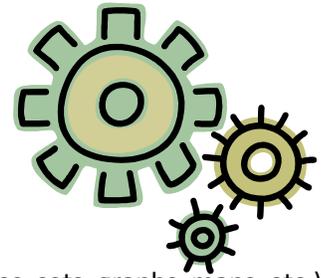


Class Information:

Time / Room: Monday / Wednesday 12:00 – 2:15pm ATC306
 Instructor: **Jason Witherell** (Office: **ATC325**)
 Instructor Office Hours: **MWF 8:15-9:00am, W 3:00-4:45pm**, or by appointment
 Instructor Email: **jwitherell@shawnee.edu**
 Instructor Phone: **740-351-3113** (I don't check my voicemail)



Course Goals (and relative weight): *Upon completion of this course, you should...*

1. (50%) Be familiar with most of the basic computer science data structures (lists, trees, sets, graphs, maps, etc.) including underlying implementations and strengths / weaknesses.
2. (5%) Be able to apply and qualitatively analyze algorithms using data structures¹.
3. (30%) Become an intermediate Java developer (it is expected that you've taken, passed, and *understand* material from ETEC1101, ETGG1801/1803, or an equivalent course)²
4. (5%) Be a competent debugger (finding bugs in existing code and your own using the IDE's debugger)
5. (10%) Be able to construct and ask questions relating to computer science.

Catalog Description:

This course includes advanced methods for searching and sorting, including hashing techniques. It is an Introduction to complexity analysis. Topics covered will include dynamic data structures such as lists, queues, trees, heaps, tables, and graphs. In addition, we will cover algorithms involving hashing, sorting, recursion, and searching. Lab emphasis is upon the implementation of these structures and techniques in complete working structured software applications.

Grading: *Your grade will be based on five components (~half from **theory**, half from **hands-on** exercises). The overall points will be roughly distributed as follows.*

1. (10%) **Attendance**
2. (20%) **Quizzes**
3. (50%) **Lab Assignments**
4. (20%) **Final Exam**

Grading Scale:

Percentage	94-100	90-94	87-90	84-87	80-84	77-80	74-77	70-74	67-70	64-67	60-64	0-60
Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

Class Structure:

We'll generally break the class into *about* 9 sections. For each section, we'll start with a lecture. Immediately thereafter, a lab project will be assigned in which you can practice / implement the ideas from lecture. Once the lab is submitted and returned, we'll have a quiz over the material just covered. Occasionally we might have small in-class exercises / quizzes as well.

Attendance:

In addition to the lab and quiz grade for each section, you'll also receive a participation grade. Generally, everyone starts with a 100% attendance grade, but you will lose points by:

- Sleeping
- Being disruptive to others (this doesn't mean don't talk)
- Updating your facebook profile, doing other non-class-related activities
- Working on homework, **even if it's for this class!**

¹ You will be further exposed to these concepts in ETEC3401 (Algorithms), fall 2017 (assuming you pass this class ©)

² We'll build upon your Java expertise next semester in ETEC2110 (Systems Programming), which is in C/C++

Quizzes:

Quizzes will *usually* be announced. Quizzes are closed-notes, closed-book, closed-computer. They'll usually contain a mix of programming related questions (I am aware you don't have the computer in front of you, and I'll take that into consideration when grading), code tracing / analysis, and theoretical / short-answer questions. The final exam will normally be given during finals week and is similar in structure to quizzes (it is cumulative, though).

Lab Assignments:

Lab assignments will attempt to give you hands-on experience implementing and using the ideas we've discussed in class. As sophomores, every single detail will *not* be spoon-fed to you. It's your job to ask (well-formed) questions about the material if you don't understand it (often, knowing when you *don't* understand something is the hardest part). Some labs will contain extra bonus points – these can be "banked" across the semester, but I will cap your *overall* lab grade at 110%.

Textbook:

There is no required text for the course, but if a textbook will help you grasp the material, I would recommend a good Java reference book and a book on data structures. This one looks promising:

Starting Out With Java (Gaddis and Muganda)

There are several versions. They mostly differ in how far they go (one goes through basic data structures) and the order of topics. I would see this textbook as a good resource if you get lost in the early material in the class (which I'll go through rather quickly since you're all veteran programmers)

If you'd rather not purchase an expensive textbook, I've found <http://docs.oracle.com/javase/8/> to be very helpful. It has many tutorials. The Java API (<https://docs.oracle.com/javase/8/docs/api/>) is also a good reference if you want to look up the behavior / syntax of a specific class / method.

Tentative Topics:

1. Whirlwind intro to Java.
2. More advanced OOP concepts and Basics of Slick2D (which we'll use to do simple graphics in some labs)
3. Lists (linked lists, queues, stacks)
4. Trees (binary trees, ???), plus recursion
5. Quadtrees?
6. [Optional Bonus Lab: Huffman Encoding]
7. Hashing and Sets
8. Graph structures (plus depth- / breadth-first search, spanning-forests)
9. TBD

ADA statement:

Any student who believes s/he may need an accommodation based on the impact of a documented disability should first contact a Coordinator in the Office of Disability Services, Student Success Center, Massie Hall, 740-351-3276 to schedule a meeting to identify potential reasonable accommodation(s). Students are strongly encouraged to initiate the accommodation process in the early part of the semester or as soon as the need is recognized. After meeting with the Coordinator, students are then required to meet with their instructors to discuss the student's specific needs related to their disability. If a student does not make a timely request for disability accommodations and/or fails to meet with the Coordinator of Disability Services and the instructor, a reasonable accommodation might not be able to be provided.

A few more Resources if you need help:

- Lindsay Monihen (MAS 132), CPS Advisor: academic crises, financial aid questions, transferring, etc.
- Dean of Students Office (UC 222): resolution of academic and non-academic resources.
- Student Ombudsperson, Linda Hunt (ADM 140): help with appeals, complaints

Important Dates (The cutoff time is typically 5pm on the date listed)

August 22 (M): classes begin

August 26 (F): Last day to add a class on MySSU

September 2 (F): Last day to add a class (with Instructor *and* Dean approval)

September 5 (M): Labor Day (NO CLASS!)

October 6 – 7 (Th – F): Fall Break (NO CLASS!)

October 12 (W): Midterm grades available on MySSU³

October 31 (M): Registration for Spring semester starts

November 2 (W): Last day to drop a class on MySSU

October 29 – 30 (Sa – Su): GDEX conference in Columbus (bonus points...)

November 4 (F): Shawnee 2015 Gaming Conference (a few bonus points [more if you present]...)

November 11 (F): Veterans Day (NO CLASS!)

November 23 – 25 (W – F): Thanksgiving break (NO CLASS!)

December 9 (F): Last day of classes (also last day to petition to graduate)

December 10 – 16 (Sa – F) Final Exams week

ETEC2101.01 Final is: December 12 (M) 12:00 – 1:50pm

Make sure you plan your travel arrangements around this...

December 21 (W): Final grades available on MySSU



³ If you appear to be struggling in the class, I encourage you to meet with me outside of class. The purpose is to help you turn things around, not to blame you or make you feel bad.