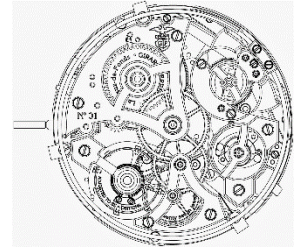


Instructor: Jason Witherell
 Office & Office-hours: ATC325, M-R 8:15a – 9am, W 2:30p – 3:30p (or by appointment)
jwitherell@shawnee.edu
 ssucet.org (course content)
 blackboard.shawnee.edu (lab submission and class grades)



Catalog Description:

Advanced methods for searching and sorting, including hashing techniques. Introduction to complexity analysis. Dynamic data structures such as lists, stacks, queues, trees, heaps, tables, and graphs will be covered in addition to algorithms involving hashing, sorting, recursion and searching. Lab emphasis is upon the implementation of these structures and techniques in complete working structured software applications.

Student Learning Outcomes / 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 structures.
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)
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.

Textbooks / Suggested References:

- Any good Java textbook (if you learn that way)
- Any good Data Structures textbook (possibly in Java, but not necessarily)
- <https://docs.oracle.com/javase/8/docs/api/> (a comprehensive list of all JDK classes)
- <https://docs.oracle.com/javase/tutorial/> (more readable tutorials on many Java concepts)

Grading System: Your grade will be based on 4 components (~half from **theory**, half from **hands-on** exercises). The overall points will be weighted as follows:

- (50%) **Lab Assignments**
- (15%) **Test 1** (~9/19/2017)
- (15%) **Test 2** (~11/14/2017)
- (20%) **Comprehensive Final Exam** (12/12/2017 @ noon)

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

Lab Assignments: are meant to be a chance to experiment and apply the theory and data structures we discuss in lecture. These labs will vary in difficulty and length from short (mostly) in-class exercises to more complex multi-week projects. We will attempt to reserve some time in class for lab time – make sure you start early and always ask your questions immediately.

Plagiarism: If your work looks similar to that on a website or of another student, beyond a reasonable doubt, it is plagiarism. Bottom-line: if you're looking at anyone's code solution to a problem: STOP – you're not doing yourself any favors and you could face stiff penalties! Plagiarism will be dealt with as follows:

- First minor offense (parts of the solution were copied) – a warning will be given in your lab feedback.
- First major offense (virtually all is copied) or second minor offense – all parties involved will receive a 0 on that lab.
- All further offenses: the case will be turned over to the academic misconduct committee (Dean of Students)

No paired programming: Sorry...it's caused too many problems in this class in the past. You're more than welcome to discuss ideas and non-lab code. Even debugging another students code is generally OK (although be careful not to share your code with another).

Attendance: will be taken, but won't directly affect your grade. You're an adult – decide if coming to class is worth your time or not. You will, however, be responsible for *anything* covered in class, including announcements on due-dates, tests, etc. even if you're not there.

Tentative Topics: *The dates (and perhaps topics) will almost surely change...*

Lab#	Topic	Points	Approximate Dates	
Lab1	JavaIntro	30	8/22/2017 (T)	8/25/2017 (F)
Lab2	OOP + Slick	100	8/24/2017 (R)	9/1/2017 (F)
Lab3	ArrayList	70	9/5/2017 (T)	9/12/2017 (T)
Lab4	LinkedList (in-class)	30	9/12/2017 (T)	9/15/2017 (F)
		Test 1	9/19/2017 (T)	
Lab5	Stacks / Queues	30	9/21/2017 (R)	9/28/2017 (R)
Lab6	HashMaps (in-class)	30	10/3/2017 (T)	10/6/2017 (F)
Lab7	BinaryHeaps + File I/O (Word-Counter)	60	10/10/2017 (T)	10/20/2017 (F)
Lab8	Recursion and Binary Search Tree (in-class)	30	10/19/2017 (R)	10/27/2017 (F)
		Test 2	10/31/2017 (T)	
Lab9	AVL-Sets (maze generation)	100	11/2/2017 (R)	11/17/2017 (F)
Lab10	B+ Trees / Quadrees / or Huffman	80	11/9/2017 (R)	11/17/2017 (F)
Lab11	Graphs (in-class) + Traversals	80	11/16/2017 (R)	12/8/2017 (F)
		Final Exam	12/12/2017 (T)	

Resources for help:

- The instructor – I should be your first line of defense
- The class SI (if we can obtain one) – listen for announcement on this.
- Your academic advisor: career advice, etc.
- Larry Miller (ATC315), Engineering Technologies chair: troubles with instructor, changing majors, degree paperwork, etc.
- Lindsay Monihen (MAS132), CPS advisor: academic crises, financial aid questions, transferring, etc.
- Dean of Students Office (UC 222): resolution of academic and non-academic difficulties.
- Student Ombudsperson, Linda Hunt (ADM 140): help with appeals, complaints.

Americans with Disabilities Act Policy

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 Accessibility 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 Accessibility Services and the instructor, a reasonable accommodation might not be able to be provided.

Important Dates: Note the student business center generally closes around 4pm.

- 8/21/2017 (M): classes begin
- 8/25/2017 (F): Last day to add a class on MySSU
- 9/1/2017 (F): Last day to add a class (with instructor *and* Dean approval)
- **9/4/2017 (M): Labor Day (UNIVERSITY CLOSED!)**
- 9/29/2017 (F) – 10/1/2017 (Su): GDEX conference in Columbus (bonus points for ETGG classes?)
- **10/5/2017 (R), 10/6/2017 (F): Fall Break (NO CLASSES!)**
- 10/7/2017 (Sa): Midterm grades available on MySSU
- **10/30/2017 (M): Registration for Spring Semester starts (M=Seniors, Veterans, etc. T=Juniors, etc.)**
- **11/1/2017 (W): Last day to drop a class on MySSU**
- 11/3/2017 (F): Shawnee 2017 gaming conference (bonus points for ETGG classes?)
- 11/10/2017 (F): Veterans Day (UNIVERSITY CLOSED!)
- **11/22/2017 (W) – 11/24/2017 (F): Thanksgiving Break (NO CLASSES (W), UNIVERSITY CLOSED (R,F)!)**
- 12/8/2017: Last day to petition to graduate, Last day of classes
- 12/9/2017 (Sa) – 12/15/2017 (F): Final Exam week
 - **12/12/2017 (T) noon – 1:50pm: ETEC2101-01 final exam!**
- 12/20/2017 (W): Final grades available on MySSU