

## Midterm Exam Notes.

The midterm exam will be on Oct 27 for in-class students.

Distance students should plan on taking the exam by Nov 2. Make certain that Debra McDowell has your proctor contact information.

- Duration: 2.5 hours
- Closed Book Exam except for 1 3x5 index card on which you may write notes.
- The exam will be a mix of objective questions, short answers and writing code.

Topics will include:

- HTTP protocol
- Java Servlets - working with GET, POST; using streams to write back to a client
- Java Enums
- Using ArrayList
- Working with regular expressions.
- Exceptions -working with checked vs unchecked exceptions; writing your own exception
- Java Collections framework - understand how the Collection interfaces are implemented in various classes (e.g. HashMaps, HashSet, ArrayList)
- Observer/Observable: be able to set up an Observable class and an Observer that reacts to changes in the Observable.
- Junit - know how to use
- Threading Slides up to Thread Coordination (which we will cover after the exam)
- Concurrency Book -- chapters 1,2,3 and 5 (note: not chapter 4). The focus will be on material from the two concurrency handouts from session 7. As you work through the handouts, go back to the book and read the related sections. The handouts have been created based on a sequential read of chapters 2,3 and 5 (with some items skipped).

The best way to prepare for the exam is to read the material and then try and write code to test your understanding. Try using Junit to test the Java library. For example, write Junit tests to:

- test enums
- verify the methods of ArrayList
- check that observer/observable works as expected

Try writing a program that demonstrates the dangers of multi-threading, such as a program that prints an incorrect result and a program that throws a ConcurrentModificationException. This is not as easy as may sound. Trying to do this though, will cement many of the concepts more effectively than just reading about them.