Topics to know for the In-Class Test

Lecture Week 1
- Object, Class
- Class Declaration
- Object as instance of the class
- Instance variables, Instance methods
- Overloading methods
- Access Modifiers (Public, Private)
- Abstraction
- Encapsulation
- Constructors

Lecture Week 2
- Access methods and variables
- Object Assignment
- String class and Packages
- Implementing class,
- Static, not-static context
- Differences: instance and class variables
- Casting

Lecture Week 3
- Inheritance
- Class Extension
- Subclasses
- Overriding methods
- super
- Access Modifiers (Protected)
- Polymorphism
- Substitution Principle
- Dynamic binding
- instanceof

Lecture Week 4
- Object class in Java
- Final classes and methods
- Abstract classes
- Interfaces

Lecture Week 5
- Collections and Data Structures
- Array
- Set, List, Queue, Map (in particular, ArrayList, HashSet, HashMap)
- Searching and sorting in Java using Comparable

Lecture Week 07
GUI in Java: AWT and SWING
Event Handling
Delegation Event Handling Model
Event Source
Event Listener

Lecture Week 08
- Events handling
- How Event Handler Works
- Streams, Predefined Streams

Lecture Week 09
-Exception
- try and catch statements
- Multiple catch statements
- Using finally
- Declaring Exceptions
- Throwable class
- checked and un-checked exceptions
- Throwing Exceptions
- Custom Exceptions

Lecture Week 10
- Threads, multithreading
- Implementing threads
- 2 Threading Mechanisms (Thread and Runnable)
- Create multiple threads
- Life Cycle of a Thread
- Thread states
- Terminating Threads
- yield() Sleep()
- Concurrent access to data
- Synchronization
- wait(), notify(), notifyAll()
- suspending and resuming threads