**Software Engineering Project Midterm**

* **Know the principles of Object Oriented programming (inheritance, encapsulation etc.)**
  + **[Scan by Benjamin Peirce]**
  + **Inheritance 🡪** ability to inherit implementations of methods by subclasses from superclasses
  + **Encapsulation 🡪** hiding object sates
  + **Polymorphism 🡪** ability to define multiple implementations at run time
* **Be able to give an overview of the Extreme Programming process from the survey of agile processes [**[**pdf**](http://cs.txstate.edu/~rp31/papers/AgileComp.pdf)**]**
  + Iterative approach with OO with every iteration and regression testing with each iteration
  + Informal (someone else reads code) static analysis before testing
  + Fix bugs before compilation
* **Know the principles of Model-Driven development and its advantages**
  + Manages scale
  + Define an executable model (state charts)
  + Validate model (before creation of source code)
  + Automatically create skeleton of code
  + *Create control flow for methods*
  + *DESIGN to get source code*
  + Testing will take much less time
* **Know the Model-View-Controller (MVC) architectural style - its constraints and benefits**
  + DIAGRAM ON TRACS
* **Know the syntax of the class diagram language (class representations, various kinds of associations)**
  + [Class diagram and state chart notation]
* **Know the syntax of the state chart diagram language**
* **Be able to create a class diagram and a state chart from requirements**
* **Know what is tested in different stages of testing (unit, integration, system, acceptance, regression)**
  + **Unit 🡪** individual methods
  + **Integration🡪** interfaces of objects
  + **System 🡪** whole or partial system (any test case with more than one instance)
  + **Acceptance 🡪** client does acceptance testing and finds out what is/is not functioning
  + **Regression 🡪** retest what used to be working after changes are made (or after merges are made)
* **Be able to create test cases according to boundary, statement and edge (branch) coverage criteria**