

## CS 485 Final Exam Review Topics

All the material in the Shalloway book  
Vocabulary in particular is important.

No material found **only** in Meyers.

### C++

- Constructors
- Destructors
- Dynamic Memory
- CopyAndSwap
- Inheritance
- Virtual/Pure Virtual
- CopyAssignmentOperator
- Polymorphism
- Enums
- Exceptions
- Namespace
- STL : vector, map, iterator
- Double Dispatch
- Lambda
- Memory Layout - Virtual Function Tables
- Unit Testing

**Any topic addressed via source code in CS485\_Student\_Examples or TicTacToe-MVP**

### UML

Be able to produce and read a UML diagram comparable to the UML diagram for Bank.

### Design

- CRC cards
- Strategy Pattern
- Template Method
- Factory Method/Abstract Factory Pattern
- Singleton
- Visitor
- Observer
- Decorator
- Command
- MVP

Define encapsulation

Given a UML diagram, explain if that is a good design. In particular, explain what is being encapsulated.

SOLID

Composition/Aggregation/Inheritance

What is an interface?

Cohesion & Coupling

Explain “program to the abstract”.  
Abstract vs Concrete.