• Dynamic Storage Allocation
  o Declare pointers of classes
  o Declare array of pointers of classes
  o The “this” pointer
  o -> operator and the . operator
  o & the address operator
  o The “new” operator
  o The “delete” operator
  o Overload the “=” operator
• Copy constructor
• C-Style Strings
  o With an actual size
  o Without a size but with initialization
• C++ string type v.s. C-Style strings
  o Assignment operator =
  o cin >>
  o getline() as a class member function on C++ style strings
• inheritance
  o General description
  o How one class inherits another
  o Protection levels
  o Base class
  o Derived class
  o How constructors work in or for:
    ▪ Base class
    ▪ Derived class
• Virtual Functions
  o What is a “Virtual Function”
  o Pure virtual function
  o Advantages/disadvantages
  o How to declare
  o How to use
• Templates
  o Templates will also include a discussion of link list as in the project
  o Define templates
  o How to use/invoke templates
  o Swap function example
  o Only use class templates
• Recursion
  o Base Case/General theory on recursion
  o Advantages/Disadvantages
  o Recursion v.s. iterative solution
  o Blob Finder example
  o Factorial example
  o
• Exception
- What are exceptions
- Try
- Throw
- Catch