# EX016 – Pretend Assignment Derive an Instructor Class from the SimplePerson class

#### **Due Date:**

11:59 PM the day after this assignment is presented in class Anything after that receives a zero (no partial credit for late submissions)

## **Grading:**

May be used for up to 5 possible bonus points to be applied to homework assignment #2

## **Topics:**

Create C++ classes from UML Explore relationship of UML hierarchy to C++ inheritance Investigate pointers and the usage of new and delete with respect to classes

#### Task 1

Implement the two classes: SimplePerson and Instructor as described in the below UML diagrams

# **SimplePerson**

- m\_nameStr: string
- m\_idStr string
- + SimplePerson(const string& nameStr, const string& idStr);
- + ~SimplePerson()
- + print(): void
- + getName(): string



- m\_dept: string
- m\_isTenured: bool
- + Instructor(const string& sname, const string& sid, const string& sdept, bool tenured);
- + ~ Instructor ()
- + print(): void
- + setTenure(bool tenureValue): void

#### **Friend functions**

+ operator<< (ostream& ostr, const Instructor& istruct): ostream&

#### Task 2

Create a file named PersonTest.cpp to test your classes.

In this file:

Create a simple person
Call the print() function of that person

Create an instructor
Call the print() function of that instructor
Output that instructor using cout <<

Also experiment with some pointer concepts

Create a pointer to an instructor (be sure to initialize it to NULL)

Make the pointer point to the instructor created above Call the print() function using the pointer

Use new to make the pointer point at a new instructor object
Call the print() function using the pointer
Set the tenure of the instructor by using the pointer to call the setTenure() function
Call the print() function using the pointer
Free the memory allocated for this new instructor
Make the pointer point to NULL

Demonstrate what happens if you have a SimplePerson pointer pointing to an Instructor and use the pointer to call the print() function.