

University of Ontario Institute of Technology
INFR 2140: Object Oriented Programming
Assignment 2

Date Posted: July 23rd, 2018

Due Date: August 5th, 2018 (11:59pm) via Blackboard.

Instructions:

Not following these instructions will make you lose 10 points.

- This is an INDIVIDUAL assignment.
- Include your name and student ID commented above all files.
- Provide separate compilation files for each class and zip them all for the final submission.
- Name the zipped file with your student ID.
- Submit your assignment on Blackboard; No other mean of submission (e.g., email, printouts, etc.) is accepted.
- Include proper documentation for your code.

For this assignment, you are developing a student registration system. For this system, you need to include the following classes:

- a) *Person*:** For this class add the required data members (e.g., name, dob, ssn, etc.), member functions, and operators.
 - b) *Date*:** For this class add the required data members (e.g., day, month, and year), member functions, and operators. The dob data member in the *Person* class is of type *Date*.
 - c) *Professor*:** Inherited from *Person*. For this class add data members (e.g., office, numberOfCourses, employmentStatus, etc.), member functions, and operators.
 - d) *Student*:** Inherited from *Person*. For this class add the required data members (e.g., major, department, etc.), member functions (e.g., agreeToTeach, numberCourses), and operators.
 - e) *Course*:** Include all the required data members (e.g., courseNo, courseName, credits), member functions (e.g., scheduleSection, addPrerequisite, hasPrerequisite), and operators. This class needs to have a member function that shows the list of the courses in your system. The information of the courses needs to be stored in a file named, “Courses.txt”.
 - f) *Section*:** Inherited from *Course*. Include all required data members (e.g., sectionNo, dayOfWeek, timeOfDay, room, seatingCapacity), member functions (e.g., enroll, drop, confirmSeatAvailability), and operators.
- Once you include complete definitions for the above classes, complete the definition of a function, named main() to prompt the user for different types of actions. This function should provide a menu for the user to select the type of action (e.g., Add New Student, Add New Course, Display Courses, Display Students, etc.).

- Your program needs to save all students' information in a text file, named "Students.txt". To display students' information, your program reads from the file that contains the information.
- Your program also needs to display the total number of students registered in the system.
- For all the classes you need to overload stream extraction and insertion operators in order to properly have an input and output from the user. You may need to overload other operators as well.
- Make sure to use exception handling to provide proper messages to the user in case of an exception.

NOTE 1: Your program needs to include all the concepts we learnt in this course, including, inheritance, composition, operator overloading, polymorphism, working with files, and exception handling.

NOTE 2: You may need to add more data members and member functions to the classes than those listed above.