

# Object Oriented Programming Lab

## Lab 07 & 08

Special Section

### Instructions:

- Work on this lab individually. Discussion is not allowed.
- Anyone caught being indulged in the act of plagiarism would be awarded an "F" grade in this lab.

### **Submission Details:**

- Submit the zip folder of your lab source files via mail at [oop.lab.specialsection@gmail.com](mailto:oop.lab.specialsection@gmail.com)
- On May 23, 2020, Before 8.59pm
- The email subject should be OOP Lab 7+8\_Roll No.
- Late submissions are not allowed.

**Note:** Validate all the inputs in their correct format. Use **this pointer** where it can be used.

### **Task 01:**

**[20 M]**

Write a **Course** class having following definition.

```
class Course
{
    int cHour; //credit hours
    string cName; //course name
    float gpa;
public:
    Course(string, int, float) //Parametrized Constructor
    void setCourse(string, int, float); //setter for all data members
    void setCName(string); //setter for cName
    void setCHour(int); //setter for cHour
    void setGpa(float); //setter for gpa
    string getCName(); //getter for cName
    int getCHour() const; //getter for cHour
    double getGpa() const; //getter for gpa
    void show() const;
    ~Course(); //Destructor
};
```

Implement all the above functions given in Course class .

Now,

Write **Semester** class having data members:

**int semesteNo;**

**int no\_of\_courses ;**

**Course \*courses;** //Course type pointer to declare dynamic array according to no of courses

Add following **methods** in **Semester** class:

- **Semester ( int semesterNo )** //The value should be assigned to the object's appropriate member variable, then set no of courses to 0 & courses pointer to null
- **Semester ( int semesteNo , int no\_of\_courses )** //The value should be assigned to the object's appropriate member variables , then Declare dynamic array according to number of courses.

Tazeem Haider

([tazeem.haider@pucit.edu.pk](mailto:tazeem.haider@pucit.edu.pk))

# Object Oriented Programming Lab

## Lab 07 & 08

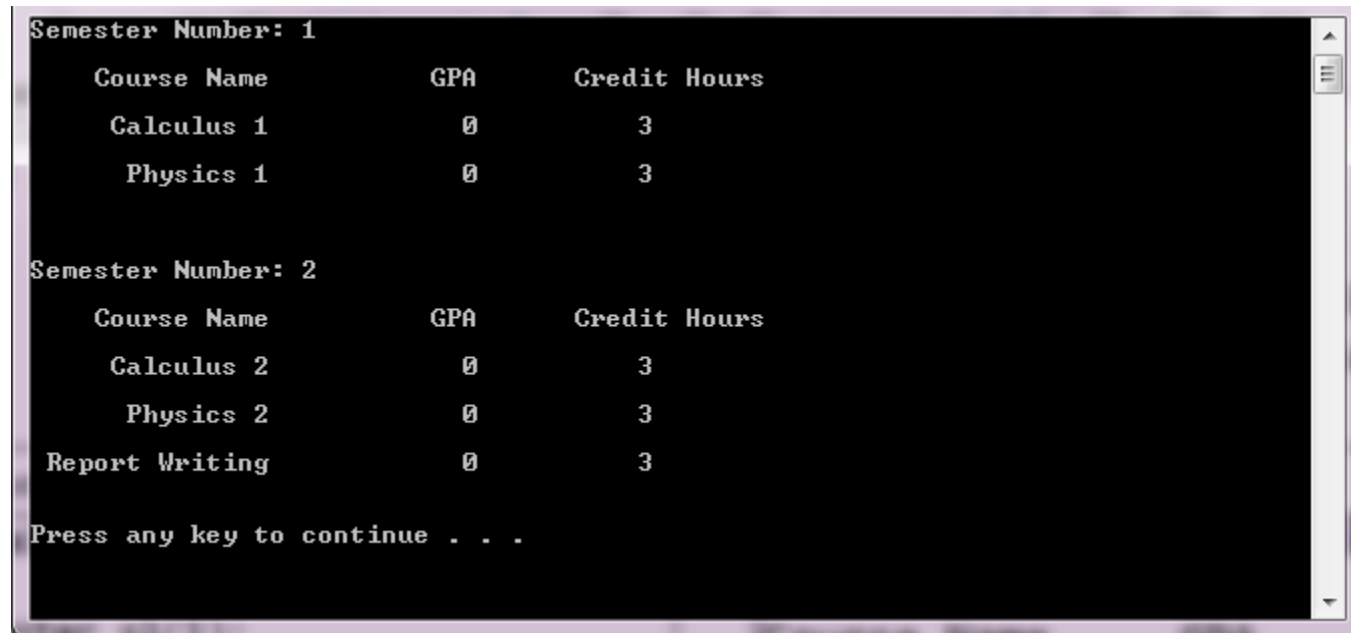
Special Section

- **setter** method for **number\_of\_courses** with check number of courses **1 to 6 only**
- **setter** method for **semesterNo** with check semesterNo **1 to 8 only**
- **void setCourse(int courseNo, char cName[], int cHour=0, float gpa=0.0 )**  
Use set course method of Course class in this function.
- **show method** to show all courses detail.
- **Destructor** for the class.

Now write the **main function** having following statemens:

```
void main()
{
Semester s1(1);
s1.setNoOfCourses(5);
s1.setCourse(1,"Calculus 1");
s1.setCourse(2,"Physics 1");
s1.show();
cout<<endl;
Semester s2(2, 4);
s2.setCourse(1,"Calculus 2");
s2.setCourse(2,"Physics 2");
s2.setCourse(3,"Report Writing");
s2.show();
}
```

**Sample output will be:**



```
Semester Number: 1

Course Name      GPA      Credit Hours
Calculus 1       0        3
Physics 1        0        3

Semester Number: 2

Course Name      GPA      Credit Hours
Calculus 2       0        3
Physics 2        0        3
Report Writing   0        3

Press any key to continue . . .
```