1. Course number and name
   (a)TC1012 Programming II

2. Credits and contact hours
   (b)3-0-8

3. Instructor's or course coordinator's name
   (c)Yolanda Martínez

4. Text book, title, author, and year
   (d)* Deitel, Harvey M., 1945-, C : how to program / H.M. Deitel, P.J. Deitel, 3rd ed, Upper Saddle River, N.J. : Prentice Hall, 2001, New Jersey, 2001, eng, [0130895725]
   a. other supplemental materials
      (e)

5. Specific course information
   a. brief description of the content of the course (catalog description)
      (f)The purpose of this intermediate computing course is for students to solve problems using the object-oriented paradigm. It requires prior knowledge of algorithms and control structures in a high-level language. The learning outcome of this course is for students to design and implement solving-problem programs using the object-oriented paradigm.
   b. prerequisites or co-requisites
      (g)TC1011
   c. indicate whether a required, elective, or selected elective (as per Table 5-1) course in the program
      (h)Required

6. Specific goals for the course
   a. specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic.
      (j)By taking this course the student will be able to analyze, design and program solutions using the paradigms of object oriented programming. The following topics are covered: introduction to object oriented programming. The "String" class as an example of a predefined class. Classes, attributes and methods. Object oriented design. Encapsulation and information hiding. Interface and implementation differentiation and separation. Arrays and collections of objects. Inheritance, polymorphism and class hierarchy. Methods and operators overloading. Use of libraries of predefined classes for data structures: stacks, queues, binary trees and lists. Introduction to GUI classes.
   b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.
      (k)

7. Brief list of topics to be covered
   (l)TC1012. Brief list of topics:
   1. Predefined Classes (string, fstream). Using Text Files
   2. Object Oriented Programming
   3. Introduction to Pointers
   4. Arrays containing objects
   5. Advanced Object Oriented Topics (Operator Overloading, friend functions, composition, inheritance, polimorphism)
   6. Introduction to GUIs
   7. Templates

8. Predefined classes to work with data structures (introduction to data structures, Standard Template Library).