Course Syllabus

BMT 227

1. Course number and name: BMT **227/** Computer Programming
2. Credits and contact hours: (1 + 1) credit hours, (1 +2) contact hours
3. Instructor's name: **Abdullah BenOmran**
4. Text book, title, author, and year:
   - **Books or notes**:
     - Teach yourself C++ in 21 days, Jesse Liberty and Bradley Jones, 2005.
   - **Other supplemental materials:**
     - Lecture notes available on LMS system

5. Specific course information

   a. brief description of the content of the course:

   This course will provide an introduction to the C++ programming language and its usage. After attending this course students will have acquired the basic skills in programming in C++ and an understanding of the ideas of object oriented programming. Topics covered in this course include an introduction to classes and objects, class variables, constructors and functions, overloaded constructors and functions, public and private access to variables and functions, arithmetic operators, simple input and output, comparison operators and the use of conditional and iterative control statements, use of library functions and the creation of user defined functions, introduction to pointers, introduction to arrays, accessing arrays using both subscripts and pointers.prerequisites or co-requisites:

   Pre-requisites: None

   Co-requisites: NA

   b. indicate whether a required, elective, or selected elective (as per Table 5-1) course in the program: **Required**

6. Specific goals for the course

   a. specific outcomes of instruction:

   Upon completing BMT227, students should have the following capabilities:

Able to design a C++ program to perform specific tasks.

Able to examine program codes to eliminate errors and warning.

b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

	Course outcome	abet (a-k)
1	a. an ability to select and apply the knowledge, techniques, skills, and modern tools of biomedical technology to include the application of circuit analysis, analog and digital electronics, microcomputers, biomechanics, biomedical instrumentation systems, and safety in the building, testing, operation, and maintenance of biomedical equipment.	a
2	an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.	c
3	a commitment to quality, timeliness, and continuous improvement.	k

7. Brief list of topics to be covered

Topics
The Parts of a C++ Program: A Simple Program, cout, comments, using functions.
Variables and Constants: Storing data in memory, size of integers, signed and unsigned, variable types, defining variables, creating variables, short and long variables, wrapping around, characters, and enumerated constants.
Expressions and Statements: Using white spaces, assignment operators, mathematical operators, incrementing and decrementing, prefixing and postfixing, operator precedence, nesting, the nature of truth,
Functions: Return values, parameters, arguments. Declaring and defining functions, function prototype, Variables scope, and default parameters.
Basic Classes: Declaring a class, defining an object, private versus public access.

Program Flow:
Looping, goto, using while loops, do…while loops,

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
a.	**First Midterm**	7	15%
b.	**Second Midterm**	11	15%
c.	**Practical**		30%
d.	**Final**		40%
e.			