

Module (Course Syllabus) Catalogue

2022-2023

College/ Institute	College of Erbil Technical Engineering	
Department	Technical Information System Engineering	
Module Name	Fundamental of Programming with C++	
Module Code	CPP203	
Degree	Technical Diploma <input type="checkbox"/>	Bachler <input checked="" type="checkbox"/>
Semester	Two	
Qualification		
Scientific Title	Asst. Lecturer	
ECTS (Credits)	7	
Module type	Prerequisite <input type="checkbox"/>	Core <input checked="" type="checkbox"/> Assist. <input type="checkbox"/>
Weekly hours	16	Total Workload=(189) hrs
Weekly hours (Theory)	(4)hr Class	(92)Total hrs Workload
Weekly hours (Practical)	(12)hr Class	(97)Total hrs Workload
Number of Weeks	12	
Lecturer (Theory)	Karwan Muhammed Muheden	
E-Mail & Mobile NO.	karwan.muheden@epu.edu.iq	
Lecturer (Practical)	Muhamed Adham Salim & Melad Yousif plos	
E-Mail & Mobile NO.		
Websites		

Course Book

<p>Course Description</p>	<p>C++ is a general-purpose programming language that supports various computer programming models such as object-oriented programming and generic programming. It was created by Bjarne Stroustrup and, “Its main purpose was to make writing good programs easier and more pleasant for the individual programmer.” By learning C++, you can create applications that will run on a wide variety of hardware platforms such as personal computers running Windows, Linux, UNIX, and Mac OS X, as well as small form factor hardware such as IoT devices like the Raspberry PI and Arduino-based boards.</p>				
<p>Course objectives</p>	<p>By the end of this course, you should be able to:</p> <ol style="list-style-type: none"> 1. Understand and use the basic programming constructs of C/C++ 2. Manipulate various C/C++ datatypes, such as arrays, strings, and pointers 3. Isolate and fix common errors in C++ programs 4. Use memory appropriately, including proper allocation/deallocation procedures 5. Apply object-oriented approaches to software problems in C++ 6. Write small-scale C++ programs using the above skills 				
<p>Student's obligation</p>	<p>It is the teacher's job to formulate a classroom management plan to facilitate the development of an effective learning environment. The student also has an obligation in the development of a quality learning environment. Following individual rules or expectations are just the beginning. In addition to complying with posted rules, students should be expected to show respect for self and others and meet all behavioral and academic expectations.</p>				
<p>Required Learning Materials</p>	<ul style="list-style-type: none"> •Using data show, white board and PowerPoint, Testing in department’s Laboratory. •Publish all lectures and notes in google classroom and moodle account. 				
<p>Evaluation</p>	<p>Task</p>		<p>Weight (Marks)</p>	<p>No.</p>	<p>Relevant Learning Outcome</p>
	<p>Assignments</p>	<p>Homework</p>	<p>%4</p>	<p>2</p>	<p>Solve problems of CPP.</p>
		<p>Class Activity</p>	<p>%2</p>	<p>-</p>	<p>Be active during class.</p>
		<p>Report</p>	<p>%10</p>	<p>1</p>	<p>How to write about CPP programming.</p>
<p>Project</p>		<p>%10</p>	<p>1</p>	<p>Create small project using CPP concept.</p>	

	Lab Report & Activity	%5	3	Solve CPP using tools and code.
	Quiz	%4	2	
	Midterm Exam	%10	1	
	Lab Midterm Exam	%15	1	
	Final Exam	%20	1	
	Lab Final Exam	%20	1	
	Total	%100		
Specific learning outcome:	<p>At the completion of this course, students should be able to explain</p> <ul style="list-style-type: none"> • Understand the basic components and structures of C & C++ programming languages • Develop, execute, debug and validate the programs as per the requirements • Identify the appropriate programming constructs and its uses and approaches to computational problems • Implement modular programming and OOPs concepts in solving problems • Implement file handling techniques for the applications which require back-end storage 			
Course References:	<ul style="list-style-type: none"> • Bootstrap: Responsive web development-Jake Spurlock • PHP: The Complete Reference-Steven Holzner • Learning MySQL-Seyed M.M. & Hugh E. Williams 			
Course topics (Theory & Practical)			Week	Learning Outcome
<ul style="list-style-type: none"> • Introduction to Programming Languages and Applications • Representing Algorithms by Using Flowcharts • Introduction to C++ Application • Variables • Input, output 			1	
<ul style="list-style-type: none"> • Operators in C++ (Arithmetic Operators and Assignment Operators) • Operators in C++ (Relational and Comparison Operators) • Operators in C++ (Logical and Ternary Operators) 			2	
<ul style="list-style-type: none"> • Control Structures in C++: if, if else • Control Structures in C++: Nested If and If/else Statements • Control Structures in C++: switch case 			3,4	
<ul style="list-style-type: none"> • Loops: while • Loops: do while • Loops: for • Nested Loops: while, do while and for 			5,6	

<ul style="list-style-type: none"> • Flow control statements (continue, and break) • Functions in C++ • Functions in C++ (Continue with more examples) • Scope, global variables 	7,8	
<ul style="list-style-type: none"> • Arrays: One Dimensional Array (Declaration, Initialization and Operations) 	9	
<ul style="list-style-type: none"> • Arrays: Two-Dimensional Array (Declaration, Initialization and Operations) 	10	
<ul style="list-style-type: none"> • Strings • Advanced Functions: Recursion • Advanced String manipulation • Sorting Algorithms 	11,12	

Questions Example Design

Q1\ write a code program to find factorial any number x!; $4!=4*3*2*1$ use do-while ?

Answer::

```
#include<iostream>
using namespace std;
```

```
int main()
{
    int x;
    int fact=1;
    cout<<"pls insert the integer number to find factorial \n";
    cin>>x;
    do{
        fact=fact*x;
        x--;
    }while(x>=1);
    cout<<"the result factorial is = "<<fact<<endl <<endl;

return 0;
}
```

Extra notes:

External Evaluator

I confirm that the syllabus given the attached course book is sufficient and covers the required areas needed for the students.



Signature

Assist Lecturer Niyaz Muhamad Salih
16-Jan-2022