



## Module (Course Syllabus) Catalogue 2023-2024

College/ Institute	Koya Technical Institute	
Department	Information Technology	
Module Name	Principle Of Programming	
Module Code	PRP203	
Semester	2	
Credits	7	
Module type	Prerequisite <input type="checkbox"/>	Core <input checked="" type="checkbox"/> Assist. <input type="checkbox"/>
Weekly hours	5	
Weekly hours (Theory)	( 2 )hr Class	( )hr Workload
Weekly hours (Practical)	( 3 )hr Class	( )hr Workload
Lecturer (Theory)	Wshyar Omar Khudhur	
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Lecturer (Practical)	Miran Ahmad Khudhur	
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# Course Book

<b>Course Description</b>	<p>This course could be considered as main course where basic concepts will be explained. These concepts are frequently repeated in the other programs. From the 1990 to the present day, the world has witnessed rapid development and prosperity in the field of science especially in the field of information technology. As a result of this fast development, people must provide the means and mechanisms to control and organize this information. Electronic device are designed and operated by one of operating system which developing by one of the programming language such as: C, C++, C# and so on. Therefore any operating system or any application programs' that you want to create it, in the purpose of executing any specific job must be made by one of those programming languages which classified as a high level language. C# is an important programming language to create application program, therefore you need to know or learning the basic concepts in the C# language to create this kind of programs. Then you have to have a good background in C# because this will be your fundamental step and help you to learn easily the Object Oriented Programming in second stage. Finally, the programming considered as a backbone for information technology.</p>
<b>Course objectives</b>	<ul style="list-style-type: none"><li>• Teach students how to write program by using the C# Programming Language.</li><li>• Prepare students with the necessary programming background to proceed with C# courses.</li><li>• Will be introduced to programming concepts and techniques.</li><li>• Will learn control statements, loops, functions, arrays ...etc.</li><li>• Will write programs for wide variety problems in math, science, and financials.</li><li>• Will analyse and design programs.</li></ul>

<b>Student's obligation</b>	Students should be attend in all lessons, and they have to solve the homework, in all weeks about one of the fields of C# programming Language then send me by special email. The student has to submit almost the assignments, reports and also At the end of the course, they should take a final exam.
<b>Required Learning Materials</b>	Power point slides use in the class including Example of C# programing Language, experimental images, and in some points also white board uses to explain more details.
<b>Assessment scheme</b>	24% Mid Term (Theory and practical) 8% Quiz 28% Assignment (report, homework, seminar..) 20% final practical 20% final theory
<b>Specific learning outcome:</b>	Upon successful completion of this course, students will be able to: <ol style="list-style-type: none"> <li>1. In the first stage the student took basic information about how to programming, and how to write statements code in the C# language and then running the program.</li> <li>2. in this course the student will learn how to build flow chart for any program and how to convert it to program.</li> <li>3. Use primitive data types, selection statements, loops, functions to write programs.</li> <li>4. Develop programs to solve a variety of problems in math, science, business.</li> <li>5. Use arrays to store, process, and sort data.</li> </ol>
<b>Course References:</b>	<ul style="list-style-type: none"> <li>▪ Key references: <ol style="list-style-type: none"> <li>1. Fundamental of C# Programming and Numerical Analysis, Twana Kamal Hagi, 2008.</li> <li>2. A GETWAY TO THE C# LANGUAGE. ( ARAM M. KHAYAT, 2008)</li> </ol> </li> <li>▪ Magazines and review (internet): <ol style="list-style-type: none"> <li>1. <a href="http://www.cprogramming.com/tutorial.html">www.cprogramming.com/tutorial.html</a></li> <li>2. <a href="https://www3.ntu.edu.sg/home/ehchua/programming/cpp/cp3_OOP.html">https://www3.ntu.edu.sg/home/ehchua/programming/cpp/cp3_OOP.html</a>.</li> </ol> </li> </ul>

Course topics (Theory & Practical)	Week	Learning Outcome
Introduction to C#	1	<ul style="list-style-type: none"> <li>○ Detail of the topics, Computer languages' and its types (Low and High level languages).</li> <li>○ Detail of the topics, Visual Studio's Explaining, Navigation, Entrance to C#, how to creating project in C# and how to Save &amp; open C# Source Files.</li> </ul>
Simplest C# program, Input and output result.	2	<ul style="list-style-type: none"> <li>○ Writing Simplest C# program with rules and explaining the lines one by one. Comments, using (Console.WriteLine()) commands and keywords.</li> </ul>
Simplest C# program, Variable scope, variables and constants in the program.	3	<ul style="list-style-type: none"> <li>○ Program structure (writing Simplest C# program with rules and explaining the lines one by one) and Comments.</li> <li>○ Variables (Variable scope) and Constants in C#, data types, some rules about variables defining and how to using variables and constants in the program.</li> </ul>
Operators, Arithmetic, Logical operators, Boolean in C#.	4	<ul style="list-style-type: none"> <li>○ Operators, Simple assignment operators, Arithmetic operators with priority, Logical operators, Boolean in C# &amp; Basic input_ output (using (Console.WriteLine()) commands.</li> </ul>
Write a program about IF- else Statement	5	<ul style="list-style-type: none"> <li>○ Conditional Statement (IF Statement, IF-else Statement and Nested IF Conditions) and solving some examples for If statements.</li> </ul>
Switch case statement Write a program about Switch case statement	6	<ul style="list-style-type: none"> <li>○ Conditional Statement (Switch case statement), break and continue command and the different between them.</li> <li>○ Conditional Statement (Switch case statement), break and continue command and the different between them.</li> </ul>
Loop (For)	7	<ul style="list-style-type: none"> <li>○ Loop (For), Nested loop and using break and continue command in loops.</li> </ul>
Loop while, do-while	8	<ul style="list-style-type: none"> <li>○ Loops (while, do-while) and then explaining the different between them.</li> </ul>
Arrays: One dimension & Multi dimension Array with some examples.	9	<ul style="list-style-type: none"> <li>○ Arrays</li> </ul>
String	10	<ul style="list-style-type: none"> <li>○ Strings (what is string and how to define it), using strings in some programs and</li> </ul>

		using some new keywords for this purpose and ) Console.WriteLine()).
Function	11	<ul style="list-style-type: none"> <li>○ Some templates of function (Prepared Functions).</li> <li>○ Functions (Function's Parts: Prototype Part, Calling Function, Definition of Function and Parameters), Recursion Function, Calling by Reference Or calling by value and some templates of function (Prepared Functions').</li> </ul>
Variables	12	<ul style="list-style-type: none"> <li>○ Scope of Variables.</li> </ul>

## Questions Example Design

Q1: what is a Data type? Enumerate all types? Explain one of them.

Q2// Fill the blanks in each of the following questions:

(25 marks)

Program features are ....., ..... and .....

**Ans: can be maintenance, reliable and efficient**

Q3// Answer in each of the following:

1- WriteLine is a.....

A. literal

B. keyword

**C. function**

D. class

2- C# developed by?

A. IBM

**B. Microsoft**

C. Google

D. Facebook

## External Evaluator