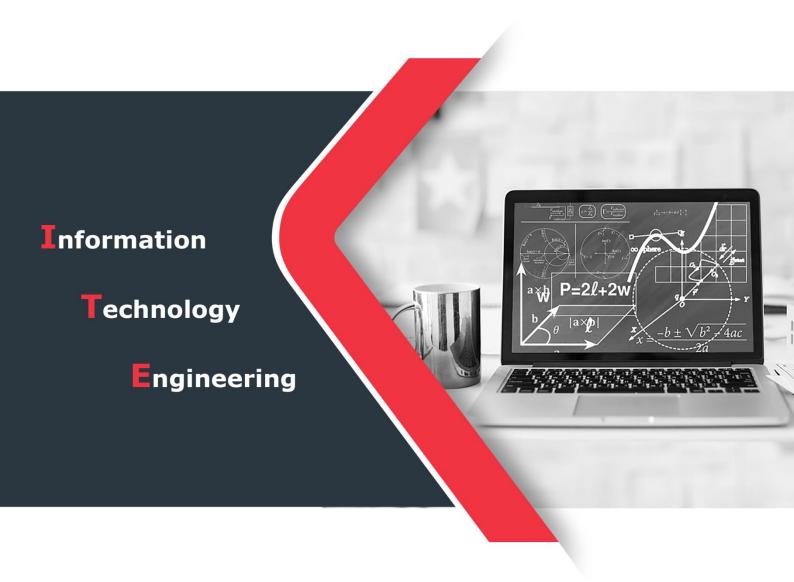


# **Course Definition File**

**Programming 1** 





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#### 1. Basic Information:

Course Name	Programming 1
Course ID	BPG401
No. of Recorded Sessions*	12
No. of Synchronized Sessions*	12
No. of Quizzes (hrs.)	6
Exam (hrs.)	2
Registered Sessions Work Load (hrs.)	36
Synchronized Sessions Work Load (hrs.)	36
Credit Hours	5

<sup>\*</sup>The duration of the recorded session is 2 hrs and of the synch.session is 1.5 hr

#### 2. Pre-Requisites:

Course	ID		
_			

#### 3. Course Objectives:

"Programming 1" course aims to acquaint the student with the basic concepts of programming, problems algorithms and their SPL programing, up to micro programing. It enables the student namely to:

1. Acquaint with the concepts of computer programing, algorithms, operating systems, compilers, coding, programing languages, Dot Net, the basics of C#, the main programing instructions such as read, write... up to C# structure, partial programs, and the development of medium size C# application program in Visual Studio Dot Net environment.

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2. Be trained how to use different basic and applications algorithms and programing with C#, by means of solved and unsolved examples and problems.

#### 4. Learning Outcomes (LO):

By the end of this course the learner is expected to:

- Be acquainted with the computer as a machine, its hardware and software, their classification, coding, programing concepts, programing languages, compilers, methodical development, solutions strategies...
- Understand the Microsoft Dot Net concept, Dot Net Framework, the C# novice level and master the analysis of programs and their design, the different C# components and priorities...
- Master the general rules of C# instructions, the variable range and different instructions including the 5 basic algorithmic ones.
- Master the applications of control instructions, repeat and continue instructions in
   C and C#, structured programing instructions and parallel instructions.
- Master the usage of different composite data and character strings, the tables and matrices up to multidimensional table definition and matrix cells...
- Master C# program listing, functions and procedures, their definitions in C#,
   calling and pass transactions and recovery...
- Be able to solve successfully a set of relevant exercises and problems.

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#### 5. Assessment Results:

			Assessment Type				
Chapter No.	Chapter Title	Intended Objectives	Developed content/ Recorded Sessions	Practical Activities (Synchronized Sessions)	Quizzes and Exams	Presentations And Interviews	Reports
CH1	Computer Program	Comprehension  -Analytical  Thinking	X	×	Х	×	Х
CH2	C# Basics	Comprehension  -Analytical  Thinking -Tools  And Application  Hands- On	X	X	X	X	Х
CH3	C# Instructions	Comprehension  -Analytical  Thinking -Tools  And Application  Hands- On	X	X	X	X	X
CH4	Algorithmic Language	Comprehension  -Analytical  Thinking -Tools  And Application  Hands- On	X	X	X	X	Х
CH5	Structures of Composite Data	Comprehension  -Analytical  Thinking -Tools  And Application  Hands- On	X	X	X	X	Х

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CH6	Introduction to Functions and Procedures	Comprehension  -Analytical Thinking -Tools And Application Hands- On	X	X	X		Х
CH7	Exercises and Problems	Comprehension -Analytical Thinking	X	X		×	X

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## 6. Course Syllabus

Chapter No.	Chapter Title	Chapter Content (Syllabus)	No. of Theoretic al Learning Units	No. of Practical Learning Units)
CH1	Computer Program	<ol> <li>The computer as a machine</li> <li>H/W development &amp; knowledge Democracy</li> <li>Operating systems</li> <li>Computers &amp; operating systems</li> <li>Classification of operating systems &amp; their development</li> <li>Data coding</li> <li>Computers software</li> <li>Programming languages</li> <li>High level programming languages – historical background</li> <li>High level programming languages</li> <li>Procedural languages 1</li> <li>High level programming languages</li> <li>Procedural languages 2</li> <li>High level programming languages</li> <li>Functional languages</li> <li>Logical Languages</li> </ol>	2	2

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			1	,
		14. High level programming languages		
		<ul> <li>Object oriented languages</li> </ul>		
		15. Compilers		
		16. Exercises		
		17. Systematic development of		
		software		
		18. Software development strategies		
		19. Flowcharts		
		20. Algorithms		
		21. Pseudo code		
		22. Pseudo code basic instructions		
		23. Read instruction		
		24. Write instruction		
		25. Assign instruction		
		26. Conditional instruction		
		27. While instruction		
		28. Methodology of writing a software		
		system		
		29. General classical examples		
		30. Exercises		
		31. Activity		
		1. Microsoft Dot Net		
		2. Dot Net Framework		
CH2	C# Basics	3. C# quick start	2	2
		4. Analyze the script		
		5. C# Reserved words (Keyword)		
		•	•	

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		6. Basic styles
		7. C# variables
		8. C# constants
		9. Operations in C# and their
		preferences -1
		10. Operations in C# and their
		preferences -2
		11. Operations in C# and their
		preferences -3
		12. Operations in C# and their
		preferences -4
		13. Operations in C# and their
		preferences -5
		14. Reading instruction
		15. Exercises for experimentation
		1. General rules
		2. Instructions blocks and variable
		range
		3. Assign instruction
	C#	4. Conditional instruction
CH3	Instructions	5. Conditional instruction ambiguity 2 2
	mondonomo	6. Conditional assign instruction
		7. While instruction
		8. The five basic algorithm instructions
		in C#
		9. Exercises

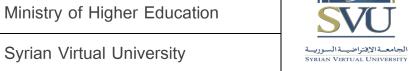
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		10. Problems		
		11. Issues to resolve algorithmically,		
		and then by language C#		
		1. Control instructions derived from the		
		basic instructions		
		2. Loop Instruction for		
		3. C# frequency instruction		
		4. Loop Instruction for in C, C#		
		5. Examples of for Instruction		
		6. Loop instruction: Repeat one time at		
		least		
		7. Example: Repeat one time at least		
		8. Example: Script do { } while		
	Algorithmic Language	Break structured programming		
CH4		10. Instructions to break structured	2	2
		programming in programming		
		languages		
		11. Example of break instruction		
		12. Example of break instruction within		
		for instructions block		
		13. The instruction continue in C, C#		
		14. Branching instruction: multiple-		
		choice conditional instruction		
		15. Branching instruction: switch		
		case		
		16. Programming examples: switch		



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		0000		
		case		
		17. Problems		
		Composite data patterns		
		2. Character strings		
		3. Character strings – Declaring a		
		string of characters		
		4. Character strings – the internal		
		representation of the characters		
		string and access to a character of		1
		the string characters		
		5. Character strings – Modification:		
		Insert		
	Structures	6. Character strings – Modification:		
CH5	of	Merge using the "+" process	1	
	Composite	7. Character strings – Modification:		
	Data	Obtain the location of a partial string		
		of the IndexOf character string		
		8. Character strings – Modification:		
		Converts a string of characters to		
		the ToCharArray character table		
	!	9. Character strings – Modification:		
		Assign and comparision		
		10. Tables and matrices – definition of		
		a table		
		11. Tables and matrices – Using tables		
		and matrices		

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		12. Tables and matrices - software		
		examples		
		13. Tables and matrices – definition of		
		a matrix, generating matrix cells		
		whose dimensions are not defined		
		at the definition		
		1. The structure of the script in C#		
		2. Functions and procedures (methods)		
		3. Declare the method and define it in		
		C#		
		4. Call a method		
	Introduction to Functions	5. Passing Transactions – Introduction		
		6. Passing transactions – simple		
CH6		pattern homogeneity	1	1
	and	7. Passing transactions – pass Value		
	Procedures	8. Passing transactions – pass Address		
		9. Method result returning		
		10. Variables definition range		
		11. Row elements and procedures		
		variables		
		12. Exercises for experimentation		
		Exercises and problems		
	Exercises	1. Exercise 1		
CH7	and	2. Exercise 2	2	2
	Problems	3. Exercise 3		
		4. Exercise 4		

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	5. Exercise 5	
	6. Exercise 6	
	7. Exercise 7	
	8. Exercise 8	

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## 7. Practical Activity:

#### Tools and Labs:

Tool Name	Description	
Word, power point, excel	Microsoft office	
Visual Studio	Microsoft	
	https://visualstudio.microsoft.com/vs/preview/	

## • Practical Activities per Chapters:

Chapter	Practical Activity	Remarks
CH1	<b>▼</b> Exercises	
	<b>▼</b> Homework	
	<b>▼</b> Webinars	
	<b>▼</b> Project	
	<b>⋉</b> Experiment	
	<b>▼</b> Other	
CH2	<b>▼</b> Exercises	
	<b>▼</b> Homework	
	<b>⋉</b> Webinars	
	▼ Project	
	<b>⋉</b> Experiment	
	□ Other	
CH3	<b>▼</b> Exercises	
	<b>▼</b> Homework	
	<b>⋉</b> Webinars	
	<b>▼</b> Project	

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	Experiment
	□ Other
CH4	<b>▼</b> Exercises
	<b>▼</b> Homework
	<b>▼</b> Webinars
	<b>▼</b> Project
	Experiment
	□ Other
CH5	<b>▼</b> Exercises
	<b>▼</b> Homework
	<b>▼</b> Webinars
	<b>▼</b> Project
	Experiment
	□ Other
CH6	<b>▼</b> Exercises
	<b>▼</b> Homework
	<b>▼</b> Webinars
	<b>▼</b> Project
	Experiment
	□ Other
CH7	<b>▼</b> Exercises
	☐ Homework
	<b>▼</b> Webinars
	□ Project
	□ Experiment
	□ Other

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