University/Academy: Arab Academy for Science and Technology & Maritime Transport
Faculty/Institute: College of Computing & Information Technology
Program: B. Sc. In Computer Science

Course title	**Systems Programming**
Course code	**CS321**

Form no. (11A): **Knowledge and skills matrix for a course**

Course content	Week study	Knowledge	Intellectual skills	Professional skills	General skills
Introduction	1				• Demonstrate the ability to make use of a range of learning resources and to manage one's own learning.
Intel Microprocessor Architecture	2	• Describe Intel machine architecture.			
Assembly Language – Data Transfer Instructions	3			• Write assembly programs. • Use X86 simulator.	• Show the use of general computing facilities.
Assembly Language – Arithmetic operations	4			• Write assembly programs. • Use X86 simulator.	
Assembly Language – Control instructions	5			• Write assembly programs. • Use X86 simulator.	
Assembler	6	• Understand the design of an assembler	• Design 1-pass and 2-pass assembler	• Use X86 simulator. • Implement 1-pass and 2-pass assembler	
Assembler Examples	7	• Know how the assembler works	• Design 1-pass and 2-pass assembler	• Use X86 simulator. • Implement 1-pass and 2-pass assembler	
7th week exam	8				

Linkers and Loaders	9	• Understand design concepts of loaders • Understand design concepts of linkers	• Decide what type of linking loader is suitable for environment used		• Show the use of general computing facilities.
Introduction to Compilers	10		• Evaluate compiler performance issues and code generation.		
Regular Expressions and Context-Free Grammar	11			• Develop a compiler for a specific language	
12th week exam	12				
Complier steps and Optimizations	13		• Evaluate compiler performance issues and code generation.		• Demonstrate skills in group working, team management, time management and organizational skills.
Ambiguity	14	• Identify compiler design concepts	• Evaluate compiler performance issues and code generation.		
Design of Parsers	15	• Identify compiler design concepts	• Evaluate compiler performance issues and code generation.		• Show the use of general computing facilities.

Course Instructor

Name:

Signature:

Head of Department

Name:

Signature: