

Syrian Arab Republic	 الجامعة الافتراضية السورية SYRIAN VIRTUAL UNIVERSITY	الجمهورية العربية السورية
Ministry of Higher Education		وزارة التعليم العالي
Syrian Virtual University		الجامعة الافتراضية السورية

Course Definition: Parallel Programming

1- Basic Information:

Course Name	Parallel Programming
Course ID	PPR
Contact Hours (Registered Sessions)	16
Contact Hours (Synchronized Sessions)	16
Mid Term Exam	
Exam	2
Registered Sessions Work Load	48
Synchronized Session Work Load	48
Credit Hours	4

2- Pre-Requisites:

Course	ID
Operating System (1)	OS1

3- Course General Objectives:

Define the necessity of the parallel programming style to solve grand challenge problems.

Explain the different methods of parallel programming and evaluation metrics.

Focus on Message Passing Interface (MPI) as a method to implement parallel software projects.

Load balancing and termination detection of parallel project.

Enable the students to implement a complete project and evaluate the performance.

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4- Intended Learning Outcomes (ILO):

Code	Intended Learning Outcomes
ILO1	The necessity of parallel programming to solve grand challenge problems
ILO2	Parallel Programming methods and performance evaluation metrics
ILO3	Synchronous computations
ILO4	Load balancing and termination detection
ILO5	MPI and PVM libraries
ILO6	Exercises and performance evaluation

5- Course Syllabus (18 hours of total synchronized sessions)

- RS: Recorded Sessions; SS: Synchronized Sessions;

ILO	Course Syllabus	RS	SS	Type	Additional Notes
ILO1	<ul style="list-style-type: none"> • Parallel Programming and grand challenge problems 	1.5	1.5		
ILO2	<ul style="list-style-type: none"> • Parallel Programming methods and performance evaluation metrics 	6	6		
ILO3	<ul style="list-style-type: none"> • Synchronous computations 	1.5	1.5		
ILO4	<ul style="list-style-type: none"> • Load balancing and termination detection 	3	3		
ILO5	<ul style="list-style-type: none"> • MPI and PVM libraries 	3	3	assignments	Exercises
ILO6	<ul style="list-style-type: none"> • Exercises and performance evaluation 	9	9	assignments	Exercises

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6- Assessment Criteria (Related to ILOs)

ISC	Interactive Synchronized Collaboration	Ex	Exams	Rpt	Reports
PF2F	Presentations and Face-to-Face Assessments	PW	Practice Work		

ILO Code	ILO	Intended Results	Assessment Type				
			ISC	PW	Ex	PF2F	Rpt
ILO1	The necessity of parallel programming to solve grand challenge problems		✓	✓	✓		
ILO2	Parallel Programming methods and performance evaluation metrics		✓	✓	✓		
ILO3	Synchronous computations		✓	✓	✓		
ILO4	Load balancing and termination detection		✓	✓	✓		
ILO5	MPI and PVM libraries		✓	✓	✓		✓
ILO6	Exercises and performance evaluation		✓	✓	✓		✓

7- Practice Tools:

Tool Name	Description
MPI	Message Passing Interface library