



COURSE SPECIFICATIONS (CS)

Course Specifications

Institution: Najran University	Date: August 2017
College/Department : College of Computer Science	

A. Course Identification and General Information

1. Course title and code: Parallel and Distributed Systems, 456CSS-3			
2. Credit hours: 3			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) Bachelor of Science in Computer Science			
4. Name of faculty member responsible for the course: Mr. Shah Murtaza Rashid Al Masud			
5. Level/year at which this course is offered: Level – 8			
6. Pre-requisites for this course (if any): 329CSS-3			
7. Co-requisites for this course (if any): N/A			
8. Location if not on main campus: Main Campus, Male Section			
9. Mode of Instruction (mark all that apply):			
a. traditional classroom	<input type="text"/>	What percentage?	<input type="text"/>
b. blended (traditional and online)	<input checked="" type="text"/>	What percentage?	<input type="text" value="100%"/>
c. e-learning	<input type="text"/>	What percentage?	<input type="text"/>
d. correspondence	<input type="text"/>	What percentage?	<input type="text"/>
f. other	<input type="text"/>	What percentage?	<input type="text"/>
Comments:			

B Objectives

1. What is the main purpose for this course?

After completing the course student will be able to

- #1 Define the basic concepts and terminologies of parallel and distributed systems.
- #2 Explain various parallel and distributed computing paradigms.
- #3 Evaluate the performance and different issues of parallel, distributed and pipelined computing.
- #4 Analyze the algorithms of parallel and distributed systems.
- #5 Apply the knowledge and methods of parallel and distributed systems in programming using java.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

- 1. Encouraging students to reading the journal papers on different issues of parallel and distributed systems
- 2. Exploring the related course web links of different prominent universities in KSA and outside KSA
- 3. Modifying students to do library works
- 4. Encouraging students to study at home and utilize their IT resources for solving more problems

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

Introduction to parallel systems; Processes and processors; Parallel architectures (multi-computer, multi-processor); Performance of Parallel, Distributed and Pipelined Computing systems (speedup, efficiency, etc.); Characterization of distributed systems; System models; Inter-process communication; Remote invocation; Distributed operating system; and Distributed file systems.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
1. Introduction to parallel system	1	4
2. Parallel system architecture	1	5
3. Parallel system architecture	1	4
4. Performance of Parallel systems (speedup, efficiency, etc.)	1	5
5. Performance of Parallel systems (speedup, efficiency, etc.)	1	4
6. Introduction to distributed systems	1	5
7. Distributed system models	1	4

8. Inter-process communication	1	4
9. Inter-process communication	1	5
10. Remote invocation	1	4
11. Remote invocation	1	5
12. Distributed Operating system	1	4
13. Distributed File systems	1	5
14. Review	٢	4

2. Course components (total contact hours and credits per semester):						
		Lecture	Tutorial	Laboratory/ Studio	Practical	Other: Total
Contact Hours	Planned	30	6		30	66
	Actual	30	6		30	66
Credit	Planned					
	Actual					

3. Additional private study/learning hours expected for students per week.	10
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Define the basic concepts and terminologies of parallel and distributed systems.	Lectures, Small Group Work, Small Group Discussion	Quiz 1, Midterm-1 Exam, Final Exam
2.0	Cognitive Skills		
2.1	Evaluate the performance and different issues of parallel, distributed and pipelined computing.	Lectures, Small Group Work, Small Group Discussion	Midterm-1 Exam, Final Exam
3.0	Interpersonal Skills & Responsibility		

3.1	Explain various parallel and distributed computing paradigms.	Lectures, Small Group Work	Midterm-2 Exam
3.2	Analyze the algorithms of parallel and distributed systems.	Lectures, Small Group Work, Small Group Discussion	Midterm-2 Exam, Final Exam
4.0	Communication, Information Technology, Numerical		
4.1	Apply the knowledge and methods of parallel and distributed systems in programming using java.	Lectures, Small Group Discussion, Lab Demonstrations	Lab Assignment, Lab Final Exam
5.0	Psychomotor		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Quiz	2	10%
2	Midterm Examination 1	5	15%
3	Midterm Examination 2	9	15%
4	Lab Activities	8	10%
5	Lab Final Examination	14	10%
6	Final Examination	15	40%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

During the whole semester, 10 hours/week are reserved for students to guide them, to help them, to explain them topic which is not clear to them etc.

E Learning Resources

1. List Required Textbooks

1. Ananth Grama, Anshul Gupta, George Karypis, Vipin Kumar, Introduction to Parallel Computing, Second Edition, Addison Wesley
2. George Coulouris, Jean Dollimore, Tim Kindberg and Gordon Blair, Distributed Systems Concepts and Design, fifth edition, Addison Wesley

2. List Essential References Materials (Journals, Reports, etc.)

1. William Stallings, Computer Organization and Architecture: Designing for Performance, Eighth Edition, Pearson Prentice Hall, Pearson Education, Inc. Upper Saddle River, New Jersey.
2. Peter Pacheco, An Introduction to Parallel Programming, 2011, Morgan Kaufmann
3. Andrew S. Tanenbaum, Maarten van Steen, Distributed Systems: Principles and Paradigms, second edition, Prentice Hall.
4. Graba, Jan, An Introduction to Network Programming with Java, second edition, Springer

3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

Available in Blackboard

4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

F. Facilities Required

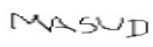
Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) - Lecture Rooms with 20 seats with smart table, Mic, Speaker, PC, Auto Projector with Screen and a white board or a smart board (male Section).
2. Technology resources (AV, data show, Smart Board, software, etc.) <ul style="list-style-type: none"> 1. Desktop/ Laptop computer Multimedia Projector 2. Laboratory contains an enough number of PC to accommodate all students with Java-related software like JCreator , J2SE , NetBean, Eclipse and JRE licensed version with network package should be installed.
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) <ul style="list-style-type: none"> 1. A File cabinet to keep class stuffs, papers and students files, and a printer to print program screen shots. 2. Registered software: Jcreator

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching		
Methods	Ways	Plan of Action
Online course survey	By the end of each semester, students give opinions on satisfactions of the course	By the end of each semester, students give their opinions about many factors in the course. They give feedback about the teaching strategies, assessment methods, textbooks, instructor, etc
Feedback about Course Learning Outcomes (CLOs)	A course survey is distributed to students to take their opinion	A course survey is distributed to students to take their opinions about the CLOs.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department <ul style="list-style-type: none"> 1. Assistance from colleagues. 2. Independent assessment of standard achieved by students 		
3. Processes for Improvement of Teaching		

<ol style="list-style-type: none"> 1. Note down the problem that faces during class and tries to solve those problems by discussing senior faculty members 2. Learning best teaching methods from the best teacher amongst all faculty members 3. Workshops to facilitate the exchange of experiences amongst faculty members
<p>4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)</p> <ol style="list-style-type: none"> 1. Getting feedback from the students who will pass the course and work in the practical field 2. Every exam papers and lab works are reviewed by the course coordinator. 3. Samples of students assignments and exams are collected every semester and reviewed from time to time as per NCAAA and ABET standards.
<p>5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ol style="list-style-type: none"> 1. Preparing Course Report 2. Planning to update Course syllabus 3. Students survey

Name of Course Instructor: Shah Murtaza Rashid Al Masud

Signature: 

Date Specification Completed: August 2017

Program Coordinator: Dr. Abdulrahman Thaqfan

Signature: 

Date Received: _____