



هيئة تقويم التعليم

Education Evaluation Commission

المركز الوطني للتقويم والاعتماد الأكاديمي

National Center for Academic Accreditation and Evaluation

# **COURSE REPORT (CR)**

Najran University  
College of Computer Science and Information Systems  
Department of Computer Science  
Department of Information Systems

Course Name: Operating Systems  
Course Code: 227CSS-3

June 2017

A separate Course Report (CR) should be submitted for every course and for each section or campus location where the course is taught, even if the course is taught by the same person. Each CR is to be completed by the course instructor at the end of each course and given to the program coordinator

A combined, comprehensive CR should be prepared by the course coordinator and the separate location reports are to be attached.

Institution: Najran University	Date of Course Report: May 23, 2017
College/ Department: College of Computer Science & Information Systems	

### A. Course Identification and General Information

1. Course title: Operating Systems	Code # 227CSS-3	Section # 286 & 287				
2. Name of course instructor : Muhammad Akram	Location: Main Campus					
3. Year and semester to which this report applies: Second Semester 2016/2017 (1437/1438)						
4. Number of students starting the course?	13	Students completing the course? 10				
5. Course components (actual total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30	6		30		66
Credit	2	0		1		3

### B. - Course Delivery

1. Coverage of Planned Program			
Topics Covered	Planned Contact Hours	Actual Contact Hours	Reason for Variations if there is a difference of more than 25% of the hours planned
Introduction, History and Evolution of Operating Systems, Types of Operating Systems, Operating System Structure	8	8	N/A
Process management (Processes Concept , Process Scheduling – CPU Scheduling, Scheduling concepts, criteria and scheduling algorithms , Process synchronization).	20	20	
Multithreaded Programming (Overview, Multithreading model and threading issues).	5	5	
Deadlocks (deadlock characterization, methods for handling deadlock prevention, avoidance, detection and recovery).	5	5	
Memory Management Strategies (Swapping, Dynamic Memory Allocation, Paging & Segmentation ).	5	5	
Virtual Memory (Demand Paging, Page Replacement, and Allocation of frames).	5	5	
Implementing File Systems (Implementation, Allocation Methods & Free Space Management)	14	14	

<b>2. Consequences of Non Coverage of Topics</b> For any topics where the topic was not taught or practically delivered, comment on how significant you believe the lack of coverage is for the course learning outcomes or for later courses in the program. Suggest possible compensating action.		
Topics (if any) not Fully Covered	Effectuated Learning Outcomes	Possible Compensating Action
N/A		

### 3. Course learning outcome assessment.

	List course learning outcomes	List methods of assessment	Summary analysis of assessment results
1	Describe operating system history, services, applications and types.	Quiz, Assignment and Mid Term exams	85.71% [For CS students] 66.67% [For IS students]  Final result shows that CLO 1 is achieved but still need to work hard to improve result more.
2	Apply UNIX commands to perform essential operations.	Lab Exam and Lab homework	71.43% [For CS students] 100% [For IS students]  Final result shows that CLO 2 is achieved by both CS and IS students. Until the achievement is not 100%, still there is chance of improvement.
3	Illustrate various algorithms of processes, threads, scheduling, synchronization, deadlock, memory management and file system.	Quiz, Assignment, Mid Term exam and Final Theory Exam	85.71% [For CS students] 100% [For IS students]  CLO 3 is achieved.
4	Explain operating system support for processes, threads, scheduling, synchronization, deadlock, memory management and file systems	Mid Term Exam and Final Theory Exam	71.43% [For CS students] 100% [For IS students]  Final result shows that CLO 4 is achieved by both CS and IS students. Until the achievement is not 100%, still there is chance of improvement
5	Develop programs to make use of various systems calls and implement standard problems/algorithms related to operating systems concepts	Lab Homework and Final Lab Exam	28.57% [For CS students] 66.67% [For IS students] Performance of CS students is very weak in CLO 5, it need improvements
	Evaluate the different algorithms for CPU Scheduling, synchronization, and deadlock	Mid Term Exam and Final Theory Exam	42.86% [For CS students] 33.33% [For IS students] Performance of both CS and IS students is very weak in CLO 5, it need improvements

Summarize any actions you recommend for improving teaching strategies as a result of evaluations in table 3 above.

- Motivating students to be active during class by asking questions regularly during lecture.
- Let student's to give short presentation (i.e. 3 to 5 min) at the end of every lecture to briefly explain what learn in today's lecture.
- Group Discussion.
- It is difficult to cover all the course contents in lecture time, so course instructor try to utilize the tutorial time to solve exercise problems. Try to fix minimum one hour tutorial compulsory every week.

4. Effectiveness of Planned Teaching Strategies for Intended Learning Outcomes set out in the Course Specification. (Refer to planned teaching strategies in Course Specification and description of Domains of Learning Outcomes in the National Qualifications Framework)

List Teaching Methods set out in Course Specification	Were these Effective?		Difficulties Experienced (if any) in Using the Strategy and Suggested Action to Deal with Those Difficulties.
	No	Yes	
<p><i>Lectures, active learning, collaborative and cooperative learning and independent study assignments are used as teaching strategies.</i></p> <ul style="list-style-type: none"> <li>• Showing and delivering PPT presentation in the class.</li> <li>• Using white board to explain important points in more detail.</li> <li>• Online classes are also conducted for students.</li> <li>• Video lectures are uploaded on the blackboard and youtube.</li> <li>• Motivating students to be active during class by asking questions regularly during lecture.</li> <li>• Motivating students to work in home, to search from internet, to read related reference books by giving them assignments related to operating system and OS security.</li> <li>• Let students to solve scheduling problems in small groups and giving correction on their solution during class.</li> <li>• Motivating students to be active during class by asking questions regularly.</li> <li>• Giving students tutorial related to scheduling algorithms, thread, memory management etc.</li> </ul>		√	<ul style="list-style-type: none"> <li>• Most of the time students did not participate actively in class, so it is desirable that every teacher must motivate them for participation and engage them during lecture by asking questions.</li> </ul>

<ul style="list-style-type: none"> <li>Solving algorithm on white board for students to make them more familiar with various scheduling algorithms.</li> <li>Let students to solve scheduling problems in small groups and giving correction on their solution during class.</li> <li>Motivating students to be active during class by asking questions regularly.</li> <li>Let students to present their work after group discussion session.</li> <li>Giving students tutorial related to scheduling algorithm to explain them in more detail.</li> <li>Motivating students to work in home, to search from internet, to read related reference books by giving them assignments.</li> <li>Use C and UNIX commands, and develop various system programs under Linux to make use of OS concepts related to System calls, CPU Scheduling, process synchronization during lab session.</li> </ul>	√	<ul style="list-style-type: none"> <li>Normally students only rely on class notes, need to motivate them to read books, search related data from internet.</li> <li>Some students feel shy when ask them to come and explain answer using white board, so course instructor must encourage them to come front and use white board to explain your answer.</li> </ul>
<ul style="list-style-type: none"> <li>Introductory class to make the students alert and be conscious about the class attendance, timing, discipline during the contact hours.</li> <li>Student presentation to present their finding on assigned problems.</li> <li>Two individual assignments which require investigation using provided reading material, library resources as a means of developing the self-study.</li> <li>Explanation and examples given in class lectures.</li> </ul>	√	<p>Most of the students copy assignment from other class fellows or from internet, so it is needed that course instructor must be strict on plagiarism and motivate students to write by yourself and also give reference in assignment.</p>
<ul style="list-style-type: none"> <li>Group discussion.</li> <li>Showing and delivering PPT presentation in the class and PDF format of course book.</li> <li>Showing how to operate and work with Red Hat Linux operating system.</li> <li>Two individual assignments which require investigation using provided reading material, internet search and library resources as a means of developing the self-study.</li> <li>Let students prepare their Lab reports in the Class using MS WORD and other software tools</li> <li>Giving correction in Lab activity.</li> </ul>		

**Note:** In order to analyze the assessment of student achievement for each course learning outcome, student performance results can be measured and assessed using a KPI, a rubric, or some grading system that aligns student work, exam scores, or other demonstration of successful learning.

## C. Results

### 1. Distribution of Grades

Letter Grade	Number of Students	Student Percentage	Explanation of Distribution of Grades
A	1	7.69%	95% to 100% (A+ Grade) 90% to 94% (A Grade)
B	1	7.69%	85% to 89% (B+ Grade) 80% to 84% (B Grade)
C	4	30.76%	75% to 79% (C+ Grade) 70% to 74% (C Grade)
D	4	30.76%	65% to 69% (D+ Grade) 60% to 64% (D Grade)
F	0	%	Less than 60
Denied Entry	0		
In Progress	0		
Incomplete	2	15.38%	
Pass	10	76.92%	
Fail	0		
Withdrawn	1	7.69%	

### 2. Analyze special factors (if any) affecting the results

In this course only one student got A and only one got B grade, main reason for this is that mostly students did not study in home on regular bases; normally they study during exam days, also students just rely on lecture slides/notes. To get higher grade it is important to read books and related material from internet. But if we compare with last year results then this result is little bit better than last year.

### 3. Variations from planned student assessment processes (if any) (see Course Specifications).

#### a. Variations (if any) from planned assessment schedule (see Course Specification)

Variation	Reason
<i>No variations from planned assessment schedule. It is same as it was defined in course specification document.</i>	

b. Variations (if any) from planned assessment processes in Domains of Learning (see Course Specification)	
Variation	Reason
<i>No variation from planned assessment process in domain of learning. It is same as it was defined in course specification document.</i>	

4. Student Grade Achievement Verification (eg. cross-check of grade validity by independent evaluator).	
Method(s) of Verification	Conclusion
<ul style="list-style-type: none"> <li>Students' grades and marks are accurately checked and reviewed by the reviewers in all the midterm exams, quizzes, assignments and final exams.</li> <li>The question paper for all the assessment methods are reviewed and checked so that all the questions satisfy the course learning outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>Verification of marks is assured in this way.</li> <li>Checking of the question papers are done by the course coordinator according to the ABET standards.</li> </ul>

#### D. Resources and Facilities

1. Difficulties in access to resources or facilities (if any)  <i>All the recourses or facilities that are required to complete this course were available.</i>	2. Consequences of any difficulties experienced for student learning in the course.
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#### E. Administrative Issues

1 Organizational or administrative difficulties encountered (if any)  N/A	2. Consequences of any difficulties experienced for student learning in the course.
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#### F Course Evaluation

1 Student evaluation of the course (Attach survey results report)
<p>a. List the most important recommendations for improvement and strengths</p> <p>This course contain students from both programs i.e. Computer Science and Information System. So this evaluation is from both CS &amp; IS students. Total 17 students participated in this evaluation and according to their overall response shows mostly students are strongly agree/agree.</p> <p><b>Before the beginning of course:</b> Analysis show that almost 86.11% students are said that basic guidelines for course, assessment method and evaluation criteria was clear for me before to start the course.</p>

<p><b>During the course delivery:</b> almost 73% students are strongly agree/agree and 6% are neutral with way course delivery.</p> <p><b>Course assessment:</b> About 68.75% students are strongly agree or agree with course. They said we clearly know the benefits of this course in our future life, this course improve their skills to think and solve, to work in team and to communicate effectively. About 16% student did not have clear idea of said things.</p>	
<p>b. Response of instructor or course team to this evaluation</p> <p>This evaluation will help me to overcome my weak point and it will improve my strengths in coming semesters.</p>	
<p>2. Other Evaluation (e.g. by head of department, peer observations, accreditation review, other stakeholders)</p> <p>N/A</p>	
<p>a. List the most important recommendations for improvement and strengths</p> <p>N/a</p>	
<p>b. Response of instructor or course team to this evaluation</p>	

### G. Planning for Improvement

1. Progress on actions proposed for improving the course in previous course reports (if any).				
Actions recommended from the most recent course report(s)	Actions Taken	Results	Analysis	
N/A				

2. List what actions have been taken to improve the course (based on previous CR, surveys, independent opinion, or course evaluation).				
<ul style="list-style-type: none"><li>• Every course have course coordinator; both the course instructor and course coordinator have regular consultation with each other to improve the course.</li><li>• Course contents revision is continues process in CS &amp; IS College.</li><li>• New equipment's are installed in class rooms like smart-board.</li></ul>				

3. Action Plan for Improvement for Next Semester/Year				
Actions Recommended	Intended Action Points and Process	Start Date	Completion Date	Person Responsible



<ul style="list-style-type: none"> <li>✓ It is required to make attendance compulsory for students. It is noted that students miss classes because they know to miss classes will not make them Harman.</li> <li>✓ Explain the basic concepts during lecture and use tutorial time to solve problems related to scheduling algorithms, thread, deadlocks etc.</li> <li>✓ To motivate students at regular intervals is very important in this environment. It is observed that students did not actively participate during lecture; this active participation can be achieved by asking related questions, taking short quiz during lecture, group discussion etc.</li> <li>✓ It is difficult to cover all the course contents in lecture time, so course instructor try to utilize the tutorial time to solve exercise problems. Try to fix minimum one hour tutorial compulsory in every week.</li> <li>✓ CLOs must be explained to students in first introductory lecture.</li> <li>✓ In start of each lecture relate the lecture topic with CLOs.</li> <li>✓ Students should know the expectations in the assessment methods. So I recommend to give the marking scheme (e.g. Rubric, etc.)to students before assessment methods.</li> </ul>		<p style="text-align: center;">Start of 1<sup>st</sup> semester 1438/1439</p>		<p>University higher authorities</p> <p>Instructor</p> <p>Instructor</p> <p>Instructor</p> <p>Instructor</p> <p>Instructor</p>
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**Name of Course Instructor:** Muhammad Akram

Signature:  Date Report Completed: May 23, 2017

**Program Coordinator: :** Dr. Abdulrahman Taqfan

Signature:  Date Received: May 23, 2017