



# **COURSE REPORT (CR)**

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

Course Name: **Algorithm Design and Analysis**  
Course Code: **474CSS-3**

**Prepared By:**  
**Moath Bagarish**

June 2017

Institution : Najran University	Date of Course Report : 30-05-2017
College of Computer Science and Information Systems; Department of Computer Science	

### A. Course Identification and General Information

1. Course title : Design and Analysis of Algorithm	Code # 474CSS-3	Section: 252				
2. Name of course instructor : Moath Bagarish	Location: Male campus					
3. Year and semester to which this report applies: Academic Year: 1437-38 (H) / 2016-17(E); Semester: Second						
4. Number of students starting the course?	09	Students completing the course? 09				
5. Course components (actual total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	45	6	N/A	N/A	N/A	51
Credit	3	0	N/A	N/A	N/A	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
Fundamentals of algorithmic problem solving, important problem types and fundamental data structures	6	6	N/A
Asymptotic notations and mathematical analysis	6	6	N/A
Brute force	6	6	N/A
Divide and conquer	3	3	N/A
Dynamic Programming	3	3	N/A
Greedy Algorithms	6	6	N/A
Graph Algorithms	3	3	N/A
NP-completeness and reducibility	3	3	N/A
Coping with the Limitations of Algorithm Power: Backtracking, Branch and bound	3	6	N/A

## 2. Consequences of Non Coverage of Topics

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	N/A	N/A

## 3. Course learning outcome assessment.

	List course learning outcomes	List methods of assessment	Summary analysis of assessment results
1	<b>CLO_1:</b> Explain/Describe important algorithmic problem types.	Midterm-1 and Final Exam	<ul style="list-style-type: none"> <li>➤ <b>Assessment marks:</b> 14 marks out of 100 used for assessment.</li> <li>➤ <b>Marking benchmark:</b> 9.10 marks out of 14 marks (65% marks) were benchmarked for CLO achievement.</li> <li>➤ <b>Student benchmark:</b> CLO is being considered achieved if 65% students achieve benchmarked marking (65%).</li> <li>➤ <b>Assessment outcome:</b> 83.33% students achieved benchmarked marks.</li> </ul> <p><b>Result:</b> CLO achieved.</p>
2	<b>CLO_2:</b> Measure the efficiency of algorithms by evaluating the time complexity of an algorithm using the asymptotic notation (Big-O(), Omega(), Theta()).	Assignment-1, Midterm-2 and Final Exam	<ul style="list-style-type: none"> <li>➤ <b>Assessment marks:</b> 18 marks out of 100 used for assessment.</li> <li>➤ <b>Marking benchmark:</b> 11.70 marks out of 18 marks (65% marks) were benchmarked for CLO achievement.</li> <li>➤ <b>Student benchmark:</b> CLO is being considered achieved if 65% students achieve benchmarked marking (65%).</li> <li>➤ <b>Assessment outcome:</b> 100% students achieved benchmarked marks.</li> </ul> <p><b>Result:</b> CLO achieved.</p>
3	<b>CLO_3 :</b> Analyze the expected performance of a particular algorithm in a particular context.	Assignment-2, Final examination	<ul style="list-style-type: none"> <li>➤ <b>Assessment marks:</b> 24 marks out of 100 used for assessment.</li> <li>➤ <b>Marking benchmark:</b> 15.60 marks out of 24 marks (65% marks) were benchmarked for CLO achievement.</li> <li>➤ <b>Student benchmark:</b> CLO is being considered achieved if 65% students achieve benchmarked marking (65%).</li> <li>➤ <b>Assessment outcome:</b> 66.67% students achieved benchmarked marks.</li> </ul> <p><b>Result:</b> CLO achieved.</p>
4	<b>CLO_4 :</b> Use the mathematical techniques to analyze the efficiency of an algorithm and demonstrate the	Midterm-1, Midterm-2 and Final examination	<ul style="list-style-type: none"> <li>➤ <b>Assessment marks:</b> 30 marks out of 100 used for assessment.</li> <li>➤ <b>Marking benchmark:</b> 19.50 marks</li> </ul>

	algorithmic correctness.		<p>out of 30 marks (65% marks) were benchmarked for CLO achievement.</p> <ul style="list-style-type: none"> <li>➤ <b>Student benchmark:</b> CLO is being considered achieved if 65% students achieve benchmarked marking (65%).</li> <li>➤ <b>Assessment outcome:</b> 66.67% students achieved benchmarked marks.</li> </ul> <p><b>Result:</b> CLO achieved.</p>
5	<b>CLO_5:</b> Evaluate how to deal with problems for which no fast algorithms exist (NP Completeness).	Midterm-1 and Final examination	<ul style="list-style-type: none"> <li>➤ <b>Assessment marks:</b> 14 marks out of 100 used for assessment.</li> <li>➤ <b>Marking benchmark:</b> 9.10 marks out of 14 marks (65% marks) were benchmarked for CLO achievement.</li> <li>➤ <b>Student benchmark:</b> CLO is being considered achieved if 65% students achieve benchmarked marking (65%).</li> <li>➤ <b>Assessment outcome:</b> 100% students achieved benchmarked marks.</li> </ul> <p><b>Result:</b> CLO achieved.</p>

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

N/A

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	
Traditional classroom lectures: Here the instructor addresses verbally in front of students the concepts associated with examples with taking help of writing on the board as needed.		√	
Instructions through virtual class: During lecture the instructor connected to virtual classroom for distance learning students.		√	

Instructions using LMS: Instructor provided instructions, notifications, using Black Board.		√	
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**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	11.1%	At least 90% marks and above
B	4	44.4%	80% to 89% marks
C	4	44.4%	70% to 79% marks
D	0	0%	60% to 69% marks
F	0	0%	Below 60% marks
Denied Entry	0	0%	More than 25% class absents
In Progress	0	0%	
Incomplete	0	0%	
Pass	09	100%	
Fail	0	0%	
Withdrawn	0	0%	Withdrawn before Midterm-2 examination.

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

None

#### 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
N/A	


b. Variations (if any) from planned assessment processes in Domains of Learning (see Course Specification)	
Variation	Reason
N/A	

4. Student Grade Achievement Verification (eg. cross-check of grade validity by independent evaluator).	
Method(s) of Verification	Conclusion
Cross checked by another (Mr. Hattan Al-sharif) teaching staff.	OK
Grades were reviewed by the Head of the Department (Dr. Abdulrahman Al-qahtani).	Approved

#### D. Resources and Facilities

1. Difficulties in access to resources or facilities (if any)	2. Consequences of any difficulties experienced for student learning in the course.
N/A	

#### E. Administrative Issues

1 Organizational or administrative difficulties encountered (if any)	2. Consequences of any difficulties experienced for student learning in the course.
None	N/A

#### F Course Evaluation

1 Student evaluation of the course 9
a. List the most important recommendations for improvement and strengths None
b. Response of instructor or course team to this evaluation

N/A
2. Other Evaluation (e.g. by head of department, peer observations, accreditation review, other stakeholders)
N/A
a. List the most important recommendations for improvement and strengths
None
b. Response of instructor or course team to this evaluation
N/A

### 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	N/A	N/A	N/A
b.			
c.			

2. List what actions have been taken to improve the course (based on previous CR, surveys, independent opinion, or course evaluation).
None

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

a. Follow the current course syllabus and course specification.	N/A	Before beginning of the next semester	N/A	Instructor
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**Name of Course Instructor:** Moath Bagarish

**Date Report Completed:** 12-06-2017

Program Coordinator: Dr. Abdulrahman Thaqfan

Signature:  - Date Received: \_\_\_\_\_