ATTACHMENT 2 (g)

Course Report

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course REPORT
(CR)
Analysis and Design of Algorithms
CIS 313-Z

Dr. Hassan Aly

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.

Course Report

For guidance on the completion of this template refer to the NCAAA handbooks or the NCAAA Accreditation System help buttons.

Institution: Majmaah university	Date of Course Report 1435
College/ Department: College of Science / Department of Computer Science and Information	

A. Course Identification and General Information

1. Course title	Analysis and Design of Algorithms	Code #	CIS 313-Z	Section	260
2. Name of course instructor	Dr. Hassan Aly	Location	College of Science at AzZulfi		
3. Year and semester to which this report applies. 2nd Semester 1434/1435					
4. Number of students starting the course?	14	Students completing the course?	14		

5. Course components (actual total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	45		30			75
Credit Hours	45		15			60

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
1. **Basic Definitions:** Definition of an algorithm. Time and space tradeoffs in algorithms. Algorithms strategies. Asymptotic analysis of upper and average complexity bounds. Identifying differences among best, average and worst case behaviors. Big oh, omega, and theta notations.	**10**	**10**	
2. **Solving Recursions:** Using recurrence relations to analyze recursive algorithms, substitution method, recursion-tree method, and the master theorem method.	**10**	**10**	

3. **O(n2) Sorting Algorithms.** insertion, selection, bubble sort.	**10**	**10**	
4. **Divide and Conquer Paradigm:** elements of the divide and conquer technique, merge sort, and quick sort**.**	**10**	**10**	
5. **Searching Algorithms.** linear and binary search.	**5**	**5**	
6. **Graph Algorithms:** Representation of graphs ((adjacency list, adjacency matrix), depth- and Breadth-first traversals. Minimum spanning tree (Kruskal's and Prim's algorithms). Dijkstra's algorithm.	**15**	**15**	
7. **Advanced data structures:** Binary search tree.	**5**	**5**	This topic is concealed since there is enough time.
8. **Dynamic Programming Paradigm:** Elements of dynamic programming, Matrix chain algorithm.	**5**	**5**	
9. **Greedy Algorithms Paradigm:** Elements of greedy algorithm, optimal binary search tree.	**5**	**5**	

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	Effected Learning Outcomes	Possible Compensating Action
Advanced data structures: Binary search tree.	No effect	Changing the time table of the course.

3. Course learning outcome assessment.

	List course learning outcomes	List methods of assessment	Summary analysis of assessment results
1	Recognize the role of algorithms relative to other technologies used in computer science.	Written Exam Homework assignments Lab assignments Class Activities Quizzes Observations Presentations Group Discussion	The average of the final results is 2.73 (C+) of a total of 14 students.
2	Name the key algorithmic design paradigms: brute force, divide and conquer, decrease and conquer, transform and conquer, greedy, dynamic programming.		
3	define the language, notation, and concepts of algorithmic design.		
4	Predict the resources that the algorithm requires.		
5	Develop, analyze and compare existing algorithms for a wide variety of problems: sorting, searching, graphs, and binary search tree.		
6	Justify and analyze algorithmic tradeoffs: time vs. space, deterministic vs. randomized, and exact vs. approximate.		
7	Write efficient algorithms of certain selected problems.		
8	work cooperatively in a small group environment.		
9	Save time and space in each task.		

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

- Individual presentations
- Brainstorming
- Improving programming tools.

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	
• Lectures • Homework • Conversation with instructors		√	
• Conversation with other students. • Indirect questions. • Working groups for course activities		√	

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	7.14%	
B	2	14.28%	
C	3	21.43%	
D	6	42.86%	
F	2	14.29%	
Denied Entry	0	0	
In Progress	14	100%	
Incomplete	0	0	
Pass	12	85.71%	
Fail	2	14.29%	
Withdrawn	0	0	

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

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

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

4. Student Grade Achievement Verification (eg. cross-check of grade validity by independent evaluator).	
Method(s) of Verification	Conclusion
Interview students, including answers and model answer sheet and learning resources for decision	Good result

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.

E. Administrative Issues

1 Organizational or administrative difficulties encountered (if any)	2. Consequences of any difficulties experienced for student learning in the course.

F Course Evaluation

1 Student evaluation of the course (Attach survey results report)
a. List the most important recommendations for improvement and strengths

b. Response of instructor or course team to this evaluation
2. Other Evaluation (e.g. by head of department, peer observations, accreditation review, other stakeholders)
a. List the most important recommendations for improvement and strengths
b. Response of instructor or course team to this evaluation

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
a.			
b.			
c.			
d.			

2. List what actions have been taken to improve the course (based on previous CR, surveys, independent opinion, or course evaluation).

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

Name of Course Instructor: _____

Signature: _____ **Date Report Completed:** _____

Program Coordinator: _____

Signature: _____ **Date Received:** _____