Kingdom of Saudi Arabia
Ministry Of Higher Education
Majmaah University
Deanship of Quality assurance
and Human Development

Course Specification

CIS 313

Algorithm Analysis and Design

1431/1432

Course Specification

Institution: AL Majmaah University
College/Department : al Zulfi collage of science

A- Course Identification and General Information

1. Course title and code: ***Algorithm Analysis and Design / CIS 313***
2. Credit hours: 4
4. Name of faculty member responsible for the course: Sami Smadi
5. Level/year at which this course is offered: 6th
6. Co-requisites for this course (if any): CIS 224
7. Location if not on main campus

B- Objectives

1. Summary of the main learning outcomes for students enrolled in the course.

On completion of this course the students are expected

- To provide a thorough treatment of the concepts and design principles of contemporary Computer Algorithms.
- To present time and space complexity of algorithms.
- To measure the efficiency of algorithms.
- To design and analyze various sorting algorithms such as insertion, merge, quick, and heap sort.
- To design and analyze various searching algorithms such as breadth-first and depth-first search.
- To select best algorithm for a certain problem.
- To design different algorithmic approaches.

C- Course Description (Note: General description in the form to be used for the Bulletin or Handbook should be attached)

1. Topics to be Covered		
List of Topics	No of Weeks	Contact hours

Introduction	1	3
Algorithm analysis	2	6
Divide and conquer algorithm analysis	2	6
Recursion algorithm analysis	2	6
Sorting algorithm analysis	3	9
Searching Algorithm analysis	3	9
Other Algorithms analysis	1	3

2. Course components (total contact hours per semester):				
Lecture: 42	Tutorial: 14	Laboratory: 28	Practical/Field work/Internship	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)

4. Schedule of Assessment Tasks for Students During the Semester

D- E Learning Resources.

1. Required Text(s)

Michael T.Goodrich,Roberto Tamassia , Algorithm Design: Foundations,Analysis,and Internet Examples

2. Essential References

Computer Algorithms by Sara Baase

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

4-.Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations

E- Assessment

First Exam 15% Second Exam 15% Practical 10% Final 60%