

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



Course Specification

(Summary)

1431/1432

Course Specification

Institution: **Majmaah University**

College/Department : **College of Science (Zulfi) / Computer Science Department**

A- Course Identification and General Information

1. Course title and code: **Computer Graphics CIS275**

2. Credit hours: **3**

4. Name of faculty member responsible for the course:

Dr.Eng: Khaled Issa

5. Level/year at which this course is offered : **7**

6. Co-requisites for this course (if any) CIS153

7. Location if not on main campus

B- Objectives

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

- Introduction to Computer Graphics
- Matrices & Vector
- 2D Transforms
- 3D Transforms and projection
- OpenGL

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
Computer Graphics Applications Survey	1	4

Color models (chromaticity diagram, RGB, CMY, YIQ, HSV, and HLS color models)	2	8
Graphics Output Primitives (coordinate frames, DDA, Bresenham's algorithm	2	8
circle-drawing, fill-area primitives algorithms). 2D Graphics (2D cartesian coordinates)	1	4
curves and parametric equations, functions and transformations, inverse functions	1	4
3D Graphics (vectors in 3D, dot and cross product, homogeneous coordinates, correlation between cartesian and homogeneous coordinates)	2	8
Geometric transformations (2D geometric transformations, matrix representation and homogeneous coordinates, inverse transformations, 2D composite transformations)	2	8
Geometric Representation (Lagrange polynomials of degree n, Hermite cubic polynomial, Bernstein polynomial, interpolation problem, Spline interpolation, problem of approximation	2	8

2. Course components (total contact hours per semester):				
Lecture: 2	Tutorial:	Laboratory:2	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.

Required Text(s) .1

Hearn, D. and P. Baker "Computer Graphics with OpenGL".
Pearson Prentice Hall, Pearson Education Inc., Upper Saddle
River, NJ07458, USA, 2004. PIE ISBN 0-13-120238-3

2. Essential References

- Opengl Programming Guide: The Official Guide to Learning Opengl,Version 1.1
- The OpenGL Programming Guide- The Redbook

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

- Computer Graphics: Principles and Practice in C (2nd Edition)
Publisher: Addison-Wesley Professional; 2 edition (August 14, 1995)
- Introduction to Computer Graphics
- **Publisher:** Addison-Wesley Professional (September 10, 1993)

4-.Electronic Materials, Web Sites etc

<http://www.videotutorialsrock.com/> •

www.opengl.org/code/ •

www.nullterminator.net/opengl32.html

5- Other learning material such as computer-based programs/CD, professional standards/regulations

OpenGL ES / OpenGL SC Software Renderer

E- Assessment

Mid-term(s): 40

Final: 60