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| **Islamic University- Gaza** |  | 2024/2025, 1st Semester |
| **Faculty of Information Technology** | Course number: CSCI 4302 |
| **Computer science department** | **Eng. Ehab M. Mortaja** |

# Computer Graphics

# Lecturer: Eng. Ehab M. Mortaja, [emortaja@iugaza.edu](mailto:emortaja@iugaza.edu)

# Time: Sunday, Tuesday: Male:

# Female:

# Office hours: WhatsApp from (10:00 am - 15:00 pm)

# *Course description*

This is an introductory computer graphics course. The course offers an introduction to the field of computer graphics, with emphasis on principles, algorithms and graphics programming techniques.

***Course Outline***

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| **Week** | **Topics** |
| 1-2 | Brief overview of computer graphics and architecture (rendering pipeline), graphics software, and graphics applications. Introduction to OpenGL library, example programs. |
| 3 | Drawing basic graphics primitives |
| 4 | Making line drawing |
| 5 | Simple interaction with Mouse and Keyboard |
| 6 | Window and Viewport transformation |
| 7 | Clipping. |
| 8-9 | Vectors, Lines and Planes. Intersecting Lines and Planes |
| 10 | 2D Transformations |
| 11 | 3D Transformations |
| 12 | Drawing 3D scenes with OpenGL |
| 13 | Introduction to 3D viewing: The camera and perspective transformation |
| 14-15 | Color theory |

***Text Book:***

**Computer Graphics with OpenGL®, Fourth Edition by Donald Hearn, M. Pauline Baker, and Warren R. Carithers, 2014.**

## *References*

* **Computer Graphics Using OpenGL**, by F.S. Hill, Jr., 2nd edition, Prentice Hall, 2001.

## OpenGL: <http://www.opengl.org>

* **OpenGL Programming Guide**, by Dave Shreiner, Mason Woo, Jackie Neider, and Tom Davis, Addison Wesley, 4th Edition, 2004.
* **Computer Graphics with OpenGL**, by D. Hearn and Pauline Baker, Prentice Hall, 3rd edition, 2004.

## *Course Assessment*

* Homework and Quizzes (40-50%)
* Final Exam - (50-60%)