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| **Computer Graphics** | **Module Title:** |
| **ARED 412** | **Module ID:** |
| **None** | **Prerequisite:** |
| **7** | **Level:** |
| **2 (1+2+0)** | **Credit Hours:** |

**Module Description:**

The aim of this course is to allow students to acquire knowledge of understanding Computer Graphics Systems, specifically: The fundamental display algorithms for raster graphics systems, the mathematical nature of 2-D and 3-D environments and the properties of surfaces and their simulation.

Module Aims:

The aim of this course is to allow students to acquire knowledge of understanding Computer Graphics Systems.

**Learning Outcomes:**

* Understand the foundations of computer graphics: hardware systems, math basis, light and color, OPENGL Libraries, Transmissions and Rendering in Computer Graphics.
* Acknowledge the Applications of the Computer Graphics.
* Identify the functions common to all Computer Graphics
* Define the basic Computer Graphics components and understand to draw shapes and objects
* The ability to drawing geometric in Computer Graphics, ability to communicate and to discuss related topics of the course with instructor inside and outside class
* Communicate technical information effectively.
* Perform research and encourage performing teamwork activity
* Acquaintance of using computer software related to the course and preparing reports to improves their communication skills sing the internet to search for related topics.

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| List of Topics | No. of  Weeks | Contact Hours |
| Introduction to Computer Graphics | 2 | 6 |
| Graphics system | 2 | 6 |
| 2D Graphics Algorithm | 2 | 6 |
| 3D Object Modeling | 2 | 6 |
| Introduction to OPENGL | 1 | 3 |
| OpenGL Programming Guide | 1 | 3 |
| 3D Transformations | 2 | 6 |
| Rendering | 1 | 3 |
| Tutorial on OpenGL | 1 | 3 |
| Review | 1 | 3 |

**Textbook:**

D. Hearn, M. P. Baker, "Computer Graphics with OpenGL", 3rd Ed., Prentice Hall, 2003, ISBN 0130153907.