

COMPUTER GRAPHICS AND VISUALIZATION CERTIFICATE, GRADUATE

Certificates are intended primarily for working professionals, and provide a "bite-sized" chunk of graduate coursework. See Professional Master of Computer Science (MCS) (<http://catalog.ewu.edu/science-technology-engineering-mathematics/computer-science/computer-science-mcs/>) for additional information.

Required Certificate Prerequisites—must be completed prior to admission.

CSCD 240	C AND UNIX PROGRAMMING or CSCD 255 C PROGRAMMING FOR ENGINEERS
CSCD 377	INTRODUCTORY COMPUTER GRAPHICS or MATH 231 LINEAR ALGEBRA
MATH 142	PRECALCULUS MATH II

Certificate Requirements

CSCD 506	RESEARCH METHODS IN COMPUTER SCIENCE	4
CSCD 570	3D COMPUTER GRAPHICS PRINCIPLES	4
CSCD 577	VIRTUAL REALITY AND DATA VISUALIZATION	4
CSCD 601	RESEARCH REPORT	4
Total Credits		16

Students who successfully earn a Computer Graphics and Visualization, Graduate Certificate from EWU should be able to do the following:

- demonstrate an understanding of basic and advanced concepts of computer graphics and use OpenGL as a renderer;
- demonstrate an understanding of the fundamentals of geometric modeling;
- develop applications and analyze scientific data with Visualization Tool Kit (VTK);
- give visual insights to a large amount of information using software tools like R;
- model and animate a 3D environment with the basic and advanced concepts of transformation, projection, texture, lighting and shading.;
- use force feedback-based virtual devices like Geomagic's Phantom that can make virtual objects tangible and develop applications using such devices.