

# 3D DESIGN & DIGITAL MANUFACTURING CERTIFICATE IN APPLIED SCIENCE

## Program Description

This certificate includes SolidWorks, CATIA V5, GD&T and Mastercam or CAMWorks, to enhance the student's abilities in order to expand their employment opportunities in engineering and manufacturing, including the automotive and aerospace sectors.

This certificate allows technicians in engineering and manufacturing to add new knowledge and skills in order to bridge the gap between 3D CAD design and the fabrication of products in the digital manufacturing environment, including subtractive and additive manufacturing, 3D printing, 3D laser scanning, reverse engineering, CNC programming and metrology/CMM processes.

## Mission Statement

This certificate gives technicians in engineering & manufacturing additional skills to cross over the gap between 3D CAD design and the skills of fabricating products in the digital manufacturing environment – including subtractive & additive manufacturing, CNC programming, 3D scanning, quality control and metrology.

## Entrance Requirements

Students must be a graduate from one of the following programs or have equivalent industrial knowledge/experience:

- Associate Degree in CNC Technology
- Engineering (CAD) Design Technology
- Mechanical Engineering Technology
- Machine Tool Technology
- Certificate in 3D CAD Modeling Design

## Type of Program

Day or evening

## Employment Opportunities

Manufacturing, engineering companies, product design and machine design companies.

Visit our web page at <https://www.gvltec.edu/edt/>.

## Recommended Program Schedule

Listed below is the ideal grouping of courses in order by semester. This plan assumes a full-time schedule. Note, however, that many variables can affect this plan, and not every course is offered every semester. Please see your advisor to map out your own personalized progression toward graduation.

**Note:** Please contact your advisor for recommended evening schedules.

First Semester		Hours
MTT 121	Machine Tool Theory I	3
EGR 275	Introduction to Engineering/Computer Graphics	3
<b>Total Semester Hours</b>		<b>6</b>
Second Semester		Hours
MTT 245	Rapid Prototype Setup and Operations	3
EGT 119	Geometrics	3
EGT 245	Principles of Parametric CAD	3
<b>Total Semester Hours</b>		<b>9</b>
Third Semester		Hours
QAT 209	Adv Metrology & Coord Measure Machines	3
or MTT 243	Adv Dimensional Metrology for Machinists	
MTT 250	Principles of CNC	3
MTT 251	CNC Operations	3
<b>Total Semester Hours</b>		<b>9</b>
Fourth Semester		Hours
EGT 252	Advanced CAD	3
MTT 254	CNC Programming I	3
or MTT 258	Machine Tool CAM	
<b>Total Semester Hours</b>		<b>6</b>
<b>Total Required Credit Hours</b>		<b>30</b>