

# ENGINEERING GRAPHICS AND ANIMATION

(Formerly Drafting and Design Technology)

(Wallace and Sparks Campuses and Easterling Correctional Facility)

Engineering Graphics and Animation encompasses many divergent fields of study, including Aerospace, Architectural, Civil, Electrical, Mechanical, Piping, Structural, and Technical Illustrating. All of these fields focus on the ability to communicate by using a graphic language. Graphic communication is the ability to translate ideas and rough sketches into finished drawings that can be used to manufacture or assemble the desired product. These drawings are produced with the aid of specialty drawing and measuring instruments and the use of special computer programs. Students in this program learn basic drafting techniques as well as advanced topics within the fields of Architectural Design, Mechanical Design, and 3-D Design and Animation. Computer-Aided Drafting and Design (CAD) is an essential part of this program and is explored in depth.

Students who complete the prescribed degree curriculum will earn an associate in applied science degree in Engineering Graphics and Animation in one of the following concentrations: Architectural Graphics, Engineering Graphics, or 3-D Design and Animation. Students who complete the prescribed program certificate curriculum will earn a certificate in the chosen option. Admission is conditional and depends on the student's ability to perform the essential functions for this program. Reasonable accommodations are considered.

## DEGREE CURRICULUM (Wallace and Sparks Campuses)

<i>Course</i>	<i>Credit Hours</i>
<b>Area I: Written and Oral Communications</b>	<b>6</b>
ENG 101 English Composition I	3
SPH 106 Fundamentals of Oral Communication <b>OR</b>	
SPH 107 Fundamentals of Public Speaking	3
<b>Area II: Humanities and Fine Arts</b>	<b>3</b>
Humanities/Fine Arts Elective	3
<b>Area III: Natural Sciences, Mathematics, and Computer Science</b>	<b>10</b>
CIS 146 Microcomputer Applications	3
MTH 100 Intermediate College Algebra	3
PHS 112 Physical Science II <b>OR</b>	
CHM 111 College Chemistry I <b>OR</b>	
PHY 201 General Physics I <b>OR</b>	
PHY 213 General Physics I w/ Calculus	4
<b>Area IV: History, Social and Behavioral Sciences</b>	<b>3</b>
History/Behavioral Science/Social Science Elective	3
<b>Area V: Career and Technical Courses</b>	<b>51-53</b>
<b>Required Orientation Courses</b>	
ORI 101 Orientation to College <b>OR</b>	
ORI 105 Orientation and Student Success	1-3
ORI 104 WorkKeys® Assessment and Advisement	1
<b>Required Field of Concentration Courses</b>	
DDT 104 Basic Computer-Aided Drafting and Design	3
DDT 111 Fundamentals of Drafting and Design Technology	3

DDT 124	Basic Technical Drawing	3
DDT 127	Intermediate Computer-Aided Drafting and Design	3
DDT 128	Intermediate Technical Drawing	3
DDT 144	Basic 3-D Modeling	3
WKO 106	Workplace Skills	3
<b>Total Career and Technical Program Core Courses</b>		<b>23-25</b>

*After completing the Core Technical Course Requirements, students may choose from the following concentrations:*

## ARCHITECTURAL GRAPHICS CONCENTRATION (DDA)

<i>Course</i>	<i>Credit Hours</i>
<b>Area V: Required Field of Concentration Courses</b>	
DDT 150 Theory of Residential Drawing and Design	3
DDT 155 Drawing for Residential Construction	4
DDT 212 Intermediate Architectural Drafting	3
DDT 213 Civil Drafting, Plat Maps	3
DDT 216 Design of Structural Wood Members	3
DDT 222 Advanced Architectural Drawing	3

## Choose any 3 Elective Courses - 12 Semester Hours

ACR 121 Principles of Electricity for HVAC/R	3
ACR 205 System Sizing and Air Distribution	3
DDT 125 Surface Development	3
DDT 225 Structural Steel Drafting	3
DDT 231 Advanced CAD	3
DDT 233 Intermediate 3-D Modeling	3
DDT 235 Specialized CAD	3
DDT 236 Design Project	3
DDT 237 Current Topics in CAD	3
DDT 260 Portfolio	3
ELT 114 Residential Wiring Methods I	3
ELT 115 Residential Wiring Methods II	3
<b>Total Concentration Credits</b>	<b>31</b>
<b>Total Credits for Degree</b>	<b>73-75</b>

## ENGINEERING GRAPHICS CONCENTRATION (DDE)

<i>Course</i>	<i>Credit Hours</i>
<b>Area V: Required Field of Concentration Courses</b>	
DDT 125 Surface Development	3
DDT 150 Theory of Residential Drawing and Design	3
DDT 155 Drawing for Residential Construction	4
DDT 213 Civil Drafting, Plat Maps	3
DDT 216 Design of Structural Wood Members	3
DDT 220 Advanced Technical Drawing	3

## Choose any 3 Elective Courses – 12 Semester Hours

ASE 101 Fundamentals of Automotive Technology	3
ASE 112 Electrical Fundamentals	3
DDT 225 Structural Steel Drafting	3
DDT 231 Advanced CAD	3
DDT 233 Intermediate 3-D Modeling	3
DDT 235 Specialized CAD	3
DDT 236 Design Project	3

DDT 237	Current Topics in CAD	3
DDT 244	Advanced 3-D Modeling	3
DDT 260	Portfolio	3
INT 117	Principles of Industrial Mechanics	3
INT 118	Fundamentals of Industrial Hydraulics and Pneumatics	3
<b>Total Concentration Credits</b>		<b>31</b>
<b>Total Credits for Degree</b>		<b>73-75</b>

### 3-D DESIGN AND ANIMATION CONCENTRATION (DDD)

Course	Credit Hours
<b>Area V: Required Field of Concentration Courses</b>	
DDT 125	Surface Development 3
DDT 233	Intermediate 3-D Modeling 3
DDT 234	3-D Graphics and Animation 3
DDT 235	Specialized CAD 3
DDT 236	Design Project 3
DDT 244	Advanced 3-D Modeling 3

### Choose any 3 Elective Courses – 12 Semester Hours

CIS 251	C++ Programming Language	3
CIS 207	Introduction to WEB Development	3
DDT 150	Theory of Residential Drawing and Design	3
DDT 155	Drawing for Residential Construction	4
DDT 225	Structural Steel Drafting	3
DDT 231	Advanced CAD	3
DDT 237	Current Topics in CAD	3
DDT 260	Portfolio	3
<b>Total Concentration Credits</b>		<b>31</b>
<b>Total Credits for Degree</b>		<b>73-75</b>

### Architectural Graphics Associate of Applied Science Degree Suggested Course Sequence

FIRST SEMESTER	SECOND SEMESTER	THIRD SEMESTER
ORI 101	DDT 127	DDT 150
DDT 104	DDT 128	DDT 155
DDT 111	DDT 144	DDT 216
ENG 101	MTH 100	SPH 107
CIS 145	Humanities/Fine Arts Elective*	
<i>History/Social and Behavioral Science Electives*</i>		
FOURTH SEMESTER	FIFTH SEMESTER	
DDT 124	ORI 104	
DDT 212	DDT 222	
DDT 213	PHS 112	
Architectural Graphics Elective*	Architectural Graphics Elective*	
Architectural Graphic Elective*	Architectural Graphics Elective*	
	WKO 106	

### Engineering Graphics Associate of Applied Science Degree Suggested Course Sequence

FIRST SEMESTER	SECOND SEMESTER	THIRD SEMESTER
ORI 101	DDT 127	DDT 150
DDT 104	DDT 128	DDT 155
DDT 111	DDT 144	DDT 216
ENG 101	MTH 100	SPH 107
CIS 146	Humanities/Fine Arts Elective*	
<i>History/Social and Behavioral Science Electives*</i>		
FOURTH SEMESTER	FIFTH SEMESTER	
DDT 124	ORI 104	
DDT 125	DDT 220	
DDT 213	PHS 112	
Engineering Graphics Elective*	Engineering Graphics Elective*	
Engineering Graphics Elective*	Engineering Graphics Elective*	
	WKO 106	

### 3-D Design and Animation Associate of Applied Science Degree Suggested Course Sequence

FIRST SEMESTER	SECOND SEMESTER	THIRD SEMESTER
ORI 101	DDT 127	DDT 235
DDT 104	DDT 128	SPH 107
DDT 111	DDT 144	3-D Design and Animation Elective*
ENG 101	MTH 100	3-D Design and Animation Elective*
CIS 146	Humanities/Fine Arts Elective*	
<i>History/Social and Behavioral Science Electives*</i>		
FOURTH SEMESTER	FIFTH SEMESTER	
DDT 124	ORI 104	
DDT 125	DDT 233	
DDT 234	DDT 244	
3-D Design and Animation Elective*	DDT 236	
3-D Design and Animation Elective*	PHS 112	
	WKO 106	

\*All DDT coursework except DDT 216 has a prerequisite of DDT 104 and DDT 111 except DDT 127, which require only DDT 104.

\*\*DDT 150 and DDT 155 are co-requisites.

Note: Troy University Mechanical Engineering Students take DDT 104 for Engineering Graphics.

### CERTIFICATE CURRICULUM (Sparks and Wallace Campuses)

Course	Credit Hours
<b>Area I: Written and Oral Communications 6</b>	
COM 103	Introductory Technical English II OR
ENG 101	English Composition I 3
SPC 103	Oral Communication Skills OR
SPH 106	Fundamentals of Oral Communication OR
SPH 107	Fundamentals of Public Speaking 3
<b>Area III: Natural Sciences, Mathematics, and Computer Science 6</b>	
DPT 103	Introductory Computer Skills II OR
CIS 146	Microcomputer Applications 3
MAH 101	Introductory Mathematics I OR
MTH 100	Intermediate College Algebra 3

After completing the Core Technical Course Requirements, students may choose from the following concentrations:

<b>Area V: Career and Technical Courses</b>	<b>32-34</b>
<b>Required Orientation Courses</b>	
ORI 101	Orientation to College OR
ORI 105	Orientation to Student Success OR
ORT 100	Orientation for Career Students 1-3
ORI 104	WorkKeys Assessment and Advisement 1

**Program Core Classes**

DDT 104	Basic Computer-Aided Drafting and Design	3
DDT 111	Fundamentals of Drafting and Design Technology	3
DDT 124	Basic Technical Drawing	3
DDT 125	Surface Development	3
DDT 127	Intermediate Computer-Aided Drafting and Design	3
DDT 128	Intermediate Technical Drawing	3
DDT 144	Basic 3-D Modeling	3
DDT 150	Theory of Residential Drawing and Design	3
DDT 155	Drawing for Residential Construction	4
DDT 233	Intermediate 3-D Modeling	3
	<b>Total Core Credits</b>	<b>45-47</b>

**ARCHITECTURAL GRAPHICS CONCENTRATION (DDA)**

<b>Course</b>	<b>Credit Hours</b>
<b>Area V: Required Field of Concentration Courses</b>	
DDT 212	Intermediate Architectural Drafting 3
DDT 216	Design of Structural Wood Members 3
DDT 222	Advanced Architectural Drawing 3
DDT 235	Specialized CAD 3
	<b>Total Concentration Credits</b>
	<b>12</b>
	<b>Total Credits for Certificate</b>
	<b>57-59</b>

**ENGINEERING GRAPHICS CONCENTRATION (DDE)**

<b>Course</b>	<b>Credit Hours</b>
<b>Area V: Required Field of Concentration Courses</b>	
DDT 213	Civil Drafting, Plat Maps 3
DDT 220	Advanced Technical Drawing 3
DDT 225	Structural Steel Drafting 3
DDT 236	Design Project 3
	<b>Total Concentration Credits</b>
	<b>12</b>
	<b>Total Credits for Certificate</b>
	<b>57-59</b>

**3-D DESIGN AND ANIMATION CONCENTRATION (DDD)**

<b>Course</b>	<b>Credit Hours</b>
<b>Area V: Required Field of Concentration Courses</b>	
DDT 234	3-D Graphics and Animation 3
DDT 235	Specialized CAD 3
DDT 236	Design Project 3
DDT 244	Advanced 3-D Modeling 3
	<b>Total Concentration Credits</b>
	<b>12</b>
	<b>Total Credits for Certificate</b>
	<b>57-59</b>

**SHORT CERTIFICATE CURRICULUM (Easterling Correctional Facility)**

<b>Course</b>	<b>Credit Hours</b>
<b>Area V: Career and Technical Courses</b>	
<b>Core Course Requirements</b>	
DDT 104	Basic Computer-Aided Drafting and Design 3
DDT 111	Fundamentals of Drafting and Design Technology 3
DDT 124	Basic Technical Drawing 3
DDT 127	Intermediate Computer-Aided Drafting and

	Design	3
DDT 128	Intermediate Technical Drawing	3
	<b>Total Core Technical Credits</b>	<b>15</b>

*After completing the Core Technical Course Requirements, students may choose from the following concentrations:*

**MECHANICAL DRAFTING CONCENTRATION (MDD)**

DDT 125	Surface Development	3
DDT 131	Machine Drafting Basics	3
DDT 144	Basic 3-D Modeling	3
DDT 220	Advanced Technical Drawing	3
	<b>Total Concentration Credits</b>	<b>12</b>
	<b>Total Credits for Program Certificate</b>	<b>27</b>

**ARCHITECTURAL AND RELATED TRADES DRAFTING CONCENTRATION (ATD)**

DDT 150	Theory of Residential Drawing and Design	3
DDT 155	Drawing for Residential Construction	4
DDT 213	Civil Drafting, Plat Maps	3
DDT 225	Structural Steel Drafting	3
	<b>Total Concentration Credits</b>	<b>13</b>
	<b>Total Credits for Program Certificate</b>	<b>28</b>

*Architectural Graphics Certificate Suggested Course Sequence*

<i>FIRST SEMESTER</i>	<i>SECOND SEMESTER</i>	<i>THIRD SEMESTER</i>
<i>ORT 100</i>	<i>DDT 127</i>	<i>DDT 150</i>
<i>DDT 104</i>	<i>DDT 128</i>	<i>DDT 155</i>
<i>DDT 111</i>	<i>DDT 144</i>	<i>DDT 216</i>
<i>COM 103</i>	<i>MAH 101</i>	
<i>DPT 103</i>		
<i>FOURTH SEMESTER</i>	<i>FIFTH SEMESTER</i>	
<i>SPC 103</i>	<i>ORI 104</i>	
<i>DDT 124</i>	<i>DDT 222</i>	
<i>DDT 125</i>	<i>DDT 233</i>	
<i>DDT 212</i>	<i>DDT 235</i>	

*Engineering Graphics Certificate Suggested Course Sequence*

<i>FIRST SEMESTER</i>	<i>SECOND SEMESTER</i>	<i>THIRD SEMESTER</i>
<i>ORT 100</i>	<i>DDT 127</i>	<i>DDT 150</i>
<i>DDT 104</i>	<i>DDT 128</i>	<i>DDT 155</i>
<i>DDT 111</i>	<i>DDT 144</i>	
<i>COM 103</i>	<i>MAH 101</i>	
<i>DPT 103</i>		
<i>FOURTH SEMESTER</i>	<i>FIFTH SEMESTER</i>	
<i>SPC 103</i>	<i>ORI 104</i>	
<i>DDT 124</i>	<i>DDT 220</i>	
<i>DDT 125</i>	<i>DDT 225</i>	
<i>DDT 213</i>	<i>DDT 233</i>	
	<i>DDT 236</i>	

**3-D Design and Animation  
Certificate  
Suggested Course Sequence**

<b>FIRST SEMESTER</b>	<b>SECOND SEMESTER</b>	<b>THIRD SEMESTER</b>
ORT 100	DDT 127	DDT 150
DDT 104	DDT 128	DDT 155
DDT 111	DDT 144	
COM 103	MAH 101	
DPT 103		

<b>FOURTH SEMESTER</b>	<b>FIFTH SEMESTER</b>
SPC 103	ORI 104
DDT 124	DDT 233
DDT 125	DDT 235
DDT 234	DDT 244
	DDT 236

**Engineering Graphics and Animation  
Certificate  
Suggested Short Course Sequence**

<b>FIRST SEMESTER</b>	<b>SECOND SEMESTER</b>	<b>THIRD SEMESTER</b>
DDT 104	DDT 144	DDT 213
DDT 111	DDT 220	DDT 225
DDT 124	DDT 131	DDT 150
DDT 127	DDT 125	DDT 155
DDT 128		

*\*All DDT coursework except DDT 216 has a prerequisite of DDT 104 and DDT 111 except DDT 127 which requires only DDT 104.*

*\*\*DDT 150 and DDT 155 are co-requisites.*