

Design Engineering Technology 151301 D&D
Associate in Applied Science Degree

Available: Shoals Campus
 Advisors: A. Rice (5257) rice@nwsc.edu
 M. Hubka (5270) hubka@nwsc.edu

Design Engineering prepares students for the manufacturing and construction industry. Today, the drafter is a highly skilled technician with an ability to visualize objects three dimensionally before they are physically created. By using traditional manual tools or computer assisted methods, the drafter creates drawings that describe the shape and size of the product or project.

Design Engineering instruction at the College is offered in fundamental, intermediate, and advanced levels of drafting and design. Advanced courses train students for the development of drawings in mechanical and architectural design. Related studies prepare the student academically in mathematics, physics, psychology, and English.

A graduate of the program will generally be qualified to enter the industry as an entry level draftsman, detailer, or apprentice designer. Graduates are encouraged to continue education toward a professional degree in engineering or architecture.

Entering students are required to complete ORI 101. Transfer students are exempt from this requirement.

General Education Requirements	Semester		
	Theory	Lab	Hours
***ENG 101 English Composition I	3	0	3
*ENG 130 Technical Report Writing	3	0	3
MTH 103 Intro to Technical Mathematics	3	0	3
MTH 118 Technical Mathematics	3	0	3
PHY 115 Technical Physics	3	2	4
PSY 200 General Psychology	3	0	3
Humanities or Fine Arts Elective	3	0	3
Total General Education Requirements	22		

Major Requirements

DDT 104 Basic Computer Aided Drafting and Design	1	4	3
DDT 111 Fundamentals of Drafting and Design	1	4	3
DDT 117 Manufacturing Processes	1	4	3
DDT 122 Advanced Technical Drawing	1	4	3
DDT 124 Basic Technical Drawing	1	4	3
DDT 127 Intermediate Computer Aided Drafting and Design	1	4	3
DDT 128 Intermediate Technical Drawing	1	4	3
DDT 131 Machine Drafting Basics	1	4	3
DDT 132 Architectural Drafting	1	4	3
DDT 134 Descriptive Geometry	1	4	3
DDT 181E Special Topics - Work Ethics	3	0	3
DDT 211 Intermediate Machine Drafting	1	4	3

DDT 231 Advanced CAD	2	3	3
DDT 233 Three-Dimensional Modeling	1	4	3
DDT 227 Strengths of Material	4	0	4
Drafting and Design Electives	X	X	8
Total Major Requirements	54		

Total Semester Credit Hours 76

Design Engineering Technology Electives

DDT 114 Industrial Blueprint Reading			
DDT 115 Blueprint Reading for Machinists			
DDT 116 Blueprint Reading for Construction			
DDT 118 Basic Electrical Drafting			
DDT 125 Surface Development			
DDT 126 Sections and Conventional Practice			
DDT 130 Fundamentals of Drafting for Related Trades			
DDT 133 Basic Surveying			
DDT 139 Fundamentals of Drafting for Related Trades Lab			
DDT 150 Theory of Residential Drawing and Design			
DDT 155 Drawing for Residential Construction			
DDT 182 Special Topics in Design Engineering Technology			
DDT 191 Drafting Internship (1 cr)			
DDT 192 Drafting Internship (2 cr)			
DDT 193 Drafting Internship (3 cr)			
DDT 212 Intermediate Architectural Drafting			
DDT 213 Civil Drafting, Plat Maps			
DDT 214 Pipe Drafting			
DDT 215 Geometric Dimensioning and Tolerancing			
DDT 217 Building Codes, Ordinances, Zoning Restrictions and the A.D.A.			
DDT 220 Intermediate Technical and Mechanical Drawing			
DDT 221 Advanced Machine Drafting			
DDT 222 Advanced Architectural Drafting			
DDT 223 Advanced Civil Drafting			
DDT 224 Structural Concrete Drafting			
DDT 225 Structural Steel Drafting			
DDT 226 Technical Illustration			
DDT 228 Geographic Information Systems			
DDT 229 Inter. Technical and Mechanical Drawing Lab			
DDT 232 CAD Customization			
DDT 234 3D Graphics and Animation			
DDT 235 Specialized CAD			
DDT 236 Design Project			
DDT 237 Current Topics in CAD			
DDT 238 Special Topics in CAD			
DDT 239 Independent Studies			
DDT 250 Theory of Commercial Drawing and Design			
DDT 255 Drawing for Commercial Construction			
DDT 267 Co-op Elective			
DDT 268 Co-op Elective			
DDT 271 Co-op Elective (2-6 cr)			
DDT 290 Survey of Aerospace Technology			

Note: Three Drafting Electives totaling 8 semester hours are required. Students should consult advisor concerning other possible electives from other program areas.

*Students who have completed ENG 130 prior to Spring 2000, and students substituting ENG 102 must take Speech.

**Computer competency skills are embedded within one or more courses required in this curriculum.

***Keyboarding skills are essential for the successful completion of English 101.

**Computer Aided Design
Engineering Technology
Short-Term Certificate** 151301 DDT

Available: Shoals Campus
 Advisor: A. Rice (5257) rice@nwsc.edu
 M. Hubka (5270) hubka@nwsc.edu

This short-term certificate is open to drafting and design industry personnel with a minimum of one year experience in manual drafting, design, or engineering. The program provides upgrade training in the use of computer aided drafting and design (CADD) technology.

Entering students are required to complete ORI 101. Transfer students are exempt from this requirement.

	Semester		Hours
	Theory	Lab	
DDT 104 Basic Computer Aided Drafting and Design	1	4	3
DDT 127 Intermediate Computer Aided Drafting and Design	1	4	3
DDT 231 Advanced CAD Drafting and Design Elective	2	3	3
	X	X	6

Total Semester Credit Hours 15

NOTE: Two Drafting electives totaling 6 semester hours is required. Students should consult advisor concerning other possible electives from other program areas.

**Electrical Technology
AOT Degree** 309999

Available: Shoals Campus
 Advisors: J. Bonner (5244) ndt1@nwsc.edu
 J. Hackworth (5335) joehackworth@nwsc.edu

Students desiring to receive the AOT Award must complete all major certificate courses, one minor certificate course of study, and the required credit hours of general education courses in Areas I, II, III, and IV. Upon completion of all the courses listed, students are eligible to receive the Associate in Occupational Technology Degree. Students desiring to take general education courses for transfer to another institution should consult an advisor for proper general education course selection.

Core Degree Requirements for the Associate in Occupational Technology Degree

Entering students are required to complete ORT 100. Transfer students are exempt from this requirement.

	Semester Hours
Area I: Written Composition English Composition I and/or Technical Writing	3
Area II: Humanities and Fine Arts	3
Area III: Natural Science and Mathematics A minimum of 3 hours in degree creditable mathematics is required. The additional 6 hours of degree creditable coursework may be taken from disciplines of math, biology, chemistry, physical science, physics, environmental technology and computer science.	9
Area IV: History, Social and Behavioral Sciences Courses may be taken from the disciplines of history, economics, geography, political science, psychology, and sociology.	3

Minimum General Requirements 18

Major Requirements	Semester Hours
ELT 114 Residential Wiring Methods	3
ELT 117 AC/DC Machines	3
ELT 118 Commercial/Industrial Wiring I	3
ELT 119 Concepts of Solid State	5
ELT 121 Concepts of Digital Electronics	5
ELT 122 Advanced AC/DC Machines	3
ELT 132 Commercial/Industrial Wiring II	3
ELT 209 Motor Control I	3
ELT 212 Motor Control II	3
ELT 219 Fluid Power Systems	3
ELT 231 Programmable Controls I	3
ELT 232 Programmable Controls II	3
ELT 242 Journeyman Master Prep Exam	3
Total Major Requirements	43

Minor Requirements	309999 EAC
Air Conditioning/Refrigeration Technology	
ACR 111 Refrigeration Principles	3
ACR 121 Principles of Electricity for HVACR (or ELT 111)	3-5
ACR 122 HVACR Electrical Circuits (or ELT 112)	3-5
ACR Elective	1-3
Total Minor Requirements	12

General Requirements 18

Total Requirements for AOT Degree 73

*Computer competency skills are embedded within one or more courses required in this curriculum.