

The Engineering Graphics Technologies degree allows the student to study mechanical technologies as their area of design study. This program also contains an in-depth emphasis in computer aided design (CAD) including two and three-dimensional design, visualization, customization, and programming. Mechanical design students will be introduced to parametric modeling design, geometric tolerancing (GD and T), materials, and manufacturing processes. Students will also create physical models with 3D plotting and laser cutting/engraving equipment. This program prepares the student for a variety of employment opportunities that include Draftsperson, Junior Designer, and Computer Aided Design Technician.

Required Courses	Credits	Pre or Co Reqs Rqd	Course Availability		
			Fall	Spr	Sum
General Education Courses					
• CIS 118 - Intro to PC Applications	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• COM 115 - Public Speaking*	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• ENG 121 - English Composition GT-CO1 OR ENG 131 - Technical Writing GT-CO1*	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• General Education Elective (See Notes for specific requirements)	3-5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• MAT 121 - College Algebra: GT-MA1 or Higher*	4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Major Courses					
• CAD 101 - Computer Aided Drafting/2D I	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• CAD 102 - Computer Aided Drafting/2D II	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• CAD 201 - Computer Aided Drafting / Custom	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• CAD 202 - Computer Aided Drafting / 3D	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• EGT 101 - Mechanical Design I	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• EGT 102 - Mechanical Design II	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• EGT 105 - Blueprint Reading (Online)	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• EGT 201 - Engineering Materials	3	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• EGT 205 - Geometric Dimension & Tolerance	3	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• EGT 210 - Mechanical Design III	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• EGT 289 - Capstone	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Major Elective (See Notes for specific requirements)	3-4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Major Elective (See Notes for specific requirements)	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Major Elective (See Notes for specific requirements)	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• MTE 120 - Manufacturing Processes (Online)	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pre-Requisites, Co-Requisites, and Recommendations (grade C or better required)

Where requirements are listed as course categories (e.g. Electives, Arts/Humanities) rather than as specific courses, please note that depending upon course choice, pre-requisites may be required.

CAD 101 - Computer Aided Drafting/2D I

- Requirement: Students must have Windows File Management skills to create file folders, rename files, delete files, copy and move files

CAD 102 - Computer Aided Drafting/2D II

- Co-Requisite: CAD 101 - Computer Aided Drafting/2D I OR CAD 105 - AutoCAD for Interiors
- Requirement: Students must have Windows File Management skills to create file folders, rename files, delete files, copy and move files

CAD 201 - Computer Aided Drafting / Custom

- Pre-Requisite: CAD 102 - Computer Aided Drafting/2D II

CAD 202 - Computer Aided Drafting / 3D

- Pre-Requisite: CAD 102 - Computer Aided Drafting/2D II

CIS 118 - Intro to PC Applications

- Requirement: Students must have Windows file management skills to create file folders, rename files, delete files, copy and move files

EGT 101 - Mechanical Design I

- Co-Requisite: CAD 101 - Computer Aided Drafting/2D I

EGT 102 - Mechanical Design II

- Pre-Requisite: CAD 102 - Computer Aided Drafting/2D II
- Pre-Requisite: EGT 101 - Mechanical Design I

EGT 210 - Mechanical Design III

- Pre-Requisite: EGT 102 - Mechanical Design II AND CAD 202 - Computer Aided Drafting / 3D OR CAD 240 - Inventory I/Autodesk OR CAD 255 - SolidWorks/Mechanical

Program Outcomes

- Define and differentiate various engineering materials.
- Design digital graphics.
- Demonstrate the ability to draw with dimension.

Notes

- Major Electives: Select three (3) courses from the following: CAD 240, CAD 255, CAD 262, CAD 264, EGT 280.
- *This course requires college level readiness as measured by Accuplacer, ACT, or SAT scores; approved high school course work that is less than five years old; or successful completion of appropriate college-readiness course.
- AAA 101 – College 101: Student Experience is required for all new college students seeking degrees or transfer.
- Any general election requirements may also be completed during the summer semesters.
- Asterisked courses transfer to Metro State University and its Mechanical Engineering Technology program through an MOU. Please see department chair for details.
- EGT 101 is a CAD based course; students must have completed or co-enrolled in CAD 101 or CAD 102 to attend EGT 101.
- EGT 101, 102, 201, 205 and MTE 120 are transferrable to Metro State University and its Mechanical Engineering Technology program through an MOU. Please see department chair for details.



- General Education Elective: Select one (1) course from the following: CHE 101, ECO 202, ENG 122, MAT 122, MAT 125, MAT 201, MAT 202, PHI 112 (all transferrable to Metro State University and its Mechanical Engineering Technology program through an MOU. Please see department chair for details.)
- IMPORTANT: Subject to change without notice. Please consult the Engineering Graphics Technologies-Mechanical Design Concentration Department for specific course planning information and official guidance.

Graduation Requirements

- Refer to 18/19 catalog for specific requirements and important information about this degree.
- Students should use DegreeCheck (available via myACC) to monitor progress towards completion. Students must apply for graduation; visit www.arapahoe.edu/departments-and-programs/graduation.

RECOMMENDED COURSE SEQUENCE FULL-TIME TRACK

Year 1: Fall	Credits	Course
	3	CAD 101 - Computer Aided Drafting/2D I
	3	CAD 102 - Computer Aided Drafting/2D II
	3	CIS 118 - Intro to PC Applications
	3	EGT 101 - Mechanical Design I
	3	EGT 105 - Blueprint Reading
Year 1: Spring	Credits	Course
	3	CAD 201 - Computer Aided Drafting / Custom
	3	CAD 202 - Computer Aided Drafting / 3D
	3	EGT 102 - Mechanical Design II
	3	ENG 121 - English Composition GT-CO1 OR ENG 131 - Technical Writing GT-CO1
	3	Major Elective ~Recommended Restricted Elective(s)~ CAD 240 - Inventor I/Autodesk
Year 2: Fall	Credits	Course
	3	COM 115 - Public Speaking
	3	EGT 210 - Mechanical Design III
	3	Major Elective ~Recommended Restricted Elective(s)~ CAD 262 - 3D Printing/Additive Manufacturing
	4	MAT 121 - College Algebra: GT-MA1 or Higher
	3	MTE 120 - Manufacturing Processes (Online)
Year 2: Spring	Credits	Course
	3	EGT 201 - Engineering Materials
	3	EGT 205 - Geometric Dimension & Tolerance
	3	EGT 289 - Capstone
	3-5	General Education Elective ~Recommended Elective(s)~ CHE 101 - Introduction to Chemistry I with Lab: GT-SC1* ECO 202 - Principles of Microeconomics: GT-SS1* ENG 122 - English Composition II: GT-CO2 MAT 122 - College Trigonometry: GT-MA1 MAT 125 - Survey of Calculus: GT-MA1 MAT 201 - Calculus I: GT-MA1 PHI 112 - Ethics: GT-AH3*
	3-4	Major Elective ~Recommended Restricted Elective(s)~ CAD 255 - SolidWorks/Mechanical CAD 264 - 3D Scanning and Modeling EGT 280 - Internship

RECOMMENDED COURSE SEQUENCE PART-TIME TRACK

Year 1: Fall	Credits	Course
	3	CAD 101 - Computer Aided Drafting/2D I
	3	CAD 102 - Computer Aided Drafting/2D II
	3	CIS 118 - Intro to PC Applications
Year 1: Spring	Credits	Course
	3	CAD 201 - Computer Aided Drafting / Custom
	3	CAD 202 - Computer Aided Drafting / 3D
	3	ENG 121 - English Composition GT-CO1 OR ENG 131 - Technical Writing GT-CO1
Year 1: Summer	Credits	Course
	4	MAT 121 - College Algebra: GT-MA1 or Higher
Year 2: Fall	Credits	Course
	3	EGT 101 - Mechanical Design I
	3	EGT 105 - Blueprint Reading
	3	Major Elective ~Recommended Restricted Elective(s)~ CAD 262 - 3D Printing/Additive Manufacturing
Year 2: Spring	Credits	Course
	3	EGT 102 - Mechanical Design II
	3	EGT 201 - Engineering Materials
	3	EGT 205 - Geometric Dimension & Tolerance
Year 2: Summer	Credits	Course
	3	COM 115 - Public Speaking
Year 3: Fall	Credits	Course
	3	EGT 210 - Mechanical Design III
	3-5	General Education Elective ~Recommended Elective(s)~ CHE 101 - Introduction to Chemistry I with Lab: GT-SC1* ECO 202 - Principles of Microeconomics: GT-SS1* ENG 122 - English Composition II: GT-CO2 MAT 122 - College Trigonometry: GT-MA1 MAT 125 - Survey of Calculus: GT-MA1 MAT 201 - Calculus I: GT-MA1 PHI 112 - Ethics: GT-AH3*
	3	MTE 120 - Manufacturing Processes (Online)
Year 3: Spring	Credits	Course
	3	EGT 289 - Capstone
	3	Major Elective ~Recommended Restricted Elective(s)~ CAD 240 - Inventor I/Autodesk



3-4 Major Elective

~Recommended Restricted Elective(s)~

CAD 255 - SolidWorks/Mechanical

CAD 264 - 3D Scanning and Modeling

EGT 280 - Internship