# CAD/MECHANICAL ENGINEERING TECHNOLOGY, A.A.S.

#### **Entry Time**

Fall

#### Award

Associate of Applied Science degree 2 years (5 terms including summer)

The CAD/MET Program provides students with a comprehensive education in mechanical design, technical drafting, and manufacturing processes, culminating in both a Mechanical CAD Certificate and a Mechanical CAD Diploma. The diploma includes preparation for multiple industry-standard Solidworks certifications, ensuring students are wellequipped for the workforce. Students gain proficiency in additional software like AutoCAD and Creo, while also learning foundational concepts in Geometric Dimensioning & Tolerancing (GD&T) and 3D printing. The program can be tailored to prepare students for engineering transfer or to specialize in a variety of manufacturing areas, providing a structured path to successful careers in engineering and manufacturing.

# **Career Opportunities**

- drafter
- mechanical drafter
- CAD drafter
- engineering technician
- CAD operator/designer
- · mechanical engineering assistant

## **Degree Requirements**

Term 1				
Fall		Credit Hours		
DRF-141	Engineering Drawings	2		
DRF-142 or EGT-400	Engineering Design or PLTW - Introduction to Engineering Design	3		
CAD-330	Solidworks I	3		
CAD-340	Solidworks II	3		
CAD-300	AutoCAD for Applied Engineer	2		
MFG-202	Manufacturing Process	2		
	Term Totals:	15		
Term 2				
Spring				
CAD-350	Solidworks III	3		
CAD-360	Creo I	3		
CAD-237	Geometric Dimensioning & Toler	3		

EGT-185       Design Project         MAT-102 or MAT-138 or MAT-136 or MAT-136 or MAT-210       Intermediate Algebra <sup>1</sup> or College Algebra with Limits or Trigonometry & Analytic Geom or Calculus I         Term 3       Term Totals:         Term 3       Summer         Humanities or History/Culture Course (https://creditcatalog.kirkwood.edu/aas- degree-humanities-requirement/)       Communications Course <sup>1</sup> Communications Course <sup>1</sup> Term Totals:         Term 4       Fall         PHY-162 or PHY-212       College Physics I <sup>1</sup> or Classical Physics I         MAT-138       College Algebra with Limits <sup>1</sup> or Trigonometry & Analytic Geom	3       h Limits       lytic Geom       18
MAT-102       Intermediate Algebra <sup>1</sup> or MAT-138       or College Algebra with Limits         or MAT-136       or Trigonometry & Analytic Geom         or MAT-210       Term Totals:         Term 3       Summer         Humanities or History/Culture Course (https://creditcatalog.kirkwood.edu/aas-         degree-humanities-requirement/)         Communications Course <sup>1</sup> Term 4         Fall         PHY-162       College Physics I <sup>1</sup> or Classical Physics I         MAT-138       College Algebra with Limits <sup>1</sup>	h Limits alytic Geom alog.kirkwood.edu/aas- 3 6 
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Term Totals:       Term 4       Fall       PHY-162 or PHY-212     College Physics I <sup>1</sup> or Classical Physics I       MAT-138 or MAT-136     College Algebra with Limits <sup>1</sup> or Triggeorgetry 8 Analytic Coom	6 Is <sup>1</sup> 4 Ilytic Geom
Term 4       Fall       PHY-162 or PHY-212     College Physics I or Classical Physics I       MAT-138     College Algebra with Limits 1 or Triggeometry 8 Analytic Coom	Is <sup>1</sup> 4 Iytic Geom
Fall       PHY-162 or PHY-212     College Physics I       MAT-138     College Algebra with Limits 1       cr. MAT-126     cr. Tigggemetry 8 Analytic Comm	is <sup>1</sup> 4 lytic Geom
PHY-162 or PHY-212     College Physics I       MAT-138     College Algebra with Limits <sup>1</sup> cr Trigogometry & Analytic Coom	IS <sup>1</sup> 4 Ilytic Geom
MAT-138 College Algebra with Limits <sup>1</sup>	ts <sup>1</sup> 4
or MAT-210 or Calculus I or MAT-216 or Calculus I	
Engineering/Manufacturing Elective <sup>1</sup>	3
Communications Course <sup>1</sup>	3
Term Totals:	
Term 5	14
Spring	14
PHY-172     College Physics II <sup>1</sup> or PHY-222     or Classical Physics II	14
	4
Engineering/Manufacturing Elective <sup>1</sup>	4
Engineering/Manufacturing Elective <sup>1</sup> Engineering/Manufacturing Elective <sup>1</sup>	14 4 3 3
Engineering/Manufacturing Elective 1         Engineering/Manufacturing Elective 1         MGT-145       Human Relations in Management 1         or PSY-111       or Intro to Psychology         or ECN-120       or Principles of Macroeconomics         or ECN-130       or Principles of Microeconomics	14 14 4 3 gement <sup>1</sup> 3 economics iconomics
Engineering/Manufacturing Elective 1         Engineering/Manufacturing Elective 1         MGT-145       Human Relations in Management 1         or PSY-111       or Intro to Psychology         or ECN-120       or Principles of Macroeconomics         or ECN-130       Term Totals:	14 14 4 3 3 gement <sup>1</sup> 3 economics conomics 13

<sup>1</sup> Students planning to transfer to a four-year college or university should consult their academic advisor to determine their communications, math, physics, social science, and engineering/manufacturing electives to meet the transfer institution's requirements.

#### **Engineering/Manufacturing Electives**

Code	Title	Credit Hours
ATR-105	Industrial Robotics	3
ATR-136	PLC for Manufacturing	4
ATR-210	Electromechanical Systems	4
ATR-310	Industrial Controls	5
CAD-108	CAD for Electrical Design	2

CAD-201	Intro to BIM	3
CHM-165	General Chemistry I	4
CON-101	Architectural Plans and Specs	3
CON-313	Structures and Mechanical/Electrical/ Plumbing Systems	3
ELE-364	Basic Electrical Circuits	4
ELT-279	Electronic Practices	4
ELT-309	Digital Circuits	3
ELT-341	Electric Circuits II	5
ELT-345	Electric Circuits I	5
ELT-618	Microprocessors I	5
ELT-621	Microprocessors II	4
EGR-160	Engineering I	3
EGR-167	Engineering II	4
EGR-180	Statics	3
EGR-280	Dynamics	3
EGR-290	Thermodynamics	3
MAT-149	Linear Algebra	3
MAT-219	Calculus III	4
MAT-227	Differential Equation/Laplace	4
MFG-103	Applied Metallurgy	3
MFG-145	Light Machining-Maint Trades	4
MFG-373	Computer Aided Manufacturing I	4
MFG-374	Comp Aided Manufacturing II	4
MFG-396	Alt Manufacturing Processes	3
WEL-208	Intro to Fabrication	2
WEL-228	Welding Safety/Health: SENSE1	1
WEL-267	Welding for Maintenance	3

### **Optional Courses**

Code	Title	Credit Hours
CAD-928	Independent Study	1
CAD-924	Honors Project	1
EGT-410	PLTW - Principles of Engineering	3
DRF-924	Honors Project	1