Computer Aided Design and Engineering Technology - Computer Aided Engineering Option (CAD.CAE.AAS)

Associate in Applied Science

Engineering/Manufacturing and Industrial Technology

Auburn Hills Campus

This program leads to an associate in applied science degree with a specialization in CAD Engineering Technology. Program graduates are encouraged to transfer to one of OCC's four-year university partners and continue their education in Engineering Technology; however, graduates are prepared for occupations and careers in engineering and manufacturing industries. Rapid Prototyping and co-op opportunities enhance their learning experience.

The CAD Engineering option focuses on design with an emphasis on concepts and applications of CAD Engineering Technologies. CAE covers subjects such as: the applications and principles of kinematics in design, concepts and techniques of finite element modeling for stress analysis / non-destructive testing, techniques and applications of solid modeling, and CNC tool path generation for CAD models.

High school graduates who completed state-approved career and technical education (CTE) programs may be eligible to receive college credit for work completed while in high school. Detailed information can be obtained by contacting an OCC Counseling Office or by visiting oaklandcc.edu/articulation. (http://www.oaklandcc.edu/articulation/)

Program Webpage - Click Here **(**https://www.oaklandcc.edu/programs/cad/**)**

Program Outcomes and Full Time Plan Example - Click Here **(**https://www.oaklandcc.edu/program-plan/cad.cae.aas**)**

Code	Title		Credit Hours
Major Requirements			
CAD 1101	Introduction to CAD		4
CAD 1105	Animation Design		3
CAD 1201	Introduction to Engineering Graphics		4
CAD 1450[1]	Drafting and Design Co-op Internship		3
CAD 2102	Fundamentals of Part Design and Its Applications		4
CAD 2151	Introduction to Generative Surface Design		4
DDT 1000	Fundamentals for the Drafting Industry		3
MAT 1150[2]	Intermediate Algebra (or higher level math except MAT 1525, MAT 2530 or MAT 2540)		3-4
IST 1800	Manufacturing Processes		3
Select one of the following ENG courses:			3-4
ENG 1350[2, 3]	Business Communications	3	
ENG 1450[2, 3]	Writing and Reading for Problem Solving	3	
ENG 1510[2]	Composition I	3-6	
or ENG 1510E	Composition I Enhanced	4	
or ENG 1510S	Composition I with Support	6	
ENG 2200[2]	Professional Communication	4	
Required Supportive Courses			
CAD 1050	Geometric Dimensioning and Tolerancing (GD&T)		4
CAD 1501	Special Topics in CAD: Fusion 360 Design		2
CAD 2131	Product Design		4
CAD 2141	Kinematics		3
CAD 2161	Finite Element Modeling and Analysis		3
Select one of the following:			4
APP 2170[4]	Applied Technology	4	
or PHY 1610	College Physics I	4	
Total Credit Hours for Program-Related Courses			**54-56**
General Education Requirements			
Communication / English (3-credits)			3
Complete 3 credits from Communication/English courses listed in the General Education Distribution List (http://catalog.oaklandcc.edu/graduation-requirements/general-education-distribution/#communication-english)			
Fine Arts / Humanities (3-credits)			3
Complete 3 credits from Fine Arts/Humanities courses listed in the General Education Distribution List (http://catalog.oaklandcc.edu/graduation-requirements/general-education-distribution/#fine-arts-humanities)			
Mathematics / Science (3-credits)			
Satisfied			
Social Science (3-credits)			3
Complete 3 credits from Social Science courses listed in the General Education Distribution List (http://catalog.oaklandcc.edu/graduation-requirements/general-education-distribution/#social-science)			

Written Communication (3-credits)	
Satisfied	
Total Credit Hours	**63-65**

1

One of the following may be used as a co-op substitution:
CAD 2000, CAD 2110, CAD 2340, CAD 2602, or CAD 2702.

2

Course may be used to meet General Education requirements.

3

Students transferring to other institutions should select ENG 1510.

4

If taking APP 2170, take MAT 1150. If taking PHY 1610, take MAT 1560.

A minimum cumulative 2.00 grade point average (GPA) overall is required for graduation.