

# MECHANICAL DESIGN/CAD A.A.S.

60 Semester Credit Hours; Curriculum: 0270

The Mechanical Design/CAD A.A.S. degree curriculum focuses on preparing students for job positions in mechanical design, architectural design, interior design and building information management.

**Note:** Refer to IAI General Education Courses page for guidelines on General Education course selection.

Code	Title	Hours
<b>General Education Requirements</b>		
<i>Area A — Communications</i>		
EGL 101	Composition I	3
Select one of the following:		3
EGL 102	Composition II	
EGL 111	Introduction to Business and Technical Writing (recommended)	
EGL 212	Technical Writing Applications	
SPE 103	Effective Speech	
<i>Area B — Mathematics</i>		
Select one course from Area B (Mathematics)		3
<i>Area C — Science</i>		
(PHY 101 recommended)		3
<i>Area D — Social and Behavioral Sciences</i>		
Select one course from a social or behavioral science discipline		3
<i>Area E — Humanities/Fine Arts</i>		
Select one course from a humanities or fine arts discipline		3
<i>Area F — Global Studies</i> <sup>1</sup>		
Select one course that satisfies Global Studies requirement		0-3
<i>Area G — U.S. Diversity Studies</i> <sup>2</sup>		
Select one course that satisfies U.S. Diversity Studies requirement		0-3
<b>Total Hours</b>		<b>18</b>

<sup>1</sup> Students may take a Global Studies course that satisfies both Area F and another Area requirement.

<sup>2</sup> Students may take a U.S. Diversity course that satisfies both Area G and another Area requirement.

Code	Title	Hours
<b>Major Requirements</b>		
CAD 116	Basic AutoCAD	3
CAD 117	Intermediate AutoCAD	4
CAD 118	Advanced AutoCAD	4
CIS 101	Introduction to Computer Information Systems	3
ENG 120	Engineering Graphics	3
MEC 105	Processes and Materials	3
MEC 220	Elements of Machine Design	3
MEC 230	Statics and Strength of Materials	3
Select additional CAD, FME, GIS, MEC, or MFG courses; contact an academic advisor for a list of acceptable courses		16
<b>Total Hours</b>		<b>42</b>

## Program Learning Outcomes

1. Evaluate mechanical designs and select the proper process and materials for production.
2. Create 2D and 3D computer drawings and models for manufacturing and prototyping.
3. Evaluate computer aided design models and assemblies based on critical thinking and problem solving skills.
4. Collaborate with people of diverse backgrounds and abilities.
5. Develop a solution through group work.
6. Communicate and present ideas and solutions to design problems.

## Mechanical Design/CAD Pathway

The following pathway is recommended for students pursuing an Associate in Applied Science degree in Mechanical Design/CAD.

For more information or program specific advising contact the department chair or program coordinator. **General Education courses should be selected from the list of IAI General Education Courses.**

Course	Title	Hours
<b>First Year</b>		
<b>Semester One</b>		
EGL 101	Composition I	3
CAD 116	Basic AutoCAD	3
ENG 120	Engineering Graphics	3
MEC 105	Processes and Materials	3
CAD 230	Introduction to SolidWorks	4
<b>Hours</b>		<b>16</b>
<b>Semester Two</b>		
MAT 114	Applied Mathematics I	4
CAD 117	Intermediate AutoCAD	4
CAD 107	Introduction to 3D Printing	2
MEC 220	Elements of Machine Design	3
CAD 232	Intermediate SolidWorks	4
<b>Hours</b>		<b>17</b>
<b>Second Year</b>		
<b>Semester One</b>		
CAD 118	Advanced AutoCAD	4
MEC 230	Statics and Strength of Materials	3
CAD 234	Advanced SolidWorks	4
CIS 101	Introduction to Computer Information Systems	3
Select one elective from CAD, FME, GIS, MEC or MFG		2-4
<b>Hours</b>		<b>16-18</b>
<b>Semester Two</b>		
PHY 101	Applied Physics	4
Select one of the following:		3
EGL 102	Composition II	
EGL 111	Introduction to Business and Technical Writing	
EGL 212	Technical Writing Applications	
SPE 103	Effective Speech	
Select one of the following:		3
HUM 165	Introduction to World Music <sup>1</sup>	
HUM 210	World Mythologies <sup>1</sup>	
PHL 205	World Religions <sup>1</sup>	
Select one of the following:		3
SOC 101	Introduction to Sociology <sup>2</sup>	
SOC 103	Social Problems <sup>3</sup>	
SSC 105	Introduction to Ethnic Studies <sup>2</sup>	
<b>Hours</b>		<b>13</b>
<b>Total Hours</b>		<b>62-64</b>

**Note:** Pathway is a recommended sequence and selection of courses. Part-time students should contact the department chair or program coordinator to discuss a part-time pathway as well as course prerequisites and recommendations.

- <sup>1</sup> Course fulfills the Global Studies Requirement. At least one Global Studies course is required for degree completion.
- <sup>2</sup> Course fulfills the U.S. Diversity Requirement. At least one U.S. Diversity course is required for degree completion.
- <sup>3</sup> Course fulfills both the Global Studies and U.S. Diversity Requirements.