

Computer-Aided Mechanical Design Technology
First Year, Fall Semester

Course ID	Course No.	Course Name	Credits	Days	Times
000119	CADD1502	AutoCAD Foundations	3.0	M-F	10-12
000120	CADD1512	Inventor Foundations	3.0	M-F	10-12
000117	TECH1545	Technical Computations	3.0	T,H	7:30-10
000115	TECH1552	Basic Metal Joining and Fabrication	2.0	M,H	1-3
Total			11.0		

Time	Monday	Tuesday	Wednesday	Thursday	Friday
		Technical Computations		Technical Computations	
8-9					
9-10					
10-11	AutoCAD Foundations (Wk 1-8)				
11-12	Inventor Foundations (Wk 9-16)				
12-1					
1-2	Basic Welding			Basic Welding	
2-3	Wk 1-8			Wk 1-8	
3-4					

Diploma Students (before spring semester of 2nd year)

Course No.	Course Name	Credits
ENGL1308	Stretch Analytical Writing	3.0
DVRS1310	Human Relations for a Diverse Workplace	3.0

AAS Degree Students (before spring semester of 2nd year)

Course No.	Goal Area	Credits
	Goal Area 1	at least 3.0
	Goal Area 7	at least 3.0
	3rd Goal Area	Varies
	Any Goal Area	Varies
	Total General Education Credits	15.0

Mechanical Design Engineering Technology
AAS - 68 Credits

Suggested Technical Studies Semester I		
<u>CADD1502</u>	AutoCAD Foundations	3 Credits
<u>CADD1512</u>	Inventor Foundations	3 Credits
<u>TECH1545</u>	Technical Computations	3 Credits
<u>TECH1556</u>	Basic Manual - Automated Machining	2 Credits
Suggested Technical Studies Semester II		
<u>CADD1507</u>	Drawing Principles I	3 Credits
<u>CADD1516</u>	Drawing Principles II	3 Credits
<u>CADD1520</u>	SolidWorks Foundations	3 Credits
<u>CADD1523</u>	Design Calculations I	3 Credits
<u>CADD1530</u>	Basic Electric Circuits	1 Credits
Suggested Technical Studies Semester III		
<u>CADD2505</u>	Advanced Drawing Principles I	3 Credits
<u>CADD2509</u>	Advanced Drawing Principles II	3 Credits
<u>CADD2518</u>	Design Calculations II	3 Credits
<u>CADD2529</u>	Manufacturing Systems	2 Credits
<u>TECH1552</u>	Basic Metal Joining and Fabrication	2 Credits
Suggested Technical Studies Semester IV		
<u>CADD2510</u>	Design Concepts	3 Credits
<u>CADD2514</u>	Computer- Aided Design	3 Credits
<u>CADD2522</u>	Machine Design	3 Credits
<u>CADD2532</u>	Geo-Dim for Designers	2 Credits
<u>CADD2541</u>	Mastercam Fundamentals	2 Credits
<u>CADD2542</u>	Reverse Engineering	2 Credits
<u>CADD2550</u>	Mechanical Design Technical Communications	1 Credits
General Education		
	MnTC Goal Area 1 Communications	3 Credits
	MnTC Goal Area 7 Diversity	3 Credits
	MnTC Transfer Electives (at least one from another Goal Area)	9 Credits

Estimated cost for books and supplies: \$4300

Mechanical Design Engineering Technology
Diploma - 59 Credits

Suggested Technical Studies Semester I		
<u>CADD1502</u>	AutoCAD Foundations	3 Credits
<u>CADD1512</u>	Inventor Foundations	3 Credits
<u>TECH1545</u>	Technical Computations	3 Credits
<u>TECH1556</u>	Basic Manual-Automated Machining	2 Credits
Suggested Technical Studies Semester II		
<u>CADD1507</u>	Drawing Principles I	3 Credits
<u>CADD1516</u>	Drawing Principles II	3 Credits
<u>CADD1520</u>	SolidWorks Foundations	3 Credits
<u>CADD1523</u>	Design Calculations I	3 Credits
<u>CADD1530</u>	Basic Electric Circuits	1 Credits
Suggested Technical Studies Semester III		
<u>CADD2505</u>	Advanced Drawing Principles I	3 Credits
<u>CADD2509</u>	Advanced Drawing Principles II	3 Credits
<u>CADD2518</u>	Design Calculations II	3 Credits
<u>CADD2529</u>	Manufacturing Systems	2 Credits
<u>TECH1552</u>	Basic Metal Joining and Fabrication	2 Credits
Suggested Technical Studies Semester IV		
<u>CADD2510</u>	Design Concepts	3 Credits
<u>CADD2514</u>	Computer- Aided Design	3 Credits
<u>CADD2522</u>	Machine Design	3 Credits
<u>CADD2532</u>	Geo-Dim for Designers	2 Credits
<u>CADD2541</u>	Mastercam Fundamentals	2 Credits
<u>CADD2542</u>	Reverse Engineering	2 Credits
<u>CADD2550</u>	Mechanical Design Technical Communications	1 Credits
General Education		
	MnTC Goal Area 1 Communications - **Recommend ENGL1308	3 Credits
	MnTC Goal Area 7 Diversity **Recommend DVR1310	3 Credits

Estimated cost for books and supplies: \$3,700

MECHANICAL DESIGN Program Laptop Requirements – 2023



HP ZBook Fury 16 G9 Mobile Workstation or equal

Wolf Pro Security - Intel Core i7 12800HX / 2 GHz - Win 11 Pro (includes Win 11 Pro License) - NVIDIA RTX A1000 / Intel UHD Graphics - 16 GB RAM - 512 GB SSD NVMe, TLC - 16" IPS 1920 x 1200 - Wi-Fi 6E, Bluetooth - kbd: US - with HP Wolf Pro Security Edition

Not Acceptable: Apple computers using MAC OS or Apple devices using iOS, Chromebooks or tablets using Android OS

Minimum specifications below...

Processor: Intel Core i7 or better, 2 GHz or better recommended

Memory: 16 GB RAM

Storage: 512 GB

Operating System: Windows 11 Pro, 64-bit

Camera (webcam) w/ built in microphone

Bluetooth capable

Dimensions: 17" screen recommended, but a 15" will work and is less expensive

Ports and Slots: 2 minimum USB, HDMI port

Wireless mouse

More Information on SCTCC Website: <https://www.sctcc.edu/laptop-program>

System requirements for AutoCAD 2023 including Specialized Toolsets (Windows)

Operating System 64-bit Microsoft® Windows® 11 and Windows 10 version 1809 or above. See Autodesk's [Product Support Lifecycle](#) for support information.

Processor **Basic:** 2.5–2.9 GHz processor (base) ARM Processors are not supported.
Recommended: 3+ GHz processor (base), 4+ GHz (turbo)

Memory **Basic:** 8 GB
Recommended: 16 GB

Display Resolution **Conventional Displays:**
1920 x 1080 with True Color

High Resolution & 4K Displays:
Resolutions up to 3840 x 2160 (with capable display card)

Display Card **Basic:** 1 GB GPU with 29 GB/s Bandwidth and DirectX 11 compliant
Recommended: 4 GB GPU with 106 GB/s Bandwidth and DirectX 12 compliant

DirectX 12 with Feature Level 12_0 is required for Shaded(Fast) and Shaded with edges(Fast) visual styles. Please be sure to use the latest video card manufacturer drivers from their website.

Disk Space 10.0 GB (suggested SSD)

Network See [Autodesk Network License Manager for Windows](#)

Pointing Device MS-Mouse compliant

.NET Framework .NET Framework version 4.8 or later

Microsoft Word/Office software

- FREE Download for SCTCC Students: Microsoft Office 365 ProPlus Help Desk: www.sctcc.edu/student-help-desk
- SCTCC's Office 365 subscription allows current students to download and run Microsoft Office on up to 5 machines (PC or Mac) and also on up to 5 mobile devices (Android, iPhone etc.).

Laptop Requirements Fall 2023

First-year students in the programs listed below are required to purchase laptop computers and software. Laptops running Windows 10 are highly recommended. Apple computers using MAC OS or Apple devices using iOS, Chromebooks or tablets using Android OS are not recommended for use with the following programs.

Programs requiring personal computers:

- Architectural Construction Technology
- Computer-Aided Mechanical Design Technology
- Computer Programming
- Land Surveying/Civil Engineering Technology
- Energy & Electronics:
 - Mechatronics
 - Energy Technical Specialist
 - Robotics and Automation
 - Instrumentation and Process Control
- Information Technology:
 - Network Administration
 - Cyber Security
 - PC Specialist

Students in programs requiring laptops may order their laptop computers from a recommended vendor. The recommended company, Now Micro, has established a website for our students' use and their prices will be posted on the site. Sales tax will be added to the cost of computers and software. The recommended laptops are dependable and capable of performing the functions needed. They are high-end computers that will perform well during college years as well as after graduation.

Instructions for Purchasing SCTCC Standard Laptop Bundles

1. Go to the vendor website where you will find laptop pricing and specifications. Vendor site: <https://portal.nowmicro.com>
2. Register as an individual and follow the prompts to set-up online profile or login in if you already have an account.
3. Once you submitted registration, please check your email for password.
4. Once logged into the store site, enter keyword "SCTCC" under the product search to access school-approved laptop bundle options.

***NOTE:** Customers must select Credit Card as Payment Method, and either FedEx Ground or Will Pick Up at Store as Delivery Method. Orders that do not comply with these instructions will not be processed.