

St. Cloud Technical & Community College Machine Tool Technology -

There will be a tool day on Thursday, August 24th – approximately \$1,900

Course ID	Course Number	Course Name	Cr		
000088	MACH1503.01	Machine Tool Tech I	4	1 st Half	
000089	MACH1510.01	Machine Tool Tech II	4	2nd Half	
000090	MACH1517.01	Blueprint Reading	1	Full	
000116	TECH1530.01	Computer Apps	2	Full	Hybrid
000122	TECH1545.03	Technical Computations	3	Full	Diploma Only
000114	TECH1550.02	Basic CADD	2	Full	

Diploma

Hour	Monday	Tuesday	Wednesday	Thursday	Friday
7 – 8	1517	1503/1510	1517	1503/1510	
8 – 9	1503/1510	1503/1510	1503/1510	1503/1510	
9 – 10	1503/1510	1503/1510	1503/1510	1503/1510	
10 – 11	1503/1510	1545	1503/1510	1545	
11 – 12		1545	1530	1545	
12 – 1	1503/1510				
1 – 2	1503/1510		1550		
2 – 3			1550		
3-4			1550		

Diploma General Studies – need 6 credits

ENGL1308 – Stretch Analytical Writing I

DVRS1310 – Human Relations for a Diverse Workplace

AAS Degree General Education – need 15 credits

MATH1300 – College Algebra – 3 crs

MATH1321 – Trigonometry – 3 crs

Goal Area 1 – Written – 3 crs

Goal Area 1 – Oral – 3 crs

Goal Area 5 or 7 Social Science /Diversity – 3 crs

Semester: Fall, 2023

Instructor's Name: Tony Wolbersen

CNC and Advanced Machining AAS
60 Credits

Suggested Technical Studies Semester I		
<u>MACH1503</u>	Machine Tool Technology I	4 Credits
<u>MACH1510</u>	Machine Tool Technology II	4 Credits
<u>MACH1517</u>	Blueprint Reading I	1 Credits
<u>TECH1530</u>	Computer Applications	2 Credits
<u>TECH1550</u>	Basic CADD	2 Credits
Suggested Technical Studies Semester II		
<u>MACH1511</u>	Machine Tool Technology III	5 Credits
<u>MACH1514</u>	Introduction to Swiss Turning	2 Credits
<u>MACH1519</u>	Blueprint Reading II	1 Credits
<u>MACH1532</u>	CAM I 2D	1 Credits
<u>MACH1540</u>	CNC Fundamentals	2 Credits
<u>TECH1552</u>	Basic Metal Joining and Fabrication	2 Credits
Suggested Technical Studies Semester III		
<u>MACH1525</u>	Geometric Dimensioning and Tolerancing	1 Credits
<u>MACH1528</u>	Jigs and Fixtures	1 Credits
<u>MACH2504</u>	CNC Milling/Turning	4 Credits
<u>MACH2510</u>	Cutting Tool Technology	1 Credits
<u>MACH2514</u>	Metallurgy	1 Credits
<u>MACH2523</u>	High Performance Manufacturing	1 Credits
<u>MACH2528</u>	Introduction to Electrical Discharge Machining	2 Credits
<u>MACH2540</u>	Advanced Swiss CNC Turning	2 Credits
Suggested Technical Studies Semester IV		
<u>MACH2519</u>	Advanced CNC Milling	2 Credits
<u>MACH2527</u>	Advanced CNC Turning	2 Credits
<u>MACH2539</u>	Advanced Electrical Discharge Machining	1 Credits
<u>MACH2544</u>	CNC/CAM Capstone	1 Credits
Advanced CNC/CAM Machinist Concentration		
<u>MACH2512</u>	CAM II 3D/Solid Modeling/Turning	2 Credits
<u>MACH2516</u>	CAM III Multi-Axis Programming	2 Credits
<u>MACH2531</u>	Multiaxis VMC	2 Credits
<u>MACH2535</u>	Live Tooling Turning Centers	2 Credits
General Education		
<u>MATH1300</u>	College Algebra	3 Credits
<u>MATH1321</u>	College Trigonometry	3 Credits
	MNTC Goal 1 Communications Written	3 Credits
	MNTC Goal 1 Communications Oral	3 Credits
	MNTC Goal 5 or 7 Social Sciences/Diversity	3 Credits

Estimated cost for books and supplies: \$5365

CNC and Advanced Machining Diploma
54 Credits

Suggested Technical Studies Semester I		
<u>MACH1503</u>	Machine Tool Technology I	4 Credits
<u>MACH1510</u>	Machine Tool Technology II	4 Credits
<u>MACH1517</u>	Blueprint Reading I	1 Credits
<u>TECH1530</u>	Computer Applications	2 Credits
<u>TECH1545</u>	Technical Computations	3 Credits
<u>TECH1550</u>	Basic CADD	2 Credits
Suggested Technical Studies Semester II		
<u>MACH1511</u>	Machine Tool Technology III	5 Credits
<u>MACH1514</u>	Introduction to Swiss Turning	2 Credits
<u>MACH1519</u>	Blueprint Reading II	1 Credits
<u>MACH1532</u>	CAM I 2D	1 Credits
<u>MACH1540</u>	CNC Fundamentals	2 Credits
<u>TECH1552</u>	Basic Metal Joining and Fabrication	2 Credits
Suggested Technical Studies Semester III		
<u>MACH1525</u>	Geometric Dimensioning and Tolerancing	1 Credits
<u>MACH1528</u>	Jigs and Fixtures	1 Credits
<u>MACH2504</u>	CNC Milling/Turning	4 Credits
<u>MACH2510</u>	Cutting Tool Technology	1 Credits
<u>MACH2514</u>	Metallurgy	1 Credits
<u>MACH2523</u>	High Performance Manufacturing	1 Credits
<u>MACH2528</u>	Introduction to Electrical Discharge Machining	2 Credits
<u>MACH2540</u>	Advanced Swiss CNC Turning	2 Credits
Suggested Technical Studies Semester IV		
<u>MACH2519</u>	Advanced CNC Milling	2 Credits
<u>MACH2527</u>	Advanced CNC Turning	2 Credits
<u>MACH2539</u>	Advanced Electrical Discharge Machining	1 Credits
<u>MACH2544</u>	CNC/CAM Capstone	1 Credits
Advanced CNC/CAM Machinist Concentration		
<u>MACH2512</u>	CAM II 3D/Solid Modeling/Turning	2 Credits
<u>MACH2516</u>	CAM III Multi-Axis Programming	2 Credits
<u>MACH2531</u>	Multiaxis VMC	2 Credits
<u>MACH2535</u>	Live Tooling Turning Centers	2 Credits
General Education		
<u>ENGL1308</u>	Stretch Analytical Writing I	3 Credits
<u>DVRS1310</u>	Human Relations for a Diverse Workplace	3 Credits

Estimated cost for books and supplies: \$5160

Course Schedule

Instructor: AAS Student

Term: ___ Fall ___ Semester

2023

Hour	Monday	Tuesday	Wednesday	Thursday	Friday
7 – 8 am	Mach1517 Blueprint Reading Rm 1-335	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Mach1517 Blueprint Reading Rm 1-335	Mach1503/1510 Machine Tech I/II Lab Rm. 1-368	
8 – 9 am	Mach1503/1510 Machine Tech I/II Lec Rm.1 -335	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Mach1503/1510 Machine Tech I/II Lec Rm.1 -335	Mach1503/1510 Machine Tech I/II Lab Rm. 1-368	
9 – 10 am	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	
10 – 11 am	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Math 1360 College Algebra	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Math 1360 College Algebra	
11 am – 12pm		Math 1360 College Algebra	Tech1530 Computer Apps Rm. 1-335	Math 1360 College Algebra	
12 – 1 pm	Mach1503/1510 Machine Tech I/II lab Rm.1 -368				
1 – 2 pm	Mach1503/1510 Machine Tech I/II lab Rm.1 -368		Tech1550 Basic CADD 1-335		
2 – 3 pm			Tech1550 Basic CADD 1-335		
3-4 pm			Tech1550 Basic CADD 1-335		
4 – 5pm					

Course Name	Credits	Course ID
Mach Tech I	4	000088
Mach Tech II	4	000089
Blueprint Reading I	1	000090
College Algebra	3	000619
Basic Cadd	2	000114
Computer Apps	2	000116
Total Credits	16	

Course Schedule

Instructor: Diploma Student

Term: ___ Fall ___ Semester

2023

Hour	Monday	Tuesday	Wednesday	Thursday	Friday
7 – 8 am	Mach1517 Blueprint Reading Rm 1-335	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Mach1517 Blueprint Reading Rm 1-335	Mach1503/1510 Machine Tech I/II Lab Rm. 1-368	
8 – 9 am	Mach1503/1510 Machine Tech I/II Lec Rm.1 -335	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Mach1503/1510 Machine Tech I/II Lec Rm.1 -335	Mach1503/1510 Machine Tech I/II Lab Rm. 1-368	
9 – 10 am	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	
10 – 11 am	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Tech1545 Tech Computations 1-370	Mach1503/1510 Machine Tech I/II lab Rm.1 -368	Tech1545 Tech Computations 1-335/337	
11 am – 12pm		Tech1545 Tech Computations 1-370	Tech1530 Computer Apps Rm. 1-335	Tech1545 Tech Computations 1-370	
12 – 1 pm	Mach1503/1510 Machine Tech I/II lab Rm.1 -368				
1 – 2 pm	Mach1503/1510 Machine Tech I/II lab Rm.1 -368		Tech1550 Basic CADD 1-335		
2 – 3 pm			Tech1550 Basic CADD 1-335		
3-4 pm			Tech1550 Basic CADD 1-335		
4 – 5pm					

Course Name	Credits	Course ID
Mach Tech I	4	000088
Mach Tech II	4	000089
Blueprint Reading I	1	000090
Technical Computations	3	000122 (Only Diploma students)
Basic Cadd	2	000114
Computer Apps	2	000116
Total Credits	16	

The following tools and books are required for the Machine Tool Program:

Tools

1 Safety glasses	\$5.50
2 0-1 Micrometer (Starrett)	\$102.00
3 1-2 Micrometer (Starrett)	\$119.50
4 Set of Parallels	\$39.00
5 Carbide Tool Holder & Insert	\$69.94
6 Set of Drills	\$150.00
7 Precision Rule – 6 inch	\$7.50
8 Tool Box (29 wide x 20 deep)	\$635.00
9 English Ball “L” Wrench Set	\$14.95
10 Metric Ball “L” Wrench set	\$0.00
11 Set of Combination Wrenches ¼ - ¾ Inch	\$36.60
12 Edge Finder	\$6.50
13 Center Gage	\$17.95
14 Scriber – Carbide point	\$7.50
15 Electronic Caliper – 6 or 8 Inch	\$115.00
16 Tap Wrench Starrett 93C	\$35.50
17 Tap Wrench Starrett 93B	\$27.50
18 Tap Wrench Starrett 93A	\$25.95
19 Dial Indicator – Best Test	\$99.00
20 Indicol Indicator Holder	\$47.25
21 Dead Blow Hammer	\$24.95
22 Deburring Set	\$7.95
23 Screw Pitch Gage	\$36.00
24 Hone ½ Inch Square	\$8.55
25 Depth Micrometer – 0 – 6 Inch	\$232.00
26 File w/handle	\$5.75
27 Center drills #1, #2, #3	\$13.00
	Estimated Tool Cost
	\$1,871.59

Books

1 Technology of Machine Tools 7th Edition & workbook set	\$251.00
2 Machinery's Handbook 29th Edition	\$95.00
3 Interpreting Engineering Drawings 8th Edition	\$148.00
4 Mathematics for Machine Technology 7th Edition (Diploma Students Only)	\$184.00
5 Microsoft Office 2013 Marque series	\$125.00
6 Parametric Modeling with SolidWorks 2015	\$48.00
7 Scientific Calculator	\$20.00
	Estimated Book Cost
	\$871.00

Total \$2,742.59

Note: These prices are approximate values and are subject to change

Rules of SCTCC Machine Tool Technology Lab

- a. **Safety glasses with side shields are required** – no tinted/reflective lenses **only clear lenses** are allowed. If caught not wearing you will donate a \$2.00 donation to the skills club.
- b. Baseball caps are allowed in the shop. They must be worn the correct way with bills forward. Any other hats are not allowed.
- c. No coats – leave in locker or in toolbox. Do not hang on chairs or equipment. If you are wearing a hoodie the hood must be down and strings tucked in or removed.
- d. Cell phones are to be placed on silent mode in bookbag/toolbox/ or locker.
- e. No radios or MP3/iPods allowed in shop lab. No ear buds are allowed anywhere in the Machine Tool lab or classrooms.
- f. Book bags belong in toolbox or locker – not in shop on tables
- g. Closed toe shoes, no sandals. Shoe must completely cover foot. Steel toe preferred. Shoes must have oil resistant/slip resistant soles.
- h. T-shirts, allowed per school dress code as listed in code of conduct. No loose clothing.
- i. Hair below the collar, must be in ponytail
- j. No shorts allowed in shop. You will be asked to leave if you are wearing shorts.
- k. Pants must be worn so waistband is not below the waistline. No sweat/wind pants allowed.
- l. No horseplay
- m. Housekeeping:
 - i. Return tools to the place you got them from
 - ii. Clean up the area/areas you have worked at the end of class period
- n. If you are going to be late or absent contact the instructor by phone or email, **not** your buddy.
- o. Tool boxes are to be placed in the designated areas at the end of the class period.
- p. No food is allowed in the shop or computer lab. Beverages must be in a closed container and kept in or on toolbox.
- q. Metal chips are the only thing allowed in chip bins. No garbage.
- r. Any student tools left out will require a \$1.00 handling fee in order to get tools back.
- s. No tobacco products or electronic cigarettes of any type are allowed in the shop or school property.

***** Upon receiving a third safety violation in the semester, the student will be asked to leave the lab and classes for one day.**