

CNC Machining Certificate of Completion

PROGRAM DESCRIPTION

The CNC Machining one-year certificate of completion program is a self-directed, outcome-based program designed to prepare students for technician-level employment in manufacturing environments using CNC equipment.

PROGRAM COSTS

(beyond standard tuition/fees and textbooks)

Material Costs

- Welding personal protective equipment and tools, approximately \$400

Enrollment Fees

- Fees on specific MFG courses (\$410 total)

PROGRAM ENTRANCE REQUIREMENTS

Academic Entrance Requirements

- Required:
 - None
- Recommended:
 - High school diploma or GED
 - Minimum placement scores resulting in MTH 020 Pre-Algebra placement or prior completion of MTH 010 Developmental Mathematics or higher ("C" or higher)
 - Successful completion of or current enrollment in MATC new-student orientation class MFG 100 MATC Orientation
 - Recommended completion of CIS 070 Intro to Computers: Windows or equivalent skills

PROGRAM PERFORMANCE STANDARDS

Academic Requirements

- Students must have a 2.0 cumulative GPA to earn a COCC certificate or degree.
- All courses in the program must be completed with a grade of C or higher.

PROGRAM COURSE REQUIREMENTS

Core Courses¹

MFG 100	MATC Orientation	1
MFG 101	Blueprint Reading	2
MFG 103	Welding Technology I	3
MFG 110	Manufacturing Processes I	3
MFG 112	Manufacturing Processes II	3
MFG 114	Manufacturing Processes III	3
MFG 115	Design Processes I	2

MFG 133	Quality Assurance	3
MFG 202	Metals Preparation	2
MFG 211	CNC Mill Operator	2
MFG 213	CNC Turning Operator	2
MFG 230	CNC Programming Mill	2
MFG 232	CNC Programming Lathe	2
MFG 234	CAD/CAM Mill	2
MFG 236	CAD/CAM Lathe	2

Other Required Courses

CIS 070	Intro to Computers: Windows (or higher)	2
MTH 085	Technical Mathematics I (or higher)	4
WR 060	Rhetoric/Critical Thinking I (or higher)	4

Total Credits 44

¹ Most manufacturing courses carry a \$25-\$75 fee to cover software or lab materials (see class schedule for individual courses and fees).

ADVISING NOTES

Nearly all MATC courses are self-directed, outcome-based curricula. This provides students with a greater degree of flexibility than most other COCC programs. The MATC hours of operation provide students with ample time to complete their coursework during a term.

Upon starting their program, students review their desired certificate or degree outcome with their advisor and a sequence of coursework is identified for them. With the exception of classes in a series (e.g. Manufacturing Processes I, II, III) or those with specific prerequisites (as identified in the catalog) most classes can be taken in any order, provided that instructor permission is obtained.

This certificate is designed for students planning to enter their chosen career upon graduation. Often only selected credits are considered transferable to public or private baccalaureate institutions. Prior to starting any MATC program, students are advised to contact the institution to which they intend to transfer and identify what credits may be transferable.

Industrial Maintenance Certificate of Completion

PROGRAM DESCRIPTION

The Industrial Maintenance one-year certificate of completion program is a self-directed, outcome-based program designed to prepare students for technician-level employment in industrial maintenance in a manufacturing environment.

PROGRAM COSTS

(beyond standard tuition/fees and textbooks)

Material Costs

- Welding personal protective equipment and tools, approximately \$400

Enrollment Fees

- Fees on specific MFG courses (\$150 total)

PROGRAM ENTRANCE REQUIREMENTS

Academic Entrance Requirements

- Recommended:
 - High school diploma or GED
 - Minimum placement scores resulting in MTH 020 Pre-Algebra placement or prior completion of MTH 010 Developmental Mathematics or higher ("C" or higher)
 - Successful completion of or current enrollment in MATC new-student orientation class MFG 100 MATC Orientation
 - Recommended completion of CIS 070 Intro to Computers: Windows or equivalent skills

PROGRAM PERFORMANCE STANDARDS

Academic Requirements

- Students must have a 2.0 cumulative GPA to earn a COCC certificate or degree.

- All courses in the program must be completed with a grade of C or higher.

PROGRAM COURSE REQUIREMENTS

Core Courses¹

MFG 100	MATC Orientation	1
MFG 101	Blueprint Reading	2
MFG 102	Blueprint Reading Sheet Metal	2
MFG 103	Welding Technology I	3
MFG 109	Lean Practices	2
MFG 110	Manufacturing Processes I	3
MFG 116	Manufacturing Electrical Systems	2
MFG 118	Fluid Power Systems I	2
MFG 160	Materials Engineering	2
MFG 241	Electric Motor Control	2
MFG 242	Programmable Logic Controllers I	2
MFG 243	Industrial Sensors	2
MFG 244	Programmable Logic Controllers II	2
MFG 245	Electrical Control/Fluid Power	2
MFG 246	Mechanical Troubleshooting	2
MFG 267	Oxygen-Fuel and Plasma Cutting	2
MFG 289	Material Handling-Fork Lift Safety	1

Other Required Courses

CIS 070	Intro to Computers: Windows (or higher)	2
MTH 085	Technical Mathematics I (or higher)	4
WR 060	Rhetoric/Critical Thinking I (or higher)	4

Total Credits 44

¹ Most manufacturing courses carry a \$25-\$75 fee to cover software or lab materials (see class schedule for individual courses and fees).

ADVISING NOTES

Nearly all MATC courses are self-directed, outcome-based curricula. This provides students with a greater degree of flexibility than most other COCC programs. The MATC hours of operation provide students with ample time to complete their coursework during a term.

Upon starting their program, students review their desired certificate or degree outcome with their advisor and a sequence of coursework is identified for them. With the exception of classes in a series (e.g. Manufacturing Processes I, II, III) or those with specific prerequisites (as identified in the catalog) most classes can be taken in any order, provided that instructor permission is obtained.

This certificate is designed for students planning to enter their chosen career upon graduation. Often only selected credits are considered transferable to public or private baccalaureate institutions. Prior to starting any MATC program, students are advised to contact the institution to which they intend to transfer and identify what credits may be transferable.

Manual Machining Certificate of Completion

PROGRAM DESCRIPTION

The Manual Machining one-year certificate of completion program is a self-directed, outcome-based program designed to prepare students for technician-level employment in manufacturing environments using manual machining equipment.

PROGRAM COSTS

(beyond standard tuition/fees and textbooks)

Material Costs

- Welding personal protective equipment and tools, approximately \$400

Enrollment Fees

- Fees on specific MFG courses (\$450 total)

PROGRAM ENTRANCE REQUIREMENTS

Academic Entrance Requirements

- Recommended:
 - High school diploma or GED
 - Minimum placement scores resulting in MTH 020 Pre-Algebra placement or prior completion of MTH 010 Developmental Mathematics or higher (“C” or higher)
 - Successful completion of or current enrollment in MATC new-student orientation class MFG 100 MATC Orientation
 - Recommended completion of CIS 070 Intro to Computers: Windows or equivalent skills

PROGRAM PERFORMANCE STANDARDS

Academic Requirements

- Students must have a 2.0 cumulative GPA to earn a COCC certificate or degree.
- All courses in the program must be completed with a grade of C or higher.

PROGRAM COURSE REQUIREMENTS

Core Courses¹

MFG 100	MATC Orientation	1
MFG 101	Blueprint Reading	2
MFG 103	Welding Technology I	3
MFG 110	Manufacturing Processes I	3
MFG 112	Manufacturing Processes II	3
MFG 114	Manufacturing Processes III	3
MFG 115	Design Processes I	2
MFG 133	Quality Assurance	3
MFG 202	Metals Preparation	2
MFG 203	Layout	2
MFG 205	Drill Press	2
MFG 210	Vertical Milling	2
MFG 214	Lathe Operator I	2
MFG 216	Lathe Operator II	2

Other Required Courses

CIS 070	Intro to Computers: Windows (or higher)	2
MTH 085	Technical Mathematics I (or higher)	4
WR 060	Rhetoric/Critical Thinking I (or higher)	4

Total Credits 42

¹ Most manufacturing courses carry a \$25-\$75 fee to cover software or lab materials (see class schedule for individual courses and fees).

ADVISING NOTES

Nearly all MATC courses are self-directed, outcome-based curricula. This provides students with a greater degree of flexibility than most other COCC programs. The MATC hours of operation provide students with ample time to complete their coursework during a term.

Upon starting their program, students review their desired certificate or degree outcome with their advisor and a sequence of coursework is identified for them. With the exception of classes in a series (e.g. Manufacturing Processes I, II, III) or those with specific prerequisites (as identified in the catalog) most classes can be taken in any order, provided that instructor permission is obtained.

This certificate is designed for students planning to enter their chosen career upon graduation. Often only selected credits are considered transferable to public or private baccalaureate institutions. Prior to starting any MATC program, students are advised to contact the institution to which they intend to transfer and identify what credits may be transferable.

Manufacturing Technology I
Certificate of Completion

PROGRAM DESCRIPTION

The one-year certificate of completion in Manufacturing Technology is designed to prepare students for technician-level employment in a variety of manufacturing environments.

PROGRAM COSTS

(beyond standard tuition/fees and textbooks)

Material Costs

- Welding personal protective equipment and tools, approximately \$400

Enrollment Fees

- Fees on specific MFG courses (\$740 total)

PROGRAM ENTRANCE REQUIREMENTS

Academic Entrance Requirements

- Recommended:
 - High school diploma or GED
 - Minimum placement scores resulting in MTH 020 Pre-Algebra placement or prior completion of MTH 010 Developmental Mathematics or higher (“C” or higher)
 - Successful completion of or current enrollment in MATC new-student orientation class MFG 100 MATC Orientation
 - Recommended completion of CIS 070 Intro to Computers: Windows or equivalent skills

PROGRAM PERFORMANCE STANDARDS

Academic Requirements

- Students must have a 2.0 cumulative GPA to earn a COCC certificate or degree.
- All courses in the program must be completed with a grade of C or higher.

PROGRAM COURSE REQUIREMENTS

Core Courses¹

MFG 100	MATC Orientation	1
MFG 101	Blueprint Reading	2
MFG 103	Welding Technology I	3
MFG 105	Welding Technology II	3
MFG 107	Welding Technology III	3
MFG 109	Lean Practices	2
MFG 110	Manufacturing Processes I	3
MFG 112	Manufacturing Processes II	3
MFG 114	Manufacturing Processes III	3
MFG 115	Design Processes I	2
MFG 116	Manufacturing Electrical Systems	2
MFG 118	Fluid Power Systems I	2
MFG 133	Quality Assurance	3
MFG 160	Materials Engineering	2

Other Required Courses

BA 285	Business Human Relations	3
or PSY 101	Applied Psychology	
or SP 218	Interpersonal Communication	
CIS 070	Intro to Computers: Windows (or higher)	2
MTH 085	Technical Mathematics I (or higher)	4
WR 060	Rhetoric/Critical Thinking I (or higher)	4

Total Credits 47

¹ Most manufacturing courses carry a \$25-\$75 fee to cover software or lab materials (see class schedule for individual courses and fees).

ADVISING NOTES

Nearly all MATC courses are self-directed, outcome-based curricula. This provides students with a greater degree of flexibility than most other COCC programs. The MATC hours of operation provide students with ample time to complete their coursework during a term.

Upon starting their program, students review their desired certificate or degree outcome with their advisor and a sequence of coursework

is identified for them. With the exception of classes in a series (e.g. Manufacturing Processes I, II, III) or those with specific prerequisites (as identified in the catalog) most classes can be taken in any order, provided that instructor permission is obtained.

This certificate is designed for students planning to enter their chosen career upon graduation. Often only selected credits are considered transferable to public or private baccalaureate institutions. Prior to starting any MATC program, students are advised to contact the institution to which they intend to transfer and identify what credits may be transferable.

Manufacturing Technology II Certificate of Completion

PROGRAM DESCRIPTION

The Manufacturing Technology two-year certificate of completion program is a self-directed, outcome-based program designed to prepare students for technician-level employment in a variety of manufacturing environments.

PROGRAM COSTS

(beyond standard tuition/fees and textbooks)

Material Costs

- Welding personal protective equipment and tools, approximately \$400

Enrollment Fees

- Fees on specific MFG courses (estimate \$1100 total)

PROGRAM ENTRANCE REQUIREMENTS

Academic Entrance Requirements

- Recommended:
 - High school diploma or GED
 - Minimum placement scores resulting in MTH 020 Pre-Algebra placement or prior completion of MTH 010 Developmental Mathematics or higher ("C" or higher)
 - Successful completion of or current enrollment in MATC new-student orientation class MFG 100 MATC Orientation
 - Recommended completion of CIS 070 Intro to Computers: Windows or equivalent skills

PROGRAM PERFORMANCE STANDARDS

Academic Requirements

- Students must have a 2.0 cumulative GPA to earn a COCC certificate or degree.
- All courses in the program must be completed with a grade of C or higher.

PROGRAM COURSE REQUIREMENTS

Core Courses¹

MFG 100	MATC Orientation	1
MFG 101	Blueprint Reading	2
MFG 103	Welding Technology I	3
MFG 105	Welding Technology II	3
MFG 107	Welding Technology III	3
MFG 109	Lean Practices	2
MFG 110	Manufacturing Processes I	3
MFG 112	Manufacturing Processes II	3
MFG 114	Manufacturing Processes III	3
MFG 115	Design Processes I	2
MFG 116	Manufacturing Electrical Systems	2
MFG 118	Fluid Power Systems I	2
MFG 133	Quality Assurance	3
MFG 160	Materials Engineering	2

Manufacturing Electives:¹

Choose at least 38 credits from the list below: 38
 Recommend: CIS 135S1, MFG 102, MFG 201, MFG 202, MFG 203, MFG 205, MFG 210, MFG 211, MFG 213, MFG 214, MFG 216, MFG 230, MFG 232, MFG 234, MFG 236, MFG 238, MFG 239, MFG 241,

MFG 242, MFG 243, MFG 244, MFG 245, MFG 246, MFG 250, MFG 254, MFG 262, MFG 264, MFG 266, MFG 267, MFG 271, MFG 272, MFG 273, MFG 274, MFG 275, MFG 276, MFG 281, MFG 282, MFG 283, MFG 284, MFG 285, MFG 286, MFG 287, MFG 288, MFG 289, MFG 290, MFG 291

Other Required Courses

BA 285	Business Human Relations	3
or PSY 101	Applied Psychology	
or SP 218	Interpersonal Communication	
CIS 070	Intro to Computers: Windows (or higher)	2
MTH 085	Technical Mathematics I (or higher)	4
WR 060	Rhetoric/Critical Thinking I (or higher)	4

Total Credits 85

¹ Most manufacturing courses carry a \$25-\$75 fee to cover software or lab materials (see class schedule for individual courses and fees).

ADVISING NOTES

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Quality Assurance Certificate of Completion

PROGRAM DESCRIPTION

The Quality Assurance one-year certificate of completion program is a self-directed, outcome-based program designed to prepare students for technician-level employment in manufacturing in the quality assurance field.

PROGRAM COSTS

(beyond standard tuition/fees and textbooks)

Material Costs

- Welding personal protective equipment and tools, approximately \$400

Enrollment Fees

- Fees on specific MFG courses (\$260 total)

PROGRAM ENTRANCE REQUIREMENTS

Academic Entrance Requirements

- Recommended:
 - High school diploma or GED
 - Minimum placement scores resulting in MTH 020 Pre-Algebra placement or prior completion of MTH 010 Developmental Mathematics or higher ("C" or better)
 - Successful completion of or current enrollment in MATC new-student orientation class MFG 100 MATC Orientation
 - Recommended completion of CIS 070 Intro to Computers: Windows or equivalent skills

PROGRAM PERFORMANCE STANDARDS

Academic Requirements

- Students must have a 2.0 cumulative GPA to earn a COCC certificate or degree.

- All courses in the program must be completed with a grade of C or higher.

PROGRAM COURSE REQUIREMENTS

Core Courses¹

MFG 100	MATC Orientation	1
MFG 101	Blueprint Reading	2
MFG 102	Blueprint Reading Sheet Metal	2
MFG 103	Welding Technology I	3
MFG 109	Lean Practices	2
MFG 110	Manufacturing Processes I	3
MFG 112	Manufacturing Processes II	3
MFG 115	Design Processes I	2
MFG 133	Quality Assurance	3
MFG 160	Materials Engineering	2
MFG 202	Metals Preparation	2
MFG 203	Layout	2
MFG 238	Optical Comparator	1
MFG 239	Coordinate Measurement Machine	1
MFG 254	Manufacturing Jigs and Fixtures	2
MFG 262	Welding Inspection/Quality Control	2

Other Required Courses

CIS 070	Intro to Computers: Windows (or higher)	2
MTH 085	Technical Mathematics I (or higher)	4
WR 060	Rhetoric/Critical Thinking I (or higher)	4

Total Credits 43

¹ Most manufacturing courses carry a \$25-\$75 fee to cover software or lab materials (see class schedule for individual courses and fees).

ADVISING NOTES

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Upon starting their program, students review their desired certificate or degree outcome with their advisor and a sequence of coursework is identified for them. With the exception of classes in a series (e.g. Manufacturing Processes I, II, III) or those with specific prerequisites (as identified in the catalog) most classes can be taken in any order, provided that instructor permission is obtained.

This certificate is designed for students planning to enter their chosen career upon graduation. Often only selected credits are considered transferable to public or private baccalaureate institutions. Prior to starting any MATC program, students are advised to contact the institution to which they intend to transfer and identify what credits may be transferable.

Welding Certificate of Completion

PROGRAM DESCRIPTION

The Welding one-year certificate of completion program is a self-directed, outcome-based program designed to prepare students for technician-level employment in manufacturing environments using welding equipment.

PROGRAM COSTS

(beyond standard tuition/fees and textbooks)

Material Costs

- Welding personal protective equipment and tools, approximately \$400

Enrollment Fees

- Fees on specific MFG courses (\$740 total)

PROGRAM ENTRANCE REQUIREMENTS

Academic Entrance Requirements

- Recommended:
 - High school diploma or GED
 - Minimum placement scores resulting in MTH 020 Pre-Algebra placement or prior completion of MTH 010 Developmental Mathematics or higher ("C" or higher)
 - Successful completion of or current enrollment in MATC new-student orientation class MFG 100 MATC Orientation
 - Recommended completion of CIS 070 Intro to Computers: Windows or equivalent skills

PROGRAM PERFORMANCE STANDARDS

Academic Requirements

- Students must have a 2.0 cumulative GPA to earn a COCC certificate or degree.
- All courses in the program must be completed with a grade of C or higher.

PROGRAM COURSE REQUIREMENTS

Core Courses¹

MFG 100	MATC Orientation	1
MFG 101	Blueprint Reading	2
MFG 103	Welding Technology I	3
MFG 105	Welding Technology II	3
MFG 107	Welding Technology III	3
MFG 110	Manufacturing Processes I	3
MFG 202	Metals Preparation	2
MFG 262	Welding Inspection/Quality Control	2
MFG 267	Oxygen-Fuel and Plasma Cutting	2
MFG 271	SMAW I	2
MFG 272	GMAW I	2
MFG 273	SMAW II	2
MFG 274	GMAW II	2
MFG 281	GTAW I	2
MFG 282	FCAW I	2
MFG 283	GTAW II	2
MFG 284	FCAW II	2

Other Required Courses

MTH 085	Technical Mathematics I (or higher)	4
WR 060	Rhetoric/Critical Thinking I (or higher)	4

Total Credits 45

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ADVISING NOTES

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Upon starting their program, students review their desired certificate or degree outcome with their advisor and a sequence of coursework is identified for them. With the exception of classes in a series (e.g. Manufacturing Processes I, II, III) or those with specific prerequisites (as identified in the catalog) most classes can be taken in any order, provided that instructor permission is obtained.

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