

Dear Machine Tool Technology student,

This handout has been designed to clarify the path to success. The Certificate of Achievement in this field consists of two semesters of study starting in Fall of any year. You will enter the path in your first semester by taking the "CNC Shop Inspection" class where you learn the basics of measuring instruments. You will stay the path by taking the "Blueprint Reading" class so you understand how to interpret the customer requirements. You will learn how to use the Verisurf software and how it relates to tool building by taking the "Computer-Assisted Inspection Using Verisurf" and "Tool Building Using Verisurf" classes.

In your second semester, you will complete the path by taking "Machine Tool Introduction", "Advanced Computer-Assisted Inspection Using Verisurf" and "Geometrical Dimensioning and Tolerancing" classes. These classes will provide the basic knowledge of measuring instruments and understanding of how parts are produced in industry. These classes will build on what you learned and prepare you for entry-level employment.



NEW STUDENTS AND/OR FIRST SEMESTER (FALL)

Course	Course Name	Semester Offered
MTT 56 (2 units)	CNC Shop Inspection [4]	Fall
MTT 68 (2 units)	Computer-Assisted Inspection Using Verisurf [2,3]	Fall and Spring
MTT 78 (1 units)	Tool Building Using Verisurf [2,3]	Spring
ENGT 116 (2 units)	Blueprint Reading [1,3,4]	Fall, Spring, and Summer
7 Units	4 Classes	

CONTINUING STUDENTS SECOND SEMESTER (SPRING)

Course	Course Name	Semester Offered
MTT 100 (2 units)	Machine Tool Introduction [1,3]	Fall, Spring, and Summer
MTT 168 (1 units)	Advanced Computer-Assisted Inspection Using Verisurf [2,3]	Fall
ENGT 117 (2 units)	Geometrical Dimensioning and Tolerancing [4]	Fall and Spring
5 Units	3 Classes	

Notes:

- 1-Classes are usually offered during evening
- 2-Classes are offered as "Credit By Exam"
- 3-Classes are usually offered on Saturdays
- 4-Classes are usually online



Machine Tool Technology

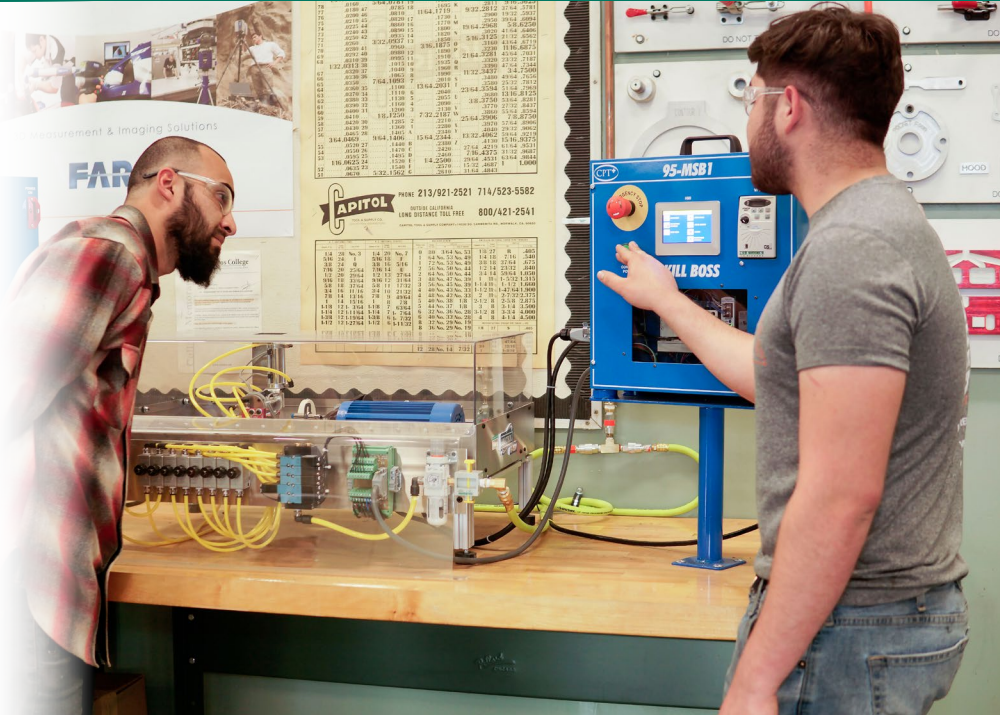
For more information on Certificates, please refer to the current General Catalog: www.cerritos.edu/catalog

Dear Industrial Technology Automated Manufacturing student,

This handout has been designed to clarify the path to success. The certificate of achievement in this field consists of three to four semesters of study starting in Fall of any year. You will enter the path in your first semester by taking classes in industrial maintenance and computer aided design (CAD).

In your second semester, you will stay the path by taking classes in robotics and motor controls.

In your third and/or fourth semester, you will complete the path with classes in programmable logic controllers, frequency drives, computer assisted inspection, and the setup and operation of CNC mills. These classes will build on what you learned and prepare you for employment.



ASSOCIATE OF ARTS DEGREE IS ALSO AVAILABLE

NEW STUDENTS AND/OR FIRST SEMESTER (FALL)

Course	Course Name	Semester Offered
MTT 110 (2 units)	Industrial Maintenance of Machine Tools	Fall - ODD years
ENGT 259 (4 units)	SolidWorks Introduction [1,4]	Fall, Spring, and Summer
6 Units	2 Classes	

CONTINUING STUDENTS SECOND SEMESTER (SPRING)

Course	Course Name	Semester Offered
MTT 100 (2 Units)	Machine Tool Intro [1]	Fall, Spring, and Summer
MTT 180 (3 units)	Robotics for Computer Numerically Controlled Machines [1]	Spring
5 Units	2 Classes	

CONTINUING STUDENTS THIRD SEMESTER (FALL)

Course	Course Name	Semester Offered
MTT 52 (2.5 units)	Setup and Operation of CNC Milling Machines [1]	Fall and Spring
MTT 111 (2 units)	Programmable Logic Controllers in Automated Manufacturing	Fall - EVEN years
4.5 Units	2 Classes	

CONTINUING STUDENTS THIRD SEMESTER (SPRING)

Course	Course Name	Semester Offered
MTT 68 (2 units)	Computer-Assisted Inspection Using Verisurf [2,3]	Fall and Spring
MTT 112 (2 Units)	Variable Frequency Drives in Automated Manufacturing	Spring - ODD years
4 Units	2 Classes	

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Dear Machine Tool Technology student,

This handout has been designed to clarify the path to success. The Certificate of Achievement in this field consists of three semesters of study starting in Fall of any year. You will enter the path in your first semester by taking introductory classes "Machine Tool Introduction" and "Blueprint Reading". These classes will provide the basic knowledge of blueprint reading and measuring instruments. You will also take "Shop Inspection" and "Setup and Operation of CNC Lathes" classes. These classes will teach you how to interpret the customer basic requirements and how to produce a part.

In your second semester, you will stay the path by taking a series of classes such as: "Geometrical Dimensioning and Tolerancing", "Fixture Tooling" and "Setup and Operation of CNC Milling Machines" where you will learn about specifications, planning, design, fabrication, and machining methods as well as computer-assisted inspection. In your third semester, you will complete the path by taking "Manual Machining Laboratory" and "SolidWorks Introduction" classes. You will learn how to create solid models and make blueprints using Computer-Aided Design (CAD) software. In addition, you will also receive hands-on practice with conventional machines. These classes will build on what you learned and prepare you for entry-level employment.



ASSOCIATE OF ARTS DEGREE IS ALSO AVAILABLE NEW STUDENTS AND/OR FIRST SEMESTER (FALL)

Course	Course Name	Semester Offered
MTT 56 (2 units)	CNC Shop Inspection [4]	Fall
MTT 57 (2.5 units)	Setup and Operation of CNC Lathes [1]	Fall and Spring
MTT 100 (2 units)	Machine Tool Introduction [1,3]	Fall, Spring, and Summer
ENGT 116 (2 units)	Blueprint Reading [1,3,4]	Fall, Spring, and Summer
8.5 Units	4 Classes	

CONTINUING STUDENTS SECOND SEMESTER (SPRING)

Course	Course Name	Semester Offered
MTT 52 (2.5 units)	Setup and Operation of CNC Milling Machines [1,3]	Fall and Spring
MTT 62 (2 units)	Fixture Tooling [2,3]	Spring
MTT 68 (2 units)	Computer Assisted Inspection Using Verisurf [2,3]	Fall and Spring
ENGT 117 (2 units)	Geometrical Dimensioning and Tolerancing [4]	Fall and Spring
8.5 Units	4 Classes	

CONTINUING STUDENTS THIRD SEMESTER (SUMMER)

Course	Course Name	Semester Offered
MTT 94L (1 unit)	Manual Machining Laboratory [1]	Fall, Spring, and Summer
ENGT 259 (4 units)	SolidWorks Introduction [1,4]	Fall, Spring, and Summer
5 Units	2 Classes	

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In your second semester, you will stay the path by taking the "MasterCam Milling" and "Setup and Operation of CNC Lathes" classes where you will learn about programming with MasterCAM. (Computer-Aided Manufacturing) software and the operational setup of CNC lathes. In addition, you will also be taking a "Fixture Tooling" class where you will learn about planning, design and fabrication methods. You will also be taking a "Computer Assisted Inspection Using Verisurf" class where you will learn how to use the Verisurf software. In your third semester, you will complete the path by taking the two machining lab courses where you will have additional hands-on practice with CNC lathes and mills. These classes will build on what you learned and prepare you for entry-level employment.



ASSOCIATE OF ARTS DEGREE IS ALSO AVAILABLE

NEW STUDENTS AND/OR FIRST SEMESTER (FALL)

Course	Course Name	Semester Offered
MTT 52 (2.5 Units)	Setup and Operation of CNC Milling Machines [1]	Fall and Spring
MTT 56 (2 Units)	CNC Shop Inspection [4]	Fall
MTT 100 (2 Units)	Machine Tool Introduction [1,3]	Fall, Spring, and Summer
ENGT 116 (2 Units)	Blueprint Reading [1,3,4]	Fall, Spring, and Summer
8.5 Units	4 Classes	

CONTINUING STUDENTS SECOND SEMESTER (SPRING)

Course	Course Name	Semester Offered
MTT 57 (2.5 Units)	Setup and Operation of CNC Lathes [1]	Fall and Spring
MTT 62 (2 Units)	Fixture Tooling [4]	Spring
MTT 68 (2 Units)	Computer-Assisted Inspection Using Verisurf [2,3]	Fall and Spring
MTT 180 (3 Units)	Robotics for Computer Numerically Controlled Machines	Fall and Spring
9.5 Units	4 Classes	

CONTINUING STUDENTS THIRD SEMESTER (SUMMER)

Course	Course Name	Semester Offered
MTT 91L (1 Unit)	CNC Mill Machining Laboratory [1]	Fall, Spring, and Summer
MTT 95L (1 Unit)	CNC Lathe Machining Laboratory [1]	Fall, Spring, and Summer
2 Units	2 Classes	

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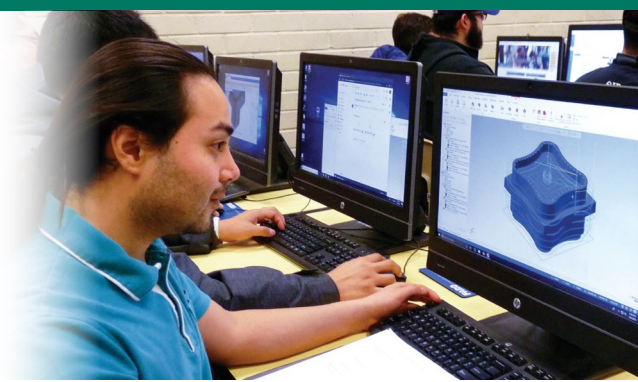
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Dear Machine Tool Technology student,

This handout has been designed to clarify the path to success. The Certificate of Achievement in this field consists of four semesters of study starting in Fall of any year. You will enter the path in your first semester by taking the "CNC Shop Inspection" class where you learn the basics of measuring instruments. You will also be taking the "Blueprint Reading" class along with "MasterCam Milling" and "Setup and Operation of CNC Milling Machines" classes. You will learn about programming with MasterCAM (Computer-Aided Manufacturing) software and the operational setup of CNC mills. These classes will teach you how to interpret customer basic requirements and how to produce a part.

In your second semester, you will stay the path by continuing to take "MasterCam Advanced" and "Geometric Dimensioning and Tolerancing" classes. In addition, you will also take "Setup and Operation of CNC Lathes" and "Robotics for Computer Numerically Controlled Machines" classes to learn about the operational setup of CNC lathes and robots. You will complete the path through classes and labs taken in your third and fourth semesters; classes such as: "MasterCam Turning", "MasterCam Multi-Axis Milling", and "MasterCam Multi-Axis Turning" as well as the two lab courses "CNC Mill Machining Laboratory" and "CNC Lathe Machining Laboratory" where you will learn Multi-Axis MasterCAM programming and additional hands-on practice with CNC lathes and mills. These classes will build on what you learned and prepare you for entry-level employment.



ASSOCIATE OF ARTS DEGREE IS ALSO AVAILABLE

NEW STUDENTS AND/OR FIRST SEMESTER (FALL)

Course	Course Name	Semester Offered
MTT 51 (3.5 units)	MasterCam Milling [1]	Fall, Spring and Summer
MTT 52 (2.5 units)	Setup and Operation of CNC Milling Machines [1]	Fall and Spring
MTT 56 (2 units)	CNC Shop Inspection [4]	Fall
ENGT 116 (2 units)	Blueprint Reading [1,3,4]	Fall, Spring and Summer
10 Units	4 Classes	

CONTINUING STUDENTS SECOND SEMESTER (SPRING)

Course	Course Name	Semester Offered
MTT 57 (2.5 units)	Setup and Operation of CNC Lathes [1]	Fall and Spring
MTT 180 (3 units)	Robotics for Computer Numerically Controlled Machines [1]	Spring
MTT 278 (3.5 units)	MasterCam Advanced [1]	Spring
ENGT 117 (2 units)	Geometrical Dimensioning and Tolerancing [4]	Fall and Spring
11 Units	4 Classes	

CONTINUING STUDENTS THIRD SEMESTER (SUMMER)

Course	Course Name	Semester Offered
MTT 59 (2.5 unit)	MasterCam Turning [1]	Summer and Spring
MTT 91L (1 unit)	CNC Mill Machining Laboratory [1]	Fall, Spring, and Summer
3.5 Units	2 Classes	

CONTINUING STUDENTS THIRD SEMESTER (SUMMER)

Course	Course Name	Semester Offered
MTT 71 (2 units)	MasterCam Multi-Axis Milling [1]	Fall
MTT 72 (2 units)	MasterCam Multi-Axis Turning [1]	Fall
MTT 95L (1 unit)	CNC Lathe Machining Laboratory [1]	Fall, Spring and Summer
5 Units	3 Classes	

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Dear Machine Tool Technology student,

This handout has been designed to clarify the path to success. The Certificate of Achievement in this field consists of three semesters of study starting in Fall of any year. You will enter the path in your first semester by taking introductory classes, "Machine Tool Introduction" and "Blueprint Reading". These classes will provide the basic knowledge of blueprint reading and measuring instruments. You will also take "CNC Shop Inspection" and "Computer Assisted Inspection Using Verisurf" classes. These classes will teach you how to interpret customer basic requirements, how to produce a part, and how to use the Verisurf software.

In your second semester, you will stay the path by taking "Geometrical Dimensioning and Tolerancing" and "Fixture Tooling" classes where you will learn about datums, modifiers, planning, design, and fabrication methods. You will also take a "Tooling and Materials for New Product Development" class where you will learn about metallic and non-metallic materials used in the design of tooling. In addition, you will also be taking "Manual Machining Laboratory" class to have additional hands-on practice with conventional lathes, mills, and associated cutting tools. In your third semester, you will complete the path by taking "SolidWorks Introduction" where you will use Computer-Aided Design (CAD) software and learn how to create solid models and make blueprints. These classes will build on what you learned and prepare you for entry-level employment.



ASSOCIATE OF ARTS DEGREE IS ALSO AVAILABLE

NEW STUDENTS AND/OR FIRST SEMESTER (FALL)

Course	Course Name	Semester Offered
MTT 56 (2 Units)	CNC Shop Inspection [4]	Fall
MTT 68 (2 Units)	Computer-Assisted Inspection Using Verisurf [2,3]	Fall and Spring
MTT 100 (2 Units)	Machine Tool Introduction [1,3]	Fall, Spring, and Summer
ENGT 116 (2 Units)	Blueprint Reading [1,3,4]	Fall, Spring, and Summer
8 Units	4 Classes	

CONTINUING STUDENTS SECOND SEMESTER (SPRING)

Course	Course Name	Semester Offered
MTT 62 (2 Units)	Fixture Tooling [4]	Spring
MTT 94L (1 Unit)	Manual Machining Laboratory [1]	Fall, Spring, and Summer
NPD 103 (3 Units)	Tooling and Materials for New Product Development [1,4]	Spring
ENGT 117 (2 Units)	Geometrical Dimensioning and Tolerancing [4]	Fall and Spring
8 Units	4 Classes	

CONTINUING STUDENTS THIRD SEMESTER (SUMMER)

Course	Course Name	Semester Offered
ENGT 259 (4 Units)	SolidWorks Introduction [1,2,4]	Fall, Spring, and Summer
4 Units	1 Class	

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