

# MACHINE TOOL TECHNOLOGY

ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

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DESCRIPTION: This associate degree program familiarizes the students with machine tools and manufacturing processes, develops skills in the operation of computer-aided drafting software, and provides hands-on experience setting up, programming, and operating Computer Numerical Control (CNC) machines and advanced inspection equipment. Computer-Aided Manufacturing (CAM) and Statistical Process Control (SPC) are skills integrated within the curriculum to prepare the student for employment as CNC programmers, machinists, toolmakers, and quality assurance technicians, or move on to complete a four-year degree in Manufacturing Engineering. The Associate in Applied Science (AAS) degree in Machine Tool Technology requires completing the certificate programs and the following courses marked with an \*\*.

## GENERAL EDUCATION REQUIREMENTS CREDITS: 12

ENG 120 or ENG 111	APPLIED COMMUNICATION (3/3) or ENGLISH COMPOSITION I (3/3)
ENG 123 or ENG 112	TECHNICAL COMMUNICATION (3/3) or ENGLISH COMPOSITION II (3/3)
PLS 221 or PLS 222	AMERICAN GOVERNMENT & POLITICS (3/3) or STATE & LOCAL GOVERNMENT (3/3)
PHY 111	APPLIED PHYSICS (3/4)

## CORE PROGRAM REQUIREMENTS CREDITS: 48-49

CAD 150	3D MODELING (3/4) <sup>A</sup>
CAD 220	MACHINE DESIGN (3/4)
CAD 250	ADVANCED 3D MODELING (3/4) <sup>A</sup>
MET 200	MATERIAL SCIENCE (3/4) <sup>A</sup>
MFG 101	MACHINING PROCESSES I (4/6) <sup>A</sup>
MFG 102	MACHINING PROCESSES II (4/6) <sup>A</sup>
MFG 122	MANUFACTURING PROCESSES (3/3) <sup>A</sup>
MFG 201	CNC I (4/6) <sup>A</sup>
MFG 202	CNC II (4/6) <sup>A</sup>
MFG 204	COMPUTER-AIDED MFG (CAM) (3/4) <sup>A</sup>
MFG 205	CNC III (4/6) <sup>A</sup>
MFG 220	JIGS & FIXTURE DESIGN (4/6) <sup>A</sup>

MTH 110 or MTH 113	TECHNICAL MATH I (3/4) or INTERMEDIATE ALGEBRA (4/4)
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MTH 112 or MTH 122	TECHNICAL MATH II (3/4) or PLANE TRIGONOMETRY (3/3)
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## SUGGESTED ELECTIVES CREDITS: 3

APP OR WLD COURSE (3/3)

*GPA of 2.0 or higher must be maintained in occupational specialty courses*

## MINIMUM 63 CREDIT HOURS/82 CONTACT HOURS

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### NOTES:

<sup>A</sup> Included in occupational specialty

Students transferring in Manufacturing or Industrial Engineering should take MTH 113 and MTH 122.

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## SUGGESTED SEQUENCE OF COURSES

### YEAR 1 (FALL SEMESTER) CREDITS: 16-17

MFG 101	MACHINING PROCESSES I (4/6)
MFG 122	MANUFACTURING PROCESSES (3/3)
CAD 150	3D MODELING (3/4)

ENG 120 or ENG 111	APPLIED COMMUNICATION (3/3) or ENGLISH COMPOSITION I (3/3)
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MTH 110 or MTH 113	TECHNICAL MATH I (3/4) or INTERMEDIATE ALGEBRA (4/4)
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### YEAR 1 (SPRING SEMESTER) CREDITS: 17

MFG 102	MACHINING PROCESSES II (4/6)
MFG 201	CNC I (4/6)
MFG 204	COMPUTER-AIDED MFG (CAM) (3/4)

ENG 123 or ENG 112	TECHNICAL COMMUNICATION (3/3) or ENGLISH COMPOSITION II (3/3)
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MTH 112 or MTH 122	TECHNICAL MATH II (3/4) or PLANE TRIGONOMETRY (3/3)
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### YEAR 2 (FALL SEMESTER) CREDITS: 17

MFG 202	CNC II (4/6)
MFG 220	JIGS & FIXTURE DESIGN (4/6)
CAD 220	MACHINE DESIGN (3/4)
MET 200	MATERIAL SCIENCE (3/4)

PLS 221 or PLS 222	AMERICAN GOVERNMENT & POLITICS (3/3) or STATE & LOCAL GOVERNMENT (3/3)
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### YEAR 2 (SPRING SEMESTER) CREDITS: 13

MFG 205	CNC III (4/6)
CAD 250	ADVANCED 3D MODELING (3/4)
PHY 111	APPLIED PHYSICS (3/4) Elective (3/3)