

Manufacturing Technology | Associate in Applied Science

Field of Study Code: MANUF.AAS

Catalog Description:

The Manufacturing Technology program provides training in a wide variety of skill areas of product manufacturing and services. The four degree options in the program are Automated Manufacturing Systems, Drafting/Design, Manufacturing Technology and Manufacturing Engineering Technology. Automated Manufacturing is designed to prepare the student for careers in computer-aided manufacturing, robotics and numerical control. Drafting/Design prepares the student for careers in the drafting and computer-aided design areas. Manufacturing Technology provides the student with a broad background in the areas of machining, drafting and fluid systems so as to prepare them for entry-level positions as machine operators, machine maintenance personnel and quality control personnel. The Manufacturing Engineering Technology degree prepares students for entry-level engineering technician positions in manufacturing. The **Manufacturing Technology degree** requires 65 credits in program requirements, program electives and general education in the courses listed below.

Program Requirements	29
Manuf 1101 Industrial Design/CAD	3
Manuf 1104 Technical Mechanics	2
Manuf 1110 Metrology.....	3
Manuf 1151 Machine Shop I.....	3
Manuf 1153* Advanced Machine Processes	3
Manuf 1180 Quality Control	3
Manuf 2251* Computer Numerical Control (CNC).....	3
Elect 1100 Electricity and Electronics Fundamentals	3
Elmec 1141 Hydraulics and Pneumatics	3
Weld 1100 Welding I	3

Program Electives.....16

Select 16 credits from the courses below. (In addition to the courses listed above.)

Manuf 1121 Physical Metallurgy	3
Manuf 2201* Geometric Dimensioning and Tolerancing	3
Manuf 2202* Solid Modeling and Design.....	3
Elmec 1171 Introduction to Robotic Technology	3
Weld 1112* Oxy-Fuel, Welding, Plasma Cutting and Brazing.....	3
Weld 1122* Shielded Metal Arc (SMAW).....	3
Weld 1132* Gas Metal Arc (MIG).....	3
Weld 1142* Gas Tungsten Arc (TIG).....	3

* - course has a prerequisite

General Education20

Each candidate for an Associate in Applied Science (A.A.S.) degree shall satisfactorily complete a minimum of 18 credits in General Education. (In addition to the courses listed below.)

Suggested Course Sequence (Full-Time Enrollment)

Please note: A student's readiness to perform college-level coursework is based on the student's placement test and/or ACT scores. Below 1000 level coursework may be required prior to the student taking courses in the suggested sequences.

First Semester (15 to 17 credits)

- Manuf 1101 (3)
- Manuf 1151 (3)
- Manuf 1180 (3)
- Elmec 1141 (3)
- General Education (3 to 5)

Second Semester (15 to 18 credits)

- Manuf 1110 (3)
- Weld 1100 (3)
- Elect1100 (3)
- General Education (3 to 5)
- General Education (3 to 5)

Third Semester (8 to 14 credits)

- Manuf 1153 (3)
- Manuf 1104 (2)
- Elective (3 to 9)

Fourth Semester (9 to 17 credits)

- Manuf 2251 (3)
- Elective (3 to 9)
- General Education (3 to 5)

For more information:

If you are considering this program as an area of study, please contact the **Business and Technology Division** office at 630-942-2592.

Program web site:

<http://www.cod.edu/programs/manufacturing/>

For the **Manufacturing Technology degree**, students are required to take 20 credits in General Education.

Under the specified General Education headings below, the following courses are required:

Communication: 6 credits

Written: (3 credits) English 1101 or 1105

Oral: (3 credits) Speech 1100, 1120 or 1150

Physical and Life Sciences: 3 to 5 credits

At least one course with a laboratory component

Mathematics: 3 to 5 credits

Select a minimum of 3 credits (1000 level or above).

Select Mathematics 1102, 1104 or 1120 only where required in the degree program. Only one from the following three courses may count toward overall degree requirement credit: Mathematics 1635, Psychology 2280 or Sociology 2205. Only one of the following courses may count toward overall degree credit: Mathematics 1428 or Mathematics 1431.

Humanities and Fine Arts: 3 credits

Social and Behavioral Sciences: 3 credits

Complete at least 2 credits from the list of courses in the Global/Multicultural Studies or Contemporary Life Skills Category.

(Manufacturing Technology 1180 fulfills this requirement)

TOTAL CREDITS FOR AAS DEGREE

65

Career Information MANUF.AAS

Job Title(s): Manufacturing Production Technicians
Research and Development Machinist

For salary and wage information, please visit: www.onetonline.org

If you would like information regarding internships, resume development, interviewing and job search skills, please contact the Career Services Center

Phone: 630-942-2230

www.cod.edu/careerservices

Twitter: @codcareercenter

Related Occupations:

Electronics Engineering Technicians
Robotics Technicians
Electrical and Electronics Repairers,
Commercial and Industrial Equipment
Industrial Machinery Mechanics

Electrical Engineering Technicians
Mechanical Engineering Technicians
Computer Numerically Controlled Machine Tool
Programmers, Metal and Plastic

Manufacturing Technology | Associate in Applied Science

Field of Study Code: MANUF.AAS.AUTO

Catalog Description:

The **Automated Manufacturing Systems degree** requires 66 credits in program requirements, program electives and general education in the courses listed below.

Program Requirements40

Manuf 1101	Industrial Design/CAD	3
Manuf 1104	Technical Mechanics	2
Manuf 1110	Metrology.....	3
Manuf 1121	Physical Metallurgy	3
Manuf 1151	Machine Shop I.....	3
Manuf 1180	Quality Control	3
Manuf 2202*	Solid Modeling and Design.....	3
Manuf 2251*	Computer Numerical Control (CNC).....	3
Manuf 2253*	Computer-Aided Manufacturing (CAM).....	3
Manuf 2280	Industrial Safety	2
Elect 1100	Electricity and Electronics Fundamentals	3
Elmec 1141	Hydraulics and Pneumatics	3
Elmec 1171	Introduction to Robotic Technology	3
Elmec 1190	Introduction to Programmable Logic Controllers.....	3

Program Electives.....6

Select six credits from the courses below. (In addition to the courses listed above.)

Manuf 1153*	Advanced Machine Processes	3
Manuf 1160*	Technical Static and Strength of Material	4
Manuf 2201*	Geometric Dimensioning and Tolerancing	3
Manuf 2203*	Manufacturing Processes and Design	3
Manuf 2206*	Mechanical Computer-Aided Drafting/Design	3
Manuf 2207*	Tool Design.....	3
Manuf 2271*	Robotic Application	3

* - course has a prerequisite

General Education20

Each candidate for an Associate in Applied Science (A.A.S.) degree shall satisfactorily complete a minimum of 18 credits in General Education. (In addition to the courses listed below.)

For the **Automated Manufacturing Systems degree**, students are required to take 20 credits in General Education.

Under the specified General Education headings below, the following courses are required:

Communication: 6 credits

Written: (3 credits) English 1101 or 1105

Oral: (3 credits) Speech 1100, 1120 or 1150

Suggested Course Sequence (Full-Time Enrollment)

Please note: A student's readiness to perform college-level coursework is based on the student's placement test and/or ACT scores. Below 1000 level coursework may be required prior to the student taking courses in the suggested sequences.

First Semester (15 to 17 credits)

- Manuf 1101 (3)
- Manuf 1121 (3)
- Manuf 1151 (3)
- Elmec 1141 (3)
- General Education (3 to 5)

Second Semester (14 to 16 credits)

- Manuf 1180 (3)
- Manuf 1104 (2)
- Manuf 2202 (3)
- Elect 1100 (3)
- General Education (3 to 5)

Summer Term (5 to 7 credits)

- Manuf 2280 (2)
- General Education (3 to 5)

Third Semester (18 to 20credits)

- Manuf 1110 (3)
- Manuf 2251 (3)
- Elmec 1171 (3)
- General Education (3 to 5)
- Program Elective (3)

Fourth Semester (18 to 22 credits)

- Manuf 2253 (3)
- Elmec 1190 (3)
- General Education (3 to 5)
- General Education (3 to 5)
- Program Elective (3)

For more information:

If you are considering this program as an area of study, please contact **the Business and Technology Division** office at 630-942-2592.

Program web site:

<http://www.cod.edu/programs/manufacturing/>
MANUF.AAS.AUTO

Physical and Life Sciences: 3 to 5 credits

At least one course with a laboratory component

Mathematics: 3 to 5 credits

Select a minimum of 3 credits (1000 level or above).

Select Mathematics 1102, 1104 or 1120 only where required in the degree program. Only one from the following three courses may count toward overall degree requirement credit: Mathematics 1635, Psychology 2280 or Sociology 2205. Only one of the following courses may count toward overall degree credit: Mathematics 1428 or Mathematics 1431.

Humanities and Fine Arts: 3 credits

Social and Behavioral Sciences: 3 credits

Complete at least 2 credits from the list of courses in the Global/Multicultural Studies or Contemporary Life Skills Category.

(Manufacturing Technology 1180 or 2280 fulfills this requirement)

TOTAL CREDITS FOR AAS DEGREE

66

Career Information MANUF.AAS.AUTO

Job Title(s): Computer-Controlled Machine Tool Operators, Metal and Plastic Brake Press Operator; Computer Numerical Control Lathe Operator (CNC Lathe Operator); Computer Numerical Control Machine Operator (CNC Machine Operator); Computer Numerical Control Machinist (CNC Machinist); Computer Numerical Control Mill Operator (CNC Mill Operator); Computer Numerical Control Operator (CNC Operator); Computer Numerical Control Set-Up and Operator (CNC Set-Up and Operator); Machine Operator; Machine Set-Up, Operator; Machinist

For salary and wage information, please visit: www.onetonline.org

If you would like information regarding internships, resume development, interviewing and job search skills, please contact the Career Services Center

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www.cod.edu/careerservices

Twitter: @codcareercenter

Related Occupations:

Engine and Other Machine Assemblers

Rolling Machine Setters, Operators, and Tenders, Metal and Plastic Machinists

Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic
Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic
Cutting and Slicing Machine Setters, Operators, and Tenders

Manufacturing Technology | Associate in Applied Science

Field of Study Code: MANUF.AAS.DRAFT

Catalog Description:

The **Manufacturing Technology Drafting/Design degree** requires 65 credits in program requirements, program electives and general education in the courses listed below.

Program Requirements32

Manuf 1101	Industrial Design/CAD	3
Manuf 1104	Technical Mechanics	2
Manuf 1121	Physical Metallurgy	3
Manuf 1151	Machine Shop I.....	3
Manuf 1180	Quality Control	3
Manuf 2202*	Solid Modeling and Design.....	3
Manuf 2203*	Manufacturing Processes and Design	3
Manuf 2206*	Mechanical Computer-Aided Drafting/Design	3
Manuf 2207*	Tool Design.....	3
Manuf 2208*	Mechanical Design Portfolio	3
Elect 1100	Electricity and Electronics Fundamentals	3

Program Electives13

Select 13 credits from the courses listed below. (In addition to the courses listed above.)

Manuf 1110	Metrology.....	3
Manuf 2201*	Geometric Dimensioning and Tolerancing	3
Manuf 2251*	Computer Numerical Control (CNC).....	3
Manuf 2280	Industrial Safety	2
Manuf 2281	Cost Analysis.....	2
Elmec 1141	Hydraulics and Pneumatics	3
Elmec 1171	Introduction to Robotic Technology	3
Elmec 1190	Introduction to Programmable Logic Controllers.....	3
Weld 1100	Welding I	3

* - course has a prerequisite

General Education20

Each candidate for an Associate in Applied Science (A.A.S.) degree shall satisfactorily complete a minimum of 18 credits in General Education. (In addition to the courses listed below.)

For the **Drafting/Design degree**, students are required to take 20 credits in General Education.

Under the specified General Education headings below, the following courses are required:

Communication: 6 credits

Written: (3 credits) English 1101 or 1105

Oral: (3 credits) Speech 1100, 1120 or 1150

Suggested Course Sequence

(Full-Time Enrollment)

Please note: A student's readiness to perform college-level coursework is based on the student's placement test and/or ACT scores. Below 1000 level coursework may be required prior to the student taking courses in the suggested sequences.

First Semester (15 to 17 credits)

- Manuf 1101 (3)
- Manuf 1151 (3)
- Manuf 1180 (3)
- Elect1100 (3)
- General Education (3 to 5)

Second Semester (14 to 18 credits)

- Manuf 2201 (3)
- Manuf 2202 (3)
- Manuf 1104 (2)
- General Education (3 to 5)
- General Education (3 to 5)

Summer Term (6 to 10 credits)

- General Education (3 to 5)
- Elective (3 to 5)

Third Semester (12 to 16 credits)

- Manuf 2203 (3)
- Manuf 2206 (3)
- Elective (3 to 5)
- General Education (3 to 5)

Fourth Semester (15 to 19 credits)

- Manuf 1121 (3)
- Manuf 2207 (3)
- Manuf 2208 (3)
- Elective (3 to 5)
- General Education (3 to 5)

For more information:

If you are considering this program as an area of study, please contact the **Business and Technology Division** office at 630-942-2592.

Program web site:

<http://www.cod.edu/programs/manufacturing/>

MANUF.AAS.DRAFT

Physical and Life Sciences: 3 to 5 credits

At least one course with a laboratory component

Mathematics: 3 to 5 credits

Select a minimum of 3 credits (1000 level or above).

Select Mathematics 1102, 1104 or 1120 only where required in the degree program. Only one from the following three courses may count toward overall degree requirement credit: Mathematics 1635, Psychology 2280 or Sociology 2205. Only one of the following courses may count toward overall degree credit: Mathematics 1428 or Mathematics 1431.

Humanities and Fine Arts: 3 credits

Social and Behavioral Sciences: 3 credits

Complete at least 2 credits from the list of courses in the Global/Multicultural Studies or Contemporary Life Skills Category.

(Manufacturing Technology 1180 fulfills this requirement)

TOTAL CREDITS FOR AAS DEGREE

65

Career Information MANUF.AAS.DRAFT

Job Title(s): Mechanical Drafters

Mechanical Drafter, Designer, Drafter, Design Drafter, Mechanical Designer, CAD Designer (Computer Aided Design Designer), CAD Operator (Computer Aided Design Operator), CAD/CAM Specialist (Computer Aided Design/Computer Aided Manufacturing Specialist), Project Designer, Installation Drafter

For salary and wage information, please visit: www.onetonline.org

If you would like information regarding internships, resume development, interviewing and job search skills, please contact the Career Services Center

Phone: 630-942-2230

www.cod.edu/careerservices

Twitter: @codcareercenter

Related Occupations:

Architectural Drafters

Civil Drafters

Electronics Engineering Technicians

Electronic Drafters

Mapping Technicians

Electrical Drafters

Commercial and Industrial Designers

Civil Engineering Technicians

Manufacturing Technology | Associate in Applied Science

Field of Study Code: MANUF.AAS.MET

Catalog Description:

The **Manufacturing Engineering Technology degree** requires 65 credits in program requirements and general education in the courses listed below.

Program Requirements	53
Manuf 1101 Industrial Design/CAD	3
Manuf 1121 Physical Metallurgy	3
Manuf 1151 Machine Shop I.....	3
Manuf 1160* Technical Static and Strength of Material	4
Manuf 1180 Quality Control	3
Manuf 2202* Solid Modeling and Design	3
Manuf 2203* Manufacturing Processes and Design	3
Manuf 2251* Computer Numerical Control (CNC).....	3
Manuf 2253* Computer-Aided Manufacturing (CAM).....	3
Manuf 2281 Cost Analysis.....	3
Elect 1100 Electricity and Electronics Fundamentals	3
Elmec 1141 Hydraulics and Pneumatics	3
Math 1431* Precalculus I	5
Math 1432* Precalculus II: Trigonometry	3
Math 1635* Statistics	4
Physi 1201* General Physics I	5

* - course has a prerequisite

General Education

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Each candidate for an Associate in Applied Science (A.A.S.) degree shall satisfactorily complete a minimum of 18 credits in General Education. (In addition to the courses listed above.)

For the **Manufacturing Engineering Technology degree**, some General Education courses are already listed under program requirements. Therefore, students only need 12 credits besides those listed under program requirements.

Under the specified General Education headings below, the following courses are required for the **Manufacturing Engineering Technology degree**:

Communication: 6 credits

Written: (3 credits) English 1101 or 1105

Oral: (3 credits) Speech 1100, 1120 or 1150

Physical and Life Sciences: 3 to 5 credits

At least one course with a laboratory component

(Physics 1201 in program requirements fulfills this requirement)

Mathematics: 3 to 5 credits

Select a minimum of 3 credits (1000 level or above).

Suggested Course Sequence

(Full-Time Enrollment)

Please note: A student's readiness to perform college-level coursework is based on the student's placement test and/or ACT scores. Below 1000 level coursework may be required prior to the student taking courses in the suggested sequences.

First Semester (14 to 16 credits)

- Manuf 1101 (3)
- Manuf 1151 (3)
- Math 1431 (5)
- General Education (3 to 5)

Second Semester (15 to 17 credits)

- Math 1432 (3)
- Elect1100 (3)
- Manuf 1121 (3)
- Manuf 2202 (3)
- General Education (3 to 5)

Summer Term (4 credits)

- Math 1635 (4)

Third Semester (17 to 19 credits)

- Manuf 1180 (3)
- Manuf 2203 (3)
- Manuf 2251 (3)
- Physi 1201 (5)
- General Education (3 to 5)

Fourth Semester (16 to 18 credits)

- Manuf 1160 (4)
- Manuf 2253 (3)
- Manuf 2281 (3)
- Elmec 1141 (3)
- General Education (3 to 5)

For more information:

If you are considering this program as an area of study, please contact the **Business and Technology Division** office at 630-942-2592.

Program web site:

<http://www.cod.edu/programs/manufacturing/>

Select Mathematics 1102, 1104 or 1120 only where required in the degree program. Only one from the following three courses may count toward overall degree requirement credit: Mathematics 1635, Psychology 2280 or Sociology 2205. Only one of the following courses may count toward overall degree credit: Mathematics 1428 or Mathematics 1431.

(Mathematics 1431 or 1432 in program requirements fulfills this requirement)

Humanities and Fine Arts: 3 credits

Social and Behavioral Sciences: 3 credits

Complete at least 2 credits from the list of courses in the Global/Multicultural Studies or Contemporary Life Skills Category.

(Manufacturing 1180 in program requirements fulfills this requirement)

TOTAL CREDITS FOR AAS DEGREE

65

Career Information MANUF.AAS.MET

Job Title(s): Manufacturing Engineering Technologists

For salary and wage information, please visit: www.onetonline.org

If you would like information regarding internships, resume development, interviewing and job search skills, please contact the Career Services Center

Phone: 630-942-2230

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Related Occupations:

Logistics Engineers

Industrial Engineers

Mechanical Engineers

Manufacturing Engineers

Electronics Engineers, Except Computer

Robotics Technicians

Electronics Engineering Technologists

Aerospace Engineering and Operations Technicians