

AUTOMOTIVE TECHNOLOGY ASSOCIATE OF APPLIED SCIENCE DEGREE

The Transportation and Welding Department offers both an Associate of Applied Science degree and a Certificate of Applied Science in Automotive Technology.

The Associate of Applied Science degree is usually completed in four semesters.

The Certificate of Applied Science can be completed in two semesters. The automotive curriculum emphasizes the fundamentals of all mechanical, fuel, and electronic systems found on modern vehicles and prepares students for service and management positions in the automotive industry.

The program is Master NATEF accredited and ASE certified in the following areas of instruction: A1-Engine Repair, A2-Automatic Transmission/Transaxle, A3-Manual Drive Train & Axles, A4-Suspension & Steering, A5-Brakes, A6-Electrical/Electronic Systems, A7-Heating & Air Conditioning, A8-Engine Performance. Graduates find employment in new car dealerships, independent and specialty shops, government motor pools, and fleet maintenance organizations. Other graduates find positions in management as service managers, shop foremen, factory representatives, or diagnostic specialists. See our website at www.msbillings.edu/careers (<http://www.msbillings.edu/careers/>) for graduate data.

The program has pathway agreements with the Billings Career Center in School District #2 and into the Bachelor of Applied Science program at Montana State University-Northern to provide unique training and educational opportunities for those students who are interested and qualified.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Diagnose problems throughout the eight ASE areas in modern automobiles.
- Repair complex systems throughout the eight ASE areas in modern automobiles.
- Perform diagnosis techniques and proper repair procedures relative to the flat rate time standard.
- Identify health and safety hazards and demonstrate proper techniques and practices associated with the automotive industry.

Required Courses

Code	Title	Credits
AST 106	Auto Manual Drive Train/Axles	2
AST 107	Auto Man Drive Train/Axles Lab	2
AST 114	Automotive Brakes	2
AST 115	Automotive Brakes Lab	2
AST 162	Automotive Engine Diagnostics	3
AST 163	Auto Engine Diagnostics Lab	3
AST 175	Engine Rebuild Lab	5
AST 220	Auto Steering and Suspension	2
AST 221	Auto Steering/Suspension Lab	2
AST 230	Elec/Electrncs Sys II	2
AST 231	Elec/Electrncs Sys II Lab	2
AST 260	Advanced Auto Diagnostics	3
AST 261	Advanced Auto Diagnostics Lab	3
AST 270	Auto Transmissions/Transaxles	3
AST 271	Auto Transmissns/Transxls Lab	3
AST 285	ASE Exam Prep: Section One	1

AST 280 or AST 298	Applied Lab Exp/Light Repair Internship/Cooperative Educ	4
CAPP 120	Introduction to Computers	3
COMX 106	Comm in a Dynamic Workplace	3
M 114	Extended Technical Mathematics	3
TRID 150	Environ/Shop Practices	2
TRID 151	Welding	2
TRID 152	Vehicle Htg, Vent & AC	3
TRID 170	Engine Theory	4
TRID 181	Transport Elect Systems Lec	2
TRID 182	Transport Elect Systems Lab	2
WRIT 122 or WRIT 121	Intro to Business Writing Intro to Technical Writing	3

Total Minimum Credits 71

Students should check the course descriptions for required prerequisites. Math and English requirements are usually determined by performance on placement tests or transfer credits.

Suggested Plan of Study

Code	Title	Credits
First Semester		
AST 106	Auto Manual Drive Train/Axles	2
AST 107	Auto Man Drive Train/Axles Lab	2
M 114	Extended Technical Mathematics	3
TRID 150	Environ/Shop Practices	2
TRID 170	Engine Theory	4
TRID 181	Transport Elect Systems Lec	2
TRID 182	Transport Elect Systems Lab	2
Total		17
Second Semester		
AST 114	Automotive Brakes	2
AST 115	Automotive Brakes Lab	2
AST 175	Engine Rebuild Lab	5
AST 162	Automotive Engine Diagnostics	3
AST 163	Auto Engine Diagnostics Lab	3
WRIT 121 or WRIT 122	Intro to Technical Writing Intro to Business Writing	3
Total		18
Third Semester		
AST 285	ASE Exam Prep: Section One	1
AST 220	Auto Steering and Suspension	2
AST 221	Auto Steering/Suspension Lab	2
AST 230	Elec/Electrncs Sys II	2
AST 231	Elec/Electrncs Sys II Lab	2
TRID 152	Vehicle Htg, Vent & AC	3
COMX 106	Comm in a Dynamic Workplace	3
CAPP 120	Introduction to Computers	3
Total		18
Fourth Semester		
AST 260	Advanced Auto Diagnostics	3
AST 261	Advanced Auto Diagnostics Lab	3
AST 280	Applied Lab Exp/Light Repair	4

or AST 298	Internship/Cooperative Educ	
AST 270	Auto Transmissions/Transaxles	3
AST 271	Auto Transmissns/Transxls Lab	3
TRID 151	Welding	2
Total		18