

Automotive/Diesel (ATDI)

ATDI 134. Electrical/Electronic Sys I. 6 Credits.

A beginning course in the study of electrical/electronic fundamentals applied to mobile and transportation technology. The course will create the foundation of electrical systems and will include theory, design, diagnosis, and repair of wiring and circuits, batteries, alternators, starters and electrical circuits. The use of test instruments and electrical troubleshooting manuals currently recommended by industry will be emphasized.

Course Fees: \$36.00

ATDI 191. Special Topic. 3 Credits.

Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

ATDI 257. Automatics. 4 Credits.

A course in automatic transmissions including lecture, demonstration, and student participation in disassembling and reassembling of selected transmissions for the purpose of understanding the function, construction, operation, servicing, and troubleshooting procedures. Prerequisite: AUTO 117 or DIES 216.

Course Fees: \$21.50

ATDI 262. Automatics Remove and Repair. 1 Credit.

A course in Automatic Transmissions designed to Remove and Install selected automatic transmissions or transaxles from a vehicle. Students will learn to adjust, diagnose, and test for proper operation and also correct industry troubleshooting procedures.

ATDI 264. Electrical/Electronic Sys II. 6 Credits.

This course is a continuation of the study of electrical/electronic systems in use on current automotive and heavy equipment. The course will be study industry recommended diagnostic and repair procedures on systems including charging and cranking systems, ignition systems, power accessories, networking systems and microprocessor-based engine, powertrains, and brake/suspension control systems. Prerequisite: ATDI 134.

Course Fees: \$21.50

ATDI 265. Heating and Air Conditioning. 4 Credits.

Theory of heating and basic air conditioning equipment in automotive, heavy truck, and farm applications; servicing and repairing of these units.

Prerequisite: ATDI 134.

Course Fees: \$21.50

ATDI 291. Special Topic. 3 Credits.

Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

ATDI 298. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail Only.

ATDI 383. Alt Auto Power Systems. 4 Credits.

This course examines a variety of alternative power sources used in the automotive transportation industry. Topics covered in the class are compression ignition engine systems, propane and CNG systems, hybrid electric systems, and electric propulsion systems. Prerequisites: AUTO 128 and ATDI 264.

Course Fees: \$10.25

ATDI 384. AT/DI Elctrcl/Elctrn Sys III. 4 Credits.

This course provides an in-depth study of microprocessor-based vehicle control systems, diagnostic systems, and development/testing systems. Students will experience oral and written reporting on current applications. Topics include multiplexed communications, bi-directional scanners, data structures and PC-based service bay systems, and test cells. Prerequisites: ATDI 134 and ATDI 264.

Course Fees: \$21.50

ATDI 400. Shop Procedures. 3 Credits.

This is a lecture course addressing diesel and automotive shop management issues. Students will be exposed to shop management environments and issues including customer relations, parts inventory, repair order preparation, shop efficiency and productivity, shop organization, work flow, labor guides, work ethics and stewardship. Computerized shop management software will be integrated throughout the course. Prerequisites: Junior standing, ATDI 134, ATDI 264, AST 164, AST 266, DST 264, DST 274, DST 273.

ATDI 498. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail Only.