FORD ASSET (ASET)

ASET 111. Intro to Automotive Service. (2 Credits)
This course covers the basic concepts and terms of automotive technology, work place safety, state inspections, pre-delivery, safety and environmental regulations, and use of service information resources. Topics include familiarization with automotive and shop components along with identification and proper use of various auto-motive hand and power tools. Upon completion, students should be able to describe terms associated with automobiles, identify and use basic tools and shop equipment, and use information sources and conduct basic safe- ty/ emissions and/or PDI inspections. 2 credits (64 hours combined lecture and laboratory), fall semester

ASET 112. Intro Auto Electrical Systems. (3 Credits)
This course covers basic electrical theory and wiring diagrams, test equipment, and diagnoses/repair/replacement of batteries, starters, alternators and basic electrical accessories. Topics include diagnosis and repair of battery, starting, charging, lighting and basic accessory systems problems. Upon completion, students should be able to diagnose, test, and repair the basic electrical components of a car. Prerequisite: ASET 111 3 credits, (96 hours combined lecture and laboratory) fall semester

ASET 113. Intro to Braking Systems. (3 Credits)
This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disk brakes involving hydraulic, vacuum boost, hydra boost, parking brake, anti-lock and electronic stability control systems. Upon completion, students should be able to diagnose, service, and repair various automotive braking system issues. Prerequisite: ASET 111, 112 3 credits (100 hours combined lecture and laboratory), fall semester

ASET 121. Engine Repair. (3 Credits)
This course covers the theory, construction, inspection, diagnosis and repair of internal combustion engines and related systems. Topics include fundamental operating principles of engines and diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis/repair of automotive engines using appropriate tools, equipment, procedures, and service information. Prerequisite: ASET 113 3 credits (128 hours combined lecture and laboratory), spring semester

ASET 122. Electrical & Electronic System. (4 Credits)
This course covers electrical theory and electronic systems, wiring diagrams, test equipment, and diagnosis/repair/replacement of electrical and electronic systems problems including networks and multiplexing. Upon completion, students should be able to use digital volt-ohm meters, oscilloscopes, Ford IDS test equipment, and repair automotive electrical and electronic components and systems. Prerequisite: ASET 113 4 credits (128 hours combined lecture and laboratory), spring semester

ASET 125. ASSET Cooperative Training I. (1 Credit)
A supervised field work program with the students' sponsoring Ford or Lincoln dealer under the supervision of an experienced technician that is certified in the specialties area covered during the previous semester. Work experience to take place during break between fall and spring semesters. Prerequisite: ASET 112,113 1 credit (2-3 weeks of combined experience), spring semester

ASET 160. Applied Electricity & Electron. (3 Credits)
The student will learn the rules governing basic direct current circuits and passive components, as well as the methods of measuring these properties. Fundamental analysis of basic automotive series and parallel circuits, and measurement with digital meters and oscilloscopes will be covered. Simple controlling elements such as basic relays, diodes and transistors used as switches will be examined. Practical troubleshooting using digital meters and oscilloscopes (voltage drops, current testing, and resistance checks) are covered. Prerequisite: ASET 112 or permission of instructor 3 credits (2 lecture hours, 2 laboratory hours), spring semester

ASET 211. Climate Control. (2 Credits)
This course covers the theory of refrigeration and heating, electrical/ electronic/ pneumatic controls, and diagnosis and repair of climate control systems. Topics include diagnosis/repair of climate control components and systems, recovery/ recycling of refrigerants, and safety and environmental regulations. Upon completion, students should be able to describe the operation, diagnose, and safely servicing of climate control systems using appropriate tools, equipment, and service information. Prerequisite: ASET 122 2 credits (64 hours combined lecture and laboratory), fall semester

ASET 212. Steering/Suspension Systems. (3 Credits)
This course covers principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include wheel alignment angles and their dynamic properties, manual steering, hydraulically assisted power steering, electronic power assisted steering systems along with standard and electronically controlled suspensions. Upon completion, students should be able to service and repair various steering and suspension components, check and adjust various alignment angles, perform NVH diagnosis and balance wheels. Prerequisite: ASET 122 3 credits (96 hours combined lecture and laboratory), fall semester

ASET 213. Manual Transmission/Drive Trn. (3 Credits)
This course covers the operation of and diagnosis/repair of manual transmissions/transaxles, clutches, drive shafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train service and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory and diagnose and repair manual transmissions and drive trains. Prerequisite: ASET 122 3 credits (80 hours combined lecture and laboratory), fall semester

ASET 215. ASSET Cooperative Training 2. (4 Credits)
A supervised fieldwork program with students' sponsoring Ford or Lincoln dealer under the supervision of an experienced technician that is certified in the specialties area covered during the previous semester. Work experience to take place during break between spring and fall semesters. Prerequisite: ASET 121 and 122 4 credits (10-12 weeks of combined experience), fall semester

ASET 221. Automatic Transmissions. (4 Credits)
This course covers operation, diagnosis, service and repair of automatic transmissions/transaxles. Topics include hydraulic, mechanical, and electrical/ electronic operation of automatic transmissions and transaxles and the use of appropriate service tools and equipment. Upon completion, students should be able to explain operational theory and diagnose and repair automatic transmissions and transaxles. Prerequisite: ASET 122 4 credits (128 hours combined lecture and laboratory), spring semester

ASET 222. Engine Performance. (4 Credits)
This course covers the principles of fuel delivery/management, exhaust/emission systems, electronic engine control and procedures for diagnosing and restoring engine performance using appropriate test equipment. Topics include procedures for diagnosis and repair of fuel delivery/management and emission systems, Ford GTDI injection, basic Ford diesel performance and using appropriate service information and equipment to aid in diagnosis. Upon completion, students should be able to describe, diagnose, and repair engine fuel delivery/management and emission control systems using appropriate service information and diagnostic equipment. Prerequisite: ASET 121 and 122 4 credits (128 hours of combined lecture and laboratory), spring semester

ASET 225. ASSET Cooperative Training 3. (1 Credit)
A supervised field work program with students' sponsoring Ford or Lincoln dealer under the supervision of an experienced technician who is certified in the specialties area covered during the previous semester. Work experience to take place during break between fall and spring semesters. Prerequisite: ASET 211, 212, 213 1 credit (2-3 weeks of combined experience), spring semester