ETT - ELECTRICAL TRANSPORTATION TECHNOLOGY

ETT 3190 Fundamentals of Automotive Electrical and Electronic Systems Cr. 3
Foundations in contemporary automotive electronic systems. Topics include: review of automotive electronics, basic circuit building blocks, vehicle controllers, networking, diagnostics, sensors, actuators, and power electronics. Offered Fall.
Prerequisites: ([EET 2000 with a minimum grade of D-]) AND ([PHY 2140 with a minimum grade of D-])
Restriction(s): Enrollment is limited to Undergraduate level students.

ETT 4150 Fundamentals of Hybrid and Electric Vehicles Cr. 3
Hybrid and electric vehicle technologies: concepts and design, energy analysis, unified model approach, hybridization, hybrid powertrain architectures, IC engines for HEVs, transmissions used in HEVs, on-board energy storages. Offered Winter.
Prerequisites: ([ET 3430 with a minimum grade of D-]) AND ([PHY 2140 with a minimum grade of D-])
Restriction(s): Enrollment is limited to Undergraduate level students.

ETT 4310 Energy Storage Systems for Hybrid and Electric Vehicles Cr. 3
Overview of advanced battery technologies and applications in EV/HEV, hybrid powertrain configuration and requirements, in-vehicle energy storage systems, battery development, thermal management, control systems, cell monitoring, balancing, and on-board diagnostics. Offered Winter.
Prerequisites: ([ET 3430 with a minimum grade of D-]) AND ([PHY 2140 with a minimum grade of D-])
Restriction(s): Enrollment is limited to Undergraduate level students.

ETT 4410 Introduction to Advanced Energy Storage Cr. 3
Comprehensive coverage of energy storage for automotive and renewable energy; battery technology; hydrogen electrochemical cells and regenerative fuel cells; mechanical energy storage; thermal and chemical storage; superconductor. Offered Fall.
Prerequisites: ([ET 3430 with a minimum grade of D-]) AND ([PHY 2140 with a minimum grade of D-])
Restriction(s): Enrollment is limited to Undergraduate level students.

ETT 4510 Power Management and Applications of Energy Storage Systems Cr. 3
Principles of electric machines, power electronics, control, and power management strategy for energy systems, and the applications of energy storage systems in alternative energy systems and electric drive vehicles. Offered Fall.
Prerequisites: ([ET 3430 with a minimum grade of D-]) AND ([PHY 2140 with a minimum grade of D-])

ETT 4650 Power Electronics and Charging Infrastructure for Hybrid and Electric Drive Vehicles Cr. 3
Principles of power systems, distribution systems, and ac/dc charging systems; applications of power electronic technologies in traction control, battery management, and regenerative braking for electric drive vehicles. Offered Winter.
Prerequisites: ([ETT 3150 with a minimum grade of D-])
Restriction(s): Enrollment is limited to Undergraduate level students.

ETT 4740 In-Vehicle Networking and Embedded Systems Cr. 3
Principles of data communications and real-time embedded systems networking, with emphasis on in-vehicle networking. Controller Area Networks and FlexRay are covered. Project-oriented course utilizing various hardware/software. Offered Yearly.
Prerequisites: ([EET 3100 with a minimum grade of D-])
Restriction(s): Enrollment is limited to Undergraduate level students.