FERRIS STATE UNIVERSITY

Automotive Engineering Technology

Bachelor of Science Degree

Tidewater Community College (TCC)

Transfer Guide

AET is an instructional program that prepares individuals to apply basic engineering principles and technical skills in support of engineers and other professionals engaged in developing, manufacturing and testing self-propelled ground vehicles and their systems. Includes instruction in vehicular systems technology, design and development testing, instrument calibration, test equipment operation and maintenance, and report preparation.

Communication Competency Course Requirements

FSU Course	FSU Course Title	FSU Cr. Hrs.	TCC Equiv.	TCC Course Title	TCC Cr. Hrs.
COMM 121	Fundamentals of Public Speaking	3	CST 100	Principles of Public Speaking (will substitute for COMM 221)	3
ENGL 150	English 1	3	ENG 111	College Composition 1	3
ENGL 250	English 2	3	ENG 112	College Composition II	3
ENGL 311	Advanced Technical Writing	3	No Equivalent	No Equivalent	No Equivalent

Quantitative Literacy Course Requirements

FSU Course	FSU Course Title	FSU Cr. Hrs.	TCC Equiv.	TCC Course Title	TCC Cr. Hrs.
MATH 116	Intermediate Algebra	3	MTH 115 & MTH 116	Technical Mathematics 1 & 2	4

Natural Sciences Competency Course Requirements – minimum 6 credits required – one course must have a lab

FSU Course	FSU Course Title	FSU Cr. Hrs.	TCC Equiv.	TCC Course Title	TCC Cr. Hrs.
CHEM 114	Introduction to General Chemistry	4	CHM 121	Health Science Chemistry	4
PHYS 211	Introductory Physics 1	4	PHY 201	General College Physics 1	4

Culture Competency Course Requirements – 9 credits required – courses must come from 2 different disciplines

FSU Course	FSU Course Title	FSU Cr. Hrs.	TCC Equiv.	TCC Course Title	TCC Cr. Hrs.
Varies	FSU General Education – Culture Electives	6	Varies	Varies	6
SURE 331	Ethics-Prof In Engineering Technology	3	No Equivalent	No Equivalent	No Equivalent

Self and Society Competency Course Requirements – 9 credits required - courses must come from 2 different disciplines

FSU Course	FSU Course Title	FSU Cr. Hrs.	TCC Equiv.	TCC Course Title	TCC Cr. Hrs.
Varies	FSU General Education – Self & Society Electives	9	Varies	Varies	Varies

Additional General Education Course Requirements

FSU Course	FSU Course Title	FSU Cr. Hrs.	TCC Equiv.	TCC Course Title	TCC Cr. Hrs.
MATH 126	Algebra & Analytical Trig	4	No Equivalent	No Equivalent	No Equivalent
MATH 216	Applied Calculus	4	No Equivalent	No Equivalent	No Equivalent

Ferris State University General Education Program

Students are encouraged to work with an advisor to select appropriate general education courses

Diversity Competency – 2 Courses Required
If not met by courses taken for Culture, Self and Society, or Michigan Transfer Agreement (MTA), a student must have one course with the Global Diversity attribute and one course with the U.S. Diversity attribute. Some courses include both Global Diversity and U.S. Diversity attributes. Courses with both attributes satisfies the entire Diversity competency.

Collaboration Competency – 2 Courses Required
If not met by courses taken in the bachelor degree program, a student must have two courses with the Collaboration attribute. Some courses include both Collaboration and Problem Solving attributes. Of the required courses in this specific program, these courses will meet the Collaboration requirement:

- AUTO 310 - Engine Air Flow Analysis
- AUTO 320 - Dynamometer Analysis

Problem Solving Competency – 2 Courses Required
If not met by courses taken in the bachelor degree program, a student must have two courses with the Problem Solving attribute. Some courses include both Collaboration and Problem Solving attributes. Of the required courses in this specific program, these courses will meet the Problem Solving requirement:

- AUTO 310 - Engine Air Flow Analysis
- AUTO 320 - Dynamometer Analysis

Major Requirements – 53 Credits Required

FSU Course	FSU Course Title	FSU Cr. Hrs.	TCC Equiv.	TCC Course Title	TCC Cr. Hrs.
AUTO 111	Manual Transmission & Drive Lines	4	AUT 178	Automotive Final Drive & Manual Transmission Systems	4
AUTO 112	Automotive Brake Systems	4	AUT 151	Automotive Braking Systems Diagnostics	4
AUTO 113	Automotive Electricity/Electronics	4	AUT 149	Basic Automotive Electrical Diagnostics	4
AUTO 114	Automotive Engines	4	AUT 152	Automotive Engine Diagnostics	4
AUTO 115	Suspension, Steering, Alignment Services	4	AUT 153	Automotive Steering & Suspension Systems Diagnostics	4
AUTO 117	Electronic Fuel Management Systems	4	AUT 155	Basic Automotive Engine Performance Diagnostics	4
AUTO 200	Service Area	6	AUT 197 & AUT 297	Cooperative Education in Automotive Technology *Requires 120 additional documented hours of acceptable work experience	2
AUTO 211	Automatic Transmission	4	AUT 251	Automatic Transmissions	4
AUTO 213	Chassis Electrical/Electronics	4	AUT 249	Advanced Automotive Electrical Diagnostics	4
AUTO 214	Automotive HVAC	4	AUT 236	Auto Climate Control	4
AUTO 310	Engine Air Flow Analysis	3	No Equivalent	No Equivalent	No Equivalent
AUTO 320	Dynamometer Analysis	3	No Equivalent	No Equivalent	No Equivalent
AUTO 450	Automotive Fuels & Lubes	3	No Equivalent	No Equivalent	No Equivalent
AUTO 460	Emission Systems	3	No Equivalent	No Equivalent	No Equivalent
AUTO 480	Alternate Fuel & Vehicle System	3	No Equivalent	No Equivalent	No Equivalent
AUTO 493	Internship	4	No Equivalent	No Equivalent	No Equivalent

Additional Requirements – 28 Credits Required

FSU Course	FSU Course Title	FSU Cr. Hrs.	TCC Equiv.	TCC Course Title	TCC Cr. Hrs.
MATL 240	Intro to Material Science	4	No Equivalent	No Equivalent	No Equivalent
MATL 341	Material Science Metals	3	No Equivalent	No Equivalent	No Equivalent
MECH 212	Kinematics & Mechanisms	2	No Equivalent	No Equivalent	No Equivalent
MFGE 321	Metrology	3	No Equivalent	No Equivalent	No Equivalent
MFGE 341	Quality Science Statistics	3	No Equivalent	No Equivalent	No Equivalent
MFGE 342	Statistical Process	3	No Equivalent	No Equivalent	No Equivalent
MFGE 442	Design of Experiments 1	3	No Equivalent	No Equivalent	No Equivalent
PDET 322	Model & Prototype Development	2	No Equivalent	No Equivalent	No Equivalent
PDET 413	Fluids/Thermodynamics	3	No Equivalent	No Equivalent	No Equivalent
PDET 415	Advanced Solid Modeling CAD	2	No Equivalent	No Equivalent	No Equivalent
Total Credits Required for Degree					**131**

Program Contact Information:

Main Campus, Big Rapids
College of Engineering Technology
(800) 433-7747 | (231) 591-2890 | auto@ferris.edu
Transfer Partnerships Website

Delivery Locations
This degree and the Ferris courses are offered at the following locations:

- Ferris State University, Main Campus, Big Rapids
- Select courses may be delivered online and/or in a mixed delivery format (i.e. a mix of online and face-to-face instruction at the Ferris Main Campus or at an off-campus location).

General Admission Criteria
Transfer Students

- 2.5 College GPA Overall
- MATH 116 Placement
- ENGL 150 placement

Graduation Requirements
In addition to meeting all the programmatic requirements, students must:

1. Meet University General Education requirements.
2. Earn a minimum of 120 credits.
3. Maintain a 2.00 or higher cumulative FSU GPA.
4. Earn 30 credits from FSU (Residency).
5. Earn 40 credits of 300 level or higher courses.

Advising Notes
It is recommended that potential applicants meet with an advisor to review the degree, course schedule, and have any questions answered prior to completing an application. Students who are completing the MTA may have different general education course requirements for the particular degree selected. Meeting with a Ferris advisor prior to the selection of general education or elective course work may reduce the chance of completing a course that will not apply toward the selected degree. Once admitted, students must continue to meet with an advisor as they work toward graduation.

Transfer Student Orientation
All new students to Ferris State University are required to complete an orientation.

Disclaimer
This is a guide for students who plan to transfer to Ferris State University. This guide is not intended to be a contract with Ferris. The information on this guide is subject to change. Students should contact their community college or Ferris to keep informed of changes. Final responsibility for verifying all transfer information lies with the student. Please refer to effective and/or revised date on the bottom of this guide.