

CERTIFICATE IN AUTOMOTIVE RESEARCH AND DEVELOPMENT

The High Performance Institute offers a Certificate of Achievement in Automotive Research and Development. The field of automotive research and development offers many exciting career opportunities, including: engineering design, prototype building, vehicle evaluation and engineering, materials engineering, powertrain tuning and design, regulatory affairs and advanced technical research. The Citrus Certificate of Achievement in Automotive Research and Development area of emphasis is Engine Research, Development and Testing. The Engine Research, Development and Testing concentration provides a solid background in engine design and development, as well as testing procedures using both engine and chassis dynamometers.

The Certificate of Achievement in Automotive Research and Development is a stepping stone to exciting career opportunities. Completion of the certificate is excellent preparation for students desiring to transfer to a four-year university to pursue a degree in engineering, production technology or industrial technology. Students can also choose to step directly into the exciting world of the automotive aftermarket or new vehicle production where a number of entry-level positions await the highly-motivated student.

Learning Outcomes

Certificate of Achievement Level Student Learning Outcomes

Students completing the Automotive Research and Development Certificate of Achievement will:

1. Be able to test and evaluate the design of systems that affect performance, emissions, energy production and consumption, and will either enter the automotive aftermarket industry as a research and development technician, or transfer to a four-year school to continue their education in technology and engineering.

Requirements

Code	Title	Units
Required courses:		
AUTO 291	Engine Performance Enhancements and Tuning	3
AUTO 295	Engine Design	4
AUTO 296	Cylinder Head Development	4
AUTO 297	Cylinder Block Development	4
Select at least eight (8) units from the following courses: 1		
AUTO 230A	Automotive Service and Repair Work Experience A	1
AUTO 230B	Automotive Service and Repair Work Experience B	2
AUTO 230C	Automotive Service and Repair Work Experience C	3

Code	Title	Units
AUTO 230D	Automotive Service and Repair Work Experience D	4
AUTO 695A	Special Topics: Automotive Technology	0.5
AUTO 695B	Special Topics: Automotive Technology	1
AUTO 695C	Special Topics: Automotive Technology	2
AUTO 695D	Special Topics: Automotive Technology	3
AUTO 696A	Special Topics: Automotive Technology	0.5
AUTO 696B	Special Topics: Automotive Technology	0.5
AUTO 696C	Special Topics: Automotive Technology	1
AUTO 696D	Special Topics: Automotive Technology	1
BUS 130	Introduction to Business	3
BUS 132 or PHIL 108	Business, Ethics and Society Philosophy - Ethics	3
BUS 170	Small Business Management	3
DRAF 160	Foundation Digital Design Tools - Intermediate Computer Aided Design (CAD)	3
PHYS 110	Physics in Everyday Life	4
Total Units		23

¹ Work Experience AUTO 230A, AUTO 230B, AUTO 230C, AUTO 230D and Special Topics AUTO 695A, AUTO 695B, AUTO 695C, AUTO 695D or AUTO 696A, AUTO 696B, AUTO 696C, AUTO 696D require department approval.

Curriculum Map

2-Year Curriculum Map Example

This map represents one possible pathway through the program and is only for reference.

*It is highly recommended that you make an appointment (<https://www.citruscollege.edu/stdntsrvcounsel/Pages/ApptSchedule.aspx>) to create a customized education plan that fits your needs.

Course	Title	Units
Fall Term 1		
AUTO 291	Engine Performance Enhancements and Tuning	3
AUTO 296	Cylinder Head Development	4
Assumes completion of AUTO 168 and AUTO 295		
Units		7
Winter Term 1		
AUTO 230A	Automotive Service and Repair Work Experience A	1
Units		1
Spring Term 1		
AUTO 297	Cylinder Block Development	4

Course	Title	Units
AUTO 230D	Automotive Service and Repair Work Experience D	4
Units		8
Summer Term 1		
BUS 130 or BUS 132 or BUS 170	Introduction to Business or Business, Ethics and Society or Small Business Management	3
Units		3
Total Units		19

Career Information

Career Opportunities

There are a variety of careers you can do with this major.

To explore more about this major, schedule an appointment (<https://www.citruscollege.edu/stdntsrv/ctcenter/Pages/ApptSchedule.aspx>) with a career counselor.
