



COURSE OUTLINE

Please save a copy onto your computer before filling in the form

Course Name: Automotive Electronics

Department Head/Coordinator: Jason Devisser

Effective Date: September 2015

School or Centre:		Department:	
School of Transportation Trades		Automotive Service Technician	
Course History:		Year of Study:	
Revised Course		1st Year Post-secondary	
Name of Replacing Course (if applicable):	IAST 2015	Course Number:	IAST 1023
		Number of Credits:	6.0

Course Pre-requisites (if applicable):

Admission to the program

Course Co-requisites (if applicable):

None

PLAR (Prior Learning Assessment & Recognition)

No Yes (details below):

Course Description:

Students learn about the design and function of automotive electronics systems and will perform troubleshooting and repair procedures. Topics include voltage, current, resistance, power, series circuits, parallel circuits, series-parallel circuits, circuit terminology, electron and conventional current flow, circuit construction and electrical relationships. Additional topics include magnetic theory, circuit protection devices, semi-conductors, microprocessors, wiring, 12-volt batteries and on-board diagnostic systems.

Note to instructors: An instructional strategy is an approach that an instructor uses to achieve the learning outcomes (e.g., lecture, case study, video, group work).

Instructional Strategies:

Classroom activities are lectures, demonstrations, audio-visual presentations and exercises. Practical experience takes place in an active shop setting. The extensive workshop experience provides reinforcement of theoretical concepts, develops hand skills, and familiarity with repair procedures, electronic equipment and standard safety procedures. All modules are designed to enable the student to work independently and in groups.

Course Learning Outcomes:

Upon successful completion, students will be able to:

- Describe principles of electricity and magnetism
- Use electrical test equipment to measure electrical signals
- Describe principles of electronics and circuit component operation
- Diagnose and service wiring systems
- Service 12 Volt batteries
- Use scan tools to access vehicle data stream information from a vehicle computer

Program Learning Outcomes:

Upon successful completion, students of the Automotive Service Technology Diploma will have acquired the skills and knowledge to:

- Practice working safely including complying with WorkSafeBC and WHMIS regulations
- Apply employability and communication skills while working in a businesslike manner
- Utilize hand, measuring, and power tools and equipment safely and effectively
- Provide general automotive maintenance services including lubrication and fluids, belts and hoses, exterior lamps, body trim and hardware, tires and wheels, non friction bearings and spindles and hubs
- Assess, diagnose and service hydraulic, drum brake, disc brake, power assist and anti-lock brake systems
- Assess, diagnose and service steering systems
- Assess, diagnose and service suspension systems
- Describe and diagnose electrical, electronic, and ignition systems
- Analyze and diagnose On Board Diagnostic (OBD) System Data using advanced electrical test equipment including computer controls, multiplex and network systems
- Identify and service fuel delivery systems, fuel types, alternate fuels, and gasoline fuel injection components
- Describe and test engine management systems including input sensors and output actuators
- Describe new vehicle technology and hybrid systems
- Describe and service vehicle Pre and Post Combustion Systems, emissions, Test OBD-II Evaporative Emission System, and Perform exhaust gas analysis

Evaluation/Grading System *(Click on drop down box arrows to see list of options)*

Grading System	Specify if 'Other':	Specify Passing Grade:
Percentages		70%

Components and Weighting of the Assessment/Evaluation Plan: *(Click on drop down box arrows to see list of options)*

Type	Percentage	Evaluation Plan (provide a brief explanation for each component especially if value exceeds 35%):
Quizzes/Tests	70	Students are given m/c quizzes and tests throughout the course to assess their theoretical knowledge
Lab Work	30	Practical knowledge & skills are evaluated in the shop while students work on training aids & customer cars
Total		100

Learning Environment/Type *(Select all that are used within the course)*

Instruction Type	Hours Per Instruction Type	Comments
J - Classroom/Online (Mixed Mode)	70	
K - Shop/Teaching Kitchen	80	
Enter Total Hours	150	

Resource Material(s):

Resources are items in addition to tuition that the student is responsible for purchasing. Course resource information will be supplied by the department/instructor.

Course Topics and Sequence Covered:

- Circuit terminology
- Circuit concepts
- Electrical components
- Magnetic theory
- Electrical test equipment
- Electronic components
- Microprocessor systems

VCC Education and Education Support Policies

There are a number of **Education** and **Education Support** policies that govern your educational experience at VCC, please familiarize yourself with them.

The policies are located on the VCC web site at:

<http://www.vcc.ca/about/governance--policies/policies/>

To find out how this course transfers, visit the BC Transfer Guide at www.bctransferguide.ca.

FOR COMMITTEE USE ONLY

Date Approved by Education Council:		Date Approved by VCC Board (if applicable):	
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