

# Master Course Syllabus

Your College, Your Future



Established 1969

## AUT-133 ELECTRICAL FUNDAMENTALS

Course Number	AUT-133
Course Title	Electrical Fundamentals
Credit Hours	3
Prerequisites	None
Course Description	This course is a study of the theories of electricity, including magnetism, series and parallel circuits, Ohms Law, and an introduction to use of various electrical test equipment.
Course Objectives	Students shall exhibit critical reasoning when confronted with technical day-to-day problems. Students shall know the functions of all electrical components. Students shall name and inspect all electrical components. Students will analyze the complete electrical system, diagnose any issues, and repair as needed.
Course Developer	Daniel (Joe) Altman
Means of Instruction	Lecture/Lab
Required Textbook/Written Materials/Supplies	<i>See Booklist online for current book.</i>

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## General Education Core Competencies

General Education Core Competencies	Course Methodology, Content and/or Assessment
<p>Communication: Students will be able to communicate effectively through reading, writing, speaking and listening.</p> <ul style="list-style-type: none"> <li>• Prepare written documents in a professional manner.</li> <li>• Develop oral communication skills to present information in a professional and appropriate manner.</li> <li>• Demonstrate appropriate listening skills in one-on-one and small and large group settings.</li> </ul>	<p><b>Participation in class discussions is recommended and encouraged.</b></p> <p><b>The lab consists of exercises that are self paced using hands- on automotive shop equipment.</b></p> <p><b>The Instructor will work with each individual student to assure quality workmanship.</b></p> <p><b>Students will prepare a written essay on materials covered.</b></p>

General Education Core Competencies	Course Methodology, Content and/or Assessment
<p>Mathematical Reasoning: Students will apply those mathematical skills appropriate to their program of study.</p> <ul style="list-style-type: none"> <li>• Analyze and solve mathematical problems needed in the workplace, daily life and educational environment.</li> <li>• Interpret data using analytical methods.</li> </ul>	<p><b>Students will be able to measure to 1/16inch accuracy with a tape measure.</b></p> <p><b>Students will be able to measure within .001 accuracy with a micrometer and a dial indicator.</b></p>
<p>Critical Thinking: Students will employ effective processes for resolving problems and making decisions.</p> <ul style="list-style-type: none"> <li>• Identify problems and potential causes.</li> <li>• Solve problems using basic research, analysis and interpretation.</li> <li>• Evaluate results of solutions and revise strategies as indicated by findings.</li> </ul>	<p><b>Students will utilize and demonstrate safety precautions when diagnosing automotive problems.</b></p> <p><b>Students will diagnosis automotive problems using mathematical and diagnostic charts.</b></p> <p><b>Students will repair automotive problems with diagnostic solutions.</b></p>

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<p>Technology Utilization: Students will apply knowledge of computers on a level compatible with job and/or educational demands.</p> <ul style="list-style-type: none"> <li>• Demonstrate a basic knowledge of computer applications including word processing, spreadsheets, databases, and presentation software.</li> <li>• Use basic operating system functions competently (e.g. store and retrieve data, load software).</li> <li>• Demonstrate communication and research skills through use of the internet.</li> </ul>	<p><b>Students will utilize computer skills through use of basic automotive scan tools.</b></p> <p><b>Students will look at live data and troubleshoot. Also turn components on and off to check systems in the automobile and see if components are functioning properly through online databases such as the General Motors web site and Alldatapro.com supplied by instructor at his discretion.</b></p>
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General Education Core Competencies	Course Methodology, Content and/or Assessment
<p>Interpersonal Skills: Students will deal effectively and appropriately with others.</p> <ul style="list-style-type: none"> <li>• Interact well with individuals and groups from diverse backgrounds and cultures.</li> <li>• Work with others in situational analysis, problem solving, and task accomplishment.</li> <li>• Demonstrate respect for the rights, work, and views of others.</li> </ul>	<p><b>Can work effectively with other students in completing assignments as a project team.</b></p> <p><b>Is able and willing to instruct less experienced students in completing work assignments.</b></p> <p><b>Is willing and able to explain the nature of a problem and the action taken to make necessary adjustments or repairs.</b></p> <p><b>Demonstrates flexibility in assigned shared responsibilities.</b></p> <p><b>Works well with either gender and with people diverse backgrounds or cultures.</b></p>
<p>Professionalism: Students will exhibit professionalism through observances of a code of ethics, a sense of responsibility, good habits, and a positive attitude.</p> <ul style="list-style-type: none"> <li>• Demonstrate personal and business integrity and ethics.</li> <li>• Recognize, manage, and cope with the transitions of change.</li> <li>• Utilize informational resources for lifelong learning.</li> </ul>	<p><b>The student will have to show the ability and proper attire to project professionalism in the automotive field.</b></p> <p><b>Be eager for a life- long learning career.</b></p>

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## College Policies

Policy Type	Policy Description
<b>Attendance Policy</b>	<p>Williamsburg Technical College does not require specific attendance in a course. Acknowledging that participation supports student success in coursework, however, individual instructors may set attendance guidelines for the course. Those specific guidelines must be included in the course syllabus. (<i>See Syllabus Addendum provided by the instructor.</i>)</p> <p>In addition, students must attend during the first two weeks of class or inform the instructor of their intent to attend to remain on the class roster. If no prior arrangements have been made and the student does not attend during the first two weeks following the semester start date, the student will be dropped as a “no show” from that course following the second week of class.</p> <p>Class rosters will be final as of the end of the second week of classes.</p> <p>Students may withdraw from a class at any time by completing a withdrawal form in the Student Services Office. A student can only receive a “WP” grade if withdrawal is completed in the Student Services Office prior to the last date to receive a “WP” grade published in the academic calendar. Students who fail to withdraw by the specified time will receive a letter grade for the course. For specific procedures related to this policy, refer to WTC Procedure D-23.1.</p>
Policy Type	Policy Description
<b>Policy for Students with Disabilities</b>	<p>The Student Affairs Division provides counseling and support services which help students with disabilities to pursue academic programs of their choice and participate fully in campus life.</p> <p>The AVP for Student Affairs can arrange counseling, special parking, priority registration, and other reasonable services needed by students with disabilities. Students with disabilities are encouraged to contact the AVP for Student Affairs to discuss needs and concerns as they arise.</p>
<b>Policy for Academic Misconduct</b>	<p>All forms of academic dishonesty including, but not limited to, cheating on tests, plagiarism, collusion, and falsification of information will call for discipline. See the Student Code &amp; Grievance Procedure in the Williamsburg Technical College Catalog for details.</p>

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<b>Grading Policy</b>	<p>The College operates on the semester hour system, and the following symbols are used in grading:</p> <p>A-- Excellent B -- Above Average C -- Average D -- Passing F -- Failure I -- Incomplete WF -- Withdrawal while failing WP -- Withdrawal while passing</p>
<b>Policy for Class Safety and Emergencies</b>	<p>Injuries must be reported to the AVP for Student Affairs immediately. Insurance claim forms are available in the Student Affairs division. Please refer to the college catalogue for more information on how Williamsburg Technical College addresses safety and emergency issues. For additional information, contact Student Affairs at 843.355.4162.</p> <p>Students taking coursework at off-site locations are responsible for reading and adhering to all safety instructions and guidance at the off-site location.</p> <p style="text-align: center;">Health Services and First Aid</p> <p>Williamsburg Technical College is a commuter institution; therefore, infirmary facilities are not provided. Basic first aid for minor injuries is available, and first aid kits are located in various departments of the College. Major illness or injury will be treated by health professionals. The campus is located adjacent to Williamsburg Regional Hospital.</p> <p>Each student is covered by accident insurance at no additional cost. This group insurance covers the student while on campus and during college-sponsored group travel.</p>