

 <b>Nashua Community College</b>	<b>Mechanical/Electrical Systems I CRTN 135 Spring 2020</b>
<b>Department</b>	Industry and Transportation
<b>Instructor</b>	Prof. Mark DeRosa
<b>NCC Email</b>	mderosa@ccsnh.edu
<b>Telephone Number</b>	
<b>Office Hours</b>	By Appointment
<b>Office Location</b>	Automotive Building Room 7
<b>Class Days/Meeting Time</b>	Lecture: Mon 2:00-2:50pm, Wed. 8:00-8:50am Lab: Wed 9:00-11:50am
<b>Class Location</b>	Lecture: Room 9 Lab: Automotive Building Room 8

## Rationale:

This course teaches the students about basic electrical, heating and air conditioning systems and how they can be affected and repaired in the collision field.

## Course Description:

The development of skills and knowledge working with automobile cooling systems, HVAC and basic electrical systems will be covered. Shop safety will be stressed and applied

## Course Competencies:

1. Identify A/C system components and refrigerants
2. Demonstrate competency in servicing and testing A/C systems
3. Discuss environmental regulations relating to refrigerants and coolants
4. Identify and inspect cooling system components
5. Interpret basic automotive wiring circuits
6. Operate electrical testing equipment

## Essential Questions:

1. What new information can I use in my job in collision repair?
2. Why is it important to learn about electrical for collision repair?

3. Why is it important to learn about A/C and cooling systems for collision repair?

## Required Textbook(s):

Auto Fundamentals, 11<sup>th</sup> Ed. Goodheart-Willcox 2015

## Supplemental Materials:

Electronic Media and handouts as assigned

## Course Expectations:

### Methods of Teaching:

1. Classroom lecture and discussion
2. Classroom and lab demonstrations
3. Lab exercises, live work, task sheets.

### Attendance:

Class attendance is considered essential to academic success of students. Since there are constant learning opportunities between faculty members and students, and between students and other students within the classroom or lab, it is expected that students will attend each meeting of each course in which they are enrolled.

In addition, the lesson disruptions caused by late arrivals and the resulting missed material is likely to negatively impact each student's learning experience. The instructor reserves the right to refuse admission to any student who repeatedly arrives late for class or lab. Attendance information is typically collected at the beginning of each class/lab meeting, consequently there is no distinction between *absent* and *late*.

Furthermore, students may expect random, weekly participation quizzes on covered material and assigned reading. Participation quizzes are generally given at the beginning of class. Only those students who are present, and on time, may participate. Participation quizzes are not eligible for make-up.

If a student is absent more than the number of hours a course meets in a two-week period, (10 hours) the faculty may withdraw that student from the course with an "AF" grade any time during the semester. An "AF" grade is calculated in the GPA as an "F".

There is no provision in the course calendar for repeating of lectures, labs or demonstrations due to absenteeism.

### Make Up Policy:

Not all missed work is eligible for make-up. It is the student's responsibility to inquire about missed work at the first-class meeting after returning from an absence. The instructor will determine eligibility and provide an appropriate

assignment. Any approved assignment must be completed and turned in as directed.

There is no provision for make-up of a midterm exam, final exam, or lab practical exam.

### **Student Responsibilities, including but not limited to:**

Students are responsible for completing assignments on time.

Students are expected to take notes. Not all covered material is in the book.

Students are expected to be professional and courteous.

Students are expected to arrive on time for classes/labs.

Students are expected to have the essential books/supplies/tools.

**Protective eyewear is required in any lab at all times.**

**Proper clothing is to be worn in the lab at all times**

Food is prohibited in all labs and classrooms during classes.

Lab service bays must be cleaned and/or washed at the end of each lab session.

All students must contribute to the clean-up process.

No students will be dismissed from lab session until service bays are clean.

### **Homework**

Self-study assignments are required. Some are listed in the course calendar, some will be assigned throughout the semester. Chapter end questions assigned per the course calendar are due at the beginning of the first-class meeting of the week assigned. Chapter-end questions should include the question number, answer letter as well as the related answer text. Please include the chapter number on your answer sheet.

Scheduled homework assignments are combined into the equivalent of two test grades. Assignments passed in one class late will be accepted at reduced credit. Assignments will not be accepted more than one class late.

Any assignment turned in via e-mail will be accepted provided it is mailed prior to the due date/time

### **Cell Phones**

Use of any communication devices such as an I-pod, MP3 player, or cell phone (including sending or receiving text messages) is prohibited in class. Cell phone ringers should be silenced while in class. Emergency use is allowed; however, it is recommended that the student momentarily leave the room for the conversation.

Use of any communications device for any reason during a test or exam will result in the voiding of that test or exam.

### **Students Who Wish to Provide "Live" Shop Work**

Any student who wishes to service an outside vehicle (whether owned by the student or not) during a lab must obtain **prior** permission from the instructor. A "repair request" form must be completed and submitted to the instructor before the vehicle will be allowed into the shop. Any charges incurred are due and payable immediately. Current HATN113 students may be granted a "one school

day" grace period, however any student with an excessively delinquent auto bill may be barred from taking a midterm, final, or lab exam. Instructors reserve the right to secure pre-payment for any invoice expected to exceed \$100.

## Grading:

Point/letter grade equivalents:	Grading Weights:
100-94: A	10% Quizzes
93-90: A-	40% Lab performance
89-87: B+	10% Midterm exam
86-84: B	20% Final exam
83-80: B-	20% Lab Exam
79-77: C+	
76-74: C	
73-70: C-	
69-67: D+	
66-64: D	
63-60: D-	
Below 60: F	

## Available Support Services

**Tutoring, The Writing Center, Available Academic Services:** The Academic Success Center | Room 100 offers academic support services which are open to all NCC students looking for additional help with their college assignments. Math tutoring and writing assistance are available. The Writing Center is for any student seeking assistance with the writing process for any class, not just College Composition. For more information and to view the tutoring schedules view here: <http://www.nashuacc.edu/student-services/academic-success-center>

**Classroom Accommodations:** Students who have a documented disability (physical, learning, or mental health) and require reasonable classroom accommodations must meet with the Disabilities Support Coordinator to set up a NCC Reasonable Accommodation Plan (RAP). If you had an IEP or 504 in high school, you may qualify for a plan. If you would like more information or if you are not sure if you qualify for a plan, please contact Jodi Quinn, Disabilities Support Coordinator, located in The Academic Success Center (Room 100), 603-578-8900 ext. 1451. View additional information and the application here: <http://www.nashuacc.edu/student-services/academic-success-center/disability-services> In order to receive classroom accommodations, it is the student's responsibility to meet with his/her instructor privately and provide a hard copy of the signed Reasonable Accommodation Plan (RAP) each term the student wants to utilize classroom accommodations even if the student has had that instructor in a previous term.

**Audio Record Classroom Lecture:** Please note that as a student in this class, you may have a classmate who by permission can audio record class lectures for his/her learning purposes. **Only students with prior written permission** from the instructor or the Disabilities Support Coordinator may audio record class lectures - *for educational purposes only*. Students who audio record class lectures are prohibited from selling, transcribing, or distributing the recordings in *any manner* and are asked to delete the recordings when it is no longer essential for their learning purposes.

**Title IX Statement:** Classroom instructors at Nashua Community College are encouraged to create and maintain a safe learning environment in which students feel able to share opinions and related life experiences in classroom discussions, in written work, and in meetings with professors. To the greatest extent possible, this information will be kept private. However, staff and faculty have a legal obligation to report information concerning sexual misconduct, violence and exploitation of individuals per federal statute and in compliance with established policies and procedures at Nashua Community College. If you have been subjected to sexual misconduct, violence or exploitation, we encourage you to contact your NCC Title IX representative Lizbeth Gonzalez, 603-578-8900 x1528\_ or [lgonzalez@ccsnh.edu](mailto:lgonzalez@ccsnh.edu) for support and assistance. You may also contact Bridges, the local crisis center, for free and confidential services at their 24hr support line 603-883-3044. You do not need to be in crisis to call.

Additional information including resources can be found at:

New Hampshire Coalition Against Domestic and Sexual Violence:  
[https://www.nhcadv.org/uploads/1/0/7/5/107511883/nhcadv\\_catchment\\_map.pdf](https://www.nhcadv.org/uploads/1/0/7/5/107511883/nhcadv_catchment_map.pdf)

uSafeUS <https://usafeus.org/app3/webviewer.html>

Bridges <https://www.bridgesnh.org/>

**Additional Student Support Services:** Information on additional support services for NCC students can be found at <http://nashuacc.edu/student-services/where-to-find-assistance-at-ncc>

## **Department Policies**

Cellphones, laptops, tablets and other electronic equipment should be shut off during class unless previously approved by instructor.

**Shop Policies:** Shop Policies: See Shop Policies posted under the Files tab in Canvas.

**Required Tools:**

All students are required to possess hand tools per the *Required Tool List*. Each student is expected to have the tools available for each lab session. The instructor reserves the right to refuse admission to (or dismiss from) lab any student who is not regularly prepared with the required tools. All tools should be at the college no later than the first Monday in October.

## College Policies

**AF Policy:** If a student misses more than the number of hours the course meets during a two-week period (e.g. six hours for a three credit course), the faculty may withdraw a student from the course with an "AF" grade. Please note that absences, tardies, and leaving class early all count towards "missed class time."

Students should also understand an AF grade can be assigned by an instructor or an administrator at any time for reasons other than poor grade performance or failure to meet attendance requirements e.g., violation of the Student Code of Conduct, disruptive behavior, etc.

Please be advised that if the behavior of any student (or students) continually disrupts the learning of his/her classmates, the following steps will be taken 1) verbal warning; 2) meeting with instructor and department chair; 3) referral to Vice President of Academic Affairs and/or removal from the course with AF grade.

An "AF" grade is calculated in the GPA as an "F". Students should refer to the student handbook for additional information about the AF policy.

**Canvas:** All instructors at NCC will be using Canvas. Canvas is the online learning management system used by instructors and learners at Nashua Community College. Instructors may post syllabi, course related documents and grades in Canvas. Students may be required to submit assignments and/or take assessments through Canvas and/or participate in discussion boards.

To directly link to Canvas On Demand tutorials, please visit the following link:

[https://community.canvaslms.com/community/answers/guides/video-guide#jive\\_content\\_id\\_Students](https://community.canvaslms.com/community/answers/guides/video-guide#jive_content_id_Students)

If you have forgotten your Easy Login Password information, please visit the following link: <https://password.ccsnh.edu/accounts/Reset>

**If class is ever cancelled because of instructor illness or inclement weather, students will need to check Canvas for their assignments.**

**College Email System:** Nashua Community College has established a College electronic mail ("email") system as a means of the College sending official information to enrolled students, and for students to send communication to their instructors and College personnel. All students registered at NCC will be assigned a College email account/address to be used as the only email address for all email communication: 1) sent to the students from their instructors and from all College personnel; and, 2) sent by the students to their instructors and to all College personnel.

In addition:

- Students should check their College email account regularly to ensure they are staying current with all official communications. Official communication includes, but is not limited to, policy announcements, registration and billing information, schedule changes, emergency notifications and other critical and time sensitive information.
- Students should also check their college email account to be sure that they are current with all email communication from their faculty.
- The student email account/address should be the only e-mail address students use to send email to faculty and College personnel so that student email is recognized and opened.
- This service is provided exclusively to the students of NCC. Accounts are for individual use only, and are not transferable or to be used by any other individual.
- Students using their College email account do so under the policies set forth in the Student Handbook under "Student Computer Conduct Code".

**Sensitive Materials Policy:** During the semester, in order to cover certain academic topics, there may be occasions to view or discuss material which may not meet the student's own personal definition of appropriateness. At such times, every student has the right to decide not to participate. Every effort will be made by the instructor to notify students in advance of when such sensitive material will be used so that students can make alternative arrangements. Faculty will guide students in the identification of alternate learning opportunities consistent with relevant course objectives so that students opting out of scheduled "sensitive" learning experiences will not be penalized academically in any way. Please note the opportunity to leave the classroom discretely is always available to each student when such sensitive material is being discussed. The student then has the responsibility before the next class meeting to inform the instructor as to the reason for leaving.

**Plagiarism Policy:** Plagiarism is a serious violation of a student's academic integrity and the trust between a student and his or her teachers. Plagiarism is the

act of a person presenting another person's work as if it were his or her own original work. Such acts of plagiarism include, but are not limited to:

1. A student submitting as his or her own work an entire essay or other assignment written by another person.
2. A student taking word for word a section or sections of another person's work without proper acknowledgment of the source and that the material is quoted.
3. A student using statistics or other such facts or insights as if these were the result of the student's efforts and thus lacking proper acknowledgment of the original source.
4. The paraphrasing of another person's unique work with no acknowledgment of the original source.
5. Copying another student's work on a quiz or test.

When a student is found to have plagiarized an academic assignment, it will be up to each instructor to determine the penalty. Depending on the severity of the incident, this could range from a warning to a loss of credit for the assignment. In all cases of plagiarism, the student's advisor will be notified and the incident will be documented. If any further incidents of plagiarism are reported to the student's advisor, additional sanctions will be imposed. These may include notification of the Vice President of Academic Affairs; loss of credit for the course; suspension or dismissal from a department program; academic probation; and/or expulsion from the College.

### **Credit Hour Guidelines**

1. A credit hour shall be the equivalent of one (1) hour of classroom or direct faculty instruction and a minimum of two (2) hours of out-of-class student work each week for 15 or 16 weeks.
2. A credit hour shall be allocated based on the following:

Category	Contact Hours per Week	Contact Hours per Sem. (based on minimum 15 week semester)
Class	1	15
Laboratory	2 or 3	30-45
Clinical	3 to 5	45-75
Practicum, Fieldwork	3	45
Internship	3 to 6	45-90
Co-op	Variable by Dept.	Variable by Dept.



## Course Calendar

Week #	Week Of	Lecture/Discussion	Lab	Assignment
1	Jan 20	Intro	Shop Safety/Tool Intro	<b><u>Due Mon</u></b> Chap 7 Review Questions
2	Jan 27	<b>Chapter 7</b> Electrical Fundamentals	Voltage, Current, Resistance	
3	Feb 3	<b>Chapter 7</b> Electrical Fundamentals	Voltage, Current, Resistance	
4	Feb 10	<b>Chapter 7</b> Electrical Fundamentals	Circuits	<b><u>Due Mon</u></b> Chap 8 Review Questions
5	Feb 17	<b>Chapter 8</b> Computer Systems	Scan Tool	
6	Feb 24	<b>Chapter 8</b> Computer Systems	Diagnostics	<b><u>Due Mon</u></b> Chap 12 Review Questions
7	Mar 2	<b>Chapter 12</b> Cooling Systems	Cooling System Fundamentals	
8	Mar 9	<b>Midterm Review and Midterm</b>		
	Mar 16- 20	<b>Spring Break</b>		
9	Mar 23	<b>Chapter 12</b> Cooling Systems	Cooling System Components	
10	Mar 30	<b>Chapter 12</b> Cooling Systems	Cooling System Service	<b><u>Due Mon</u></b> Chapter 28 Review Questions
11	Apr 6	<b>Chapter 28</b> A/C Systems	A/C Fundamentals	
12	Apr 13	<b>Chapter 28</b> A/C Systems	A/C components/operation	
13	Apr 20	<b>Chapter 28</b> A/C Systems	A/C system Service	
14	Apr 27	<b>Final Review and Final Exam</b>		
15	May 4	<b>Lab Final</b>		

**This calendar is subject to change**

**This schedule is subject to change. In the event of class cancellation due to inclement weather or instructor illness, students are directed to the course Canvas site for an alternate assignment for that day.**