COURSE TITLE AND NO.: AUT 430  Automotive Investigations

FACULTY:
Instructor: Eugene Talley
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OFFICE HOURS:
I maintain an open office policy and am available to meet or communicate during most of the week. During the week, I am typically in my office unless I am teaching a class, attending a meeting, touring guests, at other locations at the TEC, or off campus for some reason. If a student wishes to meet, please contact me as soon as possible. If an urgent matter arises, and I cannot be found in my office, the department secretary should be able to contact me.

If you are emailing me or leaving a message, please remember to provide background and contact information.

CREDIT HOURS: Variable 1 to 3

COURSE DESCRIPTION:
Provides opportunities for students to conduct research in such areas as: emission and clean air testing; diagnostic software de-bugging; diagnostic methods; development of training information; alternative fuel systems; business operations; management/marketing practices; and production systems. Independent study. Student can take a maximum of 9 hours toward degree. Restricted to major. Special Approval needed from the advisor.

COURSE OBJECTIVE:
This course provides the opportunity for Automotive Baccalaureate students to achieve in-depth knowledge and competency to explore innovative techniques and procedures under the supervision of an instructor.

Because the course is individualized, careful planning of the project is expected. This preparation is formalized in an AUT 430 Proposal, which must be understood, reviewed, and approved, by a number of persons. The number of credit hours should be in proportion to the time and effort devoted to a regular academic course or about 50 hours per credit.

INTRODUCTION:
AUT 430 provides an opportunity for students to investigate automotive related topics in order to facilitate career goals. Students may wish to research a technical or business topic they wish to learn more about. Some examples include hybrid vehicle operation/diagnosis, gasoline direct fuel injection, variable valve timing, fuel economy and emission regulations, common rail diesel engine operation or
diagnosis, or study of new vehicle dealership service operations and trends. AUT 430 could also be a project in building an automotive curriculum, conducting an area marketing study of aftermarket competition, or attending training sessions or conferences. It could also involve an applicable automotive related design or mock up.

While flexible, it is important to plan specific learning outcomes and be able to document 50 hours per credit hour of quality research and produce a quality final product. Because the course is an independent study there are no formal contact times but students are encouraged to communicate about project progression. If you need an idea, suggestion or an opinion, please contact the instructor.

ASSIGNMENTS:
1. Proposal (30 points)
   Students are to put some serious thought and effort into developing an Investigative Proposal. It is expected that the student should spend a minimum of 10 hours developing this proposal. Submit a 1-2 page proposal by uploading it into the “Proposal” dropbox on the D2L course site. A Microsoft Word file “Proposal Form” is available for your use if desired, but not required.

   This Proposal is due within 3 weeks of the start of the academic term.

   Refer to the assignment page on the D2L site for the assignment details

2. Product Outline (50 points)
   From the approved project, the student is to submit a formal Product Outline of their project. It is expected that the outline will require several pages to develop a detailed overview of the project scope and show your progress. Submit the project outline materials to the “Project Outline” dropbox on the D2L course site.

   This assignment is due 6 weeks after the start of the academic term.

   Refer to the assignment page on the D2L site for the assignment details.

3. Final Product (100 points)
   The student is to submit their final product. The product should be consistent with the accepted investigation proposal. It will be scored on a possible 100 point scale. In scoring the product, the instructor will take into account evidence of 50 quality hours per credit spent on the product by the student. The final product can be uploaded into the final project dropbox, or emailed for grading.

   The final product is due one week prior to the end of the academic term.

   This assignment is worth a maximum of 100 points towards the student’s final grade. The assignment will be assessed based upon the AUT 430 project rubric and any other agreed upon evaluation.

   This final product is to be your original work. Not that of others. It is very important that you cite your research references. If you use a statement or an image from somewhere other than your own, you must cite that work.

   Refer to the assignment page on the D2L site for the assignment details.
GRADING:
Students are assigned a letter grade. 180 total points are possible:
- 168-180 points: A
- 153-167 points: B
- 139-154 points: C
- 126-138 points: D
- 125 or less points: F

ACADEMIC DISHONESTY POLICY:
Students may be subject to disciplinary proceedings resulting in an academic penalty or disciplinary penalty for academic dishonesty. Academic dishonesty includes, but is not limited to, cheating on a test, plagiarism, or collusion.

WHAT IS RESEARCH?
At a simple level, it is discovery and learning. It is finding out additional information. It is developing something new. If you have a theory or hunch on how something works and go to a vehicle and test your hypothesis, this is research. Now we need to fully document the process and the results.

You might be writing a paper and need to perform research on a topic. A good place to start is a textbook that you may have used in another automotive related course. A trip to the library is also a good place to start. Once you get a book, look at the book’s references and see where the author got some data.

The internet contains a large amount of data, be careful though. Much internet content is full of opinion or posted by people who are not true experts. Wikipedia and blog pages are typically not acceptable as trusted and qualified resources. Do not use them.

Here are just a few examples of more trusted automotive periodicals:
http://www.underhoodservice.com/
http://www.undercardigest.com/
http://www.gearsmagazine.com/
http://www.autoinc.org/
http://motorage.search-autoparts.com/
http://www.ai-online.com/Adv/galleryindex.php

Here are a few industry organizations that are worth looking at:
http://www.macsw.org
http://www.atra.com/
http://www.iatn.net/
http://www.ase.com/
http://www.asashop.org/
http://www.sema.org/
http://www.sae.org/

Government sites can also be helpful:
http://www.epa.state.il.us/air/vim/
http://www.epa.gov/ (you could spend weeks in here)
http://www.arb.ca.gov/homepage.htm
Many Universities may have research sites
http://opensiuc.lib.siu.edu/

Service Information sites:
http://www.alldata.com/
https://techinfo.toyota.com
http://www.in.honda.com/RRAAApps/RRAASec/Asp/rralog.asp
https://dealerconnect.chrysler.com
http://www.fordtechservice.com
http://www.hmaservice.com/ (Free)
www.kiatechinfo.com (free)
www.motorcraftservice.com (free: great resource for OBD2)

When you conduct online research keep a log of not only the URL’s but also the date, the article, and the author(s) if applicable. You may also interview people and or go to places such as a shop or dealership to find out more information. Be sure to record who, what, when and where.

CITATION REFERENCE
If you use others works it is important that you cite your sources. There are many different styles such as MLA, APA etc. I prefer APA style and you can find several online resources to help you out.

APA Style Help:
http://owl.english.purdue.edu/owl/resource/560/01/
http://www.apastyle.org/learn/tutorials/basics-tutorial.aspx

I also encourage the use of photos in papers and other types of products to convey the project. Be sure to also give credit to the publication or site where you obtained the photo from. If you took the photo, be sure to cite that as well.

The end of the paper should include a reference page. If you used books, periodicals, training materials etc. For this AUT 430 Project, list them all as a reference, even if you did not have a specific quote or paraphrase from the source in the final project. It shows that you took due diligence in trying to investigate the material.