COURSE SYLLABUS

COURSE LISTING:
An introduction to the fundamentals of electrical and fluid power systems. The students are provided with lecture and laboratory experiences.

COURSE DESCRIPTION: The purpose of this course is to provide students with the fundamental concepts related to the application of fluid and electrical systems. Through lectures, laboratory activities, and out-of-class assignments, students will gain an understanding of the vocabulary and applications of fluid and electrical systems in our modern world.

TEXTBOOKS:

GENERAL PERFORMANCE GOALS:
After participating in this class you should be able to:
- Identify the basic components and operation of pneumatic and hydraulic systems.
- Identify and describe basic electrical systems.
- Construct basic fluid and electrical circuits.
- Describe the systems approach to problem analysis and design.
- Describe the elements of basic control systems and logic.

EXPECTATIONS and POLICIES:
1. You have the prerequisite knowledge, skills, and dispositions to participate in this course.
2. You will participate in all discussions, activities, and assignments.
3. You will complete and submit all assignments on time. (Late assignments will not be accepted, for any reason. Technology related issues are not acceptable excuses, submit early!)
4. You will communicate promptly with the instructor concerning any issues related to the course.
5. You will adhere to The University of Texas at Tyler academic honest policies.
6. You will not ask for “sympathy points.” (i.e. give me an “extra” assignment to increase my grade.)
7. The instructor reserves the right to modify this syllabus and will communicate this to the students in a timely manner of the modifications.
8. You are required to be present from 9:30 am to 10:45 am every Tuesday and Thursday. Attendance will be taken.
9. Absolutely NO Cell Phones
10. Students are required to log on and use Blackboard Learning Management Software at least twice a day to access their electronic gradebook, related course materials and other information that the instructor may post.
COURSE REQUIREMENTS:
Assignments

1. 10-16 experiments
2. complete assigned outside work (written & computer)
3. complete midterm exam
4. complete final exam
5. complete individual semester paper

GRADING:

Course Activities and Grading Weights

<table>
<thead>
<tr>
<th>Grading and Evaluation:</th>
<th>Points:</th>
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</thead>
<tbody>
<tr>
<td>Homework assignments (x10)</td>
<td>100</td>
</tr>
<tr>
<td>Exams (x2)</td>
<td>200</td>
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<tr>
<td>Experiments (x10-16)</td>
<td>100-160</td>
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<tr>
<td>Presentation</td>
<td>100</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>500</strong></td>
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Grading Scale for:

<table>
<thead>
<tr>
<th>Points</th>
<th>Grade</th>
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<tbody>
<tr>
<td>440-500</td>
<td>A (Above 90%)</td>
</tr>
<tr>
<td>380-439</td>
<td>B (80-89%)</td>
</tr>
<tr>
<td>220-379</td>
<td>C (70-79%)</td>
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<tr>
<td>160-219</td>
<td>D (60-69%)</td>
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<tr>
<td>Below 160</td>
<td>F (Below 60%)</td>
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Suspense Dates:

- Class Start Date: Mon, Aug 22
- Topic Summary #1: Thur, Sept 8
- Topic Summary #2: Thur, Sept 29
- Topic Summary #3: Thur, Oct 6
- Topic Summary #4: Thur, Oct 20
- Topic Summary #5: Thur, Nov 17
- Homework Assignments: as scheduled
- Individual Semester Paper: TBA
- Midterm Exam: TBD
- Final Exam: TBD
- Final Exam Week: Dec 13-17

Topic Summaries:

Directions: Write article summaries from topics pertaining to mechanical and fluid power systems. These articles should be taken from recent periodicals, not handbooks or textbooks. Each summary shall be one (1) page in length. Each summary must come from a separate periodical of a different titled publication. The articles you choose to review must have relevance to principles of
mechanical and fluid systems and reflect current trends. **SEE EXAMPLE ON LAST PAGE. PRESENT YOUR TOPIC TO THE INSTRUCTOR AT LEAST A WEEK BEFORE THE ASSIGNMENT IS DUE.**

**IDEA STATEMENT**

If you have a disability, including a learning disability, for which you request disability support services/accommodations(s), please contact Ida MacDonald in the Disability Support Services office so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodation must provide documentation of his/her disability to the Disability Support Services counselor. In order to assure approved services the first week of class, diagnostic, prognostic, and prescriptive information should be received 30 days prior to the beginning of the semester services are requested. For more information, call or visit the Student Services Center located in the University Center, Room 282. The telephone number is 566-7079 (TDD 565-5579). Additional information may also be obtained at the following UT Tyler Web address: http://www.uttler.edu/disabilityservices.

**ACADEMIC HONESTY STATEMENT**

“Academic dishonesty, such as unauthorized collusion, plagiarism and cheating, as outlined in the Handbook of Operating Procedures, University of Texas at Tyler, will not be tolerated. University regulations require the instructor to report all suspect cases of academic dishonesty to the Dean of Students for disciplinary action. In the event disciplinary measures are imposed on the student, it becomes part of the student’s official school records.” Also, please note that the handbook obligates you to report all observed cases of academic dishonesty to the instructor.

**GRADE REPLACEMENT STATEMENT**

If you are repeating this course for a grade replacement, you must file an intent to receive grade forgiveness with the registrar by the 12th day of class. Failure to file an intent to use grade forgiveness will result in both the original and repeated grade being used to calculate your overall grade point average. A student will receive grade forgiveness (grade replacement) for only three (undergraduate student) or two (graduate student) course repeats during his/her career at UT Tyler. (2006-2008 Catalogue, p. 35).

**UNIVERSITY POLICIES REGARDING ACADEMIC PROCESSES:**

The following University policies must appear on each course syllabus or be provided as an informational sheet (web-links to these policies may be used in the print or electronic syllabus) http://www.uttler.edu/academicaffairs/syllabuspolicies.pdf

**STUDENTS RIGHTS AND RESPONSIBILITIES**

To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: http://www.uttler.edu/wellness/StudentRightsandResponsibilities.html

**GRADE REPLACEMENT/FORGIVENESS**

If you are repeating this course for a grade replacement, you must file an intent to receive grade forgiveness with the registrar by the 12th day of class. Failure to do so will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates will receive grade forgiveness
(grade replacement) for only three course repeats; graduates, for two course repeats during his/her career at UT Tyler.

**STATE-MANDATED COURSE DROP POLICY**
Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the 12th day of class (See Schedule of Classes for the specific date).

Exceptions to the 6-drop rule include, but are not limited to, the following: totally withdrawing from the university; being administratively dropped from a course; dropping a course for a personal emergency; dropping a course for documented change of work schedule; or dropping a course for active duty service with the U.S. armed forces or Texas National Guard.

Petitions for exemptions must be submitted to the Registrar's Office and must be accompanied by documentation of the extenuating circumstance. Please contact the Registrar's Office if you have any questions.

**DISABILITY SERVICES**
In accordance with federal law, a student requesting accommodation must provide documentation of his/her disability to the Disability Support Services counselor. If you have a disability, including a learning disability, for which you request an accommodation, please contact Ida MacDonald in the Disability Support Services office in UC 282, or call (903) 566-7079.

**STUDENT ABSENCE DUE TO RELIGIOUS OBSERVANCE**
Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.

**STUDENT ABSENCE FOR UNIVERSITY-SPONSORED EVENTS AND ACTIVITIES**
If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

**SOCIAL SECURITY AND FERPA STATEMENT:**
It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

**Note:** The instructor reserves the right to modify the syllabus. All modifications will be communicated to the students in a timely manner.

The author believes active suspension will replace springs and shocks with a computer and high-speed hydraulics. The primary benefit of the system is to isolate one suspension characteristic from another. Essentially, MacPherson struts are replaced with hydraulic struts which can react within $3/1000$ second, and can cycle up to 1500 times/minute. A computer responds to tiny changes in body and wheel movement by controlling double-acting struts. As well as sensing bumps, the system reads the forces acting on the car body preventing it from banking to the outside of a curve. The idea of active suspension is credited to Britain's great interest in its application. American auto manufacturers have characterized the system as expensive, noisy, and consuming power, however, it may appear on some "expensive" U.S. automobiles.

*Reaction*

This article had good appeal for automobile enthusiasts who want to keep abreast of the latest technology. The reporting of this innovative suspension system was very consistent and well documented through interviews. Several pictures of the system components were shown as well as a pictorial schematic of the complete suspension system. Upon reading this article, anyone would have a good working knowledge of the computer controlled suspension.

Note: Margins are to be set at the following dimensions:

- Left = 1.25”
- Right = 1.00”
- Top = 1.00”
- Bottom = 1.00”