AVT 204 Hydraulics Spring 2016

Instructor: Karen Johnson  
Course: AVT 204 Aircraft Hydraulics  

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Office Hours: T and R 10:00-1:00  

Lecture Times: T & R 1-2  
Lab Times:  
Sect. 1: W 10-12, 1-3  
Sect. 2: F 10-12, 1-3  
Sect. 3: M 10-12, 1-3  

Required Course Materials: Jeppesen A&P Airframe Textbook

Course Objective: Students will have knowledge of fluid theory and applied physics, which relate to aircraft hydraulics. They will know the theory of operation, maintenance requirements and adjustments of various hydraulic components and systems. They will be able to test, inspect, troubleshoot and service hydraulic systems and overhaul malfunctioning components in accordance with FAA and manufacturers specifications.

Attendance Policy: Attendance is mandatory. As an FAA certified Airframe and Powerplant Mechanic Training Program, we must abide by the FAA’s attendance policy. Instructors are required to take roll each class period. It is the student’s responsibility to contact the instructor in advance of absences whenever possible or immediately thereafter to arrange make-up time where appropriate and to obtain hand-outs or other material from classes missed.

Students are expected to be in class and lab on time. Three late arrivals will be counted against the student as on unexcused absence. Unexcused absences or habitual tardiness will result in a cumulative reduction of the student’s final grade point average: First unexcused absence results in a 1 point reduction of the final grade. Second absences results in a 2 point reduction. Third absence results in a 4 point reduction. Fourth absence results in an 8 point reduction. Fifth absence results in a 16 point reduction. After the fifth unexcused absence the cumulative grade reduction would be 31 points, making it impossible to receive a passing grade for the course.

Make up time may be granted at the discretion of the instructor. Final determination as to whether or not an absence is “excused” rests with the instructor. Performance of make up time does not reinstate points lost due to unexcused absences. There will be no make up time during finals week. Make up time must be completed within 2 weeks of the date of absence.

Documentation for excused absences must be presented to the instructor within 1 week of the date of absence. Documentation for an excused absence must include the dates you were absent, and self-diagnosis forms will not be accepted.
Grading Policy: Course grades will be an average of grades received in lecture (1/3), lab (1/3) and on the final exam (1/3). You must receive a 70% cumulative score in the course to pass. All required lab projects must be finished by the end of finals week or a failing grade will be issued.

- Lecture grades will be taken from tests and quizzes given during lecture, however, tests given in lecture will cover information from lecture and lab.

  Quizzes: Quizzes will be every Tuesday and Thursday on SIU Online. They will cover topics covered in that day’s lecture and topics from the reading for the next lecture. Quizzes will be averaged to make up one test score.

- Lab grades will be an average of lab test scores. One “test” score will be an average of subjective points and maintenance entries. Students are required to complete all FAA required lab projects in order to pass the course.

  Maintenance Entries: Entries will be turned in every lab day. Entries will detail the work you did in lab that day. Content and format of entries must comply with FAA Regulations.

  Subjective Points: These points will be given when you display a positive work attitude in lab. They won't be given when you are caught sleeping, consistently not doing work, disappear, constantly on your phone, etc... 

- The final exam will be a cumulative test covering all material given in lecture and lab.

Classroom Behavior: Preparedness for class is required for each class meeting. This includes bringing required textbooks and writing materials to class. Any reading assignments should be completed prior to class meetings with an expectation of extensively discussing said content.

Acts of academic dishonesty are defined as the following:

1. Plagiarize or represent the work of another as one's own work.
2. Prepare work for another that is to be used as that person's own work.
3. Cheat by any method or means.
4. Knowingly or willfully falsify or manufacture scientific or educational data and represent the same to be the result of scientific or scholarly experiment or research.
5. Knowingly furnish false information to a university official relative to academic matters.
6. Solicit, aid, abet, conceal, or attempt acts of academic dishonesty.

None of these will be tolerated, and will be dealt with in accordance with SIUC policy. Please see the Student Conduct Code for additional information.
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LECTURE TOPICS

Unit 1
- Principles of Hydraulics and Fluids
- Hydraulic Seals and Components
- Aircraft Hydraulic Systems

Unit 2
- Landing Gear Structure
- Aircraft Landing Gear Structure
- Landing Gear Position Indication and Warning Systems
- Steering Systems

Unit 3
- Brake System Components
- Aircraft Braking Systems
- Anti-Skid Systems
- Tire and Wheel Assemblies

LAB PROJECTS

Unit 1
- Overview of Aircraft Hydraulic Systems
- Hydraulic system components
- Small and Medium Airplane hydraulic systems
- Large Airplane and Helicopter hydraulic systems

Unit 2
- Shock Struts
- Fixed and Retractable landing gear systems
- Landing Gear Steering systems

Unit 3
- Aircraft Brake System Maintenance
- Aircraft Anti-skid systems
- Wheels and Tires