**AVT 306 SYLLABUS - HELICOPTER POWER TRAIN LABORATORY**

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<tr>
<th>Course Instructor</th>
<th>Daniel Mattingly</th>
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<tr>
<td>Email</td>
<td><a href="mailto:dmatting@siu.edu">dmatting@siu.edu</a></td>
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<tr>
<td>Office Phone</td>
<td>(618) 536-3371, ext 284 (453-9284)</td>
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<tr>
<td>Office Hours</td>
<td>Mondays and Fridays from 12 to 12:50 and 3:00 to 4:00. Wednesdays from 12 to 2:00. Other times can be made available by appointment.</td>
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<td>Office Location</td>
<td>Aviation Technologies Helicopter Building room 101</td>
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<td>Course Meeting Times</td>
<td>Mon, Wed &amp; Fri 9 a.m. to 11:50 a.m.</td>
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<td>Meeting Locations</td>
<td>Hangar in Helicopter Lab Facility</td>
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**Course Description**

Students will perform all functions of overhaul concerned with rotary wing transmissions, gearboxes, and drive trains. The student will demonstrate skill in disassembly, inspection, discrepancy analyzation, reassembly, and non-destructive inspection.

**Required Textbooks and Tools:**

*Fundamentals of Helicopter Maintenance*, by Joseph Schafer, Jeppesen

Tools required include safety glasses and the appropriate tools for each lab. You must have your tools for each class or you will be counted absent for the time that the tools are not available. If you have a job that requires the use of your tools, inform the instructor so that other arrangements can be made. A calculator is required periodically throughout the semester in support of calculations during quizzes and exams. Cellular telephones are not considered as an acceptable calculator and they will not be authorized for use during a quiz or exam.

**Grading Policy**

The final grade you receive in the course will be calculated based on the instructor’s evaluation of the student’s performance during the laboratory projects (1/3), quizzes (1/3) and laboratory final (1/3).

The instructor’s evaluation portion of the grade will be based on the student’s performance, attitude, unauthorized breaks, cooperation and willingness of the student to work with others. Points will be deducted for the day when safe maintenance practices are not followed. Examples of unsafe maintenance practices are not wearing safety glasses when appropriate and “fooling around” that could result in injury to the student or others working with the student. Safety glasses and ear protection are required and should be part of your tool kit. **No open toed or open heel shoes (sandals, flip flops, etc.) will be allowed in the lab. No food or drinks are allowed in lab except in designated areas.**

Quizzes may be written with multiple choice, short answer or fill in the blank questions. Quizzes may also consist of verbal and practical applications that require the use of the appropriate manuals relative to the given task. Quizzes may not be taken late and the lowest quiz grade will be thrown out at the end of the semester with the remainder being averaged. A missed quiz will result in a zero being averaged.

The lab final will be broken into several stations relative to the different projects that were encountered during the semester and consist of written and/or practical evaluations.

The letter grade issued at the completion of the course will be based on the following grading scale:
Attendance Policy
The instructor will take roll at the beginning of each class and all students are expected to be in class on time. If a student is late to class three times (less than 10 minutes per occasion), it will be counted as one hour of unexcused absence. If a student is late to class more than 10 minutes, it will be counted as one hour of unexcused absence. Any student leaving class early without previously coordinating with the instructor will be considered absent for the entire class period. Excused absences are defined as absences that are due to circumstances outside the control of the student (medical emergencies, death in the family, etc.). Whenever possible, it is the student’s responsibility to provide the instructor with a verbal explanation and/or written documentation prior to the class that will be missed. An illness will require supporting documentation from the SIU Student Health Service or private physician indicating the date and time of appointment. The instructor will make a determination based on the information provided by the student if the missed class will be considered as an excused absence. The student will have a maximum of 2 weeks from the absence date to make up the time missed. All of the student’s time must be made up prior to finals week or the appropriate point deductions will be taken in accordance with the next paragraph.

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 one-point reduction of the final grade (0-100 scale). Second absence results in a two-point reduction. Third absence results in a four-point reduction. Fourth absence results in an eight-point reduction. Fifth absence results in a sixteen-point reduction. After the fifth unexcused absence the cumulative grade reduction would be 31 points.

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 absence.

Class Behavior
Within the aviation industry, we are expected to conduct ourselves with dignity and professionalism. The following behaviors will not be tolerated during the laboratory sessions:
- The reading of newspapers
- The excessive use of foul or vulgar language
- Sexual harassment of any type
- Racially demeaning comments or slurs
- Use of headphones or ear buds
- Unnecessary talking or sleeping in class or any other distractions

Students engaging in unprofessional behavior will be advised and if the unacceptable behavior continues, the student may be asked to leave the classroom with an unexcused absence being recorded for that day.

Cell Phones
CELLULAR PHONES ARE TO BE TURNED OFF OR SET TO VIBRATE DURING CLASS AND OUT OF SIGHT BY LEAVING THEM IN YOUR VEHICLE OR BACKPACK. Text messaging during class will not be tolerated. The potential of a medical emergency is understandable, but if your phone rings during class or if you choose to answer your phone during class without a valid reason, you will be counted as absent for the class. Advise the instructor if there is a potential medical problem so that he is aware and can preplan for it. We all forget to turn them off from time to time, so please try to remember.
AVT 306 Lab Project Outline:
(Changes may be made if necessary and other projects may be introduced if time allows.)

1. Bell 205 or 206 main drive shaft disassembly, inspection, repack and reassembly
2. Bell 206 main rotor head disassembly, inspection and reassembly
3. Bell 206 swashplate disassembly, inspection, friction adjustment and reassembly
4. Bell 205 tail rotor driveshaft coupling disconnect and reconnect
5. Bell 205 tail rotor driveshaft coupling disassembly, inspection and reassembly
6. Bell 205 stabilizer bar disassembly, inspection, reassembly, and balancing
7. Bell 205 intermediate (42°) gearbox disassembly, inspection and reassembly
8. Bell 205 scissors and sleeve disassembly, inspection, shimming, and reassembly
9. Bell 47 transmission disassembly and reassembly
10. Bell 206 transmission disassembly and reassembly
11. Bell 205 transmission disassembly and reassembly