AVT 301 – HELICOPTER THEORY AND GENERAL MAINTENANCE PRACTICE
SYLLABUS – FALL 2015
Prerequisite: Completion of all A&P Courses
Requisite: Concurrent Enrollment in AVT 302

Instructor: Karen Johnson
Lecture Location: Helicopter Lab Facility Class Room
Lecture Hours: Mon., Wed., and Fri. 0800 – 0850
Office: TEC 226G Office phone: (618) 453-9210
Email: ksulliva@siu.edu
Office hours: T&R 11-2

Required: Fundamentals of Helicopter Maintenance, by Joseph Schafer, Jeppesen ($26.95 and up)
Personal notebook & pen or pencil (#2 pencil for tests and quizzes)
Current SIU email address and Internet access.

Objective: AVT 301 will provide instruction for the student to gain an in-depth knowledge of rotary
wing aerodynamics, main and tail rotor systems, rotor blades, primary and secondary
controls, and general maintenance practices and inspections. Lecture: Three hours per
week. Prerequisite: FAA certificate with airframe and powerplant ratings or successful
completion of all courses leading to certification. Departmental approval required.

AVT 301 is the lecture component of the helicopter maintenance course, and AVT 302 is
the lab component of the helicopter maintenance course. They must be taken concurrently.
The lecture will be three hours a week, and lab will be nine hours a week. However, due to
the proximity of time and space of the lecture and lab, we will at times exercise our freedom
to move between lecture and lab, at the discretion of the instructor, to enhance the learning,
but the total number of hours of each will be maintained.

Grading: AVT 301 (Lecture): Fifty percent (50%) of this grade will be determined by an average of
three unit exams and several quizzes. The quizzes figure into the overall test scores so
missing a quiz can have an effect on your final grade. The average grade of the quizzes
weighs the same as one unit exam. There is no make-up for missed quizzes. Exams and
quizzes will be drawn from material covered in lecture and reading assignments. A Final
Exam will account for the other 50% of the lecture grade. Missed exams may be made up
within 1 week of the absence. All assignments, whether for lab or lecture, must be
legible and on time or the result will be a reduction in grade for that assignment.

Grade Scale: 100 – 90 = A
89 – 80 = B
79 – 70 = C
69 – 60 = D
59 and below is a failure.

Rules: No food or drink in the classroom, with some exceptions to be discussed. No open-toe
shoes are allowed in the lab; therefore they shall not be worn during lecture either in the
event we visit the lab area to enhance the learning. Absolutely no horseplay is allowed in
class.

Cell Phones: Cell phones and similar devices are to be turned off or set to vibrate during class. If you do
have an emergency, go to an area where you will not distract others. Let your instructor know in advance if
you have a “situation” where you need to be available by phone. Cell phones, or other personal electronic communication devices, will not be tolerated as simply a convenience or personal pleasure. Plan ahead!

**Attendance and Tardiness Policy:** Attendance is mandatory. Roll will be taken at the beginning of 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.** If the student arrives after attendance is taken, but not more than ten minutes after the beginning of the class period, the student will be considered tardy. **Three (3) late arrivals will be counted against the student as one unexcused absence.** If the student misses more than the first ten minutes of the class the student will be considered absent for the entire hour. **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 unexcused absence** results in a two-point reduction.
- **Third unexcused absence** results in a four-point reduction.
- **Fourth unexcused absence** results in an eight-point reduction.
- **Fifth unexcused absence** results in a sixteen-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.

**Makeup time may be granted only for excused absences** and must be made up within two weeks after the absence barring extenuating circumstances. No make up time will be allowed during the last 2 weeks of the semester. No more than **three (3) hours** of excused absences may be made up, unless unavoidable circumstances exist, for which evidence must be provided. 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.** Excused absences or tardiness require *written* evidence of extreme circumstances affecting that person’s ability to attend class. Illness will require supporting documentation from the SIUC Student Health Service or a private physician indicating date and time of appointment. Unless the instructor is approached by the student after the first class attended following an absence or late arrival, the absence will stand as unexcused. Each person is expected to be in class/lab for the entire scheduled period. Anyone leaving after the beginning of a class, without making prior arrangements with the instructor, will receive an unexcused absence for the amount of time allotted for that class, excused absences excepted.

**Lectures will cover, but not be limited to, the following material:**

1. Helicopter and Major Component Orientation
2. Helicopter Maintenance Publications
3. Helicopter Aerodynamics
4. Helicopter Vibrations: Types, Analyzation, and Solutions
5. Main Rotor Blade Alignment & Static Balancing
6. Tail Rotor Static Balancing
7. Dynamic Tracking and Balancing of the Main and Tail Rotors – Learning with the Whirligig
8. Daily and 100-hour Inspection Items, primarily on a Bell 206

**AVT 301 Final Exam Date:** TBA