

AVIATION 112
Aircraft Systems and Introduction to Glass Cockpits
Winter 2009

AVIA 112, 0875, Section A, 2 Credits

Instructor: Curt Scott
Phone: (Office) 253-833-9111, ext. 4335 (Cell) 253.380.7240

Office Hours: M-F 10-11s

Office: Tech Center Room 135 (in the TC 133 Office complex)

Email: Cscott@greenriver.edu

E-mail: cscott@greenriver.edu, Alt. Email curtescott@aol.com

Web Site : www.instruction.greenriver.edu/aviation

Course Description:

Provides students with information on flight deck procedures and aircraft systems

Materials for the Course:

- FAR/AIM
- E6b
- Sectional Chart

Learning Objectives:

Provide students with necessary aeronautical knowledge to prepare students for work in aviation career areas such as Air Traffic Control, Flight Dispatch and Air Transportation. On completion of this course, students should be able to explain basic operations principles of aircraft systems and aircraft navigation.

Instructional Method:

Lectures, video presentations, computer data projector presentations, internet and study assignments - homework includes completing a checklist of simulator activity in a flight simulator

Evaluation Standards, Grading & Academic Honesty:

Course grades will be from Tests, Homework and successful completion of Flight Simulator events. Cheating in any form will result in a zero score for the test and no opportunity for a test retake. Additionally, students must fly at least simulator 3 hours, and complete all the Simulator Activities

- Complete at least 1 hours in the simulator by the 4th week of class
- Complete at least 2 hours by the 8th week of class
- Complete at least 3 hours prior to the week before finals week

Failure to complete flight simulator events and/or complete less than 3 hours of simulator time will result in a reduced grade based on the percentage of events not completed and/or the percentage of hours less than 3 hours flown (i.e 3 hours earns 100%, and full completion and at least 3 hours earns 100%. If either parameter is less than 100%, the simulator grade portion will reduce by the percentage below 100%

Testing, Make-ups, Retakes & Grading

Quiz/Test schedule is on last page. Class will confirm quiz/test dates based on student readiness for testing (class majority vote). Instructor can over-ride a class majority vote. Coordinate with the Instructor-for early or late testing or retakes. Grade scoring is as follows:

*Scheduled Day or Earlier	1 to 21 days after * or 2 nd attempt
Max Score 100%	80%
*Make-ups/Retakes/late assignments must be within 21 days of the scheduled day to count for score	

Attendance/Absence/Tardiness Policy:

Please try to not miss class. Please tell me if you anticipate missing class. An explanation would be courteous as well.

Student Code of Conduct:

Refer to GRCC Catalog

GRCC decimal grading scale

%	GRCC	%	GRCC	%	GRCC	%	GRCC
100	4.0	90	3.5	80	2.5	70	1.5
99	4.0	89	3.4	79	2.4	69	1.4
98	3.9	88	3.3	78	2.3	68	1.3
97	3.9	87	3.2	77	2.2	67	1.2
96	3.8	86	3.1	76	2.1	66	1.1
95	3.8	85	3.0	75	2.0	65	1.0
94	3.7	84	2.9	74	1.9	64	0.9
93	3.7	83	2.8	73	1.8	63	0.8
92	3.6	82	2.7	72	1.7	62	0.7
91	3.6	81	2.6	71	1.6		

GRCC Campus-wide Outcomes:

Green River Community College (GRCC) identified specific fundamental knowledge, skills, behaviors, attitudes, and values that GRCC students must possess to be successful after leaving the Green River Community College environment:

1. Student's sense of individual responsibility to the community

- Demonstrate knowledge of and willingness to accept stated/agreed expectations, policies, behavior, and procedures.
- Demonstrate accountability (be punctual, prepared, ready to learn), integrity (do your own work, do your share of shared work), initiative (seek help when you need help), and tolerance (be awareness of your own biases). Actively and appropriately interact with others while respecting everyone's opinion.
- Measured by occurrences of student readiness for class, participation in class,

timely assignment submissions, and effective group membership.

2. Quantitative and symbolic reasoning

- Student can evaluate and interpret information and data, can recognize which processes or methods are appropriate for solving a given problem, can estimate a solution, and correctly implements those processes.
- Student can translate data into various formats such as graphs, tables, formulas, and sentences.
- Measured by student work in class, on projects, homework, and tests.

3. Critical Thinking:

- Student provides reasons for the conclusions he or she reaches and assesses the relevance and adequacy of those reasons.
- Student connects past learning with current topics.
- Measured by student work in class, on projects, homework, and tests.

4. Written & Oral Communications skills suitable for the modern business environment

- Student becomes involved with the material and can express a clear sense of purpose, unity, and focus in his or her writing or speaking.
- Student can organize of his or her thoughts in written and oral communications clearly and effectively using well-organized, logical writing and using correct grammar and spelling.
- Measured by student work in projects, test answers, and class and group participation

Special Needs:

If, because of a disability, the student:

- Needs special accommodations (adapt a course activity, have additional assistance, etc.),
- Has emergency medical information the instructor should know about, or
- Has a need for special assistance in the event of a building evacuation,

Please contact the Instructor and be sure the instructor fully understands the special need. Students may use alternate modes to communicate Special Needs information (email, phone). In any case, and using any format, students should inform the Instructor as soon as possible after the start of school.

**Students should also contact Disability Support Services (DSS) in LSC 277
Phone DSS at: 253-833-9111, ext. 2631 or TDD at 253-288-3359.**

AVIA 112 - Course Outline

Weeks 1 and 2 – Engines, Props, Oil and Fuel Systems

- Classroom - Conventional, Jet and Turbo Prop Engines and systems for measuring engine performance, fuel and electrical systems
- Simulator Activity (with emphasis on checklist use)
 - Engine Instrumentation – Review purpose and use of
 - Tach (RPM) meter, Manifold Pressure gauge and Hobbs Meter
 - Fuel quantity and pressure gauges
 - Oil System quantity and pressure gauges
 - Problems with each of the above systems
- **TEST – Engines & Props**

Weeks 3 and 4 – Electric, Hydraulic and Pneumatic Systems

- Classroom - Review functions and indicators for Electric, Hydraulic and Pneumatic Systems
- Simulator Activity
 - Electric, Hydraulic and Pneumatic Systems operation and use
 - Aircraft systems indicators and controls
 - Hydraulic pressure and temperature gauges and controls
 - Pneumatic Indicators and controls
- **TEST – Oil, Fuel, Electric, Hydraulic and Pneumatic Systems**

Weeks 5, 6, and 7 – Glass Cockpit Technology

- Review G-1000 and Avidyne Glass Cockpits
- Simulator Activity
 - Overview the G-1000 Glass Cockpit

Weeks 8, 9, 10 – Basic Navigations Systems

- Review operation and use of Navigation Systems including the Magnetic Compass, Directional Gyro, VOR, ILS, ADF, DME, TACAN
- Simulator Activity
 - Use each navigation system to
 - Track TO/FROM a navigation station
 - Plot Position using VORs, ADFs, DME and a VFR chart
 - While flying, plot positions, calculate magnetic courses and fly courses
- **PowerPoint (PPT) Assignments**

Week 11 – Advanced Navigation Systems

- Review GPS systems and ADSB Systems
- Simulator Activity
 - Plan and fly a GPS flight Profile (Departure, Enroute, Approach)
- **PowerPoint (PPT) Assignments**