

AVIATION 112
Aircraft Systems and Introduction to Glass Cockpits
Spring 2009
AVIA 112, 0875, 2 Credits

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Course Description:

Provides students with information on modern aircraft systems and glass cockpit technology. Lab portion of class is conducted in the G1000 flight simulator.

Students must complete the simulator flight activities in not more than 5 hours

- Complete at least 1 hours in the simulator by the 4th week of class
 - Complete a total of least 2 hours by the 8th week of class
 - Complete a total of least 3 hours prior to the week before finals week
 - Fly at least simulator 3 hours – AND – complete all the Simulator Activities
- Failure to complete flight simulator events and flying less than 3 hours will result in a reduced grade based on the percentage of events not completed and the number or hours below 3 hours not flown.

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.

Testing, Make-ups, Retakes & Grading – Homework

Testing will be on dates the class agrees (by class vote). Instructor can override class vote on testing dates. Students must arrange for Make-ups and Retakes with the instructor Scoring for late assignments or test make-ups and retakes is as follows:

1-10 days after test date: Max score 85%

11-21 days after test date: Max score 80%

More than 21 days after test date: No retakes will be allowed

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.**

Course Outline:

- **Week 1-** Review G-1000 and Avidyne Glass Cockpits
- Simulator Activity
 - Overview the G-1000 Glass Cockpit

Weeks 2 and 3 – 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

Week 4 – Basic and Advanced Navigation Systems

- Review GPS systems and ADSB Systems
- Review of VOR system
- Simulator Activity
 - Plan and fly a GPS flight Profile (Departure, Enroute, Approach)

Weeks 5 and 6 – Modern Electric, Hydraulic and Pneumatic and Vacuum Systems

Weeks 7, 8, 9, 10 – Modern Pressurization, Anti-Ice, Flight Control, Oxygen, Fire Protection, and Warning Systems

Week 11 – Review for final exam