Aviation 201
Air Traffic Control

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Course Description:
Introduces radar and non-radar Air Traffic Control, flight data processing, aircraft communication, FAA separation standards, controller techniques, and airspace management - Covers Computer simulation of ATC problems

Additional Notes: AVIA 201 provides an overview of ATC with emphasis on FAA rules and procedures from FAAO 7110.65 including basic rules and procedures for FAA ATC operations and with specific emphasis on the Air Route Traffic Control Center (ARTCC) option for information handling, separation standards, radar and non-radar control with computer simulation of ATC problems. AVIA 201 is a “foundation course” for all GRCC Aviation students, but most particularly for GRCC FAA AT-CTI* students who need a sound knowledge of ATC rules and procedures to prepare for the FAA ATC Academy.
* FAA AT-CTI - FAA Air Traffic –Collegiate Training Initiative program

Learning Objectives:
At the completion of AVIA 201 successful students should:
- Understand the FAA philosophy of air safety and basic ATC methodology for conducting a safe, orderly, and expeditious flow of air traffic
- Know the purpose of equipment Controllers use to provide ATC services (radios, radar and computer equipment)
- Understand fundamental ATC procedures for En route ATC
- Understand ATC separation standards and gain a limited understanding of ATC control techniques and methods
- At a limited level, be able to perform basic ATC control functions for separation and sequencing of air traffic
- Understand constraints of “demand verses capacity” caused by weather and volume, with regard to managing air traffic in the En route, Terminal and Airport surface environments

Two simple concepts sum up all the practical application of Air Traffic Control. These are known (in this class) as Professor Veer’s #1 and #2 rules:
1. Always use 5 miles OR 1000 feet,
2. Never let anyone in or out of your airspace without coordination!

Homework: (Your job)
- Read and understand materials and resources (texts, FAA Orders, Web sites and FAA publications pertinent to ATC studies)
- Memorize information
- Monitor ATCLive.net, learn and practice specific ATC phraseology
- Record scenario voice communications, listen to yourself, strive to improve your speaking and listening skills
- Treat ATC scenario play like the real thing
Each CTI Student should have very good knowledge of the FAAO 7110.65 covering enroute ATC operations, and sections of the AIM covering ATC procedures, have a working knowledge of CFR (FAR) rules pertaining to ATC, and have basic knowledge of the purpose and content of the other FAA publications in the FAA publications list. Please note: all these publications are available at the www.faa.gov/atpubs website.

Learning Resources for AVIA 201:

Texts
- *FAR/AIM (Current Year) FAR parts 1,71,73,91
- *FAA Handbook 7110.65 (Primarily chapters 1,2,4,5,6)
- Basic Aviation FUN-damentals – Scott and Comollo, 1st edition
- Handouts for memorization, study and scenario practice

Websites
- www.instruction.greenriver.edu/aviation
- www.aviationweather.gov
- *www.faa.gov/atpubs/
- www.faa.gov/library/manuals/aircraft/
- www.liveatc.net

Other
- USB Memory Device (thumb drive, flash drive) at least 256k capacity

Class Attendance:
“EIGHT FOR EIGHT AND DON’T BE LATE!”

ATC 201 is one of the tougher classes in all of the Aviation Degree programs. The pace is rapid, we cover many topics, and rote memorization of material is required. If you are unable to attend class (illness, unexpected hardship, etc) notify me as soon as possible – preferably before class – so I can brief you on what to study to keep up. Even if you’re not in class, you’re still responsible for the information covered in the class during your absence. For AT-CTI students, part of my job is to prepare you for the FAA ATC Academy. Along these lines, regular class attendance, a diligent work ethic, and the ability to work well with others in class are important and are part of my recommendation as to your fitness to be in the FAA ATC workforce. Therefore, if you have more than 4 unexcused absences your grade will be reduced by 10%.

For the students going into other Aviation Careers (not ATC), employers often (very frequently, in fact) ask GRCC aviation faculty about students as part of employer hiring process. Your class attendance, dedication to studies and the ability to work well with others are part of my response to the employer because those same traits are important for any job in any setting. Consistent, timely, prepared attendance indicates a lot about your ability to think, plan and adapt to changing work situations. Please be on time and ready to learn, so we can give a future potential employer a good report.

Academic Honesty: If you don’t have your integrity, you don’t have anything! Cheating in any form is cause to receive zero score and no chance to retake the test. If you’re employed with the FAA and you lie, cheat or steal, it may be cause for dismissal!

Grading and Evaluation
Graded Student Learning
Class Grades for AVIA 201 will derive from

(1) Written tests on knowledge from FAAO 7110.65
   a. Head Math Quizzes
   b. Basic ATC Knowledge
   c. ATC Radar Procedures Knowledge
   d. ATC Non-Radar Procedures Knowledge

(2) Memory tests over any or all of the following specific topics:
   a. Keyboard Data Entry (Controller and Ghost Pilot keystrokes)
   b. Area Knowledge (Memphis Center Sector 66 & adjacent area airspace)
   c. ATC Flight Clearances, Flight Data Information and data entry procedures
   d. Aircraft Recognition and Aircraft Performance
   e. Controller-Pilot Phraseology

Student Learning Evaluation (Not Graded)
For AT-CTI students, the evaluation of non-graded items will be part of the overall faculty recommendation I must make to the FAA on your fitness to proceed into the FAA ATC work force. I will discuss the recommendation process with each student. The criteria I use to make a recommendation are: (this list is not all-inclusive, but rather representative)

- Ability to accurately hear, understand, repeat and record ATC information and instructions, using keyboard entry, manual entry on a Flight Strip, and note taking
- Ability to perceive potential ATC conflicts and take appropriate action in a timely manner
- Awareness of when to coordinate with other Air Traffic Controllers, the pilot, and with other Air Traffic and Aviation entities
- Ability to work efficiently, effectively, thoughtfully, and cordially with others in a team environment
- Ability to attend classes on time, to complete work on time, to be ready for instruction with all necessary materials on time, and be a ready and able learner

Testing, Test Make-up, Retakes & Grading
Each test will usually have an opportunity to earn extra credit which may exceed 100%. To earn 100% and extra credit, students must take tests on or before the scheduled day. Test schedules will be posted on the white board in class. The highest score for a make-up or a retake of a test is 85%, EXCEPT the map test (90%). Late tests can not receive extra credit. Coordinate with the Instructor to make up or retake tests. All make-ups and retakes must be completed within 10 days from the original test day. (The instructor reserves the right to make exceptions to this rule for extraordinary circumstances.)

Grade percent conversion to GRCC decimal grading system

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<th>Grade Percent</th>
<th>Conversion</th>
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<tr>
<td>62 - 64</td>
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<tr>
<td>65 - 66</td>
<td>1.0 - 1.1</td>
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<td>77 - 79</td>
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<td>80 - 82</td>
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<td>4.1 - 4.2</td>
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<tr>
<td>97 - 100</td>
<td>4.3 - 4.4</td>
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68 = 1.3  77 = 2.2  86 = 3.1  99/100 = 4.0
69 = 1.4  78 = 2.3  87 = 3.2
70 = 1.5  79 = 2.4  88 = 3.3

*NOTE – AVIA 201 students must achieve a grade of GRCC 2.5 (80%) or better or receive instructor permission to enroll in AVIA 202

Cell phones and other personal communication devices
Please put your cell phones to OFF or VIBRATE during class. Please don’t use cell phones or use text messaging in class. Also, please do not play with computers in the ATC Lab. Changing ATC lab equipment and computer settings without specific direction to do so can be grounds for removal from class and a course grade of zero.

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 aware 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.

AT-CTI RECOMMENDATION CRITERIA:

Each GRCC AT-CTI student must receive a positive recommendation from the GRCC ATC Faculty as part of the FAA ATC Candidate Selection process. Completing GRCC FAA AT-CTI degree program and receiving a positive recommendation from GRCC is not a guarantee of employment with the FAA.

With due regard for all factors associated with FAA needs for Air Traffic Control Candidates, and to ensure that GRCC ATC Students will have a reasonable chance of success throughout each FAA ATC Candidate’s selection, hiring, training and job qualification process, GRCC has established the following standards for a Positive Recommendation to the FAA from the GRCC ATC Faculty:

Academic Performance
Students must successfully complete
1. All non aviation courses with at least a grade of 75% (GRCC grade 2.0) or higher.
2. All aviation courses (except ATC courses) with at least a grade of 80% (GRCC grade 2.5) or higher.
3. All Air Traffic Control (ATC) courses (except AVIA 203 capstone course) with at least a grade of 85% (GRCC grade 3.0) or higher
4. AVIA 203 Capstone ATC course with at least 87% (GRCC grade 3.2) or higher and
   Complete the following AVIA 203 tests
   A. AVIA 203 Area Knowledge Test with a grade of at least 90%
   B. AVIA 203 Phraseology Tests series with grades at or above 80%,
   C. AVIA 203 Strip-Marking Tests, with grades at or above 80%,
   D. AVIA 203 Final-Four AT-Basics Final Tests, with an average score for all four tests of 90% and at least 80% or higher on each individual test
   NOTE: Each student has two opportunities to take each of the AVIA 203 Capstone course tests that require minimum scores to earn a positive recommendation
5. Complete the Air Traffic degree program with at least a minimum GPA of 85% (GRCC 3.0).

Conduct and Demeanor
Excellent judgment is an essential aspect of being an Air Traffic Controller. Team work is also vital to success in the Air Traffic Control profession. For those reasons, students in the GRCC ATC program must demonstrate excellent judgment and superior cooperative and respectful behavior at all times and in all situations or circumstances. Any inappropriate factual situation or circumstance involving a student that shows the student lacks good judgment or that shows a student’s inability to work effectively in a team environment will affect the recommendation GRCC makes to the FAA about that student.
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<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
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<td>Syllabus</td>
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<td>Clearance</td>
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<td>Intro to FAA</td>
<td>Airspace</td>
<td>Separation</td>
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<td>Basic Communication</td>
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<td>Phrase to Strip</td>
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Course guide and grade sheet are subject to change

**Aviation 201**

**Grade Sheet**

- Syllabus Quiz: _________________________________ _______/35
- Head Math Quiz 1: _________________________________ _______/44
- Head Math Quiz 2: _________________________________ _______/44
- Head Math Quiz 3: _________________________________ _______/44
- Head Math Quiz 4: _________________________________ _______/44
- Phonetic Alphabet Quiz: _________________________________ _______/114
- Strip Spaces Quiz: _________________________________ _______/70
- Control Information Symbol Quiz: _________________________________ _______/94
- Symbols Abbreviations Quiz: _________________________________ _______/100
- Strip to Phrase Quiz: _________________________________ _______/105
- Phrase to Strip Quiz: _________________________________ _______/100
- Basic Take Home Test: _________________________________ _______/222
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<tr>
<td>Radar Take Home Test</td>
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<tr>
<td>Radar Closed Book Test</td>
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<tr>
<td>Non-Radar Take Home Test</td>
<td>184</td>
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<tr>
<td>Non-Radar Closed Book Test</td>
<td>160</td>
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<td>Radar Lab</td>
<td>200</td>
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<tr>
<td>Listening Log (liveatc.net)</td>
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<tr>
<td>Map Test</td>
<td>750</td>
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<tr>
<td>Radar Lab Proficiency Verification (PV)</td>
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