AVT 102
INTRODUCTION TO AVIONICS

COURSE DESCRIPTION

This course presents an introduction to the three past and present major phases of avionics systems: Navigation, Communication, and Air /Ground Surveillance using an array of different sophisticated state-of-the-art radios, sensors and displays to communicate with the aircrew. Basic operational and maintenance procedures and practices will be introduce, in addition to relevant abbreviations and acronyms corresponding to each system.

3 Credits (3 Lec, 0 lab, 3 CR. 3)
Prerequisites: RDG 100, ENG 100, and MAT 100

COURSE FOCUS

Students will learn Avionics, Systems, Installation and Troubleshooting.

TEXT AND REFERENCES

Buckwalter, L. (2012). Avionics Communications Inc. Leesburg, VA.
ISBN: 978-188554421-6

COURSE GOALS

The following list of course goals are address in the course. These goals related directly to the performance objectives (Addendum A). (*designates a CRUCIAL goal)

1. Understand the meaning of avionics
2. Understand avionics history
3. Define blind flying
4. Define Morse, Bell, Hertz contributions
5. Demonstrate transponder knowledge
6. Describe acceptable VHF radios
7. Describe NavCom connections
8. Depict aviation band frequencies
9. Depict finding position
10. Depict time difference measurement
11. Depict VHF system
12. Detail radar altimeter
13. Detail satellite navigation
14. Discuss ADF limitations
15. Depict was system
16. Comprehend TCAS system
17. Define splitting vhf channels
18. Demonstrate interrogator knowledge
19. Discuss Automatic Direction Finder
20. Discuss Microwave Landing system
21. Discuss proper test troubleshooting skills
22. Display knowledge of Instrument Landing Systems
*23. Display knowledge of panel labels
*24. Display knowledge of VOR
25. Explain airline control panel
*26. Explain HF Datalink
*27. Explain Satellite communications
28. Interpret Aircraft Earth Station
29. Interpret Ground Earth Station
*30. Know basic knowledge of RADAR Altimeter
31. Know basic knowledge of Transponder
32. Know basic Instrument Landing
33. Learn basic information on Flight Data Recorder
*34. Learn Satellite navigation
35. Learn basics on EFIS
36. Obtain distance
*37. Recognize weather detection terms
38. Reference how to mount avionics equipment
*39. Relate basic knowledge of airplane wiring
*40. Comprehend installation plan terminology
41. Display basic knowledge of antenna installation
42. Obtain airborne ground stations
*43. Relate how to make electrical connections
*44. Relate knowledge of AC/DC power
*45. Relate knowledge of airline electrical system
*46. Study ACRS reporting system
47. Study emergency locator transmitter
48. Study SELCAL code
49. Understand High Frequency communications
50. Understand VHF communications
STUDENT CONTRIBUTION

Each student needs to spend at least 6 hours per week preparing and completing their classwork or on-line assignments to turn in weekly. Attendance is critical in this class.
Student Attendance Policy: See student handbook within course catalog.

COURSE EVALUATION

Each week's assignments are worth 100 points and averaged over the semester. Chapter tests are also worth 100 points and averaged at the end of the semester. The final will be 100 points.
Tests: 50% Assignments: 45%
Timeliness/Attendance/Participation: 5%

COURSE SCHEDULE

The schedule for this course is provided in Blackboard on the Assignments page. It is important that all instructions in Blackboard be followed carefully as some assignments are completed and turn-in to the instructor and some are uploaded in Blackboard for grading

Approved by:  _Kelli Boniecki____________________  Developed/Revised:  _July 7, 2019____
Division Dean for Business & Industrial Divisions

ADA STATEMENT

The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8228 during the first ten business days of the academic term.
ACADEMIC MISCONDUCT

There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student’s responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the TCL Student Handbook, the Division Office, and the Learning Resources Center.

ATTENDANCE

• The College’s statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.

• Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.

• Students taking an online/internet class must sign in and communicate with the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.

• Reinstatement requires the signature of the division dean.

• In the event it becomes necessary for a student to withdraw from the course OR if a student stops attending class, it is the student’s responsibility to initiate and complete the necessary paperwork. Withdrawing from class may have consequences associated with financial aid and time to completion.

• When a student exceeds the allowed absences, the student is in violation of the attendance policy. The instructor MUST withdrawal the student with a grade of “W”, “WP”, or “WF” depending on the date the student exceeded the allowed absences and the student’s progress up to the last date of attendance

OR

• Under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.

• Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.

• A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.

• A copy of TCL’s STATEMENT OF POLICY NUMBER: 3-1-307 CLASS ATTENDANCE (WITHDRAWAL) is on file in the Division Office and in the Learning Resources Center.
ONLINE ATTENDANCE PROCEDURE

For all online courses, students must complete an assignment designated by the instructor during the first week of classes. The instructor will drop the student from the course if the initial assignment is not completed.

Instructors will withdraw students from the class when 90% attendance is not maintained. Attendance in an online course is defined by regular course access and by timely completion of assignments as required by the instructor. Each student will be expected to access the web class at least once a week and complete 90% of assignments on time. Additional access is encouraged and may be necessary for successful completion of classes.

Failure to log in and complete assignments will result in the student being withdrawn from the course. The instructor will assign a grade of “W,” “WP,” or “WF” based upon the student’s academic standing as of the last date of attendance, which is the last login. Students are responsible for any financial matters associated with an administrative withdrawal. If a student fails to email the instructor (using the my.tcl.edu email account) requesting to be dropped from the course and has not submitted the initial assignment required during the first week of class, the instructor will assign a “Never Attended” code in the student information system (Self-Service) no later than ten calendar days after the first day of the class. Students who are dropped as a result of never attending the course are still responsible for all fees associated with the course.

HAZARDOUS WEATHER

In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGCO 98.3, WGZO 103.1, WFXH 106.1, WWVV 106.9, WLOW 107.9, WZGR 104.9, WFXH 1130 AM, WLVH 101.1, WSOK 1230 AM, WAEV 97.3, WTOC TV, WTGS TV, WJWJ TV, and WSAV TV. Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. www.tcl.edu/textalert.asp.

EMERGENCY TEXT ALERT

Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. Participants receive immediate notification of emergency events and weather cancelations via text messaging on their cell phones. Participants can also opt in to receive non-emergency news and announcements. Go to www.tcl.edu. On the homepage, click on “emergency Text Alert at TCL” and fill out the form or go to www.tcl.edu/textalert.asp.

Syllabus Safety Addendum

Purpose

The purpose of this safety addendum is to provide each student with safety guidelines during an incident, emergency, or disaster at TCL. In addition, it provides students guidelines for lockdown procedures, evacuation procedures, and active shooter.
**Definition**

An incident is any event, potential or actual, that may impact normal operations but has no immediate health or life threatening consideration or serious effect on the overall functional capacity of the College. An event of this nature should be reported to the Office of the Vice President for Administrative Services. Also, notify the off-site campus administrator if applicable.

An emergency is any incident, potential or actual, which may endanger life or health or which affects an entire building or buildings, and will disrupt the overall operations of the College. Outside emergency services will probably be required, as well as major efforts from campus support services. Major policy considerations and decisions will usually be required from the college administration during times of crises. An emergency should be reported immediately by directly using 911 if life or health/injury considerations exist and then to the Office of the President or Vice President for Administrative Services as quickly as possible. Also, notify the off-site campus administrator if applicable.

A disaster is any event or occurrence that has taken place and has seriously impaired or halted the operations of the College. In some cases, mass personnel casualties and severe property damage may be sustained. A coordinated effort of all campus-wide resources is required to effectively control the situation. Outside emergency services will be essential. In all cases of disaster, an Emergency Control Center will be activated, and the appropriate support and operational plans will be executed. The disaster should be immediately reported, first by calling 911 and then to the Office of the President or Vice President for Administrative Services. Also, notify the off-site campus administrator if applicable.

**Types of Emergencies**

- Hurricane
- Tornado
- Fire
- Biochemical or Radiation Spill
- Explosion/Bomb
- Downed Aircraft (crash which directly impacts campus operations)
- Utility Failures
- Violent or criminal behavior
- Psychological Crisis
Procedures


Building Evacuation
1. Building evacuations occur when an alarm sounds and/or upon notification by Security or the Emergency Director.

2. When the building evacuation alarm is activated during an emergency, individuals should exit according to the building evacuation plan and alert others to do the same.

3. Once outside, individuals should proceed to a clear area that is at least 500 feet away from the affected building. Streets, fire lanes, hydrant areas and walkways should be kept clear for emergency vehicles and personnel.

4. Individuals should not return to an evacuated building unless told to do so by Security or the Emergency Director.

5. Individuals should assist persons with disabilities in exiting the building. Elevators are reserved for disabled persons.

Campus Evacuation
1. A uniformed Security Guard, the Emergency Director, or an Emergency Resource Team member will announce evacuation of all or part of the campus grounds.

2. All persons (students and staff) are to immediately vacate the campus, or in the case of a partial evacuation relocate to another part of the campus grounds as directed.

Lockdown
1. Clear the halls
2. Report to the nearest classroom/office
3. Assist those needing special assistance
4. Ensure classroom/office doors are closed and locked
5. Turn off lights
6. Stay away from doors and windows (out of the line of sight)
7. BE QUIET and follow instructor’s directions
8. Silence cell phones
9. Wait for the “All Clear” before leaving