# COURSE OUTLINE

<table>
<thead>
<tr>
<th>AVI 114</th>
<th>Flight II</th>
<th>2</th>
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<tbody>
<tr>
<td>Course Number</td>
<td>Course Title</td>
<td>Credits</td>
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<tr>
<td>Hours: 1 / 3</td>
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Lecture / Laboratory

Pre-requisite: See Below

Co-requisite: AVI 132

Implementation

Fall 2010

### Catalog Description:

Required flight training for the commercial pilot certificate for the student who has met the requirements for the private pilot certificate in Flight I. Consists of 67.0 hours or the time needed to complete Flight Lesson 80. Be advised, additional time is regularly needed to meet completion standards and proficiency. Fee required.

### Pre-requisites:

AVI 113

Private Pilot Certificate

FAA-approved Medical

U.S. Citizenship or TSA Approval

### Required Texts/Other Materials:

1. Owner’s and Operator’s Manual of Aircraft used in Training
3. Practical Test Standards: Commercial Pilot for Airplane Single-Engine Land

### Last Revised:

Spring 2014

### Course Coordinator:

Joan Jones

### Information Resources:

Text books:

- Guided Flight Discovery Instrument/Commercial by Jeppesen Sanderson
- The Advanced Pilots Flight Manual by William K. Kershner
- Stick and Rudder by Wolfgang Langewiesche

### Other Learning Resources:

- Learning Center and Tutoring in the Library
- Student’s Flight Instructor at Trenton-Mercer Airport
- AOPA ([www.aopa.org](http://www.aopa.org))
- Gleim Software ([www.gleim.com](http://www.gleim.com))
- King Schools Software ([www.kingschools.com](http://www.kingschools.com))
Lesson Progress Checks:

_____ 32 Preparations for Advanced Maneuvers
_____ 42 Progress Check for Advanced Maneuvers and Emergency Procedures
_____ 68 Progress Check for Advanced Maneuvers Commercial and Radio NAV
_____ 80 Local Night Flight – Commercial Proficiency and Operations

Course Goals:

The Course goals are outlined in detail in the Commercial Pilot Practical Test Standards. The tasks are carefully enumerated within each area of operation. Please refer to this document as it specifically relates to these 11 areas of operation...

1. Pre-flight Preparation – Items A, B, C, D, E, F, G, and J
2. Pre-flight Procedures – Items A, B, C, D, and F
3. Airport Operations – Items A, B, and C
5. Performance Maneuvers – Items A, B, C, and D
8. Slow Flight and Stalls – Items A, B, C, and D
10. High Altitude and Operations – Items A and B
11. Post-flight Procedures – After-Landing, Parking, and Securing the Aircraft

GENERAL EDUCATION GOALS AND OBJECTIVES

<table>
<thead>
<tr>
<th></th>
<th>MCCC General Education Goals &amp; Objectives</th>
<th>Activities, projects, assignments, and exams that evaluate student learning of the course’s General Education goals and objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>[Check all that are addressed directly and seriously (not peripherally) in the course.]</td>
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<tr>
<td></td>
<td>1. Communication -- English Language: Students will communicate effectively in both speech and writing.</td>
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<tr>
<td>✓</td>
<td>1.1. Students will comprehend and evaluate what they read, hear and see.</td>
<td>Students will interpret and comprehend Practical Test Standards for the Commercial Certificate. Radio communications with ATC will be demonstrated and understood.</td>
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<tr>
<td>✓</td>
<td>1.2. Students will state and evaluate the views and findings of others.</td>
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<tr>
<td>✓</td>
<td>1.3. Students will write and speak clearly and effectively in standard American English.</td>
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<td>1.4. Students will logically and persuasively state and support orally and in writing their points of view or findings.</td>
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<td>1.5. Students will evaluate, revise and edit their communication.</td>
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<td>1.6. Students will develop an understanding of sensory communication and other forms of non-verbal communication.</td>
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<td><strong>2. Communication -- Foreign Language:</strong> Students will have the opportunity to develop competence in a Foreign Language.</td>
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<td>2.1 Students will learn basic vocabulary, grammar and everyday conversation in a foreign language.</td>
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<td>2.2 Students will recognize the uniqueness of foreign countries, their people and their cultures.</td>
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<td></td>
<td>2.3 Students will gain a measure of facility at interaction in a foreign language on topics involving that language's history, its cultural and historical context, and current issues of interest to native speakers of the language.</td>
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<td><strong>3. Critical thinking, problem solving and information literacy:</strong> Students will use critical thinking and problem solving skills in analyzing information gathered through different media and from a variety of sources.</td>
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<tr>
<td>✓</td>
<td>3.1. Students will identify a problem and analyze it in terms of its significant parts and the information needed to solve it.</td>
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<td></td>
<td>3.2. Students will use appropriate library tools such as cataloging systems to access information in reference publications, periodicals, bibliographies and databases.</td>
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<tr>
<td>✓</td>
<td>3.3. Students will use computers to access, analyze or present information, solve problems, and communicate with others.</td>
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<td>3.4. Students will formulate and evaluate possible solutions to problems, and select and defend the chosen solutions.</td>
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<td>3.5. Students will recognize weaknesses in arguments, such as the use of false or disputable premises, suppression of contrary evidence, faulty reasoning, and emotional loading.</td>
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<tr>
<td></td>
<td><strong>General Education Goals and Objectives</strong> [Check all that are addressed directly and seriously (not peripherally) in the course.]</td>
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<tr>
<td>✓</td>
<td><strong>4. Ethical dimension:</strong> Students will recognize, analyze and assess ethical issues and situations.</td>
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<tr>
<td></td>
<td>Activities, projects, assignments, and exams that will evaluate student learning of the goal and/or objective(s)</td>
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Students will be able to assess his/her ability to do Commercial maneuvers; determine whether a cross country flight can be safely accomplished; examine an aircraft during pre-flight and determine if the aircraft is safe to fly; be confronted with simulated flight emergencies, analyze the event and choose the proper course of action; utilize online weather to evaluate and determine whether or not it is safe to fly. Students will be able to utilize computers to interpret and analyze weather.
| ✓ | 4.1. Students will identify ethical implications of an issue or a situation. | Students will comply with the code of Federal Regulations involving Commercial Pilot Operations, interpret and defend their positions and justify their actions based upon the regulations. |
| ✓ | 4.2. Students will analyze and evaluate the strengths and weaknesses of different perspectives on an ethical issue or a situation. |
| ✓ | 4.3. Students will integrate their knowledge, take a position on an ethical issue or a situation, and defend it with logical arguments. |
| | **5. Quantitative skills: Students will apply appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.** |
| ✓ | 5.1. Students will translate quantifiable problems into mathematical terms and solve these problems using mathematical or statistical operations. | Students will be able to locate parameters associated with weight and balance, performance characteristics for airplanes, then apply them to graphs and charts and choose the appropriate course of action. |
| ✓ | 5.2. Students will construct graphs and charts, interpret them, and draw appropriate conclusions. |
| | **6. Science and technology: Students will apply the scientific method of inquiry to draw conclusions based on verifiable evidence, use scientific theories and knowledge to understand the natural world, and explain the impact of scientific theories, discoveries and technological changes on society.** |
| ✓ | 6.1. Students will identify and recall scientific information and theories, and, integrating and applying this knowledge, will use the scientific method to solve problems and draw conclusions from data. | Students will demonstrate a working knowledge of density altitude, glide ratios, best rate of climb, GPS, navigation, dead reckoning and pilotage. |
| | 6.2. Students will distinguish between scientific theory and scientific discovery, will distinguish between science and its technological application, and will explain the impact of science and technology on society. |
| | 6.3. Students will demonstrate a working knowledge of the subject matter of one of the physical or biological sciences. |
| ✓ | 6.4. Students will demonstrate a working knowledge of a major domain of technological application. |
FLIGHT TRAINING COURSE OBJECTIVES

The student obtains the aeronautical skills and experience necessary to meet the requirements of a commercial pilot certificate with an airplane category rating and a single-engine land class rating.

COURSE COMPLETION STANDARDS

The course completion standards are based upon the Commercial Pilot Practical Test Standards as outlined by the Federal Aviation Administration. The student demonstrates through flight test and school records that he/she has the aeronautical skills and experience necessary to obtain a commercial pilot certificate with an airplane rating and a single-engine land class rating.

* DENOTES ADDITIONAL TIME MAY BE NEEDED TO MEET COMPLETION STANDARDS AND PROFICIENCY.

FLIGHT BLOCK 8 - LESSONS 28 TO 32

OBJECTIVE

The objective of Flight Block 8 is for the student to review the basic maneuvers listed in Flight Lessons 28 through 32 in a C172 aircraft to acquire and demonstrate the private pilot proficiency and knowledge required to begin commercial pilot training.

CONTENT:

- Flight Block 8 Commercial Maneuvers
- Flight Lessons 28 – 32

COMPLETION STANDARDS

The student successfully completes each of the flight lessons in Block 8. He/she demonstrates private pilot proficiency and knowledge prior to proceeding to Block 9.

FLIGHT LESSONS 28 – PRIMARY AIRCRAFT

Dual Flight

1.0 Flight *

Learning Objectives:

The objective of this lesson is for the student to review and correct techniques used to perform the basic flight maneuvers and procedures listed.

CONTENT:

1. Pre-Flight Orientation
2. Review
   A. Short and Soft Field Landings
   B. Minimum Controllable Airspeed
   C. Departure (Power On) Stalls
   D. Approach To Landing (Power Off) Stalls
   E. Steep Turns
   F. Emergency Procedures
1. Simulated Engine Failure  
2. Simulated Electrical Failure  
G. Rejected Landing  
H. VOR Tracking  
I. Forward Slips to a Landing  
J. Cross Country and Diversion Procedures

COMPLETION STANDARDS
At the end of this lesson the student is expected to demonstrate the correct techniques necessary to perform the basic private pilot maneuvers per practical test standards.

FLIGHT LESSONS 29 – PRIMARY AIRCRAFT

Dual Flight

Learning Objectives:
The objective of this lesson is for the student to review and correct techniques used to perform the basic flight maneuvers and procedures listed.

CONTENT:
1. Pre-Flight Orientation  
2. Review  
   A. Normal and Crosswind Takeoffs and Landings  
   B. Side Slips  
   C. Slips to Landing  
   D. Ground Reference Maneuvers  
   E. Unusual Attitudes  
      1. Turning (Coriolis Maneuver)  
      2. Somatographic Illusion  
3. Post-Flight Discussion

COMPLETION STANDARDS
At the end of this lesson, the student is expected to demonstrate the correct techniques necessary to perform the basic private pilot maneuvers per the practical test standards.

FLIGHT LESSONS 30 – PRIMARY AIRCRAFT

Solo Flight

Learning Objectives:
During this lesson the student will practice primary flight procedures and maneuvers demonstrating private pilot procedures.

CONTENT:
A. Short and Soft Field Takeoffs and Landings  
B. Forward Slip to a Landing  
C. Departure Stalls  
D. Approach to Landing Stalls

COMPLETION STANDARDS
At the end of this lesson the student is expected to demonstrate proficiency in the private pilot maneuvers as per the practical test standards.

**FLIGHT LESSONS 31 – PRIMARY AIRCRAFT**

**Solo Flight**

*SOLO 1.0 Flight *

**Learning Objectives:**
During this lesson the student is expected to demonstrate the correct basic private pilot flight maneuvers.

**CONTENT:**
A. Normal and Crosswind Takeoffs and Landings
B. Side Slips
C. Slips to a Landing
D. Turns about a Point
E. Steep Turns
F. VOR Tracking

**COMPLETION STANDARDS**
At the end of this lesson the student will demonstrate proficiency in the private pilot maneuvers as per the practical test standards.

**FLIGHT LESSON 32 – PRIMARY AIRCRAFT**

**Progress Check**

*Dual Flight 1.3 Flight *

**Learning Objectives:**
The objective of this lesson is for the Chief Instructor or the Assistant Chief Instructor to evaluate the student’s performance and ensure readiness to progress to the advanced maneuvers introduced in block 9 and that it is in accordance with private pilot practical test standards.

**CONTENT:**
1. Pre-Flight Orientation
2. Review
   A. Short Field Takeoffs and Landings
   B. Slips to a landing
   C. Minimum Controllable Airspeed
   D. Departure (Power On) Stalls
   E. Approach to Landing (Power Off) Stalls
   F. Simulated Engine Failure
   G. Rejected Landing
   H. VOR Navigation
      1. Intercepting and Tracking a Course
   I. Cross Country Planning and Diversion Procedures

**COMPLETION STANDARDS**
In order for the student to proceed to Block 9, he/she must demonstrate the same basic proficiency that is expected from a private pilot upon flight test examination and demonstrate maneuvers according to a predetermined plan of operation. The student will be graded on maneuver planning and execution. Grading emphasis will be placed on smoothness of operation and the performance of maneuvers by outside visual reference.
FLIGHT BLOCK 9 - LESSONS 33 TO 71

OBJECTIVE

During Flight Block 9, the student is introduced to and learns to perform the precision flight maneuvers listed in Flight Lessons 33, 36 and 41. Throughout this block, the student will refine the handling of the airplane and develop to commercial standards. The goal is to become proficient as pilot in command in both local and cross-country flight to meet or exceed commercial flight standards. Additionally, a review of previously learned maneuvers is provided. This learning experience increases the student’s proficiency and teaches him/her to perform flight maneuvers according to a predetermined plan.

CONTENT:

- Flight Block 9 Commercial Maneuvers
- Flight Lessons 33 – 71

COMPLETION STANDARDS

The student must complete each of the individual flight lessons in Block 9. At the completion of Block 9, the student must demonstrate the ability to perform each of the advanced maneuvers using proper coordination and smooth control inputs and he/she should perform each maneuver according to his/her predetermined plan.

FLIGHT LESSON 33 – PRIMARY AIRCRAFT

1.3 Flight *
1.0 Ground *

Learning Objectives:
The student learns the techniques used to enter and control the bank angle during steep power turns and steep spirals, and the techniques used to judge altitude during accuracy landing approaches. This knowledge will aid the student in learning to control the airplane near its performance limits.

CONTENT:

1. Pre-Flight Orientation
2. Introduction
   A. Steep Power Turns (50° Bank)
   B. Steep Spirals
   C. Accuracy Landings
   D. Lazy Eights
   E. Chandelle
3. Post-Flight Discussion

COMPLETION STANDARDS

At this stage of instruction, the student is graded primarily on his/her understanding of the advanced maneuvers rather than his/her performance. During the steep power turns, the student should understand the techniques necessary to hold the bank within +15°, altitude within 250 feet, and roll out within +15°. During the steep spirals, the student should be able to demonstrate an understanding of the techniques necessary to hold the heading, upon recovery, within +20° and the airspeed within +10 knots. Acceptable performance for accuracy landings should be such that the student does not undershoot the
selected point on the runway and the student should understand the techniques required to affect a landing within 200 feet beyond the designated mark.

**FLIGHT LESSON 34 – PRIMARY AIRCRAFT**

*Dual Flight*  
1.0 Flight *
0.5 Ground *

**Learning Objectives:**
During Flight lesson 34, the student will review flight maneuvers to gain proficiency and increase their understanding of the performance criteria of each maneuver.

**CONTENT:**
1. Review  
   A. Chandelles  
   B. Steep Power Turns  
   C. Steep Spirals  
   D. Accuracy Landings  
   E. Slip to Landings  
   F. Lazy Eights  
2. Introduce  
   A. Eights on Pylons  
3. Post-Flight Discussion

**COMPLETION STANDARDS**
These lessons are complete when the student has performed each of the listed maneuvers. The student should attempt to maintain altitude control while executing steep power turns within 250 feet, bank within 10°, and recover on a heading with 15° of the entry heading. During the execution of steep spirals, bank should be held within 10° of the desired bank, the roll out heading should be within 10° of the entry heading, and airspeed should be 10 knots. Accuracy landings should be achieved within 200 feet of the designated mark. In a Chandelle, the student will roll out within 15° of the 180° point and maintain airspeed above stall.

**FLIGHT LESSONS 35 & 36 – PRIMARY AIRCRAFT**

*Solo Flight*  
1.2 Flight * Each

**Learning Objectives:**
During these flight lessons, the student will review and practice the maneuvers learned in the previous two lessons. The student will learn to control the airplane while their attention is diverted to outside references and to obtain its maximum performance while precisely controlling pitch and bank attitude.

**CONTENT:**
1. Pre-Flight Orientation  
2. Review  
   A. Steep Power Turns  
   B. Steep Spirals  
   C. Accuracy Landings  
   D. Slip to a Landing  
   E. Chandelles  
   F. Lazy Eights
G. Eights on Pylons

COMPLETION STANDARDS
The student is expected to perform those maneuvers, which he/she has had an opportunity to practice solo, in a manner which demonstrates increased understanding. While executing chandelles, the student should understand how to affect a roll out so as to complete the maneuver after 180° of turn. The airspeed, at the time of roll out, should be within 10 knots of stalling speed. During the execution of pylon eights, the student should show reasonable proficiency in holding the pylon without the use of slips.

FLIGHT LESSON 37 – PRIMARY AIRCRAFT

Dual Flight 1.2 Flight *

Learning Objectives:
During this lesson, the student will demonstrate the listed commercial maneuvers. The student will practice the listed maneuvers to further develop their skill in flying the airplane in a smooth and coordinated manner.

CONTENT:
1. Review
   A. Steep Power Turns
   B. Steep Spirals
   C. Chandelles
   D. Lazy Eights
   E. Accuracy Landings
   F. Eights on Pylons
2. Post-Flight Discussion

COMPLETION STANDARDS
This lesson is complete when the student has performed each of the listed maneuvers. In addition, the student should realize increasing insight and precision in advanced flight maneuvers. Increased proficiency should be evident by the student’s increased coordination and smooth control application. In addition, the student will learn the control usage necessary to perform the lazy eight without persistent slipping.

FLIGHT LESSONS 38 THRU 40 – PRIMARY AIRCRAFT

Solo Flight 1.2 Flight * Each

Learning Objectives:
The student will practice the listed maneuvers to further develop their skill in flying the airplane in a smooth and coordinated manner.

CONTENT:
1. Review
   A. Steep Power Turns
   B. Steep Spirals
   C. Accuracy Landings
   D. Slip to a Landing
   E. Chandelles
   F. Lazy Eights
G. Eights on Pylons

COMPLETION STANDARDS
These lessons are complete when the student has performed each of the listed maneuvers. These listed maneuvers shall be performed with increasing proficiency. Points of entry, airspeed, bank angle, and general performance requirements shall be known.

FLIGHT LESSON 41 – PRIMARY AIRCRAFT
Dual Flight

Learning Objectives:
During this lesson, the Instructor will review with the student previously learned maneuvers so any faulty areas of performance can be corrected.

CONTENT:
1. Pre-Flight Orientation
2. Review
   A. Steep Power Turns
   B. Steep Spirals
   C. Chandelles
   D. Accuracy Landing
      1) Power off with flaps
      2) Power off without flaps
      3) Power on with flaps
   E. Lazy Eights
   F. Eights on Pylons
3. Post-Flight Discussion

COMPLETION STANDARDS
The student must demonstrate to the instructor that the student can plan and execute maneuvers in a precise, coordinated manner. Accuracy landings must be within 200’ of selected touchdown points.

FLIGHT LESSON 42 – PRIMARY AIRCRAFT
Progress Check

Learning Objectives:
During this Progress Check, the Chief Flight Instructor or his assistant will review with the student previously learned maneuvers so any faulty areas of performance can be corrected.

CONTENT:
1. Pre-Flight Orientation
2. Review
   A. Steep Power Turns
   B. Steep Spirals
   C. Chandelles
   D. Lazy Eights
   E. Eights on Pylons
   F. Accuracy Landings
1) Power off
2) Power on
G. Emergency Procedures
3. Post-Flight Discussion

COMPLETION STANDARDS
Performance will be judged on the student’s ability to plan and execute maneuvers in a precise, coordinated manner. Entry procedures, wind position, memory items in bold letters for emergency procedures, and accuracy landings within 200’ of selected touchdown point represent objectives which must be demonstrated.

FLIGHT LESSONS 43 THRU 45 – PRIMARY AIRCRAFT
Solo Flight
**SOLO**
1.2 Flight * Each

*Learning Objectives:*
During these flight lessons, the student will attempt to gain proficiency in the performance of advanced maneuvers and make further progress toward meeting commercial pilot proficiency.

*CONTENT:*
1. Review
   A. Steep Power Turns
   B. Steep Spirals
   C. Chandelles
   D. Lazy Eights
   E. Short Field and Soft Field Takeoffs and Landings
   F. Accuracy Landings
   G. Slips to Landings
   H. Eights on Pylons

COMPLETION STANDARDS
These lessons are complete when the student has performed each of the listed maneuvers. During the performance of the maneuvers, the student should attempt to increase proficiency by developing their ability to perform smooth, coordinated maneuver entries and stabilized landing approaches.

FLIGHT LESSON 46 – PRIMARY AIRCRAFT
Dual Flight
**INSTRUCTION**
2.0 Flight *

*Learning Objectives:*
During this dual lesson, the student will reacquaint himself or herself with a cross-country flight. This flight must be at least of two hour duration and a total straight line distance of more than 100 nautical miles from the original point of departure and occurring in day VFR conditions, as per CFR 141 Appendix D Section 4 (B)(1)(iii).

*CONTENT:*
1. Pre-Flight Orientation
   A. Weight and Balance
   B. Weather
   C. Navigation Log
   D. Fuel Planning
FLIGHT LESSON 47 – PRIMARY AIRCRAFT
Solo Flight

Learning Objectives:
During this lesson the student will perform a solo cross-country flight. The three leg route will be selected, by the student, from the approved airport list in the flight packet. An instructor will review the route and navigation log before the flight occurs and notate it in the comment section of the folder.

CONTENT:
1. Pre-Flight Orientation
   A. Submit a navigation log for a three leg cross-country flight
   B. Weight and Balance
   C. Weather
   D. Fuel Planning
   E. Flight Plan Filed
2. Execute Cross-Country Involving
   A. Pilotage
   B. Dead Reckoning
   C. Radio Navigation and Communication
   D. Utilize Radar Programs

COMPLETION STANDARDS
This lesson is complete when the student has satisfactorily completed the cross-country flight. [Please be sure you have cancelled your flight plan.] The student should be able to have completed their navigation log and followed their preplanned course. Radio communication with en route facilities will also be utilized.

FLIGHT LESSONS 48 THRU 50 – PRIMARY AIRCRAFT
Solo Flight

Learning Objectives:
During these solo lessons, the student will practice the listed maneuvers and any additional maneuvers assigned by the instructor to correct any faulty areas of performance determined in Flight Lesson 47.
CONTENT:
1. Review
   A. Steep Power Turns
   B. Step Spirals
   C. Chandelles
   D. Lazy Eights
   E. Short Field and Soft Field Takeoffs and Landings
   F. Accuracy Landings
   G. Eights on Pylons

COMPLETION STANDARDS
These lessons are complete when the student has conducted the assigned solo flights. The student will attempt to increase proficiency in planning and executing the advanced flight maneuvers to obtain the maximum utilization of the training time.

FLIGHT LESSON 51 – PRIMARY AIRCRAFT
Dual Flight

Learning Objectives:
In this lesson, the student receives training in VOR tracking and bracketing to provide the student with the necessary skill to accurately use these radio aids for cross-country navigation.

CONTENT:
1. Pre-Flight Orientation
2. Review
   A. VOR Orientation
   B. VOR Bracketing and Tracking
      1) To station
      2) From station
   C. GPS Orientation
3. Post-Flight Discussion

COMPLETION STANDARDS
Based on previous radio navigation experience and this lesson, the student will demonstrate VOR bracketing and tracking; the student will be able to give their aircraft position relative to the station and visualize crosswind component direction and approximate velocity.
**FLIGHT LESSONS 52 THRU 55 – PRIMARY AIRCRAFT**

**Solo Flight**

1.2 Flight * Each

**Learning Objectives:**
During the four flight lessons, the student will practice the advanced maneuvers to further increase proficiency toward the level of a commercial pilot. Additionally, VOR navigation, if possible, will be practiced so the student may improve his ability to track specific radials and bearings.

**CONTENT:**
1. Review
   A. VOR Bracketing and Tracking
   B. Steep Power Turns
   C. Steep Spirals
   D. Chandelles
   E. Lazy Eights
   F. Short Field and Soft Field Takeoffs and Landings
   G. Accuracy Landings
   H. Eights on Pylons

**COMPLETION STANDARDS**
These lessons are complete when the student has conducted the assigned solo flights. During each lesson, the student should attempt to gain proficiency in performing the maneuvers smoothly and executing each maneuver according to a predetermined plan. The student should also attempt to intercept and track specific VOR course with no more than a four degree off course indication.

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**FLIGHT LESSON 56 – PRIMARY AIRCRAFT**

**Instruction**

1.0 Flight *

**Learning Objectives:**
During this lesson, the student will show added proficiency in the performance of advance maneuvers and make further progress toward meeting commercial pilot proficiency.

**CONTENT:**
1. Pre-Flight Orientation
2. Review
   A. Steep Power Turns
   B. Steep Spirals
   C. Chandelles
   D. Lazy Eights
   E. Eights on Pylons
   F. Accuracy Landings
      1) Power off with flaps
      2) Power off without flaps
3. Post-Flight Discussion

**COMPLETION STANDARDS**
This lesson is complete when the student can perform a steep spiral +10 knots of recommended AS, three turns, and proper entry. For steep power turns, the student must be able to perform one circle in each direction +/-150 feet +10 knots and +15° on heading, and perform this maneuver visually. The student will also increase proficiency in the remaining maneuvers.
Learning Objectives:
During Flight Lessons 57 through 59, the student will review the listed maneuvers to further develop his skill toward the level of commercial pilot proficiency.

CONTENT:
1. Review
   A. Steep Power Turns
   B. Steep Spirals
   C. Chandelles
   D. Lazy Eights
   E. Short Field and Soft Field Takeoffs and Landings
   F. Accuracy Landings
   G. Eights on Pylons
   H. Slow Flight
   I. Stalls (Power on and Off)

Completion Standards
The three lessons are complete when the student has conducted each of the assigned flights. During each flight, the student should attempt to increase their planning and performance abilities.

FLIGHT LESSON 60 – PRIMARY AIRCRAFT
Solo Flight
Learning Objectives:
Plan and execute a three-legged cross-country through controlled airspace. File a cross-country flight plan with FSS.

CONTENT:
1. Pre-Flight Orientation
   A. Prepare a cross-country flight to MCCC’s approved cross-country airports
   B. Execute the cross-country flight using pilotage and radio navigation

Completion Standards
The lesson is complete when the cross-country flight is completed and the flight plan is cancelled with FSS. The student shall utilize appropriate radio communications and navigation facilities.

FLIGHT LESSON 61 – PRIMARY AIRCRAFT
Solo Flight
Learning Objectives:
The student will review the following commercial maneuvers to improve proficiency.

CONTENT:
1. Review
   A. Steep Power Turns
   B. Steep Spirals
C. Chandelles
D. Lazy Eights
E. Short Field and Soft Field Takeoffs and Landings
F. Accuracy Landings
G. Eights on Pylons

COMPLETION STANDARDS
This lesson is complete when the student has completed the assigned maneuvers.

FLIGHT LESSON 62 – PRIMARY AIRCRAFT
Dual Flight

Learning Objectives:
During this lesson, the student will demonstrate improved performance on the commercial maneuvers. The student will concentrate on Chandelles and Accuracy Landings.

CONTENT:
1. Pre-Flight Orientation
2. Review
   A. All Commercial Maneuvers
3. Post-Flight Discussion

COMPLETION STANDARDS
The student, at the completion of this lesson, will demonstrate that he/she can perform chandelles and accuracy landings according to the Practical Test Standards.

FLIGHT LESSONS 63 THRU 65 – PRIMARY AIRCRAFT
Solo Flight

Learning Objectives:
During these lessons, the student will continue to practice and review commercial maneuvers.

CONTENT:
1. Review
   A. Commercial Maneuvers
   B. Accuracy Landings
      1) Power off with flaps
      2) Power off without flaps

COMPLETION STANDARDS
The student in the demonstration of these maneuvers should be approaching the skill level as described in Practical Test Standards.

FLIGHT LESSON 66 – PRIMARY AIRCRAFT
Dual Flight

Learning Objectives:
During this lesson, the student will perform all commercial maneuvers. The instructor will check for proper entry and form complying with commercial Practical Test Standards.

**CONTENT:**
1. Pre-Flight Orientation
2. Review – All Commercial Maneuvers
3. Post-Flight Discussion

**COMPLETION STANDARDS**
This lesson is complete when the student had performed all commercial maneuvers to Practical Test Standards. Special emphasis should be on lazy eights and pylon eights.

**FLIGHT LESSON 67 – PRIMARY AIRCRAFT**

_**Solo Flight**_

*SOLO_  

**Learning Objectives:**  
The student will review and improve commercial maneuvers prior to a proficiency check.

**CONTENT:**
1. Review  
   A. Chandelles  
   B. Lazy Eights  
   C. Steep Spirals  
   D. Accuracy Landings  
   E. Eights on Pylons  
   F. Steep Power Turns

**COMPLETION STANDARDS**  
During this lesson, the student will polish all maneuvers, performing them to Commercial Practical Test Standards.

**FLIGHT LESSON 68 – PRIMARY AIRCRAFT**

_**Dual Flight**_

*PROGRESS CHECK_  

**Learning Objectives:**  
The Chief Flight Instructor or his assistant, to determine the student’s ability to correctly perform each of the listed maneuvers and procedures, will conduct this lesson as a progress check.

**CONTENT:**
1. Pre-Flight Orientation  
2. Review  
   A. VOR Bracketing and Tracking  
   B. Slow Flight  
   C. Stalls (Power on and off)  
   D. Steep Power Turns  
   E. Steep Spirals  
   F. Chandelles  
   G. Lazy Eights  
   H. Short Field and Soft Field Takeoffs and Landings  
   I. Accuracy Landings
J. Slips to Landings
K. Eights on Pylons
3. Post-Flight Discussion

COMPLETION STANDARDS
At the completion of this lesson, the student will be able to perform all advanced flight maneuvers demonstrating the ability to preplan and execute the maneuver according to that plan. During the execution of the maneuvers, the student will be expected to demonstrate the ability to perform at the competency level of the Commercial Practical Test Standards.

FLIGHT LESSON 69 – PRIMARY AIRCRAFT
Solo Flight

* Each

Learning Objectives:
During this solo lesson, the student will review cross-country procedures to obtain greater proficiency in the use of radio communications and the three methods of navigation.

CONTENT:
1. Pre-Flight Orientation and Planning
2. Review
   A. Cross-country flight of at least three legs
   B. Tower and radar approach services

COMPLETION STANDARDS
This lesson is complete when the student has performed the cross-country flight. During this flight, the student should attempt to increase accuracy in maintaining the preplanned course and in the calculating of ETA’s.

FLIGHT LESSONS 70 & 71 – PRIMARY AIRCRAFT
Solo Flight

* Each

Learning Objectives:
During Flight Lessons 70 and 71, the student will practice flight maneuvers to gain proficiency and correct any deficiencies determined in Flight Lesson 68.

CONTENT:
1. Review
   A. Steep Power Turns
   B. Steep Spirals
   C. Chandelles
   D. Lazy Eights
   E. Controlled Flight Operation
   F. Accuracy Landings
   G. Eights on Pylons

COMPLETION STANDARDS
These lessons are complete when the student has conducted the assigned flight. Additionally, the student should attempt to gain proficiency in all advanced flight maneuvers by decreasing the time required to plan and transition from one maneuver to the next.
FLIGHT BLOCK 10 - LESSONS 72 TO 80

OBJECTIVES

The student will increase night proficiencies, fly a night solo flight and a daytime cross-country, and demonstrate throughout safety awareness and knowledge of emergency procedures.

CONTENT:

- Block Commercial Maneuvers with Night Flying and Solo Cross-Countries
- Flight Lessons 72 - 80

COMPLETION STANDARDS

The student must complete each of the individual lessons in Flight Block 10. At the completion of Flight Block 10, a night solo flight, two day solo cross-counties and night proficiencies will be accomplished.

FLIGHT LESSON 72 – PRIMARY AIRCRAFT

Dual Flight

INSTRUCTION

1.0 Flight *
0.7 Ground *

Learning Objectives:

The student will be introduced to the operational and regulatory aspects of night operations. The lesson will include takeoffs and landings in the local area to prepare the student for solo night operations.

CONTENT:

1. Pre-Flight Orientation
   A. Aircraft Equipment (91.205) and MEL Lists (91.213)
   B. Aircraft Lights (91.209)
   C. Recency of Experience (61.57)
   D. Weight and Balance including adding and removing weight and the shifting of weight

2. Introduction
   A. Aircraft Pre-flight Action
      The student will be taught the pre-flight procedures needed prior to conducting a safe night operation. Items to be covered will include:

3. Electrical Systems

4. Lighting Systems
   A. Takeoffs
   B. The student will become acquainted with the proper visual references for night takeoffs, including the possibility of the loss of ground references
   C. Landings
   D. The student will become acquainted with proper visual references and will execute normal and crosswind landings from both power on and power off approaches

E. Emergency Procedures
F. Physiological Effects
G. The student should be made aware of the special problems of hypoxia and depth perception
H. Controlled Airport Operations

5. Post-Flight Discussion
COMPLETION STANDARDS
At the conclusion of this lesson, the student will demonstrate an adjustment of visual references for night takeoffs and landings. The student will also correctly answer questions pertinent to the aircraft’s electrical and lighting systems and demonstrate that he can safely act as pilot in command during local night flight.

FLIGHT LESSON 73 – PRIMARY AIRCRAFT
Dual Flight

INSTRUCTION
1.0 Flight *

Learning Objectives:
During this lesson, the student will review and increase proficiency in the takeoff and landing phases of night operations to prepare for future night flights in the local traffic pattern. The instructor will make the determination to authorize the night solo flight.

CONTENT:
1. Pre-Flight Orientation
2. Review
   A. Pre-flight Action
   B. Takeoffs
   C. Landings
3. Post-Flight Discussion

COMPLETION STANDARDS
This lesson is complete when the student has performed the assigned night operations. At the conclusion of this lesson, the student should show increased night proficiency through the ability to execute stabilized landing approaches to a predetermined touchdown point and climb outs, after takeoff, at a constant airspeed and altitude. The instructor, upon completion of this flight, will authorize the night solo flight.

FLIGHT LESSON 74 – PRIMARY AIRCRAFT
Solo Flight

SOLO
1.0 Flight *

Learning Objectives:
During this night solo flight lesson, the student will practice night takeoff and landings. The student’s flight instructor previously must have flown lesson 73 and given written authorization for the student to do this lesson. This flight lesson is limited only to the Mercer County Airport Traffic Pattern. The student is not allowed to leave the traffic pattern. The Mercer County Airport does not allow repeated takeoff and landings after 10 p.m. Please see the coordinator for approved options during the summer.

CONTENT:
1. Pre-Flight
   A. Present dispatcher with written authorization for flight from your flight instructor for scheduling. If a dispatcher is unavailable for this scheduled flight, a flight plan must be filed with FSS.
2. Review
   A. Pre-flight action emphasizing aircraft lighting
   B. Takeoff
   C. Landings

COMPLETION STANDARDS
Lesson 74 is complete when the student has conducted the night solo takeoff and landings flight. The student should attempt to gain proficiency in performing the maneuvers with smoothness and coordination.

FLIGHT LESSON 75 – PRIMARY AIRCRAFT
Solo Flight

Learning Objectives:
In this lesson the student will further practice cross-country flying with emphasis on planning to unfamiliar fields and communications through controlled airspace.

CONTENT:
1. Pre-Flight Planning (three legs)
2. Navigation by Pilotage and Radio
3. Operations at Unfamiliar Airports
4. Radio Communications

COMPLETION STANDARDS
This lesson is complete when the student has performed the assigned flight.

FLIGHT LESSONS 76 & 77 - PRIMARY AIRCRAFT
Dual Flight

Learning Objectives:
During the two dual lessons, the student will review and gain proficiency in night flight operations.

CONTENT:
1. Pre-Flight Orientation
2. Review
   A. Takeoffs
   B. Steep Turns
   C. Minimum Controllable Airspeed
   D. Landings
   E. Night Operations at controlled airports and airports within 25 NM
   F. Simulated Engine Out Procedure
3. Post-Flight Discussion

COMPLETION STANDARDS
The two lessons are complete when the student has conducted the assigned flights. During the lessons, the student should attempt to gain proficiency in night flight abilities. All landing approaches and initial climbs after takeoff should be stabilized. Altitude control during steep turns and flight at minimum controllable airspeed should be within 150 feet.

FLIGHT LESSON 78 – PRIMARY AIRCRAFT
Solo Flight

Learning Objectives:
The student will execute a three-legged solo cross-country flight, to include one landing at Atlantic City.

**CONTENT:**
1. Pre-Flight Planning
2. Cross-Country Flying by Use of Radio Navigation and Pilotage

**COMPLETION STANDARDS**
This lesson is complete when the student has conducted the assigned flight. Student should have increased knowledge and understanding of radio communication operations.

**FLIGHT LESSON 79 – PRIMARY AIRCRAFT**

**Dual Flight**

**INSTRUCTION**

1.0 Flight *
1.0 Ground *

**Learning Objectives:**
During Lesson 79, the student will receive instruction to increase proficiency in night takeoffs, landing, and maneuvers, which will develop their professional piloting ability.

**CONTENT:**
1. Pre-Flight Orientation
2. Review
   A. Takeoffs and landings
   B. Steep turns
   C. Minimum controllable airspeed
   D. Night operations at controlled and uncontrolled fields
3. Post-Flight Discussion

**COMPLETION STANDARDS**
This lesson is complete when the student demonstrates ability to locate other airports at night, conduct safe and stabilized approach and landings, and execute steep turns and minimum controllable airspeed within 150 feet.
Learning Objectives:
This progress check, conducted by the Chief Flight Instructor or his assistant, evaluates the student's ability to perform local night flight operations with the competency of a commercial pilot. Safety in night flight operations, cross-country procedures, and emergency situations will be emphasized.

CONTENT:
1. Pre-Flight Orientation
   A. Night Cross Country Planning
2. Review
   A. Pre-flight Action
   B. Takeoff
   C. Steep Turns
   D. Minimum Controllable Airspeed
   E. Emergency Procedures
   F. Landing
   G. Controlled and Uncontrolled Airport Operations
   H. Cross Country Execution
   I. Diversion
3. Post-Flight Discussion

Completion Standards
The student will demonstrate that they can safely act as pilot in command in the night environment, which includes the use of the proper procedures and the handling of emergency situations. Conduct the cross country flight accurately and perform the diversion and the maneuvers satisfactorily.
Mercer County Community College is committed to Academic Integrity -- the honest, fair and continuing pursuit of knowledge, free from fraud or deception. This implies that students are expected to be responsible for their own work and that faculty and academic support services staff members will take reasonable precautions to prevent the opportunity for academic dishonesty. The college recognizes the following general categories of violations of Academic Integrity, with representative examples of each. Academic Integrity is violated whenever a student:

A. Uses or obtains unauthorized assistance in any academic work.
   - copying from another student's exam
   - using notes, books, electronic devices or other aids of any kind during an exam when prohibited
   - stealing an exam or possessing a stolen copy of an exam.

B. Gives fraudulent assistance to another student
   - completing a graded academic activity or taking an exam for someone else.
   - giving answers to or sharing answers with another student before, during or after an exam or other graded academic activity.
   - sharing answers during an exam by using a system of signals.

C. Knowingly represents the work of others as his/her own, or represents previously completed academic work as current.
   - submitting a paper or other academic work for credit which includes words, ideas, data or creative work of others without acknowledging the source.
   - using another author's words without enclosing them in quotation marks, without paraphrasing them or without citing the source appropriately.
   - presenting another individual's work as one's own.
   - submitting the same paper or academic assignment to another class without the permission of the instructor.

D. Fabricates data in support of an academic assignment.
   - falsifying bibliographic entries.
   - submitting any academic assignment which contains falsified or fabricated data or results.

E. Inappropriately or unethically uses technological means to gain academic advantage.
   - inappropriately or unethically acquiring material via the Internet or by any other means.
   - using any electronic or hidden devices for communication during an exam.

Each instructor and academic support service area is authorized to establish specific guidelines consistent with this policy.

CONSEQUENCES FOR VIOLATIONS OF ACADEMIC INTEGRITY
For a single violation, the faculty member will determine the course of action to be followed. This may include assigning a lower grade on the assignment, assigning a lower final course grade, failing the student in the course, or other penalty appropriate to the violation. In all cases, the instructor shall notify the Chair of the Academic Integrity Committee of the violation and the penalty imposed. When two (or more) violations of academic integrity are reported on a student, the Academic Integrity Committee (AIC) may impose disciplinary penalties beyond those imposed by the course instructors. The student shall have the right to a hearing before the AIC or a designated AIC subcommittee.

**APPEALS**

The student has a right to appeal the decision of the instructor or the Academic Integrity Committee. Judicial procedures governing violations of Academic Integrity are contained in the Student Handbook.

Approved by the MCCC Board of Trustees March 18, 2004

**CLASSROOM CONDUCT STATEMENT**

It is the student’s responsibility to attend all of their classes. If they miss a class meeting for any reason, students are responsible for all content that is covered, for announcements made in their absence, and for acquiring any materials that have been distributed in class. If students walk into a class after it has begun, it is expected that they choose a seat close to where they entered the room so that they do not disrupt the class meeting.

Students are expected to follow ordinary rules of courtesy during class sessions. Engaging in private, side conversations during class time is distracting to other students and to the instructor. Leaving class early without having informed the instructor prior to class is not appropriate. Unless there is an emergency, leaving class and returning while the class is in session is not acceptable behavior. Disruptive behavior of any type, including sharpening pencils during class while someone is speaking, is not appropriate.

The college welcomes all students into an environment that creates a sense of community of pride and respect; we are all here to work cooperatively and to learn together.