

MIDDLE TENNESSEE STATE UNIVERSITY
AEROSPACE DEPARTMENT

APPROVED PILOT SCHOOL
CERTIFICATE #CA8S053Q

FITS SCENARIO BASED PRIVATE/INSTRUMENT PILOT
CERTIFICATION COURSE-ASEL



FITS Accepted-May 25, 2004

FEBRUARY 2004

FITS Terminology/Definitions

Key Terms

Technically Advanced Aircraft (TAA) – is a general aviation aircraft that contains a GPS navigator with a moving map display, plus any additional systems. Traditional systems such as autopilots when combined with GPS navigators are included. It includes aircraft used in both VFR and IFR operations, with systems certified to either VFR or IFR standards. Note: there will be application to non-TAAs.

Light Turbine TAA- a jet or turboprop TAA certified for single-pilot operations, weighing 12,500 lbs or less, equipped with cabin pressurization, conventional (non-swept) wings and capable of operating in Class A airspace on normal mission profiles. (Note: Light Turbine TAA is specifically defined as having a non-swept wing due to the significantly increased training demands for pilots transitioning to swept wing aircraft)

Scenario-based Training (SBT) – is training system that uses a highly structured script of real-world experiences to address flight training objectives in an operational environment. Such training can include initial training, transition training, upgrade training, recurrent training, and special training. The appropriate term should appear with the term "Scenario-based," e.g., "Scenario-based Transition Training," to reflect the specific application.

Single Pilot Resource Management (SRM) – is the "art and science" of managing all resources available to a single-pilot to ensure the successful outcome of the flight.

Related Terms and Abbreviations

14 CFR part 61 and 141 – Title 14 of the Code of Federal Regulations (14 CFR) part 61 pertains to the certification of pilots and instructors, and part 141 pertains to certificated pilot schools.

Aircraft Automation Management – is the demonstrated ability to control and navigate an aircraft by means of the automated systems installed in the aircraft.

Automated Navigation leg – is a flight of 30 minutes or more conducted between two airports in which the aircraft is controlled primarily by the autopilot and the on-board navigation systems.

A **VFR Automated Navigation Leg** is flown on autopilot beginning from 1,000 ft above ground level (AGL) on the departure until the 45-degree entry to the downwind leg in the VFR airport traffic pattern.

An **IFR Automated Navigation Leg** is flown on autopilot beginning from 500 ft AGL on departure until reaching the decision altitude or missed approach point on the instrument approach. If a missed approach is flown, it will also be flown using the autopilot and on-board navigation systems.

Automation Competence - is the demonstrated ability to understand and operate the automated systems installed in the aircraft.

Automation Surprise- is the ability of an automated system to provide different cues to pilots when compared to the analog systems they replace, especially in time-critical situations.

Automation Bias – is the relative willingness of the pilot to trust and utilize automated systems.

Aviation Training Device (ATD) - is a Flight Training Device (FTD) or Personal Computer Aviation Training Device (PCATD) that is approved and authorized by the FAA to provide flight training as allowed by 14 CFR part 61 and part 141.

Candidate Assessment- is a system of critical thinking and skill evaluations designed to assess a student's readiness to begin training at the appropriate level.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Critical Safety Tasks/Events – are those mission related tasks/events that, if not accomplished quickly and accurately, may result in aircraft damage, injury, or loss of life.

Data link Situational Awareness Systems – are systems that feed real-time information to the cockpit on *weather, traffic, terrain, and flight planning*. This information may be displayed on the PFD, MFD, or on other related cockpit displays.

Desired Pilot in Training (PT) Scenario Outcomes - The object of scenario-based training is a change in the thought processes, habits, and behaviors of the PT during the planning and execution of the scenario. Since the training is “student-centered”, the success of the training is measured in the following desired PT performances:

- **Describe** – at the completion of the scenario, the PT will be able to describe the physical characteristics and cognitive elements of the scenario activities.
- **Explain** – at the completion of the scenario, the PT will be able to describe the scenario activity and understand the underlying concepts, principles, and procedures that comprise the activity.
- **Practice** – at the completion of the scenario, the student will be able to practice the scenario activity with little input from the instructor. The PT with coaching and/or assistance from the instructor will quickly correct minor deviations and errors identified by the instructor.
- **Perform** - at the completion of the scenario, the PT will be able to perform the activity without assistance from the instructor. Errors and deviations will be quickly identified and corrected by the PT. At no time will the successful completion of the activity be in doubt. “Perform” will be used to signify that the PT is satisfactorily demonstrating proficiency in traditional piloting and systems operation skills.
- **Manage/Decide** - at the completion of the scenario, the PT will be able to correctly gather the most important data, identify possible courses of action, evaluate the risk inherent in each course of action, and make the appropriate decision. “Manage/Decide” will be used to signify that the PT is satisfactorily demonstrating acceptable SRM skills.

Emergency Escape Maneuver- is a maneuver (or series of maneuvers) performed manually or with the aid of the aircrafts automated systems that will allow a pilot to successfully escape from an unanticipated flight into Instrument Meteorological Conditions (IMC) or other life-threatening situation.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Mission Related Tasks- are those tasks required for the safe and effective accomplishment of the mission.

Multi-Function Display (MFD)- is a device that combines primarily navigation, systems, and situational awareness information onto a single electronic display.

Partial Panel – Partial Panel in a TAA can be induced by covering all or parts of the PFD/MFD. Each individual TAA may be certified with a set of backup flight instruments that usually include an attitude indicator, altimeter, and airspeed indicator. The attitude indicator may be powered electrically or by vacuum. During partial panel flight it is important that the all-electric TAA pilot be aware of the life span of the batteries and understand the concept of load shedding to preserve the battery.

Pilot in Training (PT) – a person undergoing flight training.

Primary Flight Display (PFD) – is a device that combines the primary six flight instruments plus other related navigation and situational awareness information into a single electronic display.

Proficiency Based Qualification- is a qualification based on demonstrated performance rather than other flight time or experience.

Simulation- is any use of animation and/or actual representations of aircraft systems to simulate the flight environment. PT interaction with the simulation and task fidelity for the task to be performed are required for effective simulation.

Training Only Tasks – are training maneuvers that, while valuable to the PT's ability to understand and perform a mission related task, are not required for the PT to demonstrate proficiency. However, instructor pilots would be required to demonstrate proficiency in training-only tasks.

Scenario Development Guide

Scenario development is a key element of the FITS syllabus. The PT ideally will eventually conduct scenario planning with little assistance from the instructor. However, with guidance from the syllabus, the instructor sets the boundaries for each scenario and guides the planning process to ensure that learning outcomes are achieved in an orderly and efficient manner.

Instructors will review the lesson syllabus and decide an appropriate destination for the “out-and-back” scenario. Initially, short VFR cross-countries will be used to get the PT comfortable with the sensation of flight, aircraft technology, and the NAS. Later VFR and IFR scenarios will more deeply explore the aircraft’s performance envelope, the NAS, and automation management.

Prior to completion of the syllabus the PT should explore its maximum as well as minimum speed and performance envelopes, and flown it with full and near legal minimum fuel conditions.

Although not required, the instructor and PT may combine several lessons, especially in the IFR syllabus, to perform a long multi-leg trip into both terrain and airspace that the student is not familiar with. Scenarios should increase in airspace complexity. The student will, by the end of the syllabus, explore and master all classes of airspace including special use airspace and Temporary Flight Restrictions.

Instructor/PT Responsibilities

Pre-Scenario Planning - For Scenario based Instruction to be effective; it is vital that the instructor communicate to the student well in advance of the flight the following information:

- Scenario destination(s)
- Desired learning outcomes
- Desired level of PT performance (*describe, explain, perform, manage/decide, etc.*)
- Desired level of automation assistance
- Possible instructor directed in-flight scenario changes (during later stages of the program no preflight notification is required)

Scenario Planning – The student will plan the flight to include:

- Route
- Destination(s)
- Weather
- NOTAMs

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

- Desired learning outcomes
- Possible alternate scenarios and emergency procedures
NOTE: *after the basics of flight planning are mastered, the PT will be encouraged to use any automated tools available such as "DUATS" or other flight planning services that they would normally use in their day to day flying.*

Preflight Briefing – The student will brief the instructor on the flight scenario including:

- Route, weather, and NOTAMs
- Accomplishment of desired learning outcomes
- Emergency procedures and alternate scenarios

In-Flight – The PT will conduct the scenario plan with minimal intervention from the instructor. Obviously, the first few scenarios will require considerable instructor input. However, as the PT gains experience in both the physical skills associated with flying the aircraft and the mental skills required to demonstrate good decision making and SRM skills, the instructor's role should be minimal.

It is useful for the instructor to let the PT "work out" the solution to lesser problems encountered before intervening or instructing, and instructors should attempt to offer the PT assistance and instruction without actually solving the problem for them. This self-directed learning builds the PT's confidence and poise in the air, and assists them in developing their own ADM and risk management processes. *However*, if safety of flight or the completion of the scenario is in doubt, the instructor should intervene.

Post-Flight – The post-flight review should be led by the PT and should ideally lead off with a discussion of successful maneuvers, decisions, and activities. The PT should then identify those areas where he or she feels help is required and discuss what they would do differently. Based on this analysis, the PT and instructor should discuss methods and alternatives for improvement. Again, early in the syllabus the instructor may take a leading role in the post-flight review, but it is vital that the PT learn to identify performance deficiencies and corrective actions.

Scenario Grading - The object of scenario-based training is a change in the thought processes, habits, and behaviors of the PTs during the planning and execution of the scenario. Since the training is PT(student)-centered, the success of the training is measured in the following desired PT outcomes:

- ***Describe*** – at the completion of the scenario, the PT will be able to describe the physical characteristics and cognitive elements of the scenario activities.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

- **Explain** – at the completion of the scenario, the PT will be able to describe the scenario activity and understand the underlying concepts, principles, and procedures that comprise the activity.
- **Practice** – at the completion of the scenario, the student will be able to practice the scenario activity with little input from the instructor. The PT with coaching and/or assistance from the instructor will quickly correct minor deviations and errors identified by the instructor.
- **Perform** - at the completion of the scenario, the PT will be able to perform the activity without assistance from the instructor. Errors and deviations will be quickly identified and corrected by the PT. At no time will the successful completion of the activity be in doubt. "Perform" will be used to signify that the PT is satisfactorily demonstrating proficiency in traditional piloting and systems operation skills.
- **Manage/Decide** - at the completion of the scenario, the PT will be able to correctly gather the most important data, identify possible courses of action, evaluate the risk inherent in each course of action, and make the appropriate decision. "Manage/Decide" will be used to signify that the PT is satisfactorily demonstrating acceptable SRM skills.

FITS Private Instrument Flight Scenarios

Private/Instrument Flight Syllabus

Flight Training

Flight Training Course Objectives

The PT will obtain the necessary aeronautical knowledge, skill, and experience to meet the requirements for a private pilot certificate (airplane single-engine) and an instrument rating (airplane), pass the FAA practical tests and operate safely in the NAS.

Flight Training Course Completion Requirements

The PT must demonstrate through flight tests and school records that the necessary aeronautical knowledge, skill, and experience requirements to obtain a private pilot certificate (airplane single-engine) and an instrument rating (airplane) have been met. Lesson Flight Times are not given for each individual ATD Scenario or Flight Scenario. It is also important to note that the instructor must prepare the PT to satisfactorily meet the objectives of the associated Tasks of each applicable Area of Operation in the FAA Practical Test Standards.

Flight Time - Since the average flight time to attain each rating significantly exceeds the FAA mandated minimum standard, the emphasis in this syllabus is on completion of the scenario and all the scenario sub tasks to the appropriate level of proficiency. On average, ATD sessions should last approximately one hour, and flight scenarios should allot approximately one hour for each cross-country leg flown. The FAA mandated VFR and IFR cross-countries would obviously require more flight time.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Stage I

Stage Objectives

During this stage, the PT obtains the foundation for all future aviation training. The PT becomes familiar with the training airplane and learns how the airplane controls are used to establish and maintain specific flight attitudes and ground tracks. The PT will learn instrument attitude flying procedures and basic instrument navigation. The PT will also become familiar with stabilized approached while flying instrument approaches visually. In addition, the PT will become proficient in emergency procedures under visual and instrument flight conditions.

Stage Completion Standards

At the completion of this stage, the PT will demonstrate proficiency in basic flight maneuvers and will have successfully performed the instrument flying procedures included in the stage. In addition, the PT will demonstrate knowledge of emergency procedures under visual and instrument flight rules and will have the proficiency required to solo the training airplane at the beginning of Stage II.

Desired Pilot in Training (PT) Scenario Outcomes

The object of scenario-based training is a change in the thought processes, habits, and behaviors of the PTs during the planning and execution of the scenario. Since the training is PT centered, the success of the training is measured in the following desired PT outcomes:

- ***Describe*** – at the completion of the scenario, the PT will be able to describe the physical characteristics and cognitive elements of the scenario activities.
- ***Explain*** – at the completion of the scenario, the PT will be able to describe the scenario activity and understand the underlying concepts, principles, and procedures that comprise the activity.
- ***Practice*** – at the completion of the scenario, the student will be able to practice the scenario activity with little input from the instructor. The PT with coaching and/or assistance from the instructor will quickly correct minor deviations and errors identified by the instructor.
- ***Perform*** - at the completion of the scenario, the PT will be able to perform the activity without assistance from the instructor. Errors and deviations will be quickly identified and corrected by the PT. At no time will the successful completion of the activity be in doubt. "*Perform*" will be used to signify that the PT is satisfactorily demonstrating proficiency in traditional piloting and systems operation skills.
- ***Manage/Decide*** - at the completion of the scenario, the PT will be able to correctly gather the most important data, identify possible courses of action, evaluate the risk inherent in each course of action, and make the appropriate decision. "*Manage/Decide*" will be used to signify that the PT is satisfactorily demonstrating acceptable SRM skills.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 1-A
(Aviation Training Device)

Lesson Objectives:

The objective of this lesson is for the student to become familiar with available computer-based training (CBT) facilities. The main features of the Aviation Training Device (ATD), including instrumentation and controls, will be explained. The student will also be introduced to the instrument cockpit check and flight instruments systems. In addition, the student will be briefly introduced to the fundamentals of attitude instrument flying and review how the various flight instruments are used to maintain aircraft control.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson One-A

Tasks	Sub Tasks	Desired Performance
Introduce CBT/ATD	1. Orientation & Familiarization 2. Overview of Instruments and Controls	Describe Describe/Explain
Aircraft Systems	1. Instrument Cockpit Check	Describe
Full Panel Instrument	1. Straight and Level 2. Turns 3. Change of Airspeed 4. Constant Airspeed Climbs and Descents	Describe/Explain Describe/Explain Describe/Explain Describe/Explain

Completion Standards:

The PT will be familiar with the features and flight characteristics of the CBT facilities and the ATD. The instructor will determine that the PT has a basic understanding of full panel instrument references as they relate to aircraft control.

Post flight discussion and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 1-B
(ATD)

Lesson Objectives:

The student will practice the basic instrument maneuvers briefly introduced during Lesson 1-A. In addition, the student will be introduced to more typical instrument maneuvers, including rate climbs/descents, climbing/descending turns, slow slight, stalls/stall recovery, and unusual attitude recoveries.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson One-B

Tasks	Sub Tasks	Desired Performance
Aircraft Systems	1. Instrument Cockpit Check	Explain
Basic Maneuvers	1. Straight and Level 2. Turns 3. Rate Climbs 4. Climbing Turns 5. Rate Descents 6. Descending Turns	Practice Practice Explain/Practice Explain/Practice Explain/Practice Explain/Practice
Speed Control	1. Change of Airspeed 2. Constant Airspeed Climbs and Descents 3. Maneuvering during slow flight 4. Power-off stalls 5. Power-on stalls	Practice Practice Explain/Practice Explain/Practice Explain/Practice
Advanced Maneuvers & Procedures	1. Steep Turns 2. Operations in Turbulence 3. Recovery from unusual flight attitudes	Explain Explain/Practice Explain/Practice

Completion Standards:

The PT will demonstrate basic understanding of the instrument cockpit check and an improving proficiency in basic instrument maneuvers. The instructor will determine through observation and oral questioning that the PT has gained a basic understanding of common instrument maneuvers. The PT should be able to maintain altitude within 200 feet and headings within 15 degrees during level flight. Climb and descent airspeeds will be maintained within 15 knots. In addition, the PT should be able to recognize the approach of stalls and demonstrate the correct recovery procedures from unusual flight attitudes.

Post flight discussion and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 1

Scenario Objective:

During the first leg, the PT will use all checklists, identify and locate appropriate check points for a visual cross country flight, relate the movement of the airplane in flight to each of the primary controls. The cross country should be at least 20 nm from Murfreesboro airport (MBT) but not greater than 50 nm. During the return leg, the PT will control the airplane in straight and level, medium bank turns, climbs, and descents.

The PT will participate in planning a short cross-country flight with a full-stop landing and a return to the Murfreesboro airport (MBT). The first leg in the initial orientation flight and the activities listed should be introduced as a part of the normal flight from one airport to another.

During this initial orientation flight, the student is introduced to the training airplane and its systems. The PT will learn about certificates, documents, checklists, how to conduct the necessary preflight activities, be introduced to functions of the flight controls, and be shown how they are used to maintain specific attitudes. The four fundamental flight maneuvers as well as normal takeoff and landing procedures. Emphasis will be on preflight preparation and procedures with introductory discussion of navigational charts, pilotage, the route of flight and the destination airport. The PT will practice on the return leg and be introduced to basic instrument flying. The instructor should allow the PT time during the cruise portion of the flight to explore the features of the aircraft cabin and the cockpit automation.

*** Indicates tasks and sub-tasks to be introduced/practiced during the return phase of the flight*

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Preflight SRM briefing 6. Decision making and risk management 	<p style="text-align: center;">Describe Explain Describe Describe Describe Describe</p>
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. ** Minimum equipment list 4. Cockpit management 5. PFD Setup 6. Airplane Servicing 7. BRS Preflight 8. Operation of systems 9. Positive exchange of flight controls 	<p style="text-align: center;">Explain Describe Describe Explain Explain Describe Describe Describe Practice</p>
** Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. ** Aircraft flight instrument and navigation equipment 2. ** Preflight check of instruments, equipment, and systems, MFD setup 3. ** Instrument cockpit check 4. Automation management 	<p style="text-align: center;">Describe Describe Describe Describe</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. ** Airport and runway markings and lighting 3. Radio Communications 4. Taxi 5. ** Cross wind taxi 6. SRM/Situational awareness 	<p>Explain Describe</p> <p>Describe Describe Explain Explain</p>
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. ** Wind shear avoidance 3. Aircraft automation management 4. Aeronautical Decision making and risk management 	<p>Explain</p> <p>Explain Explain</p> <p>Explain</p>
Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Situational awareness 3. SRM/ and risk management 	<p>Describe Explain Explain</p>
Climb procedures	<ol style="list-style-type: none"> 1. Constant speed climbs & climbing turns (IR & VR) 2. Departure procedures 3. Pilotage 4. Situational awareness, task management, and SRM 5. Collision avoidance precautions 6. **Autopilot climb 	<p>Describe</p> <p>Explain Describe Explain</p> <p>Explain Describe</p>
Cruise procedure	<ol style="list-style-type: none"> 1. Manual straight and level flight (IR and VR) 2. Power management & basic speed control (VR and IR) 3. Collision avoidance precautions 4. Pilotage 5. Wind Drift corrections 6. Situational awareness, task management, and SRM 7. Standard rate turns to headings (VR and IR) 8. ** Autopilot cruise 	<p>Describe</p> <p>Describe</p> <p>Describe</p> <p>Describe Explain Explain Describe Describe</p>
Descent Planning and execution	<ol style="list-style-type: none"> 1. Descents, descending turns, and transition to level flight 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 	<p>Describe</p> <p>Explain Explain</p>
Approach Procedures	<ol style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. ** Wind shear avoidance 5. Communications 6. Normal approach 	<p>Explain Explain Explain</p> <p>Explain Explain Explain</p>
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. After landing procedures 	<p>Explain Explain Explain</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. BRS Post Flight 4. Securing 	<p>Explain Explain</p> <p>Describe Explain</p>
---	---	--

OUTBOUND FLIGHT

Completion Standard:

- No specific performance skills required
- PT should be comfortable and relaxed at all times.
- Display basic knowledge of aircraft systems and the necessity of checking their operation before flight.
- Become familiar with the control systems and how they are used to maneuver the airplane on the ground and in the air.

RETURN FLIGHT

Completion Standard:

- Display increased proficiency in preflight activities, ground operations, and coordinated airplane attitude control.
- Perform takeoff with instructor assistance.
- Be familiar with control usage necessary to maintain altitude within 250 feet during airspeed and configuration changes.
- Exhibit understanding of the instrument cockpit check, aircraft systems related to IFR, and attitude control by instrument reference (IR).

Post flight feedback and preview of next lesson.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 2-A
(ATD)

Lesson Objectives:

The PT increases attitude instrument flight proficiency by performing steep turns, slow slight, stalls, and recovery from unusual flight attitudes

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Two-A

Tasks	Sub Tasks	Desired Performance
Aircraft Systems	<ol style="list-style-type: none"> 1. Instrument cockpit check 2. Systems related to IFR Operations 3. Flight Instruments and navigation equipment 	<p>Practice Explain</p> <p>Explain</p>
Basic Maneuvers	<ol style="list-style-type: none"> 1. Straight and Level 2. Turns 3. Rate Climbs 4. Climbing Turns 5. Rate Descents 6. Descending Turns 	<p>Practice Practice Practice Practice Practice Practice</p>
Speed Control	<ol style="list-style-type: none"> 1. Change of Airspeed 2. Constant Airspeed Climbs and Descents 3. Maneuvering during slow flight 4. Power-off stalls 5. Power-on stalls 	<p>Practice Practice</p> <p>Practice Practice Practice</p>
Advanced Maneuvers and Procedures	<ol style="list-style-type: none"> 1. Steep Turns 2. Operations in Turbulence 3. Recovery from unusual flight attitudes 	<p>Practice Practice Practice</p>

Completion Standard:

PT will maintain altitude within 200 feet and headings within 15 degrees during level flight. Climb and descent airspeeds will be maintained within 15 knots. In addition, the PT should be able to immediately recognize the approach of stalls and demonstrate the correct recover procedures from stalls and unusual flight attitudes.

Post flight discussion and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 2

Scenario Objectives:

The student will participate in planning a short visual cross-country flight at least 20 nm from MBT but not greater than 50 nm. The plan will include a review of airspeed control during basic maneuvers. The plan will include traffic patterns, pattern entries and departures, and additional instrument maneuvers. Emphasis will be directed to proper execution of the listed basic maneuvers and procedures, particularly takeoffs, traffic patterns and landings.

The PT will be able to control the path of the aircraft over the ground in all normal flight conditions with corrections for wind drift.

NOTE: A view-limiting device is required for the dual instrument time allocated to this lesson.

Lesson Scenario:

The PT will plan a short cross-country flight originating from MBT with the instructor providing feedback. The route of flight is a repeat of the first lesson (if possible). The PT will PRACTICE the maneuvers and procedures learned in Lesson 1. When established en route, the instructor will DEMONSTRATE basic speed control including flight at low cruise, approach speed, minimum controllable speed, and power on and power off stalls. These maneuvers should be performed en route and integrated into the normal flight profile.

The return flight will be a reverse of Leg 1 and the same as the route flown on Leg 2 of Lesson 1. The return flight will be flown using Pilotage and Dead Reckoning navigation and control for wind drift. The plan should provide for continued practice of the maneuvers and procedures already learned as well as an introduction into emergency operations and expanded BAI.

Indicates tasks and sub-tasks to be introduced/practiced during the outbound phase of the flight

** Indicates tasks and sub-tasks to be introduced/practiced during the return phase of the flight

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Preflight SRM briefing 6. Decision making and risk management 7. # Emergency Operations 	<p style="text-align: center;">Describe</p> <p style="text-align: center;">Describe</p> <p style="text-align: center;">Explain</p> <p style="text-align: center;">Describe</p> <p style="text-align: center;">Describe</p> <p style="text-align: center;">Describe</p> <p style="text-align: center;">Explain</p>
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. PFD/MFD setup 6. BRS Preflight 7. Airplane Servicing 8. Operation of systems 9. Positive exchange of flight controls 	<p style="text-align: center;">Describe</p> <p style="text-align: center;">Describe</p> <p style="text-align: center;">Explain</p> <p style="text-align: center;">Describe</p> <p style="text-align: center;">Describe</p> <p style="text-align: center;">Practice</p> <p style="text-align: center;">Describe</p> <p style="text-align: center;">Explain</p> <p style="text-align: center;">Practice</p>
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 	Describe

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 2. Preflight check of instruments, equipment, systems, & MFD setup 3. Instrument cockpit check 4. Automation management 	<p>Describe</p> <p>Describe</p> <p>Describe</p>
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. Taxi 5. ** Runway incursion avoidance 6. Cross wind taxi 7. SRM/Situational awareness 	<p>Practice</p> <p>Practice</p> <p>Practice</p> <p>Practice</p> <p>Describe</p> <p>Describe</p> <p>Describe</p>
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Wind shear avoidance 3. Aircraft automation management 4. Aeronautical Decision making and risk management 	<p>Describe</p> <p>Describe</p> <p>Describe</p> <p>Describe</p>
Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Situational awareness 3. SRM and risk management 	<p>Practice</p> <p>Describe</p> <p>Describe</p>
Climb procedures	<ol style="list-style-type: none"> 1. Constant speed climbs & climbing turns (IR & VR) 2. # Constant rate climbs (IR & VR) 3. Departure procedures 4. Pilotage and Dead Reckoning 5. Situational awareness, task management, and SRM 6. Collision avoidance precautions 7. Autopilot climb 	<p>Practice</p> <p>Describe</p> <p>Describe</p> <p>Practice</p> <p>Explain</p> <p>Practice</p> <p>Practice</p>
Cruise procedure	<ol style="list-style-type: none"> 1. Manual straight and level flight (IR and VR) 2. Power management & basic speed control (VR and IR) 3. Collision avoidance precautions 4. Pilotage 5. Wind Drift corrections 6. Situational awareness, task management, and SRM 7. Standard rate turns to heading (VR and IR) 8. ** Maneuvering during slow flight (IR & VR) 9. ** Steep turns 10. Autopilot cruise 11. ** Lean assist (if so equipped) 12. ** Best economy vs. best power 	<p>Practice</p> <p>Describe</p> <p>Practice</p> <p>Practice</p> <p>Describe</p> <p>Explain</p> <p>Practice</p> <p>Describe</p> <p>Describe</p> <p>Describe</p> <p>Practice</p>
Descent Planning and execution	<ol style="list-style-type: none"> 1. Descents, descending turns, and transition to level flight 2. # Rate descents (IR and VR) 	<p>Explain</p> <p>Describe</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 3. # Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM 	<p>Describe Explain Explain</p>
Approach Procedures	<ol style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 5. Communications 6. Normal approach 	<p>Describe Explain Explain</p> <p>Describe Explain Explain</p>
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Land and Hold Short Operations (LAHSO) 4. After landing procedures 	<p>Explain Describe Describe</p> <p>Practice</p>
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. BRS Post Flight 4. Securing 5. ** Instrument post flight procedures 	<p>Practice Practice</p> <p>Practice Practice Describe</p>

OUTBOUND FLIGHT

Completion Standard:

- Display increased proficiency in coordinated airplane attitude control during basic maneuvers.
 - Altitude within 250'
 - Airspeed within 10 kts.
 - Heading within 10 degrees
- Demonstrate correct communications and traffic pattern procedures.
- Complete landings with instructor assistance.
- Maintain altitude within 250 feet during airspeed transitions and while maneuvering at slow airspeeds.
- Indicate basic understanding of traffic patterns, pattern entries, and departures.
- Demonstrate ability to perform the listed instrument maneuvers.

RETURN FLIGHT

Completion Standard:

- Display increased proficiency in coordinated airplane attitude control during basic maneuvers.
- Perform unassisted takeoffs
- Exhibit correct communications and traffic pattern procedures.
- Complete landings with instructor assistance
- Demonstrate basic understanding of airport operations and collision avoidance procedures.
- Indicate basic understanding of airplane control by use of the flight instruments for rate climbs/descents and climbing/descending turns.

Post flight feedback and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 3-A
(ATD)

Lesson Objectives:

The PT will be introduced to procedures for flying specific maneuvers under partial panel conditions, as well as related systems or equipment malfunctions.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Three-A

Tasks	Sub Tasks	Desired Performance
Aircraft Systems	<ol style="list-style-type: none"> 1. Instrument Failure 2. Systems Failure 3. Loss of Gyro Attitude and/or Heading Indicators 	Explain Explain Explain
Basic Maneuvers (Partial Panel)	<ol style="list-style-type: none"> 1. Straight and Level 2. Standard-Rate Turns 3. Rate Climbs 4. Climbing Turns 5. Rate Descents 6. Descending Turns 	Practice Practice Practice Practice Practice Practice
Speed Control (Partial Panel)	<ol style="list-style-type: none"> 1. Change or Airspeed 2. Constant Airspeed climbs 3. Constant Airspeed descents 4. Maneuvering during slow flight 5. Power-off stalls 6. Power-on stalls 	Practice Practice Practice Practice Practice Practice
Advanced Maneuvers & Procedures (Partial Panel)	<ol style="list-style-type: none"> 1. Recovery from unusual flight attitudes 2. Magnetic Compass turns 3. Timed turns to Magnetic compass headings 	Practice Practice Practice

Completion Standard:

The instructor will determine through oral quizzing that the PT understands the change in instrument reference necessary to maintain aircraft control while using partial panel.

Post flight discussion and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 3

Scenario Objectives:

Review maneuvers to gain proficiency and provide for an introduction to stalls from various flight attitudes in order to increase understanding of airplane control during normal and critical flight conditions. Allow the student to explain significant navigation features including the destination airport. Provide opportunity for limited normal landing and takeoff practice at both airports. Introduce unusual attitude recovery procedures.

Lesson Scenario:

This is a short cross-country flight to an airport that has not been visited and is at least 20 nm from MBT but not greater than 50 nm. The PT will participate in planning a short cross-country flight with a full stop landing and a return to the Murfreesboro airport (MBT). The first leg in the initial orientation flight and the activities listed should be introduced as a part of the normal flight from one airport to another. By Scenario Three, the PT should be allowed to conduct the basic preflight planning, departure, and enroute portion of the flight. The instructor should limit instruction during this phase to filling gaps in the PT's knowledge, correcting incorrect procedures and techniques, and introducing new learning tasks. During the stop at the first destination, the instructor should conduct a mini critique of the outbound leg and should expect PT improvement in planning and execution on the return leg. The instructor will need to introduce the concept of wind correction during the approach and landings at the destination and upon the return to the departure point. Normal landing instruction and practice should begin. The mini critique should be used to correct PT performance and landing performance should improve upon return to the departure airport.

Indicates tasks and sub-tasks to be introduced/practiced during the outbound phase of the flight

** Indicates tasks and sub-tasks to be introduced/practiced during the return phase of the flight

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Preflight SRM briefing 6. Decision making and risk management 7. # Emergency Operations 	<p>Practice</p> <p>Perform</p> <p>Practice</p> <p>Practice</p> <p>Practice</p> <p>Explain</p> <p>Describe</p>
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. PFD/MFD setup 6. BRS Preflight 7. Airplane Servicing 8. Operation of systems 9. Positive exchange of flight controls 	<p>Explain</p> <p>Explain</p> <p>Explain</p> <p>Explain</p> <p>Explain</p> <p>Perform</p> <p>Explain</p> <p>Explain</p> <p>Perform</p>
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, 	<p>Explain</p> <p>Explain</p> <p>Explain</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<p>equipment, systems & MFD setup</p> <ol style="list-style-type: none"> 4. Instrument cockpit check 5. Automation management 	<p>Explain Explain</p>
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. Taxi 5. Runway incursion avoidance 6. Cross wind taxi 7. SRM/Situational awareness 	<p>Practice Practice</p> <p>Practice Practice Explain Explain Explain</p>
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Wind shear avoidance 3. Aircraft automation management 4. Aeronautical Decision making and risk management 	<p>Explain</p> <p>Explain Describe/Explain</p> <p>Explain</p>
Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Situational awareness 3. SRM/ and risk management 	<p>Practice Explain Explain</p>
Climb procedures	<ol style="list-style-type: none"> 1. Constant speed climbs & climbing turns (IR & VR) 2. Constant rate climbs (IR & VR) 3. Departure procedures 4. Pilotage 5. Situational awareness, task management, and SRM 6. Collision avoidance precautions 7. Autopilot climb 	<p>Practice</p> <p>Explain Explain Practice Explain</p> <p>Practice Practice</p>
Cruise procedure	<ol style="list-style-type: none"> 1. Manual straight and level flight (IR and VR) 2. Power management & basic speed control (VR and IR) 3. Collision avoidance precautions 4. Pilotage 5. Wind Drift corrections 6. Situational awareness, task management, and SRM 7. Standard rate turns to heading (VR and IR) 8. Maneuvering during slow flight (IR & VR) 9. Unusual attitude recovery (VR & IR) 10. Steep turns 11. # Power-off stalls (IR and VR) 12. # Power-on stalls (IR and VR) 13. # Operations in Turbulence 14. **Magnetic compass turns 15. **Wake turbulence avoidance 16. **System and equipment malfunctions 17. **Demonstrated stalls (secondary, accelerated, trim, cross-control) 	<p>Practice</p> <p>Explain</p> <p>Practice Practice Explain Explain</p> <p>Practice</p> <p>Explain</p> <p>Explain Explain Describe Describe Describe Describe Describe Describe Describe</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	18. **Spin awareness 19. **Flight at slow airspeeds with realistic distractions 20. Lean assist (if so equipped) 21. Best economy vs. best power 22. Autopilot cruise	Describe Describe Describe Explain Explain
Descent Planning and execution	1. Descents, descending turns, and transition to level flight 2. Rate descents (IR and VR) 3. Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM	Practice Explain Explain Practice Practice
Approach Procedures	1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 5. Communications 6. Normal approach 7. ** Emergency approach and landing 8. ** Emergency descent	Explain Practice Practice Explain Practice Practice Describe Describe
Landing	1. Before landing procedures 2. Normal landing 3. Land and Hold Short Operations (LAHSO) 4. After landing procedures	Practice Explain/Practice Explain Practice
Taxi and aircraft shutdown and securing procedure	1. Use of Checklist 2. Aircraft ground operations and parking 3. BRS Post Flight 4. Securing 5. Instrument post flight procedures	Practice Practice Perform Practice Explain

OUTBOUND FLIGHT

Completion Standard:

- Display increased proficiency in coordinated airplane attitude control during basic maneuvers.
- Perform unassisted takeoffs
- Demonstrate correct traffic pattern and communication procedures
- Complete landings with a minimum of instructor assistance.
- Demonstrate the ability to recognize and recover from stalls during attitude instrument flight
- Indicate the ability to control aircraft attitude during loss of gyroscopic attitude instruments.
- Stalls will be performed so that:
 - Airspeed never exceeds cruise speed
 - No secondary stalls are incurred
 - Control manipulation is prompt, positive, and coordinated

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

RETURN FLIGHT

Completion Standard:

- Display increased proficiency in coordinated airplane attitude control
- Demonstrate ability to maintain aircraft control during stalls and slow flight
- Demonstrate ability to recognize loss of attitude and/or heading indicators.
- Indicate ability to control aircraft without attitude instruments
- Exhibit basic ability to control the airplane during slow flight and stalls/stall recovery by instrument reference
- Display increased proficiency and skill in recovering from unusual attitudes
- Demonstrate spin awareness
- Indicate ability to conduct in-flight emergency procedures
- Exhibit basic understanding and ability to control wind drift
- Indicate increasing proficiency and student confidence in stall maneuvers.

Post flight feedback and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 4-A
(ATD)

Lesson Objectives:

The student is given an opportunity to practice VOR orientation, radial interception, and tracking procedures. VOR time, speed, and distance computations are also introduced. In addition, the student is taught the procedural differences between NDB homing and the interception and tracking of NDB bearings.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Four-A

Tasks	Sub Tasks	Desired Performance
VOR Navigation	<ol style="list-style-type: none"> 1. VOR Accuracy Test 2. VOR Orientation 3. Intercepting and tracking VOR Radials 4. VOR Time, Speed, and Distance computations 5. Intercepting and tracking DME Arcs 	Practice Explain Explain Explain Describe/Explain
NDB Navigation	<ol style="list-style-type: none"> 1. NDB Orientation 2. NDB Homing 3. Intercepting and Tracking NDB bearings 	Describe Describe/Explain Describe

Completion Standard:

The student will demonstrate an understanding of the procedures used to perform VOR time, speed, and distance computations, and the interception and tracking of VOR radials and DME arcs. The student also will understand the use of the NDB for homing and NDB bearing interception and tracking.

Post flight discussion and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 4

Flight Review

Scenario Objectives:

This flight will be conducted by an instructor other than the PT's regularly assigned instructor. PT will review basic flight operation. Instructor will evaluate knowledge and skill level to determine if the PT is progressing normally. Emphasis will be on safety of flight considerations during preflight activities, ground operations, basic aircraft control, airport operations, and basic attitude instrument flying.

This is a short cross-country flight at least 20 nm from MBT but not greater than 50 nm, preferably to the airport visited during scenario three with a return to MBT. The PT will plan a short cross-country flight with a full stop landing and a return to the point of origin. The PT should be allowed to conduct the basic preflight planning, departure, en route and arrival portion of the flight. The instructor should limit instruction during this phase to correcting incorrect procedures and techniques. During the stop at the cross-country destination, the instructor should conduct a mini critique of the outbound leg and should expect PT improvement in planning and execution on the return leg. The mini critique should be used to correct PT performance and landing performance should improve upon return to the departure airport.

Scenario Tasks	Scenario Sub Tasks	Desired Learning Outcome
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Preflight SRM briefing 4. Decision making and risk management 	Practice Perform Practice Explain/practice
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. PFD setup 6. MFD setup 7. Airplane Servicing 8. Positive exchange of flight controls 9. Automation management 	Practice Practice Practice Practice Explain Describe Perform Perform Explain
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. Taxi 5. Runway incursion avoidance 6. SRM/Situational awareness 7. Cross wind Taxi 	Practice Practice Practice Practice Practice Explain/practice Practice
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Aeronautical Decision making and risk management 3. Wind shear avoidance 4. Aircraft automation management 	Explain Explain/practice Practice Practice

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Situational awareness 3. SRM/ and risk management 	<p>Practice Practice Practice</p>
Climb procedures	<ol style="list-style-type: none"> 1. Constant speed climbs & climbing turns (IR & VR) 2. Departure procedures 3. Constant Rate Climb 4. Pilotage 5. Situational awareness, task management, and SRM 6. Collision avoidance precautions 7. Autopilot climb 	<p>Practice Practice Practice Practice Practice Practice</p>
Cruise procedure	<ol style="list-style-type: none"> 1. Manual straight and level flight (IR and VR) 2. Power management & basic speed control (VR and IR) 3. Collision avoidance precautions 4. Wind Drift corrections 5. Situational awareness, task management, and SRM 6. Standard rate turns to heading (VR and IR) 7. Maneuvering during slow flight (IR & VR) 8. Unusual attitude recovery (VR & IR) 9. Power-off stalls (IR and VR) 10. Power-on stalls (IR and VR) 11. Spin awareness 12. Autopilot cruise 13. Lean assist (if so equipped) 14. Best economy vs. best power 15. Steep Turns 16. Pilotage 17. Magnetic Compass Turns 18. Operations in Turbulence 19. Systems and equipment malfunctions 20. Flight at slow speeds with realistic distractions 21. Demonstration Stalls (secondary, accelerated, trim, cross-control) 22. Wake turbulence avoidance 	<p>Practice Practice Practice Practice Practice Practice Practice Explain Explain Explain Practice Practice Practice Practice Explain Practice Explain Explain Explain Practice Explain Practice</p>
Descent Planning and execution	<ol style="list-style-type: none"> 1. Descents, descending turns, and transition to level flight 2. Rate descents (IR & VR) 3. Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM 	<p>Practice Explain Practice Practice Practice</p>
Approach Procedures	<ol style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Emergency descent 	<p>Practice Explain</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 3. Emergency Approach and landing 4. Wind shear avoidance 5. Collision avoidance precautions 6. Situational awareness, task management and SRM 7. Communications 8. Normal approach 	<p>Explain Practice Practice Practice</p> <p>Practice Practice</p>
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Land & Hold short operations (LAHSO) 4. After landing procedures 	<p>Practice Practice Practice</p> <p>Practice</p>
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument Post flight procedures 	<p>Practice Practice</p> <p>Perform Practice</p>

Completion Standard:

- Demonstrate good understanding of preflight activities and safe operating practices.
- Exhibit normal (for this stage of training) knowledge and proficiency in performance of the assigned maneuvers and procedures
- Be able to safely maintain altitude within 200 feet, headings within 15 degrees, and climb/descent airspeeds within 15 knots.
- Accurately control the airplane by both visual and instrument reference during basic maneuvers
- Show a basic understanding of aircraft systems

Post flight feedback and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 5-A
(ATD)

Lesson Objectives:

The PT increases attitude instrument flight proficiency by performing steep turns, slow flight, stalls, and recovery from unusual flight attitudes. VOR navigation procedures are reviewed and localizer navigation procedures are introduced.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Five-A

Tasks	Sub Tasks	Desired Performance
Aircraft Systems	<ol style="list-style-type: none"> 1. Instrument cockpit check 2. Aircraft flight instruments and navigation equipment 3. Preflight check of instruments, equipment, and systems 	Practice Practice Practice
Maneuvers	<ol style="list-style-type: none"> 1. Straight and Level 2. Standard rate turns 3. Rate climbs 4. Climbing turns 5. Rate Descents 6. Descending turns 7. Rectangular Course 8. S-Turns 9. Turns Around a Point 	Practice Practice Practice Practice Practice Practice Practice Practice
Speed Control	<ol style="list-style-type: none"> 1. Change of Airspeed 2. Constant Airspeed climbs 3. Constant Airspeed descents 4. Maneuvering During Slow flight (partial panel) 5. Power-off stalls (partial panel) 6. Power-on stalls (partial panel) 	Practice Practice Practice Practice Practice Practice
Advanced Maneuvers and Procedures	<ol style="list-style-type: none"> 1. Steep turns (partial panel) 2. Recovery from unusual flight attitudes (partial panel). 3. Operations in turbulence (partial panel) 	Practice Practice Practice
Navigation	<ol style="list-style-type: none"> 1. VOR Navigation 2. Localizer Identification and Tracking 	Explain Explain

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Completion Standards:

The PT will maintain altitude within 200 feet and headings within 15 degrees during level flight. Climb and descent airspeeds will be maintained within 15 knots. In addition, the PT should be able to immediately recognize the approach of stalls and demonstrate the correct recovery procedures from unusual flight attitudes. The PT will also exhibit understanding of VOR navigation and Localizer identification and tracking.

Post flight discussion and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 5

Scenario Objectives:

This will be a cross-country flight with landings at 2 airports other than MBT. At least one of the airports should have an operating control tower with Class C or D airspace. PT will practice Dead Reckoning navigation and will be introduced to basic radio aids to navigation, basic system failures, emergency operations, and basic instrument procedures. PT will be introduced to short and soft field operations. Provide an opportunity for normal landing and takeoff practice at each airport as required.

Provide post flight feedback at the end of each leg along with a preview of the next phase of flight.

Indicates tasks and sub-tasks to be introduced/practiced during the outbound phase of the flight

** Indicates tasks and sub-tasks to be introduced/practiced during the return phase of the flight

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. # Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	Practice Perform Perform Perform Perform Describe Practice Practice Practice
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. Airplane Servicing 6. Operation of systems 7. Positive exchange of flight controls 	Practice Practice Perform Practice Perform Explain Perform
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, equipment, systems & MFD setup 4. Instrument cockpit check 5. Automation management 	Explain Practice Explain Explain Explain
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. Taxi 5. Runway incursion avoidance 6. Cross wind taxi 7. SRM/Situational awareness 	Practice Practice Practice Practice Practice Practice Practice
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 	Practice

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	6. **Intercepting and Tracking VOR radials	Describe
Descent Planning and execution	1. Descents, descending turns, and transition to level flight 2. Rate descents (IR and VR) 3. Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM	Practice Practice Practice Practice
Approach Procedures	1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent	Practice Practice Practice Practice Perform Practice Explain Explain
Landing	1. Before landing procedures 2. Normal landing 3. ** Short-field approach and landing 4. ** Soft-field approach and landing 5. Land and Hold Short Operations (LAHSO) 6. After landing procedures	Perform Practice Describe Describe Practice Perform
Taxi and aircraft shutdown and securing procedure	1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures	Perform Perform Perform Perform

OUTBOUND FLIGHT

Completion Standard:

- Exhibit understanding of attitude instrument flying
- Indicate good understanding of local airport and airspace rules as well as systems and equipment malfunctions and related emergency procedures
- Demonstrate continued progress in instrument proficiency, both full and partial panel
- Exhibit basic understanding of instrument system and equipment malfunctions.
- Display an understanding of basic SRM skills

RETURN FLIGHT

Completion Standard:

- Competently perform preflight duties and all other procedures and maneuvers listed in the lesson. Altitude will be maintained within 150 feet, headings within 15 degrees, and airspeed within 10 knots.
- Exhibit good knowledge of the demonstrated stalls and a basic understanding of VOR navigation
- Display an understanding of basic SRM skills

Post flight feedback and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 6-A
(ATD)

Lesson Objectives:

Introduce the PT to the GPS navigation trainer. PT should exhibit a basic understanding of GPS principles, navigation procedures, and operations.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Six-A

Tasks	Sub Tasks	Desired Performance
Training equipment	1. GPS Navigation Trainer Operation Principles	Practice
Navigation	1. GPS Orientation 2. GPS Navigation 3. Direct 4. Flight Plan 5. Nearest	Explain Explain Practice Explain Practice
Approach	1. Basic GPS Approach	Explain

Completion Standards:

The PT will demonstrate a basic knowledge of GPS operating principles. In addition, the PT should exhibit the ability to maintain orientation while using the GPS navigation trainer.

Post flight discussion and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 6

Scenario Objectives:

This is a cross-country flight with landings at 2 different airports, other than MBT, that will provide the opportunity for actual crosswind takeoff and landing practice. This scenario should be a repeat trip from Lesson 5 in reverse direction. The PT will learn the basic procedures for crosswind takeoffs, landing from a forward slip, and go-around from a rejected landing. The GPS will be introduced for navigation. During this flight the instructor may begin to introduce emergency and abnormal procedures. The instructor should observe both good procedural knowledge as well as solid decision making and risk management based on factual analysis of the problem presented.

Indicates tasks and sub-tasks to be introduced during the outbound phase of the flight

** Indicates tasks and sub-tasks to be introduced during the return phase of the flight

Scenario Tasks	Scenario Sub Tasks	Desired PT performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	<p>Practice</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Explain</p> <p>Practice</p> <p>Practice</p> <p>Practice</p>
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. Airplane Servicing 6. Operation of systems 7. Positive exchange of flight controls 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Practice</p> <p>Perform</p> <p>Practice</p> <p>Perform</p>
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, equipment, and systems, MFD setup 4. Instrument cockpit check 5. VOR Accuracy Test 6. Automation Management 	<p>Practice</p> <p>Practice</p> <p>Explain</p> <p>Practice</p> <p>Describe</p> <p>Explain</p>
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. # ATC light signals 5. Taxi 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness 	<p>Practice</p> <p>Practice</p> <p>Perform</p> <p>Describe</p> <p>Practice</p> <p>Practice</p> <p>Practice</p> <p>Practice</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Wind shear avoidance 3. Aircraft automation management 4. Aeronautical Decision making and risk management 	Practice Practice Practice Practice
Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Short-field takeoff and climb 3. Soft-field takeoff and climb 4. # Crosswind takeoff and climb 5. Situational awareness 6. SRM/ and risk management 	Perform Explain Explain Describe Practice Practice
Climb procedures	<ol style="list-style-type: none"> 1. Constant speed climbs & climbing turns (IR & VR) 2. Constant rate climbs (IR & VR) 3. Departure procedures 4. Pilotage 5. Situational awareness, task management, and SRM 6. Collision avoidance precautions 	Perform Practice Practice Practice Practice
Cruise procedure	<ol style="list-style-type: none"> 1. Manual straight and level flight (IR and VR) 2. Power management & basic speed control (VR and IR) 3. Collision avoidance precautions 4. Pilotage 5. Dead Reckoning navigation 6. Ground Track / Wind Drift corrections 7. Situational awareness, task management, and SRM 8. Medium Banked Standard rate turns to headings (VR and IR) 9. Maneuvering during slow flight (IR & VR) 10. Unusual attitude recovery (VR & IR) 11. Operations in Turbulence 12. Magnetic compass turns 13. Wake turbulence avoidance 14. System and equipment malfunctions 15. Demonstrated stalls (secondary, accelerated, trim, cross-control) 16. Spin awareness 17. Flight at slow airspeeds with realistic distractions 18. Timed turns to magnetic compass headings 19. ** GPS operations & procedures 20. GPS Orientation 21. GPS Fixes 22. GPS Direct 23. GPS flight planning and basic "T" approach 24. Nearest function on the GPS 	Perform Practice Practice Practice Explain Practice Practice Practice Practice Practice Practice Practice Practice Practice Practice Practice Practice Describe Describe Describe Describe Describe Describe

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Training Maneuvers & Procedures	<ol style="list-style-type: none"> 1. Steep turns 2. Power-off stalls (IR and VR) 3. Power-on stalls (IR and VR) 4. VOR Orientation 5. Intercepting and Tracking VOR radials 6. Emergency descents and climbs using radio aids or radar directives 	<p>Explain Explain Explain Explain Explain Describe</p>
Descent Planning and execution	<ol style="list-style-type: none"> 1. Descents, descending turns, and transition to level flight 2. Rate descents (IR and VR) 3. Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM 	<p>Practice</p> <p>Practice Practice Perform Manage/Decide</p>
Approach Procedures	<ol style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent 9. # Aborted approach (go-around) to landing 10. # Forward slips 11. ** VOR approach (VR) 	<p>Practice Perform Manage/Decide</p> <p>Perform Perform Practice Practice Practice Describe Describe</p>
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Short-field approach and landing 4. Soft-field approach and landing 5. # Crosswind approach and landing 6. Land and Hold Short Operations (LAHSO) 7. After landing procedures 	<p>Perform Practice Explain Explain Describe Practice</p> <p>Perform</p>
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures 	<p>Perform Perform Perform Perform</p>

OUTBOUND FLIGHT

Completion Standard:

- Demonstrate competence in airport operations.
- Accomplish emergency procedures with minimal assistance
- Indicate increasing proficiency and precision in ground tracking by controlling for wind drift in all phases of flight.
- Demonstrate ability to accurately interpret and utilize VOR for orientation and navigation
- Exhibit basic understanding of NDB procedures and related techniques.
- Display increasing SRM skills to include in-flight decision-making

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

RETURN FLIGHT

Completion Standard:

- Explain the proper procedures for crosswind control during taxi, takeoffs, and landings.
- Explain the correct procedure for executing a go-around from a missed approach in the training airplane.
- Demonstrate an ability to maintain aircraft control during the forward slip
- Indicate basic proficiency in VOR navigation and orientation.
- Exhibit increasing knowledge of NDB orientation and navigation.
- Display increasing SRM skills to include in-flight decision-making

Post flight feedback and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 7-A
(ATD)

Lesson Objectives:

The PT increases attitude instrument flight proficiency during this review of full and partial panel procedures. Emphasis will be on the correct procedures for steep turns, slow flight, stalls, and recovery from unusual flight attitudes.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Seven-A

Tasks	Sub Tasks	Desired Performance
Maneuvers (Full and Partial Panel)	<ol style="list-style-type: none">1. Straight and level2. Standard-rate turns3. Rate climbs4. Climbing turns5. Rate Descents6. Descending turns7. Rectangular Course8. S-Turns9. Turns Around a Point	Practice Practice Practice Practice Practice Practice Practice Practice Practice
Speed Control (Full and Partial Panel)	<ol style="list-style-type: none">1. Change of airspeed2. Constant airspeed climbs3. Constant airspeed descents4. Slow flight and stalls	Practice Practice Practice Practice
Advanced Maneuvers and Procedures	<ol style="list-style-type: none">1. Recovery from unusual flight attitudes (full & partial panel)2. Steep turns3. Operations in turbulence	Practice Practice Practice
Navigation	<ol style="list-style-type: none">1. ILS Approach2. Localizer Tracking3. Localizer Approach4. Localizer Identification5. NDB Approach	Practice Practice Practice Practice Practice

Completion Standards:

The PT will maintain altitude within 150 feet during level flight. Climb and descent airspeeds will be maintained within 15 knots. In addition, the PT should be able to immediately recognize the approach of stalls and demonstrate the correct recovery procedures from unusual flight attitudes. The PT will also exhibit understanding of ILS, localizer, and NDB approach procedures.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 7

Scenario Objectives:

This is a cross-country flight to an airport at least 20 nm from MBT but not greater than 50 nm with a basic GPS approach, using the direct feature of the GPS. If the PT demonstrates proficiency in basic cruise maneuvers, the autopilot should be used to allow instruction in GPS procedures and programming as well as aircraft automation management. Review correct procedures for a go-around from a rejected landing, ATC light signals, and radar communications.

Indicates tasks and sub-tasks to be introduced during the outbound phase of the flight

** Indicates tasks and sub-tasks to be introduced during the return phase of the flight

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	Practice Perform Perform Perform Perform Explain/Practice Practice Practice Practice
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. Airplane Servicing 6. Operation of systems 7. Positive exchange of flight controls 	Perform Perform Perform Practice Perform Practice Perform
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, equipment, and systems, MFD setup 4. Instrument cockpit check 5. VOR Accuracy Test 	Practice Practice Practice Practice Explain/Practice
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. # ATC light signals 5. Taxi 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness 	Perform Perform Practice Practice Perform Perform Practice Practice
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Wind shear avoidance 3. Aircraft automation management 	Practice Practice Practice

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 3. Power-on stalls (IR and VR) 4. VOR Orientation 5. Intercepting and Tracking VOR radials 6. Emergency descents and climbs using radio aids or radar directives 	<p>Practice Practice Practice Practice</p>
Descent Planning and execution	<ol style="list-style-type: none"> 1. Descents, descending turns, and transition to level flight 2. Rate descents (IR and VR) 3. Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM 	<p>Perform</p> <p>Practice Practice Perform Manage/Decide</p>
Approach Procedures	<ol style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent 9. Aborted approach (go-around) to landing 10. Forward slips 11. VOR approach (VR) 12. # Localizer Identification 13. # Localizer Tracking 	<p>Perform Perform Manage/Decide</p> <p>Perform Perform Perform Practice</p> <p>Practice Explain</p> <p>Explain Describe Describe</p> <p>Describe</p>
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Short-field approach and landing 4. Soft-field approach and landing 5. Crosswind approach and landing 6. Land and Hold Short Operations (LAHSO) 7. After landing procedures 	<p>Perform Practice Practice Practice Explain Perform</p> <p>Perform</p>
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures 	<p>Perform Perform Perform Perform</p>

Completion Standard:

- a. Perform takeoffs and landings smoothly, while maintaining good directional control. Approaches will be stabilized, and airspeed will be within 5 knots of that desired.
- b. Perform a go-around from rejected landing with minimal instructor assistance.
- c. Demonstrate basic understanding of NDB orientation and navigation.
- d. Exhibit basic knowledge of ATC light signals and communication procedures.
- e. Indicate basic knowledge of localizer procedures.

Post flight feedback and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 8-A
(ATD)

Lesson Objectives:

Introduce VFR navigation procedures and use of navigation facilities to determine position.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Eight-8

Tasks	Sub Tasks	Desired Performance
Navigation	<ol style="list-style-type: none">1. Dead Reckoning2. Position Fix by navigation facilities3. Diversion to an alternate	Explain Explain Explain
Emergency Procedures	<ol style="list-style-type: none">1. Lost Procedures2. Emergency descents and climbs using radio aids or radar directives (IR)	Explain Explain

Completion Standards:

At the completion of this lesson, the PT will exhibit a basic understanding of how to navigate using Dead Reckoning procedures. The PT also will be able to determine position by using the appropriate navigation facilities and will demonstrate the knowledge needed to execute emergency operations using radio aids and radar directives.

Post flight discussion and preview or next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 8

Scenario Objectives:

This is a cross-country flight with approaches and landings at 2 airports other than Murfreesboro airport (*MBT*). PT will use the DIRECT feature of the GPS and will be introduced to the radar vectors to final for a GPS approach at one airport and an overlay approach at another. Emphasis will be on GPS orientations and use. Maneuvers and procedures directed toward correction of any faulty tendencies to prepare the pilot in training for the Stage I Check. The PT should be conducting all planning for the flight and executing the basic flight scenario without aid from the instructor. Sound judgment and decision-making should be displayed during all phases of flight.

Indicates tasks and sub-tasks to be introduced during the outbound phase of the flight

** Indicates tasks and sub-tasks to be introduced during the return phase of the flight

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	<p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Practice</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Manage/Decide</p> <p style="text-align: center;">Practice</p>
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. Airplane Servicing 6. Operation of systems 7. Positive exchange of flight controls 	<p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p>
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, equipment, and systems, MFD setup 4. Instrument cockpit check 5. VOR Accuracy Test 	<p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Practice</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p>
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. # ATC light signals 5. Taxi 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness 	<p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Perform</p> <p style="text-align: center;">Practice</p> <p style="text-align: center;">Manage/Decide</p>
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Wind shear avoidance 	<p style="text-align: center;">Practice</p> <p style="text-align: center;">Practice</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 3. Aircraft automation management 4. Aeronautical Decision making and risk management 	<p style="text-align: center;">Practice Manage/Decide</p>
Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Short-field takeoff and climb 3. Soft-field takeoff and climb 4. Crosswind takeoff and climb 5. Situational awareness 6. SRM/ and risk management 	<p style="text-align: center;">Perform Explain Explain Practice Manage/Decide Manage/Decide</p>
Climb procedures	<ol style="list-style-type: none"> 1. Constant speed climbs & climbing turns (IR & VR) 2. Constant rate climbs (IR & VR) 3. Departure procedures 4. Pilotage 5. Situational awareness, task management, and SRM 6. Collision avoidance precautions 	<p style="text-align: center;">Perform Perform Perform Perform Manage/Decide Perform</p>
Cruise procedure	<ol style="list-style-type: none"> 1. Manual straight and level flight (IR and VR) 2. Power management & basic speed control (VR and IR) 3. Collision avoidance precautions 4. Pilotage 5. Dead Reckoning navigation 6. Ground Track / Wind Drift corrections 7. Situational awareness, task management, and SRM 8. Medium Banked Standard rate turns to headings (VR and IR) 9. Maneuvering during slow flight (IR & VR) 10. Unusual attitude recovery (VR & IR) 11. Operations in Turbulence 12. Magnetic compass turns 13. Wake turbulence avoidance 14. System and equipment malfunctions 15. Demonstrated stalls (secondary, accelerated, trim, cross-control) 16. Spin awareness 17. Flight at slow airspeeds with realistic distractions 18. Timed turns to magnetic compass headings 19. GPS operations & procedures 20. GPS Orientation 21. GPS Fixes 22. GPS Direct 23. GPS flight planning and basic "T" approach 24. Nearest function on the GPS 25. GPS overlay approach 	<p style="text-align: center;">Perform Perform Perform Perform Practice Perform Manage/Decide Perform Perform Perform Perform Perform Practice Practice Perform Perform Practice Explain Explain Explain Describe Explain Describe Explain</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Training Maneuvers & Procedures	<ol style="list-style-type: none"> 1. Steep turns 2. Power-off stalls (IR and VR) 3. Power-on stalls (IR and VR) 4. VOR Orientation 5. Intercepting and Tracking VOR radials 6. Emergency descents and climbs using radio aids or radar directives 	<p>Practice Practice Practice Practice Practice Practice</p>
Descent Planning and execution	<ol style="list-style-type: none"> 1. Descents, descending turns, and transition to level flight 2. Rate descents (IR and VR) 3. Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM 	<p>Perform Perform Perform Perform Manage/Decide</p>
Approach Procedures	<ol style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent 9. Aborted approach (go-around) to landing 10. Forward slips 11. VOR approach (VR) 12. Localizer Identification 13. Localizer Tracking 	<p>Perform Perform Manage/Decide Perform Perform Perform Practice Practice Practice Practice Practice Explain Explain Explain Explain</p>
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Short-field approach and landing 4. Soft-field approach and landing 5. Crosswind approach and landing 6. Land and Hold Short Operations (LAHSO) 7. After landing procedures 	<p>Perform Practice Practice Practice Practice Practice Perform Perform</p>
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures 	<p>Perform Perform Perform Perform</p>

OUTBOUND FLIGHT

Completion Standard:

- Demonstrate proficiency in the listed instrument and emergency procedures.
- Perform basic VOR and NDB orientation and navigation procedures.
- Exhibit understanding of GPS orientation and use.

RETURN FLIGHT

Completion Standard:

- Demonstrate proficiency in wake turbulence avoidance, runway incursion avoidance, and collision avoidance procedure.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

- Exhibit basic understanding of NDB and VOR navigation and orientation.
- Ability to utilize GPS for VFR navigation.
- Demonstrate increased competency in basic instrument maneuvers and procedures, including control of the airplane during unusual attitude recoveries and emergency climbs and descents.
- Control altitude within 150 feet during level turns, straight-and-level flight, and slow flight. Stall recoveries should be coordinated with a minimum loss of altitude.
- Display the correct recovery techniques form stalls.

Post flight feedback and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 9
(Pre-check)

Scenario Objectives:

Prior to this flight, the instructor will administer and grade the Pre-solo Written Exam. To help gain proficiency and confidence, the PT will practice the listed review procedures including emergency operations and basic instrument maneuvers during the lesson. To prepare the PT for the Solo Phase Check, emphasis will be directed toward correction of any faulty tendencies. This flight should be conducted as an out and back flight scenario with a major emphasis on traffic pattern entry, approach, and landing. Special emphasis should be placed on proper wind corrections in the pattern, correct procedures, stabilized approaches, and safe and effective landings.

Scenario Nine
Check Items

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Preflight Preparation and Procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Cockpit management 4. Certificates and documents 5. Minimum equipment list 6. Airplane servicing 7. VOR accuracy check 8. Instrument cockpit check 9. Operation of systems 10. Positive exchange of flight controls 	Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform
Basic Piloting Skills	<ol style="list-style-type: none"> 1. Radio Communications 2. ATC Light Signals 3. Airport and runway marking and lighting 4. Wind shear avoidance 5. Collision avoidance 6. Wake turbulence avoidance 7. Normal takeoff and climb 8. Cross-wind takeoff and climb 9. Straight-and-level flight (VR and IR) 10. Change of airspeed and configuration (VR and IR) 11. Climbs, descents, and transition to level flight (VR and IR) 12. Medium banked turns 13. Control for wind drift across the ground 14. Rectangular Course 15. S-Turns 16. Turns Around a Point 17. Slow flight and stalls (VR and IR) 18. Spin awareness 	Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	19. Recovery from unusual attitudes (VR and IR) 20. Traffic Pattern 21. Slip-to-Landing 22. Go-around 23. Normal approach and landing 24. Cross-wind approach and landing 25. Post flight procedure	Perform Perform Perform Perform Perform Perform
Instrument piloting skills	1. Rate climbs and descents 2. Magnetic compass turns (IR) 3. Use of Navigation systems	Perform Perform Perform
Emergency operations	1. Emergency descent 2. Emergency approach and landing 3. Systems and equipment malfunctions 4. Emergency equipment and survival gear	Perform Perform Perform Perform

Completion Standard:

- Pass the Pre-solo Written Exam with a minimum score of 80% and review each incorrect response with the instructor to ensure complete PT understanding.
- Demonstrate the ability and readiness for supervised solo flight in the traffic pattern.
- Exhibit understanding of attitude instrument flying
- Indicate good understanding of local airport and airspace rules as well as systems and equipment malfunctions and related emergency procedures.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Stage II

Stage Objectives

This stage allows the PT to expand the skills learned in the previous stage. The PT will further develop the knowledge and skill necessary to plan and conduct VFR cross-country flights using pilotage, Dead Reckoning, and radio navigation systems. In addition, the PT will be introduced to instrument holding and approach procedures in preparation for conducting IFR cross-country flights in Stage III.

Stage Completion Standard

This stage is complete when the PT can accurately plan and conduct VFR cross-country flights. In addition, the PT will have the proficiency to safely demonstrate consistent results in performing short-field and soft-field takeoffs and landings. The PT will also be able to accurately perform holding patterns and demonstrate a basic understanding and competence in IFR approach procedures.

Single Pilot Resource Management

During Stage II, the instructor's focus in the flight planning area should now have evolved to the role of coach and mentor. The instructor should plan to introduce the complete variety of emergency and abnormal procedures in realistic settings. Initially, emergency maneuvers should be briefed and planned by the instructor. Eventually, the instructor should introduce the emergency scenarios on an unannounced basis.

The focus of PT learning during this phase is PT situational awareness, judgment, and decision-making, as well as correct performance of the emergency procedures contained in the POH. The instructor should have a plan for the introduction and completion of the emergency situation and act as a facilitator to help the PT prioritize the tasks required, utilize available automation and other resources, and bring the scenario to a successful conclusion.

SRM Example scenario: 20 miles from the mid-scenario destination airport at 5000 feet, the instructor announces that the aircraft engine is beginning to run roughly and electrical power from one of the generators is lost. At the PT's pace, guide the PT through the decision chain to include:

- Continue to destination or land now
- Is the electrical power problem and engine roughness related
- What systems have we lost, will we lose
- How does the weather effect our decision
- What procedures are provided in the POH
- Are there other resources available (ATC assistance, Flight Service, Data link Information, Automated Checklists)
- What is the PT's plan of action

If the PT makes it to this point in the analysis, the instructor should introduce more situational complexity such as:

- Simulated IFR weather condition (accomplished under the hood)
- Engine roughness turns to an engine fire
- Complete loss of electrical power.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

The object here is to help the PT learn how to manage the entire situation in real time, and at a pace that will ensure that the PT understands the scenario and has the time to make good decisions. The instructor should provide the scenario, ask pertinent questions, observe the PT's behavior, and correct procedural errors as they happen. At the post-flight critique, the PT should lead the discussion of the emergency explaining his or her rationale for the decisions made. The instructor's role during the critique is to reinforce good behaviors and help the PT find other alternatives for poor decisions or confusing situations. Emphasis should be place on the use of cockpit automation and available resources.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 10

Scenario Objectives:

This is progress check. The chief instructor, the assistant chief instructor, or the designated check instructor will evaluate the PT's performance in the areas of preflight preparation, VFR piloting skills, basic attitude instrument flying, and emergency procedures. The PT will exhibit an understanding of navigation systems. Additionally, the PT's ability to exercise sound judgment and aircraft control in preparation for the initial solo will be assessed.

Solo

Scenario Ten

During the dual portion of the lesson, the instructor will review takeoff, traffic pattern, and landing procedures to check the PT's readiness for solo flight. In the second portion of the lesson, the PT will fly the first supervised solo flight in the local Murfreesboro traffic pattern unless otherwise approved. Emphasis will be on the correct procedures and techniques for the PT's first solo.

- Maneuvers and procedures directed toward correction of any faulty tendencies in preparation for solo flight

Flight Phase	Scenario Sub Tasks	Desired Performance
Dual	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Certificates and Documents 4. Engine Starting 5. Radio Communications 6. ATC Light Signals 7. Airport and Runway Marking and Lighting 8. Wind Shear Avoidance 9. Collision Avoidance 10. Wake Turbulence 11. Ground Track/Wind Drift Correction 12. Normal and/or Crosswind Takeoffs 13. Traffic Patterns 14. Go-Around From a Rejected Landing 15. Normal and/or Crosswind Landings 	Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform
Solo	<ol style="list-style-type: none"> 1. Radio communications 2. Taxiing 3. Before takeoff check 4. Normal takeoffs and climbs (3) 5. Traffic patterns 6. Normal approaches and landings (3) 7. After landing procedures 8. Parking and securing 	Perform Perform Perform Perform Perform Perform Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

DUAL PHASE

Completion Standards:

- Be able to demonstrate complete understanding of factors related to preflight preparation including airplane documentation and operation of systems
- Exhibit proficiency in traffic pattern operations and basic VFR ground and flight maneuvers
- Be accurate in attitude instrument flying and handle simulated emergency situations promptly, utilizing proper judgment.
- Exhibit basic understanding of instrument navigation systems.
- Display the correct recovery techniques from stalls and unusual attitudes
- Be able to compensate for the effects of wind (wind drift) and maintain an appropriate and acceptable ground track
- Be able to initiate emergency climbs and descents by instrument reference using radio navigation facilities, radio communications, and radar services.
- Perform stabilized landing approaches with touchdown at or near the appropriate touchdown area on the runway.
- Overall proficiency should indicate readiness for the first solo flight in the traffic pattern.

SOLO PHASE

Completion Standards:

- Display the ability to solo the training airplane safely in the traffic pattern. At no time will the safety of the flight be in question.
- Complete solo flight in the local traffic pattern as directed by the instructor

Post flight feedback and preview of next lesson

NOTE: *The Practical Test Standards (PTS) requires FAA inspectors and designated pilot examiners to develop a written "plan of action" for the conduct of practical tests. The instructions include provisions for changing the sequence or combining tasks as required facilitating an orderly, efficient evaluation. These instructions in the PTS contain practical guidance for instructors conducting Stage Checks.*

The chief flight instructor, assistant chief flight instructor, or the designated check instructor who conducts the Stage I Check should develop a logical plan of action. While all listed tasks in each area of operation should be evaluated, tasks with similar objectives may be combined. For example, a rectangular course may be combined with an airport traffic pattern. If the elements in one task have already been evaluated in another task, they need not be repeated. In addition, certain tasks may be evaluated orally. Such tasks include those that cannot realistically be evaluated on the scheduled flight. An example is night flying.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 11-A
(ATD)

Lesson Objectives:

Introduce VOR holding patterns and practice the correct entry procedures.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Eleven-A

Tasks	Sub Tasks	Desired Performance
Holding	1. VOR holding 2. Standard and nonstandard holding patterns	Explain Explain

Completion Standards:

At the completion of this lesson, the PT will have the necessary skill and knowledge to maintain orientation while executing the correct entries for VOR holding patterns. The PT will maintain altitude within 100 feet and airspeeds within 10 knots of that desired. The PT will apply proper wind correction for maintain course during holding.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 11-B
(ATD)

Lesson Objectives:

Introduce NDB holding patterns and practice the various entry procedures for standard and nonstandard holds.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Eleven-B

Tasks	Sub Tasks	Desired Performance
Navigation	1. VOR holding a. Standard and nonstandard holding patterns	Practice
	2. NDB holding a. Standard and nonstandard holding patterns	Explain

Completion Standards:

At the completion of this lesson, the PT will have the necessary skill and knowledge to maintain orientation while executing the correct entries for NDB holding patterns. The PT will maintain altitude within 100 feet and airspeed within 10 knots of that desired. The PT will apply proper wind correction to maintain course during holding.

Post flight discussion and preview of next lesson

LESSON 11

Scenario Objectives:

The scenario will be conducted as an out and back cross-country flight originating from MBT to an airport of the PT's choosing. The PT will be primarily responsible for planning and completing all required learning objectives. The PT will develop procedures for dealing with in flight emergencies. Review wind drift techniques, slow flight, and stall recognition. Emphasis will be on emergency procedures.

Single Pilot Resource Management

During Phase II, the instructor's focus in the flight planning area should now have evolved to the role of coach and mentor. The instructor should now plan to introduce emergency and abnormal procedures in realistic settings. Initially, emergency maneuvers should be briefed and planned by the instructor. Eventually, the instructor should introduce the emergency scenarios on an impromptu basis.

The focus of PT learning during this phase is PT situational awareness, judgment, and decision-making, as well as correct performance of the emergency procedures contained in the POH. The instructor should have a plan for the introduction and completion of the emergency situation and act as a facilitator to help the PT prioritize the tasks required, utilize available automation and other resources, and bring the scenario to a successful conclusion.

SRM Example scenario: 20 miles from the mid-scenario destination airport at 5000 feet, the instructor announces that the aircraft engine is beginning to run roughly and electrical power from one of the generators is lost. At the PT's pace, guide the PT through the decision chain to include:

- Continue to destination or land now
- Is the electrical power problem and engine roughness related
- What systems have we lost, will we lose
- How does the weather effect our decision
- What procedures are provided in the POH
- Are there other resources available (ATC assistance, Flight Service, Data link Information, Automated Checklists)
- What is the PT's plan of action

If the PT makes it to this point in the analysis, the instructor should introduce more complexity to the situation such as:

- Simulated IFR weather condition (accomplished under the hood)
- Engine roughness turns to an engine fire
- Complete loss of electrical power

The object is to help the PT learn how to manage the entire situation in real time at a pace that will ensure that the PT understands the scenario and has the time to make good decisions. The instructor should provide the scenario, ask pertinent questions, observe the PT's behavior, and correct procedural errors as they happen. At the post flight critique, the PT should lead the discussion of the emergency explaining his or her rationale for the decisions made. The instructor's role during the critique is to reinforce good behaviors and help the PT find other alternatives for poor decisions or confusing situations. Major emphasis should be placed on the use of cockpit automation and available resources.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Scenario Eleven

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	Perform Perform Perform Perform Perform Perform Perform Manage/Decide Perform
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. Airplane Servicing 6. Operation of systems 7. Positive exchange of flight controls 	Perform Perform Perform Perform Perform Perform Perform
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, equipment, and systems, MFD setup 4. Instrument cockpit check 5. VOR Accuracy Test 	Perform Perform Perform Perform Perform
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. ATC light signals 5. Taxi 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness 	Perform Perform Perform Perform Perform Perform Perform Manage/Decide
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Low level wind shear avoidance/precautions 3. Aircraft automation management 4. Aeronautical Decision making and risk management 	Perform Perform Practice Manage/Decide
Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Short-field takeoff and climb 3. Soft-field takeoff and climb 4. Crosswind takeoff and climb 5. Situational awareness 6. SRM/ and risk management 	Perform Perform Perform Perform Manage/Decide Manage/Decide
Climb procedures	<ol style="list-style-type: none"> 1. Constant speed climbs & climbing turns (IR & VR) 2. Constant rate climbs (IR & VR) 	Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	management and SRM	
Approach Procedures	<ol style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent 9. Aborted approach (go-around) to landing 10. Forward slips 11. VOR approach (VR) 12. Localizer Identification 13. Localizer Tracking 	Perform Perform Manage/Decide Perform Perform Perform Perform Perform Perform Practice Practice Practice
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Short-field approach and landing 4. Soft-field approach and landing 5. Crosswind approach and landing 6. Land and Hold Short Operations (LAHSO) 7. After landing procedures 	Perform Perform Practice Practice Perform Perform Perform
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures 	Perform Perform Perform Perform

OUTBOUND FLIGHT

Completion Standard:

- Explain runway conditions that necessitate the use of soft field and short field takeoff and landing techniques.
- Demonstrate the correct procedure to be used under existing or simulated conditions, although proficiency may not be at the private pilot practical test level.
- Ground track during while correcting for wind drift will be accurate within 100 feet.
- Practice the listed maneuvers to gain proficiency and confidence, and introduce airplane control by instruments reference during emergency situations.

RETURN FLIGHT

Completion Standards:

- Perform short and soft field takeoffs and landings smoothly, while maintaining good directional control. Approaches will be stabilized, and airspeed will be within 5 knots of that desired.
- Display the ability to initiate emergency climbs and descents by instrument reference using radio communications, navigation facilities, and radar services
- Exhibit ability to determine position using pilotage and Dead Reckoning.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 12-A
(ATD)

Lesson Objective:

Introduce intersection and localizer holding patterns and practice the correct entry procedures for each type hold.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Twelve-A

Tasks	Sub Tasks	Desired Performance
Holding	1. VOR Holding 2. NDB Holding 3. VOR intersection holding 4. NDB intersection holding 5. Localizer holding 6. Hold Entries 7. Standard and Nonstandard holding patterns 8. Partial panel holding 9. Automated Avionics Interface	Practice Practice Explain Explain Explain Explain Explain Explain Describe

Completion Standards:

At the completion of this lesson, the PT will have the necessary skill and knowledge to maintain orientation while executing the correct entries for the various intersection holding patterns. The PT will maintain altitude within 100 feet and airspeeds within 10 knots of that desired. The PT will apply proper wind correction to maintain course during holding.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 12

Scenario Objectives:

Introduce cross-country procedures and techniques to be used during a diversion to an alternate, as well as use of navigation facilities and radar services to determine position. Diversion should occur on the first leg of a two leg cross-country that originated from MBT. In addition, review instrument and emergency operations with emphasis on procedures for determining position when lost. Partial Panel flight due to loss of attitude and heading information should be introduced during this flight.

Partial Panel

Partial Panel in a TAA can be induced by covering all or part of the PFD/MFD. Each individual TAA may be certified with a set of backup flight instruments that usually include an attitude indicator, altimeter, and airspeed indicator. The attitude indicator may be powered electrically or by vacuum. During partial panel flight it is important that the all-electric TAA pilot be aware of the life span of the batteries and understand the concept of electrical load shedding to preserve the battery.

NOTE: A view-limiting device is required for the dual instrument time allocated to this flight.

Indicates tasks and sub-tasks to be introduced during the outbound phase of the flight

** Indicates tasks and sub-tasks to be introduced during the return phase of the flight

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. Dead Reckoning Navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Automated Avionics Interface 10. Emergency Operations 	Perform Perform Perform Perform Perform Practice Perform Manage/Decide Explain Perform
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. Airplane Servicing 6. Operation of systems 7. Positive exchange of flight controls 	Perform Perform Perform Perform Perform Perform Perform
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, equipment, systems, & MFD setup 4. Instrument cockpit check 	Perform Perform Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	5. VOR Accuracy Test	Perform
Engine Start and Taxi Procedures	1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. ATC light signals 5. Taxi 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness	Perform Perform Perform Perform Perform Perform Perform Manage/Decide
Airport Operations	1. ** Controlled airports 2. ** Use of ATIS 3. **Use of approach and departure control 4. **Go-arounds 5. **CTAF (FSS or UNICOM) airports	Describe Describe Describe Practice Explain
Before Takeoff Checks	1. Normal and abnormal indications 2. Low level wind shear avoidance/precautions 3. Aircraft automation management 4. Aeronautical Decision making and risk management	Perform Perform Perform Manage/Decide
Takeoff	1. Normal takeoff 2. Short-field takeoff and climb 3. Soft-field takeoff and climb 4. Crosswind takeoff and climb 5. Situational awareness 6. SRM/ and risk management	Perform Practice Practice Perform Manage/Decide Manage/Decide
Climb procedures	1. Constant speed climbs & climbing turns (IR & VR) 2. Constant rate climbs (IR & VR) 3. Departure procedures 4. Pilotage 5. Situational awareness, task management, and SRM 6. Collision avoidance precautions	Perform Perform Perform Perform Manage/Decide Perform
Cruise procedure	1. Manual straight and level flight (IR and VR) 2. Power management & basic speed control (VR and IR) 3. Collision avoidance precautions 4. Pilotage 5. Dead Reckoning navigation 6. ** Departure 7. **Opening flight plan 8. **Course interception 9. ** Position fix by navigation facilities 10. ** Flight on federal airways 11. ** Collision avoidance precautions 12. ** Closing the flight plan 13. Ground Track/Wind Drift corrections 14. Situational awareness, task	Perform Perform Practice Perform Perform Practice Practice Practice Practice Practice Practice Perform Manage/Decide Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	5. Situational awareness, task management and SRM	Manage/Decide
Approach Procedures	<ol style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent 9. Aborted approach (go-around) to landing 10. Forward slips 11. VOR approach (VR) 12. Localizer Identification 13. Localizer Tracking 	Perform Perform Manage/Decide Perform Perform Perform Perform Perform Perform Perform Practice
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Short-field approach and landing 4. Soft-field approach and landing 5. Crosswind approach and landing 6. Land and Hold Short Operations (LAHSO) 7. After landing procedures 	Perform Perform Practice Practice Perform Perform Perform
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures 	Perform Perform Perform Perform

OUTBOUND FLIGHT

Completion standards:

- Demonstrate skill in the use of navigation systems and radar services under visual and simulated instrument conditions.
- Demonstrate the ability to navigate by pilotage and Dead Reckoning.
- Exhibit ability to fix position and initiate diversion to alternate.
- Display knowledge of techniques for determining ground speed, ETA, and fuel consumption.

RETURN FLIGHT

Completion standards:

- Demonstrate the skill to perform cross-country flight safely as the sole occupant of the airplane, including use of navigation systems and radar services under simulated instrument conditions.
- Include a point of landing at least a straight-line distance of more than 50 nautical miles from the original point of departure.
- Demonstrate complete preflight planning, weather analysis, use of FAA publications and charts, adherence to the preflight plan and the use of pilotage, Dead Reckoning, radio communication, and navigation systems.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 13-A
(ATD)

Lesson Objectives:

Review the different intersection holds including standard and nonstandard holding patterns. Introduce the PT to departure procedures, DPs, STARs, and the use of radar services.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Thirteen-A

Tasks	Sub Tasks	Desired Performance
IFR Departure Procedures & Clearances	1. Use of DPs 2. Use of Radar	Explain Explain
Holding	1. Intersection holding 2. VOR and DME holding	Practice Practice
IFR Arrival procedures and clearances	1. Use of STARs 2. Use of Radar	Explain Explain

Completion Standards:

Review the different intersection holds including standard and nonstandard holding patterns. Introduce the PT to departure procedures, DPs, STARs, and the use of radar services.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 13-B
(ATD)

Lesson Objectives:

The PT will review procedures for VOR, NDB, DME, localizer, and intersection holding patterns. Emphasis will be on the correct entry for standard and nonstandard holds.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Thirteen-B

Tasks	Sub Tasks	Desired Performance
Holding	1. ILS and Localizer Hold 2. VOR Hold 3. NDB Hold 4. Intersection Hold 5. Standard and Nonstandard Hold	Practice Practice Practice Practice Practice

Completion Standards:

At the completion of this lesson, the PT will demonstrate proficiency executing the various holding patterns. The PT will maintain altitude within 100 feet and airspeeds within 10 knots of that desired. The PT will apply proper wind correction to maintain course while holding.

Post flight discussion and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 13

Scenario Objectives:

This scenario will consist of an instrument flight to a local IFR-capable airport conducted in simulated or actual IFR conditions. Intercepts and holding should be interspersed throughout the flight as opportunities permit. Prior coordination with ATC will aid in scenario execution. Landing and mid-flight critique are at the discretion of the instructor/PT. Diversion back to the Murfreesboro airport (MBT) is acceptable. Review VOR intercept and tracking and introduce standard and nonstandard holding patterns for VOR and NDBs. Emphasis will be on proper holding pattern entry.

NOTE: A view-limiting device is required for the dual instrument time allocated to this flight

Indicates tasks and sub-tasks to be introduced during the outbound phase of the flight

** Indicates tasks and sub-tasks to be introduced during the return phase of the flight

Scenario Tasks	Scenario Sub Tasks	Desired PT performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	Perform Perform Perform Perform Perform Perform Perform Manage/Decide Perform
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. Use of ATIS 6. Airplane Servicing 7. Operation of systems 8. Positive exchange of flight controls 	Perform Perform Perform Perform Perform Perform Perform Perform
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, equipment, systems, & MFD setup 4. Instrument cockpit check 5. VOR Accuracy Test 	Perform Perform Perform Perform Perform
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. ATC light signals 5. Taxi 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness 	Perform Perform Perform Perform Perform Perform Perform Manage/Decide

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Airport Operations	<ol style="list-style-type: none"> 1. Controlled airports 2. Use of approach and departure control 3. Use of ATIS 4. Go-around 5. CTAF (FSS or UNICOM) airports 	<p>Practice</p> <p>Practice</p> <p>Practice</p> <p>Practice</p> <p>Practice</p>
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Low level wind shear avoidance/precautions 3. Aircraft automation management 4. Aeronautical Decision making and risk management 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Manage/Decide</p>
Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Short-field takeoff and climb 3. Soft-field takeoff and climb 4. Crosswind takeoff and climb 5. Situational awareness 6. SRM/ and risk management 	<p>Perform</p> <p>Practice</p> <p>Practice</p> <p>Perform</p> <p>Manage/Decide</p> <p>Manage/Decide</p>
Climb procedures	<ol style="list-style-type: none"> 1. Constant speed climbs & climbing turns (IR & VR) 2. Constant rate climbs (IR & VR) 3. Departure procedures 4. Situational awareness, task management, and SRM 5. Collision avoidance precautions 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Manage/Decide</p> <p>Perform</p>
Cruise procedure	<ol style="list-style-type: none"> 1. Manual straight and level flight (IR and VR) 2. Power management & basic speed control (VR and IR) 3. Collision avoidance precautions 4. Ground Track/Wind Drift corrections 5. Situational awareness, task management, and SRM 6. Standard rate turns to headings (VR and IR) 7. Maneuvering during slow flight (IR & VR) 8. Unusual attitude recovery (VR & IR) 9. Operations in Turbulence 10. Magnetic compass turns 11. Wake turbulence avoidance 12. System and equipment malfunctions 13. Demonstrated stalls (secondary, accelerated, trim, cross-control) 14. Spin awareness 15. Flight at slow airspeeds with realistic distractions 16. Timed turns to magnetic compass headings 17. GPS operations & procedures 18. GPS Orientation 19. GPS Fixes 20. GPS Direct 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Manage/Decide</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Practice</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ul style="list-style-type: none"> 21. GPS flight planning and basic "T" approach 22. Nearest function on the GPS 23. GPS overlay approach 24. Diversion to an alternate 25. Determine ground speed, ETA, and fuel consumption 26. Position fix by navigation facilities 	<ul style="list-style-type: none"> Perform Practice Practice Practice Perform Perform
Navigation	<ul style="list-style-type: none"> 1. Pilotage 2. Dead Reckoning navigation 3. Departure 4. Opening flight plan 5. Course interception 6. Position fix by navigation facilities 7. Flight on federal airways 8. Collision avoidance precautions 9. Closing the flight plan 10. VOR Navigation 11. VOR Orientation 12. Intercepting and Tracking VOR radials 13. VOR tracking (IR) 14. NDB Navigation 15. NDB Homing (IR) 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Practice Practice Practice
Training Maneuvers & Procedures	<ul style="list-style-type: none"> 1. Steep turns 2. Power-off stalls (IR and VR) 3. Power-on stalls (IR and VR) 4. Use of Radar Services (IR) 	<ul style="list-style-type: none"> Perform Perform Perform Perform
Emergency operations	<ul style="list-style-type: none"> 1. Systems and equipment malfunctions 2. Emergency descent 3. Emergency approach and landing 4. Emergency equipment and survival gear 5. Emergency descents and climbs using radio aids or radar directives 6. Lost procedures 	<ul style="list-style-type: none"> Practice Perform Perform Perform Perform Practice
Holding Procedures	<ul style="list-style-type: none"> 1. # VOR holding 2. # NDB holding 3. # Standard holding 4. # Nonstandard holding 5. # Holding entry 	<ul style="list-style-type: none"> Describe Describe Describe Describe Describe
Descent Planning and execution	<ul style="list-style-type: none"> 1. Descents, descending turns, and transition to level flight 2. Rate descents (IR and VR) 3. Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM 	<ul style="list-style-type: none"> Perform Perform Perform Perform Manage/Decide
Approach Procedures	<ul style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 	<ul style="list-style-type: none"> Perform Perform Manage/Decide Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent 9. Aborted approach (go-around) to landing 10. Forward slips 11. VOR approach (VR) 12. Localizer Identification 13. Localizer Tracking 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p>
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Go-around procedures 4. Short-field approach and landing 5. Soft-field approach and landing 6. Crosswind approach and landing 7. Land and Hold Short Operations (LAHSO) 8. After landing procedures 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p>
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p>

Completion standards:

- Demonstrate understanding of VOR holding procedures.
- Demonstrate understanding of NDB holding procedures
- Exhibit ability to enter patterns correctly
- Maintain orientation while in the holding pattern.
- During holding, the PT should maintain altitude within 100 feet and airspeed within 10 knots of that desired.

Post flight discussion and preview of the next leg

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 14

Scenario Objectives:

The PT will now have made the transition to primarily IFR procedures. The cross-country scenarios should be agreed upon between the PT and instructor to ensure that the PT experiences as wide a variety of instrument approach procedures and airspace as possible. The advanced situational awareness provided by the TAA should make this possible at a much earlier stage of training than in conventional aircraft. Practice NDB holding and VOR intersection holds. Emphasis will be on orientation and entry procedures for VOR intersection holds.

NOTE: A view-limiting device is required for the dual instrument time allocated to this flight

Indicates tasks and sub-tasks to be introduced during the outbound phase of the flight

** Indicates tasks and sub-tasks to be introduced during the return phase of the flight

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	Perform Perform Perform Perform Perform Perform Perform Manage/Decide Perform
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. Use of ATIS 6. Airplane Servicing 7. Operation of systems 8. Positive exchange of flight controls 	Perform Perform Perform Perform Perform Perform Perform Perform
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, equipment, systems, & MFD setup 4. Instrument cockpit check 5. VOR Accuracy Test 	Perform Perform Perform Perform Perform
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. ATC light signals 5. Taxi 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness 	Perform Perform Perform Perform Perform Perform Perform Manage/Decide
Airport Operations	<ol style="list-style-type: none"> 1. Controlled airports 	Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ul style="list-style-type: none"> approach 22. Nearest function on the GPS 23. GPS overlay approach 24. Diversion to an alternate 25. Determine ground speed, ETA, and fuel consumption 26. Position fix by navigation facilities 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform
Navigation	<ul style="list-style-type: none"> 1. Pilotage 2. Dead Reckoning navigation <ul style="list-style-type: none"> a. Departure 3. Opening flight plan 4. Course interception 5. Position fix by navigation facilities 6. Flight on federal airways 7. Collision avoidance precautions 8. Closing the flight plan 9. VOR Navigation 10. VOR Orientation 11. Intercepting and Tracking VOR radials 12. VOR tracking (IR) 13. NDB Navigation 14. NDB Homing (IR) 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform
Training Maneuvers & Procedures	<ul style="list-style-type: none"> 1. Steep turns 2. Power-off stalls (IR and VR) 3. Power-on stalls (IR and VR) 4. Use of Radar Services (IR) 	<ul style="list-style-type: none"> Perform Perform Perform Perform
Emergency operations	<ul style="list-style-type: none"> 1. Emergency descent 2. Emergency approach and landing 3. Systems and equipment malfunctions 4. Emergency equipment and survival gear 5. Emergency descents and climbs using radio aids or radar directives 6. Lost procedures 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform
Holding Procedures	<ul style="list-style-type: none"> 1. VOR holding 2. NDB holding 3. Standard holding 4. Nonstandard holding 5. Holding entry 6. # Localizer holding 7. # Partial panel holding 	<ul style="list-style-type: none"> Explain Explain Explain Explain Explain Describe Describe
Descent Planning and execution	<ul style="list-style-type: none"> 1. Descents, descending turns, and transition to level flight 2. Rate descents (IR and VR) 3. Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM 	<ul style="list-style-type: none"> Perform Perform Perform Perform Manage/Decide
Approach Procedures	<ul style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 	<ul style="list-style-type: none"> Perform Perform Manage/Decide

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 4. Wind shear avoidance 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent 9. Aborted approach (go-around) to landing 10. Forward slips 11. VOR approach (VR) 12. Localizer Identification 13. Localizer Tracking 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p>
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Go-around procedures 4. Short-field approach and landing 5. Soft-field approach and landing 6. Crosswind approach and landing 7. Land and Hold Short Operations (LAHSO) 8. After landing procedures 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p>
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p>

Completion Standards:

- Demonstrate understanding of intersection holds
- Exhibit ability to interpret instruments to establish position relative to the intersection.
- Maintain orientation while holding at an intersection
- Maintain altitude during the hold within 100 feet of the assigned altitude and airspeed within 10 knots of the desired airspeed.

Post flight discussion and preview of next leg

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 15
(Flight Review)

Scenario Objectives:

This flight review, conducted by an instructor other than the PT's regularly assigned instructor, will evaluate knowledge and skill level to determine if the PT is progressing normally. The PT will plan a VFR/IFR 2-leg flight plan to an airport at least 50 miles distant from the Murfreesboro airport (MBT). The PT will plan when and where to execute all maneuvers required during the flight review. Close coordination is required between the assigned flight review instructor and the PT prior to the flight. The emphasis will be on safety of flight considerations during short and soft field procedures, VFR navigation, attitude instrument flying, holding pattern procedures, and simulated emergency operations.

NOTE: A view-limiting device is required for the dual instrument time allocated to this lesson.

Indicates tasks and sub-tasks to be introduced during the outbound phase of the flight

** Indicates tasks and sub-tasks to be introduced during the return phase of the flight

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	Perform Perform Perform Perform Perform Perform Perform Manage/Decide Perform
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. Use of ATIS 6. Airplane Servicing 7. Operation of systems 8. Positive exchange of flight controls 	Perform Perform Perform Perform Perform Perform Perform Perform
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, equipment, systems, & MFD setup 4. Instrument cockpit check 5. VOR Accuracy Test 	Perform Perform Perform Perform Perform
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. ATC light signals 5. Taxi 	Perform Perform Perform Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness 	<p>Perform Perform Manage/Decide</p>
Airport Operations	<ol style="list-style-type: none"> 1. Controlled airports 2. Use of approach and departure control 3. CTAF (FSS or UNICOM) airports 4. Use of ATIS 5. Go-around 	<p>Perform Perform Perform Perform Perform</p>
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Low level wind shear avoidance/precautions 3. Aircraft automation management 4. Aeronautical Decision making and risk management 	<p>Perform Perform Perform Manage/Decide</p>
Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Short-field takeoff and climb 3. Soft-field takeoff and climb 4. Crosswind takeoff and climb 5. Situational awareness 6. SRM/ and risk management 	<p>Perform Perform Perform Perform Manage/Decide Manage/Decide</p>
Climb procedures	<ol style="list-style-type: none"> 1. Constant speed climbs & climbing turns (IR & VR) 2. Constant rate climbs (IR & VR) 3. Departure procedures 4. Situational awareness, task management, and SRM 5. Collision avoidance precautions 	<p>Perform Perform Perform Manage/Decide Perform</p>
Cruise procedure	<ol style="list-style-type: none"> 1. Manual straight and level flight (IR and VR) 2. Power management & basic speed control (VR and IR) 3. Collision avoidance precautions 4. Ground Track/Wind Drift corrections 5. Situational awareness, task management, and SRM 6. Medium Banked Standard rate turns to headings (VR and IR) 7. Maneuvering during slow flight (IR & VR) 8. Unusual attitude recovery (VR & IR) 9. Operations in turbulence 10. Magnetic compass turns 11. Wake turbulence avoidance 12. System and equipment malfunctions 13. Demonstrated stalls (secondary, accelerated, trim, cross-control) 14. Spin awareness 15. Flight at slow airspeeds with realistic distractions 16. Timed turns to magnetic compass headings 17. GPS operations & procedures 	<p>Perform Perform Perform Perform Manage/Decide Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ul style="list-style-type: none"> 18. GPS Orientation 19. GPS Fixes 20. GPS Direct 21. GPS flight planning and basic "T" approach 22. Nearest function on the GPS 23. GPS overlay approach 24. Diversion to an alternate 25. Determine ground speed, ETA, and fuel consumption 26. Position fix by navigation facilities 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform Perform Perform
Navigation	<ul style="list-style-type: none"> 1. Pilotage 2. Dead Reckoning navigation 3. Departure 4. Opening flight plan 5. Course interception 6. Position fix by navigation facilities 7. Flight on federal airways 8. Collision avoidance precautions 9. Closing the flight plan 10. VOR Navigation 11. VOR Orientation 12. Intercepting and Tracking VOR radials 13. VOR tracking (IR) 14. NDB Navigation 15. NDB Homing (IR) 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform
Training Maneuvers & Procedures	<ul style="list-style-type: none"> 1. Steep turns 2. Power-off stalls (IR and VR) 3. Power-on stalls (IR and VR) 4. Use of Radar Services (IR) 	<ul style="list-style-type: none"> Perform Perform Perform Perform
Emergency operations	<ul style="list-style-type: none"> 1. Systems and equipment malfunctions 2. Emergency descent 3. Emergency approach and landing 4. Emergency equipment and survival gear 5. Emergency descents and climbs using radio aids or radar directives 6. Lost procedures 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform
Holding Procedures	<ul style="list-style-type: none"> 1. VOR holding 2. NDB holding 3. Standard holding 4. Nonstandard holding 5. Holding entry 6. Localizer holding 7. Partial panel holding 	<ul style="list-style-type: none"> Practice Practice Practice Practice Practice Explain Explain
Descent Planning and execution	<ul style="list-style-type: none"> 1. Descents, descending turns, and transition to level flight 2. Rate descents (IR and VR) 3. Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM 	<ul style="list-style-type: none"> Perform Perform Perform Perform Manage/Decide

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Approach Procedures	<ol style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent 9. Aborted approach (go-around) to landing 10. Forward slips 11. VOR approach (VR) 12. Localizer Identification 13. Localizer Tracking 	<p>Perform Perform Manage/Decide</p> <p>Perform Perform Perform Perform Perform</p> <p>Perform Perform Perform Perform</p>
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Go-around procedures 4. Short-field approach and landing 5. Soft-field approach and landing 6. Crosswind approach and landing 7. Land and Hold Short Operations (LAHSO) 8. After landing procedures 	<p>Perform Perform Perform Perform</p> <p>Perform Perform Perform Perform</p>
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures 	<p>Perform Perform Perform Perform</p>

Completion Standards:

- Demonstrate a sound understanding of preflight activities and safe operating practices.
- Exhibit normal (for this stage of training) knowledge and proficiency in performance of the assigned maneuvers and procedures.
- Be able to safely maintain attitude within 100 feet, headings within 10 degrees, and climb/descent airspeeds within 10 knots.
- Accurately control the airplane by instrument reference during basic attitude instrument maneuvers, while navigating by use of navigation systems, and using holding pattern procedures.
- Show a good understanding of aircraft systems used for this stage of training.

Post-flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 16

Local Area SOLO

Scenario Objectives:

This flight should be a solo practice cross-country from MBT to a nearby airport. Prior to the flight, both the PT and instructor should carefully consider the complexity of the airspace and traffic situation of the airport. Also, both the PT and the instructor should be confident in the PT's ability to handle the flight and any unplanned diversions. Practice flight maneuvers and procedures agreed upon by the PT and instructor with special emphasis on correcting any deficient areas. The lesson also should further develop the PT's knowledge, skill, and confidence during solo pilot operations. Emphasis will be on the correction of any deficient skill or knowledge areas.

- Specific maneuvers or procedures assigned by the flight instructor

Scenario Sixteen

Indicates tasks and sub-tasks to be introduced/practiced during the outbound phase of the flight

** Indicates tasks and sub-tasks to be introduced/practiced during the return phase of the flight

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	Perform Perform Perform Perform Perform Perform Perform Manage/Decide Perform
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. Use of ATIS 6. Airplane Servicing 7. Operation of systems 8. Positive exchange of flight controls 	Perform Perform Perform Perform Perform Perform Perform Perform
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, equipment, systems, & MFD setup 4. Instrument cockpit check 5. VOR Accuracy Test 	Perform Perform Perform Perform Perform
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 	Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 3. Radio Communications 4. ATC light signals 5. Taxi 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness 	<p>Perform Perform Perform Perform Perform Manage/Decide</p>
Airport Operations	<ol style="list-style-type: none"> 1. Controlled airports 2. Use of approach and departure control 3. CTAF (FSS or UNICOM) airports 4. Use of ATIS 5. Go-around 	<p>Perform Perform Perform Perform Perform</p>
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Low level wind shear avoidance/precautions 3. Aircraft automation management 4. Aeronautical Decision making and risk management 	<p>Perform Perform Perform Manage/Decide</p>
Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Short-field takeoff and climb 3. Soft-field takeoff and climb 4. Crosswind takeoff and climb 5. Situational awareness 6. SRM/ and risk management 	<p>Perform Perform Perform Perform Manage/Decide Manage/Decide</p>
Climb procedures	<ol style="list-style-type: none"> 1. Constant speed climbs & climbing turns (VR) 2. Constant rate climbs (IR & VR) 3. Departure procedures 4. Situational awareness, task management, and SRM 5. Collision avoidance precautions 	<p>Perform Perform Perform Manage/Decide Perform</p>
Cruise procedure	<ol style="list-style-type: none"> 1. Manual straight and level flight (IR and VR) 2. Power management & basic speed control (VR and IR) 3. Collision avoidance precautions 4. Ground Track/Wind Drift corrections 5. Situational awareness, task management, and SRM 6. Medium Banked Standard rate turns to headings (VR and IR) 7. Maneuvering during slow flight (IR & VR) 8. Unusual attitude recovery (VR & IR) 9. Operations in Turbulence 10. Magnetic compass turns 11. Wake turbulence avoidance 12. System and equipment malfunctions 13. Demonstrated stalls (secondary, accelerated, trim, cross-control) 14. Spin awareness 15. Flight at slow airspeeds with realistic distractions 	<p>Perform Perform Perform Manage/Decide Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ul style="list-style-type: none"> 16. Timed turns to magnetic compass headings 17. GPS operations & procedures 18. GPS Orientation 19. GPS Fixes 20. GPS Direct 21. GPS flight planning and basic "T" approach 22. Nearest function on the GPS 23. GPS overlay approach 24. Diversion to an alternate 25. Determine ground speed, ETA, and fuel consumption 26. Position fix by navigation facilities 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform
Navigation	<ul style="list-style-type: none"> 1. Dead Reckoning navigation 2. Departure 3. Opening flight plan 4. Course interception 5. Position fix by navigation facilities 6. Flight on federal airways 7. Collision avoidance precautions 8. Closing the flight plan 9. VOR Navigation 10. Pilotage 11. VOR Orientation 12. Intercepting and Tracking VOR radials 13. VOR tracking (IR) 14. NDB Navigation 15. NDB Homing (IR) 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform
Training Maneuvers & Procedures	<ul style="list-style-type: none"> 1. Steep turns 2. Power-off stalls (IR and VR) 3. Power-on stalls (IR and VR) 4. Use of Radar Services (IR) 	<ul style="list-style-type: none"> Perform Perform Perform Perform
Emergency operations	<ul style="list-style-type: none"> 1. Systems and equipment malfunctions 2. Emergency descent 3. Emergency approach and landing 4. Emergency equipment and survival gear 5. Emergency descents and climbs using radio aids or radar directives 6. Lost procedures 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform
Holding Procedures	<ul style="list-style-type: none"> 1. VOR holding 2. NDB holding 3. Standard holding 4. Nonstandard holding 5. Holding entry 6. Localizer holding 7. Partial panel holding 	<ul style="list-style-type: none"> Perform Practice Perform Perform Practice Practice Practice
Descent Planning and execution	<ul style="list-style-type: none"> 1. Descents, descending turns, and transition to level flight 2. Rate descents (IR and VR) 3. Wind drift in turns 	<ul style="list-style-type: none"> Perform Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 4. Collision avoidance precautions 5. Situational awareness, task management and SRM 	<p style="text-align: center;">Perform Manage/Decide</p>
Approach Procedures	<ol style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent 9. Aborted approach (go-around) to landing 10. Forward slips 11. VOR approach (VR) 12. Localizer Identification 13. Localizer Tracking 	<p style="text-align: center;">Perform Perform Manage/Decide Perform Perform Perform Perform Perform Perform Perform Perform Perform</p>
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Go-around procedures 4. Short-field approach and landing 5. Soft-field approach and landing 6. Crosswind approach and landing 7. Land and Hold Short Operations (LAHSO) 8. After landing procedures 	<p style="text-align: center;">Perform Perform Perform Perform Perform Perform Perform Perform</p>
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures 	<p style="text-align: center;">Perform Perform Perform Perform</p>

Completion standards:

- Practice the assigned maneuvers and procedures.
- Improve any weak performance areas determined previously.
- Perform each assigned maneuver and procedure with proper coordination and precision according to the criteria established in the FAA Practical Test Standards.

Post flight discussion and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 17-A

Scenario Lesson:

This scenario is a dress rehearsal for the PTs long VFR cross-country beginning from MBT. This flight should be of at least 100 nautical miles total distance since cross-country training flight is conducted under 14 CFR part 141, with landings at a minimum of three points, including one segment of the flight consisting of a straight-line distance of at least 50 nautical miles between the take-off and landing locations. All of the regulatory requirements for the long cross-country should be complied with. The PT should conduct the flight with minimal assistance from the instructor. The PT should brief every aspect of the flight to the instructor. The instructor should plan enroute and terminal emergency and/or diversion scenarios both during the preflight briefing and during the actual flight.

Lesson Seventeen-A

Tasks	Sub Tasks	Desired Performance
Preflight Preparation	<ol style="list-style-type: none"> 1. Sectional / Terminal Area Charts 2. Flight Publications 3. Route Selection 4. Weather Information 5. Fuel Requirements 6. Performance and Limitations 7. Weight and Balance 8. Navigation Log 9. FAA Flight Plan 10. Aeromedical Factors 	<p style="text-align: center;">Explain</p> <p style="text-align: center;">Explain</p> <p style="text-align: center;">Explain</p> <p style="text-align: center;">Explain</p> <p style="text-align: center;">Explain</p> <p style="text-align: center;">Explain</p> <p style="text-align: center;">Explain</p> <p style="text-align: center;">Explain</p> <p style="text-align: center;">Explain</p> <p style="text-align: center;">Explain</p>
Cross-country flight	<ol style="list-style-type: none"> 1. Opening the Flight Plan 2. VOR and NDB Navigation 3. Position Fix by navigation facilities 4. Dead Reckoning 5. Use of unfamiliar airports 6. Estimates of Groundspeed 7. Estimates of ETA 	<p style="text-align: center;">Practice</p> <p style="text-align: center;">Practice</p> <p style="text-align: center;">Practice</p> <p style="text-align: center;">Practice</p> <p style="text-align: center;">Practice</p> <p style="text-align: center;">Practice</p> <p style="text-align: center;">Practice</p>

Completion Standards:

At the completion of this lesson the PT will demonstrate the ability to correctly conduct a solo cross-country flight. The PT will be able to navigate by Dead Reckoning and with the aid of navigation systems.

Post flight discussion and preview of next lesson

LESSON 17
(Solo cross-country)

Objectives:

Use previous experience and training to complete solo cross-country. This flight should be of at least 100 nautical miles total distance since cross-country training flight is conducted under 14 CFR part 141, with landings at a minimum of three points, including one segment of the flight consisting of a straight-line distance of at least 50 nautical miles between the take-off and landing locations. Emphasize planning and following the plan, including alternatives for cross-country procedures.

Preflight Preparation and Risk Assessment:

- Required documents and endorsements
- Aero medical factors
- Weather information
- Route selection
- Aircraft performance and limitations
- Weight and balance
- Fuel requirements
- Basic VFR weather minimums and airspace rules
- Cockpit management, decision making, and judgment
- Sectional / Terminal Area charts
- Flight publications
- Enroute communications
- ATC services available to pilots
- Use of the flight log
- Navigation log
- VFR position report
- Emergency operations
- Lost procedures
- Diversion
- Lost communications
- ATC light signals
- FAA flight plan

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Charts 5. Pilotage 6. Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	Perform Perform Perform Perform Perform Perform Perform Manage/Decide Perform
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. Use of ATIS/AWOS/ASOS 6. Airplane Servicing 7. Operation of systems 8. Positive exchange of flight controls 	Perform Perform Perform Perform Perform Perform Perform Perform
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, equipment, systems, & MFD setup 4. Instrument cockpit check 5. VOR Accuracy Check 	Perform Perform Perform Perform Perform
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. ATC light signals 5. Taxi 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness 	Perform Perform Perform Perform Perform Perform Perform Manage/Decide
Airport Operations	<ol style="list-style-type: none"> 1. Controlled airports 2. Use of approach and departure control 3. CTAF (FSS or UNICOM) airports 4. Use of ATIS 5. Go-around 	Perform Perform Perform Perform Perform
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Low level wind shear avoidance/precautions 3. Aircraft automation management 4. Aeronautical Decision making and risk management 	Perform Perform Perform Manage/Decide
Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Short-field takeoff and climb 3. Soft-field takeoff and climb 4. Crosswind takeoff and climb 5. Situational awareness 6. SRM/ and risk management 	Perform Perform Perform Perform Manage/Decide Manage/Decide

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ul style="list-style-type: none"> 12. Intercepting and Tracking VOR radials 13. VOR tracking (IR) 14. NDB Navigation 15. NDB Homing (IR) 	<ul style="list-style-type: none"> Perform Perform Perform Perform
Training Maneuvers & Procedures	<ul style="list-style-type: none"> 1. Steep turns 2. Power-off stalls (IR and VR) 3. Power-on stalls (IR and VR) 4. Use of Radar Services (IR) 	<ul style="list-style-type: none"> Perform Perform Perform Perform
Emergency operations	<ul style="list-style-type: none"> 1. Emergency descent 2. Systems and equipment malfunctions 3. Emergency approach and landing 4. Emergency equipment and survival gear 5. Emergency descents and climbs using radio aids or radar directives 6. Lost procedures 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform
Holding Procedures	<ul style="list-style-type: none"> 1. VOR holding 2. NDB holding 3. Standard holding 4. Nonstandard holding 5. Holding entry 6. Localizer holding 7. Partial panel holding 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform Perform
Descent Planning and execution	<ul style="list-style-type: none"> 1. Descents, descending turns, and transition to level flight 2. Rate descents (IR and VR) 3. Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM 	<ul style="list-style-type: none"> Perform Perform Perform Perform Manage/Decide
Approach Procedures	<ul style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent 9. Aborted approach (go-around) to landing 10. Forward slips 11. VOR approach (VR) 12. Localizer Identification 13. Localizer Tracking 	<ul style="list-style-type: none"> Perform Perform Manage/Decide Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform
Landing	<ul style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Go-around procedures 4. Short-field approach and landing 5. Soft-field approach and landing 6. Crosswind approach and landing 7. Land and Hold Short Operations 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	(LAHSO) 8. After landing procedures	Perform
Taxi and aircraft shutdown and securing procedure	1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures	Perform Perform Perform Perform

Completion Standards:

- Demonstrate cross-country proficiency by completing the flight as planned and without incident.
- Review the completed navigation log during the post flight evaluation to determine whether it was completed and used correctly.
- The cross-country flight must include a distance of over 100n.m. since solo cross-country flight is conducted under 14 CFR part 141, with landings at a minimum of three points, including at least one segment of the flight consisting of a straight-line distance of at least 50 n.m. between take-off and landing locations.

Post flight Discussion and preview of next lesson

NOTE: *The 14 CFR part 61 and part 141 appendix B regulatory requirement for 3 solo takeoffs, landings, and traffic patterns at a controlled airport may be completed in other flight lessons. This is a private pilot certification requirement that does not necessarily have to be accomplished during a specific flight lesson.*

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 18-A
(ATD)

Lesson Objectives:

The objective of this lesson is to practice non-precision VOR approach procedures. In addition, the PT will be introduced to partial panel and no-gyro radar vectoring during non-precision approach procedures.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Eighteen-A

Tasks	Sub Tasks	Desired Performance
IFR Approaches	<ol style="list-style-type: none">1. VOR Approaches2. Straight-in approach procedures3. Circling approach procedures4. Missed approach procedures5. Landing from a straight-in or circling approach procedure6. Partial panel non-precision instrument approach procedures7. No-gyro radar vectoring and approach procedures	Practice Practice Practice Practice Practice Explain Explain

Completion Standards:

The objective of this lesson is to introduce and practice non-precision VOR approach procedures. In addition, the PT will be introduced to partial panel and no-gyro radar vectoring during non-precision approach procedures.

Post flight discussion and preview of the next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 18-B
(ATD)

Lesson Objective:

The objective of this lesson is to practice non-precision NDB approach procedures. In addition, the PT will be introduced to partial panel and no-gyro radar vectoring during non-precision approach procedures.

Lesson Eighteen-B

Tasks	Sub Tasks	Desired Performance
IFR Approaches	<ol style="list-style-type: none">1. NDB Approach2. Straight-in approach procedures3. Circling approach procedures4. Missed approach procedures5. Landing from a straight-in or circling approach procedure6. Partial panel non-precision instrument approach procedures7. No-gyro radar vectoring and approach procedures	<p>Explain</p> <p>Explain</p> <p>Explain</p> <p>Explain</p> <p>Explain</p> <p>Explain</p> <p>Explain</p>

Completion Standards;

Prior to beginning the final approach segment, the PT will maintain the specified altitude within 100 feet, heading or course within 10 degrees, and airspeed within 10 knots. On the final approach segment, the PT should apply proper correction to maintain course and maintain an altitude that is plus 100 feet, minus 0 feet of the MDA to the MAP.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 18

Scenario Objectives:

Once the solo cross country is complete, the PT should be completing all flight and scenario planning to FAA Practical Test Standards parameters without assistance. This scenario should be conducted as an out and back to learn non-precision approach procedures. Choosing a destination within 30 miles of the Murfreesboro airport (MBT) will allow the pilot time to practice basis instrument maneuvers, then to transition to the approach from the enroute structure. While the quantity of approaches flown is important, the quality of the instruction will determine the learning effectiveness. Thus, it may be more important to accomplish four or five complete approaches than to try to hurry the PT through several more. Flight on the backup instruments should be introduced on every flight by use of a PFD/MFD cover. Introduce and practice VOR approaches, including related instrument approach procedures such as circling and missed approaches. Introduce NDB non-precision instrument approach procedure (if the TAA is so equipped), including circling and missed approaches. Emphasize VOR approach procedures.

NOTE: A view-limiting device is required for the dual instrument time allocated to this flight.

Introduce:

VOR approaches

- Straight-in approach procedures
- Circling approach procedures
- Missed approach procedures.
- Landing from a straight-in or circling approach procedure

Introduce:

NDB approaches (if available)

- Straight-in approach procedures
- Circling approach procedures
- Missed approach procedures
- Landing from a straight-in or circling approach procedure

Scenario Eighteen

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	Perform Perform Perform Perform Perform Perform Manage/Decide Manage/Decide Perform
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 	Perform Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 4. Cockpit management 5. Use of ATIS 6. Airplane Servicing 7. Operation of systems 8. Positive exchange of flight controls 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p>
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. PFD setup 3. Preflight check of instruments, equipment, systems, & MFD setup 4. Instrument cockpit check 5. VOR Accuracy Test 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p>
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. ATC light signals 5. Taxi 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Manage/Decide</p>
Airport Operations	<ol style="list-style-type: none"> 1. Controlled airports 2. Use of approach and departure control 3. CTAF (FSS or UNICOM) airports 	<p>Perform</p> <p>Perform</p> <p>Perform</p>
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Low level wind shear avoidance/precautions 3. Aircraft automation management 4. Aeronautical Decision making and risk management 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Manage/Decide</p>
Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Short-field takeoff and climb 3. Soft-field takeoff and climb 4. Crosswind takeoff and climb 5. Situational awareness 6. SRM/ and risk management 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Manage/Decide</p> <p>Manage/Decide</p>
Climb procedures	<ol style="list-style-type: none"> 1. Constant speed climbs & climbing turns (IR & VR) 2. Constant rate climbs (IR & VR) 3. Departure procedures 4. Situational awareness, task management, and SRM 5. Collision avoidance precautions 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Manage/Decide</p> <p>Perform</p>
Cruise procedure	<ol style="list-style-type: none"> 1. Manual straight and level flight (IR and VR) 2. Power management & basic speed control (VR and IR) 3. Collision avoidance precautions 4. Ground Track/Wind Drift corrections 5. Situational awareness, task management, and SRM 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Manage/Decide</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	using radio aids or radar directives 6. Lost procedures	Perform
Holding Procedures	1. VOR holding 2. NDB holding 3. Standard holding 4. Nonstandard holding 5. Holding entry 6. Localizer holding 7. Partial panel holding	Perform Perform Perform Perform Perform Perform Perform
Descent Planning and execution	1. Descents, descending turns, and transition to level flight 2. Rate descents (IR and VR) 3. Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM	Perform Perform Perform Perform Manage/Decide
Approach Procedures	1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent 9. Aborted approach (go-around) to landing 10. Forward slips 11. VOR approach (VR) 12. # VOR approach (IR) 13. Straight-in approach procedures 14. Circling approach procedures 15. Missed approach procedures. 16. Landing from a straight-in or circling approach procedure 17. # NDB approaches 18. Straight-in approach procedures 19. Circling approach procedures 20. Missed approach procedures 21. Landing from a straight-in or circling approach procedure 22. Localizer Identification 23. Localizer Tracking	Perform Perform Manage/Decide Perform Perform Perform Perform Perform Perform Perform Perform Describe Describe Describe Describe Describe Describe Describe Describe Describe Describe Describe Perform Perform
Landing	1. Before landing procedures 2. Normal landing 3. Go-around procedures 4. Short-field approach and landing 5. Soft-field approach and landing 6. Crosswind approach and landing 7. Land and Hold Short Operations (LAHSO) 8. After landing procedures	Perform Perform Perform Perform Perform Perform Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures 	Perform Perform Perform Perform
---	---	--

OUTBOUND FLIGHT

Completion standards:

- Explain and use the information displayed on the approach charts
- Execute several initial and intermediate approach segments to arrive at the final approach fix
- Allow, while on the final approach segment, less than full-scale deflection of the CDI (or within 10 degrees in the case of an RMI).
- Complete the final approach and letdown to the missed approach point.
- Demonstrate the missed approach procedure, as published on the appropriate chart.

RETURN FLIGHT

Completion standards:

- Maintain altitude within 100 feet on the initial and intermediate approach segments
- Maintain altitude + 100 feet, - 0 feet of the MDA at the MAP
- Demonstrate the missed approach procedure, as published on the appropriate chart.
- Exhibit ability to properly execute circling approach procedures.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 19-A
(ATD)

Lesson Objectives:

The PT will be introduced to ILS and localizer approach procedures.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Nineteen-A

Tasks	Sub Tasks	Desired Performance
ILS Approaches	<ol style="list-style-type: none">1. Straight-in approach procedures2. Circling approach procedures3. Missed approach procedures4. Landing from a straight-in or circling approach procedure	<p>Explain</p> <p>Explain</p> <p>Explain</p> <p>Explain</p>
Localizer Approaches	<ol style="list-style-type: none">1. Front Course2. Back Course	<p>Explain</p> <p>Describe</p>

Completion Standards:

Prior to beginning the final approach segment, the PT will maintain the specified altitude within 100 feet, heading or course within 10 degrees, and airspeed within 10 knots, of the desired values. On the final approach segment, the PT should apply proper correction to maintain less than full-scale deflection of either the localizer or glide slope indications and avoid descent below the DA or MDA before initiating a missed approach procedure or transitioning to a normal landing.

Post flight discussion and preview of the next lesson

LESSON 19-B
(ATD)

Lesson Objective:

The PT will review both precision and non-precision instrument approach procedures. Emphasis will be directed toward correction of any faulty tendencies to prepare the PT for the Stage III/End-of-Course Flight Check.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson 19-B

Tasks	Sub Tasks	Desired Performance
Instrument Approaches	<ol style="list-style-type: none">1. ILS Approach2. VOR Approach3. NDB Approach4. GPS Approach5. Localizer Approach<ul style="list-style-type: none">• Front Course• Back Course	Practice Practice Practice Practice Practice Practice Practice

Completion Standard:

Prior to beginning the final approach segment, the PT will maintain the specified altitude within 100 feet, heading or course within 10 degrees, and airspeed within 10 knots of the desired values. On the final approach segment, the PT should apply proper correction to maintain the approach course, allow less than full-scale deflection of course deviation indications, and avoid descent below the DA or MDA before initiating a missed approach procedure or transitioning to a normal landing.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	20. Emergency procedures 21. Post flight procedures	Perform Perform
Instrument	1. VOR holding 2. NDB holding 3. Localizer holding 4. VOR approaches 5. NDB approaches 6. Localizer approaches 7. ILS approaches 8. GPS/GPS overlay approaches 9. Circling approach procedures 10. Straight-in approach procedures 11. Missed approach procedures 12. Partial panel non-precision instrument approach procedures	Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform

Completion standards:

- Exhibit ability to conduct a VFR cross-country flight with a diversion to an alternate airport.
- Perform private pilot maneuvers at a proficiency level consistent with the criteria established in the FAA Private Pilot Practical Test Standards.
- Demonstrate proficiency in the listed instrument maneuvers and operations with very minor deviations from the criteria published in the FAA Instrument Rating Practical Test Standards.

Post flight discussion and preview of next lesson

NOTE 1: *The FAA Practical Test Standards (PTS) requires FAA inspectors and designated pilot examiners to develop a written "plan of action" for the conduct of practical tests. The instructions include provisions for changing the sequence of combining tasks as required to facilitate an orderly, efficient evaluation. These instructions in the PTS contain practical guidance for instructors conducting Stage or Progress Checks.*

NOTE 2: *The inspector and designated examiner "plan of action" should include a preflight meeting with the PT to tell them what will be expected of them. This meeting should take place early enough that the PT has time to plan the entire scenario. The plan should also include "mini scenarios" that allow the inspector/designated examiner to introduce unexpected emergency and abnormal procedures in a realistic context.*

The chief flight instructor, assistant chief flight instructor, or the designated check instructor who conducts this Stage II Check should develop a logical plan of action. While all listed tasks in each area of operation should be evaluated, tasks with similar objectives may be combined. For example, a rectangular course may be combined with an airport traffic pattern. If the elements in one task have already been evaluated in another task, they need not be repeated. In addition, certain tasks may be evaluated orally. Such tasks include those that cannot realistically be evaluated on the scheduled flight. An example is night flying.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

STAGE III

STAGE OBJECTIVES

The objective of this stage is to develop the PT's IFR cross-country procedures and to increase proficiency to the level required of an instrument rated pilot. The PT will also be introduced to the special considerations involved in night operations.

STAGE COMPLETION STANDARD

At completion of the stage, the PT must be able to demonstrate all IFR flight maneuvers and procedures at the proficiency level of an instrument rated pilot, as outlined in the current FAA Instrument Rating Practical Test Standards. The PT will also be able to demonstrate private pilot maneuvers at the proficiency level specified in the FAA Private Pilot Practical Test Standards.

NOTE: *This note is applicable to the following dual flight lessons in Stage III of the Private/Instrument Flight Syllabus. These flight lessons include review assignments that are intended as a guide for both PTs and instructors.*

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 20

Scenario Objectives:

This scenario will consist of a night out and back flight to an airport with appropriate night lighting and instrument approach facilities. This flight should build confidence in the PTs ability to fly at night and solely on instruments. The scenario should introduce the special operational considerations associated with night flying and practice night traffic pattern, approaches, and landings. This lesson will stress the importance of including instrument references for maintaining attitude and emphasize the physiological factors and additional planning associated with the night environment.

Introduce night navigation and emergency operations. The PT will also be able to recognize the importance of thorough planning and accurate navigation. The flight should include a total distance of more than 100 nautical miles and a point of landing at least a straight-line distance of more than 50 nautical miles from the Murfreesboro airport (MBT). This flight will include attitude instrument flying practice with emphasis on precise aircraft control and the navigation accuracy required for night VFR cross-country flights

Scenario Twenty

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Night preparation	<ol style="list-style-type: none"> 1. Aero medical factors 2. Flight planning considerations 3. Use of checklists 4. Preflight inspection 5. Preparation and equipment 6. Minimum equipment list 	Manage/Decide Perform Perform Perform Perform Perform
Night-flight	<ol style="list-style-type: none"> 1. Power-off stalls 2. Power-on stalls 3. Steep turns 4. Maneuvering during slow flight 5. Normal takeoffs and climbs 6. Normal approaches and landings 7. Short field takeoffs and landings 8. Soft field takeoffs and landings 9. VFR navigation 10. Unusual attitude recoveries 11. Controlled airports 12. Use of ATIS, approach, and departure control 13. Go-around 	Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform
Night cross-country preparation	<ol style="list-style-type: none"> 1. Weather information 2. Route selection 3. Altitude selection 4. Fuel requirements 5. Performance and limitations 6. Cockpit management 	Perform Perform Perform Perform Perform Perform
Night cross-country flight	<ol style="list-style-type: none"> 1. Pilotage & Dead Reckoning 2. Radio navigation 	Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	3. Emergency operations	Perform
	4. Use of unfamiliar airports	Perform
	5. Collision avoidance precautions	Perform
	6. Diversion to alternate	Perform
	7. Lost procedures	Perform

OUTBOUND FLIGHT

Completion standards:

- Demonstrate an understanding of the importance of attitude control
- Control altitude within 150 feet during level turns, straight-and-level flight, and slow flight. Stall recoveries should be coordinated with a minimum loss of altitude.
- Complete 5 takeoffs and landings to a full-stop with each landing involving flight in the traffic pattern.
- All landing approaches should be stabilized with touchdown at a predetermined area on the runway.

RETURN FLIGHT

Completion standards:

- Demonstrate an understanding of night cross-country preparation and flight procedures, including ability to maintain attitude by instrument reference.
- Navigation should be accurate, and simulated emergency situations should be handled promptly, utilizing proper judgment.
- Total distance of more than 100 nautical miles required.
- In addition, the flight must include a point of landing at least a straight-line distance of more than 50 nautical miles from the original point of departure.
- Complete 5 takeoffs and landings to a full stop with each involving flight in the traffic pattern
- Landing approaches stabilized with touchdown at or near the appropriate touchdown area on the runway.

Post flight discussion and preview of next lesson

NOTE: 10 night takeoffs and landings to a full stop with each involving flight in the traffic pattern are required under 14 CFR part 141 appendix B (airplane single-engine course).

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 21
Solo

Scenario Objectives:

Practice VFR flight maneuvers and procedures assigned by the instructor with special emphasis on improving any deficient areas in preparation for the Stage III/End-of-Course Flight Check. An additional goal will be to further develop the PT's knowledge and skill in preparation for the private pilot practical test.

- Specific maneuvers or procedures assigned by the flight instructor

Scenario Twenty-One
(Local scenario)

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	Perform Perform Perform Perform Perform Perform Manage/Decide Manage/Decide Perform
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 4. Cockpit management 5. Use of ATIS 6. Airplane Servicing 7. Operation of systems 8. Positive exchange of flight controls 	Perform Perform Perform Perform Perform Perform Perform
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. Preflight check of instruments, equipment, and systems 3. Instrument cockpit check 4. VOR Accuracy Test 	Perform Perform Perform
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. ATC light signals 5. Taxi 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness 	Perform Perform Perform Perform Perform Perform Perform Manage/Decide
Airport Operations	<ol style="list-style-type: none"> 1. Controlled airports 	Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	2. Use of approach and departure control	Perform
	3. CTAF (FSS or UNICOM) airports	Perform
Before Takeoff Checks	1. Normal and abnormal indications	Perform
	2. Low level wind shear avoidance/precautions	Perform
	3. Aircraft automation management	Perform
	4. Aeronautical Decision making and risk management	Manage/Decide
Takeoff	1. Normal takeoff	Perform
	2. Short-field takeoff and climb	Perform
	3. Soft-field takeoff and climb	Perform
	4. Crosswind takeoff and climb	Perform
	5. Situational awareness	Manage/Decide
	6. SRM/ and risk management	Manage/Decide
Climb procedures	1. Constant speed climbs & climbing turns (IR & VR)	Perform
	2. Constant rate climbs (IR & VR)	Perform
	3. Departure procedures	Perform
	4. Situational awareness, task management, and SRM	Manage/Decide
	5. Collision avoidance precautions	Perform
Cruise procedure	1. Manual straight and level flight (IR and VR)	Perform
	2. Power management & basic speed control (VR and IR)	Perform
	3. Collision avoidance precautions	Perform
	4. Ground Track/Wind Drift corrections	Perform
	5. Situational awareness, task management, and SRM	Perform
	6. Medium Banked Standard rate turns to headings (VR and IR)	Manage/Decide
	7. Maneuvering during slow flight (IR & VR)	Perform
	8. Unusual attitude recovery (VR & IR)	Perform
	9. Operations in Turbulence	Perform
	10. Magnetic compass turns	Perform
	11. Wake turbulence avoidance	Perform
	12. System and equipment malfunctions	Perform
	13. Demonstrated stalls (secondary, accelerated, trim, cross-control)	Perform
	14. Spin awareness	Perform
	15. Flight at slow airspeeds with realistic distractions	Perform
	16. Timed turns to magnetic compass headings	Perform
	17. GPS operations & procedures	Perform
	18. GPS Orientation	Perform
	19. GPS Fixes	Perform
	20. GPS Direct	Perform
	21. GPS flight planning and basic "T" approach	Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ul style="list-style-type: none"> 22. Nearest function on the GPS 23. GPS overlay approach 24. Diversion to an alternate 25. Determine ground speed, ETA, and fuel consumption 	<ul style="list-style-type: none"> Perform Perform Perform Perform
Navigation	<ul style="list-style-type: none"> 1. Dead Reckoning navigation 2. Departure 3. Opening flight plan 4. Course interception 5. Position fix by navigation facilities 6. Flight on federal airways 7. Collision avoidance precautions 8. Closing the flight plan 9. VOR Navigation 10. VOR Orientation 11. Intercepting and Tracking VOR radials 12. VOR tracking (IR) 13. Pilotage 14. NDB Navigation 15. NDB Homing (IR) 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Practice Perform Perform
Training Maneuvers & Procedures	<ul style="list-style-type: none"> 1. Steep turns 2. Power-off stalls (IR and VR) 3. Power-on stalls (IR and VR) 4. Use of Radar Services (IR) 	<ul style="list-style-type: none"> Perform Perform Perform Perform
Emergency operations	<ul style="list-style-type: none"> 1. Emergency descent 2. Emergency approach and landing 3. Systems and equipment malfunctions 4. Emergency equipment and survival gear 5. Emergency descents and climbs using radio aids or radar directives 6. Lost procedures 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform
Holding Procedures	<ul style="list-style-type: none"> 1. VOR holding 2. NDB holding 3. Standard holding 4. Nonstandard holding 5. Holding entry 6. Localizer holding 7. Partial panel holding 	<ul style="list-style-type: none"> Perform Perform Perform Perform Perform Perform Perform
Descent Planning and execution	<ul style="list-style-type: none"> 1. Descents, descending turns, and transition to level flight 2. Rate descents (IR and VR) 3. Wind drift in turns 4. Collision avoidance precautions 5. Situational awareness, task management and SRM 	<ul style="list-style-type: none"> Perform Perform Perform Perform Manage/Decide
Approach Procedures	<ul style="list-style-type: none"> 1. Traffic pattern entry procedures 2. Collision avoidance precautions 3. Situational awareness, task management and SRM 4. Wind shear avoidance 	<ul style="list-style-type: none"> Perform Perform Manage/Decide Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 5. Communications 6. Normal approach 7. Emergency approach and landing 8. Emergency descent 9. Aborted approach (go-around) to landing 10. Forward slips 11. VOR approach (VR) 12. VOR approach (IR) 13. Straight-in approach procedures 14. Circling approach procedures 15. Missed approach procedures. 16. Landing from a straight-in or circling approach procedure 17. NDB approaches 18. Straight-in approach procedures 19. Circling approach procedures 20. Missed approach procedures 21. Landing from a straight-in or circling approach procedure 22. Localizer Identification 23. Localizer Tracking 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p>
Landing	<ol style="list-style-type: none"> 1. Before landing procedures 2. Normal landing 3. Go-around procedures 4. Short-field approach and landing 5. Soft-field approach and landing 6. Crosswind approach and landing 7. Land and Hold Short Operations (LAHSO) 8. After landing procedures 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p>
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. Use of Checklist 2. Aircraft ground operations and parking 3. Securing 4. Instrument post flight procedures 	<p>Perform</p> <p>Perform</p> <p>Perform</p> <p>Perform</p>

Completion standards:

- The lesson is complete when the PT has practiced the assigned VFR maneuvers and procedures.
- The PT should improve any weak performance areas determined previously
- Perform each assigned maneuver and procedure with proper coordination and precision according to the criteria established in the FAA Private Pilot Practical Test Standards.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 22

Scenario Objectives:

This scenario is planned as a day and night out and back cross-country with emphasis on increased proficiency in instrument approaches, including GPS procedures. The PT also will review partial panel and no-gyro radar vectoring approach procedures. Emphasis will be on correction of any deficient skill or knowledge areas. The enroute portion of the flight will be used to introduce a completely automated navigation leg and Datalink Situational Awareness Systems (if installed and operating).

Partial Panel

Partial Panel in a TAA can be induced by covering all or part of the PFD/MFD. Each individual TAA is certified with a set of backup flight instruments that usually include an attitude indicator, altimeter, and airspeed indicator. The attitude indicator may be powered electrically or by vacuum. During partial panel flight it is important that the all-electric TAA pilot be aware of the life span of the batteries and understand the concept of electrical load shedding to preserve the battery.

Review VFR cross-country flight planning operations, including weather analysis and performance calculations. In addition, the PT will gain proficiency in cross-country procedures and the proper techniques to be used during flights out of the local training area, including use of VOR, NDB, and radar services under simulated instrument flight conditions. The lesson also will review instrument and emergency operations. Emphasis will be on the importance of VFR cross-country navigation procedures and how they relate to IFR operations on a flight that includes a point of landing at least a straight-line distance of more than 50 nautical miles from the Murfreesboro airport (MBT).

NOTE: A view-limiting device is required for the dual instrument time allocated to this lesson.

- Partial panel non-precision instrument approach procedure no-gyro radar vectoring and approach procedure

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Flight Planning	<ol style="list-style-type: none"> 1. Scenario Planning 2. Certificates and Documents 3. Airport Diagrams 4. VFR Navigational Chart 5. Pilotage 6. Dead Reckoning navigation 7. Preflight SRM briefing 8. Decision making and risk management 9. Emergency Operations 	Perform Perform Perform Perform Perform Perform Manage/Decide Manage/Decide Perform
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Use of Checklists 2. Preflight Inspection 3. Minimum equipment list 	Perform Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 4. Cockpit management 5. Use of ATIS 6. Airplane Servicing 7. Operation of systems 8. Positive exchange of flight controls 	<p>Perform Perform Perform Perform Perform</p>
Aircraft systems related to IFR operations	<ol style="list-style-type: none"> 1. Aircraft flight instrument and navigation equipment 2. Preflight check of instruments, equipment, and systems 3. Instrument cockpit check 4. VOR Accuracy Test 5. #Datalink Situational Awareness Systems 	<p>Perform Perform Perform Perform Describe</p>
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> 1. Engine start 2. Airport and runway markings and lighting 3. Radio Communications 4. ATC light signals 5. Taxi 6. Runway incursion avoidance 7. Cross wind taxi 8. SRM/Situational awareness 	<p>Perform Perform Perform Perform Perform Perform Perform Manage/Decide</p>
Airport Operations	<ol style="list-style-type: none"> 1. Controlled airports 2. Use of approach and departure control 3. CTAF (FSS or UNICOM) airports 	<p>Perform Perform Perform</p>
Before Takeoff Checks	<ol style="list-style-type: none"> 1. Normal and abnormal indications 2. Low level wind shear avoidance/precautions 3. Aircraft automation management 4. Aeronautical Decision making and risk management 	<p>Perform Perform Perform Manage/Decide</p>
Takeoff	<ol style="list-style-type: none"> 1. Normal takeoff 2. Short-field takeoff and climb 3. Soft-field takeoff and climb 4. Crosswind takeoff and climb 5. Situational awareness 6. SRM/ and risk management 	<p>Perform Perform Perform Perform Manage/Decide Manage/Decide</p>
Climb procedures	<ol style="list-style-type: none"> 1. Constant speed climbs & climbing turns (IR & VR) 2. Constant rate climbs (IR & VR) 3. Departure procedures 4. Situational awareness, task management, and SRM 5. Collision avoidance precautions 	<p>Perform Perform Perform Manage/Decide Perform</p>
Cruise procedure	<ol style="list-style-type: none"> 1. Manual straight and level flight (IR and VR) 2. Power management & basic speed control (VR and IR) 3. Collision avoidance precautions 4. Ground Track/Wind Drift corrections 5. Situational awareness, task 	<p>Perform Perform Perform Perform Manage/Decide</p>

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	8. After landing procedures	Perform
Taxi and aircraft shutdown and securing procedure	1. Use of Checklist	Perform
	2. Aircraft ground operations and parking	Perform
	3. Securing	Perform
	4. Instrument post flight procedures	Perform

OUTBOUND FLIGHT

Completion standards:

- Demonstrate proficiency in executing precision and non-precision approaches, including GPS procedures.
- Maintain, while on the final approach segment, less than full-scale deflection of course deviation indications.
- Demonstrate ability to allow less than full-scale deflection of the glide slope indicator.
- Exhibit ability to perform circling and missed approach procedures.
- Display skill in flying partial panel and no-gyro radar approaches.

RETURN FLIGHT

Completion standards:

- Demonstrate the skill to perform cross-country flight safely, including use of navigation systems and radar services under simulated instrument conditions.
- Include a point of landing at least a straight-line distance of more than 50 nautical miles from the original point of departure.
- Demonstrate complete preflight planning, weather analysis, use of FAA publications and charts, adherence to the preflight plan, and the use of pilotage, Dead Reckoning, radio communication, and navigation systems.

Post flight discussion and preview of next lesson

NOTE: *Practice of all the types of approaches and procedures listed in this lesson and in the remaining flights of Stage III may be impractical. In that case, the instructor should emphasize practice of only those approaches or procedures that appear to be the most difficult for the PT.*

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 23-A
(ATD)

Lesson Objective:

The PT will plan and conduct a short IFR cross-country flight using the ATD. In addition, IFR emergency procedures will be emphasized. The Emergency Escape Maneuver, which combines the use of the autopilot and other aircraft automated systems and possibly BRS deployment (if installed and the situation warrants), will be introduced and discussed.

ATD Lessons – In the event an ATD is not available for the aircraft, the training events prescribed can be flown as local practice flights in the actual aircraft. Early in the program, these flights may be executed with the PT having only a responsibility for the specific tasks required by the ATD Lesson.

Lesson Twenty-three-A

Tasks	Sub Tasks	Desired Performance
IFR Cross-Country flight planning	<ol style="list-style-type: none"> 1. Weather information 2. Aircraft performance, limitations, and systems related to IFR operations 3. Appropriate navigational charts 4. Filing an IFR flight plan 5. Preflight check of instruments, equipment, and systems 6. IFR takeoff preparations 7. Decision making & risk management 	Explain Explain Practice Explain Explain Explain Explain
ATC clearances	<ol style="list-style-type: none"> 1. Clearance copying 2. Clearance read back 	Explain Explain
IFR Departure Procedures	<ol style="list-style-type: none"> 1. Use of DPs 2. Use of Radar 3. SRM/Situational awareness 	Explain Explain Explain
IFR Enroute Procedures	<ol style="list-style-type: none"> 1. VOR navigation 2. NDB navigation 3. Holding 4. Enroute Course Changes 5. Calculating ETAs 6. Automated Navigation Leg 7. SRM/Situational awareness and task management 	Practice Practice Practice Practice Practice Explain/ Practice Explain
Systems and Equipment Malfunctions	<ol style="list-style-type: none"> 1. Loss of Gyro attitude and/or heading indicators 	Explain
IFR Arrival procedures	<ol style="list-style-type: none"> 1. Use of STARs 2. Use of Radar 3. VOR Approach 4. NDB Approach 5. ILS Approach 6. Circling Approach Procedures 7. Missed Approach Procedures 	Explain Practice Practice Practice Practice Practice Practice

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	8. Landing form a straight-in or circling approach procedure	Practice
	9. SRM/Situational awareness and task management	Explain
Emergency Procedures	1. Loss of communications 2. Radio failure 3. Icing 4. Emergency Escape Maneuver 5. BRS Use Scenario 6. Low fuel supply 7. Engine failure	Explain Explain Explain Explain/practice Explain/Practice Explain Explain

Completion Standards:

At the completion of this flight, the PT will be able to explain the emergency operations or procedures that may be encountered on an IFR flight. Additionally, the PT will know the methods used to calculate ETAs and comply with course changes that may be issued by ATC or necessitated by enroute weather.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 23

Scenario Objectives:

The scenario will consist of an out and back cross-country originating from MBT scenario conducted under simulated IFR conditions. The full range of IFR approaches and a variety of ATC environments should be experienced. The instructor should plan all emergency scenarios so they allow the PT a realistic time period for resolution and do not detract from the approach activity. Review IFR cross-country procedures, including IFR flight planning. The lesson will also familiarize the PT with IFR departure, enroute, and arrival procedures. Emphasis will be on preflight planning and IFR cross-country procedures.

Gain increased proficiency in basic instrument maneuvers including GPS, VOR and NDB orientation. The PT will review intercepting and tracking VOR and NDB radials and bearings. In addition, the PT also will increase proficiency and confidence in partial panel maneuvers and procedures. Included is a review systems and equipment malfunctions and emergency procedures. Emphasis will be on instrument approaches.

NOTE: A view-limiting device is required for the dual instrument time allocated to this lesson.

Scenario Task	Scenario Sub-Task	Desired Performance
IFR cross-country flight planning	<ol style="list-style-type: none"> 1. Weather information 2. Aircraft performance, limitations, and systems related to IFR operations 3. Appropriate navigational charts 4. Cockpit management 5. SRM 6. Filing an IFR flight plan 7. Voice communications 8. IFR takeoff preparations 	Perform Perform Perform Perform Manage/Decide Perform Perform Perform
IFR departure procedures and clearances	<ol style="list-style-type: none"> 1. Air Traffic control clearances <ol style="list-style-type: none"> a. Clearance copying b. Clearance read back 2. Use of DPs 3. Use of Radar 4. SRM 	Perform Perform Perform Perform Perform Manage/Decide
IFR enroute procedures and clearances	<ol style="list-style-type: none"> 1. GPS navigation 2. VOR navigation 3. NDB navigation 4. Holding 5. Enroute course changes 6. Determining ETAs 7. SRM 	Perform Perform Perform Perform Perform Perform Manage/Decide
IFR arrival procedures and clearances	<ol style="list-style-type: none"> 1. Use of STARs 2. Use of radar 3. VOR/VORTAC/ approach 4. NDB approach 5. ILS approach 6. GPS approach 	Perform Perform Perform Perform Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 7. Circling approach procedures 8. Missed approach procedures 9. Landing from a straight-in or circling approach procedure 10. Canceling an IFR flight plan 11. SRM 	<p>Perform Perform Perform</p> <p>Perform Manage /Decide</p>
Full Panel Instrument --- Holding and Approaches	<ol style="list-style-type: none"> 1. VOR holding 2. NDB holding 3. Intersection holding 4. VOR approach 5. NDB approach 6. Localizer approach 7. ILS approach 8. GPS approach Circling approaches 9. Missed approaches 	<p>Perform Perform Perform Perform Perform Perform Perform Perform Perform</p>
Partial panel instrument	<ol style="list-style-type: none"> 1. Rate climbs and descents 2. Slow flight 3. Stalls/stall recoveries 4. Steep turns 5. Recovery from unusual attitudes 6. Timed turns to magnetic compass headings' 7. Magnetic compass turns 8. VOR intercept and tracking 9. NDB intercept and tracking 10. Non-precision instrument approach procedures 11. No-gyro radar vectoring and approach procedures. 	<p>Perform Perform Perform Perform Perform Perform</p> <p>Perform Perform Perform Perform Perform</p>
Simulated emergency procedures	<ol style="list-style-type: none"> 1. Loss of communications 2. Radio failure 3. Icing 4. Low fuel supply 5. Engine failure 8. Emergency Escape Maneuver 6. BRS Use Scenario 7. SRM 	<p>Perform Perform Perform Perform Perform Perform</p> <p>Explain Manage/Decide</p>

OUTBOUND FLIGHT

Completion standards:

- Display understanding of IFR cross-country flight planning procedures.
- Exhibit ability to obtain IFR clearances.
- Demonstrate ability to explain the departure, enroute, and arrival procedures performed.
- Demonstrate ability to fly both non-precision and precision approaches with only minor deviations beyond the criteria established in the instrument rating Practical Test Standards.
- Demonstrate ability to conduct IFR cross-country flight with only minimum help from the instructor

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

RETURN FLIGHT

Completion standards:

- Maintain altitude within 100 feet, headings within 10 degrees, airspeed within 10 knots, and climb and descent rates + or – 100 feet per minute of the desired values with full panel instrument reference.
- Demonstrate prompt recovery procedures from stalls and unusual attitudes.
- Exhibit knowledge of instrument systems malfunctions and partial panel procedures.
- Demonstrate proficiency in VOR and NDB orientation and tracking
- Exhibit skill in executing holding patterns as well as precision and non-precision approach procedures;
- Maintain, while on the final approach segment, less than full-scale deflection of course deviation indications, airspeed within 10 knots, and appropriate altitudes.
- Display ability to properly perform partial panel and no-gyro radar approaches.
- Exhibit knowledge of instrument and system failures
- Demonstrate proficiency in partial panel procedures
- Be able to explain emergency operations or procedures that may be encountered on an IFR flight.

Post flight discussion and preview of next lesson

LESSON 24

Flight review

Scenario Objectives:

This flight review, conducted by an instructor other than the PT's regularly assigned instructor, will evaluate knowledge and skill level at the mid-point of Stage III to determine if the PT is progressing normally. This scenario will be planned by the PT as a local out and back flight to or from class B, C, and/or D airspace. Emphasis, will be on safety of flight considerations during simulated instrument flight, stressing basic instrument maneuvers, both full and partial panel, emergency operations, holding patterns and instrument approach procedures, including circling and missed approaches.

NOTE: A view-limiting device is required for the dual instrument time allocated to this lesson

Local Instrument Review

Scenario Task	Scenario Sub-Task (Full and Partial Panel)	Desired Performance
Instrument preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Preflight preparation 2. Instrument cockpit check 3. Cockpit management 4. ATC clearances and procedures 5. SRM 	Perform Perform Perform Perform Manage/Decide
Holding	<ol style="list-style-type: none"> 1. Holding procedures 	Perform
Instrument approach procedures	<ol style="list-style-type: none"> 1. VOR approaches 2. NDB approaches 3. Localizer approaches 4. ILS approaches 5. GPS/GPS overlay approaches 6. Circling approach procedures 7. Missed approach procedures 8. Partial panel nonprecision instrument approach procedures 	Perform Perform Perform Perform Perform Perform Perform
Emergencies	<ol style="list-style-type: none"> 1. Emergency operations (Loss of communications, gyro attitude and/or heading indicators) 2. SRM 	Perform Manage/Decide

Completion standards:

- Demonstrate sound understanding of preflight activities and safe operating practices related to flight under instrument flight rules.
- Exhibit normal (for this stage of training) knowledge and proficiency in performance of the assigned maneuvers and procedures
- Be able to safely maintain altitude within 100 feet, headings within 10 degrees, climb/descent airspeeds within 10 knots, and descent rates within 100 feet of that desired.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

- Accurately control the airplane by instrument reference during basic attitude instrument maneuvers or procedures, including partial panel and simulated emergency operations.
- Show a good understanding of aircraft systems for flight under both visual and instrument conditions.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 25

Scenario Objectives:

Review IFR cross-country procedures. The PT should gain proficiency in departure, enroute, emergency, and arrival procedures. This scenario will be conducted along 250 n.m. or more of charted airways or ATC directed routing with one segment at least a straight-line distance of 100 n.m. between airports with an instrument approach at each airport. The flight will originate from MBT and involve approaches at no less than 3 airports with different kinds of approach navigation systems.

NOTE: A view-limiting device is required for the dual instrument time allocated to this lesson.

Cross-country Instrument Review

Scenario Tasks	Scenario Sub Tasks (Full and Partial Panel)	Desired Performance
IFR cross-country flight planning	<ol style="list-style-type: none"> 1. Aircraft performance, limitations, and systems related to IFR Operations 2. Filing an IFR Flight Plan 3. Weather information 4. SRM 	Perform Perform Perform Manage/Decide
Instrument preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Preflight preparation 2. Instrument cockpit check 3. Cockpit management 4. ATC clearances and procedures 5. Clearance copying 6. Clearance read back 	Perform Perform Perform Perform Perform Perform
IFR departure procedures and clearances	<ol style="list-style-type: none"> 1. Use of DPs 2. Use of Radar 3. SRM 	Perform Perform Manage/Decide
IFR enroute procedures and clearances	<ol style="list-style-type: none"> 1. VOR navigation 2. NDB navigation 3. Holding 4. Enroute course changes 5. Determining ETAs 6. Datalink Situational Awareness Systems 7. Automated navigation leg 8. SRM 	Perform Perform Perform Perform Perform Explain/Perform Perform Manage/Decide
IFR arrival procedures	<ol style="list-style-type: none"> 1. Holding procedures 2. Use of STARs 3. Use of radar 4. Canceling an IFR flight plan 5. SRM 	Perform Perform Perform Perform Manage/Decide
Instrument approach procedures	<ol style="list-style-type: none"> 1. VOR approaches 2. NDB approaches 3. Localizer approaches 4. ILS approaches 5. GPS/GPS overlay approaches 6. Circling approach procedures 7. Missed approach procedures 	Perform Perform Perform Perform Perform Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	8. Partial panel non-precision instrument approach procedures	Perform
	9. Landing from a straight-in or circling approach procedure	Perform
Emergencies	1. Emergency operations (Loss of gyro attitude and/or heading indicators)	Perform
	2. Loss of communications	Perform
	3. Radio failure	Perform
	4. Icing	Perform
	5. Low fuel supply	Perform
	6. Engine failure	Perform
	7. Systems and Equipment malfunctions	Perform
	8. Emergency Escape Maneuver	Perform
	9. BRS Use Scenario	Explain
	10. SRM	Manage/Decide

Completion standards:

- Demonstrate instrument pilot proficiency in IFR cross-country procedures as outlined in the current FAA Instrument Rating Practical Test Standards
- Demonstrate proficiency in instrument approach procedures with very minor deviations from the criteria published in the FAA Instrument Rating Practical Test Standards
- Exhibit increased proficiency in IFR emergency procedures
- Exhibit sound judgment and decision-making as well as use of available cockpit resources.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Completion standards:

- Demonstrate proficiency in performing cross-country flight operations to the level outlined in the current FAA Private Pilot and Instrument Rating Practical Test Standards
- Include a point of landing at least a straight-line distance of more than 50 nautical miles from the original point of departure.
- Demonstrate complete preflight planning, weather analysis, use of FAA publications and charts, and other available resources in adhering to the preflight plan.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 27
(Local Scenario)

Scenario Objectives:

This scenario can be flown either as a local Murfreesboro flight or as an out and back flight scenario. Demonstrate proficiency in full and partial panel instrument flight maneuvers, as well as holding and approach procedures. The lesson is intended to review and evaluate the PT's readiness for the Stage III/End-of-Course flight Check.

Scenario Twenty-Seven
Local Instrument

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Preflight	1. Instrument Cockpit Check	Perform
Full and Partial Panel instrument	1. Straight and level 2. Standard-rate turns 3. Constant airspeed climbs and descents 4. Rate climbs 5. Constant airspeed descents 6. Rate descents 7. Climbing and descending turns 8. Recovery from unusual flight attitudes 9. Steep turns 10. Maneuvering during slow flight 11. Timed turns to magnetic compass headings 12. Magnetic compass turns	Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform
IFR departure procedures and clearances	1. Use of DPs 2. Use of radar 3. SRM	Perform Perform Manage/Decide
IFR arrival procedures and clearances	1. Use of STARs 2. Use of radar 3. Holding 4. VOR approach 5. NDB approach 6. ILS approach 7. GPS approach 8. Circling approach procedures 9. Missed approach procedures 10. Landing from a straight-in or circling approach procedure	Perform Perform Perform Perform Perform Perform Perform Perform Perform Perform

Completion standards:

- Maintain altitude within 100 feet, headings, within 10 degrees, airspeed within 10 knots, and climbs or descent rates within 100 feet per minute of the desired values.
- Demonstrate holding and approach procedure proficiency equal to or better than the FAA Instrument Rating Practical Test Standards criteria.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 28

Scenario Objectives:

This scenario should be conducted as a short out and back flight at least 20 nm from MBT to replicate the profile expected during the End-of-Course Flight Check and evaluate the PT's proficiency to determine private-level performance areas in which additional practice or knowledge may be required. Since this is the second last instructional flight prior to the Stage/End-of-Course Flight Check, emphasis will be on correction of any deficient maneuvers, procedures, or knowledge areas.

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Normal preflight and cockpit procedures	<ol style="list-style-type: none"> 1. Ground operations 2. Normal takeoffs 3. SRM 	Perform Perform Manage/Decide
Training Maneuvers and Procedures	<ol style="list-style-type: none"> 1. Wind drift corrections 2. Power-off stalls 3. Power-on stalls 4. Maneuvering during slow flight 5. Using radio communications, navigation systems/facilities, and radar services 6. Unusual attitude recoveries 	Perform Perform Perform Perform Perform Perform
Landings	<ol style="list-style-type: none"> 1. Short field takeoffs and landings 2. Forward slips to landing 3. Go-around from a rejected landing 4. Normal landings 	Perform Perform Perform Perform
Taxi and aircraft shutdown and securing procedure	<ol style="list-style-type: none"> 1. After landing procedures 2. Parking and securing 3. SRM 	Perform Perform Manage/Decide
Emergency operations	<ol style="list-style-type: none"> 1. Emergency descents and climbs using radio aids or radar directives 	Perform

Completion Standards:

- Each maneuver and procedure should be performed at the proficiency level of a private pilot
- Mastery of the airplane should be evident and the successful outcome of each task performed should never be in question
- Any maneuvers or procedures that do not meet this standard should be reviewed with the PT and assigned additional practice.
- PT should exhibit a sound understanding of the knowledge, skill, and proficiency requirements for private pilot certification.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 29

Objective:

Practice flight maneuvers and procedures assigned by the instructor in preparation for the Stage III/End-of-Course Flight Check. Further develop the PT's knowledge, skill, and confidence in preparation for the practical test. Emphasis will be on correction of any deficient skill of knowledge areas.

- Specific maneuvers and/or procedures assigned by the flight instructor

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Preflight and Taxi	1. Ground operations	Perform
Takeoffs	1. Normal takeoffs	Perform
In flight maneuvers	1. Ground Track/Wind drift corrections 2. Maneuvering during slow flight 3. Power-off stalls 4. Power-on stalls	Perform Perform Perform Perform
Landings	1. Short field takeoffs and landings; 2. Soft field takeoffs and landings 3. Crosswind takeoffs and landings 4. Forward slips to a landing 5. Normal landings	Perform Perform Perform Perform Perform

Completion standards:

- The lesson is complete when the PT has practiced the assigned maneuvers and procedures.
- The PT should improve any weak performance area determined previously
- Perform each assigned maneuver and procedures with proper coordination and precision according to the criteria established in the FAA Private Pilot Practical Test Standards.

Post flight discussion and preview of next lesson

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

LESSON 30

Objectives:

During this flight, the PT will review instrument procedures, tasks, and knowledge areas, including IFR cross-country planning, ATC clearances, enroute navigation, holding, and arrival/approach procedures. The PT should also demonstrate proficiency in simulated emergency procedures. In addition, the PT should exhibit sound judgment in decision making under IFR.

NOTE: A view-limiting device is required for the dual instrument time allocated to this lesson

Scenario Tasks	Scenario Sub Tasks	Desired Performance
IFR cross-country flight planning	<ol style="list-style-type: none"> 1. Weather information 2. Task management 3. SRM 	Perform Perform Manage/Decide
IFR preflight, taxi and departure	<ol style="list-style-type: none"> 1. Filing an IFR flight Plan 2. IFR preflight inspection 3. IFR takeoff preparations 4. Obtaining an IFR clearance 5. IFR departure procedures 6. Voice communications 7. SRM 8. Automation management 	Perform Perform Perform Perform Perform Perform Manage/Decide Manage /Decide
IFR procedures	<ol style="list-style-type: none"> 1. VOR <ol style="list-style-type: none"> a) Orientation b) Interception c) Tracking 2. NDB <ol style="list-style-type: none"> a) Orientation b) Interception c) Tracking 	Perform Perform Perform Perform Perform Perform
IFR Holding procedures	<ol style="list-style-type: none"> 1. VOR HOLDING 2. NDB holding 	Perform Perform
IFR arrival procedures	<ol style="list-style-type: none"> 1. ILS approach 2. VOR approach 3. NDB approach 4. GPS approach 5. Radar approach 6. Missed approach 	Perform Perform Perform Perform Perform Perform
Simulated emergency procedures	<ol style="list-style-type: none"> 1. Loss of communications 2. Radio failure 3. Instrument failure 4. Engine failure 5. Systems and equipment failure 6. Flight at slow airspeeds with realistic distractions, and the recognition of and recovery from stalls entered from straight flight and from turns 	Perform Perform Perform Perform Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Completion standards:

- Demonstrate proficiency in IFR cross-country operations including departure, enroute, arrival, and approach procedures.
- Demonstrate ability on VOR approaches, prior to the final approach segment, to maintain altitude within 100 feet, airspeed within 10 knots, heading within 10 degrees, and allow less than full-scale deflection of the CDI (or within 10 degrees in the case of an RMI). Allow, while on the final approach segment, no more than a three-quarter-scale deflection of the CDI (or within 10 degrees in the case of an RMI).
- Demonstrate ability on ILS approaches, while on the final approach segment, to allow no more than three-quarter-scale deflection of either the localizer or glide slope indications.
- Maintain altitude within 100 feet, headings within 10 degrees, airspeeds + or – 10 knots, and climb and descent rates within 100 feet per minute of the desired values.
- Display knowledge and proficiency in performing emergency operations.
- Exhibit sound judgment in decision-making, as well as effective use of available cockpit resources.

Post flight discussion and preview of next lesson

LESSON 31

Stage III/End-of-Course flight check for Private and Instrument

Scenario Objectives;

This scenario will be flown as an out and back cross-country flight originating from MBT. If at all possible, one leg will be flown under VFR and the other under IFR. The PT is responsible for all planning and performing of the required maneuvers. The FAA inspector/designated examiner plan for this flight should include a pre-briefing the day prior to the flight to inform the PT of the desired profile. The instructor should introduce impromptu emergency and abnormal procedure scenarios in as realistic manner as possible, giving the PT the time to react to the situation, formulate a plan of action, and execute that plan.

This scenario should be conducted into and out of class B, C, and or D airspace, if at all possible.

This end-of-course check, conducted by the chief instructor, the assistant chief instructor, or the designated check instructor, will evaluate private pilot and instrument rating flight proficiency to determine the PT's ability to act safely and competently as pilot in command under IFR. This check also will evaluate the PT's decision-making and judgment in both VFR and IFR operations. This is the final test in preparation for the private pilot and instrument rating practical tests.

NOTE: *A view-limiting device is required for the dual instrument time allocated to this lesson.*

Instrument Pilot Flight Maneuvers and Procedures Navigation leg

Scenario Tasks	Scenario Sub tasks	Desired Performance
Preflight preparation	<ol style="list-style-type: none"> 1. Weather information 2. Cross-country flight planning 3. SRM 	Perform Perform Manage/Decide
Preflight procedures	<ol style="list-style-type: none"> 1. Aircraft systems related to IFR operations 2. Aircraft flight instruments and navigation equipment 3. Instrument cockpit check 4. SRM 	Perform Perform Perform Manage/Decide
Air traffic control clearances and procedures	<ol style="list-style-type: none"> 1. Air traffic control clearances 2. Compliance with departure, enroute, and arrival procedures and clearances 3. Holding procedures 4. SRM 	Perform Perform Perform Manage/Decide
Flight by reference to instruments	<ol style="list-style-type: none"> 1. Straight-and level flight 2. Change of airspeed 3. Constant airspeed climbs and descents 4. Rate climbs and descents 5. Timed turns to magnetic compass headings 6. Steep turns 7. Recovery from unusual flight attitudes 	Perform Perform Perform Perform Perform Perform Perform
Navigation aids	<ol style="list-style-type: none"> 1. Intercepting and tracking VOR radials 2. Intercepting the tracking NDB bearings 	Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Instrument approach procedures	<ol style="list-style-type: none"> 1. VOR instrument approach procedure 2. NDB instrument approach procedure 3. ILS instrument approach procedure 4. Missed approach procedure 5. Circling approach procedure 6. Landing from a straight-in or circling approach procedure 	Perform Perform Perform Perform Perform
Emergency operations	<ol style="list-style-type: none"> 1. Loss of communications 2. Loss of gyro attitude and/or heading indicators 3. SRM 	Perform Perform Manage/Decide
Post flight Procedures	<ol style="list-style-type: none"> 1. Checking instruments and equipment 	Perform

:

Private Pilot Flight Maneuvers and Procedures

Scenario Tasks	Scenario Sub Tasks	Desired Performance
Preflight preparation	<ol style="list-style-type: none"> 1. Certificates and documents 2. Weather information 3. Cross-country flight planning 4. Performance and limitations 5. Operation of systems 6. Minimum equipment list 7. Aero medical factors 8. SRM 	Perform Perform Perform Perform Perform Perform Manage/Decide Manage/Decide
Preflight Procedures	<ol style="list-style-type: none"> 1. Preflight inspection 2. Cockpit management 3. Engine starting 4. Taxing 5. Before takeoff check 6. SRM 	Perform Perform Perform Perform Perform Manage/Decide
Airport Operations	<ol style="list-style-type: none"> 1. Radio communications and ATC light signals 2. Traffic patterns 3. Airport and runway markings and lighting 	Perform Perform Perform
Takeoffs, landings, and go-around	<ol style="list-style-type: none"> 1. Normal and crosswind takeoff and climb 2. Normal and crosswind approach and landing 3. Soft field takeoff and climb 4. Soft field approach and landing 5. Short field takeoff and climb 6. Short field approach and landing 7. Forward slip to a landing 8. Go-around 	Perform Perform Perform Perform Perform Perform Perform
Performance maneuvers	<ol style="list-style-type: none"> 1. Steep turns 	Perform
Ground reference maneuvers	<ol style="list-style-type: none"> 1. Rectangular course 2. S-turns 3. Turns around a Point 	Perform Perform Perform
Navigation	<ol style="list-style-type: none"> 1. Pilotage and Dead Reckoning 2. Navigation systems and radio services 	Perform Perform

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

	<ol style="list-style-type: none"> 3. Diversion 4. Lost procedures 5. SRM 	Perform Perform Manage/Decide
Slow flight and stalls	<ol style="list-style-type: none"> 1. Maneuvering during slow flight 2. Power-off stalls 3. Power-on stalls 4. Spin awareness 	Perform Perform Perform Perform
Basic instrument maneuvers	<ol style="list-style-type: none"> 1. Straight-and-level flight 2. Constant airspeed climbs and constant airspeed descents 3. Turns to headings 4. Recovery from unusual flight attitudes 5. Radio communications, navigation systems/facilities, and radar services 	Perform Perform Perform Perform Perform
Emergency operations	<ol style="list-style-type: none"> 1. Emergency descent 2. Emergency approach and landing 3. Systems and equipment malfunctions 4. Emergency equipment and survival gear 5. SRM 	Perform Perform Perform Perform Manage/Decide
Night operations	<ol style="list-style-type: none"> 1. Night preparation 2. Night flight 	Perform Perform
Post flight procedures	<ol style="list-style-type: none"> 1. After landing 2. Parking and securing 	Perform Perform

Completion Standards

- PT will follow step-by-step procedures published on the approach chart for each approach
- Descents to the MDA or DA will be at the proper rate, so as to arrive at a position from which a normal circling or straight-in landing can be made.
- Missed approach procedures will follow the published procedure or the controller's instructions.
- Display complete understanding of VFR and IFR procedures.
- Demonstrate the necessary knowledge and skill to operate safely as pilot in command
- Exhibit sound judgment and effective use of available cockpit resources.
- Performance will meet or exceed the minimum performance requirements outlined in the current FAA Private and Instrument Practical Test Standards for each maneuver of procedure

NOTE: *The introduction to the Practical Test Standards (PTS) requires FAA inspectors and designated pilot examiners to develop a written "plan of action" for the conduct of practical tests. The instructions include provisions for changing the sequence or combining tasks as required for an orderly, efficient evaluation. These instructions in the PTS contain practical guidance for instructors conducting Stage Checks for an End-or-Course Flight Check.*

The chief flight instructor, assistant chief flight instructor, or the designated check instructor who conducts the Stage III/End-of-Course Check should develop a logical plan of action. While all listed tasks in each area of operation should be evaluated, tasks with similar objectives may be combined. For example, a rectangular course may be combined with an airport traffic pattern. If the

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

elements in one task have already been evaluated in another task, they need not be repeated. In addition, certain tasks may be evaluated orally. Such tasks include those that cannot realistically be evaluated on the scheduled flight. An example is night flying.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

TAA 01 Flight Planning		
Unit Objective – Develop thorough and successful preflight habit patterns for flight planning, performance, weight and balance, and normal and emergency single pilot resource management		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Flight Training Scenario Planning	Preflight planning	<ul style="list-style-type: none"> a. Review the required elements of the appropriate flight training scenario b. Decide on the optimum route and sequence of events to accomplish all required tasks c. Obtain all required charts and documents d. Obtain and analyze an FAA approved weather briefing appropriate to the scenario to be flown e. File a flight plan (VFR/IFR) for the scenario to be flown
2. Weight and Balance and Aircraft Performance Computation	<ul style="list-style-type: none"> a. Classroom training b. Preflight planning 	Perform weight and balance and performance computations for the specific training scenario to be flown without error.
3. Preflight SRM Briefing	Preflight planning	<ul style="list-style-type: none"> a. Orally review in specific terms all aspects of the flight scenario. b. Identify possible emergency and abnormal procedures relevant to the scenario and describe successful SRM strategies to deal with them.
4. Decision Making and Risk Management	<ul style="list-style-type: none"> a. Pre-Arrival e Learning b. Classroom Training c. All phases of flight planning and flight 	<ul style="list-style-type: none"> a. Make sound decisions based on a logical analysis of factual information, aircraft capability, and pilot experience and skill. b. Continuously critique the success of the flight scenario. c. Adjust the training scenario to maintain flight safety at all times.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

TAA 02 Normal Preflight & Cockpit Procedures		
Unit Objective – Aircraft familiarization, checklists, cockpit procedures and PFD/GPS/MFD and autopilot operation.		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Normal Pre-takeoff Checklist procedures	a. Pre-arrival – eLearning b. Preflight briefing c. Actual aircraft preflight	a. Perform normal exterior inspection by reference to the written checklist. b. Perform normal interior preflight inspection, engine start, taxi, before takeoff checklists by reference to the MFD c. Perform all checklists in the proper sequence and without error
2. PFD/MFD/GPS Autopilot Programming	a. Pre-arrival – eLearning b. Preflight briefing c. Actual aircraft preflight	a. Perform PFD/AHRS initialization b. Perform autopilot preflight checks c. Program all the GPS and MFD according to the Cirrus POH for the specific training scenario to be flown.

TAA 03 Engine Start and Taxi Procedures		
Unit Objective – Demonstrate the proper Engine Start and taxi procedures for the TAA		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Engine Start	a. Pre-arrival – eLearning b. Actual aircraft preflight	a. Demonstrate the correct procedures for engine start under all conditions b. Demonstrate the correct emergency procedures associated with engine start. c. Successfully start the engine
2. Taxi	a. Pre-arrival – eLearning b. Actual aircraft preflight	a. Understand the proper technique to control the aircraft using differential braking and power b. Successfully taxi the aircraft
3. SRM/Situational Awareness	a. Pre-arrival – eLearning b. Preflight briefing c. Actual aircraft preflight	a. Understand the capability of the MFD/GPS to aid in low visibility/congested airport taxi situations b. Demonstrate the proper visual clearing techniques

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

		during all taxi operations
--	--	----------------------------

TAA 04 Before Takeoff Checks		
Unit Objective – demonstrate the proper pre-takeoff procedures for the TAA		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Normal and Abnormal Indications	a. Pre-arrival – eLearning b. Actual aircraft preflight	a. Complete all Pre-takeoff checklist items correctly and in the proper sequence b. Identify normal and abnormal systems indications using the MFD and the POH
2. Aircraft Automation Management	a. Pre-arrival – eLearning b. Actual aircraft preflight	Correctly configure and program the PFD /MFD /HSI /GPS /Autopilot for the departure
3. Aeronautical Decision Making/Risk Management		Make the correct go / no-go decision based on the status of the aircraft, pilot, and the weather

TAA 05 Takeoff		
Unit Objective – demonstrate the proper takeoff procedures for the TAA		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Normal takeoff	a. Preflight briefing b. In-Flight from lineup on the runway through flap reduction	Perform a normal takeoff within the PTS standards
2. Crosswind takeoff		Perform a crosswind takeoff within the PTS standards.
3. Aborted takeoff		Perform the aborted takeoff procedure within the PTS standard.
4. Soft Field/Short field Takeoff		Perform a Soft Field/Short Field Takeoff within the PTS standards
5. Situational Awareness		a. Identify traffic, systems failures, and other developing situations that might prompt the performance of an aborted takeoff. b. Verbalize and prioritize those situations present during any given takeoff

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

6. Aeronautical Decision Making/Risk management		Decide to continue or abort any given takeoff based on the actual situation or a simulated scenario created by the instructor.
---	--	--

TAA 06 Climb Procedures		
Unit Objective – demonstrate the proper climb procedures for the TAA		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Manual Climb	a. Preflight briefing b. In-Flight from flap retraction until after initial level-off at cruise altitude	a. Perform a hand flown climb and level-off within the PTS standards b. Establishes pitch within the PTS standards
2. Autopilot Climb		a. Perform an autopilot flown climb and level-off within the PTS standards b. Establishes pitch attitude within the PTS standards
3. Navigation Programming		Program the GPS/MFD to comply with the flight planned course and all ATC clearances
4. Power management		Set appropriate power/engine leaning settings by reference to the MFD
5. Situational Awareness, Task Management, and Decision Making		a. Identify all traffic, hazardous terrain, and potentially hazardous situation as they occur by reference to visual clearing and the MFD (if available and optioned) b. Perform all required in-cockpit tasks in such a manner that visual clearing is not impacted negatively c. Make timely decisions based on information obtained, visually, by radio, or by aircraft automation equipment.

TAA 07 Cruise procedures		
Unit Objective – demonstrate the proper cruise procedures for the TAA		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Lean Assist MFD	a. Pre-arrival – eLearning	Lean the engine using the

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

2. Best Power vs. Best Economy	b. In Cruise Flight	Lean Assist procedures and the MFD
3. Manual Cruise		a. Perform hand flown manual cruise within the PTS standards b. Maintains altitude, within the PTS standards
4. Autopilot Cruise		a. Perform an autopilot assisted cruise within the PTS standards (for manual cruise) b. Maintains altitude within the PTS standards c. Demonstrate the aircraft reaction to course changes programmed into the GPS/MFD
5. Navigation Programming		Program flight plan changes into the GPS.
6. Automated Navigation Leg		a. In VFR conditions conduct a navigation leg of 30 minutes or more to a different airfield by use of the autopilot beginning at 1,000 ft AGL on departure and terminating autopilot use just prior to entry to the VFR pattern. b. In IFR conditions (or simulated IFR) conduct a navigation leg of 30 minutes or more to a different airfield by use of the autopilot beginning at 500 ft AGL on departure and terminating autopilot use at the decision altitude or missed approach point as applicable. If a missed approach is flown it will be flown by use of the autopilot.

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

7. Task Management, Situational Awareness, and Decision making		<ul style="list-style-type: none"> a. Identify all traffic, hazardous terrain, and potentially hazardous situation as they occur by reference to visual clearing and the MFD (if available and optioned) b. Perform all required in-cockpit tasks in such a manner that visual clearing is not impacted negatively c. Make timely decisions based on information obtained, visually, by radio, or by aircraft automation equipment
--	--	---

TAA 08 Control Performance Instrument/Visual crosscheck		
Unit Objective – demonstrate the proper use of flight controls and Visual or PFD derived cues to perform basic flight maneuvers in the TAA		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Straight and level	<ul style="list-style-type: none"> a. Preflight briefing b. In Flight 	<ul style="list-style-type: none"> a. Perform the maneuver by using outside visual references only within the PTS standard b. Perform the maneuver by sole reference to the PFD within the PTS standard c. Establishes airspeed and altitude within the PTS standard.
2. Normal Turns		
3. Climbing and Descending Turns		
4. Steep Turns (45 degree)		

TAA 09 Low Speed Envelope		
Unit Objective – recognize the onset of low speed flight regimes and demonstrate the proper use of flight controls and Visual or PFD derived cues to perform basic low speed flight maneuvers in the TAA		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Configuration changes 2. Slow Flight	<ul style="list-style-type: none"> a. Preflight briefing b. In Flight 	Demonstrate slow flight within the PTS standard with the flaps in all possible flap positions and detents

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

3. Recovery From Power –Off and Power –On Stalls		a. Demonstrate a recovery from a planned Power-Off or Power-On Stall with minimum altitude loss.
4. Recovery from autopilot induced stall		b. Demonstrate a recovery from an instructor induced Power-On/Power-Off stall with minimum altitude loss.
5. Stall Prevention, Situational Awareness, Task Management, and Decision Making		Demonstrate a recovery from an autopilot induced stall with minimum altitude loss
		a. Describe possible situations that might lead to an inadvertent stall and cockpit indications that would warn of an impending stall
		b. Demonstrate pilot actions to avert the stall prior to its occurrence

TAA 10 Descent Planning and Execution		
Unit Objective – demonstrate the proper descent procedures for the TAA		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1.Automation management	a. Pre-Fight briefing b. Descent planning during the cruise leg and the descent itself from cruise altitude until just prior to flap extension for landing	a. Decide which automated features will be used during the descent and program then prior to beginning the descent
2. Vertical Navigation (VNAV) Planning		b. Monitor and update the automated features during the descent
3. Navigation Programming		Use the descent features of the GPS and the map features of the MFD to plan a fuel efficient descent that avoids known obstacles and terrain
4. Manual Descent		Program the entire descent (VFR) and program and activate the desired approach and go-around (IFR)
5. Autopilot Descent		Perform a manual descent within PTS standards
6. Task Management, Situational Awareness, CFIT Avoidance		Perform an autopilot descent within PTS standards (for a manual descent)
		Identify the most important data available from the MFD

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

TAA 11 Landings		
Unit Objective – demonstrate landing procedures in the TAA.		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Before landing procedures	a. Pre-arrival – eLearning b. Preflight Briefing. c. In flight d. (VFR) flap extension to turning off the runway or return to pattern altitude in the event of a go-around e. (IFR) from 1,000 feet (stabilized approach until turning off the runway or climb to missed approach altitude	Perform all pre-landing checklist items correctly and in sequence
2. IFR Landing Transition (Autopilot to manual and manual to Manual)		a. Demonstrate the proper transition from instrument reference to visual reference b. Demonstrate the proper procedures for autopilot disengagement and transition to landing
3. Normal landing		Perform a normal full flap landing within the PTS standard.
4. Soft and Short Field landing		Perform Soft and Short field landings within the PTS standard.
5. Partial Flap landing		Perform a partial flap landing within the PTS standard.
6. Zero Flap landing		Perform a zero flap landing within the PTS standard.
7. Crosswind landing		Perform a crosswind landing within the PTS standard.
8. Balked landing and Go-Around		a. Make a timely decision to go-around either in flight or after initial touchdown if the landing cannot be accomplished safely. b. Perform the bailed landing procedure within the PTS standards.
9. Decision Making and Situational Awareness		a. Demonstrate awareness of all potential weather, traffic, and airfield factors that might impact the approach and landing. b. Make timely decisions to mitigate risks and ensure a successful approach and landing.

TAA 12 Aircraft Shutdown and Securing procedures		
Unit Objective – demonstrate proficiency shutting down and securing the TAA		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

1. Aircraft Shutdown & Securing Checklist	Post-flight	Demonstrate proficiency properly concluding a flight including engine shutdown and securing.
2. Aircraft Towing, Ground Handling, and Tie-down		Demonstrate proficiency properly concluding a flight including aircraft storage.

TAA 13 Automated Avionics Interface		
Unit Objective – demonstrate proficiency interfacing the avionics for flight operations		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Identification of Data/Power Sources: a. Air Data failure b. AHRS failure c. Generator/battery failure	a. Pre-Arrival - eLearning b. Classroom c. Preflight d. In-flight	a. Understand data/power source failure modes that affect operation of the PFD. b. Identify specific failures and their associated cues.
Identification of PFD Failure Modes and corrective actions a. Invalid Sensor Data b. Invalid Heading c. Crosscheck Monitor d. Recoverable Attitude e. Invalid Attitude and Heading f. Complete/partial Electrical Power failure		Perform the appropriate corrective action for each malfunction.
2. Aircraft Automation Management		a. Understand and be able to correctly describe the interface between all the installed avionics systems in the aircraft. b. Demonstrate proficiency operating the avionics installed on the aircraft as an integrated system.

TAA 14 GPS Operation and Programming		
Unit Objective – demonstrate proficiency with the GPS		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. VFR: Direct-To Function Nearest Function Airport Information Function Flight Plan Function	In-flight	Demonstrate proficiency using the GPS including the Direct-To, Nearest, Airport Information, and Flight Plan functions.
2. IFR:	a. Preflight	a. Demonstrate proficiency

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Direct-To Function Nearest Function DP/STAR/Approach Function Flight Plan Function – Integration with...	b. In-flight	using the GPS including the Direct-To, Nearest, Airport Information, DP/STAR/Approach functions. b. Demonstrate proficiency flight planning the GPS and flying the flight plan.
--	--------------	--

TAA 15 Autopilot Programming, Modes, and Annunciators		
Unit Objective – demonstrate proper use of the autopilot.		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1.Control Wheel Steering	In-flight	Demonstrate proper use of the control wheel steering.
2.LNAV and VNAV Programming	In-flight	Demonstrate proper use of the LNAV and VNAV functions of the autopilot
3.Vertical Speed and Altitude Hold	In-flight	Demonstrate proper use of the vertical speed and altitude hold
4.Navigation Modes	In-flight	Demonstrate proper use of the navigation modes of the autopilot
5.Coupled Approach Modes	In-flight	Demonstrate proper use of the coupled approach modes of the autopilot
6.Auto trim Mode	In-flight	Demonstrate proper use of the auto trim mode of the autopilot
7.Flight Director/PFD Interface	In-flight	Demonstrate proper use of the flight director/PFD interfaces

TAA 16 Automated Avionics Operation and Systems Interface		
Unit Objective – demonstrate proper use of the Avionics Interface including normal, abnormal, and emergency operations of the TAA and all installed avionics.		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Pilot Flight Display	In-flight	Demonstrate proper use of the PFD during autopilot
2. Multi Function Display Normal Operation Setup Pages Navigation Modes Traffic Mode Weather Modes Checklist Modes	a. Preflight b. In-flight c. Post-flight	Demonstrate proper use of the avionics interface during normal operations including setup, navigation, traffic, weather, and checklist.
3. Abnormal and Emergency Indications and Operations	a. Preflight b. In-flight	Demonstrate proper use of the avionics interface during

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

Navigation Modes Traffic Mode Weather Modes Checklist Modes	c. Post-flight	abnormal and emergency operations including setup, navigation, traffic, weather, and checklist.
4.EHSI Operation	a. Preflight b. In-flight	Demonstrate proper setup, use, and operation.

TAA 17 Datalink Situational Awareness Systems and Additional Avionics Setup		
Unit Objective –demonstrate proper use of the EHSI and it’s interface with other installed avionics.		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Datalink Weather Setup and Operation	a. Preflight b. In-flight	a. Demonstrate the proper setup of the information and related displays. b. Demonstrate the proper decision making skills based on the information presented
2. Datalink Traffic Setup and Operation	a. Preflight b. In-flight	a. Demonstrate the proper setup of the information and related displays. b. Demonstrate the proper decision making skills based on the information presented
3. Terrain Display and Avoidance Systems Setup and Operation	a. Preflight b. In-flight	a. Demonstrate the proper setup of the information and related displays. b. Demonstrate the proper decision making skills based on the information presented
4. Datalink Flight Plan and Traffic Control Systems Setup and Operation	a. Preflight b. In-flight	a. Demonstrate the proper setup of the information and related displays. b. Demonstrate the proper decision making skills based on the information presented

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

TAA 18 Emergency Escape Maneuvers/ Recovery from Unusual Attitudes and Upsets/Use of Ballistic Parachute Recovery System (BRS)		
Unit Objective – demonstrate unusual attitude/upset recovery in the TAA and discuss the proper use of the BRS if installed.		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. PFD	In-flight	Demonstrate unusual attitude recovery using the PFD to PTS Standards.
2. Backup Instruments	In-flight	Demonstrate unusual attitude recovery using backup instruments to PTS Standards.
3. Autopilot – Limitations of its use for recovery	a. Preflight b. In-flight	Demonstrate unusual attitude recovery using the autopilot to PTS Standards.
4. Upset Training	In-flight	Demonstrate upset recovery using the PFD.
5. BRS Preflight In-flight Activation Post Deployment Procedures Reasons for Deployment	a. Preflight b. In-flight c. BRS Training Device	a. Demonstrate procedural knowledge proper use of BRS. b. Describe situations when it is appropriate to deploy the BRS and situations when it is not appropriate.
6. Engine Failure/Emergency Descent	a. Preflight b. In-flight c. BRS Training Device	a. Demonstrate procedures to be used during engine failure or situations requiring an emergency descent. b. When given a realistic scenario make an appropriate decision between landing the aircraft or deployment of the BRS system.
7. Emergency Escape Maneuvers, Risk Management, and Decision Making	a. Preflight b. In-flight c. BRS Training Device	a. Understand the capabilities of the PFD, Autopilot, and BRS b. Develop a problem solving matrix for use of all these systems when faced with IFR/VFR emergency procedures c. Demonstrate the ability to make correct decisions when faced with IFR/VFR emergency conditions

MTSU Training Course Outline Section 3
FITS Scenario Based Private/Instrument Pilot Certification Course – ASEL

TAA 19 Instrument Approach Procedures (IFR Rated Pilots Only)		
Unit Objective – demonstrate IFR procedure proficient in the TAA using the installed equipment.		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Manual ILS	a. Pre-arrival – eLearning b. Preflight Briefing c. In-Flight	Perform the approach within the PTS standards.
2. Coupled ILS		Perform the approach within the PTS standards (for a manual approach).
3. Manual VOR		Perform the approach within the PTS standards.
4. Manual GPS		a. Program and activate the GPS approach in a timely manner. b. Perform the approach within the PTS standards.
5. Coupled VOR/GPS VNAV Approach		a. Program and activate the GPS/VNAV approach in a timely manner. b. Perform the GPS/VNAV approach within the PTS standards (for a manual approach).
6. Manual Missed Approach		Perform the missed approach within the PTS standards.
7. Autopilot Flown missed Approach		Perform the missed approach within the PTS standards (for a manual missed approach).
8. Procedure Turn		Demonstrate procedure to PTS Standards.
9. Holding		Demonstrate instrument holding to PTS standards.
10. Task Management and Decision making		In-flight
11. Situational Awareness	In-Flight	Demonstrate proper use of the MFD and HSI to maintain situational awareness during IFR procedures.