I.C. The Teaching Process

Objectives	The student should develop knowledge of the elements related to the teaching process as required in the CFI PTS.
Elements	✈ Preparation of a lesson ✈ Presentation methods ✈ Application of material ✈ Review and evaluation
Schedule	1. Discuss objectives 2. Review material 3. Development 4. Conclusion
Equipment	✈ White board ✈ Markers ✈ References
Instructor's Actions	1. Discuss lesson objectives 2. Present lecture 3. Questions 4. Homework
Student's Actions	Participate in discussion Take notes
Completion Standards	Understand: ✈ the preparation of a lesson, ✈ the different presentation methods, ✈ how the student applies the knowledge, ✈ the importance and use of a review and evaluation.

References	FAA-H-8083-9, *Aviation Instructor's Handbook* (Chapter 4)

Instructor Notes

Introduction	Overview—review objectives and elements
	What—teaching process divided into steps: preparation, presentation, application, and review and evaluation
	Why—effective teaching is necessary in order to provide a proper learning experience for students.
Essential teaching skills	✈ People skills ✈ Subject matter expertise ✈ Management skills ✈ Assessment skills
Preparation of a lesson	The instructor must plan the lesson in terms of objectives, procedures and facilities, goals to be attained, and review and evaluation.
Performance-based objectives	Set measurable, reasonable standards that describe the desired performance before moving on. All objectives must be clear, measurable, and repeatable. Describe the skill/behavior, the conditions, and the criteria. The PTS provides specific performance criteria for instructors to measure student actions.
Description of the skill or behavior	Explain the desired outcome of the instruction in concrete terms that can be measured.
Conditions	Specifically explain the conditions under which the skill or behavior should be demonstrated. Include information such as equipment, tools, reference material, and limiting parameters.
Criteria	List of standards which measure the accomplishment of the objective. Should be stated so that there is no question whether the objective has been met.
Decision-based objectives	Facilitate a higher level of learning and application. Use dynamic and meaningful scenarios to teach the student how to gather information and make informed, safe, and timely decisions.
Organization of material	1. Introduction—sets the stage. 2. Attention—could be a story, video clip, etc. to direct attention to the lesson. 3. Motivation—why is the information important. 4. Overview—a clear presentation of the objectives and key ideas.

	5. Development—the main body. Can be organized from past to present, simple to complex, known to unknown, or most frequently used to last. 6. Conclusion—retraces important elements and relates to the objectives.
Training delivery methods	There are several methods of presentation—be familiar with as many as possible and use a combination of methods as appropriate. Determine which teaching methods best convey the information being taught.
Lecture method	Suitable for presenting new material, summarizing ideas, and showing relationships. Most effective when combined with instructional aids and training devices.
Guided discussion method	Encourages active participation (students ask questions) and is helpful in areas where students can use initiative and imagination in addressing problems.
Computer assisted learning method	Reduces workload for the instructor and allows students to move at their own pace, but is not practical for the entire training program.
Demonstration-performance method	Desirable for teaching a skill. Many lessons may combine the lecture and demonstration-performance methods—the initial information is covered in class with the lecture, and then applied in the airplane.
Drill and practice method	Use practice to strengthen connections.
Problem-based learning	Effective problems will relate to the real world, require students to make decisions, are open-ended and not limited to one answer, are connected to previously-learnt knowledge and new knowledge, reflect lesson objectives, and challenge students to think critically.
Higher order teaching skills	(HOTS) Risk management, ADM, automation management, situational awareness, CFIT 1. Set up the problem. 2. Determine learning outcomes for the problem. 3. Solve the problem/task. 4. Reflect on the problem-solving process. 5. Consider additional solutions through guided discovery. 6. Reevaluate solution with additional options. 7. Reflect on the solution and why it is the best. 8. Consider what best means.

Scenario based training	Reality-based training. A good scenario is not a test, and will not have one right answer, or an obvious answer. It should not promote errors, but rather situational awareness and opportunities for decision making.
Collaborative problem-solving method	A team of people working together to solve the problem. The instructor will provide assistance only when needed.
Case study method	Written or oral account of a real world situation that contains a message that educates the student. The instructor presents the case, the students analyze it, come to conclusions, and offer possible solutions. The student should have to use critical thinking skills.
Instructional aids and training technologies	Instructional aids help students remember information and hold their attention. They help solve language barriers if those exist, and they can use multiple senses, helping the learning.
Guidelines for use	Clearly establish the objective and gather necessary data. Organize the material and select the ideas that will be supported with training aids.
Types of aids	✈ Chalk/white board ✈ Supplemental print material ✈ Enhanced training materials ✈ Projected material ✈ Video ✈ Interactive CDs/DVDs, computer assisted learning ✈ Models, mockups
Review and evaluation	Review what has been covered, require the student to demonstrate if the objectives have been met Students should be made aware of the progress and ensure standards are met before moving on The feedback must adequately compare the performance to the completion standards of the lesson This way the student knows how he is doing Students may be discouraged when the instructor is doing well and they aren't If deficiencies not associated with the present lesson are noted, they should be pointed out and fixed The instructor and the student have a valid picture of where the student is in respect to the standards

Conclusion	Brief review of main points. Use the appropriate teaching method based on the material and the student. The instructor must go to the teaching activity prepared properly to teach effectively.

CFI PTS

Objective: To determine that the applicant exhibits instructional knowledge of the teaching process by describing:

1. Preparation of a lesson.
2. Organization of material.
3. Training delivery methods:
a. Lecture method.
b. Guided discussion method.
c. Computer-assisted learning method.
d. Demonstration-performance method.
e. Dill and practice method.
4. Problem based learning.
5. Instruction aids and training technologies.

Simple to complex—example is when teaching how to land. Take the throttle, they can take the yoke at first.

Print airport diagram for checkride, full size, as a training aid.

SMART – Specific Measurable Attainable Relatable Timely