CFI Homework

- ❑ Prepare an IPC for an IR pilot who has been out of currency just over a year. He has brought a Cessna 182 equipped with
    - Mechanical/air driven instruments + Garmin 530 WAAS
    - 2 axis Autopilot
    - 1090 ES transponder in and out
- ❑ What are the minimum ground and flight training requirements you would include and why?
- ❑ What Instrument publications would you reference during the IPC and discuss with the pilot?
- ❑ How would you incorporate an EFB in this process? Pearls or pitfalls?
- ❑ What logbook entries would you need to make to document training and the IPC?
- ❑ With IPC completed, how can the pilot maintain currency? Reg?
- ❑ Briefly outline how you would train a pilot for an initial instrument rating.
- ❑ Explain how you would teach Attitude Instrument flight tasks (Primary/supporting vs Command and Performance)
    - constant rate/speed climbs, descents
    - STD rate turns
    - Climbing turns and descents
    - Intercepting and maintain courses
    - Glide slope intercept and maintain
    - What are some of the common errors and how would you detect and correct them?
- ❑ Describe how you would incorporate Scenario based training and collaborative evaluation (Learner centered grading) in your instruction. Give an example.
- ❑ How you would document the training and endorsements required for the practical?
- ❑ What records, as a CFI are your required to keep?

SYSTEMS

- ❑ How would you explain the pitot static systems and malfunctions instruments? Scenarios? Real world applications?
- ❑ Explain how the data from the pitot static system is processed and displayed on PFD. Malfunctions? How to handle?
- ❑ Describe how your gyros/heading/reference work. Failure modes? Now how would you handle this?
- ❑ Describe the electrical system and what back ups are available in case of electrical failure and how you might test for an electronic display (MFD/PFD/back up PFD)?

WEATHER

- ❑ Describe a couple of ways you would demonstrate how to get a weather brief and what products would you emphasize?
- ❑ Walk me through the weather products you choose and how you assess things such as icing and TS risks and how you might instruct on mitigation strategies with flight planning.

ICING and AIRCRAFT

- ❑ Describe Aircraft icing and how it affects performance: Take off, cruise, Landing. Decontamination?
- ❑ **ICING Encounter**: How do you determine if you have significant ice and how do you exit? Landing speed/rwy?
- ❑ In IMC, the temp drops and you start accumulating milky white ice on leading edge, ¼" in 15 minutes. How will you make the PIREP?
- ❑ **Describe the various aircraft systems that could be affected by an icing encounter, risks involved and mitigation strategies**. (prop, intake, pitot/static, nav/comms, fuel vents, windscreen, control surfaces)
- ❑ **Describe anti/de ice systems/use/limitations**

CROSS COUNTRY

- ❑ Prepare a cross-country flight plan including flight time and fuel requirements and describe how you would incorporate instruction for:
    - How to avoid obstacles and choose departure procedures to be used both in Midwest and mountainous terrain- give examples for both regions including ODP and SIDs. Ie Midwest and mountain airport
    - Define the following terms and how to use them planning a departure. Where on the departure do these protect us from terrain and obstacles?
        - Takeoff obstacle notes
        - Takeoff minimums
        - Departure procedures (ODP)
    - Demonstrate how to evaluate, plan and set up an ODP including climb table use (KSBS or KRIL??)
    - Selection of route and use of en-route charts, nav aids, airways and communication frequencies.
    - How to plan for a STAR, if applicable, and types of clearances.
    - Interpretation of IAPs RNAV, ILS, RNP, LDA, GPS etc
    - Circling aprch, categories, airspeeds, expanded, risks of circling?
    - How to verify if installed equipment is qualified/capable of SID/STAR/IAP?
    - explain process of when and how to choose an alternate-
- ❑ Describe resources to complete and file an ICAO flight plan for this proposed flight, include selection of proper equipment codes and at least three ways to file.

Putting it all together with lost comms:

- ❑ Shortly after departure, while in IMC, you lose radio communications while being vectored to a fix on an airway. Describe how you are going to handle this. How would you teach this to a student (hint: use a scenario that you can use to evaluate and instruct on departures, enroute, approaches, unpublished holds)

- You fly the approach at your destination
    - What conditions or indications would you initiate a Miss approach before reaching minimums? How would you do this? **(91.175, 91.181, AIM 5-4-21)** *****
    - When can you descend below MDA/DA? What do you need to Land legally? Determine minima?
    - On a circle to land, you are in downwind turning base and re-enter IMC. How would you handle this?
- Using GPS navigation, how do you determine you are "established" and maintaining required navigation performance enroute or on an approach. Describe how the CDI sensitivity changes.
- Describe how you would instruct a pilot to use a MFD or graphical nav display play in navigation of an approach or a hold? (situation awareness vs navigation precision of the CDI, ground track, WCA etc)
- Describe how you would teach flying a DME ARC, including intercepting ARC or FIX using VOR/DME-