SMA 1100 – Instrument Pilot Rating Ground School

Course Outline

2024-2025

Pre-requisite(s): N/A

Course Description

Canadian aviation industry regulator, Transport Canada (TC), Instrument Type Rating (INRAT) candidates to demonstrate they have attained a minimum level of theoretical Instrument Flight Rules (IFR) knowledge. Using general aviation as a focal point, SkyMap Aviation's(SA) instrument pilot rating ground school course not only covers all of the TC INRAT topics, but also thoroughly prepares students to successfully complete the applicable mandatory INRAT written examination.

Course Learning Outcomes

When you have successfully completed this course, you will have demonstrated the ability to:

1. **Apply the Canadian Aviation Regulations (CARs) with respect to the safe and legal instrument pilot operation of general aviation aircraft.**
    - Explore the constitution of the Canadian Aviation Regulations (CARs);
    - Describe how to locate information within the Canadian Aviation Regulations (CARs); and
    - Explain how the CARs apply to common situations encountered by an instrument pilot.
2. **Describe instrument flight rules (IFR) navigation concepts and practices as expected of a instrument pilot.**
    - Differentiate classes of airspace, facilities information and the related procedures.
    - Identify and utilize appropriate navigational charts.
    - Execute IFR navigation calculations.
    - Devise, file and update a flight plan.
3. **Apply fundamental meteorological theory principles for the reporting and interpretation of weather information in support of flight safety.**
    - Recognize, differentiate, and communicate various cloud types, fog formations, forms of precipitation, air masses, storms, fronts and winds.
    - Identify severe weather conditions such as icing, turbulence and thunderstorms and analyze their effect on the aircraft during flight.
    - Decode, analyze, assimilate and institute the use of aviation weather forecasts.

4. **Explain and apply the concepts and practices of basic aeronautics with respect to the safe and proficient operation of general aviation aircraft in instrument meteorological conditions (IMC).**

    - Explore the requirement and usage of flight instruments and radio navigational equipment in IFR flight.
    - Examine Pilot Decision Making (PDM) practices and the Human Factors that affect PDM.
    - Discern aircraft performance and limitations applicable to general aviation training aircraft in the IFR environment.

Learning Resources

REQUIRED

- ***Canada Air Pilot (CAP)*** – General pages - available via Nav Canada (free online)
- ***Canadian Aviation Regulations (CARs)*** (free online)
- **Canada Flight Supplement (CFS)** – available via Nav Canada website (http://products.navcanada.ca/shop-vfr/Canada-Flight-Supplement/)
- En Route Low/High Altitude Charts/Terminal Charts (free online)
- **Flight Computer**: Large Metal;
- Transport Canada, ***Aeronautical Information Manual*****,** TP 14371E, Current Edition. ISSN 1715-7382 (free online)
- Transport Canada, ***Instrument Procedures Manual***, TP 2076, ISBN 0-660-17258-5
- Transport Canada, ***Study and Reference Guide for the written examinations for the INSTRUMENT RATING – AWROPLANE AND HELICOPTER,*** TP 691E, Current Edition. ISBN 978-1-100-22696-5 (free online)
- **Current VTA** (e.g. Ottawa VTA) - available via Nav Canada website (http://products.navcanada.ca/shop-vfr/VFR-Terminal-Area-Charts/)

RECOMMENDED (Optional)

- Transport Canada, ***Human Factors for Aviation – Advanced Handbook***, TP 12864, ISBN 0-660-16656-9
- ***Aviation & Meteorology: Weather Fundamentals*** 1st Edition ISBN 978-0-9681270-3-2
- ***Canadian Instrument Rating Workbook*** – 9th Edition, AeroCourse, ISBN 0-9681270-2-5

Learning Activities

· Assigned Readings

· Class/Video Lectures/Tutorials

· Problem solving and answering questions

· Using the E6-B computer, ICAO Ruler, and aviation chart protractor

· Assignments, practice tests and examinations

Course Related Information

Students must pass the final course examination with a minimum mark of 60% to attain the course certificate of completion.

College Related Information

Students are especially encouraged to be aware of the following SkyMap Aviation expectations

Academic Integrity

SkyMap Aviation is committed to the highest standards of academic integrity, and students are expected to uphold these standards as part of the learning process. Any academic work submitted by a student is expected to be their own work, unless designated otherwise and all sources must be attributed. Students with any questions about the course expectations regarding academic integrity are encouraged to speak to their instructor and the SkyMap Aviation academic integrity team at skymapaviation@gmail.com.

Use of Mobile Devices in Class

With the proliferation of small, personal mobile devices used for communications and data storage, SkyMap Aviation believes there is a need to address their use during classes and examinations. During classes, the use of such devices unless authorized by your instructor can be disruptive and disrespectful to others. During examinations, the use of such devices is generally prohibited unless authorized by your professor. Otherwise use is considered academic dishonesty in the form of cheating.