5 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less

- (4) Training in a flight training device that meets the requirements of § 141.41(a)(1) of this part and a flight training device that meets the requirements of § 141.41(a)(2) of this part, may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or by this section, whichever is less. However, training in a flight training device that meets the requirements of § 141.41(a)(2) of this part may be credited for a maximum of 5 percent of the total flight training hour requirements.
- (c) Areas of operation. Each approved course must include the flight training on the areas of operation listed in this paragraph, that are appropriate to the aircraft category and class rating for which the course applies:
- (1) For an airplane category-single engine class rating with a type rating course, if a type rating is required, are as follows-
 - (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Takeoff and departure phase;
 - (iv) Inflight maneuvers;
 - (v) Instrument procedures;
 - (vi) Landings and approaches to landings;
 - (vii) Normal and abnormal procedures;
 - (viii) Emergency procedures; and
 - (ix) Postflight procedures.
- (2) For an airplane category-multiengine class rating with a type rating course, if a type rating is required, are as follows-
 - (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Takeoff and departure phase;
 - (iv) Inflight maneuvers;
 - (v) Instrument procedures;
 - (vi) Landings and approaches to landings;
 - (vii) Normal and abnormal procedures;
 - (viii) Emergency procedures; and
 - (ix) Postflight procedures.
- (3) For a powered-lift category rating with a type rating course, if a type rating is required, are as follows-
 - (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Takeoff and departure phase;
 - (iv) Inflight maneuvers;
 - (v) Instrument procedures;
 - (vi) Landings and approaches to landings;
 - (vii) Normal and abnormal procedures;
 - (viii) Emergency procedures; and
 - (ix) Postflight procedures.
- (4) For a rotorcraft category-helicopter class rating with a type rating course, if a type rating is required, are as follows-
 - (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Takeoff and departure phase;
 - (iv) Inflight maneuvers;
 - (v) Instrument procedures;
 - (vi) Landings and approaches to landings;
 - (vii) Normal and abnormal procedures;
 - (viii) Emergency procedures; and (ix) Postflight procedures
 - 5. Stage checks and end-of-course tests.
- (a) Each student enrolled in an airline transport pilot course must satisfactorily accomplish the stage checks and end-ofcourse tests, in accordance with the school's approved training course, consisting of the approved areas of operation of section 4.(c) of this appendix in the aircraft category and class rating for which the course applies.

(b) Each student must demonstrate satisfactory proficiency prior to being endorsed to operate an aircraft in supervised PIC flight.

Appendix F—Flight Instructor **Certification Course**

- 1. Applicability. This appendix prescribes the minimum curriculum for a flight instructor certification course and an additional flight instructor rating course required under this part, for:
 - (a) Airplane category—single-engine class.
 - (b) Airplane category—multiengine class.
 - (c) Rotorcraft category—helicopter class. (d) Rotorcraft category—gyroplane class.
 - (e) Powered-lift category.
 - (f) Glider category—nonpowered class. (g) Glider category—powered class.

 - (h) Lighter-than-air category—airship class. (i) Lighter-than-air category-balloon class.
- 2. Eligibility for enrollment. A person must have the following to enroll in the flight portion of the flight instructor or additional flight instructor rating course:
- (a) A commercial or an airline transport pilot certificate, with an aircraft category and class rating appropriate to the flight instructor rating for which the course applies; and
- (b) An instrument rating in an aircraft that is appropriate to the aircraft category and class rating for which the course applies, if the course is for a flight instructor-airplane, -helicopter, -powered-lift, -airship, or -instrument-(category and class) rating.
- 3. Aeronautical knowledge training. (a) Approved course requirements.
- Each approved course must include the knowledge areas listed in paragraph (b) of this section, and must include at least:
- (1) 40 hours of training, if the course is for an initial issuance of a flight instructor certificate; or
- (2) 20 hours of training, if the course is for an additional flight instructor rating
 - (b) Aeronautical knowledge areas.
 - The learning process;
- (2) Elements of effective teaching;
- (3) Student evaluation, quizzing, and testing;
 - (4) Course development;
 - (5) Lesson planning;
 - (6) Classroom training techniques; and
- (7) The aeronautical knowledge areas in which training is required for-
- (i) A recreational, private, and commercial pilot certificate that is appropriate to the aircraft category and class rating for which the course applies; and
- (ii) An instrument rating that is appropriate to the aircraft category and class rating for which the course applies, if the course is for an airplane or powered-lift category, or a lighter-than-air category with an airship
 - (c) School hours credited.
- A student who satisfactorily completed 2 years of study on the principles of education in a college or university may be credited with no more than 20 hours of the required training in paragraph (a)(1) of this section.
 - 4. Flight training.
 - (a) Approved course requirements.
- Each approved course must include flight training in the approved areas of operation of

- paragraph (c) of this section for the flight instructor rating for which the course applies; and must include at least:
- (1) Twenty-five hours, if the course is for an airplane, rotorcraft, or powered-lift category rating, or a lighter-than-air category with an airship class rating;
- (2) Ten hours and 10 flights, if the course is for a glider category with a nonpowered class rating;
- (3) Ten hours, if the course is for a glider category with a powered class rating; or
- (4) Eight flights, if the course is for a lighter-than-air category with a balloon class rating.
 - (b) Use of flight training devices.
- (1) The course may include training in a flight training device, provided they are representative of the aircraft for which the course is approved for, meet requirements of this paragraph, and the training is given by an authorized ground or flight instructor.
- (2) Training in a flight training device that meets the requirements of § 141.41(a)(1) of this part, may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (3) Training in a flight training device that meets the requirements of § 141.41(a)(2) of this part, may be credited for a maximum of 5 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (4) Training in a flight training device that meets the requirements of § 141.41(a)(1) of this part and a flight training device that meets the requirements of § 141.41(a)(2) of this part, may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or by this section, whichever is less. However, training in a flight training device that meets the requirements of § 141.41(a)(2) of this part may be credited for a maximum of 5 percent of the total flight training hour requirements.
 - (c) Areas of operation.

Each approved course must include the flight training on the areas of operation listed in this paragraph, that are appropriate to the aircraft category and class rating for which the course applies:

- (1) For an airplane-single engine course:
- (i) Fundamentals of instructing;
- (ii) Technical subject areas;
- (iii) Preflight preparation;
- (iv) Preflight lesson on a maneuver to be performed in flight;
 - (v) Preflight procedures;
 - (vi) Airport and seaplane base operations;
- (vii) Takeoffs, landings, and go-arounds;
- (viii) Fundamentals of flight;
- (ix) Performance maneuvers;
- (x) Ground reference maneuvers;
- (xi) Stalls, spins, and slow flight;
- (xii) Basic instrument maneuvers;
- (xiii) Emergency operations; and
- (xiv) Postflight procedures. (2) For an airplane-multiengine course:
- (i) Fundamentals of instructing;
- (ii) Technical subject areas;
- (iii) Preflight preparation;
- (iv) Preflight lesson on a maneuver to be performed in flight;
 - (v) Preflight procedures;
 - (vi) Airport and seaplane base operations;