medical defect exists that would make the person unable to pilot a glider or balloon, as appropriate; and

(4) If the course is for a rating in an airplane, powered-lift category, or an airship

class, then the person must-

(i) Hold an instrument rating in the aircraft that is appropriate to the aircraft category and class rating for which the course applies; or

- (ii) Be concurrently enrolled in an instrument rating course that is appropriate to the aircraft category and class rating for which the course applies and satisfactorily accomplish the required instrument rating practical test prior to completing the commercial pilot certification course.
- (b) A person must meet the aeronautical experience requirements prescribed in part 61 of this chapter for a commercial pilot certificate that is appropriate to the aircraft category and class rating for which the course applies upon completion of this course

3. Aeronautical knowledge training.

- (a) Each approved course must include the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the aircraft category and class rating for which the course applies, and must include
- (1) 100 hours of training, if the course is for an airplane category rating, powered lift category rating, or a lighter-than-air category with an airship class rating.

(2) 65 hours of training, if the course is for a rotorcraft category rating.

- (3) 25 hours of training, if the course is for a glider category rating.
- (4) 20 hours of training, if the course is for a lighter-than-air category with a balloon class rating.
- (b) Aeronautical knowledge areas. Each approved course must include the aeronautical knowledge areas listed in this paragraph, appropriate to the aircraft category and class rating for which the course applies:
- (1) The Federal Aviation Regulations that apply to commercial pilot privileges, limitations, and flight operations;
- (2) Accident reporting requirements of the National Transportation Safety Board;
- (3) Basic aerodynamics and the principles of flight;
- (4) Meteorology to include recognition of critical weather situations, windshear recognition and avoidance, and the use of aeronautical weather reports and forecasts;
 - (5) Safe and efficient operation of aircraft;
- (6) Weight and balance computations;
- (7) Use of performance charts;
- (8) Significance and effects of exceeding aircraft performance limitations;
- (9) Use of aeronautical charts and magnetic compass for pilotage and dead reckoning;
 - (10) Use of air navigation facilities;
- (11) Aeronautical decision making and judgement;
- (12) Principles and functions of aircraft systems;
- (13) Maneuvers, procedures, and emergency operations appropriate to the aircraft;
- (14) Night and high altitude operations;
- (15) Descriptions of and procedures for operating within the National Airspace System.

- 4. Flight training.
- (a) Each approved course must include the following flight training on the areas of operation listed in paragraph (c) of this section, appropriate to the aircraft category and class rating for which the course applies, and must include:
- (1) For an airplane-single engine course. At least 20 hours of training on the approved areas of operation listed in paragraph (c)(1) of this section that includes at least

(i) Five hours of instrument training in a single engine airplane;

- (ii) Ten hours of training in a single engine airplane that has a retractable landing gear, flaps, and a controllable pitch propeller, or is turbine-powered;
- (iii) One cross-country flight in a single engine airplane of at least 2 hours in duration, a total straight-line distance of more than 100 nautical miles from the original point of departure, and occurring in day-VFR conditions;
- (iv) Except as provided in §61.131 of this chapter, one cross-country flight in a single engine airplane of at least 2 hours in duration, a total straight-line distance of more than 100 nautical miles from the original point of departure, and occurring in night-VFR conditions; and

(v) Three hours in a single engine airplane, in preparation for the practical test within the 60 days preceding the date of the test.

- (2) For an airplane-multiengine course. At least 20 hours of training on the approved areas of operation listed in paragraph (c)(2) of this section that includes at least
- (i) Five hours of instrument training in a multiengine airplane;
- (ii) Ten hours of training in a multiengine airplane that has a retractable landing gear, flaps, and a controllable pitch propeller, or is turbine-powered;
- (iii) One cross-country flight in a multiengine airplane of at least 2 hours in duration, a total straight-line distance of more than 100 nautical miles from the original point of departure, and occurring in day-VFR conditions;
- (iv) Except as provided in §61.131 of this chapter, one cross-country flight in a multiengine airplane of at least 2 hours in duration, a total straight-line distance of more than 100 nautical miles from the original point of departure, and occurring in night-VFR conditions; and
- (v) Three hours in a multiengine airplane, in preparation for the practical test within the 60 days preceding the date of the test.
- (3) For a rotorcraft-helicopter course. At least 20 hours of training on the approved areas of operation listed in paragraph (c)(3) of this section that includes at least
- (i) Five hours of instrument training in a helicopter:
- (ii) One cross-country flight in a helicopter of at least 2 hours in duration, a total straightline distance of more than 50 nautical miles from the original point of departure, and occurring in day-VFR conditions;
- (iii) Except as provided in §61.131 of this chapter, one cross-country flight in a helicopter of at least 2 hours in duration, a total straight-line distance of more than 50 nautical miles from the original point of departure, and occurring in night-VFR conditions; and

- (iv) Three hours in a helicopter, in preparation for the practical test within the 60 days preceding the date of the test.
- (4) For a rotorcraft-gyroplane course. At least 20 hours of training on the approved areas of operation listed in paragraph (c)(4) of this section that includes at least
- (i) Five hours of instrument training in a gyroplane;
- (ii) One cross-country flight in a gyroplane of at least 2 hours in duration, a total straightline distance of more than 50 nautical miles from the original point of departure, and occurring in day-VFR conditions;
- (iii) Except as provided in § 61.131 of this chapter, one cross-country flight in a gyroplane of at least 2 hours in duration, a total straight-line distance of more than 50 nautical miles from the original point of departure, and occurring in night-VFR conditions; and
- (iv) Three hours in a gyroplane, in preparation for the practical test within the 60 days preceding the date of the test.
- (5) For a powered-lift course. At least 20 hours of training on the approved areas of operation listed in paragraph (c)(5) of this section that includes at least-
- (i) Five hours of instrument training in a powered-lift;
- (ii) One cross-country flight in a poweredlift of at least 2 hours in duration, a total straight-line distance of more than 100 nautical miles from the original point of departure, and occurring in day-VFR conditions;
- (iii) Except as provided in § 61.131 of this chapter, one cross-country flight in a powered-lift of at least 2 hours in duration, a total straight-line distance of more than 100 nautical miles from the original point of departure, and occurring in night-VFR conditions: and
- (iv) Three hours in a powered-lift, in preparation for the practical test within the 60 days preceding the date of the test.
- (6) For a nonpowered glider course. At least 10 hours of flight training and 10 flights on the approved areas of operation of paragraph (c)(6) of this section, that includes
- (i) At least 3 flights in preparation for the practical test within the 60 days preceding the date of the test; and
- (ii) If the course is for ground launch procedures privileges, the course must also include at least 5 flights of flight training in a nonpowered glider using a winch or auto tow on the approved areas of operation of paragraph (c)(6) of this section.
- (7) For a powered glider course. At least 10 hours of flight training on the approved areas of operation of paragraph (c)(7) of this section, that includes at least 3 hours in preparation for the practical test within the 60 days preceding the date of the test;
- (8) For an airship course. At least 20 hours of training in airships on the approved areas of operation in paragraph (c)(8) of this section, which includes at least
- (i) Three hours in an airship, in preparation for the practical test within the 60 days preceding the date of the test;
- (ii) Five hours of instrument training in airships:
- (iii) One cross-country flight in an airship of at least 1 hour in duration, a total straight-