

Course Overview

This Ground School will:

- Provide the required knowledge for the Private Pilot written test
- Give you a foundation of knowledge for your Private Pilot flight training
- Meet the Ground Training requirements of FARs {141 Appendix B} and {61.105}

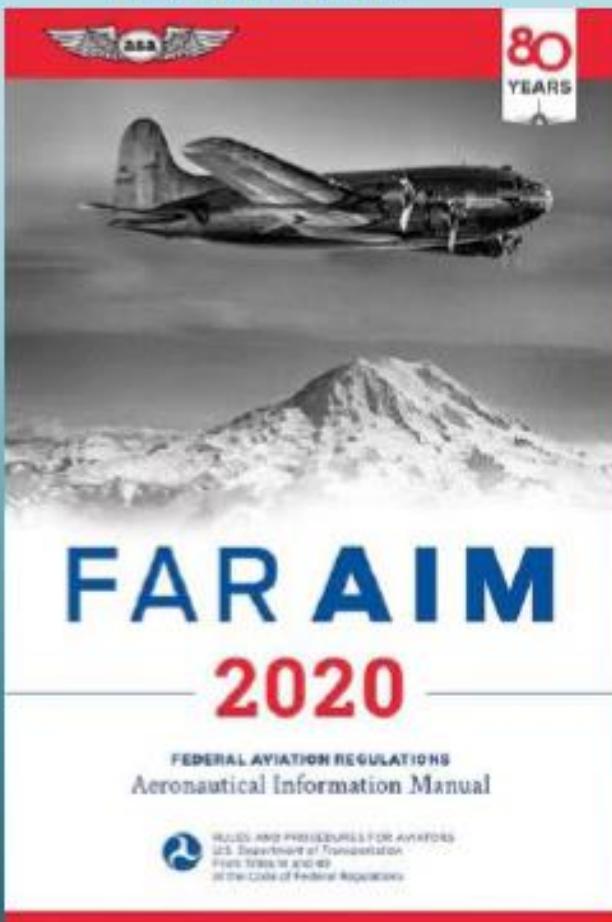
This Ground School will not:

- Guarantee a passing score on any written test, YOU HAVE TO STUDY!
- Serve as a substitute for 1-on-1 Pre-flight and Post-flight Training from a Certified Flight Instructor (CFI)

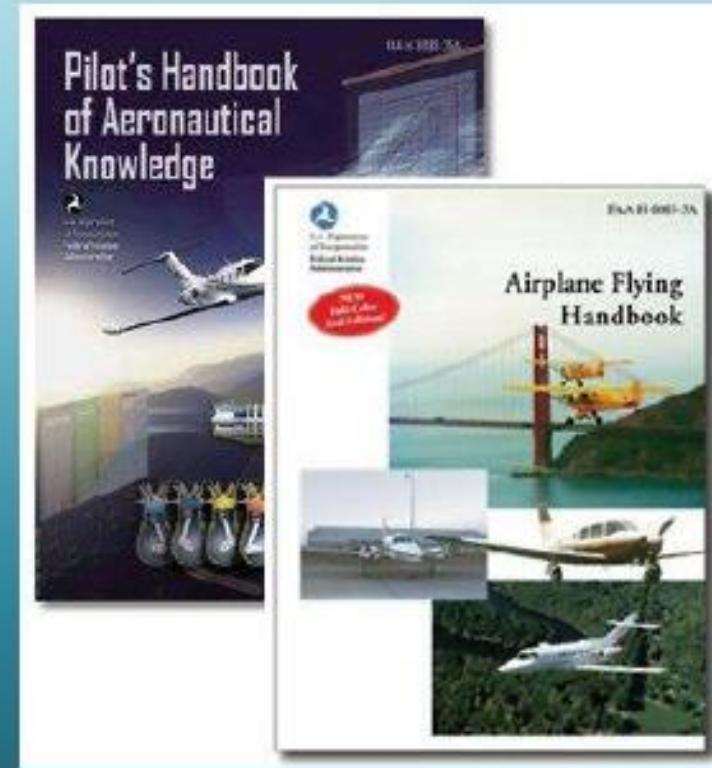
Course Materials

Text Books and iPAD

- FAR/AIM:



- Pilot Handbook of Aeronautical Knowledge (PHAK)
- Airplane Flying Handbook (AFH)



Complete List of Text Books Published by the FAA

- ▶ https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/

Text Book Links: Ground School Airplane Flying Handbook

- ▶ https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/airplane_handbook/media/airplane_flying_handbook.pdf

Pilots Handbook of Aeronautical Knowledge

- ▶ https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/media/pilot_handbook.pdf

Course Materials

Text Books and iPAD

- Aviation Weather
- Aviation Weather Services



Course Materials

Flight Computer
(E6B)



Sectional
Chart

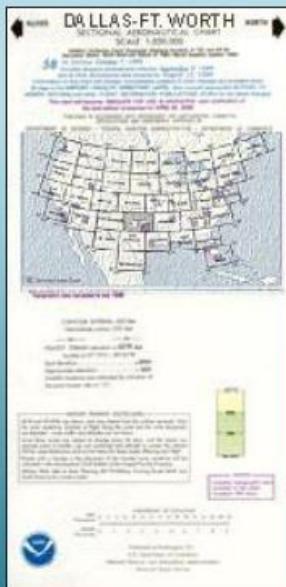
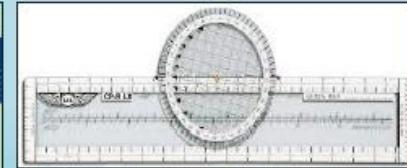


Chart
Supplement

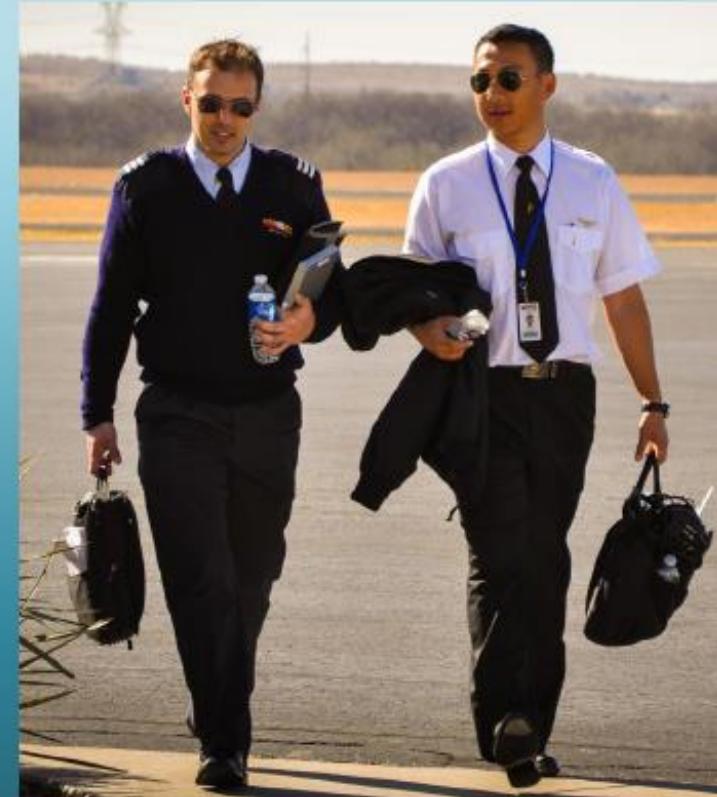


VFR
Plotter



Federal Aviation Regulations

- Part 1: Definitions and Abbreviations
 - Find and **Note** the Following:
 - Aircraft
 - Airplane
 - Category
 - Class
 - Large Aircraft
 - Night



Federal Aviation Regulations

Category and Class ID Quiz



- A. Airplane
- B. Glider
- C. Lighter-than-air
- D. Powered Lift
- E. Powered Parachute
- F. Rocket
- G. Rotorcraft
- H. Weight-shift-control

Federal Aviation Regulations

V-Speeds

- ▶ V_A Design maneuvering speed.
- ▶ V_c Design cruising speed
- ▶ V_{FE} Maximum flap extended speed
- ▶ V_{LE} Maximum landing gear extended speed
- ▶ V_{MC} Minimum control speed with the critical engine inoperative
- ▶ V_{NE} Never-exceed speed
- ▶ V_{NO} Maximum structural cruising speed
- ▶ V_R Rotation speed
- ▶ V_s Stalling speed or minimum steady flight speed at which the airplane is controllable
- ▶ V_{SO} Stalling speed or the minimum steady flight speed obtained in the landing configuration
- ▶ V_{S1} Stalling speed or minimum steady flight speed obtained in a specific configuration
- ▶ V_x Speed for best angle of climb
- ▶ V_y Speed for best rate of climb

Federal Aviation Regulations

- Part 61: Certification of Airmen
 - Find and **Note** the Following:
 - AIRMEN CERTIFICATION
 - 14 CFR 61.3 Required Documents
 - 14 CFR 61.31 Category/Class, Type Rating Requirements and Additional Endorsements
 - 14 CFR 61.23 Medical Certificate Classes and Duration
 - Student Pilot Limitations 14 CFR 61.89(a)(1-8)(b)
 - CURRENCY
 - 14 CFR 61.56 Flight Review
 - 14 CFR 61.57 Recent Flight Experience

The Pilot Certificate (61.3)



The Pilot Certificate Lists:

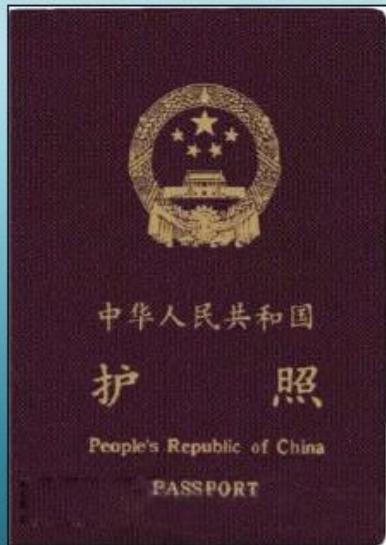
- The Pilot's Personal Information
- The Type of Certificate
- The Categories, Classes and Ratings that the Pilot is Authorized for

The Certificate Does Not List:

- The Specific Aircraft That The Pilot is Authorized to Fly (Unless Typed)
- A Certificate Expiration Date
- The Pilot Medical Information

Photo Identification (61.3)

- Official Government Passport:
- Official State Driver's License or Photo ID:



FAA Medical Certificates (61.23)

Under Age 40	Age 40 or Over
1st Class	
12 Months	6 Months
Required for ATP Operations	
2nd Class	
12 Months	12 Months
Required for Commercial Operations	
3rd Class	
60 Months	24 Months
Required for Private Pilot Operations	

Copy of FAA Form 8500-9 (Medical Certificate) or FAA Form 8420-2 (Medical Student Pilot Certificate) issued.

FF-

MEDICAL CERTIFICATE THIRD CLASS AND STUDENT PILOT CERTIFICATE

This certifies that (Full name and address):
JOHN DOE
123 ANYSTREET DR.
ANYTOWN, TN 57130

12-17-73 70 182 BR GR M
Date of Birth Height Weight Hair Eyes Sex

has met the medical standards prescribed in 14 CFR part 67, for this class of Medical Certificate.

Limitations **MUST WEAR CORRECTIVE LENSES**

Examiner Date of Examination: 10/17/89 Examiner's Designation No: 1013-2
Signature: *Joe Doctor*
Typed Name: JOE DOCTOR, D.O.

Airman's Signature

Additional Endorsements (61.31)

Additional Logbook Endorsements are Required to Operate Some Aircraft and Perform Certain Operations:

- Complex Aircraft
- Tail-wheel Aircraft
- High Performance Aircraft
- High Altitude Operations
- Type Rating

See FAR §61.31 for More Information

Additional Ratings and Certificates



Instrument Rating



Multi-Engine Class Rating



Commercial Pilot Certificate



Certified Flight Instructor



Airline Transport Pilot Certificate

Federal Aviation Regulations

Student Pilot Limitation 61.89

- ▶ A student pilot may not act as pilot in command of an aircraft:
 - That is carrying a passenger
 - That is carrying property for compensation or hire
 - For compensation or hire
 - In furtherance of a business
 - On an international flight
 - Flight or surface visibility of less than 3sm during daylight hours or 5sm at night
 - When the flight cannot be made with visual reference to the surface
 - In a manner contrary to any limitations placed in the pilot's logbook
- ▶ A student pilot may not act as a required pilot flight crewmember on any aircraft for which more than one pilot is required.

Federal Aviation Regulations (61.113)

61.113 Private Pilot Privileges and Limitations =

- A. May share the operating expenses with the passengers
- B. May fly for a charitable organization to which donations are made
- C. May tow gliders with proper experience
- D. May fly in connection with their own business
- E. May fly to any place in the world (if permitted by the specific countries)
- F. May demonstrate an aircraft for sale
- G. May not fly for hire
- H. May not give flight or ground instruction without an instructor certificate
- I. May not carry a medical patient who is not under proper medical care



WOW, how am I ever going to remember all that information?

- Answer: Lots of studying and the skillful use of **ACRONYMS!**
 - An acronym is a word formed from the initials of words in a phrase, such as NATO from “North Atlantic Treaty Organization” or "scuba" from "self-contained underwater breathing apparatus."

FAR Part 61 Certificate and Documents

Acronym (PPFR MATTCH)

P - Pilot Certificate - Duration, Privileges & Limitations, Requirements, Category & Class

P - Picture ID - Government Issued

F - Flight Review - FAR 61.56, 24 Calendar Months, Minimum 1 Hour Ground and Flight, Other Ways to Complete Requirements (Airline Ops, Wings Program, Earning a New Certificate, Military, CFI Renewals)

R - Recent Flight Experience – FAR 61.57, (to carry passengers) Last 90 Days Minimum of 3 T/O and Landings. These must be Full Stop for night and/or tailwheel aircraft.

M - Medical Certificate – Classes, Privileges, Limitations

A - Altitude Endorsement – 61.31(g)

T - Tail-Wheel Endorsement – 61.31(i)

T - Type Rating – 61.31(a), 1. Large Aircraft, 2. Turbo-Jet Aircraft, 3. As Specified by the FAA

C - Complex Endorsement – 61.31(e), Flaps, Retractable Landing Gear, and Constant Speed Propeller

H - High Performance – 61.31(f), More Than 200 Horse Power

Federal Aviation Regulations

- **Part 91: General Operating and Flight Rules**
 - Find and **Note** the following:
 - Aircraft Certification and Airworthiness Requirements
 - 14 CFR 91.7 Aircraft Airworthiness
 - 14 CFR 91.9 Aircraft Flight Manual, Markings and Placard Requirements
 - 14 CFR 91.103 Preflight Actions
 - 14 CFR 91.107 Use of Safety Belts and Shoulder Harnesses
 - 14 CFR 91.203 Required Documents
 - 14 CFR 91.205 Required Equipment
 - 14 CFR 91.207 Emergency Locator Transmitters
 - 14 CFR 91.209 Aircraft Lights
 - 14 CFR 91.213 Inoperative Equipment

Part 61..... How To **Get** The License

Part 91.... How To **Lose** The License

Airworthiness Certificate:

UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION—FEDERAL AVIATION ADMINISTRATION STANDARD AIRWORTHINESS CERTIFICATE			
1. NATIONALITY AND REGISTRATION MARKS	2. MANUFACTURER AND MODEL	3. AIRCRAFT SERIAL NUMBER	4. CATEGORY
N2631A	PIPER PA-22-135	22-903	NORMAL
5. AUTHORITY AND BASIS FOR ISSUANCE This airworthiness certificate is issued pursuant to the Federal Aviation Act of 1958 and certifies that, as of the date of issuance, the aircraft to which issued has been inspected and found to conform to the type certificate therefor, to be in condition for safe operation, and has been shown to meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention on International Civil Aviation, except as noted herein. Exceptions:			
NONE			
6. TERMS AND CONDITIONS Unless sooner surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator, this airworthiness certificate is effective as long as the maintenance, preventive maintenance, and alterations are performed in accordance with Parts 21, 43, and 91 of the Federal Aviation Regulations, as appropriate, and the aircraft is registered in the United States.			
DATE OF ISSUANCE 08-10-95	FAA REPRESENTATIVE MARION W. WILLIAMS	DESIGNATION NUMBER SW-FSDO-OKC	
Any alteration, reproduction, or misuse of this certificate may be punishable by a fine not exceeding \$1,000, or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE FEDERAL AVIATION REGULATIONS.			
FAA Form 8100-2 (8-92)			
GPO 892-804			

No
Expiration
Date

Registration Certificate:

REGISTRATION NOT TRANSFERABLE UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION CERTIFICATE OF AIRCRAFT REGISTRATION		
NATIONALITY AND REGISTRATION MARKS N 12345	AIRCRAFT SERIAL NO. 6969	This certificate must be in air- craft when operated.
MANUFACTURER AND MANUFACTURER'S DESIGNATION OF AIRCRAFT CESENA C-160		
ICAO Aircraft Address Code: I S U E D T O ROBERT E. BARO 300 MOERKLE ST ANYTOWN, OHIO 12345		
This certificate is issued for registration purposes only and is not a certificate of title. The Federal Aviation Administration does not determine rights of ownership as between private persons.		
DATE OF ISSUE February 15, 1998	David Hiscox ADMINISTRATOR	U.S. Department of Transportation Federal Aviation Administration
AC Form 8050-3(11/83) Supersedes previous editions		

36
Calendar
Month
Expiration

Airworthiness Requirements

The Aircraft Must Have:

- A - Airworthiness Certificate**
- R - Registration Certificate**
- R - Radio License**
- O - Operating Limitations** (Aircraft Manual, Instrument Markings, and Placards)
- W - Weight and Balance Documents**
- P - Placards**
- C - Compass Card**

Airworthiness Requirements

Required Inspections Which Keep the Airworthiness Certificate Current and Valid!

A – Airworthiness Directives (AD Notes)

V – VOR Receiver Checks - FAR 91.171 (VOT, Ground, Airborne, Dual) **IFR**

I – Inspections - FAR 91.409 (100 hours for hire, annual every 12 calendar months)

A – Altimeter - 91.411, 24 calendar months **IFR**

T – Transponder - FAR 91.413, 24 calendar months

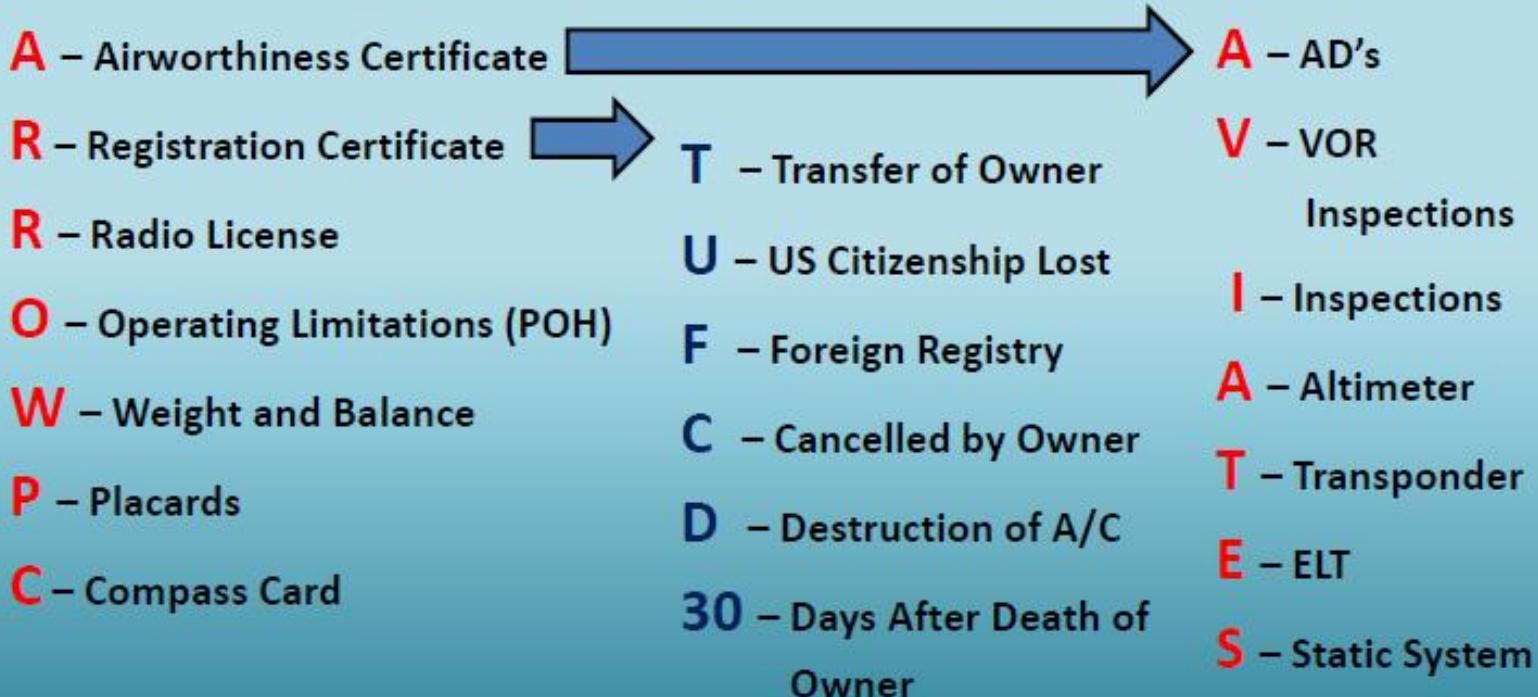
E – ELT - FAR 91.207, 12 calendar month inspection (battery replaced when 1 hour cumulative use or 50% battery life used)

S – Static System - 91.411, 24 calendar months **IFR**

Registration Certificate

- **The Registration Certificate is Valid Unless One of the Following Occurs:**
 - T** – Transfer of Ownership
 - U** – U.S. Citizenship is Lost
 - F** – A/C is Registered in a Foreign Country
 - C** – Cancelled by Owner
 - D** – Destruction of Aircraft
 - 30** – Days After Death of Owner

Put it All Together and It Looks Like This:



Other Useful Acronyms

- **91.205 Required Equipment for Day VFR:**

A – Airspeed Indicator

T – Tachometer (One for Each Engine)

O – Oil Pressure Gauge (One for Each Engine)

M – Manifold Pressure Gauge (One for Each Altitude Engine)

A – Altimeter

T – Temperature Gauge (One for Each Liquid Cooled Engine)

O – Oil Temperature Gauge (One for Each Engine)

E – ELT

F – Fuel Gauges (One for Each Tank)

L – Landing Gear Position Indicator

A – Anti-Collision Lights (Aviation Red or White)

M – Magnetic Compass

E – Emergency Equipment (For Hire Over Water – Flotation Gear and Pyrotechnic Device)

S – Seat Belts and Shoulder Harness (After July 18, 1978)

91.213 How a pilot must work through inoperable equipment for legal flight or Special flight Permit.

- ▶ Aircraft MEL
- ▶ manufacturer required equipment for flight
- ▶ 91.205 FAA min. required equipment
- ▶ Placard the inoperative
- ▶ ** Special flight Permit**

Other Useful Acronyms

- A
- T
- O
- M
- A
- T
- O
- E
- F
- L
- A
- M
- E
- S

- 91.205 **Required Equipment for Night VFR**
 - ***Everything for Day VFR Plus:***

F – Fuses (1 Spare Set or 3 of Each Kind, Accessible to the Pilot in Flight)

L – Landing Light (For Hire Only)

A – Anti-Collision Lights (Strobes)

P – Position Lights (Red, Green, and White)

S – Source of Electrical Power (Battery, Alternator, or Generator)

Homework and Reading Assignment

- **Read Chapters 1, 2, 3, and 9** of the Pilot's Handbook of Aeronautical Knowledge
- **Read Chapters 7** of the Pilot's Handbook of Aeronautical Knowledge in preparation for Lesson 2: Aircraft Systems and Power Plants
- **Test Prep Questions Pertaining To:** FAA Regulations Part 61 in ASA Chapter 4
- **Homework #1 - Due Tomorrow**

Tell me a little about yourself i.e. (location, job, etc.) and what you are hoping to gain from taking this course.

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