

- **WHEN: Tuesday-Friday, 25-28 Oct 22.** Class will be conducted in a morning and afternoon session each of the four days from 10:00-12:00 and 1:00-4:00 using MS Teams--all times are Eastern. Computers with an operating microphone and webcam are required. Additional guidance, including instructions for obtaining course materials (see below), will be provided.
- **COURSE DESCRIPTION and MATERIALS:** This 4-day virtual offering is all about Gas Turbine Engines (GTEs) and how they are used in various air-breathing propulsion systems. After taking this course, you will have a new-found understanding of the extraordinarily challenging “jet” engine operating environment. From a very practical perspective, you will be introduced to the fundamentals of the engine core (compressor, combustor, and turbine) and the various GTE propulsion systems. Numerous examples and actual engine hardware will help solidify foundational concepts. With clear learning objectives, the course follows the outline below:

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| <ul style="list-style-type: none"> <li>● Introduction and Historical Perspective</li> <li>● Foundational Concepts ⇒ Blade Geometry, Aerodynamics, and Thrust Fundamentals</li> </ul>  | } | 1 <sup>st</sup> Day |
| <ul style="list-style-type: none"> <li>● Foundational Concepts (continued)</li> <li>● Applications ⇒ Propeller Aerodynamics, Inlets, and Exhaust Nozzles</li> <li>● The Gas Turbine Engine “Core” ⇒ Compressor, Combustor, and Turbine</li> </ul> | } | 2 <sup>nd</sup> Day |
| <ul style="list-style-type: none"> <li>● The GTE Core (continued)</li> <li>● Propulsion Systems ⇒ Turbojet, Turbofan, Turboprop, and Turboshift</li> </ul>  | } | 3 <sup>rd</sup> Day |
| <ul style="list-style-type: none"> <li>● Engine Performance and Operability</li> <li>● Airframe and Engine(s) Integration</li> <li>● Final Wrap-up, Feedback, and Certificates</li> </ul>   | } | 4 <sup>th</sup> Day |

Course materials, which include a hard copy set of course notes and Klaus Hunecke’s text, *Jet Engines -- Fundamentals of Theory, Design, and Operation*, will be available. 2.0 Continuing Education Units (CEUs) are awarded.

- **WHO SHOULD ATTEND:** This course is designed for anyone working in the aviation field who wants to gain a practical appreciation for and foundational understanding of aircraft gas turbine engines -- program managers, engineers, scientists, aircraft/engine maintenance, operational, and administrative support personnel. A building-block approach is used -- no prior knowledge is assumed. Since 2002, we’ve taught thousands of “students” from audiences across the Air Force, Navy, NASA, FAA, and industry. Our instructors have earned a tremendous reputation for teaching fundamental aeronautics and propulsion -- in our classroom, theory and practical application come alive! Here are a few comments from recent offerings:
  - *“Instructors have a wealth of complimentary experience to bring to [the] course – airframe versus power – maintenance versus operator – designer versus analysis. Very responsive to questions – nice!”* Cleveland, Ohio
  - *“This course will assist me in my job. I’ve been reading design texts and engine texts over the last year to pick out the nuggets this course gave me in 2.5 days. Keep up the good work!”* Dayton, Ohio
  - *“Liked the practical applications – didn’t just learn why the engines work and are designed the way they do/are... We also learned why that’s important and how to use it. Great level of detail – explained well for the non-techies but with enough info and details for the techies”* Oklahoma City, Oklahoma
  - *“I can now understand the terms of people around me. I understand the importance of my job.”* North Charleston, South Carolina
- **COST, REGISTRATION, and CANCELLATION POLICY:** \$1400 (\$1350 if registered by 23 Sept 22), \$1325 for Federal Government employees -- Group discounts are available. For more information and to register, visit [PracticalAero.com](http://PracticalAero.com), contact [Jellsworth@PracticalAero.com](mailto:Jellsworth@PracticalAero.com), or call (719) 659-7319. Substitutions may be made at any time. Cancellations must be received two weeks prior to course start date and are subject to a \$50 fee. If you must cancel within the two-week period, and do not have a substitute, you may forfeit the entire fee and are responsible for returning course materials to PAI at your own expense. Refunds of the registration fee (only) are issued if the course is canceled. **NOTE:** This course is an “open enrollment” course and must meet a minimum student count for the offering to be held. If the minimum count is not met, the course will be cancelled not later than two weeks prior to the course start date. Practical Aeronautics will not be responsible for any costs incurred by the student if the course is cancelled.