

- **WHEN and WHERE:** Monday-Wednesday, 12-14 August 2019 at the OAI (Ohio Aerospace Institute), 22800 Cedar Point Rd, Brookpark, OH 44142. Class starts at 8:00 am each morning and ends at 4:30 Mon-Tues and around noon on Weds.
- **COURSE DESCRIPTION and MATERIALS:** This 2-½ day course 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. Where practical, a field trip will reinforce classroom discussions by examining actual engines and specific examples of airframe-engine(s) integration. With clear learning objectives, the course follows the outline below:

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| <ul style="list-style-type: none"> ● Introduction and Historical Perspective ● Foundational Concepts ⇒ Blade Geometry, Aerodynamics, and Thrust Fundamentals ● Applications ⇒ Propeller Aerodynamics, Inlets, and Exhaust Nozzles | } | 1 st Day |
| <ul style="list-style-type: none"> ● The Gas Turbine Engine “Core” ⇒ Compressor, Combustor, and Turbine ● Propulsion Systems ⇒ Turbojet, Turbofan, Turboprop, and Turboshaft ● Field Trip or In-Class Activity | } | 2 nd Day |
| <ul style="list-style-type: none"> ● Engine Performance and Operability ● Airframe and Engine(s) Integration ● Review Learning Objectives and Concluding Remarks | } | 3 rd Day (Morning Only) |

You will be given a set of course notes and a copy of Klaus Hunecke’s text, *Jet Engines -- Fundamentals of Theory, Design, and Operation*. 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 MRO, 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.”* N. Charleston, South Carolina
- **COURSE DIRECTOR:** Dr. Keith Boyer is the Vice-President for Propulsion for Practical Aeronautics. He retired from the Air Force as a Colonel in 2012 after serving as Associate Dean for Students at the Air Force Institute of Technology. He started his AF career in 1979 as an enlisted electronic warfare maintainer on B-52 aircraft. His experience ranges from hands-on flight line and back-shop maintenance to research & development, test and analysis, systems engineering, sustainment, logistics & supply chain management, and multinational requirements management. Keith taught for ten years in the Air Force Academy’s Department of Aeronautics, and served in numerous positions including Director of Propulsion and Deputy Department Head. For seven years, he was adjunct faculty to the Air Force Test Pilot School, where he twice earned the Flight Test Instructor of the Quarter award.
- **COST, REGISTRATION, and CANCELLATION POLICY:** \$1350 (\$1250 if registered by July 23rd), \$1215 for Federal Government employees -- Group discounts are available. For more information and to register, visit PracticalAero.com, contact 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. Refunds of the registration fee (only) are issued if the course is canceled.