



*With exclusive rights granted by Dr. Jack Mattingly,
Practical Aeronautics is proud to offer:*

Cycle Analysis of Gas Turbine Engines

- **WHEN and WHERE:** February 27 – 3 March 2023 at Building 100, A123/127, Arnold AFB, TN. Class runs from 8:00 to 4:00 Mon – Thurs, and from 8:00 to around noon on Friday. Laptops will be provided for two to share, but attendees are encouraged to bring personal laptops as well...no Macs and no government computers.
- **COURSE DESCRIPTION and MATERIALS:** This 36-hour course is for engineers and scientists who desire a practical understanding of gas turbine engine cycle performance including design, analysis, and test applied to an air, ship, or ground vehicle. Attendees will gain a foundational understanding of the interplay between basic engine design choices and vehicle-engine system performance. The course is presented in a workshop style and includes a hands-on design project and an engine “lab data experience” featuring engine performance calculations from measured test data with comparison to performance estimates from cycle analysis software. An improved understanding of engine corrected performance parameters is also acquired.

With clearly defined learning objectives, course highlights include:

- Overview of Vehicle-Engine System Fundamentals
- Fundamentals of Parametric Cycle Analysis
- Fundamentals of Engine Performance Analysis
- Design Team Competition using Dr. Mattingly’s AEDsys engine system software
- Engine Lab Data Experience

Course attendees receive a copy of *Elements of Propulsion, Second Edition*, by Mattingly & Boyer, latest version of the AEDsys software, as well as course notes. The textbook is the 2019 winner of the AIAA Summerfield Book Award for best book published in the last five years. 3.6 Continuing Education Units (CEUs) are awarded.

- **WHO SHOULD ATTEND:** Both new and experienced engineers and scientists working in the gas turbine engine technology area or aircraft, maritime, or ground vehicle systems that use gas turbine propulsion will benefit from this course. Attendees will return to their work with an improved understanding of gas turbine engine performance and analysis as well as its influence on the system application.
 - *“This week got me excited about my career choice again... Overall, this is the most useful training I’ve had since my career in propulsion began.”* Colorado Springs, Colorado
 - *“Gives the ability to ask the right questions, or at least know what questions to ask.”* Tullahoma, Tennessee
 - *“Practical aspect is key... software to evaluate engine parameter effect was invaluable.”* Patuxent River, Maryland
 - *“I liked that you tied this not only together with the aircraft and mission, but also that you pull this back to the Air Force and our overall mission...I think your class really recharges us and reiterates our real purpose in this job.”* Dayton, Ohio
- **COURSE DIRECTOR:** Dr. Keith Boyer is the President 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 Air Force career in 1979 as an enlisted electronic warfare maintainer on B-52 aircraft and instructor. His aircraft-engine experience includes maintenance & sustainment at the flight line, intermediate and depot levels, 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 leadership positions. 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:** \$1850 for Federal Government employees and on-site contractor employees. Group pricing is 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. **NOTE:** We can only accommodate a few seats for this course...register early!