



Customer Technical Education Center Maintenance Training Catalog

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History of GE

From the first turbosupercharger to the world's most powerful commercial jet engine, GE's history of powering aircraft spans nearly a century of innovation.

GE Aviation is a world-leading provider of commercial and military jet engines and components as well as integrated digital, electric power, and mechanical systems for aircraft. GE Aviation also has a global service network to support these offerings.

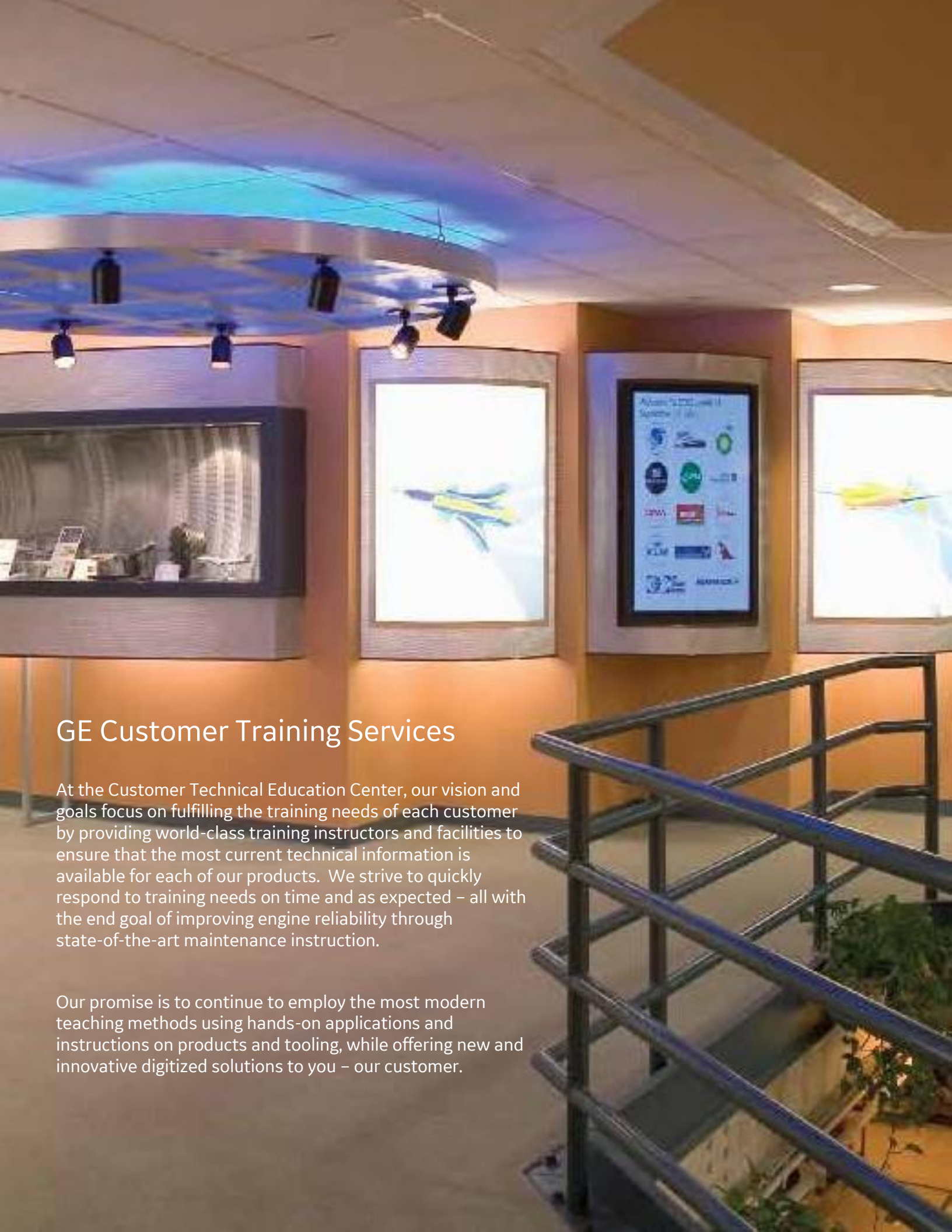
Technological excellence, supported by continued investments in research and development, has been the foundation of GE Aviation's growth and helps to ensure quality products for customers well into the future.



Technology Innovation

- First U.S. Jet Engine
- First Turboprop Engine
- First Variable Stator Engine
- First Mach 2 Engine
- First High-Bypass Engine
- First Variable Cycle Turbofan Engine
- First Unducted Fan Engine
- First 30:1 Pressure Ratio Engine
- GE90-115B World Record - steady state thrust: 127,900 lbs.
- GE9X-105B World Record - steady state thrust: 134,300 lbs.
- Additive Manufacturing Processes





GE Customer Training Services

At the Customer Technical Education Center, our vision and goals focus on fulfilling the training needs of each customer by providing world-class training instructors and facilities to ensure that the most current technical information is available for each of our products. We strive to quickly respond to training needs on time and as expected – all with the end goal of improving engine reliability through state-of-the-art maintenance instruction.

Our promise is to continue to employ the most modern teaching methods using hands-on applications and instructions on products and tooling, while offering new and innovative digitized solutions to you – our customer.

Global Footprint



CTEC

The Customer Technical Education Center (CTEC) located just outside Cincinnati, Ohio, provides technical training to customer mechanics, powerplant engineers, GE employees, and other representatives on a daily basis to help ensure fleet reliability.

CTEC employs a staff of world-class engine training experts who deliver not only technical training, but also real-world application instructions for each of the GE and CFM engine programs.

CTEC provides regular customer tours of the training facility as part of its support for customers. In addition, regular “Voice of the Customer” sessions are held to better understand customer training and technical needs.

On-site classes are also available to customers who desire a private course for a large number of their mechanics.

AEMTC

The Aero Engine Maintenance Training Center (AEMTC) - a cooperative training institute comprised of Chinese partners, Safran Aircraft Engines, CFM International, and GE Aviation - specializes in maintenance training for GE and CFM commercial aircraft engines.

Since 1996, the center has trained students from airlines throughout Asia. Located on the campus of the Civil Aviation Flight University of China (CAFUC), AEMTC is a two-story building containing six classrooms and a shop with ten training engines. There are eight instructors who conduct training classes for CFM56-3, CFM56-5B, CFM56-7B, CF34-10A, LEAP-1A, LEAP-1B, and LEAP-1C line maintenance, borescope inspection, and advanced engine systems.

AEMTC keeps close ties with the CFM training facilities at GE Aviation (CTEC) and Safran Aircraft Engines (CTC) by sharing the same training materials, quality control measurements and instructor best practices. AEMTC also keeps close contact with the GE/CFM Field Service team creating special training and seminars.

GE ATRC

The GE Advanced Technology & Research Center (GE ATRC) is located in Doha, Qatar, in the Middle East. This GE Aviation technical customer training facility is part of the Qatar Science & Technology Park within Education City.

The 13,400-square-meter (144,238-square-foot) facility includes six digital classrooms, as well as 14 engine/tooling bays for the “hands-on” portion of the technical learning offerings.

The facility opened in 2010 and features a full assortment of training on various engine models. Popular class offerings such as Line Maintenance, Borescope, and Engine Change are available to qualified customers.

Additional facility highlights:

- 490 square meters (5,260 square feet) of lab space
- 150-seat auditorium
- 465-square-meter (5,000-square-foot) product display lobby

ATA 104 Specifications

All GE courses comply with ATA 104 Specifications

Level I – General Familiarization

Personnel must be familiar with current equipment and have a general knowledge of turbine-powered transport aircraft. Level I provides a brief overview of the airframe, systems, and powerplant as outlined in the Systems Description section of the Aircraft Maintenance Manual.

Level II – Ramp and Transit

Personnel must be familiar with turbine-powered transport aircraft, digital electronic equipment, and have experience in ramp, transit, and turnaround activity. Level II provides a basic system overview – a description of controls, indicators, and principal components, including their locations and practical training on servicing and minor troubleshooting.

Level III – Line and Base Maintenance Training

In addition to requirements for Levels I and II, personnel attending Level III training should possess the knowledge and experience required to maintain turbine-powered transport aircraft. Level III provides a detailed description, operation, component location, removal/installation, BITE and troubleshooting procedures to maintenance manual level.

Level IV – Specialized Training

Personnel must have considerable experience in the field in which training will be received. Level IV provides a detailed description, component location, in-depth troubleshooting, adjustment, test procedures, rigging, engine run-up, in-depth use of wiring diagrams, schematics, and engineering data. Entry level is defined by subject matter.

Level V – Component Overhaul Training

Personnel must meet prerequisites established by the vendor. Specialized maintenance/overhaul training is conducted by airframe/engine/avionics manufacturers and/or their suppliers and/or airlines to a component maintenance manual level. Entry level is defined by subject matter.



Services Offered

GE Aviation's Customer Training Team is constantly studying fleet data and adapting our classes to best suit our customer's needs – *your* needs. Our team is committed to providing quality training to our customers to help reduce maintenance errors and improve fleet reliability. That is why we offer a complete curriculum of technical training courses on our products. Our philosophy is simple: *Better maintenance practices reduce operation disruptions*. So, it is no surprise that our courses are designed to simulate the environment in which you work and the real-world problems you encounter.

Classroom Training

Our courses provide the latest maintenance training for both engine and aviation system components. Courses range from an introduction level up to ATA level 4 training for commercial and military products. The academic portion of the course is provided in modern classroom and most courses include a hands-on portion providing practical experience to the mechanic. Our instructors share a wealth of academic and practical experience with discussions of common and not so common maintenance scenarios.

Virtual Training

Virtual training via MS TEAMS allows customers to receive the academic portions of a traditional instructor-led class without the expense of traveling to one of our training centers or paying for an instructor to come to their site. Individual students can log into a standard online collaborative meeting format and call into the class. They will receive the same technical information and have the same level of participation as if they attended class in person.

On-Site Customer Training

Under this program a CTEC instructor provides training and support beyond what is achievable in the classroom at the customer's facility. This program is especially beneficial to customers introducing a new engine type into their fleet, as a GE expert can work with technicians on the flight line, answering questions and providing education on issues as they occur. Although the On-Site Customer Training is primarily focused on Line Maintenance tasks, CTEC instructors can also provide guidance during Engine Changes and certain repairs. Contact CTEC.U@ge.com for program availability and specific offerings.

Online Training Content

Our online training includes our Maintenance Minutes, Digital Training Aids (DTAs), Best Practices Documents, Maintenance Newsletters, and Engine General Familiarization self-paced courses. This on-demand content is available 24x7 via CTEC University.

Troubleshooting

This two-day class will focus on the engine fault indications and troubleshooting logic using current fleet data to highlight the issues customer see most. Dedicated Troubleshooting classes are available on most engine lines. These courses are available upon request.

Translators

All classes and training material are presented in English. Additional class time may be required if a translator is needed. Please discuss any translation needs during class scheduling. Customers are responsible for supplying their own translators.



CTEC University Online Training Options

To meet the increasing customer demand for training and to help customers reduce costs, GE has developed on-demand, self-paced digital training products to deliver vital maintenance information directly to the maintainer available on CTEC University.

General Familiarization Courses

Electronic familiarization courses (eFam) provides an introduction to a specific engine model's architecture and systems. This enables GE to provide genuine OEM training to eligible customers who don't have the opportunity to come to our Training Centers. For most product lines, these courses are recommended prior to any subsequent training at our training centers.

Maintenance Minute (MXMs)

The CTEC team launched Maintenance Minute videos in 2015 to help customers prevent the most common issues with general engine maintenance. The videos offer on-demand tips and best practice recommendations. The goal is for a mechanics to review the pertinent video prior to completing a prescribed maintenance task to prevent these errors.

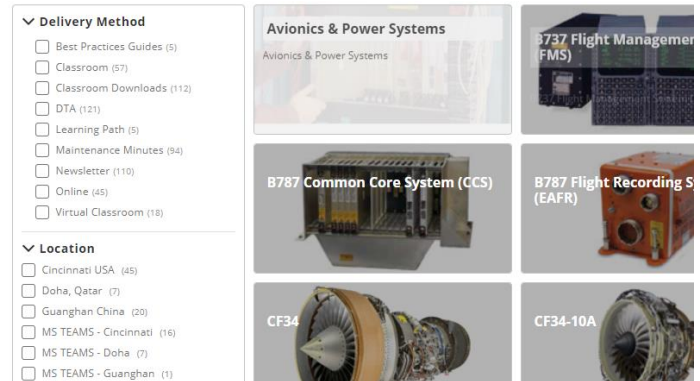
Videos are available to everyone on GE Aviation's CTEC University website log in page at this URL <https://training.geaviation.com/> as well as on GE Aviation's YouTube channel.

Digital Training Aids (DTAs)

Digital Training Aids are designed to provide the mechanic with information about specific maintenance procedures that have been linked to critical errors. This interactive learning allows the user to view detailed procedures. The cautions surrounding critical steps are highlighted and summarized.

These videos contain proprietary data and are available upon logging into GE Aviation's CTEC University website at the following URL:

<https://training.geaviation.com/>



Best Practice Guides

Best Practice Documents are documents created by our engineers capturing all the latest best practices of a specific maintenance task. These documents are often published for the more difficult and lengthy maintenance tasks and provide mechanics the most up to date information to prevent human factor errors and reduce the time a maintenance task takes to complete. Often times these documents are published so maintainers have the information as soon as possible while more formal documentation, such as service bulletins or aircraft or engine maintenance manuals are updated.

Maintenance Newsletters

Maintenance Newsletters provide a one- or two-page summary of a current maintenance topic. The newsletters are initially released in the monthly engine model specific Fleet Highlites document and then provided in CTEC University for easy access.

**Online training and training material for GE's customers will be available based on each customer's General Terms Agreement (GTA)/contract rights.

CTEC University (CTEC U)

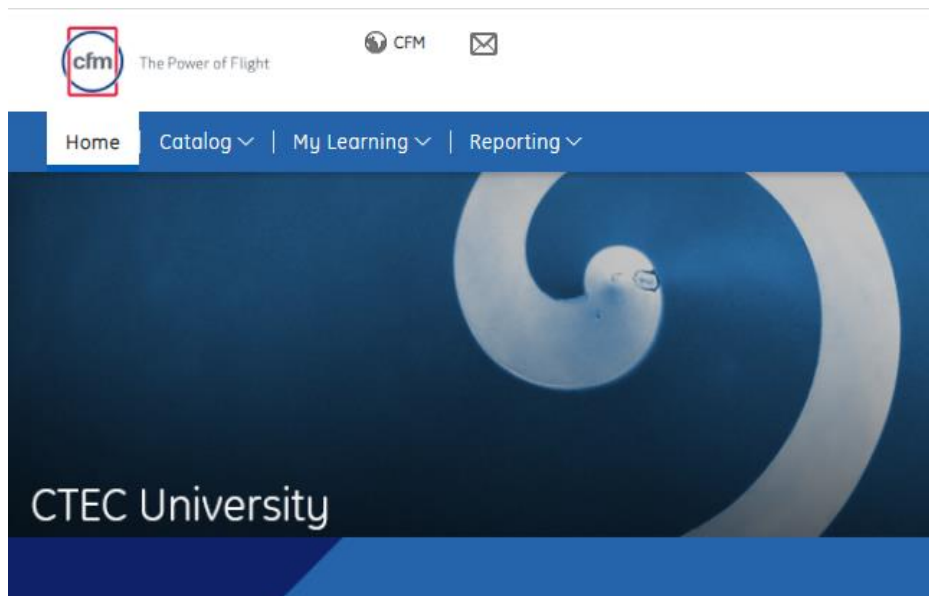
This new and enhanced website is a central online training site for GE's customers and employees to obtain a full array of CTEC training and course materials.

For our customers, this new site enables a “one-stop- shopping” experience with all training materials now available to them, including general familiarization courses, newsletters, Maintenance Minute videos, DTA videos, online courses, course schedules, training records, etc.

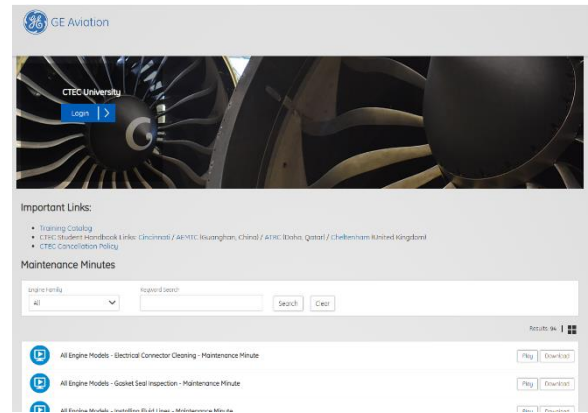
In addition, increased access is provided to customer training coordinators allowing them to:

- Access training schedules
- Purchase training
- Register students for classes
- Substitute and cancel student registrations
- Review training records and training credits (if applicable)
- View remaining training credits

For more information or to nominate a training coordinator for your organization, please send your inquiry to CTEC.U@ge.com or contact your GE Customer Support Manager.



CTEC University (CTEC U)



Frequently Asked CTEC U Questions

Getting Access to CTEC University

CTEC University can be accessed directly from any of the customer portals (my.GEAviation.com, myCFMportal, or myGEHonda.com) by selecting training from the Links widget. Users may also log into from the direct link at this URL: <https://training.geaviation.com>

Access to Training and Class Pricing

Training provisions (available training to your company) and payment terms are based upon your current license agreement(s). Please contact your Customer Support Manager, or CTEC (CTEC.U@ge.com) should you require further details.

Individual class prices may be found by logging into CTEC University searching for the desired courses. Class prices are available with each course.

Options to Enrolling Students in a Course

1. Self Service Opportunity for Customer Training Coordinators

If your organization has someone responsible for training, we can grant them Training Coordinator privileges to CTECU University. These additional privileges allow the coordinator to view schedules, purchased seats in courses, register students for class, substitute students, print student certificates, view student records, and access to reports to track your company student's training records.

2. Email requests

Company representatives may send training requests and/or student registration requests to CTEC.U@ge.com and we can enroll your students.

All other training inquiries that are not funneled through an organization's Training Coordinator can be directed to CTEC at ctec.u@ge.com or your GE Customer Support Manager.

Additional Notes

- Enrolling students requires the following information: student name, organization, email and nationality. If the student has a GE SSO to log into the customer portals, please provide the SSO.
- If your organization is paying via a Purchase Order, this PO must be received by CTEC before enrollment and seats in class will be secured. Invoicing for class occurs after the last class date and all payment terms are net 30 days from invoice receipt.

Course and Service Matrix

Engine Model(s)	General Familiarization	Line Maintenance	Borescope Inspection	Borescope Blade Blend	Engine Removal & Installation	Fan Stator Removal & Installation	Thrust Reverser	Intermediate Maintenance
CFM56-2/F108	•	•	•	•				
CFM56-3	•	•	•	•				
CFM56-7	•	•	•	•	•			
CF34-3	•	•	•					
CF34-8C	•	•	•		•			
CF34-8E	•	•	•		•			
CF34-10A (AEMTC only)	•	•	•					
CF34-10E	•	•	•		•			
CF6-80C2 PMC		•	•	•			•	
CF6-80C2 FADEC	•	•	•	•			•	
CT7	•	•	•					
GE90-115B	•	•	•	•		•		
GENX-1B	•	•	•	•	•	•		
GENX-2B	•	•	•	•	•	•		
Honda HF120	•	•	•					
F404/F414	•	•	•					
LEAP-1A	•	•	•	•	•			
LEAP-1B	•	•	•	•	•			
LEAP-1C (AEMTC only)	•	•	•	•	•			
Passport	•	•	•		•			
T700		•	•					•



CF6[®]

For more than 50 years the CF6 family of engines has established an impressive operational record, providing a baseline for developing GE's next generation of commercial and military engines. The CF6 family is the cornerstone for powering widebody aircraft across the globe.

CF6 Courses



CF6 General Familiarization

ATA 104 Level.....Level I
 Prerequisites:.....None
 Course Length:..... 4 hours
 In Class Option:.....N/A
 Virtual Option:.....N/A

This course is available online at the CTEC University website and is a prerequisite to be completed at the student’s home base before attending Line Maintenance. This course is an academic training session designed for personnel who require a general knowledge of the basic engine construction features, airflows, engine systems, and accessories.

CF6 Line Maintenance

ATA 104 Level..... Level III
 Prerequisites:.....General Familiarization
 In Class Option (4 days):..... Yes
 Virtual Option (varies):..... Yes
 Class Size:.....6-12 students

This course is an academic and practical training session designed for line maintenance mechanics and supervisory personnel with high-bypass engine and English language experience. The course consists of specific academic information on engine airflows, engine systems, component identification, and fault analysis. The hands-on portion of this course consists of removal and replacement of select engine components and use of maintenance manuals.

CF6 Borescope Inspection

ATA 104 LevelLevel IV
 Prerequisites:Basic Borescope
 In Class Option (2 day) Yes
 Virtual Option N/A
 Class Size:3-6 students

This course is an academic and practical training session designed for line maintenance mechanics and supervisory personnel. The course consists of specific academic information to analyze internal engine defects. The hands-on portion of this course consists of removal and replacement of engine borescope plugs, use of borescope equipment, and use of maintenance manuals.

CF6 Borescope Blade Blend*

ATA 104 Level..... Level IV
 Prerequisites:Borescope Inspection experience
 In Class Option (2 days):Yes
 Virtual Option:.....N/A
 Class Size:3-5 students

This course is an academic and practical training session designed for line maintenance technicians and supervisory personnel. Subject matter will include blade blend procedures, use of borescope blend equipment, and application of the maintenance manual for the CF6 series engines.

**This course must be purchased at the current training rate, or training entitlements may be used at a three times (3X) rate if training entitlements are available to the customer.*



CF34[®]

Aircraft readiness, on-time departures, reliability, flexibility, and cost-effective operation are all important measures of a successful regional aircraft engine.

The CF34 family delivers on all fronts with the most reliable engine in the history of regional aviation. The CF34 engines also provide the power for business jet service on the Bombardier Challenger 604/605 aircraft and Embraer lineage aircraft.

CF34 Courses



CF34 General Familiarization

ATA 104 LevelLevel I
Prerequisites:.....None
Course Length:..... 4 hours
In Class Option:.....N/A
Virtual Option:.....N/A

This course is available online at the CTEC University website and is a prerequisite to be completed at the student's home base before attending Line Maintenance. This course is an academic training session designed for personnel who require a general knowledge of the basic engine construction features, airflows, engine systems, and accessories.

*Available in the following engine models:
CF34-3 / CF34-8C / CF34-8E / CF34-10A / CF34-10E*

CF34 Line Maintenance and Engine Removal/Installation

ATA 104 Level Level III
Prerequisites:.....General Familiarization
In Class Option (4 days):..... Yes
Virtual Option (varies):..... Yes
Class Size:.....6-12 students

This course is an academic and practical training session designed for line maintenance mechanics and supervisory personnel with high-bypass engine and English language experience. The course consists of specific academic information on engine airflows, engine systems, component identification, and fault analysis. The hands-on portion of this course consists of removal and replacement of select engine components and use of maintenance manuals.

*Available in the following engine models:
CF34-3 / CF34-8C / CF34-8E / CF34-10A / CF34-10E*

CF34 Borescope Inspection

ATA 104 LevelLevel IV
Prerequisites:Basic Borescope
In Class Option (2 days) Yes
Virtual Option N/A
Class Size:3-6 students

This course is an academic and practical training session designed for line maintenance mechanics and supervisory personnel.

*Available in the following engine models:
CF34-3 / CF34-8C / CF34-8E / CF34-10A / CF34-10E*

CT7

Any flight, any time, and place. With more than 100 million flight hours, the CT7 family of turboshaft and turboprop engines operates across the globe in every environment your aircraft travels.

GE's successful T700/CT7 family of turboprop and turboshaft engines powers 25 types of helicopters and fixed-wing aircraft with more than 130 customers in more than 50 countries.

Built on the highly reliable T700, the CT7 engine design has proven itself in harsh environments and has achieved over 37 million engine cycles. The commercial CT7 engine powers a variety of helicopters including the Bell 214ST and 525, Sikorsky S-70, S-92 and AgustaWestland's AW101 and AW189. The turboprop version of the engine powers aircraft such as the CN235 and Saab 340.



CT7 General Familiarization

ATA 104 Level.....Level I
Prerequisites:None
Course Length:..... 4 hours
In Class Option:.....N/A
Virtual Option:.....N/A

This course is available online at the CTEC University website and is a prerequisite to be completed at the student's home base before attending Line Maintenance. This course is an academic training session designed for personnel who require a general knowledge of the basic engine construction features, airflows, engine systems, and accessories.

CT7 / T700 Powerplant Line & Base Maintenance

ATA 104 Level.....Level III
Prerequisites:General Familiarization
In Class Option (5 days):Yes
Virtual Option (varies):Yes
Class Size: 6-12 students

This course is an academic and practical training session designed for the line maintenance mechanics and supervisory personnel. Topics covered are Line Maintenance Procedures, Inspections, Hot Section Replacement, Engine Control Interface, and Borescope procedures.



GENX™

A culmination of more than 60 years of inspired engine design, the GENx turbofan engine refines the best technologies and systems of our most successful family members, the GE90 and CF6 engines. Designed to power a new generation of aircraft, the GENx has evolved from a strong heritage of ingenuity, commitment, and dedication to excellence. The GENx is making its mark in our proud legacy of aviation history.

GEnx Courses



GEnx-1B / -2B General Familiarization

ATA 104 Level.....Level I
 Prerequisites:.....None
 Course Length:..... 4 hours
 In Class Option:.....N/A
 Virtual Option:.....N/A

This course is available online at the CTEC University website and is a prerequisite to be completed at the student’s home base before attending Line Maintenance. This course is an academic training session designed for personnel who require a general knowledge of the basic engine construction features, airflows, engine systems, and accessories.

GEnx-1B / -2B Line & Base Maintenance

ATA 104 Level..... Level III
 Prerequisites:.....General Familiarization
 In Class Option (5 days):..... Yes
 Virtual Option (varies):..... Yes
 Class Size:.....6-12 students

This course is an academic and practical training session designed for line maintenance mechanics and supervisory personnel with high-bypass engine, and English language experience. The course consists of specific academic information on engine airflows, engine systems, component identification, and fault analysis. The hands-on portion of this course consists of removal and replacement of select engine components and use of maintenance manuals.

GEnx-1B / -2B Borescope Inspection

ATA 104 Level..... Level IV
 Prerequisites:.....Basic Borescope
 In Class Option (1 day):..... Yes
 Virtual Option N/A
 Class Size:..... 3-6 students

This course is an academic and practical training session designed for line or shop personnel responsible for borescoping the engine.

GEnx-1B / -2B Engine Removal & Installation

ATA 104 Level..... Level IV
 Prerequisites:NA
 In Class Option (2 days):Yes
 Virtual Option:.....N/A
 Class Size: mandatory 6-12 students

This course is an academic and practical training session designed to train Line Maintenance personnel how to remove and install a GEnx engine.

GEnx-1B / -2B Fan Stator Removal & Installation

ATA 104 Level..... Level IV
 Prerequisites:NA
 In Class Option (3 days):Yes
 Virtual Option:.....N/A
 Class Size: mandatory 6-12 students

This course is an academic and practical training session designed to train Line Maintenance personnel how to remove and install the GEnx engine and Fan Stator.

GEnx-1B / -2B Borescope Blade Blend*

ATA 104 Level..... Level IV
 Prerequisites: Borescope Inspection experience
 In Class Option (2 days):Yes
 Virtual Option:.....N/A
 Class Size:3-6 students

This course is an academic and practical training session designed for line maintenance technicians and supervisory personnel. Subject matter will include blade blend procedures, use of borescope blend equipment, and application of the maintenance manual for the GEnx series engines.

**This course must be purchased at the current training rate, or training entitlements may be used at a three times (3X) rate if training entitlements are available to the customer.*



GE90[®]

Advanced, reliable, and efficient, the GE90-115B consistently demonstrates operational reliability with highly developed propulsion technology infused in every feature of the engine. The GE90-115B is helping long-haul, long-range widebody aircraft fly farther, faster, and more cost effectively.

GE90 Courses



GE90 General Familiarization

ATA 104 Level.....Level I
 Prerequisites:.....None
 Course Length:..... 4 hours
 In Class Option:.....N/A
 Virtual Option:.....N/A

This course is available online at the CTEC University website and is a prerequisite to be completed at the student’s home base before attending Line Maintenance. This course is an academic training session designed for personnel who require a general knowledge of the basic engine construction features, airflows, engine systems, and accessories.

GE90 Line Maintenance

ATA 104 Level..... Level III
 Prerequisites:.....General Familiarization
 In Class Option (5 days):..... Yes
 Virtual Option (varies):..... Yes
 Class Size:.....6-12 students

This course is an academic and practical training session designed for line maintenance mechanics and supervisory personnel with high-bypass engine and English language experience. The course consists of specific academic information on engine airflows, engine systems, component identification, and fault analysis. The hands-on portion of this course consists of removal and replacement of select engine components and use of maintenance manuals.

GE90 Borescope Inspection

ATA 104 Level..... Level IV
 Prerequisites:.....Basic Borescope
 In Class Option (2 days):..... Yes
 Virtual Option N/A
 Class Size:..... 3-6 students

This course is an academic and practical training session designed for line maintenance mechanics and supervisory personnel. The course consists of specific academic information to analyze internal engine defects. The hands-on portion of this course consists of removal and replacement of engine borescope plugs, use of borescope equipment, and use of maintenance manuals.

GE90 Engine Removal & Installation

ATA 104 Level..... Level IV
 Prerequisites:NA
 In Class Option (2 days):Yes
 Virtual Option:.....N/A
 Class Size: mandatory 6-12 students

This course is an academic and practical training session designed to train Line Maintenance personnel how to remove and install a GE90 engine.

GE90 Fan Stator Removal & Installation

ATA 104 Level..... Level IV
 Prerequisites:NA
 In Class Option (3 days):Yes
 Virtual Option:.....N/A
 Class Size: mandatory 6-12 students

This course is an academic and practical training session designed to train Line Maintenance personnel how to remove and install the GE90 engine and fan stator.

GE90 Borescope Blade Blend*

ATA 104 Level..... Level IV
 Prerequisites:Borescope Inspection experience
 In Class Option (2 days):Yes
 Virtual Option:.....N/A
 Class Size:3-5 students

This course is an academic and practical training session designed for line maintenance technicians and supervisory personnel. Subject matter will include blade blend procedures, use of borescope blend equipment, and application of the maintenance manual for the GE90 series engines.

**This course must be purchased at the current training rate, or training entitlements may be used at a three times (3X) rate if training entitlements are available to the customer.*



HF120

Born from the combined experience and technological proficiency of GE and Honda, the Honda HF120 turbofan engine from GE Honda Aero Engines sets the stage for next-generation business jet power.

The Honda HF120 was engineered with a determined and well-defined goal: anticipate and fulfill the future needs of business jets. Today, the Honda HF120 demonstrates enhanced efficiency and power across all levels of performance.

GE Honda HF120 General Familiarization

ATA 104 Level.....Level I
 Prerequisites:None
 Course Length:..... 4 hours
 In Class Option:.....N/A
 Virtual Option:.....N/A

This course is available online at the CTEC University website and is a prerequisite to be completed at the student's home base before attending Line Maintenance. This course is an academic training session designed for personnel who require a general knowledge of the basic engine construction features, airflows, engine systems, and accessories.

GE Honda HF120 Line Maintenance

ATA 104 Level.....Level III
 Prerequisites:General Familiarization
 In Class Option (4 days):Yes
 Virtual Option (varies):Yes
 Class Size: 6-12 students

This course is an academic and practical training session designed for line maintenance mechanics and supervisory personnel with high-bypass engine and English language experience. The course consists of specific academic information on engine airflows, engine systems, component identification, and fault analysis. The hands-on portion of this course consists of removal and replacement of select engine components and use of maintenance manuals.

GE Honda HF120 Borescope Inspection

ATA 104 LevelLevel IV
 Prerequisites:Basic Borescope
 In Class Option (1/2 day) Yes
 Virtual Option N/A
 Class Size:3-6 students

This course is an academic and practical training session designed for line or shop personnel responsible for borescoping the engine.

GE Honda HF120 Engine Removal & Installation

ATA 104 LevelLevel IV
 Prerequisites: None
 In Class Option (1/2 day) Yes
 Virtual Option N/A
 Class Size:3-8 students

This course is an academic and practical training session designed to train Line Maintenance personnel how to remove and install a HF120 engine.



Passport™

Using technology perfected on various GE engine platforms, the Passport's performance surpasses any other engine in its class. Not only does the Passport enable ultra-long-range travel including powering the largest business jet, its reduced noise and lower emissions contribute to an optimal experience for both operators and passengers.

Passport 20 Courses



Passport 20 General Familiarization

ATA 104 Level.....Level I
 Prerequisites:.....None
 Course Length:.....4 hours
 In Class Option:.....N/A
 Virtual Option:.....N/A

This course is available online at the CTEC University website and is a prerequisite to be completed at the student’s home base before attending Line Maintenance. This course is an academic training session designed for personnel who require a general knowledge of the basic engine construction features, airflows, engine systems, and accessories.

Passport 20 Powerplant Line & Base Maintenance

ATA 104 Level.....Level III
 Prerequisites:.....General Familiarization
 In Class Option (4 days):.....Yes
 Virtual Option (varies):.....Yes
 Class Size:.....6-12 students

This course is an academic and practical training session designed for line maintenance mechanics and supervisory personnel with high-bypass engine and English language experience. The course consists of specific academic information on engine airflows, engine systems, component identification, and fault analysis. The hands-on portion of this course consists of removal and replacement of select engine components and use of maintenance manuals.

Passport 20 Borescope Inspection

ATA 104 LevelLevel IV
 Prerequisites:Basic Borescope
 In Class Option (3 day)Yes
 Virtual OptionN/A
 Class Size:3-6 students

This course provides the information necessary to understand the basic borescope inspection of the Passport engine. This course is recommended for borescope inspectors and quality personnel.

Passport 20 Borescope Blade Blend*

ATA 104 Level.....Level IV
 Prerequisites:Borescope Inspection experience
 In Class Option (1 day):Yes
 Virtual Option:.....N/A
 Class Size:3-5 students

This course is an academic and practical training session designed for line maintenance technicians and supervisory personnel. Subject matter will include blade blend procedures, use of borescope blend equipment, and application of the maintenance manual for the Passport engines.

Passport 20 Fan Blisk Removal & Replacement

ATA 104 Level.....Level IV
 Prerequisites:None
 In Class Option (2 day):Yes
 Virtual Option:.....N/A
 Class Size:12 students

This course is an academic and practical training session designed to train Line Maintenance personnel how to remove and install the Passport 20 Fan Blisk.

Passport 20 Engine Change

ATA 104 Level.....Level IV
 Prerequisites:None
 In Class Option (2 day):Yes
 Virtual Option:.....N/A
 Class Size:12 students

This course is an academic and practical training session designed to train Line Maintenance personnel how to remove and install a Passport 20 engine.

**This course must be purchased at the current training rate, or training entitlements may be used at a three times (3X) rate if training entitlements are available to the customer.*

Diagnostics Trend Interpretation*

ATA 104 Level.....Level IV
Prerequisites:.....None
Course Length:..... 3 days
In Class Option: (3 days).....N/A
Virtual Option: (3 days).....N/A
Class Size:.....6-12 students

GE Aviation Fleet Support provides an advanced suite of tools that enhances a customer's Engine Condition Monitoring experience. These tools were developed in cooperation with several of GE's customers to ensure that they work in a way that complements an operator's work environment.

This 3-day course provides the customer with hands-on training of the Diagnostics tool suite. Additionally, it develops an understanding of trend interpretation principles and its application to line maintenance troubleshooting. The class days are broken out as follows:

Day 1: Diagnostics Tool Usage

Data Query – Build queries and reports that can be scheduled to execute in time for large sets of data and plots to be available for analysis when you need them.

Engine Change Submittal – Online tool to remove/install engines and download current configuration for an entire fleet.

Fleet Monitor – View engine alerts, faults and related data trends to disposition/close those notifications. This allows for watch list creation for follow-up assessments and actions. You will Plot single and multiple engines and parameters over time and export data for analysis. Interactive sessions with the tools to enhance user experience.

Flight Data – View real time aircraft/engine status including faults and other reports.

Flight Coupon – Web-based tool that can be used as primary or backup method of entering flight data into the GE system.

GE Reports – Download fixed format reports provided by GE.

Days 2-3: Trend Interpretation

During this period, a student who has a background in gas turbine engines will learn how to read and interpret trends in order to analyze the interactions of various operating parameters. This will permit the student to then develop a root cause analysis for the shifts noted using the Fleet Monitor tool. The student will then learn how to apply this information to take action on the flight line for root cause confirmation.



**This course must be purchased at the current training rate, or training entitlements may be used at a three times (3X) rate if training entitlements are available to the customer*

Powerplant Engineering Course*

In this course, experienced design and analysis authorities discuss the common and unique design features and philosophies of GE, CFM and competitor aircraft engines. The intent is to have decision makers in engine management better understand why the instructions and publications for continued airworthiness contain specific material.

There are ten topics that cover different specialties of engine design:

- Preliminary Engine Design
- Static Structures Design
- Fan and Compressor Aero Design
- Compressor and Fan Mechanical Design
- Combustor Aero Design
- Turbine Aero Overview
- Turbine Mechanical Design
- Bearings and Seals Design
- Controls
- Nacelle and Externals

There are two discussion topics on specific engine management practices:

- Life Management
- Data Analysis to Improve Fleet Performance

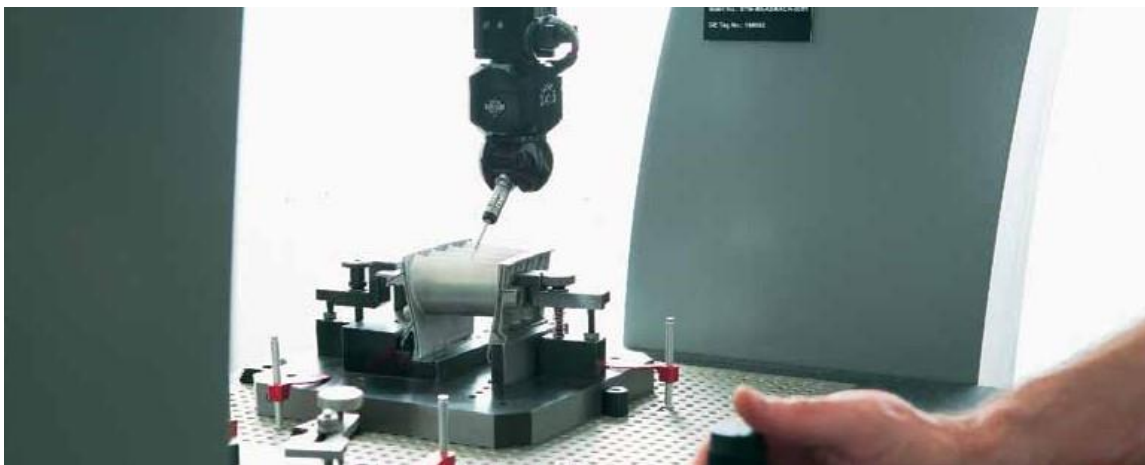
There is also a historical discussion of the evolution of the turbine engine:

- The Whittle Unit to the Ultra-High-Bypass Engine is discussed during this course. Topics are not specific to a particular engine model and include, but are not limited to, the CT7, CF6, CFM56, CF34, CFE738, GE90, GP7000, GENx and competitor's engines.

The discussion leaders are all experienced leaders in the technical field on which they lecture. These lectures include experts from GE's:

- Fleet Support / Product Support Engineering
- Systems Engineering
- Design Engineering
- Chief Engineer's Office

Class size is tailored to customer demand and the course is typically conducted once a year during the September-to-November time frame.



*This course is not eligible for use of training credits allowance. This course must be purchased at the current training rate.

CFM International

CFM International serves today as the finest example of a successful international joint company. The CFM family of engines combines the resources, engineering expertise, and services of Safran and GE Aviation.

CFM's rugged single-stage architecture is the most durable and efficient in the enabled CFM to emerge as the preferred engine in every market it serves.



The Power of Flight

CFM International is a 50/50 joint company between GE and Safran.

CFM56 Courses



CFM56 General Familiarization

ATA 104 Level.....Level I
 Prerequisites:.....None
 Course Length:..... 4 hours
 In Class Option:.....N/A
 Virtual Option:.....N/A

This course is available online at the CTEC University website and is a prerequisite to be completed at the student’s home base before attending Line Maintenance. This course is an academic training session designed for personnel who require a general knowledge of the basic engine construction features, airflows, engine systems, and accessories.

*Available in the following engine models:
 CFM56-2, CFM56-3, CFM56-5, CFM56-7*

CFM56 Powerplant Line & Base Maintenance

ATA 104 Level..... Level III
 Prerequisites:.....General Familiarization
 In Class Option:
 CFM56 (4 days)
 Virtual Option (varies):..... Yes
 Class Size:.....6-12 students

This course is an academic and practical training session designed for line maintenance mechanics and supervisory personnel with high-bypass engine and English language experience. The course consists of specific academic information on engine airflows, engine systems, component identification, and fault analysis. The hands-on portion of this course consists of removal and replacement of select engine components and use of maintenance manuals.

*Available in the following engine models:
 CFM56-2, CFM56-3, CFM56-7
 CFM56-5B Academic presentation only*

**This course must be purchased at the current training rate, or training entitlements may be used at a three times (3X) rate if training entitlements are available to the customer*

CFM56 Borescope Inspection

ATA 104 LevelLevel IV
 Prerequisites:Basic Borescope
 In Class Option (2 day) Yes
 Virtual Option N/A
 Class Size:3-6 students

This course provides the information necessary to understand the basic borescope inspection of the engine. This course is recommended for borescope inspectors and quality personnel. The hands-on portion of this course consists of removal and replacement of engine borescope plugs, borescope inspection, and use of maintenance manuals.

*Available in the following engine models:
 CFM56-2, CFM56-3, CFM56-7*

CFM56 Engine Change

ATA 104 LevelLevel IV
 Prerequisites: N/A
 In Class Option (2 day) Yes
 Virtual Option N/A
 Class Size: 6-12 students

This course is an academic and practical training session designed to train Line Maintenance personnel how to remove and install a CFM56 engine.

*Available in the following engine models:
 CFM56-7*

CFM & LEAP Borescope Blade Blend*

ATA 104 Level..... Level IV
 Prerequisites: Borescope Inspection experience
 In Class Option (1 day):Yes
 Virtual Option:.....N/A
 Class Size:3-4 students

This course is an academic and practical training session designed for line maintenance technicians and supervisory personnel. Subject matter will include blade blend procedures, use of borescope blend equipment, and application of the maintenance manual for the CFM-series engines.

*Available in the following engine models:
 CFM56-2, CFM56-3, CFM56-7*

LEAP Courses



LEAP General Familiarization

ATA 104 Level.....	Level I
Prerequisites:.....	None
Course Length:.....	4 hours
In Class Option:.....	N/A
Virtual Option:.....	N/A

This course is available online at the CTEC University website and is a prerequisite to be completed at the student’s home base before attending Line Maintenance. This course is an academic training session designed for personnel who require a general knowledge of the basic engine construction features, airflows, engine systems, and accessories.

*Available in the following engine models:
LEAP-1A, LEAP-1B, LEAP-1C*

LEAP Powerplant Line & Base Maintenance

ATA 104 Level.....	Level III
Prerequisites:.....	General Familiarization
In Class Option:	
LEAP-1A/-1B (5 days)	
LEAP-1C (available October 2021)	
Virtual Option (varies):.....	Yes
Class Size:.....	6-12 students

This course is an academic and practical training session designed for line maintenance mechanics and supervisory personnel with high-bypass engine and English language experience. The course consists of specific academic information on engine airflows, engine systems, component identification, and fault analysis. The hands-on portion of this course consists of removal and replacement of select engine components and use of maintenance manuals.

*Available in the following engine models:
LEAP-1A, LEAP-1B, and October 2021 LEAP-1C*

**This course must be purchased at the current training rate, or training entitlements may be used at a three times (3X) rate if training entitlements are available to the customer*

LEAP Borescope Inspection

ATA 104 Level	Level IV
Prerequisites:	Basic Borescope
In Class Option (2 day)	Yes
Virtual Option	N/A
Class Size:	3-6 students

This course provides the information necessary to understand the basic borescope inspection of the engine. This course is recommended for borescope inspectors and quality personnel. The hands-on portion of this course consists of removal and replacement of engine borescope plugs, borescope inspection, and use of maintenance manuals.

*Available in the following engine models:
LEAP-1A, LEAP-1B, and October 2021 LEAP-1C*

LEAP Engine Change

ATA 104 Level	Level IV
Prerequisites:	N/A
In Class Option (2 day)	Yes
Virtual Option	N/A
Class Size:	6-12 students

This course is an academic and practical training session designed to train Line Maintenance personnel how to remove and install a LEAP engine.

*Available in the following engine models:
LEAP-1A, LEAP-1B*

LEAP Borescope Blade Blend*

ATA 104 Level.....	Level IV
Prerequisites:	Borescope Inspection experience
In Class Option (1 day):	Yes
Virtual Option:.....	N/A
Class Size:	3-4 students

This course is an academic and practical training session designed for line maintenance technicians and supervisory personnel. Subject matter will include blade blend procedures, use of borescope blend equipment, and application of the maintenance manual for the LEAP-series engines.

*Available in the following engine models:
LEAP-1A, LEAP-1B, and October 2021 LEAP-1C*

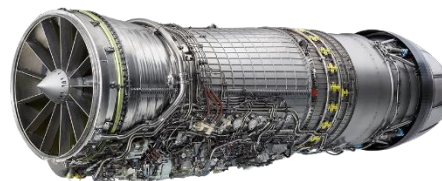
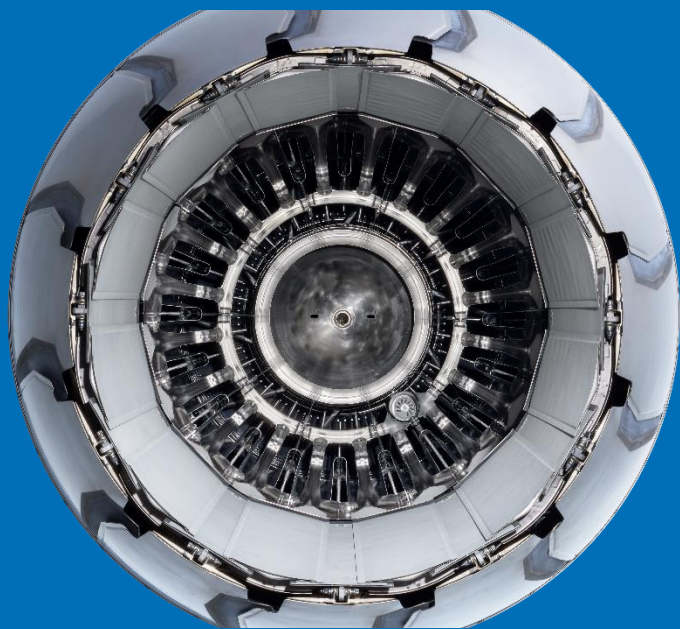
Military Programs

Since developing that first turbosupercharger for U.S. military aircraft during WWI, GE Aviation has continued to expand mission capabilities with innovations that allow pilots to fly farther, faster, and more efficiently than ever before. And we're investing more the \$1B every year in new manufacturing, materials, and technologies to ensure next-generation military aircraft will exceed tomorrow's mission demands.



F110

The undisputed engine-of-choice for the most advanced F-16 fighters, the F110 engine is rapidly gaining global popularity for the twin-engine F-15 application. The Service Life Extension Program infuses technologies from our proven commercial applications to deliver both significant operating and support cost improvements and longer time on wing.



F110 General Familiarization

(available for F110-129 and F110-132 engine modules)

ATA 104 Level.....	Level I
Prerequisites:	None
Course Length:.....	4 hours
In Class Option:.....	N/A
Virtual Option:.....	N/A

This course is designed to provide the academic instruction and visual orientation of the F110 engine hardware and maintenance requirements at the intermediate level. Classroom time will be used in a detailed discussion of engine structures, airflow, support systems and operating characteristics. Practical shop exercises include familiarization of external engine hardware/components and selected pre-disassemble internal hardware and borescope procedures.

F110 Intermediate Maintenance

(available for F110-129 and F110-132 engine modules)

ATA 104 Level.....	Level III
Prerequisites:	General Familiarization
In Class Option (4 days):	Yes
Virtual Option (varies):	Yes
Class Size:	4-8 students

This course is designed to provide experienced propulsion maintenance technicians with knowledge, skills and experience to disassemble, inspect, repair and reassemble the GE F110 engine while utilizing applicable support equipment. Training will be conducted to the level necessary to allow students to perform complete I-level tasks, troubleshoot possible system faults and restore the unit and major assemblies/subassemblies to a completely serviceable and operational condition as prescribed by applicable maintenance data. Training will include combinations of formal classroom instruction and hands-on exercises to provide appropriate knowledge and skill proficiency.

F110 Courses



F110 Borescope Inspection

ATA 104 Level..... Level III
Prerequisites:.....None
Course Length:..... 2 days
In Class Option:.....N/A
Virtual Option:.....N/A
Class Size:..... 3-6 students

This course is an academic and practical training session designed for line or shop personnel responsible for borescoping the engine.

F110 Test Cell Operations

(available for F110-129 and F110-132 engine modules)

ATA 104 Level.....Level IV
Prerequisites:.....None
Course Length:..... 2 days
In Class Option:.....N/A
Virtual Option:.....N/A
Class Size:..... 2-4 students

This course is designed to provide academic instruction and hands-on experience to install an F110 engine on the test stand, perform the necessary engine run and remove the tested engine. The course also covers the user maintenance requirements on the test cell. Class is conducted on-site at the customer's location.

F110 Familiarization Training

ATA 104 Level..... Level IV
Prerequisites:None
Course Length:.....2 days
In Class Option:.....N/A
Virtual Option:.....N/A
Class Size:2-4 students

This course is designed to provide the academic instruction and visual orientation of the F110 engine hardware and maintenance requirements at the intermediate level. Classroom time will be used in a detailed discussion of engine structures, airflow, support systems and operating characteristics. Practical shop exercises include familiarization of external engine hardware/components and selected pre-disassemble internal hardware.

Maintenance Awareness Training

ATA 104 Level.....Level III
Prerequisites:None
Course Length:.....5 days
In Class Option:.....N/A
Virtual Option:.....N/A
Class Size:6-12 students

This session is designed to provide information on maintenance tasks that could possibly lead to aircraft/engine incidents due to the maintenance performed by technicians. An overview related to the various maintenance items on the F110 family of engines that maintainers have had questions or difficulty in understanding is included. The goal is to provide an understanding on how the maintainers have a direct relationship/input on the safety of the engines based on the maintenance they perform.



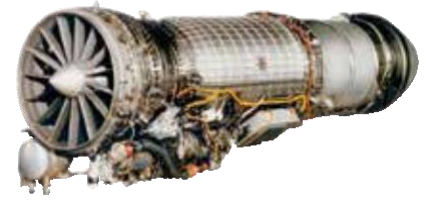
F404

The performance and reliability of F404 engines have set the standards for modern fighter engines, most notably aboard the U.S. Navy F/A-18 Hornet. This family powers a variety of aircraft for a broad range of missions – from low-level attack to high-altitude interception, and boasts widespread application on both afterburning and non-afterburning applications.

F414

The F414 combines the proven reliability, operability, and maintainability of its successful F404 predecessor with a series of advanced technologies for a 35% power increase. Ongoing technology upgrade programs continue to demonstrate thrust growth and further reductions in cost of ownership.

F404 / F414 Courses



F404 Engine Familiarization / Line Maintenance

ATA 104 Level.....	Level III
Prerequisites:.....	None
Course Length:.....	5 days
In Class Option:.....	N/A
Virtual Option:.....	N/A
Class Size:.....	6-12 students

This course is an academic and practical training session that provides an overall examination of the engine. The course is for anyone requiring basic knowledge of the engine, as well as mechanics, technicians, supervisors, and managers.

The course includes the location and identification of major modules, rotating parts, and stationary hardware in each of these modules. In-depth examination of the airflow through the engine is included with an emphasis on how airflow is controlled and used in an engine. The hands-on section covers standard maintenance practices, use of technical pubs, removal and installation, instructor selected LRUs and engine borescope inspection procedures.

F414 General Familiarization / Line Maintenance

ATA 104 Level.....	Level III
Prerequisites:.....	None
Course Length:.....	5 days
In Class Option:.....	N/A
Virtual Option:.....	N/A
Class Size:.....	6-12 students

This course is an academic and practical training session that provides an overall examination of the engine. The course is for anyone requiring basic knowledge of the engine, as well as mechanics, technicians, supervisors, and managers.

The course includes the location and identification of major modules, rotating parts and stationary hardware in each of these modules. In-depth examination of the airflow through the engine is included with emphasis on how airflow is controlled and used in the engine. The hands-on portion covers standard maintenance practices, use of technical pubs, removal and installation of instructor selected LRUs and engine borescope inspection procedures.

T700

Developed in response to the United States Army's requirement to deliver added power and improved field maintainability, 20,000 T700/CT7 engines have now surpassed 100 million flight hours in nearly four decades of service. In addition to proving their mettle in the harshest military operating environments imaginable, T700/CT7 engines are the power of choice in 50 countries and 130 customers for transport, medical evacuation, air rescue, special operations and marine patrol. A product of continuous innovation, the story of the T700 will continue to unfold as it incorporates advanced components and materials for increased power, reliability, and fuel savings.

Combat proven in the world's harshest environments, the T700/CT7 is also the engine of choice for the world's most demanding civilian applications.



T700 Intermediate Maintenance Course

ATA 104 Level..... Level IV
Prerequisites: General Familiarization
In Class Option (10 days):.....Yes
Virtual Option (varies):Yes
Class Size: 6-12 students

This course is a practical training session designed for shop personnel responsible for module removal and installation on the T700 engine. Topics covered are Shop Maintenance procedures, Inspections, Engine Module Removal and Installation, Compressor Blend Procedures, and Borescope Inspection.

Avionics and Electrical Power Systems



Avionics and Electrical Power Systems

GE Avionics and Electrical Power Systems Training has its headquarters at Cheltenham in the UK; training is available at both the Cheltenham and Cincinnati centers - or by arrangement at the customer's location if preferred.

GE Aviation provides world-class Systems and instrument training designed to meet the changing needs of today's customers with outstanding support. Before every course, the material and information are reviewed to ensure the very latest product updates are included.





Boeing 777 Electrical Load Management System (ELMS)

Fitted to all variants of the Boeing 777, the purpose of the ELMS is to house all the hardware (busbars, contactors, relays and circuit breakers) required for power distribution. ELMS monitors and controls individual loads, provides switching functions necessary to connect and disconnect loads as required and it plays a major role in controlling and supplying power to aircraft systems.

Boeing 777 Electrical Load Management System*

ATA 104 Level.....Level III
Prerequisites:None
Course Length:.....3 days
In Class Option:.....N/A
Virtual Option:.....N/A
Class Size 3-12 students

This course is an academic training session designed to provide an understanding of the role of ELMS in power distribution and management for the Boeing 777 aircraft**. The course covers ELMS versions: 1, 2, and PDP 2.5 (based on ATA Specification 104 Guidelines for Aircraft Maintenance Training). All classes will be taught in English.

By the end of the course the student will be able to-

- Describe the Boeing 777 AC and DC power distribution system.
- Describe the role ELMS plays in aircraft power management.
- Describe the location of the various components and how they are controlled and operated.
- Troubleshooting and testing of the system is also included as theoretical training.

Line/Base Engineers and Technicians, FSEs, Technical Support personnel and Engineering Management who need a detailed understanding of the Boeing 777 ELMS will benefit from attending this course.

**ELMS 3 for the 777X aircraft is a separate course offering.

*Systems training entitlements can be used towards this course provided they are available to the customer (engine training entitlements are not transferrable to this course). Alternatively, training may be purchased at the current training rate. Please contact the Systems Training Manager for details.



Boeing 737 Flight Management System (FMS)

The Flight Management System is fitted to the 737-300/400/500/600/700/800 + BBJ series aircraft. Its main function is to generate continuous automatic navigation and guidance, as well as to control and monitor performance. The heart of the system is the Flight Management Computer System, which computes accurate position data and guides the aircraft along a route using the most economical height and speed.

Boeing 737- 300/400/500/600/700/800 Flight Management System*

ATA 104 Level.....	Level III
Prerequisites:	None
Course Length:.....	3 days
In Class Option:.....	N/A
Virtual Option:.....	N/A
Class Size	3-12 students

This academic course is designed to provide an understanding of the operation of the FMS fitted to the Boeing 737-300/400/500/600/700/800 + BBJ series aircraft. It covers both single and dual configurations, as well as how to carry out ATA 104 level III maintenance tasks. All classes will be taught in English.

By the end of the course the student will be able to-

- Name the components of the FMS and state their locations in the aircraft.
- List the equipment which interfaces with the system.
- Understand and describe the basic concept, operation, and BIT of the FMS.
- Additional aspects covered by the course are loading/cross loading the various software applications (OFF, MEDB & NDB) and initializing and loading a basic flight plan.

Line/Base Engineers and Technicians, FSEs, Technical Support personnel and Engineering Management who need a detailed understanding of 737 FMS will benefit from attending this course.

*Systems training entitlements can be used towards this course provided they are available to the customer (engine training entitlements are not transferrable to this course). Alternatively, training may be purchased at the current training rate. Please contact the Systems Training Manager for details.



Boeing 787 Common Core System (CCS)

The Common Core System is the future for systems integration. It provides reliable, high speed, real time communication between systems while also delivering lower operating costs, reduced fuel consumption and reduced maintenance costs.

Boeing 787 Common Core System*

ATA 104 Level.....Level III
Prerequisites:None
Course Length:.....3 days
In Class Option:.....N/A
Virtual Option:.....N/A
Class Size 3-12 students

This is an academic training course designed to give an understanding of the Boeing 787 CCS, how it differs from a legacy federated architecture system and how the different systems utilize a common computing resource. ATA 104 level III servicing tasks are covered. All classes will be taught in English.

By the end of the course, the student will be able to-

- Describe the concept and operation of the CCS and its individual LRUs.
- Understand the System Support Functions within the CCS, as well as the Maintenance terminal and displays.

Line/Base Engineers and Technicians, FSEs, Technical Support personnel and Engineering Management who need a detailed understanding of the 787 CCS will benefit from attending this course.

*Systems training entitlements can be used towards this course provided they are available to the customer (engine training entitlements are not transferrable to this course). Alternatively, training may be purchased at the current training rate. Please contact the Systems Training Manager for details.



Boeing 787 EAFR, RIPS & AMP

The recording Subsystem on the Boeing 787 is heavily integrated into the CCS and combines the Flight Data Recording with the voice and audio recording systems.

Boeing 787 Recording Subsystem (including the EAFR, RIPS, and AMP)*

ATA 104 Level.....	Level III
Prerequisites:	None
Course Length:.....	1 day
In Class Option:.....	N/A
Virtual Option:.....	N/A
Class Size	3-12 students

Normally delivered in conjunction with the 787 CCS course, this is an ATA level III academic session designed to provide an understanding of the Boeing 787 Recording Subsystem, in particular the Enhanced Airborne Flight Recorder, its component parts and supporting software tools.

After completing this course, the student will be able to-

- Describe the purpose and operation of the Recording Subsystem component parts and their operation.
- Outline the use of the maintenance terminal as applicable to the recording Subsystem.
- Will have received an outline of the EAFR Ground Based Tool. All classes will be taught in English.

Line/Base Engineers and Technicians, FSEs, Technical Support personnel and Engineering Management who need a detailed understanding of the 787 Recording Subsystem will benefit from attending this course.

NOTE: Because this course is normally delivered in conjunction with the 787 CCS course, it should only be considered as a standalone option if the students have already attended the 787 CCS course.

For a course specific to the Ground Based Tool (Integrated Ground Software), please contact the GE Aviation Systems Training Manager.

*Systems training entitlements can be used towards this course provided they are available to the customer (engine training entitlements are not transferrable to this course). Alternatively, training may be purchased at the current training rate. Please contact the Systems Training Manager for details.



COMAC 919 Flight Management System

The COMAC 919 Flight Management System (FMS), developed by GE Aviation Systems combines the COMAC 919 aircraft avionics capabilities to ease workload of the aircrew and allow them more time to safely managing the aircraft. The FMS provides multi-sensor navigation, flight planning, trajectory prediction, and performance calculations. Its main function is to generate continuous automatic navigation and guidance to guide the aircraft along a route using the most economical altitude and speed.

COMAC 919 Flight Management System (FMS)

ATA 104 Level.....Level III
 Prerequisites:None
 Course Length:.....3 days
 In Class Option:.....N/A
 Virtual Option:.....N/A
 Class Size 3-12 students

This academic course is designed to provide an understanding of the COMAC 919-Flight Management System (FMS).

This course explains the differences between a legacy federated architecture system and how the COMAC 919 utilizes an Integrated Modular Avionics (IMA) environment. It covers how to carry out ATA 104 level III maintenance tasks. All classes will be taught in English.

By the end of the course, the student will be able to-

- Understand the full functionality of the COMAC 919 FMS and how it operates in the IMA environment.
- Be knowledgeable of the system components and system interfaces as well as control devices and user interfaces.
- Understand and describe the basic concept, and operation of the FMS.

Line/Base Engineers and Technicians, FSEs, Technical Support personnel and Engineering Management who need a detailed understanding of COMAC 919 FMS will benefit from attending this course.

*Systems training entitlements can be used towards this course provided they are available to the customer (engine training entitlements are not transferrable to this course). Alternatively, training may be purchased at the current training rate. Please contact the Systems Training Manager for details.



COMAC 919 Onboard Maintenance System (OMS)

The OMS is the system responsible for monitoring the overall health of the aircraft and maintenance data published by the various aircraft systems. It's overall function is to provide fault localization and diagnostic assessment on the health of the avionic systems on the aircraft and communicate faults and events, using appropriate methods of transmittal and displays.

COMAC 919 Onboard Maintenance System*

ATA 104 Level.....Level III
Prerequisites:None
Course Length:.....3 days
In Class Option:.....N/A
Virtual Option:.....N/A
Class Size 3-12 students

This course is an academic training session designed to give an understanding of the COMAC 919 Onboard Maintenance System (OMS). ATA 104 level III servicing tasks are covered. All classes will be taught in English.

At the end of the course the student will be able to:

- Describe the general description and overview of the OMS.
- State the basic function of the aircraft OMS.
- Describe the features and functional architecture of the OMS.
- Describe the OMS interfaces.
- Describe the operation of the OMS.
- Describe description, function and process for data loading and SD backup.
- Describe the OMS Modes of operation.

Line/Base Engineers and Technicians, FSEs, Technical Support personnel and Engineering Management who need a detailed understanding of the COMAC 919 OMS will benefit from attending this course.

*Systems training entitlements can be used towards this course provided they are available to the customer (engine training entitlements are not transferrable to this course). Alternatively, training may be purchased at the current training rate. Please contact the Systems Training Manager for details.



COMAC 919 Flight Recording System (FRS)

The FRS on the COMAC 919 interfaces with other aircraft systems to satisfy regulatory requirements for the Flight Data Recorder and Cockpit Voice Recorder, including requirements for Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM) Data-link communication recording.

COMAC 919 Flight Recording System (Including the EAFR, RIPS, and AMP)*

ATA 104 Level.....	Level III
Prerequisites:	None
Course Length:.....	1 day
In Class Option:.....	N/A
Virtual Option:.....	N/A
Class Size	3-12 students

This course is an ATA level III academic session designed to provide an understanding of the COMAC 919 Recording Subsystem, in particular the Enhanced Airborne Flight Recorder (EAFR), its component parts and supporting software tools. All classes will be taught in English.

After completing this course, the student will be able to-

- Describe the purpose and operation of the Recording Subsystem component parts and their operation.
- Outline the use of the maintenance terminal as applicable to the recording Subsystem.
- Will have received an outline of the EAFR Ground Based Tool.

Line/Base Engineers and Technicians, FSEs, Technical Support personnel and Engineering Management who need a detailed understanding of the COMAC 919 Recording Subsystem will benefit from attending this course.

*Systems training entitlements can be used towards this course provided they are available to the customer (engine training entitlements are not transferrable to this course). Alternatively, training may be purchased at the current training rate. Please contact the Systems Training Manager for details.



COMAC 919 FMS / FRS / OMS Level 1

This course is designed provide a trained person with first line level system knowledge of the Onboard Maintenance System (OMS), Flight Recording System (FRS) and Flight Management System (FMS) fitted to the COMAC C919 aircraft.

COMAC 919 Flight Management System, Flight Recording System (FRS), and Onboard Maintenance System (OMS)* Level 1

ATA 104 Level.....	Level I
Prerequisites:	None
Course Length:.....	1.5 days
In Class Option:.....	N/A
Virtual Option:.....	N/A
Class Size	3-12 students

This course is an academic training session designed to provide a general understanding and the system knowledge of the OMS, FRS and FMS systems fitted to the COMAC C919 aircraft. Training is based on ATA 104 Guidelines for Aircraft Maintenance Training. All classes will be taught in English.

By the end of the course the student will be able to-

- Describe the basic function, purpose, component locations, basic operations, of the FMS, FRS, and OMS systems.

Line/Base Engineers and Technicians, FSEs, Technical Support personnel and Engineering Management who need a general understanding of the COMAC 919 FMS, FRS and OMS will benefit from attending this course.

*Systems training entitlements can be used towards this course provided they are available to the customer (engine training entitlements are not transferrable to this course). Alternatively, training may be purchased at the current training rate. Please contact the Systems Training Manager for details.



Electrical Load Management System (ELMS 3)

Designed for the Boeing 777X, the purpose of the ELMS 3 is to house all the hardware (busbars, contactors, relays and circuit breakers) required for power distribution. ELMS monitors and controls individual loads, provides switching functions necessary to connect and disconnect loads as required and it plays a major role in controlling and supplying power to aircraft systems.

Boeing 777X Electrical Load Management System 3*

ATA 104 Level Level III
Prerequisites: None
Course Length: 3 days
In Class Option: N/A
Virtual Option: N/A
Class Size 3-12 students

This course is an academic training session designed to provide an understanding of the role of ELMS 3 in power distribution and management for the Boeing 777X aircraft. The ELMS 3 course is based on ATA Specification 104 Guidelines for Aircraft Maintenance Training. All classes will be taught in English.

By the end of the course the student will be able to-

- Describe the Boeing 777X AC and DC power distribution system.
- Describe the role ELMS 3 plays in the Boeing 777X aircraft power management.
- Describe the location of the various components and how they are controlled and operated.
- Troubleshooting and testing of the system is also included as theoretical training.

Line/Base Engineers and Technicians, FSEs, Technical Support personnel and Engineering Management who need a detailed understanding of Boeing 777X ELMS 3 will benefit from attending this course.

*Systems training entitlements can be used towards this course provided they are available to the customer (engine training entitlements are not transferrable to this course). Alternatively, training may be purchased at the current training rate. Please contact the Systems Training Manager for details.



Boeing 777X Common Core System (CCS)

The Boeing 777X Common Core System uses fewer components than previous systems and is the future for systems integration. It provides reliable, high speed, real-time communication between systems while also delivering lower operating costs, reduced fuel consumption and reduced maintenance costs.

Boeing 777X Common Core System*

ATA 104 Level.....	Level III
Prerequisites:	None
Course Length:.....	3 days
In Class Option:.....	N/A
Virtual Option:.....	N/A
Class Size	3-12 students

This is an academic training session designed to give an understanding of the Boeing 777X CCS, how it differs from a legacy federated architecture system and how the different systems utilize a common computing resource. ATA 104 level III servicing tasks are covered. All classes will be taught in English.

By the end of the course, the student will be able to -

- Describe the concept and operation of the Boeing 777X CCS and its individual LRUs.
- Will understand the System Support Functions within the CCS, as well as the Maintenance terminal and displays.

Line/Base Engineers and Technicians, FSEs, Technical Support personnel and Engineering Management who need a detailed understanding of the Boeing 777X CCS will benefit from attending this course.

*Systems training entitlements can be used towards this course provided they are available to the customer (engine training entitlements are not transferrable to this course). Alternatively, training may be purchased at the current training rate. Please contact the Systems Training Manager for details.

Boeing 777X Flight Recording System

The recording Sub system on the Boeing 777X gathers and stores airplane parameters and system data in a protected solid-state memory. These parameters provide data on flight conditions and airplane systems operation. Airline personnel use the data to analyze system performance during airplane maintenance.



Boeing 777X Recording Subsystem (including the EAFR and AMP)*

ATA 104 Level.....	Level III
Prerequisites:	None
Course Length:.....	1 day
In Class Option:.....	N/A
Virtual Option:.....	N/A
Class Size	3-12 students

Normally delivered in conjunction with the 777X CCS course, this is an ATA level III academic session designed to provide an understanding of the Boeing 787 Recording Subsystem, in particular the Enhanced Airborne Flight Recorder, its component parts and supporting software tools. All classes will be taught in English.

After completing this course, the student will be able to

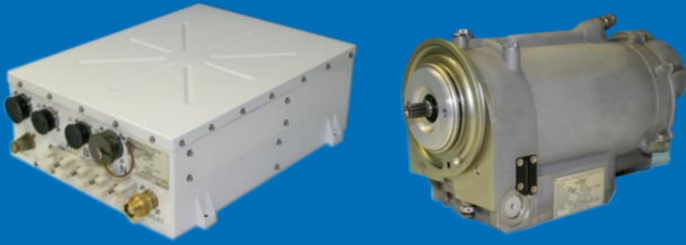
- Describe the purpose and operation of the Recording Subsystem component parts and their operation.
- Outline the use of the maintenance terminal as applicable to the recording Subsystem and will have received an outline of the EAFR Ground Based Tool.

Line/Base Engineers and Technicians, FSEs, Technical Support personnel and Engineering Management who need a detailed understanding of the Boeing 777X Recording Subsystem will benefit from attending this course.

NOTE: Because this course is normally delivered in conjunction with the Boeing 777X CCS course, it should only be considered as a standalone option if the students have already attended the Boeing 777X CCS course.

For a course specific to the Ground Based Tool (Integrated Ground Software), please contact the GE Aviation Systems Training Manager

*Systems training entitlements can be used towards this course provided they are available to the customer (engine training entitlements are not transferrable to this course). Alternatively, training may be purchased at the current training rate. Please contact the Systems Training Manager for details.



Boeing 777X Backup Electrical Power System (includes BUC and BUG)

The Boeing 777X Backup Electrical Power System (BEPS) is a non-time limited power source for essential airplane loads connected to the Transfer Buses in the event of loss of power to one or both Main AC Buses.

Boeing 777X Backup Electrical Power System*

ATA 104 Level.....	Level III
Prerequisites:	None
Course Length:.....	1 day
In Class Option:.....	N/A
Virtual Option:.....	N/A
Class Size	3-12 students

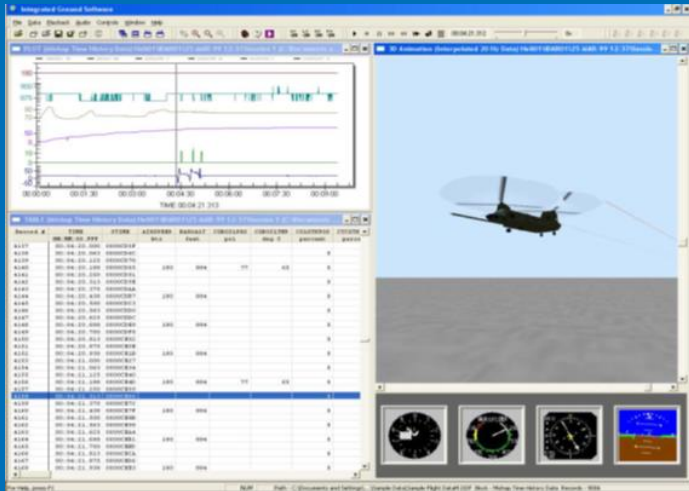
This is an academic training session designed to give an understanding of the Boeing 777X Backup Electrical System (BEPS). ATA 104 level III servicing tasks are covered. All classes will be taught in English.

By the end of the course, the student will be able to –

- Describe the concept and operation of the Boeing 777X BEPS and its individual LRUs.
- A full functional description of BEPS capabilities and operation will be taught.
- The B777-9 BEPS course provides context for the functions and the analysis of failure conditions, and the meaning of maintenance displays.

Line/Base Engineers and Technicians, FSEs, Technical Support personnel and Engineering Management who need a detailed understanding of the Boeing 777X BEPS will benefit from attending this course.

*Systems training entitlements can be used towards this course provided they are available to the customer (engine training entitlements are not transferrable to this course). Alternatively, training may be purchased at the current training rate. Please contact the Systems Training Manager for details.



Boeing 777X & 787 Integrated Ground System (IGS)

To enable trained person to carry out Level 4 (ATA 104) analysis of flight data and voice files from the B777X and B787 Enhanced Airborne Flight Recorder (EAFR) through the use of the Integrated Ground Systems (IGS) Software.

Boeing 787 Integrated Ground Systems*

ATA 104 Level..... Level IV
 Prerequisites: B787 CCS, EAFR L3
 Course Length:..... 3 days (18 hrs)
 In Class Option:..... N/A
 Virtual Option:..... N/A
 Class Size 3-6 students

This course is an is an ATA Level IV academic session designed to provide an understanding of the GE Integrated Ground System (IGS) installed on the B787 and B777X aircraft. A review of the Common Core and Flight Recording System is built into this course. All classes will be taught in English.

After completing this course, the student will be able to:

- State the basic function of the B787 Common Core System (CCS)
- Describe the purpose of the component parts of the Recording Subsystem
- Describe the basic operation and location of the EAFR
- Describe how the status of the Recording Subsystem is communicated to ground crew
- Outline the use of the Maintenance Terminal with regard to the Recording Subsystem
- Describe the basic operation and location of the RIPS and AMP
- Outline the use of EAFR Ground Based Tools
- State the purpose and function of the basic IGS Window Structure
- Describe how to import Flight Data
- Describe how to Import and Play Voice Data
- Describe how to Export Data and Audio Information
- Describe how to perform a Data Search
- Describe how to Setup and Play 3D Animation
- Describe how to use the Command Line Interface

Military Products Training

CTEC Avionics and Electrical Power Systems can provide a variety of Military Systems training, depending on the product and nation for which it was developed.

Courses vary from 3 days to 5 weeks in length.

If you qualify for military product training, please contact our Systems Training Team for further information and pricing details.



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