



# Customer Technical Education Center Military Maintenance Training Catalog



## Table of Contents

Table of Contents	2
History of GE	3
GE Customer Training Services	4
Services Offered	5
Course Matrix	6
<b>GE Aerospace Military Programs</b>	
CT7 Courses	7
F110 Courses	8
F404 / F414 Courses	10
T700 Courses	12

# 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 Aerospace 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 Aerospace 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 Aerospace'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.

# Services Offered

GE Aerospace'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 operational 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 engine system components. The academic portion of the course is provided in modern classrooms and most courses include a hands-on portion providing practical experience to the technician. Our instructors share a wealth of academic and practical experience with discussions of common and not so common maintenance scenarios.

## 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. Contact [Military.Training@ge.com](mailto:Military.Training@ge.com) for program availability and specific offerings.

## 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.



# Military Course Matrix

Engine Model(s)	General Familiarization	Organizational/ Line Maintenance	Intermediate Maintenance	Conditional Maintenance	Assemblies, Components & Systems	Controls & Accessories
<b>CT7</b>	•	•	•			
<b>F110</b>	•	•	•	•	•	•
<b>F404/F414</b>	•	•				
<b>T700</b>	•	•	•			

# 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**

Course Length: 3 Days

Class Size: 3-9 Students

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 Engine Line Maintenance**

Course Length: 5 Days

Class Size: 3-9 Students

This course is an academic and practical training session designed for the line maintenance technicians and supervisory personnel. Topics covered are Engine Specific Line Maintenance Procedures, Inspections, Hot Section Replacement, and Engine Control Interface. \*When requesting course, please specify Turboshaft or Turboprop.

## **CT7 Minor Refurbishment**

Course Length: 10 Days

Class Size: 3-9 Students

This course is a practical training session designed for shop personnel responsible for module removal and installation on the CT7 engine. Topics covered are Shop Maintenance procedures, Inspections, Engine Module Removal and Installation, Compressor Blend Procedures, and Borescope Inspection. \*When requesting course, please specify Turboshaft or Turboprop.

Course Title	Course Content			
	Basic Engine & Systems Description	Borescope, Blade Blend	Inspections, Hot Section Replacement, Engine Control Interface,	Shop Maintenance Procedures, Inspections, Engine Module Removal and Installation, Compressor Blend Procedures
General Familiarization	Included	Not Included	Not Included	Not Included
Engine Line Maintenance	Included	Not Included	Included	Not Included
Minor Refurbishment	Included	Included	Included	Included

Customer specific courses can be developed based on customer requirements as needed. Please contact us at [Military.Training@ge.com](mailto:Military.Training@ge.com) for details.

# 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**

Course Length: 3 Days

Class Size: 3-9 Students

This course is designed to provide the academic instruction and visual orientation of the F110 engine hardware and maintenance requirements. 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 basic engine and systems.

## **F110 Assemblies, Components, & Systems**

Course Length: 4 Days

Class Size: 3-9 Students

This course is designed to provide the academic instruction and visual orientation of the F110 engine hardware and maintenance requirements. 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, disassembly & assembly practices, and detailed engine operation modes.

## **F110 Engine Line Maintenance**

Course Length: 8 Days

Class Size: 3-9 Students

This course is designed to provide the academic instruction and visual orientation of the F110 engine hardware and maintenance requirements. This course covers the content included in both the General Familiarization and Assemblies, Components, & Systems (*information above*). Additionally, this course includes practical training sessions for Engine Specific Line Maintenance including borescope, and blade blending.

## **F110 Conditional Maintenance**

Course Length: 6 weeks

Class Size: 3-9 Students

This course covers the content included in both the General Familiarization and Assemblies, Components, & Systems (*information above*). Additionally, this course is designed to provide experienced propulsion maintenance technicians with knowledge, skills, and experience to remove the Augmentor & Exhaust Nozzle and Low-Pressure Turbine assemblies. Remove engine hardware to access and perform technical review on the Fan, Compressor, and High-Pressure Turbine Assemblies while utilizing applicable support equipment. Training will be conducted to the Intermediate level. Training will include combinations of formal classroom instruction and hands-on exercises to provide appropriate knowledge and skill proficiency.



# F110 Courses

## F110 Intermediate Maintenance

Course Length: 10 weeks

Class Size: 3-9 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 Engine Test Cell Operations

Course Length: 4 Days

Class Size: 3-6 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.

Course Title	Course Content				
	Basic Engine & Systems Description	Disassembly & Assembly + Engine operation modes	Borescope, Blade Blend	Augmentor & Exhaust Nozzle removal Fan/Compressor access & technical review High Pressure Turbine access & technical review	Full content
General Familiarization	Included	Not Included	Not Included	Not Included	Not Included
Assemblies, Components & Systems	Included	Included	Not Included	Not Included	Not Included
Engine Line Maintenance	Included	Included	Included	Not Included	Not Included
Conditional Maintenance	Included	Included	Included	Included	Not Included
Intermediate Maintenance	Included	Included	Included	Included	Included

Customer specific courses can be developed based on customer requirements as needed. Please contact us at [Military.Training@ge.com](mailto:Military.Training@ge.com) for details.



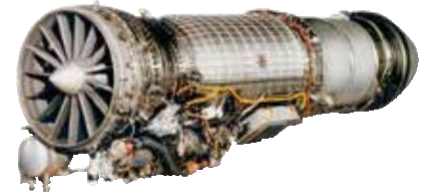
# F404

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 General Familiarization

Course Length: 3 Days

Class Size: 3-9 Students

This course is designed to provide the academic instruction and visual orientation of the F404 engine hardware and maintenance requirements. 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 basic engine and systems.

## F404 Modules, Components, & Systems

Course Length: 4 Days

Class Size: 3-9 Students

This course is designed to provide the academic instruction and visual orientation of the F404 engine hardware and maintenance requirements. 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, disassembly & assembly practices, and detailed engine operation modes.

## F404 Engine Line Maintenance

Course Length: 8 Days

Class Size: 3-9 Students

This course is designed to provide the academic instruction and visual orientation of the F404 engine hardware and maintenance requirements. This course covers the content included in both the General Familiarization and Assemblies, Components, & Systems courses (*information above*). Additionally, this course includes practical training sessions for Engine Specific Line Maintenance including borescope and blade blending.

## F414 General Familiarization

Course Length: 3 Days

Class Size: 3-9 Students

This course is designed to provide the academic instruction and visual orientation of the F414 engine hardware and maintenance requirements. 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 basic engine and systems.

## F414 Modules, Components, & Systems

Course Length: 4 Days

Class Size: 3-9 Students

This course is designed to provide the academic instruction and visual orientation of the F414 engine hardware and maintenance requirements. 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, disassembly & assembly practices, and detailed engine operation modes.

## F414 Engine Line Maintenance

Course Length: 8 Days

Class Size: 3-9 Students

This course is designed to provide the academic instruction and visual orientation of the F414 engine hardware and maintenance requirements. This course covers the content included in both the General Familiarization and Assemblies, Components, & Systems courses (*information above*). Additionally, this course includes practical training sessions for Engine Specific Line Maintenance including borescope and blade blending.

Course Title	Course Content		
	Basic Engine & Systems Description	Disassembly & Assembly overview + Engine operation modes	Borescope, Blade Blend
General Familiarization	Included	Not Included	Not Included
Modules, Components & Systems	Included	Included	Not Included
Engine Line Maintenance	Included	Included	Included

Customer specific courses can be developed based on customer requirements as needed. Please contact us at [Military.Training@ge.com](mailto:Military.Training@ge.com) for details.

# 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 General Familiarization**

Course Length: 3 Days

Class Size: 6-9 Students

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.

## **T700 Engine Line Maintenance**

Course Length: 5 Days

Class Size: 6-9 Students

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

## **T700 Intermediate Maintenance**

Course Length: 10 Days

Class Size: 6-9 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.

Course Title	Course Content			
	Basic Engine & Systems Description	Borescope, Blade Blend	Inspections, Hot Section Replacement, Engine Control Interface,	Shop Maintenance procedures, Inspections, Engine Module Removal and Installation, Compressor Blend Procedures
General Familiarization	Included	Not Included	Not Included	Not Included
Engine Line Maintenance	Included	Not Included	Included	Not Included
Intermediate Maintenance	Included	Included	Included	Included

Customer specific courses can be developed based on customer requirements as needed. Please contact us at [Military.Training@ge.com](mailto:Military.Training@ge.com) for details.

# Military Avionics and Electrical Power Systems 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.

If you qualify for military product training, please contact our Systems Training Team or [Military.Training@ge.com](mailto:Military.Training@ge.com) for further information and pricing details.



## Contact Information

**Customer Technical Education Center  
(CTEC) Military Training**

123 Merchant Street

Cincinnati, OH 45246

T +1-937-207-3342

Email: [Military.Training@ge.com](mailto:Military.Training@ge.com)