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## Network Infrastructure and Protocols Training

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technical service training tailored to fit your needs!

about technical education from GE Healthcare
GE Healthcare Education Services delivers technical education for Diagnostic Imaging,Computed Tomography, Magnetic Resonance, Mammography, Nuclear Medicine/PET, Ultrasound, Monitoring, Diagnostic Cardiology, Infant Care and Anesthesia Delivery Systems and Respiratory products. We also offer a curriculum of Network Infrastructure and Protocols Training classes focused specifically on the needs of today’s biomedical and technical professionals.

our goal
To be recognized as the global leader in healthcare education solutions.
• Building customer knowledge and competencies through a diverse educational portfolio in an increasingly complex healthcare environment.
• Striving to exceed customer expectations by delivering exceptional quality education that is clinically relevant and has a measurable impact on practice.
• Be a provider of choice for Network Infrastructure and Protocols Training education regardless of medical equipment choices, previous learning or experience.

customer requirements:
All Diagnostic Imaging and Ultrasound Classes Require Laptops
If you are attending a diagnostic imaging or ultrasound course, please bring a laptop with you to access any materials that the instructor may provide during your training class.

Please remember to bring a laptop loaded with Microsoft® Applications / CD ROM Reader.
Depending on the class you are enrolled in, you may have to load service software onto your laptop; therefore you would need administrative rights.
If you do not have Microsoft Applications (Word, Powerpoint®, Excel®) loaded on your laptop, you can download and install Microsoft Viewers for Word, Powerpoint, Excel at the below link:

registration instructions
Registration is online.
Go to www.gehealthcare.com/training and choose the appropriate category for course schedules and registration link. Select your course and complete all information. Print a copy for your files before submitting. When done, click on Save and Submit to send registration form to a Training Coordinator.

for product technical – diagnostic imaging courses:
Computed Tomography; Invasive Cardiology; Magnetic Resonance; Molecular Imaging - Nuclear Medicine; Molecular Imaging – PET; Molecular Imaging – Radiopharmaceutical; X-ray. Please print the Technical – Application for Advanced Service Training.

confirmation of enrollment is sent automatically via email.

for product technical – ultrasound courses:
Please print the Technical – Devices Agreement & Employment Verification Form.

customer requirements:
All Diagnostic Imaging and Ultrasound Classes Require Laptops
If you are attending a diagnostic imaging or ultrasound course, please bring a laptop with you to access any materials that the instructor may provide during your training class.

Please remember to bring a laptop loaded with Microsoft® Applications / CD ROM Reader.
Depending on the class you are enrolled in, you may have to load service software onto your laptop; therefore you would need administrative rights.
If you do not have Microsoft Applications (Word, Powerpoint®, Excel®) loaded on your laptop, you can download and install Microsoft Viewers for Word, Powerpoint, Excel at the below link:

Laptop requirements: PC based (Non Mac) Windows XP Pro or Windows 7; Local Administrator access; Wireless network card (Optional for Internet Access); Wired Network card; DB 9 Serial port; CD ROM drive; Ability to disable any and all spy ware and virus scan programs; HyperTerminal or other terminal emulation software; USB Port; AC Power Cord; Internet Explorer 8 or greater; Adobe Reader 6.0 or greater; Latest Flash Plug in; Windows Media Player 10 or greater**

Please Note: DVD Reader required only if enrolled for Innova* Systems or MR course.
education centers
waukesha, wi
The Healthcare Institute has expanded to include classrooms to support anesthesia classes and our new Network Infrastructure and Protocols Training curriculum.

jupiter, fl
Our center of excellence for patient monitoring product support now includes new classrooms featuring our new Network Infrastructure and Protocols Training curriculum and many GE product training classes.

remote locations
Periodically, we take classes to strategic locations for added customer convenience. Check our website for the most current list of classes www.gehealthcare.com/training.

hosting a class
If you have a group to train, consider hosting a class at your facility. Our instructors can bring a number of our courses to you for maximum flexibility and convenience. You eliminate travel expense and have the advantage of training multiple staff at the same time, which can reinforce learning.

about our training
blended curriculum
Our technical service training offers a blended curriculum with web-based and in-resident courses. Our integrated training platform minimizes the time you spend away from home.

Web-based Courses
Introductory, pre-requisite, and some differences courses are available for independent study.

In-Resident Courses (Classroom/Lab)
Advanced courses held at the GE Healthcare Institute provide invaluable and practical hands-on training taught by industry-leading instructors.

Differences Courses
Tailored specifically for those who have previous training on GE Diagnostic Imaging Equipment and designed to bring you up to speed on the latest technology and equipment.

In-Resident Training at the GE Healthcare Institute
For your convenience during your in-resident training, there are onsite meal services and condominium accommodations conveniently located across the street from the Healthcare Institute.

For your convenience, we now have one number to call for information on any course.

1-888-799-9921
PET Cyclotron Safety

Content addresses safe working practices for service personnel working on or around PETtrace* and MINITrace* cyclotron systems. Course is intended for students who are responsible for servicing cyclotron systems.

course competencies:
upon successful completion of this course, the student should be able to:

- Understand how to work safely in the cyclotron environment
- Determine how radiation is characterized in a medical imaging environment
- Understand how various levels of radiation exposure affect humans
- Know how to plan service tasks to minimize radiation exposure

product number
Tuition:
R0318PT $1,625

delivery method
web

length of course
3 hours

program information
Please visit www.gehealthcare.com/training for the most current information on dates and locations.
PET FASTlab* Synthesizer

This course provides classroom instructions and hands-on exercises on FASTlab Synthesizer-FDG (4 days) covering:

- Installation including mechanical and computer setup as well as connections to hot-cells
- Preventative Maintenance, including diagnostic procedures, system tests and replacement of worn parts
- Service: Common problems, possible sources of errors in operating procedures
- Demonstration of low-activity run as diagnostic method
- Trouble-shooting exercises
- Safety issues (EHS): Service job safety analysis, chemicals
- GMP awareness
- Theoretical background in basic chemistry for FDG and NaF

This course is held in Uppsala, Sweden.

product number
Tuition: $11,325
R0311PT

delivery method
class/lab

length of course
4 days

program information
Please visit www.gehealthcare.com/training for the most current information on dates and locations.
PET MINItrace* Service

Content addresses technical service issues for the MINItrace cyclotron system. Students should expect to learn and perform hands-on maintenance and troubleshooting tasks to a FRU level.

course competencies:
upon successful completion of this course, the student should be able to:

• Identify required tools and documentation for system service
• Work safely in the MINItrace environment 100% of the time
• Understand system and subsystem theory
• Perform basic planned maintenance procedures
• Perform system alignments and calibrations, including beam tuning
• Isolate system faults to the FRU level using system diagnostics

product number
Tuition:
R0303PT   $18,435

delivery method
class/lab

length of course
10 days

pre-requisite required
Cyclotron Safety Service (Web)
R0318PT   $1,625

program information
Please visit www.gehealthcare.com/training for the most current information on dates and locations.
PET TRACERlab* FX Research & FDG

This 10 day course will provide classroom instructions and hands-on exercises on TRACERlab FX- FDG, FX C-PRO, FX F-N, and FX F-E. Topics covered include:

- Installation including mechanical and computer setup as well as connections to hot-cells
- Preventative Maintenance including diagnostic procedures, system tests and replacement of worn parts
- Service common problems and possible sources of errors in operating procedures
- Demonstration of low-activity run as diagnostic method and trouble-shooting exercises
- Safety issues (EHS) Service job safety analysis and chemicals

When the student has completed the course, he/she should be qualified to perform installation, PM and basic service on the systems.

**product number**

Tuition:
- R0312PT $20,385

**delivery method**
class/lab

**length of course**
10 days

**program information**
Please visit www.gehealthcare.com/training for the most current information on dates and locations.
PET TRACERlab* MX-FDG

This course provides classroom instructions and hands-on exercises on TRACERlab MX-FDG. Topics included:

- Installation including mechanical and computer setup as well as connections to hot-cells
- Preventative Maintenance including diagnostic procedures, system tests and replacement of worn parts
- Service: Common problems, possible sources of errors in operating procedures
- Demonstration of low-activity run as diagnostic method
- Trouble-shooting exercises
- Safety issues (EHS): Service job safety analysis, chemicals

**Product number**

Tuition:
- R0308PT  |  $9,015

**Delivery method**

class/lab

**Length of course**

4 days

**Program information**

Please visit www.gehealthcare.com/training for the most current information on dates and locations.
PETtrace* Cyclotron Service

Content addresses technical service issues for the PETtrace cyclotron system. Students should expect to learn and perform hands-on maintenance and troubleshooting tasks to a FRU level.

course competencies:
upon successful completion of this course, the student should be able to:

• Identify required tools and documentation for system service
• Understand how to work safely in the PETtrace environment
• Understand system and subsystem theory
• Perform basic planned maintenance procedures
• Perform system alignments and calibrations, including beam tuning
• Isolate system faults to the FRU level using system diagnostics

product number
Tuition:
  R0302PT $23,675

delivery method
class/lab

length of course
10 days

pre-requisite required
- PETtrace Cyclotron Service (Web)
  R0317PT $3,900
- Cyclotron Safety Service (Web)
  R0318PT $1,625

program information
Please visit www.gehealthcare.com/training for the most current information on dates and locations.
**PETtrace* Cyclotron Service (Web)**

This program is designed to provide an overview and history of the PETtrace Cyclotron and its subsystems. The self-paced course is intended to prepare service engineers for the in-residence PETtrace Cyclotron class.

**course competencies:**
Upon successful completion of this course, the student should be able to:

- Explain the basics of PET imaging and the relationship between PET and the cyclotron
- Identify the major PETtrace subsystems and explain their function
- Identify the smaller PETtrace subsystems and explain their function
- Describe the power distribution system
- Identify the optional PETtrace subsystems

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**Delivery method**
Web

**Length of course**
2 hours

**Program information**
Please visit www.gehealthcare.com/training for the most current information on dates and locations.
Essentials of Healthcare IT

This instructor-led class is specifically designed for technical professionals responsible for the installation and support of medical devices and the networks interconnecting them. The class is taught by highly qualified technical trainers and will focus on developing the practical skills needed by a biomedical engineer to interface with networked devices in healthcare today. Extensive labs with plenty of hands-on time allows the student with no previous IT training to gain confidence in this new and exciting arena. The class will build and troubleshoot flat, switched, routed, and wireless networks. Basic computer skills are required.

intended audience:
- Biomedical equipment technicians
- Biomedical and clinical engineers
- Biomedical and clinical engineering managers
- Medical technology managers
- Hospital IT staff
- Any professional who supports the field of medical technology

product number
Tuition: 2030677-001  $4,250
Tuition & lodging: 2030677-002  $5,175
Tuition, lodging & air: 2030677-003  $6,070*

*US only

delivery method
class

length of course
4 days

program information
Please visit www.gehealthcare.com/training for the most current information on dates and locations.

Bring this class to your location.
Call for pricing and details: 888-799-9921
Securing the Healthcare IT Environment

This instructor-led class is specifically designed for technical professionals responsible for the secure transport of electronic protected health information across healthcare IT infrastructures. This class is taught by experts in the healthcare IT field and topics include: a global security overview, relevant HIPAA Title II Privacy and Security Rule information, the top 10 HCIT network attacks and ways to prevent them, strategies to mitigate risk, and securing a home network. Hands-on labs include password cracking, configuring biometric identifiers, encryption, port scanning, using network analyzers, software firewall configuration, performing an MD5 Hash, and home router configuration. Students will perform a risk analysis of medical devices using MDS2 documentation and ACCE/ECRI tools. Basic computer skills and TCP/IP network troubleshooting techniques are required.

intended audience:

- Biomedical equipment technicians
- Biomedical and clinical engineers
- Biomedical and clinical engineering managers
- Medical technology managers
- Hospital IT staff
- Any professional who supports the field of medical technology

product number

Tuition: 2020786-053 $5,000
Tuition & lodging: 2020786-054 $5,925
Tuition, lodging & air: 2020786-055 $6,820*

*US only

delivery method
class

length of course
5 days

IT skills required
GE Essentials of Healthcare IT or equivalent

program information
Please visit www.gehealthcare.com/training for the most current information on dates and locations.
Wireless in the Healthcare IT Environment

This vendor-neutral class focuses on the installation, management, and troubleshooting of RF technologies in healthcare today; including WMTS, 802.11, RFID, and cellular communications. Topics include RF and antenna basics, common interference sources in healthcare, remote patient viewing using the Wireless Medical Telemetry Service (WMTS), 802.11 and access point configuration including wireless VLANs, RFID basics, cellular communications, and security requirements for wireless systems. Students receive hands-on training with network analyzers and spectrum analyzers, perform site surveys for WMTS and 802.11, and troubleshoot WMTS antenna systems.

intended audience:
- Biomedical equipment technicians
- Biomedical and clinical engineers
- Biomedical and clinical engineering managers
- Medical technology managers
- Hospital IT staff
- Any professional who supports the field of medical technology

product number
Tuition: 2020786-050 $5,000
Tuition & lodging: 2020786-051 $5,925
Tuition, lodging & air: 2020786-052 $6,820*
*US only

delivery method
class

length of course
5 days

IT skills required
GE Essentials of Healthcare IT or equivalent

program information
Please visit www.gehealthcare.com/training for the most current information on dates and locations.
Essentials of HL7*

This vendor-neutral class prepares the student to configure and troubleshoot HL7. Focusing on V2.x, students will learn to use the HL7 standard as a reference source as well as vendor conformance documents to aid in interface design. Topics include the structure and encoding of common patient administration, order, results, and billing messages, as well as interface design, data mapping, and vocabulary. Common troubleshooting techniques will be discussed and class concepts will be reinforced through use of the HL7 Messaging Workbench software. This instructor-led course is open to anyone wanting a more in-depth insight into HL7, regardless of equipment choice in the healthcare environment.

intended audience:

- Biomedical equipment technicians
- Biomedical and clinical engineers
- Biomedical and clinical engineering managers
- Medical technology managers
- Hospital IT staff
- Any professional who supports the field of medical technology

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<tr>
<td>2020786-169*</td>
<td>$3,800*</td>
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*US only

delivery method
class

length of course
3 days

program information
Please visit www.gehealthcare.com/training for the most current information on dates and locations.
Essentials of DICOM*

This instructor-led course prepares the participant to become proficient in the installation, maintenance and troubleshooting of DICOM on digital imaging networks. Participants will learn to use the DICOM standard as a reference source, analyze conformance statements for predicting connectivity, configure and use DICOM simulators, and capture and analyze DICOM traffic using freeware tools like the DICOM Validation Toolkit.

intended audience:
- Biomedical equipment technicians
- Biomedical and clinical engineers
- Biomedical and clinical engineering managers
- Medical technology managers
- Hospital IT staff
- Radiologists
- Any professional who supports the field of medical technology

product number
Tuition: 2020786-126 $3,500
Tuition & lodging: 2020786-127 $4,055
Tuition, lodging & air: 2020786-128 $4,950*

*US only

delivery method
class

length of course
3 days

IT skills required
GE Essentials of Healthcare IT or equivalent

program information
Please visit www.gehealthcare.com/training for the most current information on dates and locations.