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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.

**registration instructions**
Registration is online.
Go to [www.gehealthcare.com/training](http://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 – ultrasound courses:**
Please print the Technical – Devices Agreement & Employment Verification Form.

**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.**

**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.
policies and terms

attendance
- Students are required to arrive on time for class.
- Class start and end times vary. Please refer to your e-mail enrollment notification.
- For no-shows (i.e., registered students who do not attend the class but do not cancel in advance of the class start date), there is a no-show fee of full course tuition.
- Students must pass an assessment to receive certificate of successful completion.

low enrollment
GE Healthcare reserves the right to cancel classes due to low enrollment. Classes with low enrollment 15 business days prior to the scheduled date will be cancelled. Please consider this when booking your travel.

When GE Healthcare cancels a class, tuition will be refunded in full. Alternatively, tuition may be applied to the cost of another class scheduled to take place within 12 months of the original class.

GE Healthcare will not be held responsible for any travel costs incurred due to circumstances beyond our control, such as, but not limited to, hurricanes, tornados, or labor strikes.

cancellations
- Cancellations can be made by email or phone: edservices@ge.com or by contacting 888-799-9921.
- For cancellations made more than 3 weeks prior to the class start date, there is no cancellation fee.
- For cancellations made 7-15 business days prior to the class start date, there is a cancellation fee of 25% of course tuition. For cancellations made 1-6 business days prior to the class start date, there is a cancellation fee of 50% of course tuition.
- For no-shows (i.e., registered students who do not attend the class but do not cancel in advance of the class start date), there is a no-show fee of full course tuition.
- GE reserves the right to cancel or reschedule any class for any reason and at any time. GE will not be held responsible for any travel costs incurred due to causes beyond our control, such as, but not limited to, hurricanes, tornados, or strikes.

order expiration
Diagnostic Imaging Courses - Training expires 24 months after order date.

Devices, Healthcare IT, and Ultrasound Courses - Training expires 18 months after order date.

use of media & recording devices
The Healthcare Institute's (HCI) policies prohibit the use of any unauthorized personal removable media and recording devices in any courses, classrooms, and labs without the express consent of GE Healthcare. This includes, but is not limited to the following:
- Cell phones
- Still Cameras
- Video or audio recording devices
- Any external hard drives (Network or other)
- Any form of memory cards including, but not limited to; CompactFlash card, Secure Digital card (SD card), or Memory Stick
- Any other flash read/write media
- Any other USB read/write media

GE health and safety policy
GE Healthcare requires students to wear closed-toe and closed-heel shoes while attending training. Safety toe-shoes are required, but steel-toe shoe covers are available in the classroom. MR courses require composite toe safety shoes. Open-toe, high-heel shoes or sandals are not permitted.

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
Mac-Lab* 6.8

The Mac-Lab/CardioLab* 6.8 course provides training on the Acquisition system, integration of the INW server, and integration of the DMS Server with the Mac-Lab system. Students are provided with an overview of the system, basic clinical applications, delineation between the individual hardware components, and practical skills to configure and troubleshoot the system.

Lab exercises are designed to reinforce principles covered in class. The course will use Mac-Lab/CardioLab 6.8 hardware and software. The applications and usage of the 6.8 systems is approximately 85% similar to the Mac-Lab/CardioLab 6.0 / 6.5 systems of the past, the difference being extra features, enhancements, and improvements.

At the end of the class the student will be considered trained on Mac-Lab/CardioLab 6.0 / 6.5 systems in addition to 6.8 systems. This Mac-Lab/CardioLab 6.8 course provides training on the Integration of the following products: * Vivid Ultrasound, * CA1000, and the * FFR (Fractional Flow Reserve) feature of the Mac-Lab. The course will only cover the Integration of the above products with the Mac-Lab/CardioLab 6.8 system, not product specific training on these products.

This Mac-Lab/CardioLab 6.8 Instructor Led Training course provides training on the Integration of the following products:

- Vivid Ultrasound
- CA1000
- FFR (Fractional Flow Reserve)

The attendee is required to have been trained on or have extensive knowledge of the above products, because specific product training will not be provided. The course will only cover the Integration of the above products with the Mac-Lab/CardioLab 6.8 system.

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<td>Networking and DICOM Basics for DI Service (Web)</td>
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Please visit www.gehealthcare.com/training for the most current information on dates and locations.
Mac-Lab*/CardioLab* v6.8 Differences (Web)

The Mac-Lab/CardioLab v6.8 Differences is for the customer already trained on Mac-Lab/CardioLab 6.0/6.5 and is requesting training on a 6.8 system without the following options: CardioICE, CA1000, and/or FFR.

In the event a customer wants training on Mac-Lab/CardioLab v6.8 with the options for CardioICE, CA1000 and/or FFR, attendance would be required to the Mac-Lab/CardioLab v6.8 instructor-led training course regardless of their past training experience.

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program information
Please visit www.gehealthcare.com/training for the most current information on dates and locations.
Mac-Lab*/CardioLab* v6.9 / 6.9.5

The Mac-Lab/CardioLab v6.9 / 6.9.5 (MLCL) course will address service training requirements for Mac-Lab/CardioLab v6.9 / 6.9.5 systems. The target audience includes customer based biomedical personnel responsible for basic maintenance and service, of the MLCL 6.9 / 6.9.5 product line. This course will cover safety practices while working on MLCL, basic functionality of MLCL including user workflow, product documentation, system usage and system configuration settings, functional checks, maintenance tasks, and troubleshooting system problems. The MLCL v6.9 is an instructor-led course with lecture and hands-on lab time.

EQUIPMENT COVERED:

- Mac-Lab / CardioLab
- CA1000 / MUSE / Nurses Workstation
- INW / DMS Server

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

- Describe basic functionality and operation of Mac-Lab/CardioLab
- Identify Mac-Lab / CardioLab Documentation
- Describe and perform system configuration settings
- Identify Upgrade paths and scenarios
- System Installation (Process)
- Perform full system functional checks
- Identify Service strategy - Customer perspective
- Troubleshoot system problems

product number
Tuition:
R0202RY $8,995

delivery method
class/lab

length of course
5 days

pre-requisite required
Networking and DICOM Basics for DI Service (Web)
R0907CM $2,590

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

The MicroPace Service Training provides the necessary tools to enable the student to effectively and safely install and service the MicroPace EPS320 Cardiac Stimulator.

This self-guided course contains four comprehensive modules:

- Overview
- Installation
- System Verification
- Troubleshooting

**product number**
Tuition:
R0174RY $545

**delivery method**
web

**length of course**
1 hour

**program information**
Please visit www.gehealthcare.com/training for the most current information on dates and locations.
Networking and DICOM* Basics for DI Service

This online course prepares the service engineer to configure and troubleshoot networks that use the DICOM protocol for transferring patient data. Participants will also learn how to read and use DICOM Conformance Statements.

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

- Explain the basics of 7-layer OSI networking model
- Configure IP on any GE diagnostic imaging (DI) system and workstation to work in a local network by using the parameters supplied by the local IT department
- Configure the DICOM parameters in GE workstations and DI systems to exchange information with any other DICOM system by using parameters supplied by GE or the local IT department
- Verify that the IP address, netmask and routing address are configured correctly
- Verify the DICOM parameters are correct
- Perform troubleshooting using ping, telnet and DICOM ping to determine if the problem is related to the network or DICOM

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

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*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

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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

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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

| product number | Tuition: 2020786-167 | $2,350 |
|                | Tuition & lodging: 2020786-168 | $2,905 |
|                | Tuition, lodging & air: 2020786-169 | $3,800* |

*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

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