

OEC 9800 Series C-arm Imaging System Maintenance Course

Course length: 1 Week
CEU's Awarded: 4

<p>COURSE INTRODUCTION The OEC 9800 Series Imaging System course is designed to teach the service professional those skills necessary to service the x-ray system and imaging chain. This includes the available calibration procedures, functional checks, and troubleshooting techniques. The course includes integrated lectures, labs, and documentation which complement each other ensuring the maximum learning environment.</p>	<p>COURSE OBJECTIVES At the conclusion of this course, attendees will be able to:</p> <ul style="list-style-type: none"> ● Troubleshoot to the component or board level. ● Perform all available calibration procedures to the manufacturer's specification. ● Perform all related CDRH compliance testing. ● Perform image evaluation. ● Verify the system performance. 	<p>PREREQUISITES FOR ADMISSION Attendees must possess the knowledge acquired through attendance at our Advanced Concepts of Digital Imaging Maintenance-Level IV course or the equivalent electronics and service experience. A strong microprocessor background is recommended.</p>
<p>DAY 1</p> <ol style="list-style-type: none"> I. Introduction II. System basic operation <ol style="list-style-type: none"> A. Front panel controls B. System specifications III. System overall block diagram IV. C-arm mainframe <ol style="list-style-type: none"> A. Power supplies <ol style="list-style-type: none"> 1. Inverter supply 2. Battery charger B. KV inverter <ol style="list-style-type: none"> 1. Full wave bridge 2. PWM control 3. KV sense <p>LAB ACTIVITIES</p> <ol style="list-style-type: none"> I. System operation II. Physical layout and component location III. KV control waveforms IV. KV calibration <p>DAY 2</p> <ol style="list-style-type: none"> I. mA control <ol style="list-style-type: none"> A. Filament drive / mid-frequency voltage control B. Filament selection C. mA sense II. Rotor controller III. Motor drives <ol style="list-style-type: none"> A. Column lift B. Collimator iris and rotate C. TV camera iris and rotate 	<p>LAB ACTIVITIES</p> <ol style="list-style-type: none"> I. mA control waveforms II. mA calibration III. Rotor controller waveforms IV. Collimator alignment <p>DAY 3</p> <ol style="list-style-type: none"> I. Image Intensifier <ol style="list-style-type: none"> A. High voltage supplies B. Mode selection II. TV camera (CCD) <ol style="list-style-type: none"> A. Overall block diagram III. Automatic brightness control <ol style="list-style-type: none"> A. Video sample B. Sample window IV. Control panel V. Host cpu <ol style="list-style-type: none"> A. Arcnet communications B. Boot codes <p>LAB ACTIVITIES</p> <ol style="list-style-type: none"> I. II sizing and focus II. Image centering III. Video level adjustment IV. ABC setup <p>DAY 4</p> <ol style="list-style-type: none"> I. Workstation <ol style="list-style-type: none"> A. Overall block diagram B. Image acquisition <ol style="list-style-type: none"> 1. A/D 2. Preprocessing 3. RAM memory 	<ol style="list-style-type: none"> 4. Hard drive <p>C. Display</p> <ol style="list-style-type: none"> 1. Postprocessing <ol style="list-style-type: none"> a. Window & leveling b. Road mapping c. Subtraction d. Averaging e. Zoom 2. D/A 3. Video switching <p>LAB ACTIVITIES</p> <ol style="list-style-type: none"> I. Operation II. Physical layout and component location III. Power supplies IV. Waveforms <p>DAY 5</p> <ol style="list-style-type: none"> I. Workstation (continued) II. System review III. Final exam IV. Course critique