

THE ENGINEERS' CLUB OF PHILADELPHIA
(215) 985-5701
www.engrclub.org

ELECTRICAL ENGINEERING COURSES
FIBER OPTICS & NETWORK WIRING

The cost of this 12 session course is \$700. It is a hands on course on the installation, trouble shooting and repair of small fiber optic networks, which meet the requirements for students who want to take the certification test as fiber optics installers.

This course is being taught by Richard Agard, and at the end of the course those students who desire may take the certification test for an additional charge. The course will be held on Tuesday evenings from 6:30 PM to 8:30 PM in a classroom at the Racquet Club of Philadelphia, located at 215 S. 16th Street, Philadelphia, PA 19102.

- 03/18/08 SESSION 1 - FIBER OPTIC FUNDAMENTALS & SAFETY - Overview of fiber optic history, optical theory, optical fiber transmission, and advantages & disadvantages of optical fiber.
- 03/25/08 SESSION 2 - FIBER OPTIC CABLES, MATERIAL & STRUCTURE - Optical fiber composition, types of optical fiber, applications of optical fiber types, and cable designs.
- 04/01/08 SESSION 3 - FIBER OPTIC TOOLS, TEST EQUIPMENT & SOURCES/DETECTORS - Fiber optic test equipment including continuity checkers, inspection scopes, optical fiber identifiers, power meters, optical loss test sites, leak detectors, talk sets, fault locators and OTDR's; sources & detectors including testing transmitter output power.
- 04/08/08 SESSION 4 - FIBER OPTIC CONNECTORS - Connector types, connector performance, termination techniques, stripping, cleaving, polishing, cleaning procedures and testing standards.
- 04/15/08 SESSION 5 - FIBER OPTIC CONNECTORS (CONTINUED)
- 04/22/08 SESSION 6 - FIBER OPTIC SPLICING - Overview of mechanical and fusion splicing, performance issues, preparing the fiber including cleaning issues for fiber and tools and cleaving the fiber, mechanical splice types, and fusion splicing.
- 04/29/08 SESSION 7- CABLE PERFORMANCE & TESTING - What affects fiber performance; fiber optic testing including power loss measurements, acceptance testing, and documentation; OTDR operation including OTDR settings, characteristics of the OTDR, finding distance to a fiber break, and splice monitoring.
- 05/06/08 SESSION 8- FIBER OPTIC STANDARDS, SPECIFICATIONS & LINKS - Cabling specifications & standards, building & installation codes, tension specifications, and loss budgeting. Fiber optic terminology.
- 05/13/08 SESSION 9 - FIBER OPTIC REPAIR, RESTORATION & CLEANING - Cable materials & structure; fiber optic cleaning instructions; restoration approaches including identification, locating and resolving; typical system faults and remedies; restoration planning; and sequential markings. Fiber optic network panels & closets including cabling-

system components -

fiber optic & network panel & closure types

05/20/08 SESSION 10 -COPPER CABLING - COMPONENTS AND CONNECTORS - Installation components;
cross connected devices

including 66 punch down blocks, 110 and S210 punch down panels, modular patch panels and
consolidation points. DCIC tools

and installation techniques including installation tools; installation components (connectors, jacks, wall
plates & patch panels);

copper cable tests & testing tools (performance testing, wire mapping & certification).

05/27/08 SESSION 11 - LANS - NETWORKING BASICS, TESTING & UTILITIES - Network components,
network topologies,

network utilities (IPCONFIG, ping, arp & TRACERT) network Monitors (sniffer-pro familiarization).

06/03/08 SESSION 12 - CERTIFICATION TEST & REVIEW