

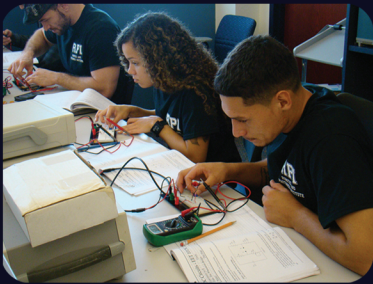
Robotics and Photonics Technicians

Highly Qualified, Motivated, Dependable

ELECTRONICS ENGINEERING TECHNOLOGY. ROBOTICS AND PHOTONICS INSTITUTE. ASSOCIATE OF SCIENCE DEGREE - INDIAN RIVER STATE COLLEGE, FORT PIERCE, FLORIDA

IRSC EET graduates are trained according to the latest industrial skill sets and professional standards using up-to-date equipment. Our graduates have the computer skills and software proficiency expected for a 21st century technician. The first year of the program builds a strong foundation in basic electronics, optics, photonics, communications, and electromechanical systems. The second year expands into two major areas: 1) robotics and automation with hands on training on Allen Bradley PLC's, and Fanuc robots, 2) lasers, photonics applications, and fiber optics with hands on labs with Nd:Yag, CO2, HeNe, semiconductor lasers, geometrical optics, fiber fusion splicers, and OTDRs. An IRSC EET graduate understands and practices industrial safety, is a team player, and skillful in installing, repairing, and maintaining today's complex electromechanical systems that will keep your organization ahead of the competition.

Basic Electronics (First Year)



Skills:

- Read blueprints, wiring diagrams, schematic drawings, or engineering instructions for assembling electronics units, applying knowledge of electronic theory and components.
- Use of DMMs, signal generators, and oscilloscopes to troubleshoot and repair complex systems.
- Test electronics units, using standard test equipment, and analyze results to evaluate performance and determine need for adjustment.
- Assemble, test, or maintain circuitry or electronic components, according to engineering instructions, technical manuals, or knowledge of electronics, using hand or power tools.
- Use electronics circuit simulators, create schematics and printed circuit boards using CAD software.
- Align AM/FM receivers for best reception.
- Build and test power supplies and signal generators.
- Proficient in business software such as MS Word, Excel, Power Point, email, and finding information on the WWW.

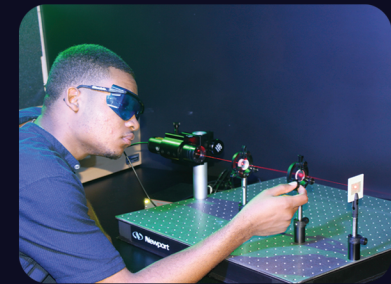
Robotics/Automation (Second Year)



Skills:

- Troubleshoot robotic systems, using knowledge of programmable controllers, electronics, circuit analysis, mechanics, sensor or feedback systems, hydraulics, or pneumatics.
- Disassemble and reassemble robots or peripheral equipment to make repairs such as replacement of defective circuit boards, sensors, controllers, encoders, and servomotors.
- Perform preventive or corrective maintenance on robotic systems or components.
- Maintain service records of robotic equipment or automated production systems.
- Install, program, or repair programmable logic controllers (PLC), robot controllers, end-of-arm tools, or conveyors.
- Program PLCs using ladder logic.
- Program SCADA systems and HMI interfaces.

Lasers/Photonics/Fiber Optics (Second Year)

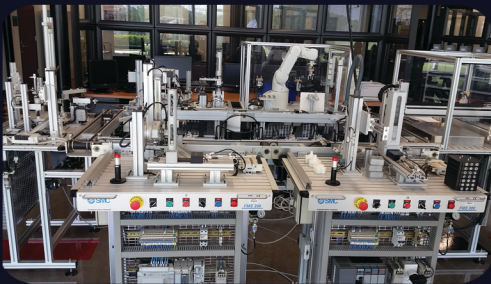


Skills:

- Compute or record photonic test data.
- Adjust or maintain equipment, such as lasers, laser enabled systems, microscopes, oscilloscopes, pulse generators, power meters, beam analyzers, or energy measurement devices.
- Tune Nd:YAG, HeNe, and CO2 lasers for maximum power and high quality beam.
- Align optical systems.
- Perform high quality fusion splicing for single and multi mode fibers.
- Use OTDR to identify problems in fiber optic links.
- Properly clean and maintain precision optics.
- Use optical source and meter to measure attenuation of optical links.
- Document procedures, such as calibration of optical or fiber optic equipment.
- Apply laser safety rules according to ANSI and OSHA standards.

STATE OF THE ART LABS

Robotics/Automation



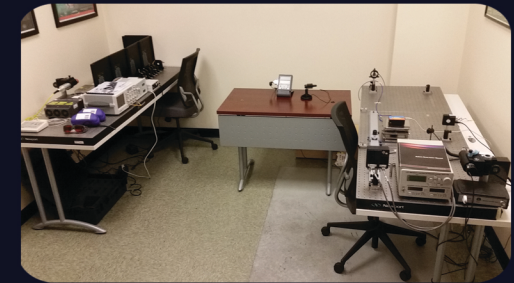
Equipment: MAP 200-205 Robotic Trainers w/Touchscreen HMI, Fanuc Robotic Arm, six-cell automated warehouse storage, FMS 200 SCADA system.

Photonics



Equipment: Newport Optics Education Kit, honeycomb optical breadboard, digital photometer with optical power meter, HeNe lasers, semiconductor diode lasers.

High Power Lasers



Equipment: Fiber laser, Nd:YAG laser, diode laser, beam analyzer, Fiber and HeNe laser training systems, spectrometers.

Fiber Optics



Equipment: OTDR, Fusion Splicers, UNICAM connectorization kit, Optical Meter, Rack mounted Fiber terminals simulating a long distance fiber link.

Fabrication



Equipment: Soldering Stations, Air scrubber/filter, PCB Holder, Benchtop power tools: drill, band saw, miter saw, sander, grinder, and vise.

Computing, Simulation, and CAD



Software: electrical circuit schematic capture and simulation (LTSPICE), electrical circuit board design and layout (Express SCH and PCB), SCADA human-machine touchscreen interference project development system (C-more), PLC language development system (RSlogic)

Solar



Equipment: solar thermal training system



Equipment: Photovoltaic training system



35KW Solar Photovoltaic Field – Brown Center