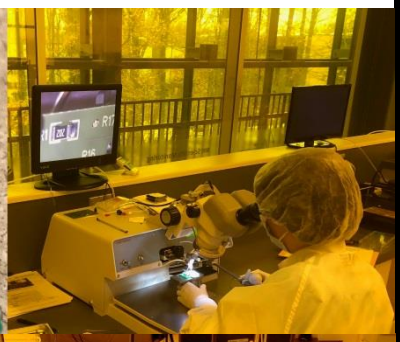
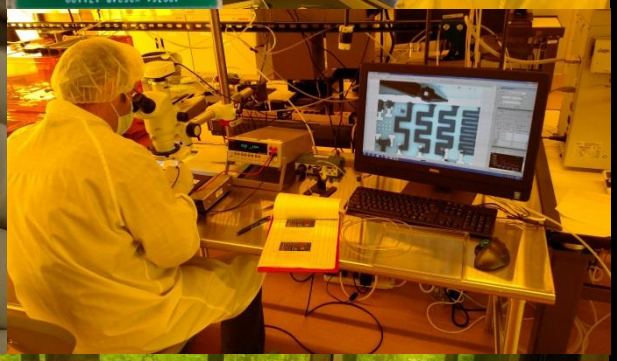
MEMS AND MICROELECTRONICS

THE EXCITING DEGREE BRIDGED WITH A RAPIDLY GROWING INDUSTRY AT

Lorain County Community College





- **M**icro**E**lectro**M**echanical **S**ystems (MEMS): a technology that consists of electronic components and mechanical structures built on a very small scale.
- Microelectronics: the integration, assembly, and engineering of multiple electronic components, MEMS devices, and printed circuit boards (PCB) that form a functioning circuit or product.
- LCCC offers a degree which is hands-on and tailored by the local microelectronics industry to prepare you and train you for working as an operator, technician, engineering tech, assembler, and lab tech in the fields of PCB and electronic manufacturing, microelectronics, MEMS sensors, biomedical, and semiconductor fabrication.

MEMS AND MICROELECTRONICS MAY 2018 FLYER

ASSOCIATES DEGREE CONTENT

Get trained how to use MEMS and Microelectronics equipment in LCCC's Center for Microelectronic Sensor Fabrication and Hybrid Board Assembly, a 2000 sq ft class 10,000 cleanroom.

Center for Microelectronic Sensor Fabrication and Hybrid Board Assembly

Hybrid Printed Circuit Board (PCB) Design & Assembly

Learn how to design schematics, create a bill of materials, and create a layout for screen printing a Surface Mount Technology (SMT) thick film hybrid printed circuit board (PCB). Learn to operate a screen printer, fire cermet materials on alumina, pick & place, and solder reflow oven to create a final functioning product with a MEMS sensor. A focus is on quality documentation such as travelers, route slips, & standard operating procedures.

Circuits and Soldering with Certificate

Earn your IPC J-STD-001 soldering certificate while you get hands-on practice at soldering electronic components to PCB. Includes lectures about ElectroStatic Discharge (ESD) and how to avoid it while you earn your IPC certificate in ESD awareness. Learn how mill your own PCB while you take classes in analogue & digital circuits

Microelectronic Packaging

Get hands-on experience in the equipment operation and troubleshooting of die attach, thermosonic wire bonding of 0.001" gold wire, pull/shear testing, and encapsulation for chip-on-board and open cavity electronic packaging while you become familiar with MIL-STD-883 guidelines for microelectronic packaging.

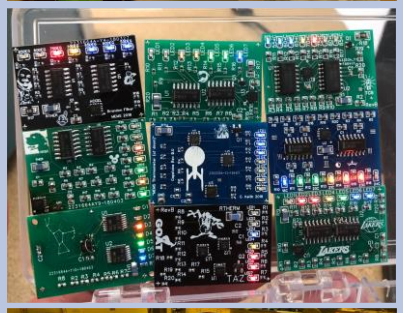
Computer Drafting Programs and other Software

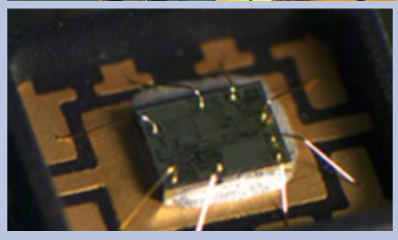
Use a computer to learn how to make 2D dimensioned drawings in AutoCAD and 3D dimensioned drawings in Solidworks. Learn how to operate a CO_2 laser for cutting materials as well as building structures using a 3D printer.

Semiconductor Fabrication

Operate equipment for fabricating semiconductor devices such as silicon wafer handling and cleaning, wet bench chemical processing, photolithographic processing, UV exposure with mask aligning, thin film sputtering, wet chemical etching, and both contact and optical profilometry.

Work Based Learning





ASSOCIATES DEGREE AND TECHNICAL CERTIFICATES AVAILABLE

Find out more: www.loraincccc.edu/mems

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Get connected as a paid intern with local supporting companies involved in PCB and electronic assembly, microelectronics, MEMS sensors, biomedical, and semiconductor fabrication. A total of 300 hrs of paid job experience is required to earn your Associates Degree.

This workforce solution was funded by a grant awarded by the U.S Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.