

INTEGRATED INDUSTRIAL TECHNOLOGY

Associate in Science Degree
Certificate of Achievement
Certificate of Competence

The Integrated Industrial Technology program at Leeward CC was developed in order to provide students on O'ahu with a foundation in electronic, electrical, mechanical, and automated control systems to meet the workforce needs of an emerging industrial technology industry.

The IIT Program provides students with a theoretical and practical understanding of mechatronic systems as well as develops practical skills and systems integration. Graduates will be able to program, operate, maintain, calibrate, and repair the equipment that makes up these systems.

The degree prepares students for occupations that involve the integration of electronic, electrical, mechanical, and communications systems. Typical occupations may include: automated programmable electromechanical systems technician, robotics and manufacturing systems technician, and process control systems integration technician.

All required IIT courses must be passed with a grade of "C" or better in order to be applied to all degrees and certificates.

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Associate in Science Integrated Industrial Technology 61 credits

First Semester Requirements

Course Alpha	Course Title	Credits
IIT 101	Industrial Safety Health and Environment	3
IIT 131	Mechanical Drive Systems	3
IIT 121	Electro-hydraulics and Pneumatics	3
ENG 100	Composition I	3
MATH 103	College Algebra or higher	3
Total Semester Credits		15

Second Semester Requirements

Course Alpha	Course Title	Credits
IIT 171	Principles of Process Quality	3
IIT 151	Rapid Prototyping	3
ICS 141	Discrete Math for Computer Science I	3
PHYS 100	Survey of Physics	3
PHYS 100L	Survey of Physics Laboratory	1
Social Sciences	100 or higher	3
Total Semester Credits		16

Third Semester Requirements

Course Alpha	Course Title	Credits
IIT 201	AC/DC Circuits	4
IIT 231	Process Control and Instrumentation	4
IIT 251	Motor and Motion Control	4
IIT 221	Programmable Logic Control	4
Total Semester Credits		16

Fourth Semester Requirements

Course Alpha	Course Title	Credits
IIT 205	Digital and Analog Circuits	4
IIT 271	Distributed Control Systems	3
IIT 281	Supervisory Control and Data Acquisition	4
Arts & Humanities	100 or higher	3
Total Semester Credits		14
Total Degree Credits		61

Associates in Science Degree in Integrated Industrial Technology Program Learning Outcomes

Apply the principles of mathematics, electronics, mechanical systems, and controls systems to program, maintain, calibrate, and repair advanced integrated systems in manufacturing and transportation.

Use appropriate safety, health, and personal protection procedures applicable to an industrial working environment.

Demonstrate an understanding of the structure and function of mechatronic systems and follow a logical sequence for isolating problems within an industrial process.

Analyze process control system operations and select the appropriate sensing equipment for that operation.

Analyze the operating difficulties of an automated system and perform the corrective actions needed.

Utilize proper procedures for inspection, preventive maintenance, and corrective maintenance of integrated industrial systems.

Demonstrate an understanding of the theory, construction, installation and operation of hydraulic and pneumatic systems in an automated controls environment.

Demonstrate an understanding of mechanical drive systems, their function and the operation in an automated controls environment.

Apply principles of process quality assurance to an automated control environment.

Use CAD/CAM to create drawings of parts and assemblies to create prototypes using additive manufacturing.

**Certificate of Achievement
Integrated Industrial Technology**
31 credits

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Course Alpha	Course Title	Credits
IIT 101	Industrial Safety Health and Environment	3
IIT 131	Mechanical Drive Systems	3
IIT 121	Electro-hydraulics and Pneumatics	3
ENG 100	Composition I	3
MATH 103	College Algebra or higher in STEM track	3
Total Semester Credits		15

Second Semester Requirements

Course Alpha	Course Title	Credits
IIT 117	Principles of Process Quality	3
IIT 151	Rapid Prototyping	3
ICS 141	Discrete Math for Computer Science I	3
PHYS 100	Survey of Physics	3
PHYS 100L	Survey of Physics Laboratory	1
Social Sciences	100 or higher	3
Total Semester Credits		16

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Program Learning Outcomes**

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- Demonstrate an understanding of mechanical drive systems, their function and the operation in an automated controls environment.
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- Use CAD/CAM to create drawings of parts and assemblies to create prototypes using additive manufacturing.

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Integrated Industrial Technology**
15 credits

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