



**SUSTAINABLE SYSTEMS
Certificate Program**

Career Curriculum GRE 2011
Certificate Program
Minimum Hrs. 28
Major Code: 1.2 150503T

FIRST YEAR – FALL SEMESTER

Dept. No.		Hrs.	Gr.
ELT 102	Basic Electricity and Wiring	4	___
HAC 121	Heating I	4	___
HAC 125	Intro to Energy Analysis	4	___
PHS 101	Environmental Technology	3	___
		15	

SUMMER SEMESTER (OPTIONAL)

Dept. No.		Hrs.	Gr.
ATI 200	Applied Technologies Internship	3	___

FIRST YEAR – SPRING SEMESTER

Dept. No.		Hrs.	Gr.
ELT 241	Energy Management	3	___
ELT 243	Alternative Energy Systems	3	___
HAC 131	Refrigeration & Air Conditioning I	4	___
PHS 100	Environmental Conservation	3	___
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The Sustainable Systems Certificate Program (GRE 2011) is an ICCB approved extension of the Energy Management Systems Certificate Program (GRE 2008).

This is a Gainful Employment Certificate Program of 16 credit hours or more that prepares the student for gainful employment in a recognized occupation. For detailed information regarding program length, cost, average loan debt and completion details, select the following link to the Gainful Employment Worksheet for this program. [Gainful Employment Worksheet–Sustainable Systems Certificate Program \(GRE 2011\)](http://www.jalc.edu/consumer_information/pdfs/gainful_employment/sustainable_systems.pdf). You can also access this information by typing the following URL into your browser's address bar:
http://www.jalc.edu/consumer_information/pdfs/gainful_employment/sustainable_systems.pdf

*John A. Logan College reserves the right to modify this curriculum guide as needed.
Please verify with your academic advisor the accuracy and time lines of this document.*

**Effective Date: Fall 2011
Rev. 03/2012**

Additional Information: This program prepares students for careers in the heating and air conditioning industry. The curriculum provides theory as well as sufficient laboratory experience to prepare graduates for immediate employment. Students will be trained for competency in installing, operating, troubleshooting, and maintaining all types of environmental control equipment. The graduate will receive a Certificate of Achievement.

All students registered for heating and air conditioning classes will be required to furnish a basic tool set. The basic tool set will be necessary by the beginning of the fifth week of the semester. The set includes the following:

Sockets

- 1/4" Socket Set

Screwdrivers

- Phillips Stubby Screwdriver
- #2 x 4" Phillips Screwdriver
- Flat Stubby Screwdriver
- 3/16" x 6" Slotted Screwdriver
- 5/16" x 6" Slotted Screwdriver

Nutdrivers

- Nutdriver ND5 1/4"
- Nutdriver ND7 5/16"

Pliers

- Sidecutters
- 7 1/2" Longnose Pliers
- Channel Locks

Wrenches

- 6" Adjustable Wrench
- 8" Adjustable Wrench
- 10" Adjustable Wrench
- 12" Adjustable Wrench
- Hex Wrench Set
- Service Valve Wrench
- Combination Wrench Set 1/4" to 3/4"

Additional Tools

- Wire Strippers
- Clamp-On Amp Meter
- Digital Multimeter (must read D.C. microamps-MA)
- Manifold Gauge Set
- Pocket Thermometer
- Inspection Mirror
- Sling Psychrometer
- Red and Green Tin Snips
- Tinnerns Hammer
- Dividers

Note: Cost varies from different suppliers. Tools may be purchased at Sears, Snap-On, True Value, etc.

Career Opportunities: Energy Auditor, Energy Analysis Tech., Estimator for HVAC.