



# Wayne County Community College District

## COURSE SYLLABUS

### GTT 220 GHEX Accreditation Exam Preparation

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**CREDIT HOURS:** 4.00

**CONTACT HOURS:** 60.00

**COURSE DESCRIPTION:**

This course provides the student with practical field experience and hands-on techniques for the fusion of the two primary ground heat exchangers used in the day-to-day installation of a ground-source heat exchanger (GHEX) using today's industry standards. This course culminates the completion of the Geothermal REHC Technology Certification by taking the student through the process of preparing for the International Ground Source Heat Pump Association's Accredited Installer examination.

**PREREQUISITES:**

GTT 201

**EXPECTED COMPETENCIES:**

Upon completion of this course, the student will be familiar with:

1. Define and explain different views of sustainability.
2. Illustrate an understanding of renewable energies, environmental conservation and sustainable developments.
3. Discuss the historical and socio-cultural aspects of environmental sustainability and sustainable design.
4. Demonstrate how heat energy is absorbed by the Earth for REHC(Renewable Energy Heating & Cooling) and how the Earth's core provides heat for EGS(Enhanced Geothermal System).
5. Demonstrate a basic understanding of HVAC/REHC.
6. Explain the concept of Compression heating and cooling related to the transport of refrigerant.
7. Demonstrate an understanding of SEER(Seasonal Energy Efficiency Rating); COP(Coefficient Of Performance); and, conventional systems "efficiency".
8. Identify and understand the Fossil Fuels, Alternatives, and Renewables.
9. Analyze the economical and environmental impacts of renewable energy sources and sustainable materials.
10. Review the concept of Sustainable Development.
11. Identify products and materials utilized to create a sustainable environment.
12. Analyze and explain the role of an integrated geothermal REHC for dwellings and municipalities.
13. Increase in knowledge of GSHP's(Ground Source Heat Pumps); Loop Field designs; pressure testing; and, site plans/blueprint reading.

14. Discuss and review: site safety; drilling equipment; excavation, and quality control.

**ASSESSMENT METHODS:**

Student performance may be assessed by examination, quizzes, case studies, oral conversation, group discussion, oral presentations. The instructor reserves the option to employ one or more of these assessment methods during the course.

**GRADING SCALE:**

90%-100% = A

80%-89.9%= B

70%-79.9%= C

60%-69.9%= D

<60% = E