**COLLIN COLLEGE**

**COURSE SYLLABUS**

Course Information

**Course Number**: HART 2372

**Course Title:** Alternative Energy Perspectives, Energy Sources, Energy Storage, and Energy Distribution

**Course Description:** The course covers principles of alternative/renewable energy technologies (e.g. Solar Electrical Energy Generation, Solar Thermal Energy Generation, Wind Energy Generation, and Geo-Thermal Energy Generation). Each alternative is placed in the proper context of the energy equation. Traditional energy sources (e.g. coal, oil, natural gas, hydropower, nuclear) are described and contrasted so that the student sees costs and benefits of both alternative and traditional energy sources. Energy Storage and Energy Distribution is covered as it pertains to each energy technology.

**Course Credit Hours:** 3

Lecture Hours: 3

Lab Hours: 1

**Prerequisite:** MATH 1314 or consent of Associate Dean

**Student Learning Outcomes:** Upon successful completion of this course, students will:

1. Alternative and Renewable Energy Sources. (SCANS: F1-F11), (SCANS: C11- C20)
2. Differences and trade-offs between each alternative. (SCANS: F1-F11), (SCANS: C11-C20)
3. Traditional energy sources. (SCANS: F1-F11), (SCANS: C11-C20)
4. Energy Storage Techniques (e.g. Batteries, other media). (SCANS: F1-F11), (SCANS: C11-C20)
5. The physics and electromagnetics of the Energy Distribution Grid. (SCANS: F1-F11), (SCANS: C11-C20)
6. Losses and inefficiencies of power distribution. (SCANS: F1-F11), (SCANS: C11-C20)
7. The concept of “selling power back to the grid” from a home or business. (SCANS: F1-F11), (SCANS: C11-C20)

**Secretary’s Commission on the Acquisition of Necessary Skills (SCANS) -** SCANS skills are a group of foundational skills and workplace competencies that the Secretary’s Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin’s workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at: <http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf>

**Withdrawal Policy:** See the current *Collin Registration Guide* for last day to withdraw.

**Collin College Academic Policies:** See the current *Collin Student Handbook.*

**Americans with Disabilities Act Statement:** Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student’s responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.