

COURSE SYLLABUS

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| Course Title: | Introduction to Energy and Systems | | Date submitted: | May 2020 (AAC: 20-15) |
| Department: | STEAM | | | |
| Curriculum: | Tech Studies: Energy Management Option | | | |
| Course Descriptors: Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system. | Course Code: (eg. ACC 101) | NRG 101 | Prerequisites: | |
| | Course Type: | L | None | |
| | A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: Internship M: Seminar P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/Clinical/Lab Z: Combined Lecture/Studio | | | |
| | Elective Type: | G | Corequisites: | |
| | AH: Art History E: English FA: Fine Arts FL: Foreign Language G: General HI: History HU: Humanities LAS: Liberal Arts & Sciences M: Math S: Science SS: Social Science | | None | |
| | Credit Hours: | 3 | | |
| | Developmental: (yes/no) | No | | |
| | Lecture: | 3 | | |
| | Clinical: | 0 | | |
| | Lab: | 0 | | |
| Studio: | 0 | | | |
| Other: | 0 | | | |
| TOTAL: | 3 | Other Requirements: | | |
| Class Maximum: | 24 | None | | |
| Semesters Offered: | Fa/Sp | | | |
| Catalog Course Description: | Explore current issues surrounding the energy industry including climate change and sustainability. Understand the basic energy consuming components of buildings and opportunities in clean energy and resource conservation as building blocks to a sustainable future. Students are introduced to career opportunities in energy management, renewable energy and sustainability. | | | |
| Topical Outline: List course content in outline format. | 1: Introduction, Course Overview 2: What is Sustainability? 3: Climate Change/Climate Resiliency 4: Politics, Economics, Population 5: Solutions – Clean Energy and Sustainable Buildings 6: The Energy Grid and Investor Owned Utilities 7: Energy Efficiency, “The First Renewable Energy” 8: Commercial Buildings and Their Systems 9: Renewable Energy 10. Elementary Blueprint Reading 11. Introduction to Spreadsheet and Applications in the Energy Industry | | | |

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| <p>Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.</p> | <p>Upon successful completion of this course, the student will be able to do the following:</p> <ol style="list-style-type: none"> 1. Demonstrate an and understanding of, and ability to use critical thinking skills when reading and discussing course readings 2. Demonstrate an understanding of key energy concepts 3. Synthesize information and present critical information in writing and in class presentations 4. Utilize data to support a written report 5. Demonstrate an ability to read and analyze building blue prints including floor, mechanical, and electrical plans 6. Create, develop, format, modify, manipulate and save a basic spreadsheet along with utilizing formulas and functions to solve rudimentary energy problems 7. Differentiate and identify various career options in the Energy industry <hr/> <p>TECH STUDIES PROGRAM, ENERGY OPTION: <i>(Numbering reflects Program Outcomes as they appear in the college catalog)</i></p> <ol style="list-style-type: none"> 6. identify energy conversion processes and their relation to engineering and technology <p>ENERGY CERTIFICATE:</p> <ol style="list-style-type: none"> 1. demonstrate a basic understanding of energy, it's measurement and varied approaches to conserving/saving 2. demonstrate a basic understanding of commercial building systems and be able to explain their operation, interactions, and their energy use. <hr/> <p>GENERAL EDUCATION: <i>(Numbering reflects General Education Outcomes as they appear in the college catalog)</i></p> <p>None</p> |
| <p>Evaluation: List how the above outcomes will be assessed.</p> | <p>Assessment will be based on the following criteria:</p> <ol style="list-style-type: none"> 1. Quizzes and Exams 2. Homework 3. Class Participation 4. Project and/or Final Exam |
| <p>Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.</p> | <p>Required: Computer with Excel installed, exercises can be performed at the Computer Lab</p> <p>Desired:</p> |
| <p>Textbook(s)</p> | <p>Suggested:</p> <p>Plan B: Mobilizing to Save Civilization, Lester R. Brown Hot, Flat & Crowded, Thomas Friedman earth, Bill McKibben</p> |