

# **College of Engineering**

## **Department of Mechanical and Materials Engineering**

### **Proposal for Minor Program**

### **Minor in Energy Systems**

Contact: \_\_\_\_\_  
Dr. Yiding Cao Date

Chairperson: \_\_\_\_\_  
Dr. George Dulikravich Date

Chairperson, Curriculum Committee: \_\_\_\_\_  
Dr. Sabri Tosunoglu Date

Dean of the College of Engineering: \_\_\_\_\_  
Dr. Vish Prasad Date

#### **Approved by:**

University Curriculum Committee: \_\_\_\_\_  
Date

Faculty Senate Chairperson: \_\_\_\_\_  
Date

Academic Affairs V.P.: \_\_\_\_\_  
Date

## **Minor in Energy Systems**

### **Prescribed courses and other requirements:**

For admission to the minor, students need:

- 1) To be fully admitted to their major
- 2) To have a GPA  $\geq 2.0$

Students are expected to meet all prerequisites for the required courses. Mechanical Engineering students are not eligible for the minor.

The minor requires 16 to 19 credit hours consisting of the following courses:

EGN 3311 Statics (3) (*Note 1*)

EGN 3321 Dynamics (3) (*Note 1*)

EGN 3343 Thermodynamics I (3) (*Note 1*)

EML 3126 Transport Phenomena (3)

EML 3126L Transport Phenomena Lab (1)

EML 4140 Heat Transfer (3)

EML 3101 Thermodynamics II (3)

*Note 1:* Students who have taken equivalent course/courses will be exempted from taking these courses. However, they need to select the courses from the following list to satisfy the minimum requirement of 15 credit hours for the minor:

EML 4706 Design of Thermal and Fluid Systems (3)

EML 4601 Principles of Refrigerating and Air Conditioning (3)

EML 4601L Refrigeration and A/C Lab (1)

### **Show Evidence that Library and/or Laboratory Resources are Available to Accommodate the Proposed Minor:**

This minor program will not require any additional library resources. Existing labs will be adequately support the one course that has laboratory components.

### **Type of Students Expected to be Attracted to this Program:**

This program will attract students majoring in Materials, Physics, Computer Engineering, Industrial Engineering, and Civil Engineering who would like to pursue a career related to energy and air-conditioning systems.

### **Briefly Describe the Requirements of the Related Major Program:**

The minor program is being proposed under the umbrella of the Bachelor of Science in Mechanical engineering. All the courses for the proposed minor are part of the required courses for the Mechanical Engineering major.

### **Justification:**

This minor will enable FIU graduates with degrees, other than Mechanical Engineering, to gain a fundamental understanding in energy and power systems. Energy and power systems are one of the most important industries in the modern society, and employ graduates from many different majors. This minor will enhance the working skills of a graduate in a career related to energy/power and air-conditioning industries.