Based on ABET CAC Student Learning Outcomes

1. **Course Number and Name:**
   CSET 2230 Assembly Language & Computer Architecture
2. **Credits and Contact hours:**
   Credits: 4 hours, Contact: 3 lecture hours; 1 lab hours
3. **Instructor's or course coordinator's name:**
   Robert Langendefer
4. **Text book, title, author, and year:**
   The 8088 and 8086 Microprocessors, 4th Edition, Walter Triebel, Avtar Singh, 2003
   a. **Other supplemental materials:**
      Software: DEBUG, MASM
5. **Specific Course Information:**
   a. **Brief description of the content of the course (catalog description):**
      This course covers the software architecture of the 8088 and 8086 microprocessors. Basic 8086/8088 instruction sets, various machine codes, and addressing modes are covered. The DEBUG and MASM software are used.
   b. **Pre-requisites, or co-requisites:**
      EET 2210
6. **Specific goals for the course:**
   a. **Specific outcomes of instruction:**
      1. Ability to write Assembly Language programs for the Intel 8088/8086 microprocessors using DEBUG and MASM. Ability to load, verify, and save machine language programs.
      2. Ability to debug and interpret machine code using the DEBUG software.
      3. Ability to decode and encode machine code by hand.
      4. Ability to examine and modify the contents of Memory.
      5. Knowledge of various addressing modes.
      6. Knowledge of data transfer instructions, arithmetic instructions, logic instructions, shift instructions, and rotate instructions.
      7. Knowledge of Control flow and loop instructions.
      8. Ability to keep abreast of the latest technology by reading appropriate journal/conference papers and other scientific magazines.
   b. **Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course: 1, 4**
      1. An ability to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions;
      4. An ability to recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.

7. **Brief list of topics to be covered:**

1. Introduction to Microprocessors and Microcomputers.
2. Software Architecture of the 8088 and 8086 Microprocessors.
3. Assembly Language Programming.
4. Machine Language Coding and the DEBUG software development program of the IBM PC.
5. 8086/8088 Programming – Integer Instructions and Computations.
6. 8086/8088 Programming –Control Flow Instructions and Program Structures.
7. Assembly Language Program Development with MASM.