A. Identification:
1. Subject Area: Construction Technology
2. Course Number: CTM 133
3. Course Title: Solar Green House Design
4. Credit Hrs: Lecture Hrs: 1 Lab Hrs: 0
5. Catalog Description:
   Solar Greenhouse Design is a course that will lead students through basic passive solar design for solar greenhouses. Solar orientation, Home site evaluation and Energy Efficient design & Construction approaches will be considered for the architectural integration of the passive solar design and construction of a “solar” greenhouse. May be taken for S/U credit with instructor approval. One lecture.

B. Course Goals:
The student will learn to Understand the fundamental principles of: Orientation, Insulation, Glass & Mass as they apply to Solar Greenhouse design, the numerous considerations involved in passive solar greenhouse design.

C. Course Outcomes/Competencies:
Students will:
Learn the fundamental principles of: Orientation, Insulation, Glass & Mass as they apply to Solar Greenhouse design
Understand how the Solar Greenhouse differs from a Conventional Green House

D. Assessment of Course Outcomes:
Assessment will include:
1. Department & faculty level review of student results from a variety of testing instruments.

E. Course Content:
Will Include:
1. Background to Passive Solar Building Design
   A. Definition of “Passive ” Solar.
   B. Solar Position, Angles & Sun Paths - Orientation
   C. Siting & Shadows
   D. Some Passive design building blocks
   E. Length / Width / Height ratios
   F. Heat Transfer and Energy Conservation
   G. Glass & Glazing Qualities that affect the SGH
   H. Thermal Storage Mass & Sizing Strategies

2. Basics of Solar greenhouse Design:
   A. Attached Sunspaces (Greenhouses)
   B. Introduction & Uses
      1. Design & Attaching SGH to existing Buildings
      3. Reducing Heat Loss
4. Glass & Glazings
5. Thermal Mass & Storage
7. Methods of Seasonal Heat Transfer from SGH to Building