REGULAR COURSE SYLLABUS

School of: School of Professional Studies
Department: Engineering Technology
CIP Code: 15.0805
Prefix & Course Number: MET 1050 Crosslisted With*: 

Course Title: Introduction to Space

Check All That Apply: Required for Major: ____ Required for Minor: ____ Specified Elective: ____
Required for Concentration: ____ Elective: X Service Course: ____

Credit Hours: 3 (2+2)

Total Contact Hours per semester (assuming 1516 week semester):
Lecture 30 Lab 30 Internship ____ Practicum ____ Other (please specify type and hours)____

Schedule Type(s): B Grading Mode(s): L

Variable Topics Courses (list restrictions, including the maximum number of hours that can be earned**):

** NOTE: This information must be included in the course description.

Restrictions (Variable Topics Course) ____
Prerequisite(s): None
Corequisite(s): ____
Prerequisite(s) or Corequisite(s): ____

Banner Enforced:
Prerequisite(s): ____
Corequisite(s): ____
Prerequisite(s) or Corequisite(s): ____

Catalog Course Description:
This is a hands-on course which introduces students to the challenges of working in space. Course activities lead to the design and construction of a working satellite for launch. This course is designed for engineering and non-engineering students.

APPROVED: Richard P. Rogers 3/18/09
Department Chair OR Program Director

Watty Slegh 3/19/09
Dean OR Associate Dean

Richard Wagner 4/13/09
Associate VP, Academic Affairs

*If crosslisted, attach completed Course Crosslisting Agreement Form
Prefix and Course Number: MET 1050

**Required Reading and Other Materials will be equivalent to:**

**Specific, Measurable Student Behavioral Learning Objectives:**
Upon completion of this course the student should be able to:
1. Relate student learning through hands-on instruction.
2. Recall the cross-disciplinary nature of space exploration.
3. Recognize the advantage of working in teams to design, build, and fly a real satellite to the edge of space.

**Detailed Outline of Course Content (Major Topics and Subtopics) or Outline of Field Experience/Internship (experience, responsibilities and supervision)**

I. **Introduction to Space**
   A. Course Overview

II. **Space Exploration**
   A. Past, Present, and Future
   B. Methods of Space Observation
   C. Design Factors for Satellites

III. **Spacecraft**
   A. Orbit Selection
   B. Environmental Factors
   C. Launch Vehicles
   D. Structures
   E. Mechanisms
   F. Communications
   G. Power
   H. Attitude Determination and Control
   I. Thermal
   J. Command and Data Handling
   K. Software
   L. Mission Operations

IV. **Balloon Sat**
   A. Cube Sat Overview
   B. Team Forming
   C. Design
   D. Soldering
   E. Camera Integration
   F. Heater Build
   G. Data Loggers
   H. Box Construction
   I. Testing
   J. Launch, Landing, and Recovery

V. **Review**
   A. Launch Recap
   B. Team Final Presentations

**Evaluation of Student Performance:**
1. Homework
2. Balloon Project
3. Midterm
4. Final Examination