

# Bemidji State University

## TADT 3470: Concept to Prototype Model

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Construct a prototype model with emphasis on 3D parametric drawing, 3D printing technology and various machining processes. Project will concentrate on form, fit, function, structural integrity and optimization of the design needed to shape concepts and test ideas. Prerequisite: TADT 1450, TADT 2450, TADT 3462.

**B. COURSE EFFECTIVE DATES:** 08/22/2016 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Materials selection
2. Model construction
3. Paint application
4. Surface preparation

### D. LEARNING OUTCOMES (General)

1. . demonstrate machining processes used in construction of a prototype model.
2. . understand and demonstrate the process of model construction.
3. . evaluate structural and sustainable properties of various materials.
4. . distinguish and determine the relationship of construction to form, fit & function as they relate to the stages of conceptual, proof of concept & prototypes.
5. . demonstrate proficiency in 3D software and the techniques required to draw a physical model.
6. . experiment with creativity and environmental impacts of products and users.
7. . explain the implications and selection of materials and processes.
8. . understand and demonstrate proper safety related to a lab environment.

### E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted