

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**



MASTER SYLLABUS

**COURSE NUMBER – COURSE NAME
GMMD 301 – 3-D Design**

Created by: Matt Burnett

Updated by: Matt Burnett

Canino School of Engineering Technology

Department: Graphic and Multimedia Design

Semester/Year: Fall 2018

- A. **TITLE:** 3-D Design
- B. **COURSE NUMBER:** GMMD 301
- C. **CREDIT HOURS:** (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)

Credit Hours: 3
Lecture Hours: 2 per week
Lab Hours: 2 per week
Other: per week

Course Length: 15 Weeks

- D. **WRITING INTENSIVE COURSE:** Yes No
- E. **GER CATEGORY:** None: Yes: GER
If course satisfies more than one: GER
- F. **SEMESTER(S) OFFERED:** Fall Spring Fall & Spring

G. **COURSE DESCRIPTION:**

3-D design bridges the concepts of design with the basic methodologies and concepts of three dimensional fabrication and composition. The course will challenge students to further develop and employ problem solving methodology to a variety of basic conceptual and practical problems in 3-Dimensional space. The course emphasizes the basic sculptural methodologies, including subtractive and additive processes, assemblage, construction, carving, casting, molding, armature, and kinetics/mechanics. The ability to move between 2-dimensional and 3-dimensional conceptualization/ realization is the primary focus of this class.

- H. **PRE-REQUISITES:** None Yes If yes, list below:

GMMD 102

CO-REQUISITES: None Yes If yes, list below:

I. STUDENT LEARNING OUTCOMES: (see key below)

By the end of this course, the student will be able to:

<u>Course Student Learning Outcome</u> <u>[SLO]</u>	<u>Program Student Learning Outcome</u> <u>[PSLO]</u>	<u>GER</u> <i>[If Applicable]</i>	<u>ISLO & SUBSETS</u>	
Demonstrate a comprehension and application of visual design theory towards theoretical and practical solutions in three dimensional space by thorough and successful completion of design problems	Content Knowledge		1-Comm Skills 2-Crit Think ISLO	W PS Subsets Subsets
Develop and expand creative problem solving ability through systemic application and analysis of the Design Process	Design Process		1-Comm Skills 2-Crit Think 3-Found Skills	W IA PS QTR
Demonstrate proficiency of the basic sculptural approaches through the successful application of fabrication processes and materials introduced in assignments	Content Knowledge		1-Comm Skills 2-Crit Think 3-Found Skills	W CA QTR Subsets
Demonstrate Professionalism in the presentation of final works, final portfolio, and in all presentations	Professional Detail		1-Comm Skills 5-Ind, Prof, Disc, Know Skills ISLO	W Subsets Subsets Subsets
Successfully translate concepts between 2-D and 3-D conception, between computer design and tactile realization.	Design Process		1-Comm Skills 2-Crit Think ISLO	W IA PS Subsets
Demonstrate a basic knowledge of product prototyping, 3-D software, fabrication and post processing	Content Knowledge		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets

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KEY	<u>Institutional Student Learning Outcomes [ISLO 1 – 5]</u>
ISLO #	ISLO & Subsets
1	Communication Skills Oral [O], Written [W]
2	Critical Thinking <i>Critical Analysis [CA] , Inquiry & Analysis [IA] , Problem Solving [PS]</i>
3	Foundational Skills <i>Information Management [IM], Quantitative Lit./Reasoning [QTR]</i>
4	Social Responsibility <i>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</i>
5	Industry, Professional, Discipline Specific Knowledge and Skills

*Include program objectives if applicable. Please consult with Program Coordinator

J. **APPLIED LEARNING COMPONENT:** Yes No

If YES, select one or more of the following categories:

- | | |
|---------------------------------------------------|--------------------------------------------------------|
| <input checked="" type="checkbox"/> Classroom/Lab | <input type="checkbox"/> Civic Engagement |
| <input type="checkbox"/> Internship | <input type="checkbox"/> Creative Works/Senior Project |
| <input type="checkbox"/> Clinical Placement | <input type="checkbox"/> Research |
| <input type="checkbox"/> Practicum | <input type="checkbox"/> Entrepreneurship |
| <input type="checkbox"/> Service Learning | (program, class, project) |
| <input type="checkbox"/> Community Service | |

K. **TEXTS:**

At discretion of instructor

L. **REFERENCES:**

Brainard, Shirl A Design Manual 3rd edition, 2003, Prentice Hall

Zelanski, Paul and Fisher, Mary Pat Shaping Space: The Dynamics of 3-D Design Thompson and Wadworth, 3rd Edition. 2007 printed in USA.

M. **EQUIPMENT:** None Needed: x

At discretion of instructor

N. **GRADING METHOD:** A-F

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**

Final Portfolio
Design Exercises
Quizzes
Exams
Tutorial competencies

P. **DETAILED COURSE OUTLINE:**

I. Course Syllabus, Revisiting Problem Solving Procedure in 3-D context

II. Design as Problem Solving

- A. Problem
- B. Criteria
- C. Design Space

D. Establishing 2-D design as one area of a much broader field/endeavor

III. Problem Solving Procedure

- A. Problem creation/posing**
- B. Brainstorm**
- C. Review and select ideas**
- D. Roughs/Mockup/Model**
- E. Draft**
- F. Analysis and Critique**
- G. Redesign**

IV. Basic Design Concepts

- A. The Visual Elements: Space, Line, Shape, Texture, Value, Color**
- B. The Conceptual Elements: Space, Line, Plane, Volume**
- C. The Relational Elements: Detachment, Touching, Overlapping, Interpenetration, Subtraction, Union, Intersection, Coinciding**

V. The Principles of Design : Using the Visual Elements

- A. Division of Space: Scale, Positive/Negative Space, Grids, Division Structures,**
- B. Balance: Symmetry, Asymmetry, Near Symmetry**
- C. Unity: Repetition, Pattern, Harmony, Proportion**
- D. Rhythm: Rhythmic Devices, Direction, Pattern**
- E. Emphasis: Contrast, Anomaly, Concentration**
- F. Variety: Transformation, Complexity**

VI. Categories of Form

- A. Realistic**
- B. Naturalistic**
- C. Abstraction**
- D. Non-Objective**
- E. Translating form between spaces: 3-D to 2-D**

VII. The Language and Methodologies of 3-D Design:

- A. Subtraction**
- B. Addition**
- C. Assemblage**
- D. Construction**
- E. Carving**
- F. Molding**
- G. Armature**
- H. Kinetics**

VIII. Building Models

IX. Surfacing/Finishing

- A. Painting**
- B. Polishing**
- C. Sanding**
- D. Dressing**
- E. Feathering**
- F. Burnishing**

X. Relating Text to Image

- A. Analytical vs. Visual: Balancing Text and Image in 3-D Design**

XI. Criticizing Designs/ Commanding Design Principles

- A. Implementation**
- B. Evaluation**
- C. Criticism**
- D. Practical analysis: making well founded criticism in a very theoretical field**
- E. Applying conceptual theory to practical problem solving**
- F. Exploring/Discussing Design in various fields**

XII. The Relationship between Design and Technology

- A. Function and Aesthetics: or the balance between function and form**
- B. Problem solving vs Problem making**
- C. The role of technology in problem solving/conception**
- D. The role of design in the development and invention of technology**
- E. Historical context of design evolution (various fields)**

XIII. Texture A. Relationship of texture to visual texture

XIV. Repetition as a Form of Change A. Creating a super unit from a subunit B. Repetition structures

Q. LABORATORY OUTLINE: None Yes