442 DIGITAL PRESENTATION – 3D PRINTING, INDESIGN & SKETCHUP ANIMATION

COURSE: 4 Class periods for 3D printing
                            8 Class periods for InDesign

SOFTWARE: TinkerCAD, Cura, InDesign, Photoshop

REQUIRED HARDWARE: USB flash memory dedicated to this class only - 16GB minimum

STUDENT WORK PRODUCT: All student work produced for this class will be gathered by the professors and will not be returned to students. If you wish an additional copy of your work, please arrange for such copies independent of what you turn in for grading.

LATE WORK: Late work will only be accepted up to one week after the due date. All late work will be deducted half credit and will be subject to further point deduction based on any missing items from the grading requirements. No points will be given for late work past one week from the original due date. No late work will be accepted for quizzes or the final InDesign Project.

GRADING:

3D Printing 60 points
InDesign 120 points
Total 180 points

Percent	Point Range	Letter Grade
90	162-180	A
80	144-179	B
70	126-143	C
60	108-125	D
0	0-107	F

ATTENDANCE: Each student may have two total absences. However, more than two consecutive class meeting absences or three non-consecutive class meeting absences per course may result in the student being withdrawn from the course. Attendance is considered an important habit to acquire in becoming a mature, responsible member of the professional community.

CLASS 1: [3D Printing] 3D Printing:
Grading this section:

Quiz 1.1 = 10
Assignment 1.1 = 5 (3 Simple Compound Objects Digital Files Only)
Assignment 1.2 = 15 (Modify Existing models - optional key fob - 10 points for Digital Files, 5 Points for 3D Printed Object)
Assignment 1.3 = 10 (Tile design- 5 points for Digital Files, 5 Points for 3D Printed Object)
Assignment 1.4 = 20 (Model to show a client - 10 points for Digital Files, 10 Points for 3D Printed Object)

Lecture:
Basics of TinkerCAD
Signup and Login
Drawing Area
Grid
Shapes
Mirror Tool
Rotate Tool
Ruler Tool
Align Tool
Align and Rotate Tools
Assignment 1.1

Exercise:
Complete TinkerCAD Tutorials

CLASS 2: [3D Printing] Slicing and Existing Models:
Due at the beginning of class: Assignment 1.1 digital files

Lecture:
Cura
Quality
Materials
Support
Brim
Model warehouses
Thingiverse.com
3dwarehouse.sketchup.com
Youmagine.com
GrabCad.com
Fabster.com
Assignment 1.2

CLASS 3: [3D Printing] Intermediate Slicing and Model Considerations:
Due at the beginning of class: Assignment 1.2 digital files

      Lecture:
            Cura
            Layer Height
            Infill
            Speed
            Support types
            Retraction
            Assignment 1.3

CLASS 4: [3D Printing] Advanced Discussion
Due at beginning of class: Assignment 1.3 digital files
Due at end of class: Assignment 1.2 3D Printed Object

      Lecture:
            Simplify3D
            Multiple model placement
            Multiple filaments
            Infill variations
            Assignment 1.4

      Quiz 1.1 - 10 points:
            Model Prep and Slicing

CLASS 5: [InDesign] Introduction to InDesign:
Due at beginning of class: Assignment 1.3 digital files
Presentations of 3D printing object 1.3

Grading this section:
            Quiz 2.1 = 10 (InDesign Design Board recreation Quiz)
            Quiz 2.2 = 10 points (InDesign reading Quiz)
            Assignment 2.1 = 10 (sketching)
            Assignment 2.2 = 20 (InDesign project Single Page Mood Board)
            Assignment 2.3 = 10 (Pen tool in class exercise)
            Assignment 2.4 = 60 (InDesign project Multi Page Portfolio Booklet)

      Lecture:
            Document setup: file, new document, set units, set pages, no bleed or slug, no margins, create - inches, 17, 11, 1 page
            Docking and undocking: panels, tabs, bars, drag by tab or drag by title bar
            Hide default workspace: tab key
            Rulers: view, show rulers or hide rulers - ctrl+R
            Guides: drag from ruler, shift key to constrain location
            View and preview: bottom of tool panel, press and hold button, normal or preview
            Bail out: strike "V", click in open space, activates the selection tool - esc, V

Text frame: click type tool, click-hold & drag, release, type text, esc - strike T, esc
Relocate text frame: click selection tool, click text frame, click-hold and drag, release Zoom: click zoom tool, single click, click-hold and drag, release, right click options - Z Hand tool: click hand tool, click-hold & drag, release - strike H, or space bar click & drag

Frame Tool: click frame tool, click-hold and drag, release - M, shift to constrain
Place Image: select frame, file, place, browse for file, select, open - ctrl+D Links panel: same panel as pages tab, scroll down for image data
Re-link: links panel, right click at error symbol, re-link, browse for file
Fitting: selection tool, click frame, right click, choose fitting, choose fitting option Fitting custom: double click frame, use grips
Crop custom: click on image inside frame, click on circle in middle (content grabber), hand appears, click-hold & drag, release, to crop as desired
Fill & Stroke: fill and stroke pallets at toolbar, stroke tab pallet, color or fill tab pallet - stroke palette tab; stroke alignment and join, stroke mitre limit for clipped points or corners
View quality: view, display performance

CLASS 6: [InDesign] Single Page Layout:
Due at end of class: Assignment 1.3 printed object

Lecture:

Rectangle shape tool: single click options, click and drag options
Ellipse shape tool: single click options, click and drag options
Polygon Shape Tool: click hold on rectangle frame tool, other tools appear, click on polygon frame tool, tool shows in toolbar, double click icon for options - 0% star inset for polygons otherwise a star, direct select for grips to modify
Adding a transparent background image to a frame: png photoshop setup, color background options

Line: line tool, stroke, select stroke color, color
Break/Scissor Tool: breaking a line that goes through another object
Fill & Stroke: fill and stroke pallets at toolbar, stroke tab pallet, color or fill tab pallet - stroke palette tab; stroke alignment and join, stroke mitre limit for clipped points or corners
Eyedropper tool: Add theme/color to swatches
Effects: go to; window, effects, opacity, blending
Pathfinder
Logo design: Using Pathfinder, frames, line, shapes, and text to create a simple logo design
Export pdf

CLASS 7: [InDesign] Single Page Layout:
Presentations of 3D printing object 1.3

Lab Day: Work to Complete InDesign Assignment 2.2

CLASS 8: [InDesign] Multi Page Booklet:
Due at the beginning of Class Assignment 2.2

Lecture:
Document setup: file, new document, set units, set pages (10 pages minimum), .125 bleed no slug, 0.5 margins, create - inches, 17, 11,

Parent pages: pages tab panel, double click white box at left of "A-Master" in pages tab panel
Double Click Parent Pages for Double Page Spread

Assign parent pages: pages tab panel, right click page box, choose apply master to pages, at apply master choose a set up master or none, choose to pages,

Page number some or all pages (Type - Insert Special Characters - Markers - Page Numbers) Copy and Mirror Alignment for Second Side
For Covers, Ctrl Shift Click on page number to edit/move/delete page number
The Pen tool: pen tool for straight corners, curves, direct selection tool to alter
View - Display Mode - Bleed or Preview
Cover: Add background - Lock Background Layer

CLASS 9: [InDesign] Multi Page Booklet:
Due at the beginning of class: Assignment 2.3 Pen tool Exercises.
Due at end of class: Assignment 1.4 3D Printed Object

Lecture:
Image text: create text, select text box, go to type, choose create outlines, place image - multiple lines may have to be selected individually and placed
Text frame: Multi Line Text
> Continuing Text through multiple Text frames

Placeholder text
Layers: Placing all Parent page items on a layer to bring in front of all other items
Assigning Object styles/Type styles

Lab Day: Create Front and Back Cover for Booklet (Pages 1,10)

CLASS 10: [InDesign] Multi Page Booklet:
Presentations of 3D printing object 1.3
In Design Practical Quiz 2.1

> **20 minute In DesignQuiz 2.1:** You will be provided with a pdf of a design board. Your quiz is to recreate the design board in class using provided images. Any fonts will be acceptable. Please use only the provided images, and recreate as close to possible the provided design board.

> **Lab Day:** Create Pages of Portfolio (Pages 4-9)

> **Reading for quiz** Find pdf file on Canvas, InDesign Student Reading.pdf

CLASS 11: [InDesign] Multi Page Booklet:
In Design Reading Quiz 2.2

> **Lecture:**
> > Export PDFs for Print and for Digital Display
> > Booklet for Print: Export Adobe PDF for Print
> > General: Two-UP (Cover Page), Pages (All)
> > Marks and Bleeds: Select All Printers Marks and Use Document Bleed Settings
> > Virtual Booklet: Export PDF
> > Marks and Bleeds: Uncheck All Printers Marks and Uncheck Use Document Bleed Settings
> **Lab Day:**
> > Create Inside Cover and Table of Contents (Pages 2,3)

CLASS 12: [InDesign] Multi Page Booklet:
Due at the beginning of Class Assignment 2.4

> **Presentations:** Turn in 2 booklet versions: 1 Booklet for Print and 1 Virtual Booklet (We will be presenting the pdfs for the Virtual Booklet in class)

Assignment Descriptions:

3D Printing

Assignment 1.1 - 10 points:

Create at least 3 <u>simple</u> objects in Tinkercad before 2nd class
Combine several shapes
Explore additional tools
Objects you would like to print should not exceed 3 cubic inches
Review help files and videos if needed

Assignment 1.2 - 15 points:

Modifying existing models – keyfob

Assignment 1.3 - 10 points:

Tile design.
Design a 3 tile with a three dimensional pattern.
Dimensions: 2"W 2"L 1/4"H

Assignment 1.4:- 20 points

Furniture or Architectural Design.
Create a model that could be used to show to a client.This design
should be a furniture piece or a small architectural model.

In Design

Assignment 2.1:

Hand sketches on paper showing title block and logo idea for 10 points

10 sheets of sketching required : 5 logo ideas: 2 drawings each (first sketch is rough sketch, second sketch is refined drawing)
First sketch contains initial idea, Second sketch contains refined version of idea Sketches must be professional, neat, clear, and understandable to the professor (if you are unsure meet with the professor in advance of the beginning of class due date)
(See diagram last page)

Assignment 2.2:

Mood Board
Create a 1 page 11x17 mood board, for 20 points Assignment to be
    turned in as a PDF and as an InDesign file.
1 page
Sketch of layout idea
Images and single line text
Logo (does not count for single line text category)
Be creative
Design must be laid out accurately, paying attention to spacing and alignment.

Assignment 2.3

Pen Tool
Complete in class pen tool exercises for 10 points:
Use the pen tool to trace each of the provided shapes. Fill the frame made by the
pen tool with images and color. (1 of each image fill and color fill minimum, one
stroke minimum)

Assignment 2.4:

Multipage Portfolio Booklet
Turn in 2 booklet versions: 1 Booklet for Print and 1 Virtual Booklet (We will be
presenting the pdfs for the Virtual Booklet in class)
10 pages
Front Cover
Inside Front Cover
Table of Contents
2 pages 1st project
2 pages 2nd project
2 pages 3rd project
Back cover

Front and Back Cover Must include Logo
Inside Front Cover has no minimum requirements
Table of Contents must include Text and Images6 Project pages must include
Single Line Text, Multi Line Text and Images on each page

Design must be laid out accurately, paying attention to spacing and alignment.

idea #1

sketch #1
(quick sketch of idea #1)

sketch #2
(refined version of idea #1)

idea #2

sketch #3
(quick sketch of idea #2)

sketch #4
(refined version of idea #2)

idea #3

sketch #5
(quick sketch of idea #3)

sketch #6
(refined version of idea #3)

idea #4

sketch #7
(quick sketch of idea #4)

sketch #8
(refined version of idea #4)

idea #5

sketch #9
(quick sketch of idea #5)

sketch #10
(refined version of idea #5)