HCOL 41043 – Design Thinking & Innovation

Monday and Wednesday 12:00 noon to 1:20 PM

Room 209 Moudy North

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Office Hours by Appointment

Expanded Description:

This course explores the use of design thinking principles to create innovative solutions to cultural and business problems. Students will identify current problems, ideate multiple concepts, and use rapid prototyping to to test and refine their ideas. A key component of the course is the development of empathy for diverse audiences as a means of solving a wide-range of problems. Students will execute and present solutions using models, infographics, and other visual, written, and oral presentation skills. This is an experiential, project-based course that requires active participation and collaboration among students. It is designed to improve creativity by exploring new ways of identifying core problems and rapidly generating and testing multiple concepts of practical solutions to real-world business and societal problems.

Learning Outcomes:

- Apply principles and processes of design thinking to solve societal and entrepreneurial business problems.
- Research across disciplines and fields of study to find parallel solutions to problems.
- Demonstrate empathy for diverse cultures and perspectives by designing solutions specific to diverse audiences.
- Create and maintain a journal/sketchbook of design thinking concepts.
- Apply principles of design to creating models, slide decks, infographics and other visual communication media.
- Collaborate with a team to develop projects from concept through presentation.
- Demonstrate understanding of design thinking including problem identification, idea generation, and solution iteration and execution.
- Create and deliver pitch presentations to explain solutions.

Attendance
In accordance with TCU policy, attendance is required. Three unexcused absences will lower a student's grade by a letter. A fourth absence will result in removal from the class for lack of academic progress a grade of F will be automatically recorded for the semester. Punctuality is expected. Tardiness and early departure will be noted. Three tardies or early departures will be

counted as one unexcused absence. An unexcused tardy or early departure of 30 minutes or more will be counted as an absence. On days designated for individual consultation, students leaving without first meeting with the instructor will be counted absent.

An appropriate excuse will require written documentation from a physician, or appropriate University authority. A doctor's excuse must explicitly state that the student was too ill to attend class on the date in question. Receipts from the Health Center or a pharmacy are not considered acceptable medical excuses.

Deadlines
All assignments will be given precise deadlines. Late work will have the grade lowered one full letter for every class period that it is late, and will not be accepted after the beginning of the second class period beyond the due date (a grade of F will be recorded for the project). Exceptions are possible, usually requiring a written excuse from a physician or the appropriate University authority. The student is responsible for making up work delayed by an acceptable excuse within a reasonable amount of time, as determined by the instructor. Projects are to be completely finished and ready to hand in at the beginning of the class period on which they are due unless specifically delayed by the instructor.

COURSE WORK

Professionalism and Participation – 10% of overall grade

An assessment of participation, engagement with the class, and professional behavior is made during each class. A grade is given at mid-term and at the end of the term.

Deadline: An assessment is made at the end of each class

Concept Sketchbook/Journal – 10% of overall grade (5% each)

Each student is required to maintain a concept journal/sketchbook to record thoughts, inspiration, and ideas related to the course projects. The student is expected to have the journal/sketchbook ready to review during each class. A grade is given at mid-term and at the end of the term. The journal/sketchbook is assessed as follows:

Depth and breadth of concept exploration: 100%

Deadlines: Journals/Sketchbooks are turned in for assessment at the beginning of class Week 8 and at the beginning of class Week 15

Challenge Assignments – 30% of overall grade (15% each)

Students will work individually to solve and present "quick fire" business or societal problems using design thinking and rapid prototyping techniques. Two challenges will be presented during the course. Solutions will be assessed as follows:

Creativity of the Solution—40% of grade

Prototype—30% of grade

Presentation of the Solution—30% of grade

Deadlines: TBD

Course Project - Mid-Term – 25% of overall grade

Teams of two or three will work on a course project that solves a problem using design thinking and prototyping.

Creativity of the Solution—30% of grade

Written Proposal—30% of grade

Prototype—20% of grade

Presentation of the Solution—20% of grade

Deadline: Week 8

Course Project Final – 25% of overall grade

Teams of two or three will work on a course project that solves a problem using design thinking and prototyping.

Creativity of the Solution—30% of grade

Written Proposal—30% of grade

Prototype—20% of grade

Presentation of the Solution—20% of grade

Deadline: Finals Week

Grading

Letter grades will be assigned based on a percentage of points earned as shown below:

A: 93 to 100%
A-: 90 to <93%
B+: 87 to <90%
B: 83 to <87%
B-: 80 to <83%
C+: 77 to <80%
C: 73 to <77%
C-: 70 to <73%
D: 60 to <70%
F: <60%

Review "Grading Criteria" on the next page to see how grading items are assessed.

Computer Lab
Students may work in the computer lab outside of class time. However, if a class is in session, ask the instructor's permission to use a workstation during class time.

Academic Conduct
Academic Misconduct (Sec. 3.4 from the Student Handbook) Any act that violates the academic integrity of the institution is considered academic misconduct. Plagiarism and other cheating are violations of the TCU Academic Conduct Policy. Any intentional violation of this policy will be subject to disciplinary action, which can range from a failing grade on the project to expulsion from the University. The procedures used to resolve suspected acts of academic misconduct are available in the offices of Academic Deans and the Office of Campus Life.

Disability Accommodations
Texas Christian University complies with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973 regarding students with disabilities. Eligible students seeking accommodations should contact the Coordinator for Students with Disabilities in the Center for Academic Services located in Sadler Hall, 11. Accommodations are not retroactive, therefore, students should contact the Coordinator as soon as possible in the term for which they are seeking accommodations. Further information can be obtained from the Center for Academic Services, TCU Box 297710, Fort Worth, TX 76129, or at (817) 257-7486.

Adequate time must be allowed to arrange accommodations and accommodations are not retroactive; therefore, students should contact the Coordinator as soon as possible in the academic term for which they are seeking accommodations. *Each eligible student is responsible for presenting relevant, verifiable, professional documentation and/or assessment reports to the Coordinator*. Guidelines for documentation may be found at
http://www.acs.tcu.edu/disability_services.asp

Students with emergency medical information or needing special arrangements in case a building must be evacuated should discuss this information with their instructor/professor as soon as possible.

All grading items are assessed using the criteria below. If you need clarification of grading criteria, please ask.

GRADING RUBRIC				
Assignment Specifications—Fulfillment of the requirements; how well directions were followed; how well instructor and colleague feedback was applied				
Excellent All project specifications followed perfectly	**Good** Project specifications mostly followed	**Acceptable** Some key project specifications were not exactly followed	**Needs Improvement** Some project specifications misunderstood or missing	**Below Standard** Many project specifications misunderstood or missing, or are non-gradable
Research—Depth of understanding of the background of the project as demonstrated by the analysis and articulation of the components of the design brief and/or the sketchbook				
Excellent Thorough research conducted and presented	**Good** Mostly good research	**Acceptable** Good research but could have been more thorough	**Needs Improvement** Missing key research components	**Below Standard** Incomplete research or non-gradable
Creativity — Use of imagination; evidence of risk-taking; application of personal voice; unique quality of ideas independent of the execution of the project.				
Excellent Concepts are very unique, surprising, and show high evidence of successful risk-taking; personal voice highly evident	**Good** Good solid concepts with evidence of risk-taking and personal voice; needs a little more exploration	**Acceptable** Average ideas with some evidence of risk-taking and personal voice; more exploration needed	**Needs Improvement** Typical concepts with little evidence of risk-taking and personal voice; more exploration needed	**Below Standard** Concepts not understandable or missing the objective; much more exploration needed; non-gradable.
Problem Solving — Evidence of critical thinking, conceptual development, and effort related to the preliminary work (thumbnails, roughs, outlines, and/or drafts)				
Excellent Exploration of problem well beyond the ordinary; exceptional breadth and variety of solutions; Superior effort	**Good** Good, above average exploration and effort; good breadth and variety of solutions	**Acceptable** Average effort and exploration; A bit more breadth and variety of solutions expected	**Needs Improvement** More effort and exploration expected; solutions need more variety and breadth	**Below Standard** Much more effort and exploration required; solutions lack variety and breadth; non-gradable
Project Presentation — Quality of presentation related to clarity and professionalism of speech, visuals, defense, and organization				
Excellent Superior presentation; flawless, professional delivery of information via speech and/or visuals; exceptional confidence and poise; well-designed and	**Good** Good presentation; Professional delivery of information via speech and/or visuals with few distractions; good confidence and poise; acceptable organization	**Acceptable** Average presentation; delivery of information via speech and visuals had some distractions; confidence and poise could use work; organization and design	**Needs Improvement** Presentation below average; delivery of information via speech and/or visuals had distractions that need to be eliminated; confidence and poise	**Below Standard** Poor presentation; delivery of information via speech and/or visuals was incomplete, disorganized or otherwise included major distractions; Lack

organized slide deck	and design of slide deck	of slide deck needs minor revision	needs practice; organization and design of slide deck needs to be reworked.	of confidence and poise evident; Organization and design of slide deck is unacceptable, Presentation is non-gradable

Participation and Professionalism — Substantive professional engagement with instructor and classmates during meetings, presentations, and critique; degree of effort, and self-assessment

Excellent Superior participation beyond the minimum requirement; Superior effort and self-assessment	**Good** Good participation Good effort and self-assessment	**Acceptable** Average participation meets minimum requirement; a little more effort and self-assessment needed	**Needs Improvement** Participation barely meets minimum requirement; much more effort and self-assessment needed	**Below Standard** Little or no participation, effort, or self-assessment; non-gradable

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Execution of Design

Technical Proficiency—Practical application of technology; technical quality of digital and/or manual samples

Excellent Flawless technical execution and/or superior manual technique	**Good** Good technical execution and/or manual technique; only minor adjustments needed	**Acceptable** Average technical execution and/or manual technique; some missing or misunderstood concepts	**Needs Improvement** Technical execution and manual technique demonstrates some lack of understanding of the concepts	**Below Standard** Most technical and/or manual technique concepts missed

Craftsmanship—Use of typography, color, and imagery as it relates to communication of the concept

Excellent Superior application of color theory, typographic principles, and imagery as it relates to communication of the visual message	**Good** Above average application of color theory, typographic principles, and imagery as it relates to communication of the visual message	**Acceptable** Average application of color theory, typographic principles, and imagery as it relates to communication of the visual message; some incorrect use of design elements	**Needs Improvement** Below average application of color theory, typographic principles, and imagery as it relates to communication of the visual message; some minor misapplications of design elements; many incorrect uses of design elements	**Below Standard** Poor application of application of color theory, typographic principles, and imagery as it relates to communication of the visual message; major incorrect uses of design elements

Composition—Use of design principles, hierarchy, and gestalt theory

Excellent Superior design and application of design principles	**Good** Good application of design principles; only minor adjustments needed	**Acceptable** Average application of design principles; some adjustments needed	**Needs Improvement** Below average understanding of design principles; Key adjustments needed	**Below Standard** Poor application of design principles; major adjustments needed

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Execution of Photography or Photo-Illustration

Technical Proficiency—Practical application of technology; technical quality of digital and/or manual samples

Excellent	**Good**	**Acceptable**	**Needs Improvement**	**Below Standard**

Flawless technical execution and/or superior manual technique	Good technical execution and/or manual technique; only minor adjustments needed	Average technical execution and/or manual technique; some missing or misunderstood concepts	Technical execution and manual technique demonstrates some lack of understanding of the concepts	Most technical and/or manual technique concepts missed

Craftsmanship—Use of color and imagery as it relates to communication of the concept

Excellent	**Good**	**Acceptable**	**Needs Improvement**	**Below Standard**
Superior application of color theory and imagery as it relates to communication of the visual message	Above average application of color theory and imagery as it relates to communication of the visual message	Average application of color theory and imagery as it relates to communication of the visual message; some incorrect use of design elements	Below average application of color theory and imagery as it relates to communication of the visual message; some minor misapplications of design elements; many incorrect uses of design elements	Poor application of application of color theory and imagery as it relates to communication of the visual message; major incorrect uses of design elements

Composition—Use of design principles, hierarchy, and gestalt theory

Excellent	**Good**	**Acceptable**	**Needs Improvement**	**Below Standard**
Superior arrangement of elements using a unique or surprising composition that focuses on the concept	Good arrangement of elements with appropriate focus and emphasis on the concept	Typical arrangement of elements. Focus and emphasis on the concept could be improved	Below average arrangement of elements. Concept does not get the appropriate focus or emphasis	Poor arrangement of elements with little or no focus or emphasis on the concept

Execution of Writing Project

Technical Proficiency—Grammar, spelling, and legibility of submission

Excellent	**Good**	**Acceptable**	**Needs Improvement**	**Below Standard**
Flawless grammar, and spelling. Submission is legible and easy to read.	Good grammar and spelling for the most part. Submission is legible and easy to read. Only a few minor errors.	Average grammar and spelling with some issues related to legibility. Some errors detected.	Grammar and spelling need improvement. Legibility issues and several errors detected.	Grammar and spelling are below standard. Poor legibility and many errors detected.

Composition—Organization, structure and flow of composition

Excellent	**Good**	**Acceptable**	**Needs Improvement**	**Below Standard**
Superior organization. Excellent structure and flow of the composition and sentence structure.	Above average organization. Good structure and flow of the composition and sentence structure.	Average organization with typical structure and flow of the composition and sentence structure. A bit more editing and rewriting expected.	Below average organization with improvement needed to the structure and flow of the composition and sentence structure. More editing and rewriting needed.	Poor organization, structure, and flow of the composition and sentence structure. Major editing and rewriting needed.

Craftsmanship—Use of language, word choice, sentence variety, and story telling

Excellent	**Good**	**Acceptable**	**Needs Improvement**	**Below Standard**
Superior use of language, word choice, sentence variety and storytelling.	Good use of language, word choice, sentence variety and storytelling.	Average use of language, word choice, sentence variety and storytelling. More thought and revision	Below average use of language, word choice, sentence variety and	Poor use of language, word choice, sentence variety and storytelling. Non-gradable.

		expected.	storytelling. Much more thought and revision needed.	

Execution of Prototype

Prototype—Clarity of concept; technical execution of design elements

Excellent Exceptional clarity and execution of design elements.	**Good** Good clarity and execution of design elements. A few minor improvements needed.	**Acceptable** Average clarity and execution of design elements. Design could be more clear and be executed better.	**Needs Improvement** clarity and execution of design elements need more exploration and work to improve.	**Below Standard** Prototype is unclear and lacks acceptable execution or is upgradable.

An assignment that is not turned in or is incomplete or well past the deadline is **Unacceptable** and earns a "0".

Participation and Professionalism

This is an "experiential" class. As such, you are expected to be an active participant in your learning. Throughout the semester, classroom activities will involve a variety of presentations, critiques, and discussions. You will be given a number of reading and experiential assignments that will take place both inside of and outside of class. The discussions are to be collaborative and participatory. You should come to each class prepared to offer your thoughts, ideas, and experiences related to the activities of the class.

Participation is based not only on the quantity of your engagement, but in the quality as well. The way you express your thoughts, interact with your fellow classmates and the professor, and conduct yourself during class contributes to the quality of your participation. This includes showing up on time and staying until the class is over.

You will receive a daily grade for Discussion and Participation. The grade is cumulative and will be entered into the gradebook at the middle and end of the semester.

Review the "Participation and Professionalism" Grading Criteria for details on how this grading item is assessed.

Concept Sketchbook and Journal

The concept sketchbook and journal is a tool used by all creative thinkers. Professional designers use them to record their thoughts, ideas, musings, concepts, sketches, and inspiration. As such, it is an extension of their brain.

You are required to purchase a sketchbook that is approximately 9x12. Throughout the semester, you will use the sketchbook to collect inspiration, annotate, draw, write out your

ideas and otherwise record what is going on in your brain related to specific assignments involving visual communication.

You may approach the sketchbook however you wish in terms of adding content. Some people like to write, some like to draw, others like to collect. However, all three of these methods of adding to your sketchbook is expected. In particular, annotation of your drawings and collections allows me to see how you are thinking. Do not neglect this very important part of your creative development. You will receive a grade at mid-semester. This is a progress grade. At least half of the sketchbook should be filled. You will receive another grade at the end of the semester for the complete sketchbook.

The Sketchbook and Journal grade is assessed using the following criteria: Assignment Specifications, Research, Creativity, and Problem Solving. Review the Grading Criteria for information on how each criterion is assessed.

Challenge Assignments

There are two individual challenges that you will take on during the semester. One will be due prior to mid-term, and the other after mid-term and before the final. The challenge is to identify a "pain point," or a problem, in need of a solution. The solution might be a new business. Or it could be a new system that works within a system, such as government or education.

Once the problem is identified, research should be conducted using interviews, observations, and reading to become better acquainted with the problem. Developing empathy will be important during this step.

Next, solutions should be generated using the design concepts shared in class, and multiple prototypes should be developed. These will be recorded in your Creative Journal and Sketchbook.

Next, a solution should be determined and a final prototype created. The prototype might take the form of a flow chart, graph, drawing, 3D model, or any other form that effectively illustrates the solution.

Finally, the problem and solution should be presented to the class. The presentation should take no more than about two minutes. It may or may not require a slide deck.

Each Challenge is assessed using the following criteria: Research, Creativity and Problem Solving, Prototype, and Presentation. Review the Grading Criteria for information on how each criterion is assessed.

Course Projects

During the second class of the semester, all students will present a problem they wish to solve over the semester. Based on the discussion during the class, teams of two or three students will be formed to work on the identified problems. Solutions will be presented in Week 8. Teams will then reform to take on a second set of identified problems. Each student will have the opportunity to lead, or co-lead, a team that tackles a problem that has been identified. The second solutions will be presented during finals week.

Teams will work to research the problem and the people affected by the problem. Next, design principles will be used to create multiple solutions and prototypes of the solutions. A paper will be written that details the research conducted and the solution. The paper be organized as follows:

- Problem statement (brief)
- Research (how it was conducted and what was discovered)
- Actions Taken (the various iterations of the solutions and how the final solution was determined to be the best).
- Conclusion (brief)

The paper should be between 1000 and 2000 words.

Lastly, teams will present their solution and prototype. A slide deck should be used for the presentation and all team members should have a role in presenting.

Each Challenge is assessed using the following criteria: Execution of the Written Paper (Technical Proficiency, Composition, and Craftsmanship), Creativity and Problem Solving, Prototype, and Presentation. Review the Grading Criteria for information on how each criterion is assessed.