

ENDS 106 **DRAFT**
Spring 2010-8:00-11:15-Monday and Wednesday
DESIGN FOUNDATIONS
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SYLLABUS

I. COURSE DESCRIPTION

1. DESIGN FOUNDATIONS. Credit 4.

Visual and functional design principles; development of skills in perception, thinking and craftsmanship as they apply to the formation of two and three-dimensional relationships as influenced by design attitudes and environmental limitations.

II. INTRODUCTION

The purpose of this class is to encourage holistic thinking and develop the individual's potential to self-actualize. There will be a strong emphasis on creativity, environmental psychology and the developing of the individual's self-awareness.

Global awareness of cultures and their habitations will be a central focus of this class. The majority of global growth will occur in Africa, Asia and India over the next 40 years. You must be aware and be able to design within the cultural constraints of each country.

Throughout the semester there will be exercises for progressive relaxation designed to block stress which inhibits creativity. Imagery centering is utilized to exercise visualization.

Students With Special Needs

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring such accommodation, please contact the Office of Support Services for Students with Disabilities in Room 126 of the Student Services Building. The phone number is 845-1637. (V/TTY)

Academic Integrity Statement

An Aggie does not lie, cheat, or steal or tolerate those who do.
All syllabi shall contain a section that states the Aggie Honor Code and refers the student to the Honor Council Rules and Procedures on the web <http://www.tamu.edu/aggiehonor>
<<http://www.tamu.edu/aggiehonor>>

III. COURSE SCHEDULE

INDUSTRIAL DESIGN – PROBLEM #1

Design and build a full-scale piece of furniture, high tech object, or sculpture. Besides fitting your body measurements, your creation should be displayed as a work of art. You

will be able to utilize the shop in Building B and the Architectural Ranch. Constraints- one 4X8 sheet of plywood or equivalent square footage in lumber.

GLOBAL BEHAVIORAL SETTING-PROBLEM #2, a behavioral setting deals with psychological and physiological distances in design, barrier free access and incorporates passive/sustainable energy design in a residential setting.

PORTFOLIO LOGO/CONTAINER/SCULPTURE FOR CD - PROBLEM #3

This project is designed to give you experience visualizing from 2 dimension to 3 dimension.

PORTFOLIO-PROBLEM #4

A portfolio is required for obtaining internships, jobs, and admission to graduate school. Create an electronic portfolio with your life's work and produce a power point presentation of your portfolio for the final. A large part of the portfolio is the packaging for the CD. Be creative. **A FORMER STUDENT IS OFFERING \$250 IN PRIZE MONEY FOR THE BEST THREE PORTFOLIOS.** You will be keeping a daily journal of your ideas in both written and graphic form. Selected pages from your journal will be included in your portfolio.

By the end of the semester you should have considerably more control over your design and problem solving abilities. Architecture is the design of the environment for the flow of life. Architecture orchestrates culture, environment, materials and art to achieve a harmonious whole. Your semester will be focused on improving the quality of life of your clients by synchronizing with and respecting the values of the planet and its inhabitants.

IV. PERFORMANCE EVALUATION

GRADING SYSTEM

Grades will be based 80% on class assignments and 20% on class participation. You are expected to constructively criticize your peers. The 20% class participation is your effectiveness as a teacher of your classmates.

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| A (Excellent) | Student's work is of exceptional quality and the solutions to problems show a depth of understanding of the program requirements. Project is fully developed and presented well both orally and graphically. Student has developed a strong and appropriate concept which clearly enhances the overall solution. The full potential of the problem has been realized and demonstrated. |
| B (Good) | Student's work shows above average understanding and clear potential. All program requirements are fulfilled and clearly and concisely presented. |
| C (Fair) | Student's work meets minimum objectives of course and solves major problem requirements. Work shows normal understanding and effort. Quality of project as well as the development of knowledge and skills is average. |
| D (Poor) | Student's work shows limited understanding and/or effort. Minimum problem requirements have not been met. Quality of project or performance as well as development of knowledge and skills is below average. |

F (Failure) Student's work is unresolved, incomplete and/or unclear. Minimum course objectives or project requirements are not met, and student's work shows lack of understanding and/or effort. Quality of project or performance is not acceptable.

Instructor's evaluation of student's interest, motivation, attendance, proficiency and overall development or improvement during the semester will be taken into consideration in determining the final course grade.

CLASS ATTENDANCE

1. Attendance is required. You learn more from your peers than from me.
2. Every third unexcused absence will result in a letter grade drop. If you come in late, it is your responsibility to correct an absence from my roll book.
3. All assignments are due at the beginning of class.
4. There is a letter grade drop for each day a project is late.
5. **Check your TAMU email and FaceBook for updates**

V. RECOMMENDED EQUIPMENT FOR MAJOR Journal-you must keep a visual and written record of your design process Besides the requirements of your Ends 115 instructor, the following will be required:

Canary paper - 12" - 18" roll
8-25' foot scale
Exacto holder and #11 blades
glue or glue gun
White plastic eraser
Needle nose pliers with wire cutter
18" metal straight edge w/cork bottom
2 G Memory/flash drive

VI. REFERENCES

"Conceptual Blockbusting", Adams
"Personal Space," Sommer
Financial Times
Wall Street Journal
"The World is Flat", Friedman

VII. COST i

Approximate cost of materials used during the semester will vary from \$100.00 to 250.00. The cost of materials can vary considerable from chip board to museum board.

PROBLEM #1

INDUSTRIAL DESIGN PROJECT:

The piece will be displayed as an early example of stellar design promise in a retrospect of your work in the year 2050 at the Museum of Modern Art in New York. This project should be inventive and eloquent. Utilize friction and natural connections when possible and avoid screws and nails. Your designs should reflect human dimensions and can be perceived as a work of art when not in human use. (Free standing, hanging, divider, etc.) The manikin you are assigned will help you model your design to fit human dimensions. You have the use of the manikin for the semester and you will turn it in with your portfolio at the end of the semester. You can utilize your industrial design for your behavior settings by reducing the computer drawing scale to 1/4"=1'-0". Constraints-one 4X8 sheet of plywood or equivalent square footage in lumber. . Wood is predicted to increase in price by 200% by 2020 so you must utilize the entire 4X8 sheet to make as many objects as possible. Since you will be practicing globally, the piece should be able to be taken apart and shipped flat as volume shipping costs are very high for overseas destinations. If you can fit the piece in the largest suitcase allowed by the airlines, it can be shipped for free. If you attempt a larger piece, it will cost around \$500 or more to ship as an over sized addition piece of luggage.

PROBLEM #2

DESIGN AND BUILD TWO SUSTAINABLE BEHAVIORAL SETTINGS IN COLLEGE STATION FOR A SINGLE CHINESE LADY AND A CHINESE FAMILY OF FOUR.

Dr. Weiling He and Dr. Wei Yan (your Ends 116 professor) will be your clients. They will give you the program for their particular requirements. You must question them about their needs and your individual interpretation will define you as a designer. You will each get a Feng Shui book to guide you in your designs. Since more buildings will be built in China over the next 40 years than anyplace on the globe, your firm will be probably be practicing in China. A knowledge of Feng Shui could be required in any of the Chinese financed buildings. Can the dwelling produce its own energy? Have you used sustainable materials? Is the dwelling livable without air conditioning? You must research energy systems that will produce energy for the building. Research! Every commission you take will require you to research climate, sun angles, wind, culture, ergonomics and materials. In the next 40 years, population will increase by 50%. If the world began building 40 cities of 2 million persons a year for the next 40 years, it would meet the projected population requirements. You must be cognizant of global needs and issues.

General Guidelines for Behavioral Settings:

Create social behavioral settings for interior and exterior groupings.

- Each space is to be oriented to take the best advantage of the wind and sun for College Station. Research the location.
- Each space must utilize natural ventilation.
- The East or West sun will enter your spaces **only** by indirect means.
- When should the sun be blocked from direct entry into your space?
- Your house must be oriented on North-South/East-West axis.

- You must be able to perform a work task in any room in the environment during daylight hours without turning on a light.
- You should be able to navigate your designed space by moon or starlight.
- The wind **must** flow over the human body in your behavioral settings.

- Each space you design will have an outside space that is equally thought out for psychological and climatic conditions.
- Each space you design must be a very special, supportive human scale space that is innovative and unique.
- Each behavioral setting must also read as a creative work of art.
- Have you created variety for the user in all five senses?

Specific Guidelines for Functional Spaces:

- What is the perception of a gathering space for the family?
- How does the food preparation area relate to the dining and living areas?
- Does the design of the sleeping quarters vary depending on the culture?
- How do bathing and toilet facilities vary between cultures?
What are the minimum space requirements you can design to make the inhabitants comfortable?
- The private exterior spaces will have a minimum of one behavioral setting each.
If you design to the aforementioned criteria, your clients should be able to live in the spaces with minimum energy usage. You must research and design into the building elements materials & human scale innovations that will give your design a maximum sustainable competitive advantage to other designs. By 2020 the cost of energy will be five times the price of energy in 2010 and to buy electricity for the dwelling may cost more than the payments for the dwelling.

Utilize a cistern(s) to catch rainwater from your roof to flush toilets and water container plants, green roofs and mist the roof during the summer. Can it be a design element? Water will also be as costly as electricity in 2025. Calculate how much cistern storage would be required for the dwellings. A green roof could grow food for the occupants. Food is projected to increase in cost by 250% by 2020. Grey water could be utilized to water plant material either on the roof or in containers.

Assume one client is in a wheelchair or on crutches and must be able to access the public areas and one bedroom; you will design interior and exterior spaces for barrier free living. Begin thinking cradle to grave in everything you design.

[Reference: Go to <http://www.easylivinghometexas.org>]

Federal Guidelines book

Added plantings within the behavioral settings will be in planters, pots or on the roof. Research Xeriscaping. The grounds will be native plants to conserve water.

[Reference: Go to <http://aggie-horticulture.tamu.edu/extension/xeriscape/xeriscape.html>]

There will be equal grades given for creativity, design, craftsmanship and function/user needs.

Check out the laser cutter in the shop! **Use it for your model.**

PROBLEM #3 –

PORTFOLIO CONTAINER/SCULPTURE FOR CD - PROBLEM #3

The major requirement for this container is the ability to be a receptacle for your portfolio that is recorded on a CD. It can be of any material and must be imaginative, creative and intriguing to your prospective client or employer. Somewhere on the inside or outside of the container, you will have your logo displayed. How can you design the container/sculpture so that it is a stand-alone work of art? What unique design would intrigue a prospective client or employer to open it? To keep it?

PURPOSE:

1. To develop an awareness and comprehension of unified shapes and spaces existing in two dimensional compositions and three-dimensional objects in space, and apply that ability to replicate that unity proportionally.
2. To develop an awareness and comprehension of the relationship of sight and touch in drawing and three-dimensional modeling.
3. To develop a high regard towards craftsmanship and quality of effort.
4. To develop an awareness of the ability to see and think spatially.
5. To develop manual skills appropriate to communicate design ideas.
6. An architect designs the formwork to contain and define the space for human use.

DUE:

- 20 Jan** Write on ½ sheet of paper 10 things that define your personality and at least 2 of those items must be humorous (actually they could all be humorous). Compose a group of three people and have a mix of genders in the group. Circulate with your list through the class until you find two other people who seem to be compatible. Measure yourself with the help of two classmates. Include front and side views, sitting, reaching and bending on 8 1/2 x 11 format. Measure everyone in your group. Do a continuous line drawing of each person's head in your group and share the drawings. Geoffrey will be taking portrait shots for FaceBook. Shop clearance class begins at 10:30 AM.
- 25 Jan** Join the Ends 106 Facebook group within the class. Use a photo and scan one or more of the line drawings and your photo from Geoffrey for the initial images in the FaceBook group. Have a board on your desk with the name on the upper left hand side. Have a lock on your cabinet. **Dr. Wei Yan & Dr. Wei Yan will talk about what requirements they need in their behavioral settings. What questions will you ask them?** Create scanned copies of your measured self to be ready for portfolio inclusion.
- 27 Jan** Have a minimum of ten different sketch ideas of your industrial design project. Turn in a personal resume. Include items that might intrigue a prospective employer to your multifaceted talents and abilities. Why would an employer or client remember your resume? Discuss among your group the requirements of the clients for their behavioral settings.
- 1 Feb** **Develop the sketches of your industrial design project and have scaled 2"=1'-0" models of three different designs. Utilize your manikin. You can utilize the laser cutter in the shop if your pieces are flat.**

- 3 Feb** **Bring three different full scale models of your portfolio container/sculpture ideas. Is your logo incorporated?**
- 8 Feb** **Review your industrial designs and refine them. What furniture is required for your behavioral settings?
Report to the rest of the class on your findings.**
- 10 Feb** Graphically illustrate a schematic preliminary of the behavioral setting designs and include furniture at 1/4"=1'-0". Show a section through each unit to indicate height. How have you taken into consideration natural light in your designs. Have you provided quality spaces for each unit? What creative designs have you incorporated in your units? The units should be more than just the minimum requirements. Each group will report on how their designs will produce energy for the behavioral settings.
- 15 Feb** 1/4"=1'0" schematic of your behavioral setting designs including exterior spaces. Your group should research all the following areas together and help each other's designs to meet the criteria.
1. Pick one of the projects in your group to show orientation of prevailing wind and how your house can be passively cooled.
2. Pick one of the projects of your group to demonstrate how your research for energy systems is incorporated into their design.
3. Pick another project and show how sun is reflected into the exterior and interior spaces in plan and section. Remember-only indirect sunlight is allowed into your behavioral setting except during the winter months.
- 17 Feb** **Refine your behavioral setting and show all furniture. Continue to refine your behavioral setting and bring in a schematic model-1/4" scale for each apartment.**
- 22 Feb** **Continue to refine your behavioral settings and display how your behavioral settings work together. Your models could be on display at the United Nations to show examples of innovative design from sustainable minded designers.**
- 24 Feb** Start building your final behavior setting model utilizing the laser cutter. Geoffrey will give you instructions on usage of the laser cutter.
- 1 March** **Continue to refine your behavioral settings. Show an updated refined scale model of your industrial designs.**
- 3 March** Create the file for the laser cutter for your behavioral setting if you have not already done so and utilize the shop. If you wait too long, you will be competing with all the other classes needing to use the cutter.
- 8 March** Build your behavioral setting model.
- 10 March** Build your behavioral setting model.
- 22 March** FINAL MODEL-1/4" finished model of your behavioral settings-including scale wheelchair & designed furniture. Review.

- 24 March **Redesign your industrial design/sculpture and have three new refined models. Show the class how many ways your industrial design project fits your human measurements and how you will be able to utilize it as a work of art. Will it be displayed on the floor, wall, ceiling or hanging in space. Is it a free standing sculpture? How is it a transformer piece?**
- 29 March **Bring in three logo designs. They should be 2-d non-objective works of art LOGO that will be used on the covers of the Smithsonian and Opera News Magazines. A selected logo will be used somewhere on your sculpted container for your portfolio. Whenever anyone sees that logo, they will think of you. Create an artsy photo of yourself that will be used on the poster to advertise the exhibition of your life's work at the museum. The LOGO should not be recognized letters or anything to do with Aggie symbols or your initials. Utilize Geoffrey's expertise in logo & graphic design.**
- 31 March Refine your logo. How will you utilize it on your sculptured portfolio container? Is your portfolio also your logo? Finalize your design on your industrial design project.
- 5 April **Finalize your design on your industrial design project. Begin construction on your industrial design projects if you have not already done so.**
- 7 April **Work on your industrial design projects.**
- 12 April **Finalize your logo.** Geoffrey will give you lectures on logo/portfolio design.
- 14 April **Work on your industrial design projects.**
- 19 April Preliminary layout of your portfolio. Work in the shop/ranch.
- 21 April Document your progress of all your projects with a digital camera. The photos will be utilized in your portfolio.
- 26 April Geoffrey will help you photograph your work in room 124 of building A and show you how to compose your photographs outside.
- 28 April Bring your portfolio container and behavioral settings to the photo lab to document your work for your portfolio if you have not already done so.
- 3 May **Present your industrial design projects**
- 10 May **Final** Presentation of portfolios between 8-10
***You must turn in a CD of your portfolio on power point, a web site address or a hard copy for the school record. It should have every assignment in this class. You can add any work from previous and other classes. You can include stellar private artwork. Have your portfolio container to display as you present your digital portfolio. Be sure you check out all that is required for the portfolio. \$250 prize money will be given to the top three portfolios thanks to two former students. Your presentation must be able to open on Geoffrey's computer. He will copy**

all CD portfolios on one disc to make sure the donors of the prize monies will be able to view all of the portfolios.

THE USE OF SPRAY PAINT OR OTHER SURFACE-ALTERING MATERIALS IS NOT PERMITTED IN THE LANGFORD COMPLEX, EXCEPT IN DESIGNATED ZONES. THERE IS A NEW SPRAY BOOTH ON THE FIRST FLOOR FOR SPRAY PAINTING. IT IS LOCATED IN THE SUNKEN COURTYARD OF BUILDING A INSIDE THE CONCRETE WALLED UNIT. STUDENTS WHO VIOLATE THIS RULE WILL BE LIABLE FOR THE EXPENSES ASSOCIATED WITH REPAIRING DAMAGED BUILDING FINISHES AND SURFACES.

AT THE END OF THE SEMESTER, YOUR AREA MUST BE CLEAN OF ALL TRASH OTHERWISE; YOUR GRADE IN THE CLASS WILL DROP A LETTER GRADE.

DEPARTMENT OF ARCHITECTURE / TEXAS A&M UNIVERSITY

The Studio Culture Statement is the official policy of the Department of Architecture at Texas A&M University and will be published widely and used to guide design studio pedagogy.

STUDIO CULTURE AT TEXAS A&M UNIVERSITY: A POLICY STATEMENT

All students, faculty, administration and staff of the Department of Architecture at Texas A&M University are dedicated to the principle that the Design Studio is the central component of an effective education in architecture.

They are equally dedicated to the belief that students and faculty must lead balanced lives and use time wisely, including time outside the design studio, to gain from all aspects of a university education and world experiences.

They also believe that design is the integration of many parts, that process is as important as product, and that the act of design and of professional practice is inherently interdisciplinary, requiring active and respectful collaboration with others.

The Operational Procedures are intended to provide a framework for the successful development of an effective Studio Culture, both as a part of the academic program and as a model for future professional practice.

OPERATIONAL PROCEDURES

Students and faculty in every design studio will embody the fundamental values of optimism, respect, sharing, engagement, and innovation.

Every design studio will therefore encourage the rigorous exploration of ideas, diverse viewpoints, and the integration of all aspects of architecture (practical, theoretical, scientific, spiritual, and artistic), by providing a safe and supportive environment for thoughtful innovation.

Every design studio will increase skills in professional communication, through drawing, modeling, writing and speaking.

Every design studio will, as part of the syllabus introduced at the start of each class, include a clear statement on time management, and recognition of the critical importance of academic and personal growth, inside and outside the studio environment. As such it will be expected that faculty members and students devote quality time to studio activities, while respecting the need to attend to the broad spectrum of the academic life.

Every design studio will establish opportunities for timely and effective review of both process and products. Studio reviews will include student and faculty peer review. Where external reviewers are introduced, the design studio instructor will ensure that the visitors are aware of the Studio Culture Statement and recognize

that the design critique is an integral part of the learning experience. The design studio will be recognized as place for open communication and movement, while respecting the needs of others, and of the facilities.

The Dissemination and Oversight Procedures are intended to ensure that all students, and all faculty members, whether assigned to design studios or not, are aware of the Studio Culture Policy and work together productively to maximize the value of this component of the departmental pedagogy. Oversight suggests peer-review and mentoring at all levels, and presumes a positive role for those charged with administration, including the exploration of innovative teaching approaches, and opportunities to demonstrate collaboration both within the academy, with the design professions, and with the society we serve.

DISSEMINATION AND OVERSIGHT PROCEDURES

The Studio Culture statement shall appear on all studio syllabi, with a verbal introduction and personal philosophy statement provided by individual design faculty member at the start of each semester.

The statement will also be posted on the department and AIAS websites. The Department Design Committee will initiate a formal discussion on the statement at the start of each academic year, with express purpose of ensuring that all new and returning faculty members understand and embrace its philosophies, and understand its opportunities.

The AIAS and the administration of the Department will ensure regular and open communication on all aspect of the academic program, including Studio Culture.

The Head of Department will include consideration of Studio Culture as part of the Annual Review of faculty members. This may suggest the use of peer review, encouragement of visiting critics, and recognition that productive review of the process and outcomes of design is not the exclusive domain of those assigned to teach design studios.