## Syllabus

### Course Title
Concept Sketching and Rendering

### Course Designator
PDES

### Course Number
3702/5702

### Semester and Year
Fall 2015

### Class Meeting Days & Time
Tues 2:30 – 5:15 PM

### Classroom
Bruininks Hall 114

### Number of Credits
3

### Final Exam Date & Time
No Final

### Instructor’s Information
- **Name**: Cory Schaffhausen, Ph.D.
- **TAs**: Joey Ivers, Scott Melanson, Stephanie Wang
- **Office Location**: Rapson Hall, Room 67
- **Office Phone**: 612-624-4321
- **Email**: schaf390@umn.edu
- **Office Hours**: Tuesday 10-12 am

### Course Information and Instructor’s Expectations

**Course Description:**
This class is an introduction to sketching and marker rendering for communication of conceptual product design. There are no pre-requisites and you do not need to know how to draw to take this class. Emphasis is placed on free-hand 2-point perspective. Each week during lecture, students learn a different toolset and apply it to bi-weekly drawing assignments. Lecture notes and assignment details will be posted online here: [http://product.design.umn.edu/courses/pdes3702/index.html](http://product.design.umn.edu/courses/pdes3702/index.html)

By the end of the semester, students will:
1. learn to represent three-dimensional product-like objects (both real and conceptual) on 2D medium beginning with basic forms
2. become more comfortable making free-hand sketches of concepts for both quick communication and formal presentation.
3. learn the basics of shading, shadows, and highlights on three-dimensional object drawings

### Course Prerequisites:
None

### Required and Recommended Materials:

**Required Readings**

**Recommended Readings**
**Required Materials**
1-2 fine line black pens (not gel ink) – needed on the first day
1 marker set (Prismacolor cool grey, chisel tip not brush tip)
1 colored Prismacolor marker (any color)
1-2 black fiber-tipped bullet-point marker pen (Pentel Sign Pen, Staedtler Permanent compact)
Prismacolor colored pencils (black and white)
1 pencil sharpener
1 pad of marker paper 9x12 (brands discussed in class, must be able to see through)
10 sheets Canson Mi-Teintes Paper (colors: ivy, tobacco, burgundy or steel grey)
1 ream of copy paper (some assignments require legal paper size)

**Established Course Objectives:**
By the end of the semester, students will:
1. learn to represent three-dimensional product-like objects (both real and conceptual) on 2D medium beginning with basic forms
2. become more comfortable making free-hand sketches of concepts for both quick communication and formal presentation
3. learn the basics of shading, shadows, and highlights on three-dimensional object drawings

**Student Learning Outcomes following course completion:** *(must identify from the list at least one outcome and how it relates to this course how it will be addressed and how it will be assessed, [http://www.slo.umn.edu/](http://www.slo.umn.edu/))*

**Communicating effectively**
Students will learn to quickly communicate their ideas with free hand sketches. Students will learn techniques for conveying 3-dimensional concepts on 2-d medium. Students will practice presenting and critiquing conceptual designs.

**Release of Work Statement:**
Students understand that enrollment in this course grants consent for their work to be selected for inclusion in college or departmental publications (online or in print). Your instructor may select to use your work to represent her/his skills as an instructor in a teaching portfolio (online or in print).

**Attendance:**
Attendance is crucial and mandatory as every lecture builds on the last. The content is also hands-on and so it is not possible to make up the content from reading notes/book. In the past, students who have missed a lecture have had a difficult time keeping up with the material. Only in certain circumstances as described in the Policies section will an absence or tardy not affect the grade. If you are sick, you must provide a letter. One unexcused missed lecture will result in a full letter grade deduction and two missed lectures will be considered an F. Excused absences will not affect the grade (see policy section). Tardiness will affect your class participation grade. Attending the first day is mandatory.

**Workload:**
Students are expected to spend 6 hours/week outside of class time drawing and working on assignments.

**Grading Structure:**
There are 6 assignments. The first 5 assignments are graded out of 10 points. The 6th assignment is graded out of 20 points. Most assignments are to be submitted on 1 sheet of paper. Class participation grades are based on both attendance and quality of in-class activity.

70% - Weekly Assignments
30% - Class Participation
http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html

Accepting and Returning Assignments:
Assignments are explained at the end of lecture on Tuesday. They are due at the beginning of lecture after two weeks. Graded assignments will be returned one week later with feedback written on attached tracing paper.

Grading Late Work:
Unless resulting from an excused absence, late assignments will receive a letter grade deduction for every day late.

Policy for Missed Exams:
No Exams

Make Up Work for Legitimate Absences:
Students will have an extra week to complete assignments missed from legitimate absences.
http://www.policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html

Extra Credit Options:
None

Schedule and Assignments:

<table>
<thead>
<tr>
<th>Week 1 – Tues, Sept 8</th>
<th>Basic Shapes in 2-Point Perspective</th>
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<tbody>
<tr>
<td>Mental models, basic shapes, 2-point perspective, cubes, cylinders, circles on cubes</td>
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<th>Week 2 – Tues, Sept 15</th>
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<td>Doubling a cube, dividing a surface, cube on cube, multiple vanishing points, rotating a cube, roof</td>
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**Assignment 1 – Dice – Due Tues, Sept 22:**
On a sheet of 8.5x11 draw 3 to 5 dice in 2-point perspective. The dice can have one dot per face. Do not fill in the dots. Keep wide vanishing points so the dice are not distorted.

<table>
<thead>
<tr>
<th>Week 3 – Tues, Sept 22: Modifications to Basic Shapes</th>
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<tr>
<td>Holes in cubes and cylinders, cones, tapered cylinders, partitioned sphere</td>
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<th>Week 4 – Tues, Sept 29</th>
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<td>Blocking, grooves, sectioning a cylinder/tube, chamfers, fillets, rounded corners and edges</td>
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**Assignment 2 – Modified Ikea furniture – Due Tues, Oct 6:**
On a sheet of 8.5x14 draw two variations of one of the provided IKEA furniture drawings. The variations should appear to be in the same space. Do not draw accessories/room décor on top of the furniture.

<table>
<thead>
<tr>
<th>Week 5 – Tues, Oct 6: Combining Basic Shapes</th>
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<tr>
<td>Block+cylinder, sphere directionality, cylinder+sphere</td>
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<tr>
<th>Week 6 – Tues, Oct 13</th>
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<td>Elbows, cylinder intersection, tubing, open lid</td>
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**Assignment 3 – Simple hardware – Due Tues, Oct 20:**
On a sheet of 8.5x11 design and draw a sconce lighting fixture that uses the techniques discussed in class. Do not add background, shadow, shading or lighting effects. It must have at least two distinct parts such as a wall plate, shade, arm, knob, bulb, etc. (e.g. do not simply draw a cube or a cylinder).

<table>
<thead>
<tr>
<th>Week 7 – Tues, Oct 20: Basics of Marker Rendering</th>
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<td>Filling area, shading a cube, cylinder, and sphere, basics of shadows on cube and cylinder</td>
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<tr>
<th>Week 8 – Tues, Oct 27</th>
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<tr>
<td>Shading corners, cones, tapered cylinders, holes, combined shapes, different materials, vignettes</td>
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</table>
Assignment 4 – Traced objects – Due Tues, Nov 3:
Print out a large photo of a small appliance on 8.5x11 paper. Trace it with the fine point of your light grey marker. Add shading, shadow, and highlights. You can reference the photo, but be careful not to include multiple light sources. Submit the original photo with your drawing.

Week 9 – Tues, Nov 3: Orthographic Drawing
Pencil rendering, highlights, shadows

Week 10 – Tues, Nov 10
Drawing from an object

Assignment 5 - Orthographic Sketch – Due Nov 17:
Choose a handheld object with interesting details. Make an orthographic sketch of it on textured colored paper using markers and pencils. On the same page, make a second sketch of a conceptual variation.

Week 11 – Tues, Nov 17: Organic Shapes
Arcs, shapes from arcs (vases, barrels, bowls), lofts, mirroring, organic forms

Week 12 – Tues, Nov 24: – Details and Additional Features for a Drawing
Lettering, labeling, arrows, hands, retesting

(Thanksgiving: November 26-27)
Week 13 – Tues, Dec 1:
Quick rendering, thumbnail sketching, Photoshop demo (Scott Guest Lecture)

Assignment 6 – Concept Design – Due Dec 8:
Industry Project with assembly drawing. Starting with thumbnail sketching, brainstorm a variety of concepts. Choose a concept and create a full rendering with some basic assembly instructions. Scan the drawing and submit it digitally with given aspect ratio. Can use Photoshop to edit and clean, but not to create the drawing. Give the drawing a clear title.

Week 14 – Tues, Dec 8
TBD, Details and Additional Features for a Drawing

Week 15 – Tues, Dec 15
Storyboarding, faces, bodies, context, Assignment 6 review, class reviews, improvement visualizations

And SKETCH OFF Finale – Tues, Dec 15:
Coffman Theatre 7-8:30 pm

University Policies

Personal Electronic Devices in Classroom:
PEDs are not permitted in lecture.
http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html

Use of Class Notes and Materials:
It is not permitted to profit off of the lecture notes from this class. If you want to reference slides or notes, please give credit to the course instructor and the University of Minnesota.
http://policy.umn.edu/Policies/Education/Education/CLASSNOTESSTUDENTS.html

Scholastic Dishonesty and Student Conduct Code:
http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html

Sexual Harassment:
http://policy.umn.edu/hr/sexualharassment

Statement on Climate of Inclusivity:
You are expected to be attentive during class, ask questions if you do not understand something, and to
offer your opinion. You are also expected to listen respectfully to other students and to me when speaking. The University of Minnesota is committed to providing a safe climate for all students, faculty, and staff. All persons shall have equal access to its programs and facilities without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation. Racism, sexism, homophobia, classism, ageism and other forms of bigotry are inappropriate to express in this class. Reports of harassment are taken seriously, and there are individuals and offices available for help.

(or refer to http://regents.umn.edu/sites/regents.umn.edu/files/policies/Equity_Diversity_EQ_AA.pdf)

Academic Freedom and Responsibility:

Availability of Disability and Mental Health Services:

The University of Minnesota is committed to providing all students equal access to learning opportunities. Disability Services (DS) is the campus office that works with students who have disabilities to provide and/or arrange reasonable accommodations.

- Students who have, or think they may have, a disability (e.g. mental health, attentional, learning, vision, hearing, physical or systemic), are invited to contact DS to arrange a confidential discussion at 612-626-1333 (V/TTY) or ds@umn.edu.
- Students registered with DS, who have a letter requesting accommodations, are encouraged to contact the instructor early in the semester to discuss accommodations outlined in their letter.

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. University of Minnesota services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via www.mentalhealth.umn.edu or contact Counseling/Consulting Services at 612-624-3323.

Academic Services:

If you would like additional help, please contact one of the offices listed below.

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<thead>
<tr>
<th>Center for Writing</th>
<th>10 Nicholson Hall, Mpls</th>
<th>612-626-7579</th>
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<tr>
<td>Student Academic Success Service</td>
<td>340 Appleby Hall, Mpls</td>
<td>612-624-3323</td>
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<td>199 Coffey Hall, St. Paul</td>
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