TODAY

- **Awareness Training**
- **Syllabus and class map questions**
  - Overview of course and grading

- **Identifying problems**
- **Deciding if they’re worth solving**
- **Group work**
- **Next up**

EPICS SECTION U

WEEK 1, STUDIO DAY 2

AWARENESS TRAINING

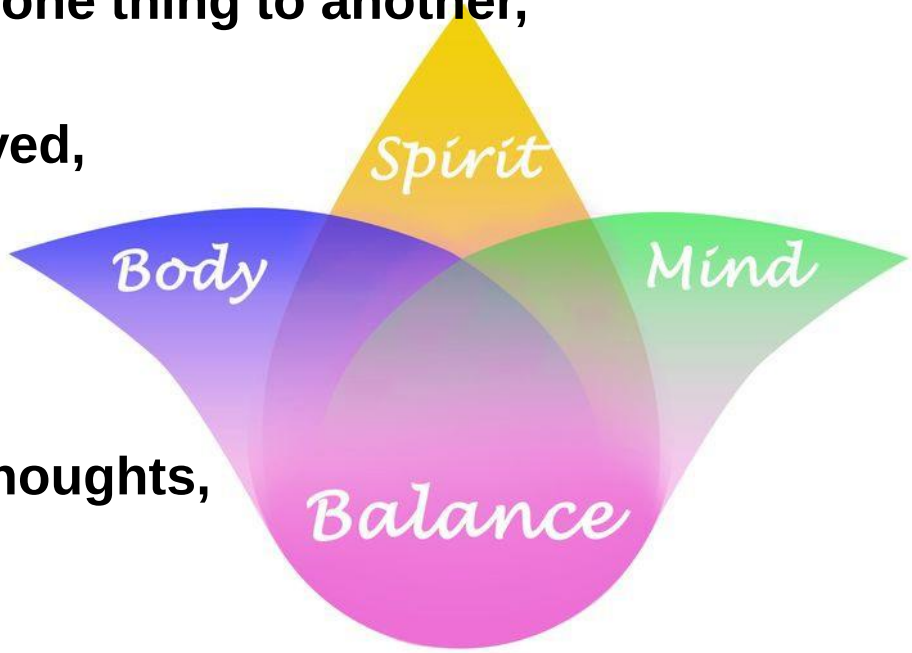
Unless we train it,

the very nature of the mind is to keep on hopping from one thing to another, almost at random.

The mind can be very usefully employed,

but it has to be trained for its job.

-Eknath Easwaran



Since you alone are responsible for your thoughts,

only you can change them.

-Paramahansa Yogananda

Thoughts become things... choose the good ones!

-Mike Dooley

SYLLABUS AND MAP

Questions, Comments, Concerns???

WHAT IS “A” WORK IN EPICS?

Exemplary work or work that exceeds the documented expectations written in the rubrics

Went extra mile *(NOT necessarily more paper)*

Depth of thought (internalization of concepts)

WHAT ABOUT “B” WORK?

Work that meets the documented expectations

You showed up, you followed directions

AND “C” WORK, AND BELOW?

Work that does not meet the documented expectations

Lacks elements of critical thinking or engagement with the given challenge

PLUS / MINUS GRADING

FINAL Grade	Lower Limit	Upper Limit
A	93	100
A-	90	92.99
B+	87	89.99
B	83	86.99
B-	80	82.99
C+	77	79.99
C	73	76.99
C-	70	72.99
D+	67	69.99
D	63	66.99
D-	60	62.99
F	0	59.99

No rounding up, sorry folks!!

…THIS IS IN YOUR SYLLABUS

A WORD ON LATE WORK….

Subtract 40% off grade after it's due

No credit after a week late

<u>Exceptions:</u>

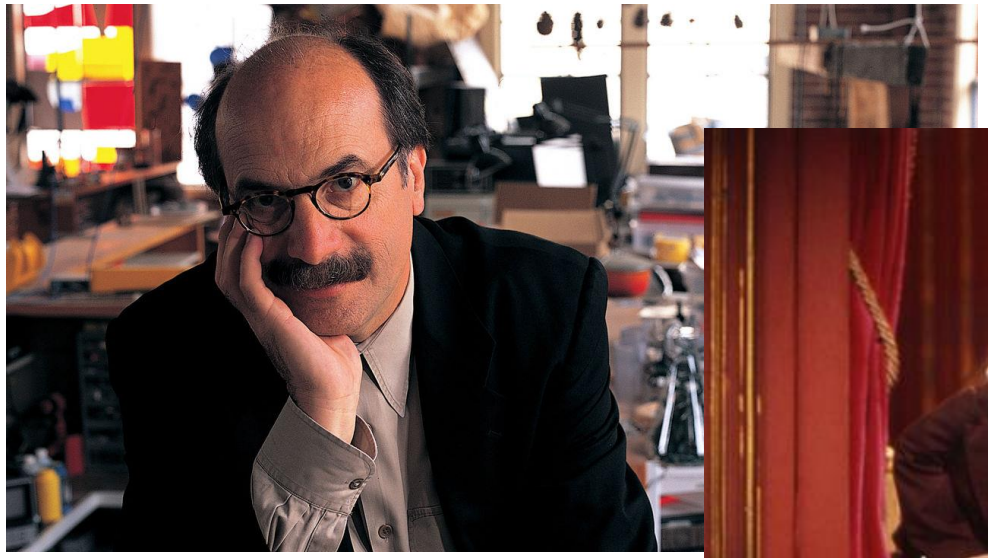
Documented excused absences. ***Discuss with professor before due date.***

WHERE DO PROBLEMS COME FROM?

WEEK 1, STUDIO DAY 2

IDEO VIDEO

Was it just me or…..

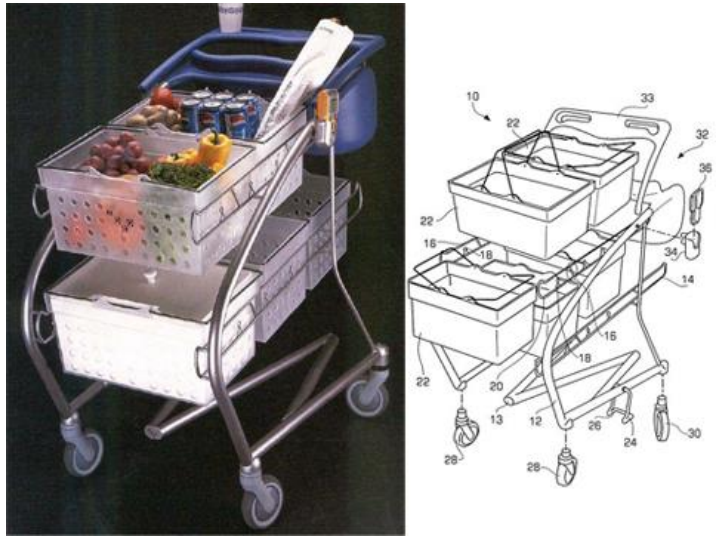


IDEO VIDEO

What stood out as good?

What didn’t you like or prompted questions?

Where did that problem come from?



TODAY'S OBJECTIVE

1- Identify, breakdown, and define open-ended problem(s).

→ 1.1. Infer potential problem-solving opportunities and generate an ongoing list.

PROBLEM IDENTIFICATION

PROMPT: *WHERE DO PROBLEMS COME FROM?*

So who do you mean when you say Somebody?

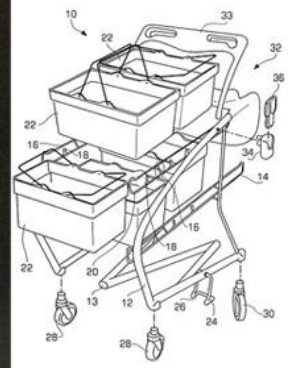
Somebody identifies a problem

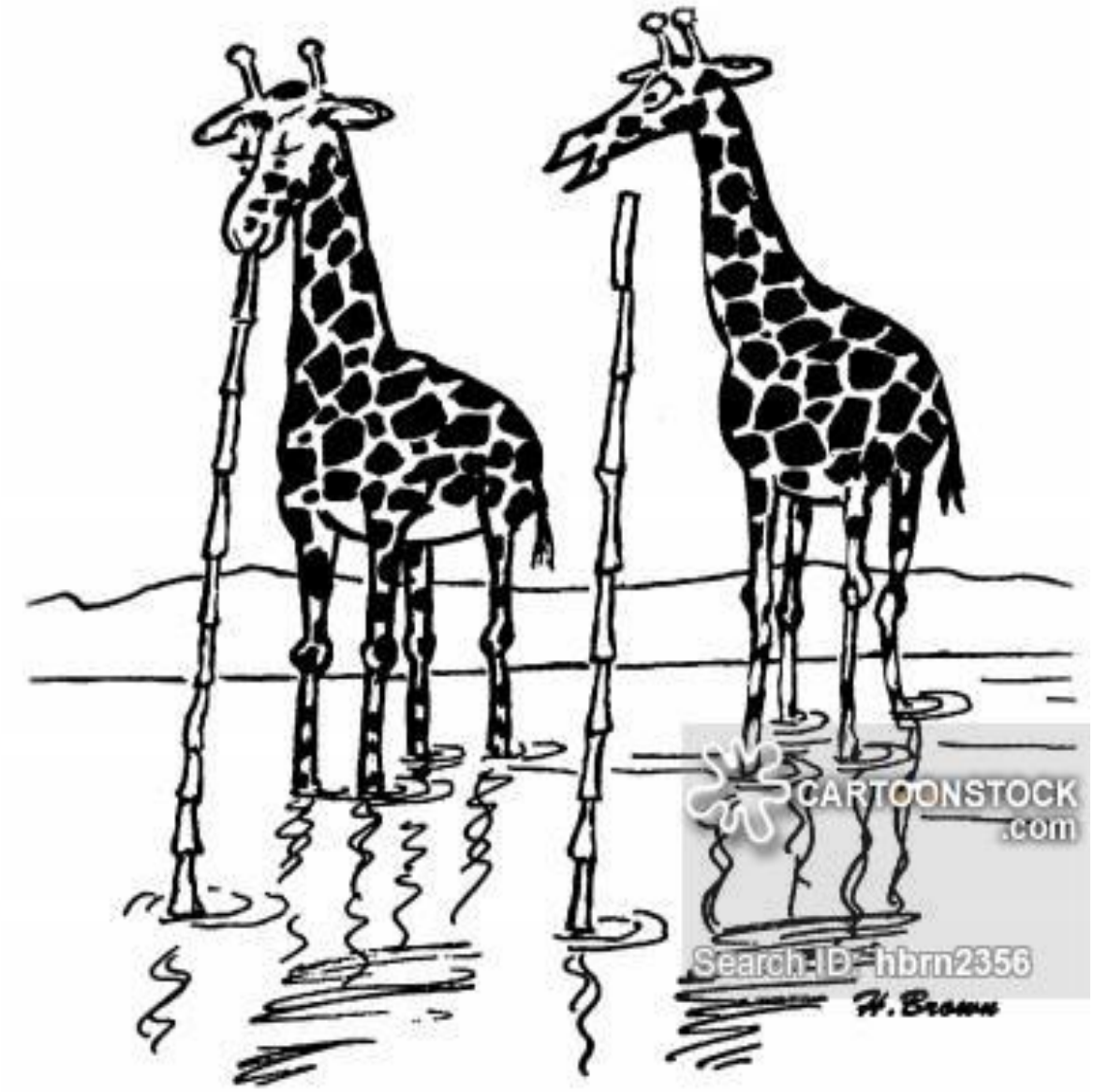
Somebody decides it's worth solving

Then, one of three things happens to it:

- **They forget about it**
- **They decide to solve it themselves** *(DIY, entrepreneurial)*
- **They ask someone to solve it for them**

(this is probably where your job will come from…)





"WHY DIDN'T SOMEONE THINK OF THIS BEFORE NOW?"

Engineers and applied scientists excel at **identifying** lots of problems stand out as **big thinkers.**

Not just big Brains – Big Awareness!

WHY? … BECAUSE WHILE PROBLEM-SOLVING IS IMPORTANT…

…problem identification and problem definition is foundational to problem solving.

If you identify the wrong problem, solving it can create more problems than it solves.

Problem identification requires facilitation, empathy, and critical leadership skills!

MOST OF ALL…
BECAUSE PROBLEM IDENTIFICATION =
OPPORTUNITY IDENTIFICATION

It starts with identifying problems.

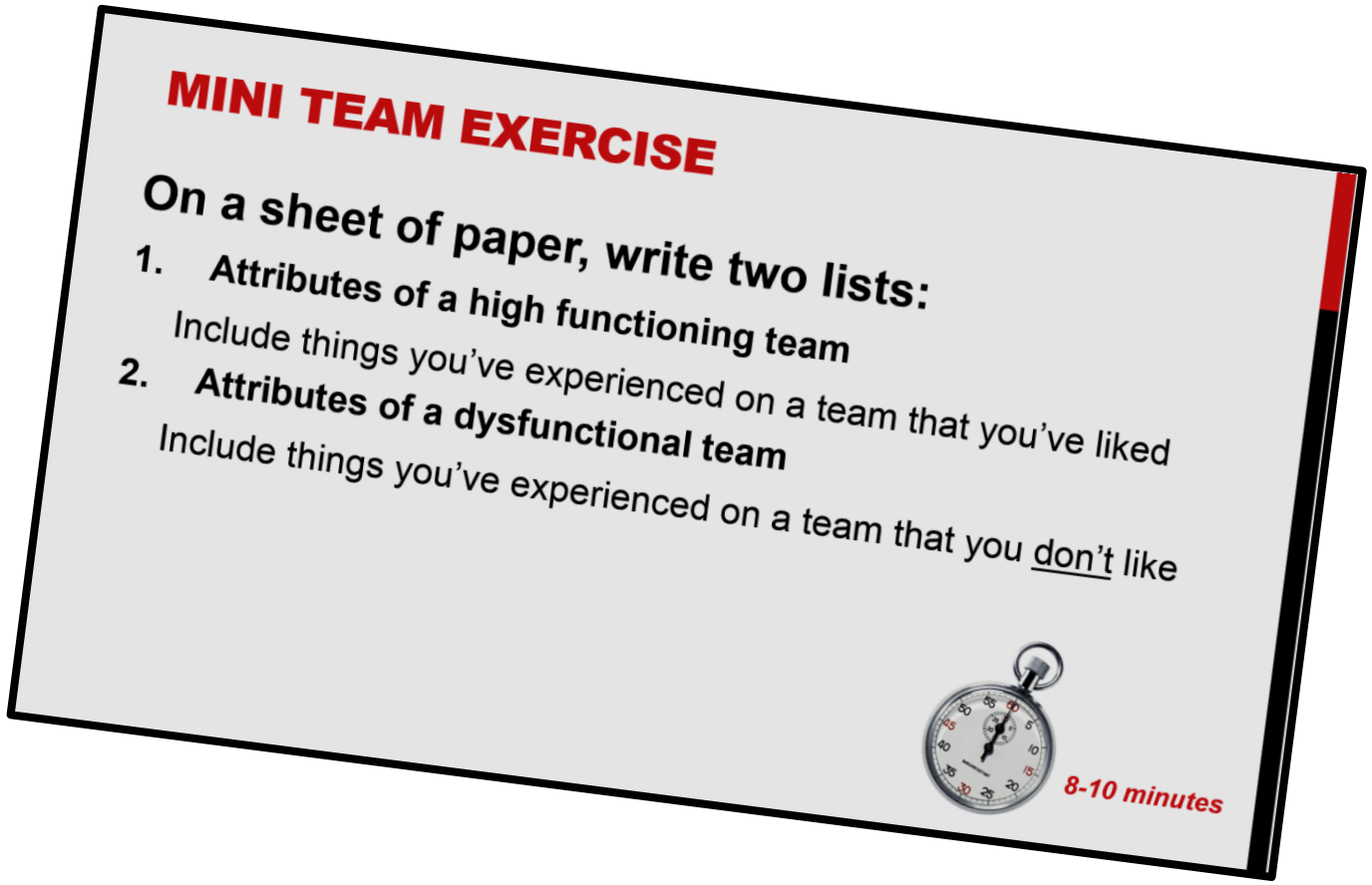
Take out your design log, and write down 10-15 things that have “bugged” you this week.

This is a “bug list. ”

as a matter of fact, it’s your second….

6 minutes

CHECK OUT YOUR PAPER FROM TUESDAY



…The 2 lists of functional team work.

List #2 is a "bug list" about working in a team.

WHAT MAKES AN EXCELLENT BUG LIST?

Quantity

- *Broaden your awareness*
- *The interconnected nature of issues will provide lots of opportunities*

Quality

- *Depth, breadth, variety*

Creativity

- *What if?*
- *Why Not?*

Unique Perspective

- *Seeing things in different ways*
- *Expect other people to solve the problem (think politics)!*

A THIRD BUG LIST

Turn the page and start a new bug list.

Write down 8-12 things that you think are (or might be) problems with FOOD.

…preparation, delivery, storage, disposal, purpose, ANY aspect of food….

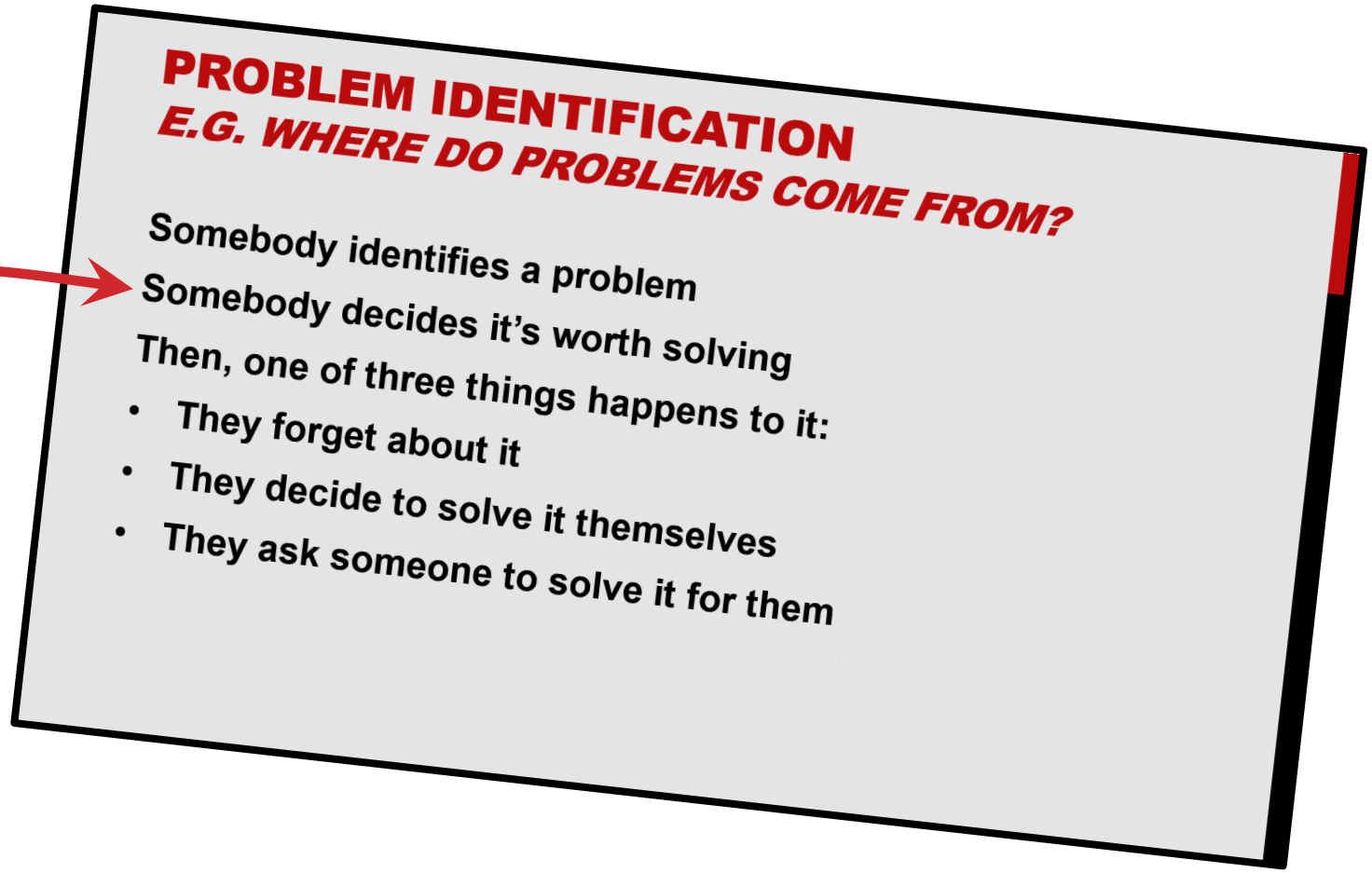
…include: what might be problems from

OTHERS' perspectives?

6 minutes

WHAT HAPPENS TO ALL THESE BUGS?

Remember this?



Who does this second piece?

WELL, IN THIS CLASS, YOU DO. WITH SOME HELP.

Asterisk all those bugs about food that you feel are "worth solving" *(yeah, if you had enough time, money, permission, etc…)*

Mini team exercise:

- Share all asterisked "bugs" about FOOD in your team.
- Of all shared bugs, agree on the most important one, and agree on the description of the problem.

Then, get feedback on this "problem statement" with a different stakeholder (not your team).

10 minutes

ASSIGNMENT FOR NEXT CLASS

With your team, "solve" the FOOD problem you've described, identifying at least three possible solutions.

At the beginning of next class, be prepared to share informally, as a team, the description of your problem, and what you think the best solutions are.

Prepare rough sketches to help describe the problem and the solutions.

EPICS 151 AND COURSE DELIVERABLES

Design EPICS I Weekly Schedule Fall 2016

ate (Mon)	Week	Project Studio 1 (Monday or Tuesday, Engineering Annex)					Project Studio 2 (Wednesday or Thursday, Engineering Annex)					Graphics (Wed, Thu, or Fri, CT129)			
		Due	Pre-Class	Topic	Assigned	rning Objecti	Due	Pre-Class	Topic	Assigned	rning Objecti	Due (SW HW due Tue 11:59 PM on BB)	Topic	Assigned	arning Objectiv
Aug 22	1		Welcome Email	Introduce course, instructor, design log, marshmallow challenge in mini-teams.	IDEO video	3.1		Buy Comp. Notebook IDEO Video	Where do problems come from? Bug lists; "Fix the classroom" exercise.	Buglist, problem definition	1.1		Field & Engineering Sketching: Why hand sketching? Design	Sketchbook (I); Process	7.2, 7.3, 7.5, 8.8
Aug 29	2		Food storage solutions; mini-teams	Part 1: Problem Definition Part 2: System breakdowns Systems Video		1.2, 1.3			Team work part 1 (5 dysfunctions), Team Assignments	watch videos, answer Blackboard	4.1, 4.2, 4.3?	In-class: Process with Lettered	Field & Engineering Sketching: 1-Point Perspective, 2-Point	Perspective & Isometric Drawings (I)	7.1, 8.5
Release Call For Proposals															
Sept 5	3	**Labor Day --no class Mon 5th or Tues 6th**					Design Log Food Desert Reflection &	Read Call for Proposals; Read	Stakeholders, user empathy (in week 2 day 1). Project questions. Interviewing (incoming	Problem Definition;U	2.4, 2.5	In-class: Perspective & Isometric	Field & Engineering Sketching: Obliques, 3rd Angle Orthographic	Dimensioning Packet (I)	7.1, 8.4, 8.8
Sept 12	4			Scholarly and Authoritative sources, and guided research. (Meet @ Arthur Lakes Library)	Team Contract (using first	2.1, 2.2	User Empathy Reflection (I)	Problem Definition	Part 1 - finalize problem definitions. Project questions, work break down structure? tech req'tsPart 2 - Team	Problem Definition Refinement	2.3, 4.1, 4.5		Introduction to SolidWorks: setting up, interface, introduction to	SolidWorks HW 1 (I)	8.1
Sept 19	5	Team Contract (T)	Refined Problem Definition;	Part 1 - Idea generation. Part 2 - Rapid prototyping - how and why. Workshop safety and tour.	Idea log peer feedback; Looks-like	5.3, 3.2			Focusing and decision-making tools.	Project Proposal (T)	5.4	Blackboard: SolidWorks HW 1 (I)	SW: Basic part modeling; design intent, sketching tools, contours.	SW HW 2 (I)	8.9, 8.10
Sept 26	6		360 Review Reading	Part 1- Teamwork part 2, peer reviews, 360 reviews. Part 2 - Presentation skills, and		4.1-5, 6.1			Part 1 - Project Planning Part 2 - why hand graphics	Project Plan (T)	5.1,5.2, 7.1?	BB: SW HW 2 (I)	SW: Features and applied features.	SW HW 3 (I)	8.9, 8.10
Oct 3	7	Looks-Like Prototype (I); Project		eam Presentations: Design Proposal; 4-5 "Looks-like" prototypes: pitch & justify best idea.		6.1, 3.2,		Teammate Evaluation	Part 1 - conduct 360 review Part 2 - confirm chosen design direction		4.1-5, 3.4	BB: SW HW 3 (I)	SW: working with planes, multiple bodies, modeling (equation, variables,	SW HW 4 (I)	8.9, 8.10
Oct 10	8			Part 1- Breaking down a big project: Subsystems and interfaces. Part 2- Works-like prototype: why /	Works-like prototype (T)	1.3, 2.3, 3.3, 3.5		Industrial catastrophe research.	Part 1 - Subsystems approval and direction. Part 2 - Risk assessment	Testing protocols and safety plan	1.3, 3.6	In-class: Dimensioning Packet (I).	Field & Engineering Sketching: Auxiliary Views, Section Views,	Auxiliary, Section Views Packet (I)	8.6, 8.7, 8.8
17-Oct	9	**FALL BREAK -- No class Mon 17th or Tue 18th**					Project Plan (T); Testing Protocol w/		Part 1- Team time - subsystems, testing, prototypes. Part 2- Overview of sushystems	Subsystems Report (I)	3.4	BB: SW HW 4 (I)	SW: sweep, shell, split, revolve, dome, patterns, ribs, holes.	SW HW 5 (I)	8.9, 8.10
Oct 24	10	Prototype Portions Progress (T)		Part 1 - Subsystems Testing Part 2 - Technical writing		3.3, 3.4, 3.5, 6.3			**Stakeholder feedback on works-like prototype (HOW??). Coaching of design iterations**	Stakeholder Feedback	2.5, 3.1, 3.4	BB: SW HW 5 (I)	SW: Assemblies and exploded views; smart fasteners.	SW HW 6 (I)	8.9, 8.10
Oct 31	11	Prototype Portions (T)		Part 1- Prototype testing.		3.3-5	Subsystems Report (I)		TBD Part 1 Embedding graphics, tables.Part 2- validating claims		6.2, 6.3	In-class: Dimensioning Packet	Field & Engineering Sketching: Working Drawings;		7.1-7.5, 8.1-8.9, 8.12
Nov 7	12	Works-Like Prototypes Progress (T)		Part 1- Prototype testing.		3.3-5			Part 1 Overview of final report, tradeshow presentations.	Final Design Report (T); Trade Show	5.6, 6.2, 6.3	BB: SW HW 6 (I)	SW: Drawing sheet, dimensioning, Bill of Materials, design intent.	SW HW 7 (I)	8.6, 8.7, 8.8, 8.11, 8.12
Nov 14	13	Works-Like Prototypes (T)		Part 1- Prototype testing.		3.3-5	Works-Like Prototype Testing		Materials list and cost estimation. Peer review of subsystems.		3.3-5, 5.5	BB: SW HW 7 (I)	SW: Exam review, tips & tricks		8.9, 8.10
Nov 21	14	Works-Like Prototype Testing (T)		Part 1 - Prototype testing (for teams not cleared yet) Part 2- Other catch-up		3.3-5	**THANKSGIVING -- No class Wed 23rd, Thu 24th or Fri 25th**					**No GRAPHICS**			
Nov 28	15	Final Teammate Evaluation (I)		Trade fair presentations and artifacts. Supervised feedback: peer and team.		6.2, 4.4			Course evals. Other course wrap up.		4.4	In-class: Design	SolidWorks Exam. 180-minute CSWA exa		8.9, 8.10
Dec 5	16	Final Design Report (T); Trade Show		Exhibit final solution; judging		6.2, 6.3			*EPICS 151 Final Competition 5-7:30 pm, Location TBD*	cd be Wed nig	6.2	**No GRAPHICS**			
Dec 19-Jan 10		**Exams & Winter Break**													

COMING UP NEXT WEEK!

Sit with your team again.

Project Day 1:

- **ASSIGNMENT: Informal team presentations of FOOD solutions**
- **Defining a problem**
- **Stakeholders of a problem**

Project Day 2:

- **Group work**

Graphics:

- **Field sketching and visualization continues**