TECNOLÓGICO
DE MONTERREY®

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TECNOLÓGICO DE MONTERREY®

Aalto University
Design Factory

Proyecto Integrador 1
Aaltonaut program

Sustainable Product Design

TEC innov action gym
MINDSET MAKERS

Aaltonaut

TEC innov action gym
MINDSET MAKERS

Aaltonaut

Session 04

Product Sustainability

Teams

Configuration:

- 1 Team leader (10 extra points)
- 5 team members
- 7 teams in total
- Follow the rules for team creation given at team creation session.

Team leaders:

Send CV to azael.capetillo@itesm.mx

07 August – 17 August

Teams

Session 20 August:

- Team leaders Pitch
- Team interviews and assembly

Note: Team creation rules explained during the session.

Next steps

Session 27 August:

- Introduction to Aalto platform

Course format:

- Lecture sessions every two weeks.
- Project revisions every two weeks.

i.e. one week for lectures of sustainability, following week for Project revision.

Some skills you need in your teams

- Creativity
- Project management
- Engineering design
- Electrical/Electronic knowledge
- Material design

Course scope

Sustainable Product Design is an interdisciplinary and international course on sustainable product development.

It is organized by **Aaltonaut-program** of **Aalto University** together with **Innovaction GYM** of **TEC de Monterrey**. The course focuses in the sustainability topics which are important in product development process:

- eco-design,
- material efficiency,
- product life cycle and
- user approach.

Course project

Student teams will develop green alternative for products of a company **(BigCo).**

Due to time pressure, the teams will make collaboration with a nominated team from Aalto/TEC. During the process the teams will study the product sustainability improvement from different approaches:

Eco-design guidance, Material choices and efficiency, Product life cycle impacts and User centred approach.

The final outcome is the market launch of a new, more sustainable product.

Teams

Team	Leader	Members				
01	**Mauricio G.**	Luis M.	Julio	Mireya	Carlos S.	
02	**Rebecca S.**	Alberto	David	Andrea	Victor	
03	**Tim**	Rilind	Marcelo	Maruca	Dennis	
04	**Andres A.**	Diego	Lobo	Phillip	Genki	Lizz
05	**Mike M.**	Francisco	Carlos	Evelin	Manuel	Alberto
06	**Arturo M.**	Rodrigo	Delma	Daniel L.	Andreas	Samuel
07	**Diego G.**	Sofia	Regina	Andres	David	

Go into your teams.

Present yourselves and tell what brings you to this course.

Aalto platform

Register into the Aalto platform

https://openlearning.aalto.fi/course/view.php?id=82

10 mins.

Reports	Presentations	Total Points
Eco design guidance	Max 2 slide / 5 min executive presentation on eco design guidance for team's product	**15**
Material list, traffic lights	Report on material content and environmental impact.	**10**
Product sustainability poster	Poster on material efficiency improvement	**10**
Product life cycle description	Product life cycle visualization	**20**
Product life cycle comparison	Defending own greenest product based on Product life cycle comparison. Criticizing opponent team's green product. (Debate)	**15**
User testing	Green product launch (final for all themes)	**30**
		Total 100

Report 01: Eco Design

Task 01 – 1% extra

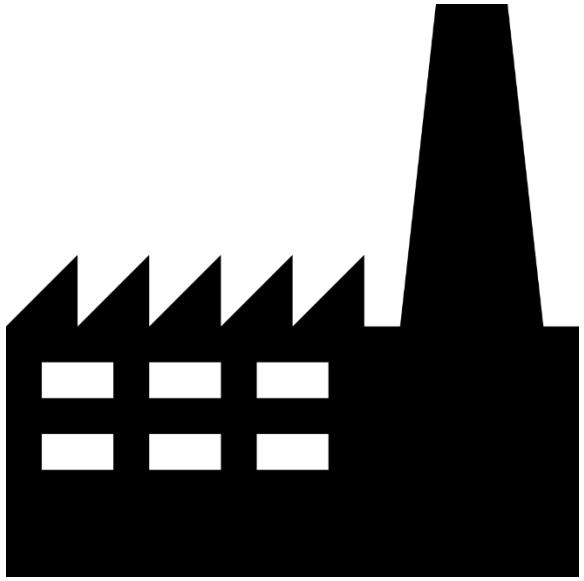
Due: 30 August

Questions for Aalto and TEC course leaders.

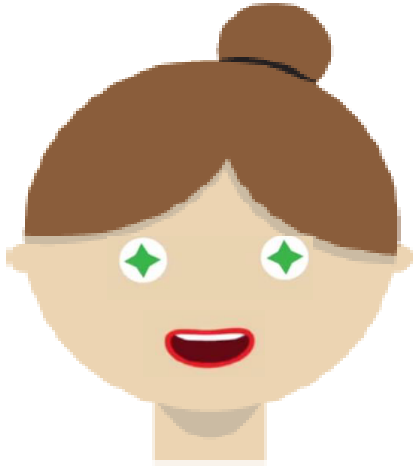
Submit the questions in the Aaltonaut platform forums using the following format:

- Title the posts “TEC Team X: Questions”
- One post per team
- All questions in one post
- Post submitted by team leader

The mission

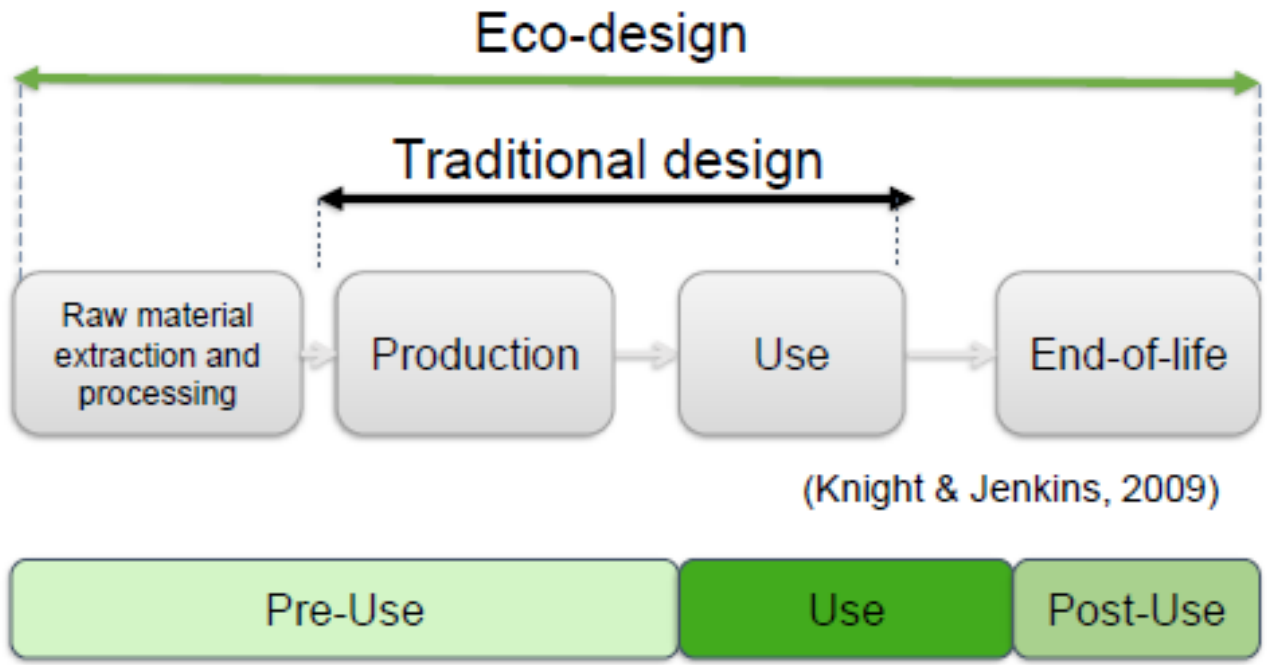


Your team will help help BigCo to develop a green product version.

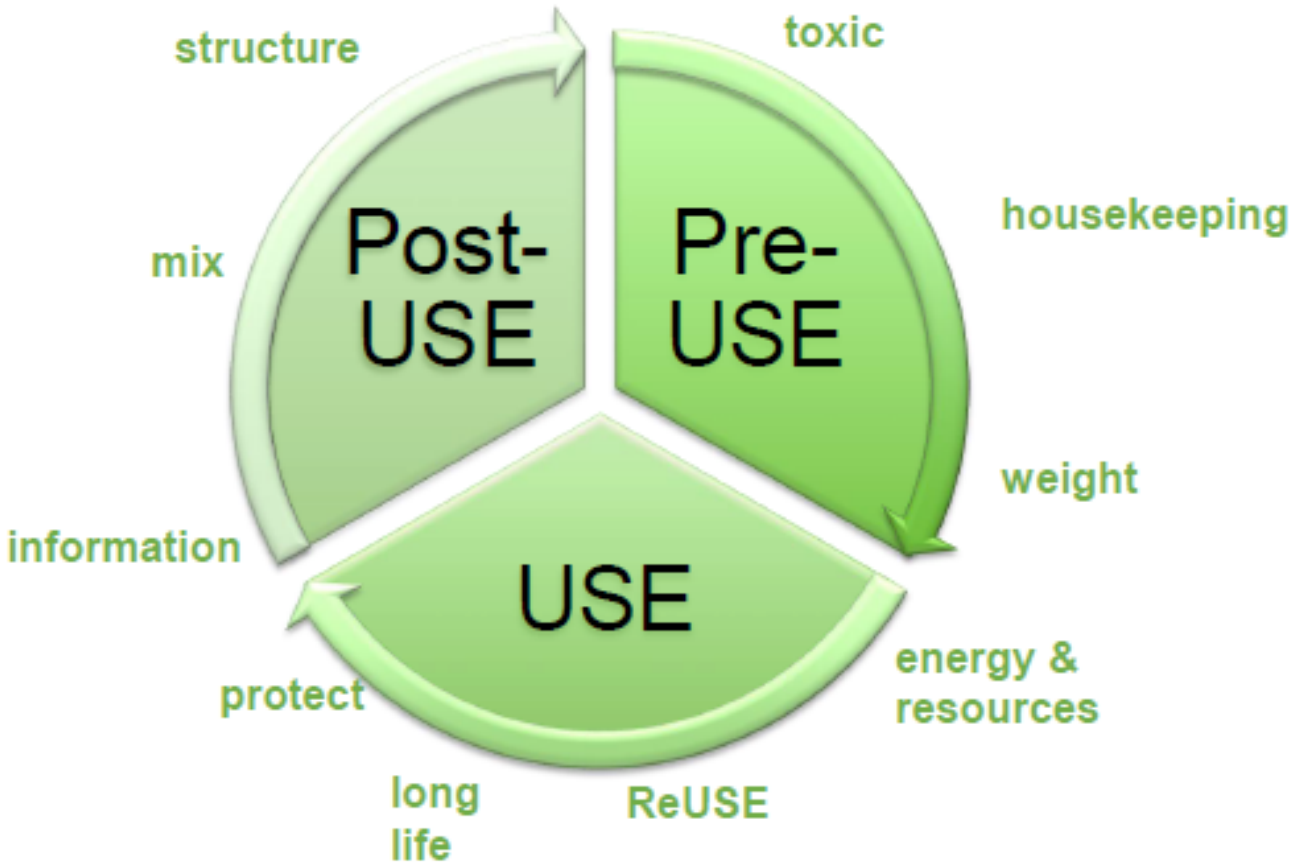


Products

Eco-design in short



The Ten Golden Rules



I. *Do not use toxic substances and utilize closed loops*
II. *Minimize energy and resource consumption in production and transport through improved housekeeping*
III. *Use structural features and high quality materialize to minimize weight....Remember functionality!*

IV. *Minimize energy and resource consumption during use*
V. *Promote repair and upgrading → ReUSE*
VI. *Promote long life*
VII. *Invest in better materials, surface treatments etc. to protect from dirt, corrosion and wear*

VIII. *Access to manuals, labelling etc.*
IX. *Promote simple, recycled not blended materials and no alloys*
X. *Use as few joining elements as possible, incl. screws, adhesives, welding, geometric locking etc.*

Adapted from Luttropp and Lagerstedt 2006

Report 01: Eco Design

Task 02 – 2.5%

Due: 03 September 2018

Mind map on poster

- Guiadance and instructions on product sustainability.
- Information sources.
- Search words.

The mission

Your team will help help BigCo to develop a green product version.

Due to time pressure and to get more improvement ideas, you will collaborate with Aaltonauts in Aalto, Finland.

They'll resume activities on September 12th.

Report 01: Eco Design

Task 03 – 2.5%

Due: 10 September 2018

Brief for your counterpart in Aalto, Finland about the Mexican sustainability guidance regarding to your team's product.

Produce document on Mexican and USA eco design guidance to your European mirror team (10 September).

Submit in Aalto Open Learning platform.

Report 01: Eco Design

Task 04 – 2.5%

Due: 21 September 2018

Brief for your counterpart in Aalto, Finland about the Mexican sustainability guidance regarding to your team's product.

Schedule an on-line meeting with your European mirror team (between 17/9 – 24/9) to share the information gathered. Contact info from Azael Capetillo.

Inform facilitators (Azael, Diana) on your meeting time, and submit meeting minutes in Aalto Open Learning platform.

Report 01: Eco Design

Task 05 – 2.5%

Due: 01 October 2018

Briefing for BigCo CEO on the sustainability guidance in Europe, Mexico and USA.

Executive presentation max 5 min

Report 01: Eco Design

Task 06 – 5%

Due: 25 September 2018

Co-evaluation report.

Tasks summary

Report	Task	Activity	Due date	Delivery	Points
01 Eco Design	1	Questions for Aalto and TEC course leaders.	30 August	Submit questions in Aalto Open Learning platform.	1 extra
	2	Mind map poster.	03 September	Poster for Innovaction.	2.5
	3	Eco design brief for Aalto Finland.	10 September	Report for Aalto mirror team on eco design guidelines in Mexico. Submit meeting minute to Course Leaders.	2.5
	4	Eco design brief for Aalto Finland / Meeting.	21 September	Presentation in class. Max 2 slide/5 min on eco design guidance for team's product.	2.5
	5	Briefing for BigCo CEO on the sustainability guidance in Europe and Mexico.	01 October	Executive presentation Max 5 slides.	2.5
	06	Teamwork co-evaluation	01 October	Co-evaluation on teamwork	5

Evaluation of Outcomes

Criteria	5	0
Analysis (on eco design guidance, material assessment, product life cycle, problem reframing& user).	• Tasks are answered clearly and the reasoning is strong. • Conclusions are based on facts. • Own perspective on topic is visible. • Own figures / tables are used for clarification.	• Task is not accomplished. • Conclusions are not made or they are not based on facts.
Information sources (e.g. books, articles, web pages, expert interviews, standards & regulations).	• Multiple information sources are sought and used. • Source criticism is applied. • References are clearly connected to facts presented.	• The references and information sources are not used. • Opinions presented as facts.
Presenting (on line meetings, executive presentation, material poster, final product launch).	• The audience is taken into account in the presentation. • The presentation is clear and easy to follow.	• The presentation is not given or it is wrongly focused.
Debate (on product life cycle).	• Gives clear and fact based reasoning. • Strong background research	• Doesn't participate in the debate in anyway.

Teamwork

Criteria	5	0
Participation in the team's assignments.	•Does own share and support others' in their work. •Participates actively in sharing the work evenly and efficiently. •Builds up the positive working atmosphere •Presents own ideas. •Builds on others' ideas.	•Doesn't accomplish tasks. Others need to do his/her share. •Lowers the motivation in team. •Doesn't bring in own ideas and strongly criticizes others' ideas.
Communication.	•Communicates proceedings, challenges, information and own whereabouts in a way which helps others in their work. •Corrective feedback is constructive and he/she gives positive feedback on other members. •Takes the given feedback into account .	•Doesn't communicate. •Doesn't give feedback when needed. •Neglects the given feedback .
Time management.	•Work proceeds independently in the schedule given.	•Assignments are not returned

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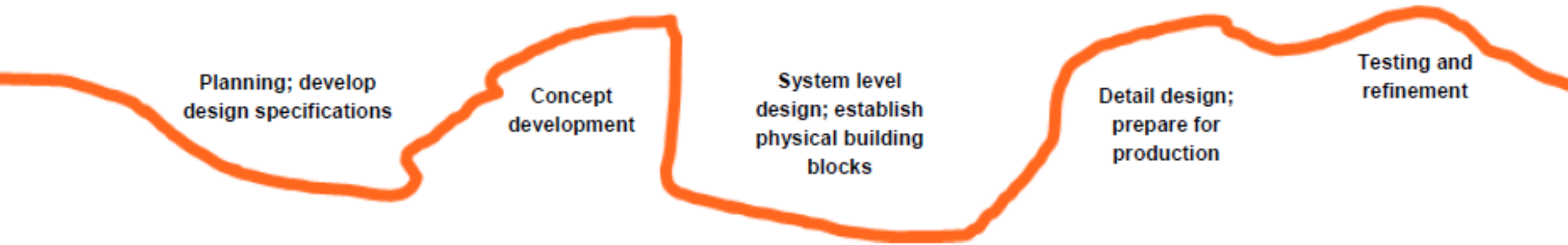
During the course the students will develop their product development expertise in the field of sustainability



Course goals

During the course the students will develop their product development expertise by gaining

knowledge on product life cycle impacts, on material choosing, material efficiency and on guidance towards sustainability.

Course goals

During the course the students will develop their product development expertise by gaining

skills in assessing product's impacts comprehensively and realizing the different perspectives and uncertainties within these assessments.

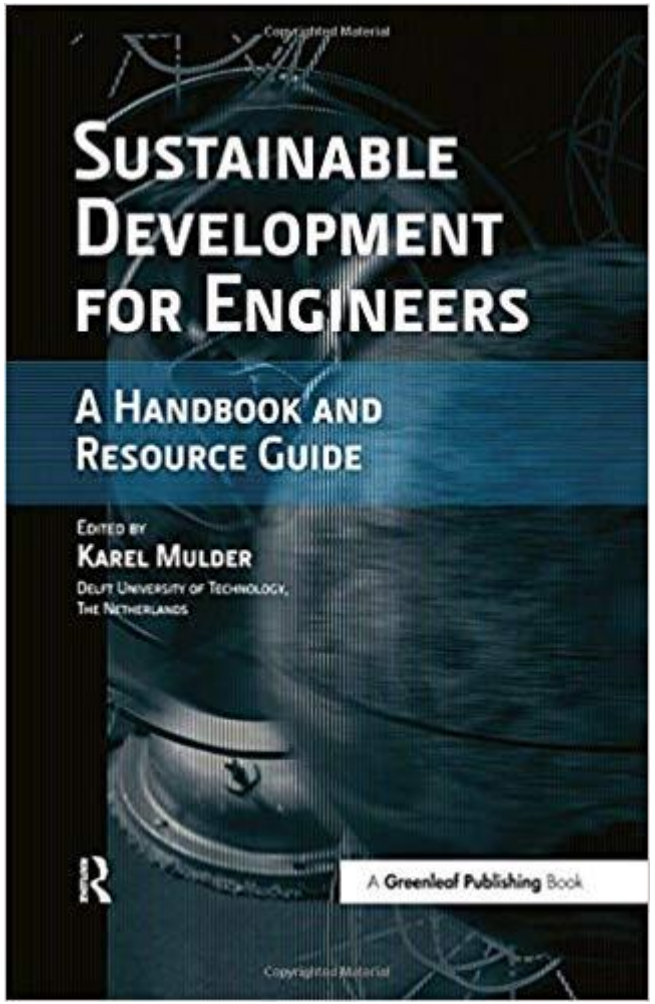
Course goals

During the course the students will develop their product development expertise by gaining

Fact based orientation in sustainability.
*Responsible **attitude** towards own choices as a product developer and as a consumer.*

Debate

Recommended lectures



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