SUSTAINABILITY

IE University
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Academic year: 19-20
Degree course: SECOND
Semester: 2º
Category: COMPULSORY
Number of credits: 6.0
Language: English

PREREQUISITES

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SUBJECT DESCRIPTION

Sustainability is imperative at the present in any discipline becoming day by day strategic whatever the business sector. Nowadays, designers, a profession handling materials, energy, water, people, waste, etc. putting on the market products and services, must take into account the repercussions of their design decisions. Sustainability is not always well understood from the perspective of the designer. In this course we will see the scientific principles that operate the functioning of the operating conditions of the Earth, where we live and compare them with the way humans do. We must understand and be aware that the current linear model of thinking and design must inexorably move to another circular, as dictated by Nature, sustainable and regenerative by definition. We will analyze the state of the planet, its connection with the design, to value and know and finally to change. This subject also seeks to reach a higher degree of consciousness to design doing good. Design not only has to be good but also do good. At the end sustainability is also a design problem. The subject also look for an increase of awareness since design and the daily decisions as a citizens, sometimes are are no easy to split and to handle. So, we’ll check the organic market and other eco choices that could be better designed in order to enhance the consumer decisions.
OBJECTIVES AND SKILLS

Several basic objectives will be of the subject will be pursued. As a future professional, the student must know the current situation of the planet and its connection with the discipline of Design. The companies are day by day evolving towards an environmental and social responsibility in their decision making and policies. All this framework is being establishing no doubtly thanks to the effort of the sustainable leadership of the European Union aligned with the Sustainable Development Goals by the United Nations. The connections of the design field with the different footprints: hydric, carbon, ecological, biodiversity and social together with the new emergent economies will be the basis of the matter. In the same way we’ll analyse in first hand the organic market and its opportunities and additionally the success and importance of the sustainable certifications. Finally during the last period of the season, the student will apply part of their knowledge acquired in a final project to their own university ecosystem, the IEU Segovia campus. Team works using research, analysis, critical thinking, systemic vision and connection with the design sector will allow a broader vision towards the commitment of awareness and ethics. Some of the knowledge acquire during the previous/current year must be applied.

So, the student through the program will obtain a real and strong understanding of the why’s of sustainability and a practical easy research of the subject. Culture, consciousness, awareness and personal emotions from weekly study and reading will be also an important achievement. Changing in the personal attitude from different perspectives will also encouraged to the students in order not only to be part of a global movement but also to make changes at early stages in the design scope. Hopefully, some of the deliveries, could be included in the student’s portafolio.
METHODOLOGY
Teacher and students together will co-create a basic contents through weekly basic research, applied studies and personal oral presentations. With the assistance of essential readings, visualizing videos, daily news, local events, etc. we'll create debates and change minds towards sustainability. Practical exercises related to subject contents will help us to a global understanding of the subject. Individual digital presentations, a test to evaluate a global comprehension and a final project in teams, will complete the basic Introduction to Sustainability in this academical year.
All the sessions will be double.

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<table>
<thead>
<tr>
<th>Teaching methodology</th>
<th>Weighting</th>
<th>Estimated time a student should dedicate to prepare for and participate in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>13.33 %</td>
<td>20 hours</td>
</tr>
<tr>
<td>Discussions</td>
<td>13.33 %</td>
<td>20 hours</td>
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<tr>
<td>Exercises</td>
<td>33.33 %</td>
<td>50 hours</td>
</tr>
<tr>
<td>Group work</td>
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<td>50 hours</td>
</tr>
<tr>
<td>Other individual studying</td>
<td>6.67 %</td>
<td>10 hours</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100.0 %</td>
<td>150 hours</td>
</tr>
</tbody>
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PROGRAM

SESSIONS 1 - 2
Meeting the group and introduction to the course: students and teacher dialogue. Meeting each other.
Explaining the basics and the annual structure of the program and other general information.
Understanding Life Centered Design better than Human Centered Design.
Grading system.
Introduction to Sustainability and why now!
Readings, videos, films, documentaries suggested.
Next week homework.
This week you must watch actively one of the documentary suggested here: Before the flood (https://www.youtube.com/watch?v=tQZfP517E2c); HOME (https://www.youtube.com/watch?v=ZjE9T-KQZOU); Food Ins (Oscar awarded); will be the first exercise. Students may design a virtual (could be in paper and then scan it) mind map making connexion from the topics covered in the documentary in order to observe the interconnections of most of them. This exercise will help you to quit the lineal thinking. The map must be clear, didactic and well designed. Be free.
A minimum of 30-45 min. will be required.
https://www.youtube.com/watch?v=ZjE9T-KQZOU

SESSIONS 3 - 4
The state of the planet discussion. Class debating and express individual oral and designed visual MIND MAPS after watching HOME or other videos/documentaries found by the students with a global systemic perspective.
Homework #1: HOME
Deliveries will be week by week adding complexity.
The complex and connecting related issues (covered in class) plus clear and personal designed slides will be deeply correlated with grading.

SESSIONS 5 - 6
The global and local state of the Freshwater.
We will discover our personal connecting with this Life supporting planetary element in our daily lives. We will connect water and design mapping Life Cycle Analysis with an ordinary consuming product/service. Finally, the Water Footprint will help us to visualize the amount of water in several common products produced/design in our present life style.
Name of the 2nd assignment: Water_homework #2
The 2nd delivery Water_homework #2 will be (as usual) a free personal analysis of your week water consumption (domestic, personal, purchases, ...) connecting them at a yearly basis plus at global scale, guessing or measuring the water consumed in the particular aspects selected. What do you extract from this?...Do you remember the data of the messages from the HOME documentary?...
A deep research of the Water Footprint indicator will enhance your perspective and scale. The resources below will help you.
In your delivery, taking risks looking for potential and well framed solutions will help us to understand this complex issue. The freshwater awareness is taken into account in any responsible business and policies in Europe and other countries in the world.

Watch: https://storyofstuff.org/movies/story-of-bottled-water/ (8 min.video)
Read: https://www.scientificamerican.com/article/is-there-really-a-freshwater-crisis/?redirect=1
Go to: https://waterfootprint.org/en/
Remember: support your delivery from valuable readings and institutions reports through the research phase plus your personal approach, will empower your arguments.

SESSIONS 7 - 8
The global and local state of the Atmosphere will be covered here. This amazing physical layer provide not only oxygen, but also protection from solar UV radiation and a magnetic radiation shield. This unique Life´s supporting element is in decline worldwide, with a serious deterioration quality in urban ecosystems, changing the climate patterns and making unsecure the survival from next generations.
A low carbon economy is a tangible metric strongly connected with the way how we design and making stuff in any particular sector from transportation to energy, food or how you prototype in the Fab Lab...
The Carbon Footprint will help us to understand globally why we must concern the atmosphere in our design decisions, connecting elements of different systems such as food, fashion or waste.
Delivery 3: Carbon_homework #3
Design a way to inform about your personal Carbon footprint related to the way how you eat, move, heat your room or dress. Think systematically taking into account for example the LCA (Life Cycle Analysis) to have a systemic perspective. One slide, a poster, a video... whatever way that you consider convincent to share in class. Be radical, be activist, we need a change in this crucial topic.
Also, in internet, look for a 1 min video to show in class and we´ll vote the best one!
Check: https://www.carbonfootprint.com/
Read some chapters of https://www.amazon.es/How-Bad-Are-Bananas-Everything/dp/1553658310. Ask for it in your IELibrary

SESSIONS 9 - 10
The global and local state of the Soil, the factory of life. When we cover the soil, we are not talking about the concrete we use when we walk down the streets or in the many infrastructures found in cities. We’ll try to understand how important is the soil, the essential Life´s supporting element which is not present in our daily concerns. Everything in the economy starts with it.
Thanks to the Ecological Footprint perspective, we have the chance to have access to your personal impact related with our life style.
Changing pattern in the way how you decide to live plus strategies from Design for Sustainability or Circular Design are both good examples to explore.
Delivery 4: Personal Footprint calculator_homework #4
You must calculate your personal ecological footprint understanding it and making progress differentiating with the other sustainable indicators.
Check and do it: https://www.footprintnetwork.org/resources/footprint-calculator/
Then, make an screenshot showing your results and design an slide with your thoughts. We’ll compare them in class. Be honest ;)
Explore also concepts such as overshoot and biocapacity (related to your country or anyother you like -avoiding repat with other peers). Use them in your designed slides.

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SESSIONS 11 - 12

The state of the Biodiversity.
The importance of knowing the actual conservation status for the survival of Humans and the rest of Life is basic nowadays. Understanding the Human welfare state connected with the Ecosystemic Services provided by the biodiversity will help student to connect perceived isolated dots in a inteconnected global ecosystem.

Delivey: Biodiversity_homework #5
This delivery will be covered in pairs and will have a higher weight in the final grading.
In pairs you have 10 min to show and convince you, millennials, how important biodiversity is globally not only for us as humans. Numbers, data,... are easy to forget, so avoid abusing of them. So, be more creative in the way you design your presentation, images and speech. The fun can be also used.

Basic reading: Reports from worldwide reputed institutions like World Wildlife Foundation WWF https://www.worldwildlife.org/pages/living-planet-report-2018 will open the student eyes of this relevant matter.
Essential watch: Watch as much as possible these (1-2 min.) videos: https://www.conservation.org/nature-is-speaking/Pages/default.aspx
Don’t miss the Mother Nature with superstar Julia Roberts.
The messages from the videos could undoubtley help you in your presentations. Do you understand most of them?. Are now evolving (changing) better?.

SESSIONS 13 - 14

The state of Society.
This final element of the Sustainability Domain will provide understanding of the important issue today for designers: Social Innovation. Global discontent mean something to you as a designer beyond your commiment as a citizen today.
Exploring different Social Footprints as well as emerging economies such as green, blue, collaborative, inclusive, sharing or circular economies will open our mind to alterantive to the dominance of capitalism.
The re-designed new Sustainable Development Goals (SDG) by United Nations will give us a better understanding for vibrant objectives for this century.

Delivery: Social footprint_homework #6
In this homework, you may have a fully understanding of the SDG and try to connect them with a particular business or product you like. Avoid using multinational companies since we do not have the chance to be sure if it is true or not. So look for small ngos or companies. There are extraordinary examples to inspire us.
Design a visually work showing 2 SDG selected and include something visually clear to identify the company. You can try also testing your own designs from the 1st year and check if suits with any of them (SDG).

SESSIONS 15 - 16

The Organic market and Certifications, greenlabels and greenwashing.
Exploring this growing and demanding designed way of producing daily products will provide a solution space to personal contribution for a better world. Understanding again the whys and the hows will give us new opportunities for a changing consumption choices as well as eco-economies opportunities.

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A vision of the last edition of the Biocultura Fair in Madrid 2019 will help the student’s perspective.
Delivey: Eco-labelling_homework #7
You must go to an organic market, and select a couple of products from different sectors (cosmetics, food, cleaning...). Take a picture of it, the logos and labells and do it a selfie to be sure you were there ;)
Then go to an industrial supermarket or your close shop and do the same.
At home compare the ingredients and please look for carefully one or two ingredients looking how healthy are for us, humans, for the soils, for the water... for the biodiversity.
Also identifying the seals/stamps... identify those which are certifications and compare them with those "just" eco.labelling. This exercesise is very important to understang the differences.
Put all the info in a couple of slides to share in class. Try to divede the class in groups of interests to cover most of the sectors.
There are "tons" of good web sites. This one is in spanish and an opportunity to practice your spanish [http://vidasana.org/](http://vidasana.org/)

SESSIONS 17 - 18
Gaming around biomimicry for social innovation. Exploring how Nature make stuff will open inspiring solution spaces for designers in this emerging global trend design.
If available time and good weather we’ll go outdoors to explore face to face nature’s genius.
Information about the test (next session)
No deliveries.
Pre-test session and re-connecting with nature

SESSIONS 19 - 20
Evaluation test. 30 questions. 60 minutes
Q&A
Presentation of the Final Project

SESSIONS 21 - 22
**Final Project: IE Segovia Green Campus**
Understanding the scope. Evaluation criteria
Research Team: **First Phase Campus reseach**
The whole project will be fully and clearly introduced in class.

SESSIONS 23 - 24
By Teams: show the data, the context and the potential hotspots to explore for the Design Phase.
Defining pairs and trios for the Design Phase.
Defining the potential sector to work.
Defining the deliveries to accomplish.

SESSIONS 25 - 26
Research and Design phase by teams.
Tutorships

SESSIONS 27 - 28
Research and Design phase by teams.
Tutorships
Final communication advisories

SESSIONS 29 - 30
Final Project: Final Presentation
Directors, teachers and other IEU and external guests will be in the audience.
Deliveries: Report, Prototypes, Maps, Communication phyles
Remember to use the GUIDELINES FOR WRITTEN ASSIGNMENTS BACHELOR IN DESIGN at IE covered and explained by the teacher Clara Zarza. This criteria will be used without previous information.
BIBLIOGRAPHY
A set of critical readings will be mandatory during the year. Some books will be read completed, others, just isolated chapters. At the same time some valuable readings from the European Comission will be encouraged for a whole understanding.

COMPULSORY
· *Cradle to Cradle*. Michael Braungart & W.McDonough

RECOMMENDED
· *Products that last*. Connie Bakker y col. *(SOME CHAPTERS)*
· *How bad are bananas?*. The carbon footprint of everything. M.Berners-Lee *(SOME CHAPTERS)*
· *The designer’s atlas of sustainability*. Ann Thorpe *(SOME CHAPTERS)*
· *Natural Capitalism*. P.Hawken y col. *(SOME CHAPTERS)*
· *The ecological footprint*. B.Rees & M.Wackernagen *(SOME CHAPTERS)*
· *Design Revolution*. Emilly Pilloton *(SOME CHAPTERS)*
EVALUATION CRITERIA

The evaluation of this particular subject consists in 4 different areas where student will show a global understanding of the subject. 1. Week by week during the first period, everyone will design a culture about sustainability through personal research and application, readings, and everything they consider important to achieve. This part will be essential to develop a critical thinking about the actual global situation and the need for solutions. 2. The next evaluation will be a simple test where students will mark the answers in a non memory test where systemic connections and design as well as cosumption patterns will be tested. 3. Final Project. During the last part of the year, student in teaming will scan the actual state of sustainability of the IEU Campus in order to design freely alternatives to enhance the situation. 4. Finally active participation in class will be the last criteria to include.

The 4 different criteria (constant effort + individual comprehension + working in team in a particular challenge + active participation) will give me a good idea of the basic culture, awareness and decision making in this important matter, the sustainability.

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Retake policy
Students failing the course in the first regular period will have to do a retake in July (except those not complying with the attendance rules, which are banned from this possibility). Dates and location of this period will be posted in advance and will not be changed. Please take this into consideration when planning your summer.

The maximum grade that a student may obtain in any type of retake will be 8 out of 10. The retakes will consist on a comprehensive exam. The grade will depend only on the performance in this exam (continuous evaluation over the semester will not be taken into account). This exam will be designed bearing in mind that the passing grade is 5 and the maximum grade that can be attained is 8.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Percentage</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>IP: Quality, design, research...</td>
<td>30 %</td>
<td></td>
</tr>
<tr>
<td>IT: knowledge acquired</td>
<td>20 %</td>
<td></td>
</tr>
<tr>
<td>FP: Final Project</td>
<td>30 %</td>
<td></td>
</tr>
<tr>
<td>CP: proactive, debating...</td>
<td>20 %</td>
<td></td>
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</tbody>
</table>

IP: Presentations will be required week by wee. Some of them will be done in pairs.
IT: Basic test evaluating global comprehension and applicability of the culture gained.
GP: Final project. Grading criteria will be explained clearly at time.
CP: Active and motivating participation on class, debating and showing a positive attitude.

All the criteria will be explained in detail during the first session in class.

PROFESSOR BIO
Manuel Quirós has been involved for the last 25 years working in areas related to nature, from academics, research, dissemination, implementation and development. After 10 years as a postdoctoral researcher at the Polytech University Madrid researching in endangered freshwater fish, he decides to explore non environmental education institutions to share the need to be aligned with Nature.

He was a member of the Sustainable staff at IED from more than 13 years, a private university pioneer in sustainable program in all the design divisions from fashion to product for first year, 3rd year and master students. His major programs in education are Education for Sustainability and also Biomimicry, a disruptive ways to design according to Nature. Both during the beginning of the XX century where truly innovative in design schools.

At IE he runs a pioneering Slow Fashion Lab https://ieulabs.ie.edu/ieu-labs/slow-fashion-lab/ with private companies (Pepe Jeans, El Ganso, Hemp,...) where 20 students have the chance to work hand by hand with the brands. The Slow movement is strongly aligned with sustainability.

Every year he travels with MSc IED (MDI program) students to the Colombian Amazonia to explore how design can enhance potentially the life quality of local indigenous communities, through social innovation projects, in collaboration with the government and Fundación Omacha.

In addition he created several non lucrative associations (Greensigns, Biomimicry Iberia, Planeta Biomimético España and Red 3I Biomimesis) disseminating the message to sustainability to numerous media (radio, TV, publications, books, conferences ...). Author of the unique blog in spanish on biomimicry and he is a contributing editor of the award-winning journal Zygote Quarterly Journal.

He currently collaborates with companies for the implementation of biomimicry and in sustainable innovation like ArcelorMittal (global leader of steel production). Manuel is invited year by year to participate in forums, simposium, media, TV, newspapers... to discuss the non technological perspective to the new world. This year he is proud to participate in the ONU-Habitat conference invited by the País Vasco Government in Bilbao, Spain. He is also designing Superior Educational Programs in Bolivia or Colombia by governmental request.

He has a Degree in zoology from the Complutense University of Madrid; Master in Aquaculture from the University of Stirling, Scotland and PhD from the Polytechnic University of Madrid where he was contracted as a post-Doc programmes during a decade. He publishes several scientific papers every year, and his divulgating publications are day by day more relevant.

More info:
Biomimicry Consultant site | Blog : http://natureinspireus.com
MQ bio: http://natureinspireus.com/sobre-manuel/m-q/
Wildlife-art: manuelquiros.com

OTHER INFORMATION
Available time out of classes: Mondays from 10-12 h.
Out of this time I’ll can not be available.
CODE OF CONDUCT IN CLASS

1. **Be on time**: Students arriving more than 5 minutes late will be marked as “Absent”. Only students that notify in advance in writing that they will be late for a specific session may be granted an exception (at the discretion of the professor).

2. **If applicable, bring your name card and strictly follow the seating chart.** It helps faculty members and fellow students learn your names.

3. **Do not leave the room during the lecture**: Students are not allowed to leave the room during lectures. If a student leaves the room during lectures, he/she will not be allowed to re-enter and, therefore, will be marked as “Absent”. Only students that notify that they have a special reason to leave the session early will be granted an exception (at the discretion of the professor).

4. **Do not engage in side conversation.** As a sign of respect toward the person presenting the lecture (the teacher as well as fellow students), side conversations are not allowed. If you have a question, raise your hand and ask it. If you do not want to ask it during the lecture, feel free to approach your teacher after class.

5. **Use your laptop for course-related purposes only.** The use of laptops during lectures must be authorized by the professor. The use of Social Media or accessing any type of content not related to the lecture is penalized. The student will be asked to leave the room and, consequently, will be marked as “Absent”.

6. **No cellular phones**: IE University implements a “Phone-free Classroom” policy and, therefore, the use of phones, tablets, etc. is forbidden inside the classroom. Failing to abide by this rule entails expulsion from the room and will be counted as one absence.

7. **Escalation policy: 1/3/5.** Items 4, 5, and 6 above entail expulsion from the classroom and the consequent marking of the student as “Absent.” IE University implements an “escalation policy”: The first time a student is asked to leave the room for disciplinary reasons (as per items 4, 5, and 6 above), the student will incur one absence, the second time it will count as three absences, and from the third time onward, any expulsion from the classroom due to disciplinary issues will entail 5 absences.