



University of Engineering and Technology
School of Computer Science
Syllabus of Course
Academic Period 2018-II

1. **Code and Name:** EG0004. Global Challenges
2. **Credits:** 3
3. **Hours of theory and Lab:** 2 HT; 2 HP;
4. **Professor(s)**

Meetings after coordination with the professor

5. Bibliography

- [E15] Upton. E. *Intuición, acción, creación: Graphic Design Thinking*. México:Editorial Gustavo Gili, 2015.
- [R12] Curedale. R. *Design methods 1: 200 ways to apply design thinking*. EE.UU Design Community College Inc, 2012.

6. Information about the course

- (a) **Brief description about the course** During the plenary sessions, there will be lectures related to the methodology of Design Thinking as well as its use and importance in the creation processes. Also, during these sessions we will have presentations on entrepreneurship and startups related to engineering or technology. During lab sessions, students form teams that maintain during the cycle. With the guidance of the teacher and through the methodology of Design Thinking developed in the plenary sessions, students will have to present innovative solutions to real problems inspired by the United Nations "Global Challenges". The students will have a Digital Log which will be constantly reviewed by the teachers in charge. In it will be the advances, processes and referents of the group project. The course culminates with the presentations of the proposals put forward by the groups.
- (b) **Prerequisites:** None
- (c) **Type of Course:** Mandatory
- (d) **Modality:** Face to face

7. Specific goals of the Course

- Ability to design and carry out experiments.
- Ability to analyze information.
- Ability to design a system, a component or a process to meet the desired needs within realistic constraints (Level 1)
- Teamwork Ability.
- Ability to lead a team.
- Oral communication skills (Level 1)
- Written communication skills (Level 1)
- Understand the impact of engineering solutions in a global, economic, environmental and societal context.

8. Contribution to Outcomes

- n) Apply knowledge of the humanities in their professional work. (**Usage**)
- ñ) Understand that the formation of a good professional is not disconnected or opposed but rather contributes to genuine personal growth. This requires the assimilation of solid values, broad spiritual horizons and a deep vision of the cultural environment. (**Usage**)

9. Competences (IEEE)

C20. Ability to connect theory and skills learned in academia to real-world occurrences explaining their relevance and utility.⇒ **Outcome n,ñ**

10. List of topics

1. Global Challenges.

11. Methodology and Evaluation

Methodology:

Theory Sessions:

The theory sessions are held in master classes with activities including active learning and roleplay to allow students to internalize the concepts.

Lab Sessions:

In order to verify their competences, several activities including active learning and roleplay will be developed during lab sessions.

Oral Presentations:

Individual and team participation is encouraged to present their ideas, motivating them with additional points in the different stages of the course evaluation.

Reading:

Throughout the course different readings are provided, which are evaluated. The average of the notes in the readings is considered as the mark of a qualified practice. The use of the UTEC Online virtual campus allows each student to access the course information, and interact outside the classroom with the teacher and with the other students.

Evaluation System:

12. Content

Unit 1: Global Challenges. (12)	
Competences Expected: 4	
Learning Outcomes	Topics
<ul style="list-style-type: none">• Flexibility and Adaptability: Students learn to work in a team in a flexible and variable environment with constant challenges.	<ul style="list-style-type: none">• Methodology of Design Thinking (DT).• DT Steps.• Technique and use of Brainstorming.• Knowledge of the user, empathy and use of archetypes.• Types of research, differences and uses.• Strategies for gathering from Insights.• Ideation methods.• Introduction tool Prototyping.• Introduction to User Experience.• Testing and Iteration Strategies.• Uses of Storytelling.
Readings : [R12], [E15]	