

Year 2024-25



**Istituto Europeo di Design**

Private Licensed Centre

TEACHING GUIDE FOR  
**Sustainable Thinking**

Foundation Course – IED Madrid Diploma Programme

**Total Design**

Updated on: 1st September 2024

Foundation Course – IED Madrid Diploma Programme.

Subject: Sustainable Thinking.

### 1. SUBJECT/COURSE IDENTIFIERS

<b>Type</b>	Basic training
<b>Nature</b>	Theoretical-practical
<b>Specialty/itinerary/style/tool</b>	Total Design
<b>Subject/Field</b>	Science applied to design
<b>Teaching/course period</b>	1 <sup>st</sup> Semester
<b>Number of credits</b>	4 ECTS
<b>Department</b>	Teaching/Educational Department
<b>Priority/ prerequisites</b>	Without priority
<b>Languages in which the course is taught</b>	English

### 2. TEACHER IN CHARGE OF THE SUBJECT

<b>Surname &amp; Name</b>	<b>E-mail</b>
Fernández Corbacho, Cristina	

### 3. LIST OF LECTURERS & GROUPS THEY TEACH

<b>Surname &amp; Name</b>	<b>E-mail</b>	<b>Groups</b>

### 4. COMPETENCIES/SKILLS

<b>Cross-sectorial skills</b>
CT2 Collecting meaningful information, analysing, synthesising and managing it accordingly.
CT3 Problem solving and decision making to meet the goals of the work/project being performed.
CT6 Being self-critical with one's own professional and interpersonal performance.
CT11 Developing a professional ethic based on the appreciation and sensitivity towards aesthetics, the environment and diversity.
CT16 Using the means and resources available to them with responsibility towards cultural and environmental heritage.

**General skills**

CG10 Adapting to changes and to the industrial technological evolution.

CG16 Finding environmentally sustainable solutions

CG18 Optimizing the use of the resources needed to achieve the planned objectives.

CG19 Showing critical capacity and knowing how to propose research strategies.

CG21 Mastering research methods.

**5. LEARNING ACHIEVEMENTS**

- Knowing how to manage eco-efficiency and sustainability.
- Experiencing a paradigm shift in which nature and people also count in a new economic model.
- Knowing how to identify some of the realities in the 21st century's landscape, in order to assess the environmental impact, and be positive in addressing the new solutions which are needed for the change one expects to undertake.
- Understanding the strategic value in sustainable design, also as citizens, and consumers of today.
- Learning to develop critical thinking, as well as a holistic and systemic vision, that is responsible for a growing reality in which society must learn to provide change now for generations to come.
- Knowing how to identify reuse processes.
- Learning to apply the methods of research and experimentation of applied sciences to sustainable design.
- Knowing how to generate searches for relevant content in relation to the topics covered in the classroom.

**6. CONTENTS**

Section (if applicable)	Topic/repertoire
<b>I. THE STATE OF OUR PLANET</b>	<b>Topic 1. Introduction to sustainability</b>
	<b>Topic 2. Analysis of eco-social issues</b>
	<b>Topic 3. Water – Hydrosphere</b>
	<b>Topic 4. Air- Atmosphere</b>

	Topic 5. Ground- Geosphere
	Topic 6. Biodiversity
	Topic 7. Biodiversity
	Topic 8. Production & consumption

II. FINAL RESEARCH PROJECT	Stage 1: Research (In teams)
	Stage 2: Defining the challenge
	Stage 3: Proposal
	Development of the proposal, final presentation and oral presentation.

## 7. STUDENTS WORK TIME PLAN/SCHEDULE

Type of Activity	Total hours
Theoretical activities	13 hours
Practical activities	14.5 hours
Other mandatory training activities (conferences, seminars, etc.)	32 hours
Tests	12.5 hours
Student's working hours	42 hours
Internship/work placement preparation	6 hours
<b>Student's total working hours</b>	<b>120 hours</b>

## 8. METHODOLOGY

Theoretical activities	<p>Lectures where the teacher will introduce the theoretical concepts and their analysis, supported by documentaries, audiovisuals and other necessary ICTs. During the lecture, the student will be able to ask questions to solve any doubts that may arise.</p> <p>In the second half of the session debate topics will be brought forward, and students will be expected to take an active part in the debate.</p>
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<p>Practical activities</p>	<p>Weekly practical exercises will be set to encourage personal reflection on the work done, reaching conclusions regarding the knowledge acquired, and favouring a functional learning process that enables the practical applications of said knowledge.</p>
<p>Other mandatory training activities (conferences, seminars, etc.)</p>	<p>Attendance to different conferences, congresses, fairs, exhibitions, etc. depending on the specialty they study. Viewing of films or documentaries. Attendance to the workshop and laboratories to execute projects and exercises with the support of specialized teachers. Support sessions to the practical classes in which, with a participative method based on self-evaluation and debate, students can solve questions and advance with their Project.</p>

## 9. EVALUATION AND GRADING CRITERIA AND INSTRUMENTS

Work to be assessed:

1. Knowing how to manage eco-efficiency and sustainability.
2. Experiencing a paradigm shift in which nature and people also count in a new economic model.
3. Knowing how to identify the realities in the current 21st century scenario to assess the environmental impact, and, to have a positive approach towards the new solutions that are required to achieve the changes that one expects to undertake.
4. Understanding the strategic value in sustainable design, as citizens, and as today's consumers.
5. Having the ability to develop critical thinking and having a holistic and systemic vision that is responsible for the planet's growing reality, in which society must learn to change now for the benefit of future generations.
6. Knowing how to identify reuse processes.
7. Knowing how to apply research and experimentation of applied science methods to sustainable design.
8. Knowing how to generate searches for relevant content in relation to the topics covered in the classroom.

The evaluation assessment must be designed and planned in a manner that integrates it within the teaching/learning training activities.

The assessment of students learning ought to be continuous, personalized and integrative:

- Continuous: in that it is integrated into the teaching-learning process and consequently is not limited by dates or specific situations.
- Personalised: since it must take into account the capacities, skills and the student's attitude. Special attention will be paid to the student's participation in work groups.
- Integrative: in that it requires taking into account the general capacities established for each stage, this will be done through the objectives in the different units and areas.

Students' learning will be assessed in relation to the achievement of the educational objectives that are specified in the course syllabus, and associated to the general and specific objectives, taking as an immediate reference the evaluation criteria established for each learning area.

To assess students learning process we need to:

- Evaluate their curricular competence (abilities and aptitudes).
- Assess the factors that hinder or facilitate good learning.
- Encourage self-evaluation and co-evaluation of students amongst themselves, as a source of critical analysis of their results, to allow for changes in attitude and for their improvement.
- Value the learning context in which the student develops.

### 9.1. EVALUATION/ASSESSMENT TOOLS

Theoretical activities	Active attitude in class, sharing thoughts and experiences. Written evaluation test to assess the understanding of the theory and topics covered. Active role in classroom debates sharing ideas and experiences.
Practical activities	Weekly practical exercises will be set based mainly on the perception and experimentation of the concepts explained in the classroom. Drafting and developing the project.
Other mandatory learning activities (lectures, seminars, etc.)	Active participation in workshops, seminars, exhibitions, conferences, webinars, always sharing views and knowledge in the classroom environment.

### 9.2. EVALUATION CRITERIA

Theoretical activities	<ul style="list-style-type: none"> <li>• Active attention and understanding during explanations.</li> <li>• Showing initiative to contribute with own opinions and constructive criticism.</li> <li>• Punctuality and quality throughout the research process, in the follow-up of the exercises during tutorials.</li> </ul>
Practical activities	<p>The evaluation/assessment of the practical cases will deal with:</p> <ul style="list-style-type: none"> <li>• Correct use of the theoretical tools proposed in the classroom</li> <li>• Careful execution</li> <li>• Crafted Conceptualization</li> <li>• Contributions</li> <li>• Punctuality: handing-in projects on time.</li> </ul> <p>In the delivery of the final project (a prototype of a proposal designed according to a pre-selected challenge) we will assess the following:</p> <ul style="list-style-type: none"> <li>• Punctuality of the work handed in during the tutorials</li> <li>• Practical application of the concepts /knowledge acquired in the classroom</li> <li>• Teamwork</li> <li>• Visual presentation</li> <li>• Oral presentation</li> <li>• Choice of communicative tools used</li> <li>• Contributions.</li> </ul>

Other mandatory learning activities (lectures, seminars, etc.)	We shall value that the student applies the knowledge acquired in workshops, seminars, expositions, conferences or webinars, to the work and projects of the course.
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### 9.3. GRADING CRITERIA

1. The evaluation system to be used in the subject/course is adapted to the continuous evaluation model.
2. In the continuous evaluation system, class attendance is compulsory, and students must comply with a percentage of activity in the presence of the teacher, which is estimated to be 80%.
3. If the student does not meet the criteria for continuous evaluation, they will be graded in a evaluation process with a loss of continuous evaluation - they will present the projects requested during the course and a specific test for this call, and, their corresponding relative weights are shown in section 9.3.1 and 9.3.2 of this guide.
4. In any case, the student will take an extraordinary exam, the structure, evaluation instrument and grading criteria for said exam is explained in section 9.3.3 of this guide.
5. In order to pass the subject/course, the student must meet the requirements of the weighting of the evaluation instruments defined in points 9.3.1, 9.3.2 and 9.3.3.3.

#### 9.3.1. Assessment tools for the weighting of grades in the continuous assessment process

Tools	Weighting of grades
Handing in weekly assignments and critical and argued participation in class.	20%
Written test	40%
Handing in final project and oral presentation	40%
<b>Total</b>	<b>100%</b>

#### 9.3.2. Ponderación de instrumentos de evaluación para la evaluación con pérdida de evaluación continua

Instrumentos	Ponderación
Handing in course projects, written test and final project.	60%
Presentation of the specific test for the evaluation in case of a loss of continuous evaluation.	40%
<b>Total</b>	<b>100%</b>

### 9.3.3. Ponderación de instrumentos de evaluación para la evaluación extraordinaria

Tools	Weighting of grades
Handing in course projects, written test and final project.	60%
Presentation of the specific test for the extraordinary evaluation	40%
<b>Total</b>	<b>100%</b>

### 9.3.4. Ponderación para la evaluación de estudiantes con discapacidad

Las adaptaciones de los instrumentos de evaluación deberán tener en cuenta los diferentes tipos de discapacidad

Tools	Weighting of grades
These shall be determined taking different types of disability into consideration	
<b>Total</b>	<b>100%</b>

## 10. TIME PLANNING OF THE CONTENTS, TEACHING METHODOLOGY AND EVALUATIONS

Session	CONTENTS, CONNECTED TEACHING METHODOLOGY, AND EVALUATION TOOLS		Total hours presence-based	Total hours not presence-based
<b>Session 1</b>	<b>Introduction to sustainability &amp; introduction to the subject.</b>			
	Theoretical activities	Master class introducing the subject. The teacher will show documents and images and shall analyse them using the required ICTs. .	2,5 hours	
	Other learning activities	Watch and analyse the following documentary and film: HOME- film "Mañana".		4 hours

<b>Session 2</b>	<b>Analysing Eco-social issues</b>			
	Theoretical activities	Discussion class, which will develop the content and analysis of the documentary viewed in the previous session. The teacher will show documents and images and shall analyse them using the required ICTs.	1,5 hours	
	Evaluation	Proactive attitude in the classroom, sharing knowledge, experiences and tools provided by the viewing of the documentary. Synthetic quality of the research done.	1 hours	



<b>Water. Hydrosphere</b>				
<b>Session 3</b>	Theoretical activities	Master class, which will develop the specific topic of the section. The teacher will display documents and images and will analyse them using the necessary ICTs.	1 hour	
	Practical activities	Students will put into practice the knowledge acquired through a series of set exercises. Discuss in a group the aspects related to their research.	1 hour	
	Other learning activities	Attendance to project workshop		2 hours
	Evaluation	Proactive attitude in the classroom, sharing knowledge. Case study revision: delivery and quality of the oral/digital presentation.	0,5 hours	

<b>Air Atmosphere</b>				
<b>Session 4</b>	Theoretical activities	Master class which will develop the specific topic of the section (State of air quality and its relation to design). Carbon footprint. The teacher will display documents and images and will analyse them using the required ICTs.	1 hours	
	Practical activities	Student will have to put into practice the knowledge acquired through a series of set exercises. Group discussion on aspects related to their research.	1 hour	
	Other learning activities	Attendance to project workshop.		2 hours
	Evaluation	Proactive attitude in class, sharing knowledge. Case study revision: delivery and quality of the oral/digital presentation.	0.5 hours	

<b>Ground. Geosphere</b>				
<b>Session 5</b>	Theoretical activities	Master class which will develop the specific topic of the section (State of ground quality and its relation to design). Eco footprint. The teacher will display documents and images and will analyse them using the required ICTs.	1 hours	
	Practical activities	Students will have to put into practice the knowledge acquired through a series of set exercises. Group discussion on aspects related to their research.	1 hour	
	Other learning activities	Attendance to project workshop.		2 hours
	Evaluation	Proactive attitude in class, sharing knowledge. Case study revision: delivery and quality of the oral/digital presentation.	0.5 hours	

<b>Biodiversity</b>				
<b>Session 6</b>	Theoretical activities	Master class which will develop the specific topic of the section. The teacher will display documents and images and will analyse them using the required ICTs.	1 hour	
	Other learning activities	Visits to environmental and sustainability congresses. Attendance to studios/shops of ethical, ecological designers in Madrid		4 hours
	Evaluation	Proactive attitude in class, sharing knowledge, experiences and tools provided by the visit. Synthetic quality of the research. Practical case revision: delivery and quality of both the oral and digital presentation of 3 related exercises.	1.5 hours	

<b>Production &amp; Consumption</b>				
<b>Session 7 - 8</b>	Theoretical activities	Master class which will develop the specific topic of the section. The teacher will display documents and images and will analyse them using the required ICTs.	2 hours	
	Practical activities	Case study development.	2 hours	
	Other learning activities	Attendance to project workshop		4 hours
	Evaluation	Proactive attitude in class, sharing knowledge. Practical case revision: delivery and quality of both the oral and digital presentation.	1 hour	

<b>Review</b>				
<b>Session 9</b>	Theoretical activities	Master class which will develop the specific topic of the section (General revision. Questions Type of questions for the test.) The teacher will display documents and images and will analyse them using the required ICTs.	1,5 hours	
	Practical activities	Case study development.	1 hour	
	Other learning activities	Attendance to project workshops.		2 hours

<b>Session 10</b>	<b>EVALUATION</b>			
	Evaluation	Written test	2,5 hours	
	Other learning activities	Attendance to project workshops.		4 hours

<b>Session 11</b>	<b>Final Project</b>			
	Theoretical activities	Master class which will develop the specific topic of the section (Describing the final project, objectives and handing-in work.) The teacher will display documents and images and will analyse them using the required ICTs.	1.5 hours	
	Practical activities	Organising working teams and team dynamics.	1 hour	
	Other learning activities	Attendance to project workshops.		2 hours

<b>Session 12 - 14</b>	<b>PROJECT DEVELOPMENT</b>			
	Practical activities	Tutorial based on aspects concerning the Final Project, and follow-up of the sample design processes.	7.5 hours	
	Other learning activities	Attendance to project workshops.		6 hours

<b>Session 15</b>	<b>FINAL PROJECT PRESENTATION</b>			
	Evaluation	Presentation and Final Project advocacy. Technical documents, oral presentation and conclusions.	2,5 hours	

<b>Session 16</b>	<b>FINAL PRESENTATION</b>			
	Evaluation	Evaluation, comments and information on the project and exercise results.	2,5 hours	

## 11. TEACHING RESOURCES AND MATERIALS

### 11.1. General Bibliography

Title	Cradle to cradle
Author	M.Braungart & W.McDonough
Publisher	Mcgraw-Hill / Interamericana De España, S.A.

Title	Tu consumo puede cambiar el mundo
Author	Chávez, Brenda
Publisher	Planeta

Title	El suelo la fábrica de la vida (English version: "Soil, the Diverse Factory of Life")
Author	Unión Europea
Publisher	pdf

### 11.2. Additional Bibliography

Title	La Biodiversidad
Author	Fundación Biodiversidad
Publisher	pdf

Title	Ciencias Ambientales. Ecología y desarrollo sostenible - (English version: "Environmental Science: towards a Sustainable Future")
Author	Nebel y Wright
Publisher	Prentice Hall

### 11.3. Websites of interest

[www.storyofstuff.org](http://www.storyofstuff.org)

[www.globalfootprint.org](http://www.globalfootprint.org)

[www.waterfootprint.org](http://www.waterfootprint.org)

[www.ceroco2.com](http://www.ceroco2.com)

[www.vidasana.org](http://www.vidasana.org)

#### 11.4. Other learning materials and resources

DOCUMENTARY	Home
DOCUMENTARY	La hora 11 (English version: "The 11th Hour")
DOCUMENTARY	Demain
REPORT	Informe Suelo de la Unión Europea - (English version: "European Union Soil Report")
REPORT	El Estado del Planeta WWF - (English version: "WWF Living Planet Report")
REPORT	Informe Biodiversidad. Fundación Biodiversidad
REPORT	Informe Objetivos del Desarrollo Sostenible de ONU - (English version: "The 17 Sustainable Development Goals (SDGs)")