EXTRACURRICULAR COURSE – ACADEMIC GUIDE

Academic Year 2025/26

1. Course "**STEP: Solutions To Environmental Problems**"

1.1. Activity Data

Activity Name	**STEP: Solutions To Environmental Problems** (Academic Pilot Program)
Responsible	Vice-rectorate for Learning and Internationalization
Activity Coordinator (LUA)	Prof. Nancy Tuchman (Visiting Scholar)
Teaching Language	English
Semester	Winter Trimester (The course is scheduled to run during the three-month residency, January–March)
Number of Credits	3 ECTS (Optional Course)

1.2. Faculty Data

The activity is led by a visiting expert specializing in institutional sustainability and environmental research.

Last Name, First Name	Role/Affiliation
Tuchman, Nancy	Visiting Scholar

1.3. Course Objectives

General Objectives The primary goal is to **launch a high-impact, credit-bearing academic offering** that will serve as the foundation for institutionalizing sustainability within the core Identity and Mission curriculum of LUA. This pilot course aims to help develop a visible culture of environmental sustainability and Integral Ecology at LUA. It also serves to assess student engagement and methodological effectiveness of the STEP model within the university context.

Specific Objectives:

• **Design and deliver** an interdisciplinary 3-credit course focused on environmental solutions and sustainability.

• Engage students in **creative and impactful campus-wide projects** aimed at raising awareness of the environmental crisis and reducing the campus environmental footprint.

• Bring students and faculty together from different disciplines around a certain environmental issue or problem on campus, addressing the problem **comprehensively, not just academically**.

• Providing effective solutions to specific environmental and sustainability problems in the university campus, including water, waste, energy, etc. The course will analyse existing novel technology to identify cost-effective and sustainable sulutions and will ultimately works towards the real implementation in the university campus

• The ultimate goal is to generate visible "wins" for the University's sustainability initiative.

Core and Transversal Competencies

Basic/Core Competencies:

• **Linguistic Communication Competence (CB1)**: Interacting orally and written, including presentations regarding project progress and findings.

• **Plurilingual Competence (CB2)**: Applicable when interacting with diverse linguistic profiles and potentially mediating solutions in multicultural contexts, though the course is taught in English.

• **Cultural Awareness and Expression Competence (CB8)**: Appreciation and respect for diverse cultures, particularly how environmental issues and solutions manifest in different social settings. Expressing cultural identity (including LUA's Jesuit tradition) creatively through project outputs.

Transversal and/or General Competencies:

• Ability for teamwork and interdisciplinary work.

• Critical, analytical, and practical skills.

• Abilities of creative and imaginative thinking.

• Capacity to develop ideas and concepts, as well as communicate and represent them adequately.

Specific Competencies of the STEP Course: The course is designed for high-impact experiential learning. Students will develop:

• The ability to design and implement innovative solutions to complex environmental problems (Solutions To Environmental Problems - STEP).

• Expertise in **framing research questions and methodologies** aligned with sustainability and social/environmental impact.

• The capacity for **interdisciplinary cooperation**, working in teams organized by disciplinary expertise (e.g., Logistics, Communications, Business, Production).

• Skills to **quantify the financial, ecological, and educational benefits** of campus sustainability projects.

• The practical use of the campus as a **laboratory** to test concepts and develop projects (learning-by-doing).

• Innovative thinking on how to implement a **circular economy** using various streams of campus waste.

1.4. Course Methodology The STEP course model is unique, highly successful, and involves a hands-on, solutions-based pedagogy. The methodology will be **dynamic, participative, and practical**. It operates similar to a **start-up company**, requiring research, interdisciplinary cooperation, team-work, and problem-solving.

Key methodological elements include:

• **Interdisciplinary Engagement:** Bringing together students and faculty from different disciplines to address the environmental issue comprehensively.

• **Project-Based Learning:** Students work toward achieving a concrete, measurable goal over the semester.

• **Team Structure:** Students are encouraged to split into groups based on disciplinary interests and expertise (e.g., a Business Team developing a plan; a Communications Team developing outreach).

• **Continuous Progress Reporting:** Teams report on their advancements weekly, discussing how their individual goals are facilitated by the work of other teams.

• **Mentorship:** The course includes academic guidance and mentorship, particularly for students whose projects align with sustainability and social/environmental impact.

1.5. Course Curriculum/Program

Module Content: STEP: Solutions To Environmental Problems (3 Credits) The curriculum focuses on the implementation of a high-impact campus project, with **water** being proposed as a key initial challenge due to regional climate concerns.

• **Phase I: Introduction and Framing (Weeks 1-3)**

◦ The STEP Model: History, successes (e.g., Biodiesel, Food Systems), and framework for achieving environmental "wins".

◦ Identifying LUA's Environmental Challenge: Water scarcity and management in Southern Spain.

◦ Framing Research Questions and Methodologies: Defining the project scope and understanding existing LUA research (e.g., soaker hose watering research).

• **Phase II: Interdisciplinary Analysis and Project Design (Weeks 4-8)**

◦ Forming Project Teams: Logistics, Communications, Business/Finance, and Production/Technology (adapted from the successful Biodiesel model).

◦ Comprehensive Problem Analysis: Addressing the chosen problem (e.g., expanding water conservation/biodiversity initiatives on campus).

◦ Research and Benchmarking: Utilizing technical insights, visiting similar projects, and gaining technique.

◦ Developing Goals: Establishing clear financial, ecological, and educational objectives for the project.

• **Phase III: Execution and Communication (Weeks 9-12)**

◦ Hands-on Project Development: Designing solutions, building prototypes (if applicable), and developing logistical plans (e.g., providing produce to neighbors; creating a social space).

◦ Marketing and Outreach: Developing strategies to document the story, raise awareness (internal/external), and build community support.

◦ Progress Reporting and Inter-Team Coordination: Weekly review of progress and obstacle resolution.

1.6. Duration The activity will be developed over the three-month academic residency of the Visiting Scholar, running from **January through March**.

1.7. Estimated Student Work Time The total workload for 3 ECTS credits is **75 hours**. Given the project-based, hands-on methodology, the allocation emphasizes practical and autonomous activity.

Activity Type	Number of Hours	Percentage
Contact Hours (Sessions)	60	80%
Formative/Theoretical Activities	20	
Practical/Hands-on Activities	40	
Non-Contact Hours	15	20%
Individual/Team Research & Preparation	15	
Total, Student Work Load	**75**	**100%**

1.8. Assessment System

The evaluation is based on a process of continuous assessment, focusing on the student's involvement, learning process, and demonstrated capacity to solve problems.

Requirements for Credit Recognition:

1. **Attendance and Active Participation:** The student must maintain a high level of active involvement in the course sessions (similar to the 70% requirement for other extra-curricular activities).

2. **Positive Evaluation of Participation and Tasks:** The faculty responsible must provide a positive evaluation based on the student's performance. This includes:

◦ Contribution to the interdisciplinary team effort.

◦ Quality of autonomous work and research.

◦ Presentation of measurable progress toward the project goals (e.g., final proposal to administration/stakeholders, technical specifications, communication strategy).

3. **Demonstrated Learning:** Evaluation will assess the student's capacity to analyze the environmental challenge, apply solutions-based methodologies, and quantify the potential benefits (financial, ecological, educational) of the pilot project.

Both requirements are indispensable to obtain the credits. Fulfilling all requirements and obtaining a positive evaluation will allow the student to certify the hours and request credit recognition.

1.9. Minimum and Maximum Number of Places Offered and Access

The activity is oriented toward **students across the University** interested in sustainability and interdisciplinary innovation, regardless of their academic disciplines. It is also highly relevant for **professors and researchers** who may be interested in adopting the methodology or co-teaching subsequent modules.

The course is designed to be accessible to all students, featuring **no prerequisites**. Given the objective of finding "hidden environmental champions", the process of accessing the course may include reviewing applications to ensure a diverse and highly motivated cohort.