Sketching Innovation: Bridging Art and Engineering in Hauts-de-France

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Abstract

Engineering Art - The French Perspective is an innovative course offered as part of the Engineering and Arts study abroad program. Designed for engineering students, the course blends art and engineering to foster creativity, cultural awareness, and self-expression. This eight-week long summer program combines a three-credit art elective with a critical tracking course in engineering, providing a transformative, interdisciplinary learning experience. In 2024, the program expanded to include additional art courses, enabling students to engage with local artists and participate in community projects throughout Lille, France. The curriculum emphasizes creative problem-solving through drawing, museum visits, and situational learning activities. Students are assessed on demonstrated engagement and progress, focusing on their ability to experiment and articulate their artistic choices. By integrating art and engineering, the course encourages students to embrace creativity in both fields, resulting in a deep, immersive educational experience that fosters personal and professional growth.

Keywords

Art, collaboration, creative integration, engineering, interdisciplinary

Introduction

Engineering Art - The French Perspective is a unique course developed as part of an Engineering and Arts in France study abroad program. Launched in 2021, this course blends the arts with engineering, specifically targeting engineering students to cultivate creativity, cultural awareness, and self-expression through artistic exploration. The Engineering and Arts study abroad

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program is an eight-week summer experience combining a three-credit art elective with a three-credit critical tracking course in either Physics or Material Science, offering students a transformative, interdisciplinary education that fosters creative problem-solving skills essential for their future careers as engineers and global citizens. The program exists as a partnership between Université Catholique de Lille and the University of Florida (UF) in which Université Catholique de Lille hosts the UF's study abroad within their already established summer program, allowing the engineering students from UF to participate in a larger set of intercultural activities. The three-credit art elective course is designed to facilitate creative engagement with the site-specific program, and it provides a balance to the more standardized engineering critical tracking course. The course profile is presented in Table (1) below (see the supplemental materials for further details of the course).

TABLE (1)

COURSE PROFILE

Course or Program Title and Numbers	EGN 4932: Engineering + Art - The French Perspective (Summer 2024)
Course or Program Title	UF in Lille - Engineering and Arts in France
Target Student Population(s)	First-year engineering students
Content Focus, Field, or Discipline	Art and engineering
Credit-Bearing	Yes
Program Level	Undergraduate
Program Duration	Nine weeks
Onsite Locations	Lille, France

In 2024, the program expanded to include two additional art courses focused on artistic tools and creativity. Thanks to a generous grant from Procter & Gamble, students gained opportunities to work with local artists, participate in community engagement projects, and tour creative and cultural facilities throughout the Lille metropolitan area. This expansion saw enrollment grow to 80 students, prompting the launch of a second program modeled after it in Brno, Czechia, set to begin in 2025.

Program Model

Course Objectives and Assessment

The central aim of the course is to help students express ideas through visual form, particularly drawing, while immersing them in French culture. Students are encouraged to move beyond linear thinking to creatively document and annotate their ideas. Key learning objectives include:

- Exploring art history through museum and gallery visits to understand stylistic differences and place artistic expressions within broader historical and cultural contexts.
- Engaging with French culture by actively participating in local life and experiencing public spaces in Lille.
- Developing technical proficiency in a range of artistic techniques while exploring connections between observations and creative expression.
- Documenting and annotating ideas through sketchbooks and other forms of visual creations such as cyanotypes and videos.

Student outcomes are primarily assessed on the basis of demonstrated engagement, effort, and progress rather than technical mastery. The course emphasizes the creative process, with students evaluated based on their willingness to take risks, experiment with new techniques, and articulate their artistic choices. Assignments include in-class projects, readings, and homework, culminating in a final project and presentation that integrates technical skills and coherent ideas.

Distinctive Aspects of the Course

This course breaks new ground in education abroad for the Herbert Wertheim College of Engineering at UF, bridging the traditionally separate fields of engineering and art. Engineering students often view their field as distinct from the arts, but this program highlights the importance of interdisciplinary learning. Daily sketchbook assignments paired with engineering coursework teach students that creativity is crucial in both fields. The course also focuses on situational learning, encouraging students to interact with their surroundings and local culture, deepening both their artistic and personal development.

One distinctive element of the program is its location in Lille, a city rich in history, art, and culture. Lille's diverse architecture, cultural institutions, and public spaces offer students a wealth of opportunities to explore the relationship between the built environment and artistic expression. This combination of art and engineering in a study abroad setting has significantly increased the number of engineering students participating in international experiences.

Course Activities and Assignments

The course integrates intentional engagement with Lille's unique assets, allowing students to immerse themselves in both the physical and cultural landscape of the region. Through situational learning activities and interactions with local artists, students are continually challenged to connect their observations with their artistic practice. Three such activities are described below.

First, the students engage in situational learning through museum visits. They visited museums such as LaM, Palais des Beaux-Arts, La Piscine, and Louvre-Lens, where they gained exposure to different artistic movements, architectural styles, and the region's industrial heritage. These experiences show how cultural institutions contribute to urban revitalization and demonstrate a variety of visual forms for self-expression.

Second, the students engage in drawing walks through Lille's markets, public spaces, and streets, interacting with locals and observing the city's economic activity. These walks develop students' ability to quickly capture their surroundings in sketchbooks, enhancing both their observational and drawing skills while fostering a deeper connection to the city's everyday life.

Third, the students visit local artists' studios, such as La Pouponnière, where they document a children's garden through drawings and create cyanotypes incorporating local flowers. They also engage in dialogue with local schoolchildren, facilitated by translators. Another site, Le Couvent in Roubaix, introduces students to a mixed-use space in a rehabilitated church, where they meet local artists working to revitalize a depressed neighborhood. Assignments like architectural tracings and rubbings allow students to explore Lille's built environment and its materiality, offering insights into the environmental and cultural differences between France and America and how these shape urban experiences.

The course assignments and activities challenge students to understand Lille's social, historical, political, and cultural context. For example, visits to Tyne Cot Cemetery highlight the impact of war on European history, while film screenings like Welcome to the Sticks explore issues of regional identity and prejudice in a lighthearted but meaningful way. These experiences help students gain a deeper understanding of the societal challenges that have shaped the region and its people.

A particularly meaningful assignment includes readings that prompt students to think critically about cultural exchange and the ethical dimensions of representing others' experiences. These readings, paired with sketchbook reflections, encourage students to grapple with issues such as cultural

appropriation and personal bias. The sketchbook becomes a tool for capturing not only what students see but also how they feel and respond to their environment, fostering a more holistic engagement with the culture and history they encounter.

Extending Learning Post-Reentry

Upon returning to the American campus, students are encouraged to continue reflecting on their study abroad experience and integrating their newfound skills into their academic and personal lives. The program fosters long-term engagement by creating strong bonds among participants, who often form lasting friendships and become more involved in campus activities. Many students report that the program transformed not only their understanding of art and engineering but also had a significant impact on their personal growth.

One strategy for extending learning is encouraging students to share their experiences with peers through presentations or discussions in other engineering and art courses. By reflecting on their time in France and the skills they developed, students contribute to a culture of interdisciplinary learning at the American university. The program consistently receives positive feedback from students, who report increased confidence in their creative abilities and a deeper connection to both their academic discipline and the world around them.

Cultural Inclusiveness and Diversity

The course models inclusive pedagogy by exposing students to a range of perspectives and lived experiences, both in course content and through interactions during their time in France. Museum visits, for example, introduce students to global perspectives on art, with an emphasis on artists from underrepresented backgrounds, including women and those from the Global South. This exposure helps students appreciate the multiplicity of experiences art can represent, challenging them to think critically about the role of the artist in society.

Co-curricular activities, such as dinners at Moroccan restaurants and visits to French comedy clubs, further enrich students' understanding of Lille’s cultural diversity. These experiences expose students to new foods, languages, and social customs, providing opportunities to step outside their comfort zones and engage with different ways of life.

Conclusion

Engineering Art - The French Perspective exemplifies high-impact educational practices through situational learning, cultural immersion, and interdisciplinary collaboration. The course's carefully designed curriculum fosters creativity, cultural awareness, and personal growth, encouraging students to engage deeply with both art and engineering. The success of the program is evident in the transformative experiences of its participants, who return to campus with a newfound appreciation for the intersections between art and engineering and a deeper understanding of the world around them.

List of Supplemental Materials

Suppl. 1: Course Syllabus
Suppl. 2: Signature Assignment

Author Biography

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