



# GREENING GAMES PEDAGOGICAL FRAMEWORK

**CGL**  
Cologne Game Lab

**Technology**  
**Arts Sciences**  
**TH Köln**



**CHARLES**  
**UNIVERSITY**



**UNIVERSITY**  
**OF TURKU**



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# 1. Introduction

The Greening Games Framework has been developed as part of a three-year-long research project “**Greening Games Building Higher Education Resources for Sustainable Video Game Production, Design & Critical Game Studies**” (2021-2024)”, during which our interdisciplinary research team with members from leading European universities had been designing, testing and assessing a range of teaching materials for B.A. and M.A. programs, predominantly in game design and game development.

This Pedagogical Framework presents our modular and interdisciplinary teaching and learning philosophy. It is the bedrock for all the teaching methods and tools that we offer to the higher education community, compiled in an open-access format in our online **Repository** and on the official **Erasmus+ Project Results Platform**.

Our goal is to provide educators with a set of didactic materials that may help in delivering thought-through courses, seminars, and workshops in eco-critical game studies and game development.

## 2. Teaching Philosophy: Modularity & Interdisciplinarity

Teaching eco-critical game studies and game development is a challenging quest. Video games are multimodal objects and practices and the existing higher educational programs across Europe are not only diverse but also highly interdisciplinary (see our **Greening Games Education Report**)<sup>1</sup>. Most existing B.A. and M.A. programs related to video games – such as those offered at the Cologne Game Lab (TH Köln) – focus on their applied aspects: game design, game programming, and game art.

There are only a handful of dedicated programs in humanities-led game studies, e.g., Master's Programme in Game Studies at Tampere University in Finland and Bachelor in Game Studies at Adam Mickiewicz University Poznań in Poland<sup>2</sup>. Game studies are usually taught within other disciplines, such as: cultural studies, media studies, film, and theater studies, cultural anthropology, pedagogy, and literary studies.

This patchwork state-of-the-art in game studies and game development means that the way we design our teaching materials needs to correspond to the actual situation at hand. Therefore, we are proposing a modular solution. Instead of creating linear curricula for Greening Games education, we focus on providing the teaching and studying community with a range of diverse formats, methods, and materials that can be mixed and matched by the instructors to best fit their own needs.

We hope that this set of materials will serve as a valuable resource for those who already teach eco-critical game studies and development and for those who are looking for inspiration to start their greening games journey in teaching.

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<sup>1</sup> For examples on incorporating game studies into existing humanities programs, see the Mapping Out Teaching and Research part of the Greening Games Education Report (Fizek et al. 2023, pp. 10-27), accessed 27th May 2024: <https://greeninggames.eu/greening-games-education-report>.

<sup>2</sup> Game Studies programme at University of Tampere: <https://www.tuni.fi/en/study-with-us/game-studies>; Game Studies programme at: <https://rekrutacja.amu.edu.pl/en/studies-cataloge/groznawstwo,490>.

## 2.1 Teaching eco-critically about and with games

Our Greening Games project has been driven by the following leading questions:

- What does it mean to teach “green gaming”?
- What should the students know and what should their instructors aim for?
- How to best incorporate topics and teaching content to existing teaching programs?
- Should we focus on the capacity of games to inspire, raise awareness and change behaviors, or is it more important to teach about ethically responsible, sustainable game-making?

We asked the above questions in order to develop robust didactic resources related to environmental sustainability in video game production, design, and game studies.

During our initial research phase, we identified the potential needs of the teaching community. We interviewed colleagues teaching eco-critical game studies and development in a variety of European higher education institutions (Fizek et al. 2023, pp. 10-27)<sup>3</sup>. Many pointed out there are still relatively few easily accessible academic resources on environmental sustainability and video games. This state-of-the-art is changing rapidly and, most probably by the end of the Greening Games project in 2024, the situation will be very different from its outset in 2021. However, what we believe is most needed at this point are best practices in teaching and a thematic interpretation of all the complex issues arising at the crossover between digital games and the natural environment. Therefore, from the outset of the Greening Games project, we have been working with four interdisciplinary approaches which, to the best of our knowledge, map out the existing themes and research questions in green game studies and game development.

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<sup>3</sup> *Greening Games Education Report*, accessed 27th May 2024: <https://greeninggames.eu/greening-games-education-report>.

## 2.2 Four Interdisciplinary Approaches

The Greening Games project navigates the richness of ecological considerations in games by working with four interdisciplinary approaches:

- **Games Infrastructures:** games as objects of nature, relying on material resources and practices
- **Games Cultures:** games as objects of culture, carrying societal values and providing spaces for activism
- **Games Production:** games as digital products developed according to workflow processes and practices
- **Games Content:** games as systems designed with embedded ecological messages and aesthetics

The first two engage with humanities-led topics related to **eco-critical game studies**, and the latter two fall under the banner of applied approaches to **eco-critical game development**.

By **eco-critical game studies**, we refer to approaches towards the study of games that engage with ethical, political and cultural dimensions of the medium. The question of the environmental sustainability of video games is embedded in the existing socio-economic power structures.

The **eco-critical game development** perspectives focus on sustainable game production and development as well as on environmentally considerate game design. The first aspect takes into consideration topics such as energy demands of game development, heating office spaces, flying to conferences, or the use of cloud services. These, amongst others, contribute to the industry's overall carbon footprint. The second aspect focuses on designing games representing and simulating ecological dynamics.

We hope that by interpreting environmental sustainability in games via those four leading paths, we can help newcomers to the field in grasping its interdisciplinary complexity.

## 2.3 Inspirations

While designing our teaching resources, we drew inspiration from the work by many other researchers and educators in the field. We learned from colleagues that were interviewed in the first phase of this project, sharing with us their teaching ideas, methods, and experiences. We attended academic conferences, game developers' events and organized our own workshops to learn about the challenges and best practices that exist at the intersection between games and environmental issues. In the teaching pilot conducted at the Cologne Game Lab in the summer semester of 2022, we collaborated with the designers from the Climate Special Interest Group of the International Game Developers Association (IGDA Climate SIG)<sup>4</sup>. We also acquired valuable insights from the interviews carried out with the developers from across the gaming sector. The interview analyses are available in the *Greening Games Education Report* (Fizek et al. 2023).

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<sup>4</sup> IGDA Climate SIG, accessed 27th May 2024: <https://www.igdaclimatesig.org>.

### 3. Modular Solution – Mix & Match

All the encounters with a rich community of researchers, developers and educators contributed to the Greening Games teaching philosophy; one that is highly interdisciplinary and modular, so that green gaming has a chance to be implemented in as many contexts as possible, from a theoretical lecture on games in the Anthropocene to an applied design workshop on making ecological games.

Within the capacity of the Greening Games project, we developed over fifty teaching resources in the following four main categories:

- **course packages** (full syllabi of B.A. and M.A. courses)
- **lecture decks** (introductory and focused lectures)
- **project-based activities** (hands-on activities which may be used during seminars and workshops)
- **additional multimodal materials** (podcasts, videos, card deck, literature library)

All of our resources are open access and available online in the **Repository**<sup>5</sup> on our project's website as well as on the official **Erasmus+ Project Results Platform**.

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<sup>5</sup> Greening Games Repository: <https://greeninggames.eu/repository>.



### *3.1 Course Packages*

Our **course packages** include full syllabi with session-to-session descriptions, which may be particularly helpful to educators who want to design multi-session courses, seminars, or workshops. As opposed to slide decks, which take their audience through a specific problem or topic, course packages provide larger didactic frameworks. Our course packages offer examples of courses designed for bachelor's as well as master's levels. Some are devoted to a humanities-led game studies content while others to design-oriented project-based courses.

### *3.2 Lecture Decks*

Our **lecture slide decks** cover the thematic breadth of the Greening Games project. Lecture packages begin with an introductory lecture deck, which provides a compact interpretation of greening games research and the context necessary to dive into more specific topics offered in focused lecture decks. The focused decks cover material designed specifically in our four thematic areas: Games Infrastructures, Games Cultures, Games Production, and Games Content.

### *3.3 Project-based Activities*

We also developed **hands-on and/or interactive activities**, which are a perfect set of teaching topics and accompanying methods from gamified team research, ranging from creative Lego building to video game play and analysis sessions. The goal of the project-based activities is to provide educators with exciting recipes for activities they may implement in their existing courses.

### *3.4 Additional Multimodal Materials*

The set of **additional materials** includes a variety of media, such as **podcasts, video interviews, a curated list of research sources, and an educational card deck**. All those materials may be mixed and matched and implemented as stand-alone support materials into existing courses. They are also an inspiring way to dive into the topic of green gaming, so they may be the most attractive didactic material for students who find our Repository.

## 4. Greening Games Educational Report

In the initial stage of the Greening Games project, we explored the state-of-the-art in current teaching and research in green gaming. We also examined the most recent initiatives from the gaming sector until the beginning of the year 2023. The report allowed us to contextualize existing pro-environmental initiatives, identify gaps in current knowledge, and to embrace the variety of voices and attitudes towards these issues.

All the insights may be found in the ***Greening Games Education*** report. The report is divided into three parts: Mapping out Teaching and Research, Mapping out the Video Games Industry, and Summary and Next Steps. In the Appendices section, we share the question sets and supporting visual data behind the semi-structured interviews and surveys we conducted among higher education experts and game developers.

The ***Greening Games Education*** report was a milestone in designing this Pedagogical Framework and the resulting didactic materials.

## 5. Credits & Acknowledgements

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The project "Greening Games. Building Higher Education Resources for Sustainable Video Game Production, Design & Critical Game Studies" (2021-2024) supports educators in addressing the interdisciplinary nature of green digital gaming.

More information may be found at: <https://greeningames.eu>.

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Authors (after project coordinator in alphabetical order): Sonia Fizek, Tuki Clavero, Laura Frings, Maria B. Garda, Mata Haggis-Burridge, Andrea Hubert, Lukáš Kolek, Karoliina Koskinen.



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