

Course Unit	Image and 2D Assets	Field of study	Visual Arts/Computer Science
Bachelor in	Game Design	School	School of Public Management, Communication and Tourism
Academic Year	2023/2024	Year of study	1
Type	Semestral	Semester	2
Workload (hours)	162	Contact hours	T - , TP 30, PL 30, TC - , S - , E - , OT - , O -
		Level	1-1
		ECTS credits	6.0
		Code	8309-801-1203-00-23

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Paulo Ricardo da Silva Alves

### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. Recognize and employ the basic principles of visual design for image display and printing;
2. Comprehend the phenomenon of image perception and produce images in response to this;
3. Distinguish, use and create different image formats maximizing quality for different outputs;
4. Understand the differences between vectorial and non vectorial images;
5. Identify and use different typographic family;
6. Demonstrate knowledge related to image generation and effectively use IT tools for that purpose;
7. Analyze themes, compositional structures, models and techniques found in images with different formats and functions;
8. Develop the use of software to produce bitmap or vector images to improve the visuality and communication of a product.

### Prerequisites

Before the course unit the learner is expected to be able to:  
The student must have IT literacy.

### Course contents

- 1) Image, its perception and principles of composition
- 2) Digital instruments: bitmap
- 3) Digital image editing and generation
- 4) Pixel Art
- 5) Digital instruments: vector
- 6) Vector Art
- 7) Case studies

### Course contents (extended version)

1. The concept of image:
  - Human visual system;
  - Image concept, resolution, formats;
  - Bitmap vs. vector
  - Principles of visual composition
  - Graphic styles in digital games
2. Digital instruments: bitmap
  - Introduction to bitmap image editing
  - Common features of an image editor
  - Interface, tools, export
3. Digital image editing and generation
  - Basic concepts and techniques
  - Digital painting for concept art
  - Photocomposition for concept art
4. Pixel Art
  - Process and techniques
  - Pixel Art vs. Voxel Art
  - Sprites e Spritesheet
  - Tilesets
5. Digital instruments: vector
  - Introduction of the vector image creation
  - Common features of a vector software
  - Interface, tools, export
6. Vector Art
  - Process and techniques
  - Graphic styles (flat, isometric, cartoon and skeuomorphism)
7. Case studies

### Recommended reading

1. Fichner-Rathus, L. (2014). Foundations of Art and Design. 2nd Ed. Cengage Learning. [ISBN 978-1285456546]
2. Glitschka, V. (2015). Vector Basic Training: A Systematic Creative Process for Building Precision Vector Artwork. 2nd Ed. New Riders. [ISBN 978-0134176734]
3. Silber, D. (2015). Pixel Art for Game Developers. CRC Press. [ISBN-13: 978-1138413559]
4. VVAA (2009). Digital Painting Techniques: Practical Techniques of Digital Art Masters. Routledge. [ISBN 978-0240521749]
5. Zeegen, L. (2010). Complete Digital Illustration: A Master Class in Image-Making. Mies: Rotovision SA. [ISBN: 9782888930969]

### Teaching and learning methods

Expositive method: with the viewing of various visual compositions, enabling the transmission of knowledge in a structured and continuous manner. Interrogative method: in order to develop students's critical skills. Demonstrative method: leaning on technical equipments and software tools. Active method: where the students take the lead in solving some exercises and works.

### Assessment methods

- Final Evaluation (Interns e Erasmus) - (Regular, Student Worker) (Final, Supplementary, Special)
  - Projects - 25% ("Photobashing and digital painting" individual project.)
  - Projects - 20% ("Pixel Art" individual project.)
  - Projects - 25% ("Vector Art" individual project.)
  - Projects - 5% (Project conducted at the Interdisciplinary Week of DJD. Minimum grade: 7.)
  - Work Discussion - 5% (Participation, attendance and punctuality)

**Assessment methods**

- Projects - 20% (Integrated Project.)

**Language of instruction**

Portuguese, with additional English support for foreign students.

**Electronic validation**

Paulo Ricardo da Silva Alves	Barbara Costa Vilas Boas Barroso	Carlos Sousa Casimiro da Costa	Luisa Margarida Barata Lopes
25-05-2024	29-05-2024	31-05-2024	04-06-2024

This document is valid only if stamped in all pages.