Eina Centre Universitari
Fundació Eina
Disseny Art Barcelona

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REPRESENTACIONS DIGITALS

Edgar Mestre Lara, Nil Vicens Sanchez

Supervising Teacher: Nil Vicens Sanchez

Group: 1

Code: 105711

Credits: 6 ECTS

Course: 1

Semester: 1

Typology: Fundamentals

Subject: Computing

Schedules:

Group	Schedules	Teacher

Teaching Guide Index

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Subject Presentation

Brief Description:

The visual representation of messages, spaces or objects through digital resources implies the understanding and mastery of the tools and software commonly used in the professional design environment. Far from limiting expression, mastery of these resources and technologies must allow going further in visual expression to control its language, complementing analog and manual techniques. The software to be used is the usual one in the professional environment, but it can be executed with alternative open or free license options, if the student so wishes.

Training Objectives:

The general training objective is to achieve technical knowledge and basic skills in both the main digital software in the design environment, and in the concepts linked to the representation and production of graphic material based on these tools.
Specifically, the objectives cover different training areas:

A: Computer and digital environment

1. Know the professional software specific to the field of Design: Indesign, Photoshop, Illustrator, Autocad, Solidworks.
2. Establish solid technical bases for working in the digital environment in general, and in the field of design in particular. Understand the general logic of software, the functioning of different operating systems (MacOs and Windows) and the use of common hardware.
3. Acquire the knowledge, habits of rigor and order necessary to work optimally in a technological environment (procedures, delivery formats, technical characteristics) and design project.
4. Understand and apply the advantages of working with parametric design programs.
2. Representation of ideas and realities
3. Be aware of the basic range of representation tools offered by the different computer programs linked to design and know how to use them optimally and appropriately.
4. Be able to generate different types of images, typical of the visual creation environment, from drawing or illustration, as well as the generation of graphics.
5. Understand the difference between bitmap and vector images, and know how to adapt and use them according to the context.
6. Be able to represent space in 2D based on the drawing of technical plans that meet the requirements of the sector.
7. Be able to represent spaces and/or objects in 3D based on the necessary parameterizations.
8. Be able to generate basic layout graphic pieces, based on the appropriate use of typography, composition, information architecture and the use of images.
9. Identify visual styles and typologies of representation and associate them with the communicative

needs of the project or context.

B. Technical preparation for use and physical production
1. Know the characteristics and know how to generate and optimally use the different formats and extensions of computer documents specific to each program.
2. Know the particularities to take into account when preparing final artwork or files to send for production.
3. Be able to produce and/or print originals and models.

Recommendations

No prior knowledge is required.

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Contents and Methodology

Brief Description:

1. Introduction to computing and the work environment
- Hardware: Internal architecture; Input and output peripherals. Software: Operating systems (Windows, OS X); Design-oriented applications and design specialties. Customization of the environment.

2. Representation of spaces and objects
- Representation of spaces in 2D (drawing of plans)   AutoCAD
The work area. Control of space and views. 2D drawing tools. 2D drawing modification tools. 2D drawing differentiation and organization tools: Layers; Blocks and Libraries; Styles and Color. Dimensioning. Working between multiple files. Copy / Export / Import. Workspace and Print Space.

3. Parametric modeling in 3D   SOLIDWORKS
- The workspace of a 3D parametric program and the differentiation with other programs. Introduction to sketching. Basic tools of 3D drawing: Extrusion; Cutting; Revolution. The intention and planning of the design process. The assembly between different parts of the object: Position relationships; Visualization and color. The creation of plans from modeling. Files, Export and Import.

4. Image processing and creation

5. Retouching and creating bitmap-based images   PHOTOSHOP
- Software capabilities. Basic aspects of the interface and workspace. Overview of the main tools. Management and types of layers (pixel layers, smart objects, text, vectorized shapes, adjustments or effects). Retouching tools. Basic light and color adjustments. Perspective adjustments in space images. Applying text. Drawing tools (brushes). Color management: color samples and modes. Applying text. Working and generating images from the contents of different files. Working from selections (selection tools). Masks (layer and clipping). File formats: characteristics and uses of basic formats (raw, jpg, tiff, png, gif, svg and psd). Verification and adjustment of file size, weight and resolution. Use and adaptation of the main color modes (RGB, CMYK, grayscale, mono/duotone, indexed color). Exporting formats. Animation with Gif format.

6. Creating images from vector-based programs   ILLUSTRATOR
- Software capabilities. Basic aspects of the interface and work area. Overview of the main tools. Drawing from lines and strokes: drawing, joining, separating, combining. Application, parameterization and use of brushes on strokes. Drawing from spots. Drawing from geometric shapes. Simplification and abstraction of shapes (icons). Combination of shapes and vectorization. Preparation of vectorized files for production (cutting or engraving). Working with layers. Using color: samples, graphic palettes,

color modes. Working with text. Exporting images in different formats and resolutions for use in digital environments or for printing.

Layout and design of graphic supports. Pagination

Creation of graphic documents and layout   INDESIGN Creation of simple graphic documents from text. Basic text editing. Typographic specifics and typographic management. Creation of complex documents (advanced layout). Information hierarchy. Definition and application of character and paragraph styles. Guides and grids. Master pages. Use of images. Preparation for printing. Configuration of pdf files. Packaging for printing. Imposition of an original for printing. Printing and production of a mockup.

Teaching methodology:

The sessions include an explanatory and demonstrative part, which will be combined with a practical part attended in class, and will end with the autonomous execution of the corresponding exercises during non-face-to-face hours.

Training activities:

In class, guided and supervised activities will be carried out that do not count towards the final grade. The training activities that will be scored will be autonomous and will consist of:

1. Exercise/s on representation of spaces with AUTOCAD (30%)
2. Volumetric representation exercise/s with SOLID (20%)
3. Graphic design exercise(s) (composition and typographic use) with INDESIGN (25%)
4. Image processing and creation exercises (25%)
5. Bitmap-based image processing with PHOTOSHOP
6. Creating images from drawing (Illustration) and vectorizing images with ILLUSTRATOR
7. Technical aspects related to digital images

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Evaluation

General evaluation regulations

A student will be considered "Not Assessable" (NA) if they have not submitted all the learning evidences or have not attended 80% of the classes without justifying their absences. In case of a justified absence, the student must contact the teacher at the time of rejoining to determine the recovery of the activities they missed.

If the student commits any irregularity that may lead to a significant variation in the grade of an evaluation act, that evaluation act will be graded with 0, regardless of the disciplinary process that may be initiated. If several irregularities occur in the evaluation acts of the same subject, the final grade for that subject will be 0.

Continuous evaluation system

The evaluation system of EINA and UAB is a continuous assessment system, the objective of which is for the student to know their academic progress throughout their educational process to allow them to improve it.
The continuous assessment process must include a minimum of three evaluative activities, of two different types, distributed throughout the course, none of which can represent more than 50% of the final grade.

In class, guided and supervised activities will be carried out that do not count towards the final grade. The training activities that will be scored will be autonomous and will consist of:

1. Exercise/s on representation of spaces with AUTOCAD (30%)
2. Volumetric representation exercise/s with SOLID (20%)
3. Graphic design exercise(s) (composition and typographic use) with INDESIGN (25%)
4. Image processing and creation exercises (25%)
5. Bitmap-based image processing with PHOTOSHOP
6. Creating images from drawing (Illustration) and vectorizing images with ILLUSTRATOR
7. Technical aspects related to digital images

Single evaluation system

The student can request a single assessment in those subjects that allow it, due to their content and teaching methodologies, as established in the course guide. This implies the submission on a single date of the required evaluative evidences for the subject. A motivated request that justifies it must be submitted within the deadlines set by the center.
From the second enrollment onwards, the assessment of the subject may consist, at the discretion of the teachers, of a synthesis test, which allows the evaluation of the learning outcomes outlined in the course guide of the subject. In this case, the grade for the subject will correspond to the grade of the

synthesis test.

Single review process

Learning outcomes of the degree program

Competencies

Manage design-related tasks autonomously, planning and organising time and processes in professional and/or academic settings.

Apply acquired knowledge to the execution of design and art projects with professional standards, considering user and audience diversity.

Skills

Graphically represent spaces, volumes, planes, and surfaces using the characteristic techniques of design.

Use digital tools and technologies according to creative and production processes in the field of design

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