

IED Arti Visive

Virtual design

This course aims at training fundamental professional figures, virtual designers, specialised in the ideation, modelling and animation of objects, characters, environments and effects, entirely realised with digital technologies. Their competencies are requested by different fields of application, ranging from film and television productions, to realistic simulation programmes (virtual reality, applications for virtual sets), in which communication and production needs converge, together with the limits of technology. Virtual designers must flank their creative talents with sound

historical-critical and cultural backgrounds, analysis and scientific investigation abilities, and the necessary flexibility to work in many different production teams. The most important sectors in which the skills and competencies of these professionals are requested, are: film and television productions and post productions (for advertising, broadcasting, home-videos), video games, multimedia production for the Internet and offline products and theme parks. Virtual designers are also a fundamental actor in any production houses in which models and animations are created for

simulation: industrial and transportation design, fashion, architecture, and even for medical, scientific and legal applications. These professional figures evolve in three directions: roles related to ideation (direction, art direction); production management; transversal specialisation in the fields of technologies implemented (modelling and 3D animation), in relation with specific uses like solutions for games, real time 3D applications, performance animation; various technical specialisations.

1st year

MODERN AND CONTEMPORARY ART

Historical-critical analysis on the main modern and contemporary artistic movements, in relation with changes in societies and culture.

BASIC DESIGN

Acquisition of technical/scientific knowledge, methods and languages that constitute the "grammar" of visual communication projects. Morphological elements and psychology of shapes. Colour theory and technique. Topics tackled envisage the coverage of theoretical lessons and laboratory exercises.

GRAPHIC DESIGN ELEMENTS

The foundations of graphic design: creation and application of logos and logotypes; composition of texts and images, through the implementation of margins in page making.

Fonts: historical outline, classification, constructive criteria, lettering selection. Printing techniques.

PHOTOGRAPHY

Basic elements of photographic language and techniques: indispensable notions for video montages and the organisation of photo-realistic sets. Analyses on photographic images in their grammatical and syntactic

elements: framing, angles, light, exposure times.

GEOMETRY OF SOLIDS

Application of geometrical drawing for the analysis on and designing of three-dimensional objects. Implementation of orthogonal projections, axonometry, perspective representations. Drawing from real models. Exercises on graphic supports and computers.

BASIC COMPUTER SCIENCE

Basic notions for theoretical understanding and correct management of systems and peripherals. Hardware configuration for graphic purposes: audio and video cards, colour technology. Files memorisation and compression. Fundamental characteristics of the applications implemented for the creation and elaboration of digital images. Operating systems: Windows, Mac OS and Linux.

THREE-DIMENSIONAL MODELLING

Appraisal of technical notions and of a real work methodology: starting from the analysis of geometrical shapes and spaces, the planning of procedures and the selection of the most suitable tools. Basic elements of rendering, texture, mapping, lighting. Discreet 3D Studio Max (basic)

GRAPHIC PROGRAMMES

The most diffused and implemented applications for fundamental processes concerning digital images - Adobe Photoshop: image digitalisation and elaboration. Macromedia FreeHand: vectorial graphics. Corel Painter: production of pictorial subjects.

SEMIOTICS

Elements of general semiotics: definition of the semiotic area, the choices of the field and unified theory of signs. An approach to more complex problems presented by different shapes and by representation and communication languages.

THE HISTORY OF THE CINEMA

The history of cinematography images through their aesthetic and technical evolution. Critical analyses on the movements and scriptwriters that have changed and innovated the language of the cinema the most.

VISUAL DESIGN

Acquisition of methodologies and tools to solve the visualisation needs at different stages of a project. Representation techniques. The definition of layouts and realisation modalities: from roughs to the final layout. Practice exercises carried out on graphic supports and computers.

2nd year

THREE-DIMENSIONAL ANIMATION 1

Animation projects for simulations and presentations: routes, workflows, actions and changes in objects and environments. Discreet 3D Studio Max.

DIGITAL ART AND CULTURE

A historical and theoretical overview on the uses and communicative implications of various technological tools and modalities of expression linked to the evolution of computer graphics, virtual reality and the web.

CONTEMPORARY VISUAL COMMUNICATION

A critical overview of the latest trends in the fields of graphics, photography, illustration and digital image. The most important experiences, schools, authors.

THE LANGUAGE OF THE CINEMA

Techniques, tools, narrative and expressive solutions in the works of the most important film makers: framing, lighting, camera movements, film direction solutions, montage, special effects. In depth studies on relationship between

cinema and television languages. Elements of film direction. The virtuality of elements and spaces and new narration modalities.

3D MODELLING AND ANIMATION

Construction methodologies for three-dimensional programmes: modelling, rendering, animation. Tests on the capacities acquired, through ad-hoc exercises. Discreet 3D Studio Max (advanced), Lightwave, Avid Softimage XSI (basic).

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MOTION GRAPHICS

From brand names to animated graphics for video and television productions. Techniques and expression elements to combine images, texts and sounds. Mixed techniques, video contributions, bi-dimensional and three-dimensional animation elements, titles, effects. Adobe Premiere, Adobe After Effects.

AUDIOVISUAL PRODUCTION

The history of audiovisual production. Media classification, the evolution of technologies. From films to videos, to digital productions. Production cycle: professional figures, workflow. Pre-production tools. Shooting techniques. Story-board and animatic ideation and realisation.

PHOTO-REALISTIC SETS

The application of project designs of synthetic images: industrial design, architecture, advertising, entertainment. Relationships with product design issues. Professional realisation of comprehensives on different topics and subjects, starting from three-dimensional models. Optimisation of: materials, textures, lights, optics for photo-realistic rendering. Discreet 3D Studio Max (advanced), Avid Softimage.

SOCIOLOGY OF COMMUNICATION

This course is based on representations and analyses on the relationship between media and society over time. The various meanings of the term "communication"; a short history of the media up to the advent of the Internet; the representation of the current situation of the "global village".

SOUND EDITING + FINALIZING

Sound: acquisition, digitalisation, compression; creative elaboration (music, voice, effects); localisation; mixing applications, equalisation, elaboration; digital registration in studios and live; analyses on sound tracks and synchronisation for video montages and animations. Sonic Foundry Sound Forge and Vegas, Macromedia Sound Editor.

VIDEO EDITING

Television standards and basic concepts for the creation and acquisition of video and animation contributions. Thematic approach to NLE montage systems. Formats, compressions, shooting techniques (use of camcorder DV). Narrating through images: sequences, synchronisation, timing. Adobe Premiere, Adobe After Effects.

3rd year

VIRTUAL ENVIRONMENTS

Immersive and non-immersive virtual realities of different fields of applications: entertainment, scientific research, training, prototypes for design and architecture, business. Modelling with Discreet 3D Studio Max through the use of applications for 3D Real Time.

THREE-DIMENSIONAL ANIMATION 2

Appraisal of the most complex and evolved language elements for simulation and the search for the maximum realism in models, rendering, movement of characters and effects. Avid Softimage XSI (advanced), applications for 3D Real Time. Workshops on Motion Capture and technologies for Virtual Set. Alias Wavefront Maya. Moreover, this course includes: Paint 3D, advanced rendering issues (2), programming for 3D, software for face animation and lip sync programmes.

CHARACTER ANIMATION

Preliminary studies on characters. Creation and description of characters. Volume design, expressions, movement simulations, colours. Projects on movement. Narrating a story through three dimensional animation (dramaturgy and acting). Final considerations on timing. Project: from concept to animation of characters.

MANAGEMENT

This module envisages talks held by guest speakers specialised in communications, marketing and corporate culture; project representation techniques; customer relations management and entrepreneurial, administrative, fiscal, legal and legislative aspects concerning this profession.

POST PRODUCTION/COMPOSITING

Creating and assembling different elements that are part of an audio-visual production, based on compositing techniques: audio, video, graphic sections and different kinds of animation. The workflow concept. Shooting for rotoscoping needs. Use of mattes, chroma key, effects, camera

tracking. TV commercial or short film projects. Discreet Combustion, Edit. Workshop: Commotion, Quantel, Inferno, Avid DS.

CULTURAL SEMINARS

Interdisciplinary seminars on project design culture with in-depth coverage on contemporary issues.

THE HISTORY AND LANGUAGE OF ANIMATION

Knowledge on the historical-stylistic panorama of animation techniques and languages, with particular attention paid to contemporary international productions.

DISSERTATION PROJECTS

Dissertation projects envisage the organisation of students into work and study teams that tackle complex issues incurred in project design. The key goal is to pinpoint research pathways that simulate professional realities and develop project design competencies and autonomy.

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These teams are monitored and sustained by senior and junior members of our teaching faculty and professionals.

Dissertation projects are generally managed in collaboration with external partners, Companies, Public Bodies and Private Associations that hold the role of the real customers of the projects.

Dissertation design projects are flanked by specific seminars on the issue tackled with in-depth coverage of cultural, technological and market issues. Topics and organisation modalities are defined and communicated at the beginning of each academic year.

The School Board holds the right to make any eventual changes it feels necessary to the curriculum in relation with the established didactic set goals.

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