

COURSE CONTENT

Course Code	DN1013
Course Title	Concepts for Digital Imaging
Pre-requisites	NIL
No of AUs	3
Contact Hours	39

Course Aims

This course will familiarise you with methods of using digital imaging tools for creative concepts. You will learn to employ the dedicated software to realize your artistic vision. The goal is to achieve an elementary understanding of these tools as an expansion of the artistic palette. The course will focus on developing concepts for single, sequential images and time-based media, which will be produced by using current digital imaging and post-production hard- and software. You will have the opportunity to integrate learned techniques with your own creative concept development.

Intended Learning Outcomes (ILO)

By the end of this course, you (as a student) would be able to:

1. Apply fundamental elements of still and moving image acquisition and creation techniques.
2. Improve audio-visual footage in post-production.
3. Apply creatively and reflexively principles learnt in class (and through external reading and practice) to realise your own ideas with the most suitable medium.
4. Work with capturing, digital drawing and painting and editing techniques with efficiency and confidence, as well as organising and archiving your files correctly.
5. Create cohesive imagery by combining pictorial elements through compositing with careful considerations of the options and challenges involved.
6. Communicate a story intelligibly in audio-visual media through implementation of editing concepts.
7. Evaluate export and presentation options and optimise your files accordingly.

Course Content

- **What is an Image? – Foundation of Digital Imaging**
Understanding the key concepts of digital images, such as vector, bitmap, resolution, bit-depth, aspect ratio, colour basics, alpha-channels and working with layers (blend modes).
- **Basics of image capturing techniques**
Introduction on how basic settings influence the image: perspective, selection of lenses and focal length, shutter speed, aperture, ISO and lighting.

- **Basics of image creation techniques**

Introduction on how to use digital imaging software as a tool for creating images for illustration, animation and comics: Basics of digital drawing and painting, applying layers and alpha channels for image manipulation, concepts for colouring. Working from photo reference.

- **Optimising the Image (Adobe Photoshop)**

Developing an understanding for the potential and weaknesses of still and moving images and learn to apply non-destructive editing-tools for adjustments.

- **Editing Time-Based Media (Adobe Premiere)**

Creating time-based media with editing image sequences and audio along a timeline. Understanding different settings for time-based media such as image sequences, frames per second, aspect ratio, bit-depth, audio etc.

- **Animating Image and Text (Adobe After Effects)**

Learn how to add and influence movements based on layered images and text files. Understanding keyframe-based animation and applying filters and effects.

- **File Management (Adobe Photoshop Lightroom or equivalent)**

Organise your files – labelling and metadata.

- **Colour Management**

Introduction in colour profiles throughout the workflow: from capturing and editing to export and presentation. Understanding different additive and subtractive colour models.

- **Presenting Audio-Visual Media**

Optimising files in high quality for print and screening or compression for the internet.

Assessment (includes both continuous and summative assessment)

Component	Course LO Tested	Related Programme LO or Graduate Attributes	Weighting	Team/Individual
Continuous Assessment 1a and b (CA1): Assignments: Still Image-captured or created	1, 4, 5	Competence, Creativity, Communication and Character	30%	Individual
Continuous Assessment 2 (CA2):	1, 2, 3, 4, 5	Communication and Character	10%	Individual

Image creation through layering techniques (basics of compositing)				
Continuous Assessment 3 (CA3): Time-Based Project	1, 2, 3, 6, 7	Competence, Creativity, Communication and Character	30%	Individual / Team
Continuous Assessment 4 (CA4): Animated Image Sequence	2, 3, 4	Competence, Creativity, Communication and Character	30%	Individual
Total			100%	

Recommended Reading and References

1. Michael Langford, Anna Fox, Richard Sawdon-Smith (2015), *Langford's Basic Photography, 10th edition*, Focal Press
2. Barbara London, Jim Stone, John Upton (2010), *Photography*, Pearson Education
3. Martin Evening (2017), *Adobe Photoshop CC for Photographers*, Routledge
4. Nykolai Aleksander (et al, 2012), *Beginner's Guide to Digital Painting in Photoshop*, 3D Total Publishing.
5. David Bordwell, Kristin Thompson (2016), *Film Art. An Introduction*, McGraw-Hill Higher Education
6. Maxim Jago (2017), *Adobe Premiere Pro CC Classroom in a Book*, Adobe Press
7. Lisa Fridsma (2017), *Adobe After Effects CC Classroom in a Book*, Adobe Press
8. Freddie E. Williams jr. (2009) , *The DC Comics Guide to Digitally Drawing Comics*, Watson-Guption.
9. *Creative Cloud Tutorials*: <https://helpx.adobe.com/support/creative-cloud.html>
10. *Lynda online tutorials*: <https://www.lynda.com/in/Adobe-Software>
11. *The manual of your camera*

Course Policies and Student Responsibilities

(1) General

You are expected to complete all assigned readings, activities, assignments, attend all classes punctually and complete all scheduled assignments by due dates. You are expected to take responsibility to follow up with assignments and course related announcements. You are expected to participate in all project critiques, class discussions and activities.

(2) Punctuality

You are expected to be punctual for all classes. If you are more than 30 minutes late, you will be deemed as absent and will not be able to sign on the attendance register.

(3) Absenteeism

In-class activities make up a significant portion of your course grade. Absence from class without a valid reason will affect your participation grade. Valid reasons include falling sick supported by a medical certificate and participation in NTU's approved activities supported by an excuse letter from the relevant bodies. There will be no make-up opportunities for in-class activities.

Academic Integrity

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the [academic integrity website](#) for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Planned Weekly Schedule*

*Subject to adjustment by instructor according to students' progress, public holidays and unforeseeable circumstances.

Week	Topic	Course LO	Readings/ Activities
1 - 3	<p>Overview of key concepts and theories of digital images, such as vector, bitmap, resolution, bit-depth, colour basics, additive and subtractive colour models.</p> <p>Basics of image capturing techniques Introduction on how basic settings influence the image: perspective, selection of lenses and focal length, shutter speed, aperture, sensitivity and lighting.</p> <p>Basics of image creation techniques Introduction on how to use digital imaging software as a tool for creating images for illustration, animation and comics: Basics of digital drawing and painting, applying layer for image</p>	1, 2, 4, 5	<p>Introductory Lectures on all subjects: digital imaging, capturing editing, exporting / printing colour, file management.</p> <p>Assigned Project 1a.) Capture images with different camera settings OR1b.) Create an image from photographic reference or imagination that employs digital drawing and painting techniques in a multi-layered approach.</p>

	<p>manipulation, concepts for colouring. Working from photo reference.</p> <p>Optimising the Image Developing an understanding for the potential and weaknesses of still and moving images and learning to apply tools for adjustments through non-destructive editing. Optimising files in quality and size for import and export formats.</p> <p>File Management Organise your files – labelling and metadata.</p> <p>Colour Management Introduction to colour profiles throughout the workflow: from capturing and editing to export and presentation.</p>		<p>In-class exercises for image editing Student Presentations of edited results</p> <p>It is suggested to work on images for Audio-Visual Storytelling created from the image-capturing exercise. Alternatively, students can create a series of sequential images through drawing or painting that can be used later for the editing assignment.</p>
4-5	<p>Basic concepts of layering and compositing Understand basic concepts of compositing through integrating diverse pictorial elements to create an artistically cohesive whole; applying layers, alpha-channels and blend modes.</p>	1, 2, 3, 4, 5	<p>Lecture on the importance of layering and compositing for photo and illustration, film and animation In-class exercises to understand basic concepts of layering and compositing.</p> <p>Assigned project: 2.) Image creation though layering techniques (basics of compositing) Through this assignment, students will learn to create a cohesive artistic whole from diverse image elements.</p>

			Project critique and review
6 - 8	Editing Moving Images Introducing the concept of timeline-based editing with a short term project	2, 3, 4, 5, 6	<p>Lecture on the foundation of audio-visual media Lecture on time-based media and basic concepts of editing In-class exercises to add a temporal component to a previously edited image through movement and audio.</p> <p>Assigned Project 3.) Editing Moving Images The students will work with the captured (or created images) to create a short filmic sequence. This assignment will require the students to understand and apply the major concepts of editing to tell a comprehensible linear story.</p> <p>In-class exercise Project Critique Student Presentations</p>
9-12	Animating Image and Text Learn how to add and influence movements based on layered image and text files.	2, 3, 4, 5, 6	<p>Lecture: Animation basics and applications across fields: Title sequences, motion graphics and VFX.</p> <p>Assigned Project 4.) Animated Image Sequence The students will create an animated image sequence that</p>

			<p>will demonstrate your understanding of editing, the aesthetics of movement and image integration to tell an intelligible story or to obtain a conclusive graphic concept.</p> <p>Project Critique Student Presentations</p>
13	<p>Presentation Final presentation of all projects</p>	3, 5	