OBEC

INSPIRING REVOLUTIONARY EDUCATIONAL CREDENTIALS

Module 2

One Block for Educational Credentials (OBEC)
2020-1-SE01-KA204-077803

Co-funded by the Erasmus+ Programme of the European Union

OBEC

Swideas

SIMORA
RAZVOJNA AGENCIJA
SISAČKO MOSLAVAČKE ŽUPANIJE

Lai-momo

1506
UNIVERSITÀ
DEGLI STUDI
DI URBINO
CARLO BO

eurada

The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Co-funded by the Erasmus+ Programme of the European Union

ABOUT THE PROJECT

OBEC (2020-1-SE01-KA204-077803) is a KA2 Strategic Partnership co-funded by the Erasmus+ of the European Union. Led by SwIdeas in Sweden, the project gathers partners in Croatia (Regional Develpment Agency of Sisak-Moslavina County - SIMORA), Italy (LAI-MOMO Società Cooperativa Sociale & Università degli studi di Urbino Carlo Bo), Belgium (EURADA - Association Europeenne Des Agences Developpement).

OBEC is an innovative project that aims to explore the potentials of Blockchain technology to promote competency development and recognition of skills and qualifications by creating an innovative system to issue and validate learning credentials on a trial basis. Through this effort, the project's goal is to encourage the professional and academic integration of migrants, exchange students, and individuals with informal and non-formal learning backgrounds.

By contributing to the educational and economic integration of these targeted groups, OBEC envisions to benefit individuals with migrant background, students, teachers, education institutions, and employers. Focusing on the key issue of lack of uniformity and transparency in systems of validation of credentials, it is expected that this effort will result in positive effects in the working context, promoting employability, empowerment, and accessibility to the labour market.

OBEC Module 2

– Blender –

Topic:
Blender

Description:
This module introduce Blender, the professional open-source tool for 3D computer graphics which is used to create animated films, visual effects, models for 3D printers, interactive content, and much more.
This module also include the concept, motivation and methodology of the course so wider public, and especially target audience, can easily understand the program and its importance for current and future game developers.

Target Audience:
- Beginners in game development
- Unemployed people
- Pupils/students

Milestones:
- Introduction to the Blender program
- Reasons and motivation behind the course
- Description of the course methodology

Final Badge:
Advanced user in Blender

The European Commission support for the production of this publication does not constitute endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein. This project is co-funded by the European Commission through the Erasmus+ Programme under the call KA204 - Strategic Partnerships for adult education. Project Code: 2020-1-SE01-KA204-077803.

Type of Exercise:	**Presentation and Reflection**
Time:	1 hour
Contents/Activities:	• What is Blender program and who is it for? • Importance of Blender program in video game development • Structure of Blender program • Reflection • Quiz
Objectives:	Upon completion of all milestones, the participants will: • Have an information about Blender program, what is it, who is it for, and how it is implemented in video game development • Learn about importance and benefits of Blender program • Understand how the program is structured, what kind of knowledges and skills it brings to developers, and what is going to be learned
Assessment format:	Quiz
Material:	TBC

The European Commission support for the production of this publication does not constitute endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein. This project is co-funded by the European Commission through the Erasmus+ Programme under the call KA204 - Strategic Partnerships for adult education. Project Code: 2020-1-SE01-KA204-077803.

OBEC

Project Partners

Swideas

1506 UNIVERSITÀ DEGLI STUDI DI URBINO CARLO BO

Lai-momo

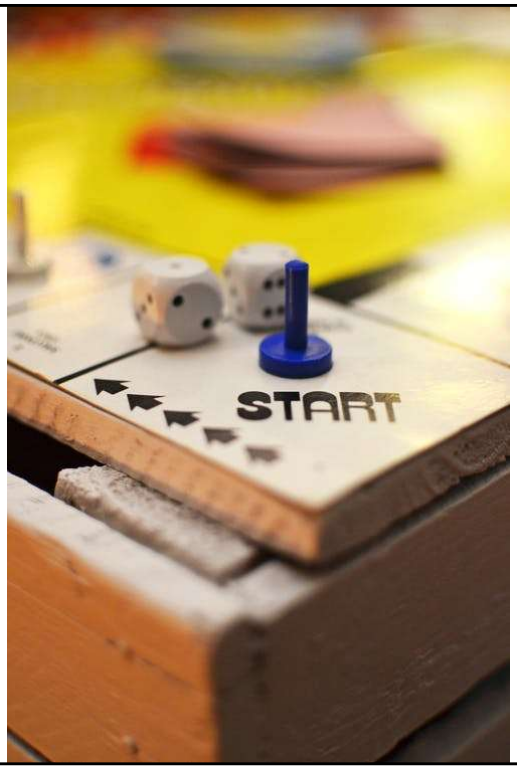
SIMORA RAZVOJNA AGENCIJA SISAČKO MOSLAVAČKE ŽUPANIJE

eurada

MODUL: BLENDER

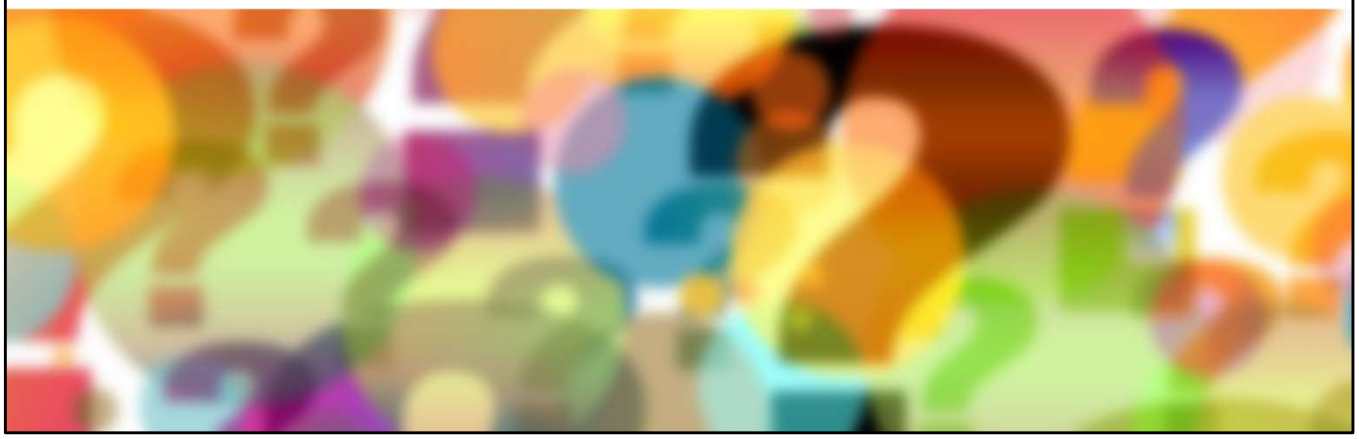
The European Commission support for the production of this publication does not constitute endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein. This project is co-funded by the European Commission through the Erasmus+ Programme under the call KA204 - Strategic Partnerships for adult education. Project Code: 2020-1-SE01-KA204-077803.

BEC
GAME DEVELOPMENT
– BLENDER PROGRAM
SIMORA
RAZVOJNA AGENCIJA
SISAČKO MOSLAVAČKE ŽUPANIJE

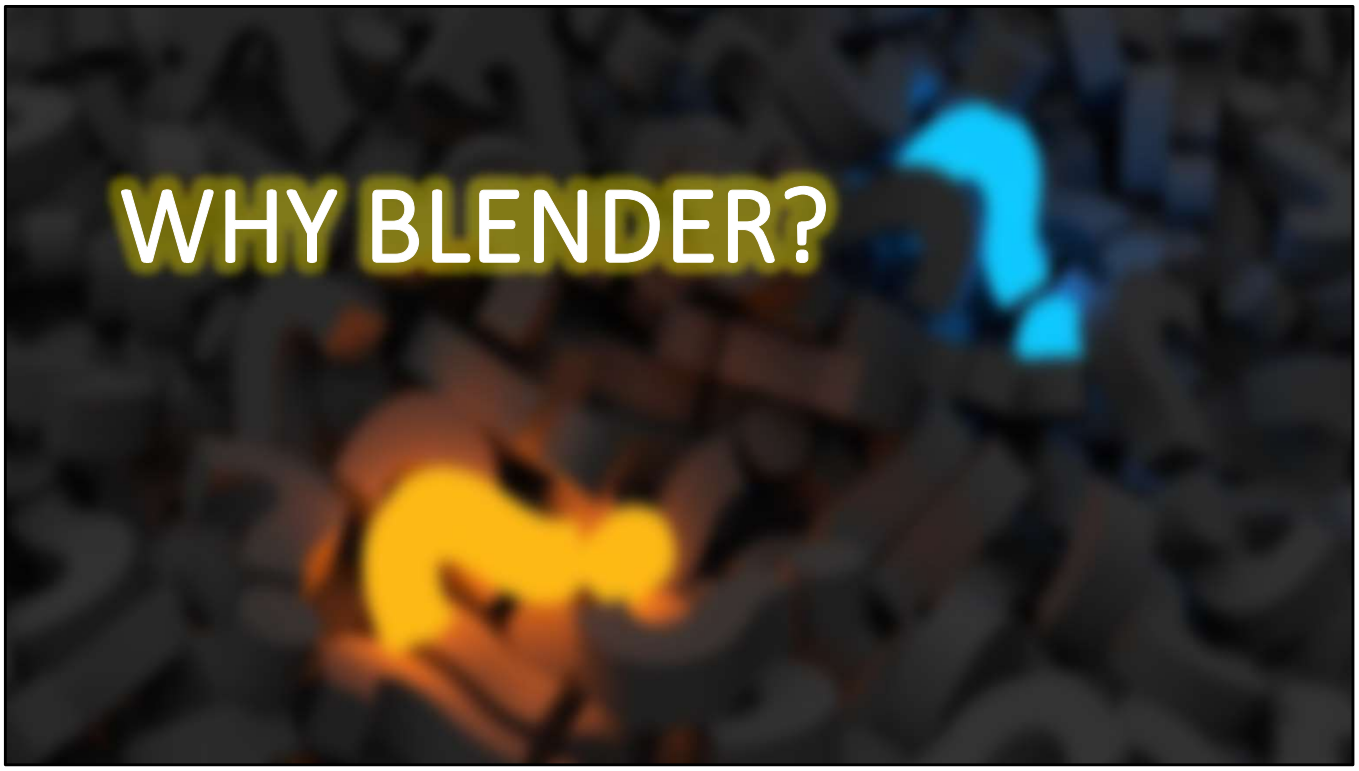


In today's digital world, it is difficult to imagine a world without multimedia. We are constantly surrounded by all kinds of multimedia such as text, sound, video and animations. Although we are often unaware that computer graphics have been implemented in almost all branches of visual media and industry. Computer graphics has enabled the creation of new industries, among them the fastest growing branch of the entertainment industry, video games.

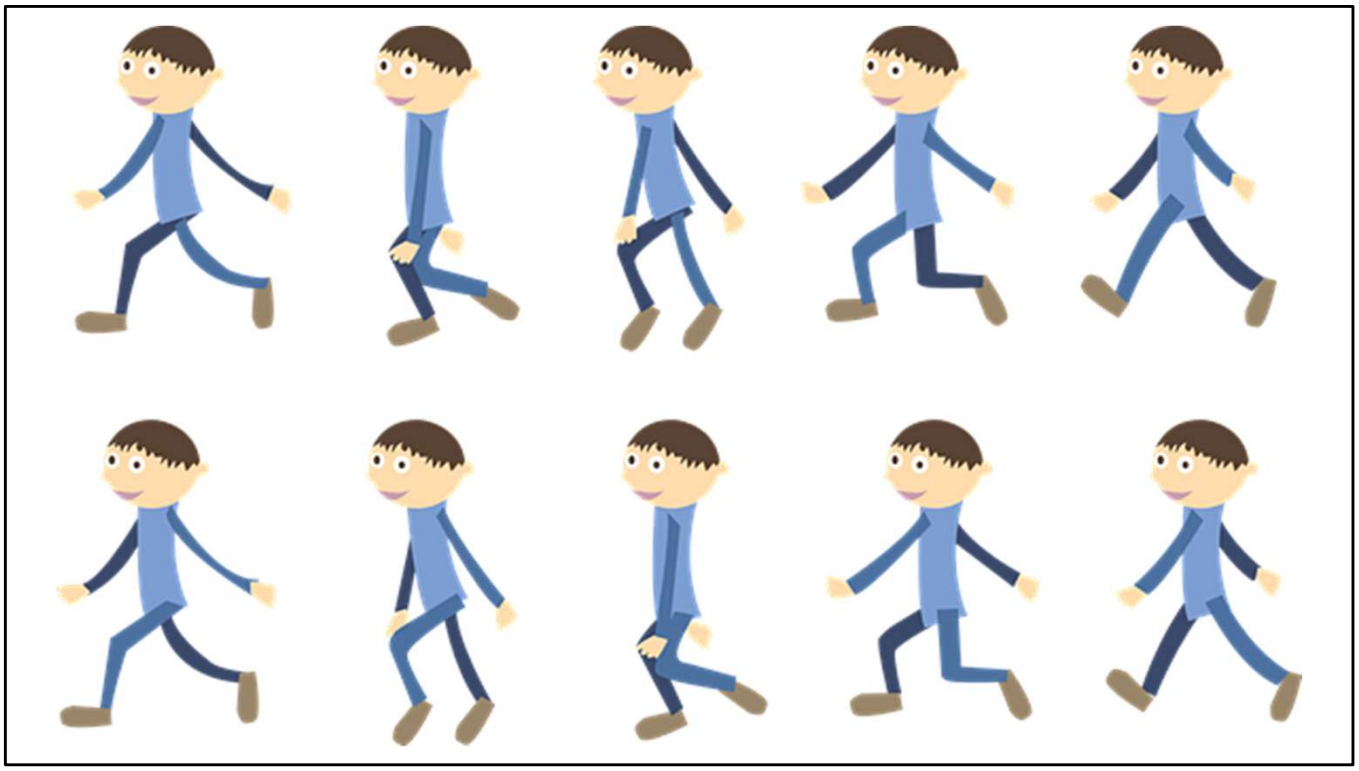
WHAT IS BLENDER?



Blender includes a free professional open-source tool for 3D computer graphics and is used to create animated films, visual effects, models for 3D printers and interactive content. In the last few years, Blender has seen more and more users and accelerated development that allows you to follow trends in the industry.



With this education, participants will acquire knowledge about video game graphics.
The 1990s were marked by the biggest changes in the innovations of the video game industry. Thus, simple graphics developed to 3D graphics that provided a better video game experience, but also encouraged the development of different genres of video games. All graphics consist of one or more elements of graphic design. Design elements are its components, such as color, type and images. Each design is made of basic elements stacked per certain principles. Good knowledge of the properties of these elements, as well as the design principles by which compositions are built from them, is of great importance for any designer. Creating animations for video games is very different from creating animations for movies.



The main difference is that the film simply needs to be *reviewed*, and the purpose of the video game is to *interact*. The word animation means revival. In computer graphics, the animation is a series of methods by which objects are triggered or distorted. Animation of solid bodies involves moving some objects in the scene, without deformation. With the advent of increasingly advanced computer technology, it is possible to accelerate the development of computer animating, as well as facilitate the 3D animating process itself.

The most popular free software package for 3D modeling is Blender. It is a free open source digital tool that is predominantly used to create animated films, visual effects, 3D modeling, create 3D models for printing on 3D printers, and in the computer game industry. In short, Blender is a versatile software in which you can do almost anything.

WHO IS IT FOR?
• beginners in game development
• unemployed people
• pupils/students

The Blender program consists of 10 themes, which are included into a 6-month program, and are going to be explained.

COURSE TIMELINE

120 lectures – 8 hours a day, theory-practice divide

30 days of basic lectures

Small scale project

40 days of mid-level lectures

Group project

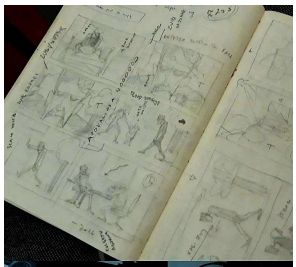
50 days of advanced studies

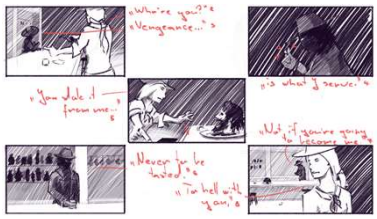
Final work

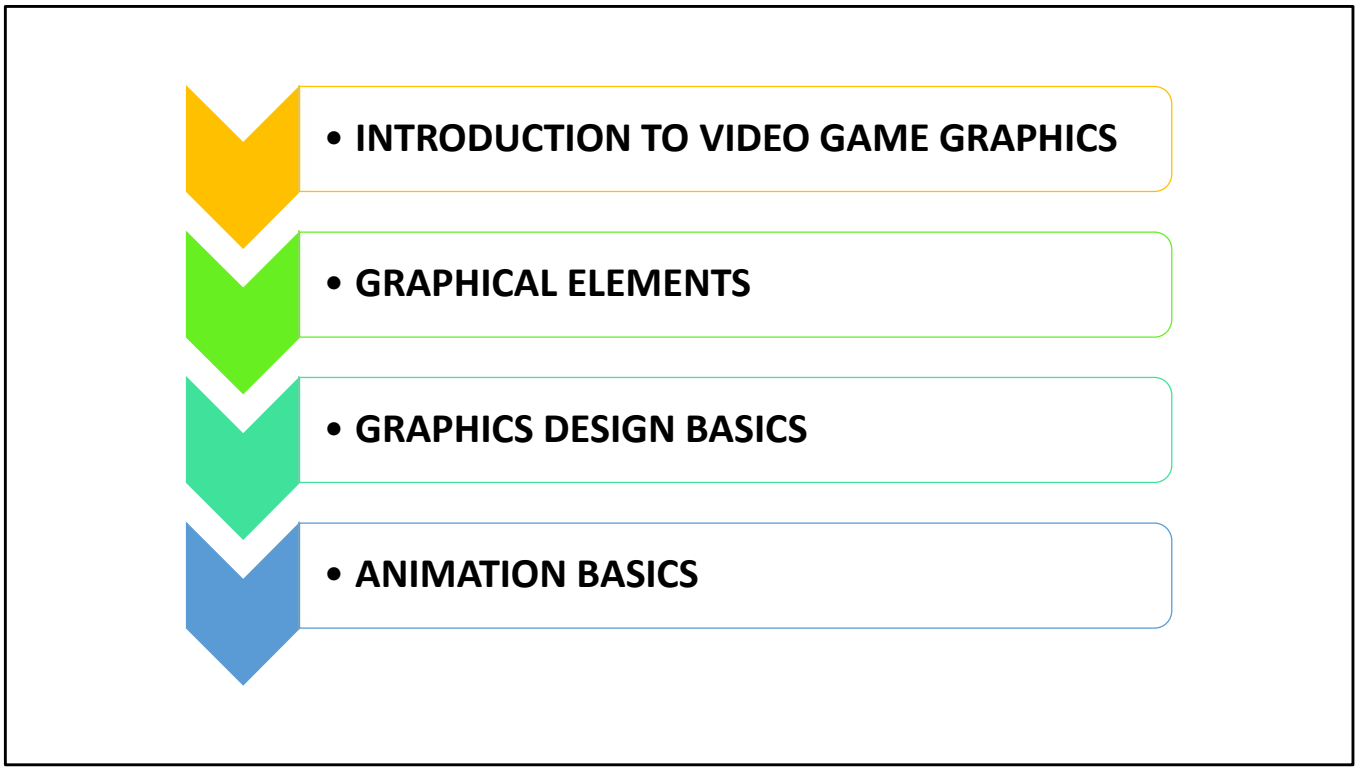
LECTURES

This is what lectures look like.

LECTURES



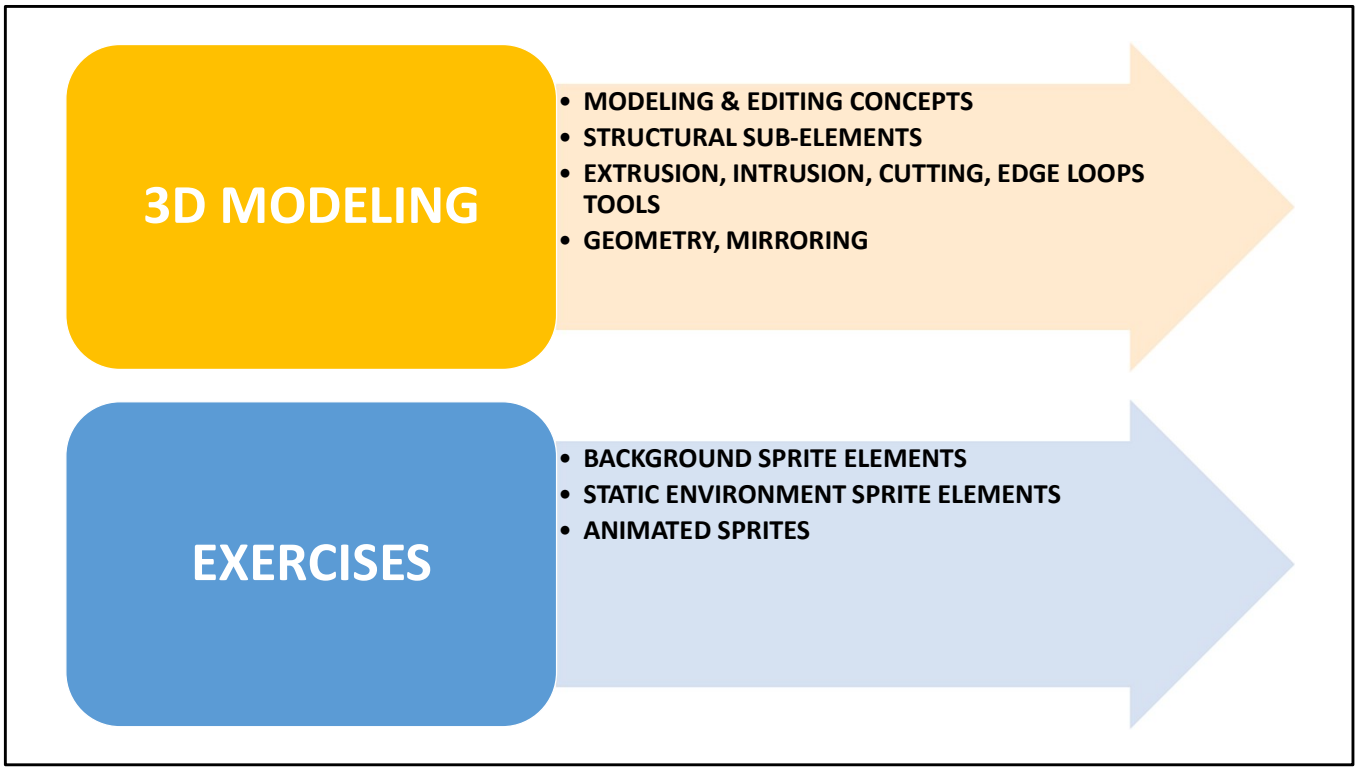




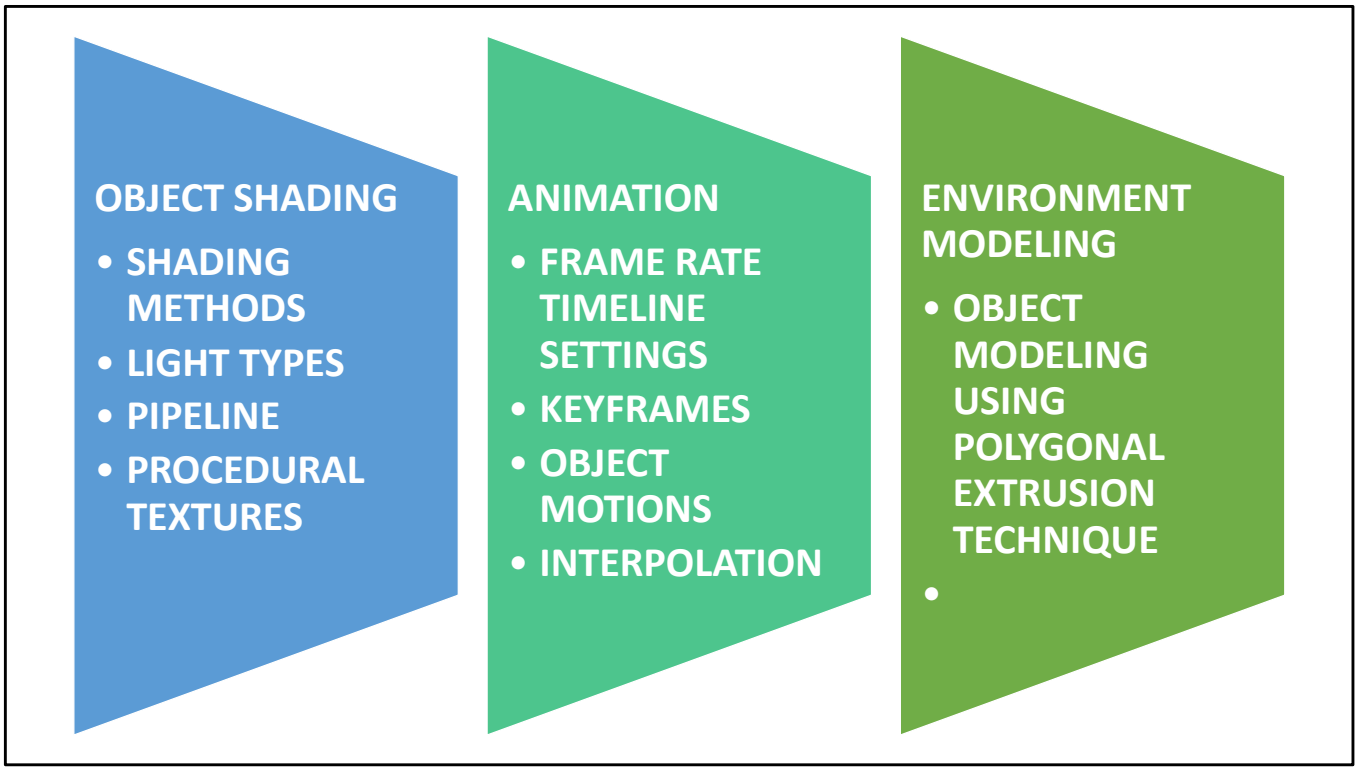
In the first month, participants will learn:

- Introduction to video game graphics – basics of shapes, colors, various programs for graphic, studies of reference images and real space
- Graphical elements - 2D sprite creation process, creation of sprite atlas sheet, creation of texture bitmaps
- Graphics design basics - design methods according to the game type, design basics based on display technology, graphical user interface design
- Animation basics - time line, dope sheet, graph editors, sprite sheet animation

and so on.



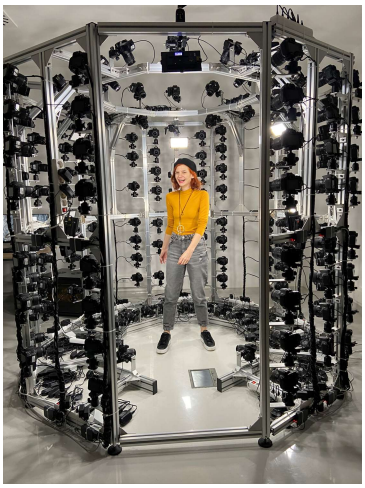
In second, third, and fourth month, participants will learn 3D modeling (such as modeling concepts, editing concepts, structural sub elements, extrusion tools, insertion tools, hierarchy and parenting structure, geometry mirroring) and will exercise different elements (for example background sprite elements, static environment sprite elements, animated sprites).

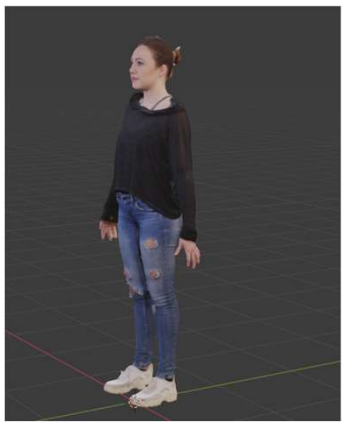


Fifth and sixth months are reserved for Object shading, Animation, and Envirnoment modeling.
In those parts, participants will learn how to shade objects (different methods, techniques, textures, and so on), all about animation (which include 3D model preparation, frame rate timeline settings, timeline animation and keyframes, object motions according to physical properties, keyframe settings and adjusting, linear motion interpolation), and environment modeling.

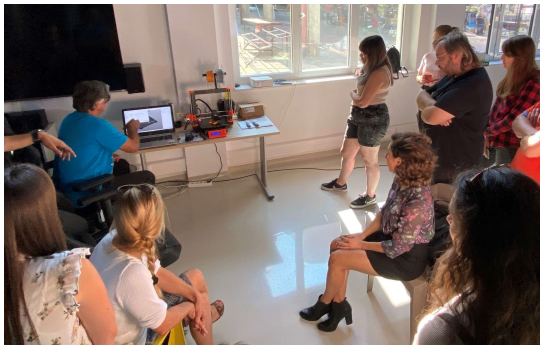
MOTION CAPTURE WORKSHOP

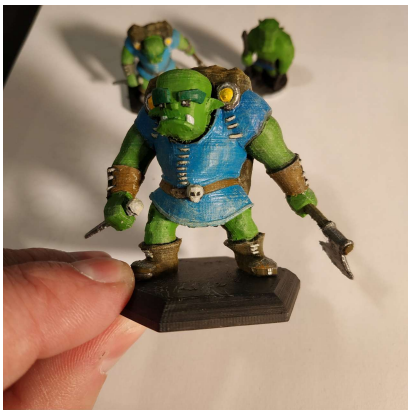
PHOTOGRAMMETRY WORKSHOP

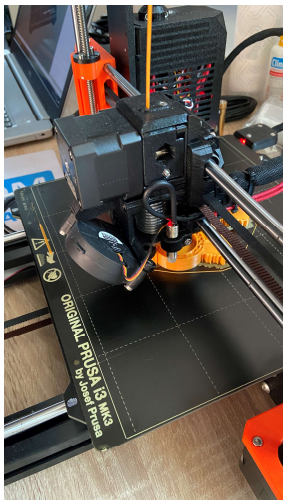




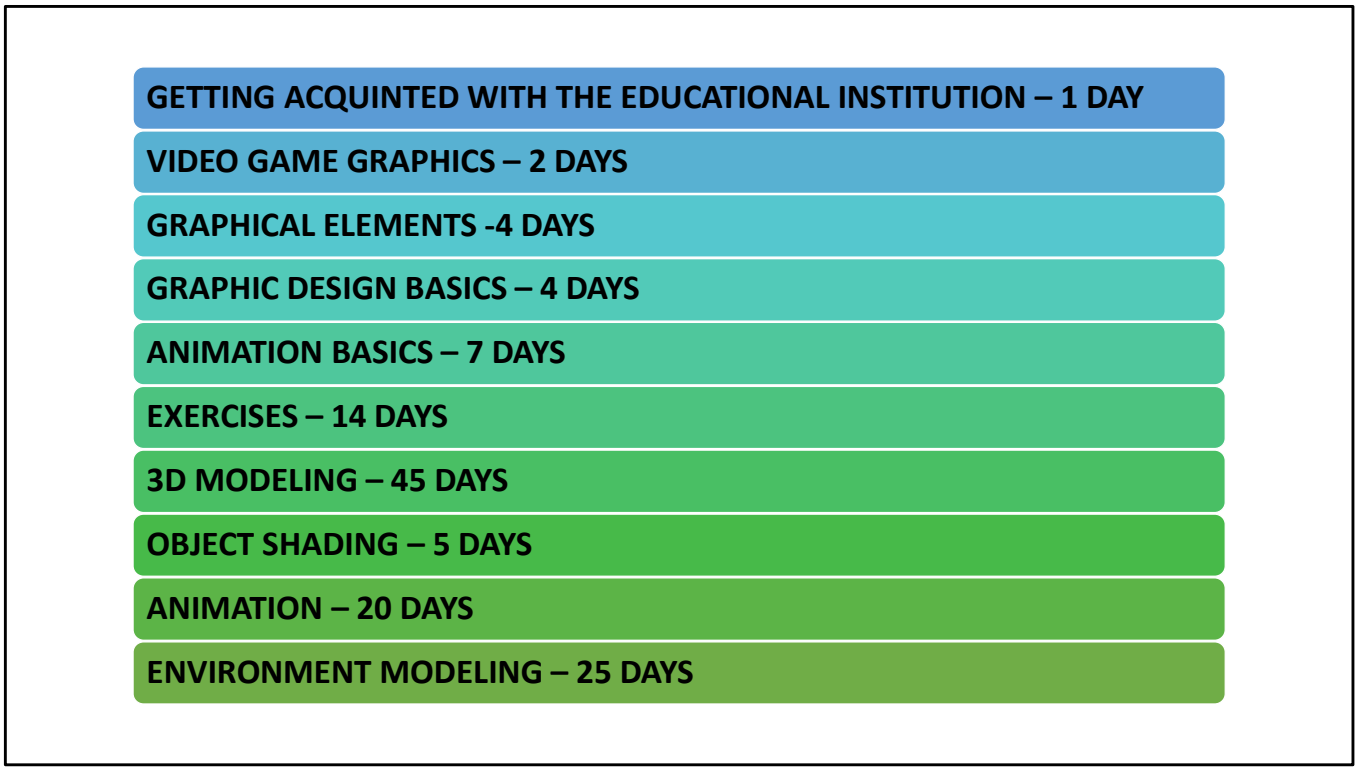
3D PRINTING WORKSHOP



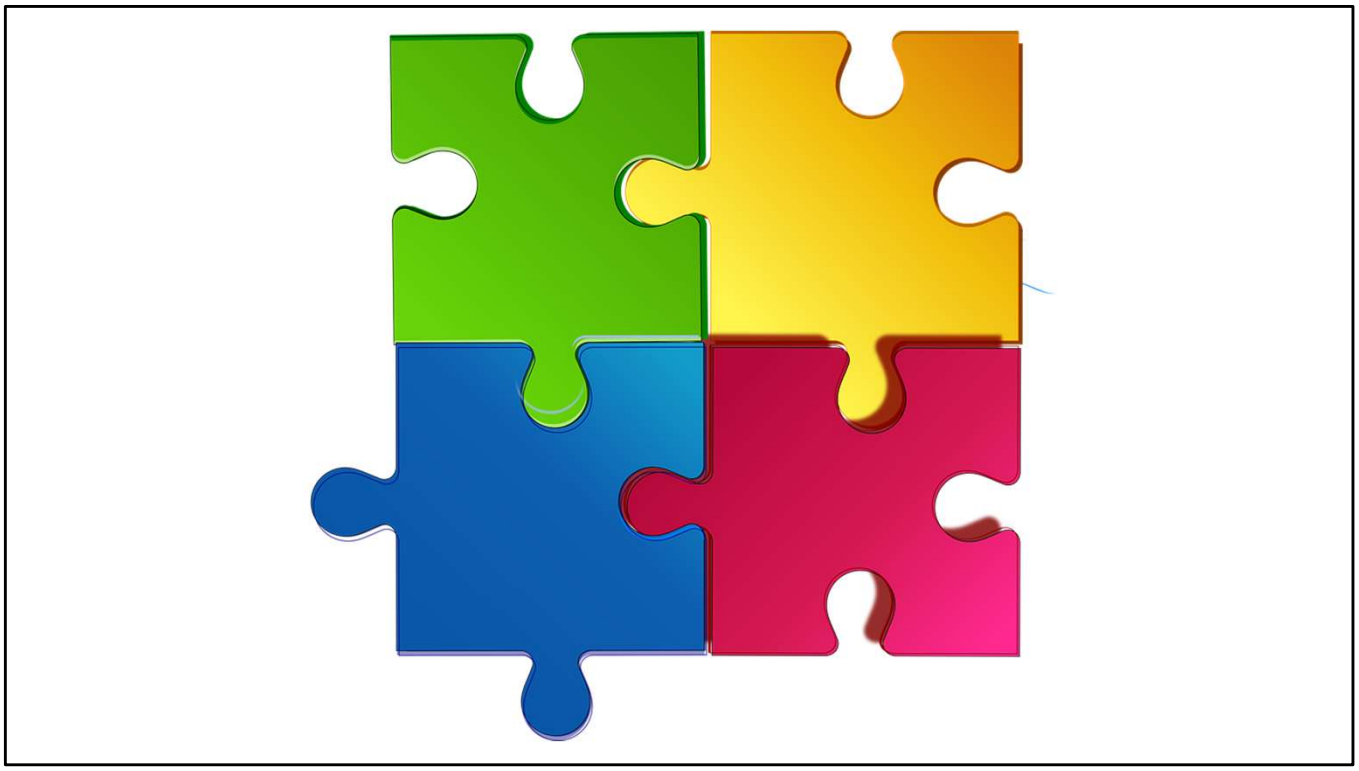




How long it all lasts?



As seen, all elements of the Blender program lasts for 127 days. The biggest parts of the program are 3D modeling, animation, and environment modeling.



From begginig till the very end, Blender program brings wide range of knowledge which is need for everyone who wants to join the amazing world of video games.

ADVANCED USER IN BLENDER

After completing the Blender program, participants will be advanced users in Blender.

IMPLEMENTERS

The implementers of the Blender program are Regional Development Agency SIMORA and its Business Incubator PISMO.

The European Commission support for the production of this publication does not constitute endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein. This project is co-funded by the European Commission through the Erasmus+ Programme under the call KA204 - Strategic Partnerships for adult education. Project Code: 2020-1-SE01-KA204-077803.