

Course description (topics)

| | | | | |
|---|---|---|--|--|
| Title of the course: Develop interactive experiences in Real-Time – the Basics of Unreal Engine | | | | |
| Tutors of the course , contact details: Barnabás Nemes, nemesbarna@gmail.com | | | | |
| Code: | Related curriculum (programme/level): | Recommended semester within the curriculum: | Credit: | Number of class hours: Student working hours: |
| Related codes | Type: (seminar/lecture/class work/consultation, etc.) | Can it be an elective course? | In case of elective what are the specific prerequisites: | |
| Course connections (prerequisites, parallelis): | | | | |
| <p>Aim and principles of the course:</p> <p>The goal of the course is to familiarize students with the basic features and use cases of Unreal Engine. Through the development of an interactive demo project, students will be able to acquire everything they need to kickstart their Unreal journey.</p> <p>During the course students will work (preferably in teams) with Unreal Engine and deliver at least one packaged, playable demo. Multiple lectures will take them through the bits and bolts of game development. From visual development and environment building, to gameplay functionality building, character animation and particle systems, sequencer animations and many more.</p> <p>Unreal Engine is a leading real-time engine that is used in all over the media industry, a very useful tool to know for any kind of digital artist.</p> | | | | |
| Learning outcomes (professional and general competences to be developed): | | | | |
| Knowledge: | | | | |
| <ul style="list-style-type: none">- Comprehensive knowledge of most Unreal Engine related tools and concepts.- Understanding the basics of real-time project development | | | | |
| Ability: | | | | |
| <ul style="list-style-type: none">- Ability to adapt ideas to realistic timely and creative constraints, and putting them into practice and realizing them in a playable form. | | | | |
| Attitude: | | | | |
| <ul style="list-style-type: none">- A critical approach to game development and different creative and production practices and achievements.- Openness to new knowledge, perspectives and methods. | | | | |
| Autonomy and responsibility: | | | | |
| <ul style="list-style-type: none">- Independently oriented and able to carry out the tasks assigned.- Seeks out solutions to arising questions, is able to solve complex problems. | | | | |
| Topics and themes to be covered in the course: | | | | |
| Unreal related, mostly technical topics that will be covered: | | | | |
| <ul style="list-style-type: none">- navigation | | | | |

- object manipulation
- materials
- blueprints
- blueprint communications
- physics and collision
- gameplay systems
- UI

- greyboxing (layout)
- environment building
- splines
- skeletal meshes
- sequencer and animations
- animation blueprints / animation montages
- cameras
- Niagara particle systems

- lighting basics
- Lumen / baked lighting practices

- basic optimization
- packaging project /best practices

Other topics

- where is Unreal used - what is the benefit of real-time engines
- what makes a game engaging, why do we play
- team building and working together
- project development
- project management and organization
- asset creation / management
- narrative design
- presentation
- target audience

Specificities of process organization / organization of learning:

Course structure, nature of the individual sessions and their timing (in case of several teachers' involvement, please indicate the distribution of their teaching input:

Weekly in person classes.

Students' tasks and responsibilities:

In person attendance is required along with being prepared to classes by doing the weekly assignments and developing the main demo project until the last class. Details of the demo project and what is the minimum requirements for it will be discussed during the course.

Learning environment: (e.g. classroom, studio, off-site, online, in-company placement, etc.)

classroom

Assessment:

(in case of more teachers are involved and they evaluate separately, separate assessments per teacher needed)

Requirements to be met:

Active, continuous attendance at consultations and sessions, completing tasks on time and to the expected standard. Delivery of main playable (packaged) demo project until the end of active semester.

Method of assessment: (what methods are used for assessment {test, oral question, practical demonstration, etc.})

Assessment criteria (what is taken into consideration in the assessment):

How is the mark calculated (how is the result of each assessed requirement reflected in the final mark? {e.g. proportions, points, weights}):

- Quality and quantity of completed assignments (in time)
- Attendance and active participation in lessons
- Quality and enjoyability of main project (requirements and details to be announced during the course)

Required Literature:

Recommended Literature:

Katie Salen_ Eric Zimmerman - The Game Design Reader_ A Rules of Play Anthology (2006, Mit Press)

Schell, J. - The Art of Game Design_ A Book of Lenses, Third Edition (2019, CRC Press)

Other information:

Recognition of knowledge acquired elsewhere/previously/validation principle:

- No exemption from attending and completing the course will be granted,
- Exemptions from the acquisition of certain competences and the completion of certain tasks may be granted,
- some tasks may be replaced by other activities,
- full exemption may be granted.

Out-of-class consultation times and location