

2DAVRP21 Development for VR/AR Production

Emnekode: 2DAVRP21

Studiepoeng: 8

Semester

Høst

Språk

English

Krav til forkunnskaper

Required previous knowledge: 2IAVRP21- Introduction to VR/AR Production

Læringsutbytte

Learning outcome

On successful completion of the course, the student has acquired the following learning outcome:

Knowledge

The student

- has knowledge of full workflow of the interactive content Development
- has knowledge of how to apply existing concepts in 3D interaction design into their applications
- has knowledge of large and small screen projection systems
- has knowledge of how to identify and program use of optical tracking systems in their immersive content
- has knowledge of how to apply and set up various 3D stereoscopic projection formats to interactive content

- has knowledge of practically development and testing of their concepts for the application on various immersive systems
- has extensive knowledge of differences and similarities between VR and AR modes
- has knowledge of how to plan and understand the UI/UX specifics for immersive systems
- has knowledge of how to apply various type of multimedia content and embed it into the 3D interactive VR applications
- has knowledge of how to analyze requirements and design features required for specific VR/AR solution
- has knowledge of how to program physics in real time rendering applications

Skills

The student

- can do review prototypes and their functionality
- can create prototypes for testing
- master to optimise products for specialised content
- can script for basic functionally programming
- can decompile existing projects and prototypes to understand possibilities
- can carry out dynamic routes design
- can analyse and problem solve techniques
- master debugging
- can script in development for immersive systems
- can deploy immersive systems
- can complete prototypes and nodes designed to support interaction in immersive systems
- can use tracking systems
- can set up and use stereoscopic features
- can use various navigation devices for immersive systems
- can set up cluster visualisation systems
- can set up, configure and take use solutions for natural Interfaces
- master the role of physics in interactive applications
- master export of physics features from industry standard 3D-application

General competence

The student

- can give professional reasons for the decisions made during the development process both in writing and orally.
- can develop and perform extensive testing of prototypes for optimisation

Innhold

Contents

- Understanding the process of interactive 3D content development
- User interface of authoring tool for interactive 3D content development
- Installation and configuration various 3D visualisation tools
- Basics of data processing with nodes, prototypes and routing methods in specified interactive 3D content authoring tool
- Overview and analysis of nodes, prototypes as components of VR/AR scene
- Introduction to routes format of programming interactivity
- Programming basic types of interactions via I/O devices
- Setup of visual appearance features
- Examples of mini projects
- Basic physics in the interactive applications
- Complex UI development with 3D, 2D and scripting elements
- Dynamic loading of the assets and streaming
- Design process for prototypes
- Practical use of external data within interactive applications
- Practical use of scripting in advance functionality programming
- Immersive system recognition and specifics
- Use of the gestures in interaction design
- Cluster visualization systems
- Templates for immersive systems and template injection
- Stereoscopy - settings and parameters
- Use of tracking system
- Use of various navigation devices
- Audio and video content in immersive and interactive applications
- UI/UX in various immersive experiences

Arbeids- og undervisningsformer

Organisation and teaching methods

The course is organised as a combination of lectures, practical exercises, weekly hand-ins, self-study and supervision.

Teaching in plenary sessions and individual work/individual assignments

Obligatoriske krav som må være godkjent før eksamen kan avlegges

Course requirements that must be approved before being eligible to sit the examination

- 1-3 individual assignments
- 80% attendance

Eksamen

Examination

- 6 hour individual practical and written exam

Graded letter marks are used, from A – F, where E is the lowest pass grade.

The examination can be given in Norwegian.

Ansvarlig fakultet

Fakultet for audiovisuelle medier og kreativ teknologi