Game Minor

Game Art Course

General

General	Game Art
Course title (long) NL	Game Art
Course title (long) EN	Game Art
Course title (short) NL	Game Art
Course title (short) EN	Game Art
Osiris course code	GAMEGA05
Credits (ECTS)	7.5
Study load (hours)	210
Course learning outcomes	• **GART-1**: You design a creative 3D model • **GART-2**: You design a modular 3D model • **GART-3**: You design a 3D character • **GART-4**: You design a scene in a 3D environment • **GART-5**: You create audio that fits multimedia. • **GART-6**: You make your considerations regarding your design choices visible. • **GART-7**: You reflect on the outcome of the soundtrack for a game environment.
Delivery format	Full-time
General description	You will design 3D-worlds and -objects using a 3D-modeling tool such as 3D Studio Max or Maya. You will learn the fundamentals of these techniques. In addition, you'll learn about designing and creating sound and music that fit a game. Options for specialization include sound in games and designing and creating animated characters.
Course prerequisites	Propaedeutic certificate
Individual learning pathway possible	No

Assessment

Assessment	GART Portfolio-Audio
Assessment (component) name (NL)	GART Portfolio-Audio
Assessment (component) name (EN)	GART Portfolio-Audio
Osiris assessment (component) code	TEST-01
Covers learning outcome(s)	GART-5, GART-6, GART-7
Assessment criteria	- GART-5: You create a clear atmosphere or mood with your soundtrack. You create a soundrack for a game-environment. You create your own soundtrack for a video. The audio you choose creates an immersive narrative and

Assessment	GART Portfolio-audio
	dramatic arc for the game-environment. Your selected sound creates an immersive narrative and a strong dramatic arc for the video. Your selected sound forms a convincing, cohesive whole. Your selected sound fits the on-screen events well. You reflect on the result of the soundtrack for a video. You create variation within the composition of the soundtrack. • **GART-6**: You document the design process for the video soundtrack, providing insight into the key considerations and design choices. You document the design process of the soundtrack for a game-environment, providing insight into the most important considerations and design choices. • **GART-7**: You reflect on the outcome of the soundtrack for a game-environment.
Assessment format (partial exam)	PROD (Professional) Product
Exam session	P1A, P2A, P3A, P4A
Permitted resources	None
Weighting (partial exam)	30%
Exam type	Online/digital
Minimum passing grade (partial exam)	5.5
Compensation option	N/A

Assessment	
Name (partial exam) NL	3D Models
Name (partial exam) EN	3D Models
Osiris (partial exam) code	TEST-02
Covers learning outcome(s)	GART-1, GART-2, GART-3, GART-4
Assessment Criteria	• **GART-1**: You describe a rich backstory for the 3D-object you will develop. You create sketches/silhouettes/artwork of the 3D-object to be developed. You justify the design of your 3D-object. You create a low-poly model of your 3D-object based on blueprints and planes. You create textures for your 3D-model. You apply your textures to your 3D-model. You demonstrate creativity in your design. • **GART-2**: You design a modular 3D-model • **GART-3**: You show multiple views of your character in the artwork. You create sketches/silhouettes/artwork of your character. You write a rich backstory for your character (backstory) • **GART-4**: You justify that the relationship between the objects is coherent and meaningful. You combine multiple objects into a coherent and meaningful environment.

Assessment	
Format(s) (partial) exam	PROD (Professional) Product
Exam session	P1A, P2A, P3A, P4A
Permitted resources	None
Weighting (partial) exam	70%
Exam Type	Online/Digital
Minimum Grade (Partial Exam)	5.5
Compensation Option	N/A

Assessment	
Minimum Course Grade	5.5

Course Offering

Course Offering	
Teaching Period	P1A, P3A
Required class participation	N/A
Minimum/maximum number of participants	Minimum: 16
Course offering	In-class sessions where you'll learn the fundamentals of Game Art and Sound. Using the theory as a guide, you'll get hands-on and work through assignments. You'll carry these skills into the Game Project.
Options (in Osiris: instructional formats)	In-class sessions. Workshops Exercises Assignments
Required reading	N/A
Required software / required materials	• Blender

Game Design Course

General

General	Game Design
Course title (long) – Dutch	Game Design
Full course name (EN)	Game Design
Short course name (NL)	Game Design
Short course name (EN)	Game Design
Osiris course code	GAMEDE12
Credits	7.5
Study load (hours)	210
Course learning outcomes	• **GDES-1**: You demonstrate in-depth insight into the characteristics of the target audience. • **GDES-2**: You choose a compelling reason why the target audience wants to play your game. • **GDES-3**: You design a game concept that balances the target audience, aesthetics of play, and gameplay. • **GDES-4**: You describe the core gameplay in terms of dynamics and mechanics. • **GDES-5**: You highlight the unique elements of your game. • **GDES-6**: You bring your concept to life as a single, clear representation. • **GDES-7**: You gather and provide feedback to fellow students to improve your own work and theirs. • **GDES-8**: You write an immersive story and support it using the Hero's Journey. • **GDES-9**: You make clear which conflicts exist in your story. • **GDES-10**: You describe the setting, world, or context in which your game takes place. • **GDES-11**: You present the game's challenges in detail. • **GDES-12**: You map out the ideal steps your player takes, and what they feel, think, and do at each step. • **GDES-13**: You design how the player interacts with the game, detailing both input and output. • **GDES-14**: You show the level design across multiple layers of abstraction and how those layers connect to create a complete view of the level design. • **GDES-15**: You reflect on your growth as a game designer. • **GDES-16**: You build a prototype in a game-integrated development environment (IDE) based on your design.
Delivery format	Full-time

General	Game Design
General description	This course is the core of the semester and is taken by all students. It focuses on game design, storytelling, level design, and collaboration between technical and design disciplines. In game design, a variety of game concepts are covered, such as (game) rules and the player experience. Concepts from cognitive psychology also come in handy, for example flow and how a game is experienced. The player is at the center; they have a goal in the game, are faced with challenges, and can take actions to overcome those challenges. We also cover game modes and interfaces. In level design, we look at the digital representation of space, terrain, lighting, set dressing, and the actors present. We do this using a game engine with an integrated development environment. You analyze existing games and work toward designing a game, or a part of a game. At the end of the course, you pitch your game concept to the group. The prize? If you win the pitch, your concept will be built by the entire group during the project phase.
Course prerequisites	Propaedeutic diploma
Individual learning pathway possible	No

Assessment

Assessment	
Name of (sub)exam (NL)	High Concept Document
Name of (sub)exam (EN)	High Concept Document
Osiris (sub)exam code	TEST-02
Covers learning outcome(s)	GDES-1, GDES-2, GDES-3, GDES-4, GDES-5, GDES-6, GDES-7
Assessment criteria	• **GDES-1**: You base the information related to your player on field research. You describe a player in terms of player types. You document information about your player in the form of a persona. You provide a summary of what kind of player you're designing for. You provide detailed information about the traits of the player you're designing for. You create your design for this player. • **GDES-2**: You choose the 1 to 3 most prominent aesthetics of play that fit the target audience. You explain your core concept in a single paragraph. You explain how the aesthetics of play align with the characteristics and habits of the target audience. You design an original or surprising combination of aesthetics of play.

Assessment	
	• **GDES-3**: Summarize the target audience, key aesthetic, and gameplay in a single sentence (core concept) • **GDES-4**: Explain how motivation techniques support the described mechanics and dynamics. Explain how the mechanics and dynamics support the chosen aesthetic or play experience. You design an innovative or surprising combination of mechanics and dynamics. • **GDES-5**: Summarize your game's unique selling points. • **GDES-6**: Capture your core concept and the feeling of your game in an image or another visual and/or audio representation. • **GDES-7**: Keep a log of feedback given and received. Iterate multiple times based on the feedback you receive. You demonstrate a a critical eye, empathy, and respect for your fellow student's work. You incorporate the feedback you received into your design.
Format(s) (partial) exam	PROD Professional Product
Exam session	P1A, P2A, P3A, P4A
Permitted resources	None
Weighting (partial) exam	25%
Exam type	Online/digital
Minimum passing grade (partial) exam	5.5
Compensation option	N/A

Assessment	Storytelling
Partial exam name (NL)	Storytelling
Partial exam name (EN)	Storytelling
Osiris (partial) exam code	EXAM-04
Covers the learning outcome(s)	GDES-8, GDES-9, GDES-10
Assessment criteria	• **GDES-8**: You describe the protagonist's inner Hero's Journey from your story. You write a story that uses the Hero's Journey as a guiding framework. You show which parts of your story correspond to which stages of the Hero's Journey. • **GDES-9**: You explain how the conflict supports your game. You justify the conflicts in your story. You show which conflicts appear in your story. • **GDES-10**. You describe the story's setting or world. You describe how the setting or world influences the game (play).
Format(s) (partial) exam	PROD Professional Product
Exam session	P1A, P3A

Assessment	Storytelling
Permitted resources	None
(Partial) exam weighting	25%
Exam format	Online/digital
Minimum passing grade (partial exam)	5.5
Compensation option	N/A

Assessment	Level Design Document
(Partial) exam name (NL)	Level Design Document
(Partial) exam name (EN)	Level Design Document
Osiris (partial) exam code	EXAM-03
Covers the learning outcome(s)	GDES-11, GDES-12, GDES-13, GDES-14, GDES-15
Assessment criteria	• **GDES-11**: You describe the challenges that appear in your level. You explain how the challenges are engaging or motivating for your player. You link the challenges in your level to events in your Player Journey. You explain how the challenges keep the player in a flow-state. • **GDES-12**: You provide an overview of all events in your level. You connect the events in your level to the events in your Hero's Journey. • **GDES-13**: You explain how you create rich feedback through your interface. You explain the interface by describing the mechanics. You build a prototype of the interface for your game. • **GDES-14**: You document the different abstraction layers of a game (vertical slice) in such a way that a team could develop it without your involvement. You indicate how the challenges are distributed across the location(s) and you indicate how the challenges are distributed over time. You connect the Hero's Journey, Player Journey, distribution across the location(s) and time into one clear overview. • **GDES-15**: You define a learning goal for the project phase based on your reflection. You reflect on your growth as a designer using the STARRT-method, Kortenhagen's reflection cycle or a similar method.
Assessment format(s)	PROD (Professional) Product
Assessment session	P1A, P3A
Permitted resources	None
(Partial) exam weighting	40%
Exam format	Online/digital
Minimum passing grade (partial exam)	5.5

Assessment	Level Design Document
Compensation option	Not applicable

Assessment	Assessment Demo Level
Sub-exam name (NL)	Assessment Demo Level
Sub-exam name (EN)	Assessment Demo Level
Osiris sub-exam code	TEST-01
Covers the learning outcome(s)	GDES-16
Assessment criteria	• □□□□□16: □□□ □□□□□□□□ □□□□ 3□□□□□□□□□ □□ game-IDE. You can navigate through your environment in a game-IDE. You can correctly answer questions related to the interface of a game-IDE correctly answer. You develop a demo level where you create and manipulate 3D-objects in a game-IDE. You add a fog system to your game in a game-IDE. You add a liquid system to your game in a game-IDE. You add a environment to your game in a game-IDE. You add a particle system to your game in a game-IDE. You add your own elements to your game.
Assessment format(s)	PROD (Professional) Product
Assessment window	P1A, P2A, P3A, P4A
Permitted resources	None
Assessment weighting	10%
Exam format	Online/digital
Minimum passing grade (partial exam)	5.5
Compensation option	Not applicable

Assessment	
Minimum passing grade	6

Course offering

Course offering	
Teaching period	P1A, P3A
Attendance required	Not applicable
Minimum/maximum number of participants	Minimum 16
Course offering	In-class sessions where you learn the fundamentals of Game Design and Gameplay. Using theory as your guide, you'll get hands-on with practical assignments. In workshops, you'll work with a group to create several short projects. You'll carry these skills into the Game Project. The professional deliverables can be used to pitch your game for the project.

Course Offering	
Options (in Osiris: teaching formats)	In-person classes Workshops Assignments Peer-reviews
Required reading	Not applicable
Required software / required materials	Git Unity 3D (http://www.unity3D.com)

Game Programming Course

General

General	Game Programming
Course title (long) — NL	Game Programming
Course title (long) — EN	Game Programming
Course title (short) — NL	Game Programming
Course short name (EN)	Game Programming
Osiris course code	GAMEPR28
Number of credits	7.5
Workload (hours)	210
Course learning outcomes	• **GPRO-1**: The student can create placeholder gameplay content using the editor of the designated game engine. • **GPRO-2**: Based on a specification, the student can develop behavior and interaction within the development framework of the designated game engine. • **GPRO-3**: The student can apply the basic principles of 3D math when building a game. • **GPRO-4**: The student can apply elements of the designated physics engine when creating content and implementing gameplay. • **GPRO-5**: The student understands the concepts behind decision-making techniques in games. • **GPRO-6**: The student is able to understand and communicate how new game-related tools, techniques, and/or technologies work.
Format	Full-time
General description	This course focuses specifically on programming in the game -development domain. You'll cover technical concepts from math, physics, and artificial intelligence. Throughout the course, you'll explore these concepts and ultimately apply them in a game prototype/proof-of--concept. The material is presented in a way that makes it broadly applicable. Given the many options for game-implementations and the fast pace of development, you'll need an investigative mindset and be able to learn new technology independently, with coaching support from instructors. The game engine used is Unity 3D, with C# as the associated programming language.
Course prerequisites	You understand basic programming principles, algorithms, and design patterns. You can program in C#, or can pick it up quickly. This level is comparable to a 2- to 3-year program in the ICT field.
Independent learning path possible	No

Assessment Plan

Assessment Plan	Unity Development Assignment 1
(Partial) exam name (NL)	Unity Development Assignment 1
(Partial) exam name (EN)	Unity Development Assignment 1
Osiris (partial) exam code	TEST-01
Covers learning outcome(s)	GPRO-1, GPRO-2, GPRO-3
Assessment criteria	• **GPRO-1**: Builds a scene filled with game-objects. Understands the purpose of various editor features and uses them to achieve the intended game play experience. Chooses a practical game-object hierarchy. Assigns the right components to the the right game-objects and uses each component correctly. Builds content to be as reusable as possible within their own project by, among other things, using prefabs. • **GPRO-2**: Understands how various parts of the Unity-framework work and applies them correctly. Selects the right variables to display in the Unity-Editor and hides all others. Programs using object-oriented principles with the C# programming language. • **GPRO-3**: Understands the impact of transformations of a game-object on other game-objects within the same transform hierarchy. Understands how objects in a 3D-scene are described and how the scene is displayed on a screen. Knows the concept of Vector in a game development context and makes frequent use of the corresponding Unity-class.
Format(s) of the (sub)exam	PROD-O Professional Product
Exam session	P1A, P2A, P3A, P4A
Permitted resources	None
Weighting (sub-exam)	0%
Exam format	Online/digital
Minimum result (sub-exam)	Pass
Compensation option	N/A

Assessment Plan	Unity Development Assignment 2
(Partial) exam name (NL)	Unity Development Assignment 2
(Partial) exam name (EN)	Unity Development Assignment 2
Osiris (partial) exam code	TEST-02
Covers learning outcome(s)	GPRO-1, GPRO-2, GPRO-4
Assessment criteria	- GPRO-1: Constructs a scene with game objects. Understands the purpose of various editor features and uses them to achieve the intended game objects to deliver the intended game play. Links the right components

Assessment	Unity Development Assignment 2
	to the correct game-objects and uses each component properly. • **GPRO-2**: Understands how various parts of the Unity-framework work and applies them correctly. Selects the right variables to display in the Unity-Editor and hides all others. Programs using object-oriented principles with the C# programming language. • **GPRO-4**: Understands how Unity handles the timing of the physics simulation and uses the correct event functions in their own code. Uses raycasting appropriately in different situations. Applies the different ways that Colliders can interact with one another in their own games. Predicts the movement of a RigidBody based on the forces acting on it being applied.
Format(s) (partial) exam	PROD (Professional) Product
Exam session	P1A, P2A, P3A, P4A
Permitted resources	None
Weighting (partial) exam	33%
Exam type	Online/digital
Minimum grade (partial) exam	5.5
Compensation option	Not applicable

Assessment	Unity Development Assignment 3
Name of (partial) exam (NL)	Unity Development Assignment 3
Name of (partial) exam (EN)	Unity Development Assignment 3
Osiris (partial) exam code	TEST-03
Covers learning outcome(s)	GPRO-2, GPRO-5
Assessment criteria	• **GPRO-2**: Understands how various parts of the Unity framework and applies it correctly in practice. Programs using an object-oriented approach with the C# programming language. • **GPRO-5**: Applies decision-making techniques within a C#-application.
Format(s) (partial) exam	PROD (Professional) Product
Exam session	P1A, P2A, P3A, P4A
Permitted resources	None
Weighting (partial) exam	33%
Exam type	Online/digital
Minimum grade (partial) exam	5.5
Compensation option	Not applicable

Assessment	
(Partial) Exam Name (NL)	Unity Research Assignment
(Partial) Exam Name (EN)	Unity Research Assignment
Osiris (Partial) Exam Code	TEST-04
Covers learning outcome(s)	GPRO-6
Grading criteria	• □□□□□6: □□□□□□□□□□□□ □□□ □□□ □□□□□□□□□ □□□ applied in Unity. Presents the knowledge gained in a clear way. Ensures others can apply the knowledge in different situations.
(Partial) Exam Format(s)	PROD (Professional) Product
Exam session	P1A, P2A, P3A, P4A
Allowed resources	None
Assessment weighting (partial exam)	34%
Exam format	Online/digital
Minimum passing grade (partial exam)	5.5
Compensation option	N/A

Assessment	
Minimum passing grade (course)	6

Course offering

Course offering	
Instructional Period	P1A, P3A
Attendance Required	N/A
Minimum/Maximum Number of Participants	Minimum 16
Course Offering	In-class sessions where you learn the basics of Game Programming. Using the theory, you'll get hands-on with practical assignments. You'll also specialize with a group in a specific topic. To do this, you'll prepare a workshop for the rest of the class. You'll carry these skills into the Game Project.
Electives (in Osiris: learning activities)	In-class sessions, workshops with exercises and assignments.
Required Reading	N/A
Required Software / Required Materials	• Free IDE (Student version), e.g., Visual Studio, Visual Studio Code, JetBrains Rider, etc. • Latest stable Unity version (free) (Latest stable version of the Unity game engine)

Game Project Course

General

General	
Course name (long) NL	Game Project
Course name (long) EN	Game Project
Course short name (NL)	Game Project
Course short name (EN)	Game Project
Osiris course code	GAMEPR12
Credits	15
Workload (hours)	420
Course learning outcomes	• **P-1**: You describe your specialization or role in broad terms as it appears in the game industry, and specifically for the game being developed, so it's clear where your project-related learning goals are focused. • **P-2**: You conduct exploratory research into your chosen specialization or role and use relevant, high-quality sources so you gain a solid understanding of that specialization or role. • **P-3**: You demonstrate your skills, knowledge, and professional attitude related to the chosen specialization through a concrete deliverable for the game. • **P-4**: The component you develop must be integratable into the game so that all group deliverables together form a playable game. • **P-5**: You document your skills, knowledge, and professional attitude with respect to your specialization or role so it's clear whether you achieved your learning goals.
Format	Full-time
General description	This minor project is unique because you work with the entire cohort on a single product. There's no pre-defined assignment; instead, you and your peers run your own brainstorming session to shape the game's concept and design (often building on the assignment created for Game Design). This means everyone goes through the full game development cycle, from concept all the way through playtesting. The game is developed in teams. Some teams build a level, while others focus on game elements that span across levels: storyline, characters that appear in every level (player), GUI, sound, and special effects. Within these teams, the goal is to work in a multidisciplinary way. Teams are a mix of CMD and ICT students, and team members specialize in a specific part of the work. Through these specializations, you demonstrate domain-specific competencies, which therefore are not the same for every student.

General	
	Representatives from the teams and the specialists together form a management team (MT), responsible for overall planning and coordination across the teams. A group of representatives from the various teams forms the integration team (IT). They ensure that all individual components delivered by the teams can be combined into a single game.
Course entry requirements	N/A
Personalized learning path available	No

Assessment

Assessment	Game Project
(Sub-)assessment name (NL)	Game Project
(Sub-)assessment name (EN)	Game Project
Osiris (sub-)assessment code	TEST-01
Covers the learning outcome(s)	P-1, P-2, P-3, P-4, P-5
Assessment Criteria	• **P-1**: You demonstrate the importance of your specialization or role in relation to the game to be developed. You demonstrate the importance of your specialization or role in relation to game development. You demonstrate the skills, knowledge, and professional attitude needed for your chosen specialization or role. • **P-2**: You use high-quality sources for your research. You keep a log of all sources used throughout the project. You research your specialization or role through literature- and field research. You develop your own well-supported opinion regarding your specialization or role and summarize it in a conclusion. • **P-3**: You provide a clear explanation of your developed deliverable. You provide a explain your process for arriving at the deliverable and persuade the instructors that the skills, knowledge, and professional attitude required to develop the deliverable as specified in the description of your specialization. • **P-4**: Your developed deliverable is (functionally) integrated into the shared game. Your deliverable aligns in content with the other deliverables. You demonstrate your contribution to the game through work beyond your specialization. • **P-5**: You demonstrate your skills, knowledge, and professional attitude by making deliverables transferable. You reflect on the extent to which you achieved your learning goal
Format(s) of the (partial) assessment	PROD (Professional) Product

Assessment	Game Project
Exam period	P1A, P2A, P3A, P4A
Permitted resources	None
(Partial) exam weighting	100%
Exam format	Online/Digital
Minimum passing grade (partial exam)	5.5
Compensation option	N/A

Assessment	
Minimum passing grade (course)	5.5

Course offering

Course offering	
Teaching period	P2A, P4A
Required participation	You are expected to collaborate with the team for 40 hours per week. Exceptions are only possible in consultation with the team.
Minimum/maximum number of participants	Minimum 16
Course offering	In a multidisciplinary team, you will build a game together. To do so, you'll apply part of what you learned in the Game Design and Game Art or Game Programming courses.
Options (in Osiris: instructional formats)	Project-based learning
Required reading	N/A
Required software / required materials	N/A