Your Course Syllabus

CODDY – International Coding and Design School for Teens and Kids

Creating Games in Roblox Studio Course. Module 1

Learning goals are to master the process of game development in Roblox Studio, to get familiar with different game development roles and to gain the necessary skills to create your own games.

Course Syllabus:

Day one

Introduction to Roblox. Creating your first game

- Create your account and install Roblox
- Roblox Studio. Understanding the game development engine
- Create your first game based on the Obby template

Learning outcome: understand the game development engine concept, create and save their first game.
Practical task: create your first game objects and set up them.

Day two

Explorer Window. Parent and Child Relationships. Objects

- Explorer Window
- Parent and Child Relationships
- Working with Objects

Learning outcome: use Parent and Child Relationships when working with objects, group game objects.
Practical task: set up Parent and Child Relationships in blocks, build a spiral staircase with objects grouping.

Day three

Customizing Object Properties and Game Settings

- Roblox objects and their properties
- Block object and its properties
- Properties of Characters
- Customizing map lightings

Learning outcome: customize the properties of objects and characters and the lighting of the map.
Practical task: customize the lighting in the game and the objects properties in your game.

Day four

Setting up effects in the game. Types of lights

- Let's add smoke and fire to the game. Learning how to customize these effects
- Types of light sources
- Adding new scripts and assets. Toolbox window

Learning outcome: add the effects to the game and customize smoke and fire effects, add several types of lights to the game.
Practical task: add colored lighting to create a relevant atmosphere in different parts of the level, practice working with effects.

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Creating Games in Roblox Studio Course. Module 2

Learning goals are to master the process of game development in Roblox Studio, to get familiar with different game development roles and to gain the necessary skills to create your own games.

Course Syllabus:

Day one

3D Objects Modeling

- Objects modeling principles in Roblox Studio
- Building the ground floor of a house
- Building the next floor and the roof
- Adding decorative elements

Learning outcome: understand the 3D modeling principles, build a model of the house.
Practical task: build a 3D model of a house using the tools we've learned.

Day two

Solid Modeling

- Introduction to Solid Modeling
- Union, Negate, Separate Operations

Learning outcome: work with solid modeling and create complex geometric models.
Practical task: build windows and doorways in our house, build complex objects with solid modeling (wall, gate, tower).

Day three

Working with Decals and Textures

- Using decals and textures to work with the appearance of the object
- The theory and practice of working with decals and textures
- Creating and customizing textures or decals

Learning outcome: explain the work with decals and textures in theory and create, apply and customize decals and textures in practice.
Practical task: change the surface of the object with the help of decals and textures (add a sign, decorate walls).

Day four

Learning and practicing plugins

- Learning plugins
- Practice working with the Stravant ResizeAlign, Archimedes and Building Tools plugins

Learning outcome: explain the work with plugins in theory and use plugins in practice.
Practical task: build a house from the details (Stravant ResizeAlign plugin), change the wall around the village (Archimedes plugin), build a fence around the field (BuildingTools plugin).

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Creating Games in Roblox Studio Course. Module 3

Learning goals are to master the process of game development in Roblox Studio, to get familiar with different game development roles and to gain the necessary skills to create your own games.

Course Syllabus:

Day one

Landscape and Terrain

- The meaning of landscape in the game. The role of the terrain artist
- Generating a new terrain and setting its parameters
- Terrain materials
- Terrain Editor and other tools

Learning outcome: explain the theory and apply settings in terrain tools.
Practical task: create mountains, caves, trails, using different materials for terrain details.

Day two

Environment Design

- Items of Interest
- Add items of interest to the game
- Create and design the player's path

Learning outcome: understand the concept of items of interest, place and highlight the items of interest and create the player's path.
Practical task: create and decorate three items of interest in your game, create a player's game path from the entrance to the final location.

Day three

Working out the landscape and environment details

- The BrushTool plugin
- Adding and adjusting vegetation
- Creation and design of different parts of the landscape

Learning outcome: explain the theory and add vegetating objects and create realistic landscape.
Practical task: add vegetation objects (trees, forests, grass), create and decorate landscape parts (stones, rocky terrain).

Day four

Creating a Team Project

- Creating a team project for teamwork
- Define the style of the game
- Basic Storytelling Techniques
- Set up the landscape and objects in the team game project.

Learning outcome: understand the principles of group work on the team game project.
Practical task: create the game storyline, set up the overall game project applying the skills gained in the course.

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Creating Games in Roblox Studio Course. Module 4

Learning goals are to master the process of game development in Roblox Studio, to get familiar with different game development roles and to gain the necessary skills to create your own games.

Course Syllabus:

Day one

Lua programming language. Getting started with scripts

- Basic programming tasks. Game engines
- Lua programming language. Variables
- Introduction to Scripting. Creating and running a script
- Application of scripts in practice game tasks

Learning outcome: work with simple scripts.
Practical task: solve practical tasks, working with ready-made scripts. Adjust the objects settings to pass the game tasks.

Day two

Lua programming language. Loops For and While

- Introduction to loops and principles of working with them
- While Loop, infinite loop
- For Loop, finite loops
- Animating basic objects with scripts
- The practice of using loops in game tasks

Learning outcome: describe how loops work and create repetitive actions with them.
Practical task: solve practical tasks — create rotating doors, moving platforms.

Day three

Lua programming language. Conditionals, If statements

- Principle of conditionals. Logical data type
- Logical operators And and Or
- Comparing variables, checking conditions.
- Working with global variables

Learning outcome: describe how logical constructions work, explain how the 'trueness' of simple and complex conditions are checked.
Practical task: passing various levels based on logical problems and mathematical examples.

Day four

Lua programming language. Functions

- The concept of functions and their advantages
- Functions creating and calling rules. Attributes of functions and local variables.

Learning outcome: create and call functions, explain the parametric approach.
Practical task: apply the knowledge gained earlier to complete practical tasks requiring the creation and application of functions.

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Creating Games in Roblox Studio Course. Module 5

Learning goals are to master the process of game development in Roblox Studio, to get familiar with different game development roles and to gain the necessary skills to create your own games.

Course Syllabus:

Day one

Lua programming language. Events, part 1

- Events basics. The event Touched
- Fixing false positives. The Debounce feature
- Creation of selectable objects
- Built-in functions Destroy, FindFirstChild

Learning outcome: understand the principles of events and expand his knowledge with more advanced programming techniques in Lua.
Practical task: practical exercises, interactive objects creation.

Day two

Lua programming language. Events, part 2

- Exploding objects creation.
- Teleport creation.
- Working with colliders and OnTouchEnded events.
- Working with arrays

Learning outcome: explain how to work with advanced event mechanics, work on solving game problems.
Practical task: solve practical tasks based on real game tasks and interaction of the player with the environment.

Day three

Introduction to interfaces

- Creating a team shooter based on a pre-prepared map
- Basic principles of UI/UX game design
- Team selection menu creation
- Working with fonts and adaptive layout

Learning outcome: explain how to create UI elements in Roblox Studio, describe responsive layout and its application in games.
Practical task: add team selection menu, customize fonts, use interface elements properties.

Day four

Lua programming language. Server and client scripts

- Client-Server Communication in Roblox
- Creating client and server side scripts
- Deleted events
- The Teams service and team faction creation

Learning outcome: understand Roblox client-server model, use Remote functions and Remote events, Script and Local Script.
Practical task: program team selection menu, connection of buttons with Teams service, implementation of the team shooter main mechanics.

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Creating Games in Roblox Studio Course. Module 6

Learning goals are to master the process of game development in Roblox Studio, to get familiar with different game development roles and to gain the necessary skills to create your own games.

Course Syllabus:

Day one

Introduction to Animation. Basics of Humanoid Characters

- Creating an avatar for animation. Character versions (R6, R15, etc.)
- Appearance customization (clothing, accessories)
- Character structure in terms of animation (body parts, skeleton)
- Basic animation (Forward Kinematics) and its principles.
- Timeline and Animation Keys

Learning outcome: understand the principles of creating, configuring and animating basic Roblox Studio avatars.
Practical task: create a basic character and practice work with Roblox Studio built-in animation tools.

Day two

IK Animation

- Inverse animation (Inverse Kinematics), its advantages and downsides
- Character R15. Creation of complex animation clips (movements)
- Attaching the animation to the character with scripts
- Loop the animation

Learning outcome: describe the work with the second basic approach to character animation, use animation scripting.
Practical task: create complex animations and play these animations automatically for player characters.

Day three

Animation and scripting

- Animation scripts creation
- Create an animation script to replace default animation
- Roblox Emotion system
- Animation Priority system
- Animation run by clicking a button

Learning outcome: understand the principles of scripts creating, describe Roblox Emotion and Animation Priority systems.
Practical task: create dance animation, create a script tracking a button clicked, create a script replacing default animation.

Day four

Animation scenes creation

- Working with Moon Animator plugin
- Adding characters to the scene and animating them
- Creating a cyclic walking animation
- Inanimate objects animation

Learning outcome: create three-character animation scene.
Practical task: create three-character animation scene and place some objects there.

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Creating Games in Roblox Studio Course. Module 7

Learning goals are to master the process of game development in Roblox Studio, to get familiar with different game development roles and to gain the necessary skills to create your own games.

Course Syllabus:

Day one

Creation of non-player characters (NPCs)

- Creating NPC
- Basic clothing and its customization
- Creating and customizing the character skeleton
- Accessories and Layered Clothing

Learning outcome: explain how to create NPCs, understand Roblox clothing system, change basic clothes and use accessories.
Practical task: create and customize one NPC for your game.

Day two

Roblox Dialogue System

- Dialogue object and its settings
- Dialogue tree system and dialogue lines.
- Adding NPCs and the dialogue system
- Programming dialogue options with the help of local scripts

Learning outcome: describe how the NPC dialogue system works, add a dialogue tree with different answers, write a script for random lines and create a script for a personal greeting.
Practical task: create and customize a dialogue with NPC for your game.

Day three

Quests. Part 1

- Preparing dialogue for the quest
- Creating quest variables
- Adding objects to the quest
- Creating scripts for checking quest dialogues

Learning outcome: describe the basic techniques of creating game quests, create and add elements of the dialogue by scripts and create basic quest.
Practical task: think up and add quest items to the game, complicate the dialogue with NPC branches, considering the quest results.

Day four

Quests. Part 2

- Creating quest reward
- Creating special effects for reward
- Creating script for completing the quest

Learning outcome: create game quest and set reward according to the quest results.
Practical task: add and set reward, create script to finish quest.

Your Course Syllabus

CODDY – International Coding and Design School for Teens and Kids

Creating Games in Roblox Studio Course. Module 8

Learning goals are to master the process of game development in Roblox Studio, to get familiar with different game development roles and to gain the necessary skills to create your own games.

Course Syllabus:

Day one

Fundamentals of Level Design. Part 1. Open locations

- Introduction to Level Design. Levels constructing principles. Blockout
- Key locations: shelters, arenas, defense points, flanks
- Altitude difference
- Balancing location complexities

Learning outcome: understand basic principles of Level Design, levels constructing principles, describe the different types of key locations, plan the main part of the level.
Practical task: create a city level from primitives (Blockout), trace the game route, put the opponents on the level.

Day two

Level Design. Part 2. Module construction and environment

- Module approach to building. Level planning
- Creating a modular building considering players moving
- Working out the environment

Learning outcome: assemble complex objects using module construction, complete creation of the main part of the level.
Practical task: create your own model of the building.

Day three

Roblox Monetary System. Introduce to game currency

- Principles of in-game currency
- Withdrawal of player's money to the interface
- Tag system and player's shooting tracking
- Getting reward

Learning outcome: create in-game currency system, output player's variables to the interface and to change them.
Practical task: add an interface to show player's money amount, set the reward for the victory.

Day four

Monetization and Creating a shop

- Programming a shop interface, creating buttons
- Purchasing jump booster
- Game weapon buying script

Learning outcome: create in-game shop, create scripts for items purchase.
Practical task: create scripts for booster and game weapons purchase.

Your Course Syllabus

CODDY – International Coding and Design School for Teens and Kids

Creating Games in Roblox Studio Course. Module 9

Learning goals are to master the process of game development in Roblox Studio, to get familiar with different game development roles and to gain the necessary skills to create your own games.

Course Syllabus:

Day one

Graduation Project Part 1. Gamedev

- Game development studio work structure
- Tasks distribution and team roles
- Graduation Project conception
- Production and team management strategies in gamedev-studio

Learning outcome: work in 2-3 - person team, assign roles and areas of activities in team project, work on game conception.
Practical task: divide into 2-3 - person teams, choose your role in team project, approve the game conception.

Day two

Graduation Project. Part 2. Game design

- Creating map and landscape elements
- Advanced landscape tools
- Building and game objects models creation
- Scripts selection, characters commands creation and design

Learning outcome: create basic game design, basic scene blockout, add basic scripts and environment elements set.
Practical task: distribute tasks solution between level designer, environment designer, programmer and 3D-artist.

Day three

Graduation Project. Part 3. Working out game details

- Adding advanced player's moving mechanics
- Testing game level
- Improve visual part of the game with the help of Brushtool plugin
- Weapons and game balance. Hit and damage tracking

Learning outcome: finish the course Graduation Project.
Practical task: distribute tasks solution between level designer, environment designer, programmer and 3D-artist.

Day four

Finishing the graduation project

- Testing, final design and publication of your Graduation project
- Graduation Project presentation
- Development prospects and further education in gamedev

Learning outcome: finish the course Graduation Project, present it to all parents and finish the course.
Practical task: finalize the project, prepare the speech and make a presentation.