CODDY

Course Minecraft Mod Development. Module 1

Learning goals are to get acquainted with the basics of programming in the MCreator editor, to explore 3D graphics in BlockBench and learn how to make mods

Course Syllabus:

Day one   **Introduction to MCreator**
− Install MCreator, deploy your Workspace
− Explore the editor interface
− Create a test block, a set of tools, armor, ore using ready-made tools
− Create your own textures
− Launch Minecraft – check your modifications

Learning outcome: Wrote the first mod.
Practical task: Explore the MCreator editor interface. Create your first modification.

Day two   **Introduction to programming. Creating a Tool Pack and Crafting Table**
− Generate your own ore, create a recipe for crafting from our ore
− Create a Tool Pack
− Create your own Wood Pack, craft boards, create a recipe for crafting sticks
− Create your own Crafting Table, write a GUI for it, write the first craft on your Crafting Table

Learning outcome: Can create a Tool Pack and a Crafting Table and write the first GUI.
Practical task: Create ore, a Tool Pack, a Wood Pack and a Crafting Table. Create a GUI.

Day three   **Creative blocks. Procedures in Minecraft**
− Create a Creative Inventory Tab (CreativeTab)
− Create items: ice crystal, cooling element
− Create a special creative block Fridge
− Write a GUI for Fridge, write a freeze procedure (put it on Freeze button)
− Create an Ice Sword with an effect
− Create crafts for all created items on our Crafting Table

Learning outcome: Created blocks, work with Crafting Table, generate crafts and implement them as procedures to the buttons.
Practical task: Create a Fridge and Ice Sword with an effect.

Day four   **Create plants for your own farm**
− Create your own plants (seed, fruits). Create your own food
− Setting up the growth stages for a growing plant
− Create a stationary plant
− Working on a potion
− We combine the knowledge gained. Build a farm and a house from our blocks. Test the plants there.

Learning outcome: Created your own farm and growing plants around it.
Practical task: Build a farm, create your own plants. Test the plants modes on a farm and in survival mode.

CODDY

Course Minecraft Mod Development. Module 2

Learning goals are to get acquainted with the basics of programming in the MCreator editor, to explore 3D graphics in BlockBench and learn how to make mods

Course Syllabus:

Day one　**Introduction to the BlockBench 3D editor. Exploring the interface. 3D Models creation**
− Install BlockBench. Explore the editor interface
− Create 3D models (block, sword) and their textures
− Learn how to export and load models to MCreator
− Launch Minecraft – check your modifications

Learning outcome: Made first steps in 3D modeling, created block model and sword model.
Practical task: Create your own mod with a 3D model. Create 3D models in BlockBench and load them to MCreator.

Day two　**Create a loaded 3D weapon**
− Create your own 3D model, add it to MCreator
− Create procedures for the weapon operation (load and hit effect when fired)
− Create your own craft of our weapon

Learning outcome: Developed skills of creating 3D models and created a working and reloading 3D weapon.
Practical task: Create your own weapon, the mechanism of reloading and the hit effect on the enemy when fired.

Day three　**Crafting without a button. Creating a 3D furnace, 3D lamp, 3D iPad**
− Create 3D models of the furnace, load to MCreator, write GUI and procedures for use
− Create two 3D models of the lamp (not lit, lit), load to MCreator, write the procedures for turning on/off the lamp
− Create a 3D model of the iPad, add it to MCreator, write a GUI for the block (as a portable inventory)

Learning outcome: Created 3D models faster - we managed 4 3D models, learned how to create and code a GUI on a block, without a button.
Practical task: Create 3D models of an furnace, lamp, iPad. Create a GUI for crafting without using a button.

Day four　**Create a 3D armor, the model from several elements**
− Create a 3D model and texture of your armor
− Add armor to MCreator, create craft for armor
− Launch Minecraft – check your modifications, fix bugs

Learning outcome: Created armor with custom 3D texture, consolidated the knowledge about creating 3D models.
Practical task: Create your own 3D armor

Course Minecraft Mod Development. Module 3

Learning goals are to get acquainted with the basics of programming in the MCreator editor, to explore 3D graphics in BlockBench and learn how to make mods

Course Syllabus:

Day one **Create Mobs, AI-driven living creatures**

− Creating a 3D model of an enemy mob (Mob)
− Creating a 3D model of a kind mob (Creature)
− Adding Java mob models to MCreator
− Setting up the artificial intelligence of mobs
− We write GUI and procedures for trading

Learning outcome: Created different types of mobs and write procedures for trading.
Practical task: Create enemy and kind mobs.

Day two **Structures and loot chest**
− Creating our own structure
− Importing the structure into MCreator
− Create a chest with random items (loot)
− Create a structure with a command block, a chest and a button

Learning outcome: Learned how to create our own structure and loot chests.
Practical task: Create your own structure and chest with random loot.

Day three **Biomes and world dimensions**
− Creating our own biome
− Adding structures to the biome
− Creating a world dimension
− Check the biome and dimension

Learning outcome: Learned how to create our own biomes and dimensions.
Practical task: Create your own biomes and dimensions.

Day four **Completion of mods creation. Project presentation**

− Completing the mods creation. Testing, correcting errors, fixing bugs
− Exporting mods to Minecraft
− Outline the project presentation
− Report the presentation

Learning outcome: Learned how to show the result of our work, present your project.
Practical task: Complete the creation of the mod. Present the project.