Fairfax Collegiate

703 481-3080 · www.FairfaxCollegiate.com

Minecraft Modding 3-4 Syllabus

Course Goals

1 Modding
Students use MCreator and other programs to modify, or “mod,” the Minecraft software by adding or altering aspects of in-game content.

2 Computer Design
Students learn the basics of computer design by working with programs such as Paint.net, to create custom textures, and Techne, to create custom models for characters, enemies, and animals.

3 Digital Organization
Students learn computer organization and the importance of carefully labeling and storing files through naming and organizing the various components of their mods.

4 Creativity & Problem-Solving
Students bring their ideas to life in the colorful, endlessly customizable world of Minecraft by thinking through each step and applying their knowledge of the software.

Course Topics

1 Texture Editing
Students use various art programs, including paint.net and MCreator's built-in drawing tools, to create custom textures for blocks, tools, and other items.

2 MCreator
Students use this accessible software to create mods, designing custom blocks, items, tools, mobs, and other game components.

3 MinecraftEdu Server / WorldEdit
Students connect to the MinecraftEdu server to gain access to "teacher tools" which will grant them heightened control over their created worlds. One such tool is WorldEdit, a powerful mod used for terraforming.

4 Modeling
Students use the program Techne to create custom models, the "bodies" used for entities from creepers to ocelots to Steve, the player character.

5 Skins
Students use MCSkin3D to create more advanced texture "skins" to suit their Techne models.

6 Events / AI
Students apply rules of logic to manipulate in-game "events" and the basics of entities' artificial intelligence. These rudiments will start students thinking like computer programmers.

7 RPG Design
Students use the mod CustomNPCs to learn about principles of game design, including the creation of "quest" missions, imposing

enemies and treacherous obstacles.

Course Schedule

Day 1

Student and Course Introductions
Students are introduced to the instructor, each other, and the topics and planned schedule of the course.

What is a Mod?
Students consider and discuss the question, and the instructor offers a tentative definition.

What Can Mods "Mod?"
Students suggest elements of the game which might be altered by a mod, preparing them to identify and discuss which elements are changed or added by a given mod.

Downloading & Installing Mods
Students receive an instructional document with steps to downloading and installing mods and create a dedicated "mods" shortcut folder on their desktop.

Mod Demos
Students spend the remainder of class playing an assortment of mods made with MCreator. The class discusses which elements of Minecraft are modified by each.

Day 2

Editing Textures
Students learn to edit in-game textures by referring to the "How to Modify Textures in Minecraftedu" document.

New Blocks in MCreator
Students learn the basic layout of MCreator and go over how to create a custom block.

One Block, Two Block, New Block, Blue Block
Students spend the rest of class creating new blocks in MCreator and testing them in Minecraftedu.

Day 3

Intro to the Minecraftedu Server
Students discover Minecraftedu's built-in server feature. The server's many "teacher" features allow for increased control of one's environment.

WorldEdit
Students terraform their server world with WorldEdit, a powerful mod built into Minecraftedu.

Let's Get Eventful
Students return to MCreator and learn about the addition of "events" to custom blocks.

The Main Event: Blocks Go Boom
Students spend time creating blocks with associated events and exploring their effects in the game.

Day 4

TX Blocks

Students go through the creation of custom TX Blocks, block components with nonstandard shapes.

Torches, Staircases and Doors! Oh my!
Students spend time creating TX blocks of various kinds, manipulating their material properties, appearance, and associated events.

Tool Time
Students go through creating tools and other custom items in MCreator.

Gonna Take Up My Sword and Shield
Students spend time creating a variety of tools, items, and weapons, including guns (weapons capable of launching projectiles).

Day 5

Armor
Students learn how to create pieces of armor.

Ye Olde Smithy
Students spend time creating pieces of armor and manipulating its properties.

Lesson: The Space Between Spaces
Students go through the basics of creating a new dimension, similar to the Nether or the End.

Thinking 4th-Dimensionally
Students spend time creating a dimension of their own.

Day 6

Lesson: Minecraft's Next Top Model
Students learn about Techne and how it can be used to manipulate or create models for characters, animals, and enemies.

Modeling in Techne
Students create or alter a Minecraft model in Techne.

Lesson: There's More Than One Way to Skin a Steve
Students learn about MCSkin3D and other means of altering or creating custom skin textures.

Texture Editing in MCSkin3D
Students work from a number of different perspectives to create a custom skin for their Techne model.

Lesson: Making a Monster
Students go through creating a hostile mob in MCreator by importing both their Techne model and MCSkin texture.

Kill the Beast
Students combine their models and skin textures to create custom mobs, then battle them.

Day 7

Lesson: CustomNPCs
Students learn about the basic features of CustomNPCs, another expansive mod which can be used with the Minecraftedu server.

Exploring CustomNPCs
Students spend time creating characters and structural features in the CustomNPCs mob.

Lesson: What Is Your Quest?
Students learn how to construct an RPG-style quest in CustomNPCs as well has how to implement the rewards and achievements it triggers.

Questing Practice
Students use the last part of class constructing a rudimentary quest based on the instructor's demonstration.

Day 8

Final Project
Students create an elaborate RPG world, complete with several quests of various types, fantastic architecture, and custom textures and models.

Day 9

Final Project
Students create an elaborate RPG world, complete with several quests of various types, fantastic architecture, and custom textures and models.

Day 10

Adventure Time: Playtesting RPGs
Students receive a USB thumb drive containing everyone's final projects and spend the majority of class playtesting classmates' RPGs.

Taking What's Yours
Students locate their various mods and files and save these files to their thumb drives.

Updated on 4/3/2022