

In Server Design, students learn the fundamentals of Java™ programming, while coding their own custom Minecraft® multiplayer server.

This is a project-based course where students take on the role of creator. In addition to technical skills, students develop the creative, critical thinking, and problem-solving skills necessary to build amazing projects from start to finish. Throughout the course, students work with industry-standard tools used by professionals. If they need any help along the way with their coursework or projects, students can reach out to experts for support by e-mail, chat, or phone.

By the end of this course, students will have built an original, professional-grade project and developed the knowledge, skills, and confidence to become creators on their own, in further study, or professionally.

Course Materials

This course has required materials.

Length: One semester

UNIT 1: WELCOME TO SERVER DESIGN

LESSON 1: START YOUR SERVERS

Study: Start Your Servers

Fire up your server for the first time.

Duration: 1 hr Scoring: 0 points

Review: Start Your Servers Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 2: SERVER MAINTENANCE

Study: Server Maintenance

Learn the ins and outs of how to properly maintain and update your server.

Duration: 1 hr Scoring: 0 points

Review: Server Maintenance Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 3: WRAP UP

Practice: Troubleshooting

Fix a broken file.

Duration: 1 hr Scoring: 15 points

Quiz: Quiz

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 10 points

UNIT 2: SERVER SETTINGS

LESSON 1: A SIMPLE METHOD

Study: A Simple Method

Use methods to customize some of our server's main properties.

Duration: 1 hr Scoring: 0 points

Review: A Simple Method Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 2: METHOD TO THE MADNESS

Study: Method to the Madness

Learn how to use parameters to set these world features for your server.

Duration: 1 hr Scoring: 0 points

Review: Method to the Madness Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 3: WRAP UP

Practice: Troubleshooting

Fix a broken file.

Duration: 1 hr Scoring: 15 points

Quiz: Quiz

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 10 points

UNIT 3: ENTER THE ARENA

LESSON 1: COMMAND YOUR CODE

Study: Command Your Code

Use command blocks to choose where the player spawns when they join the server.

Duration: 1 hr Scoring: 0 points

Review: Command Your Code Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 2: BACK TO BASE!

Study: Back to Base!

Use code to check for conditions and perform actions if they are true.

Duration: 1 hr Scoring: 0 points

Review: Back to Base! Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 3: BLOCK DOCTOR

Study: Block Doctor

Program hunger and health restore stations that the player can use to regain their strength.

Duration: 1 hr Scoring: 0 points

Review: Block Doctor Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 4: WRAP UP

Practice: Troubleshooting

Fix a broken file.

Duration: 1 hr Scoring: 15 points

Quiz: Quiz

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 10 points

Explore: Bonus Content

Explore extra content from the unit.

Duration: 0 hrs 30 mins Scoring: 0 points

Project: Checkpoint

Present your course project for review.

Duration: 0 hrs 15 mins Scoring: 30 points

UNIT 4: THE HORDES

LESSON 1: ZOMBIE APOCALYPSE

Study: Zombie Apocalypse

Add custom mob spawners into our map to pop up monsters anywhere we want.

Duration: 1 hr Scoring: 0 points

Review: Zombie Apocalypse Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 2: TRICK OUT YOUR MOBS

Study: Trick Out Your Mobs

Customize the mobs we spawn.

Duration: 1 hr Scoring: 0 points

Review: Trick Out Your Mobs Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 3: MOBS OF MOBS

Study: Mobs of Mobs

Code new mobs and add comments to keep our code in order.

Duration: 1 hr Scoring: 0 points

Review: Mobs of Mobs Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 4: WRAP UP

Practice: Troubleshooting

Fix a broken file.

Duration: 1 hr Scoring: 15 points

Quiz: Quiz

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 10 points

UNIT 5: TREASURE CHESTS

LESSON 1: TIMING IS EVERYTHING

Study: Timing is Everything

Add chests to our map that fill with any item you want.

Duration: 1 hr Scoring: 0 points

Review: Timing is Everything Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 2: HIP HIP H-ARRAYS

Study: Hip Hip H-Arrays

Add arrays of chests and items so you can fill any chest with any item you want.

Duration: 1 hr Scoring: 0 points

Review: Hip Hip H-Arrays Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 3: RANDOM IS EVERYTHING

Study: Random is Everything

Make random items from your item array show up in random chests from your chest array.

Duration: 1 hr Scoring: 0 points

Review: Random is Everything Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 4: WRAP UP

Practice: Troubleshooting

Fix a broken file.

Duration: 1 hr Scoring: 15 points

Quiz: Quiz

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 10 points

Explore: Bonus Content

Explore extra content from the unit.

Duration: 0 hrs 30 mins Scoring: 0 points

UNIT 6: SETTING UP SHOP

LESSON 1: STORE STOCKING

Study: Store Stocking

Allow players to equip themselves with certain items before stepping into the arena.

Duration: 1 hr Scoring: 0 points

Review: Store Stocking Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 2: GIMME SOME CREDIT

Study: Gimme Some Credit

Add credits to our code that will limit our players' purchasing power.

Duration: 1 hr Scoring: 0 points

Review: Gimme Some Credit Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 3: KIT STOP

Study: Kit Stop

Add kits that the players can use to transform into different classes of characters.

Duration: 1 hr Scoring: 0 points

Review: Kit Stop Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 4: WRAP UP

Practice: Troubleshooting

Fix a broken file.

Duration: 1 hr Scoring: 15 points

Quiz: Quiz

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 10 points

Project: Checkpoint

Present your course project for review.

Duration: 0 hrs 15 mins Scoring: 30 points

UNIT 7: KEEPING SCORE

LESSON 1: TEAM BUILDING EXERCISE

Study: Team Building Exercise

Add teams to our code.

Duration: 1 hr Scoring: 0 points

Review: Team Building Exercise Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 2: WHAT'S THE POINT?

Study: What's the Point?

Add a point system to your game.

Duration: 1 hr Scoring: 0 points

Review: What's the Point? Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 3: WRAP UP

Practice: Troubleshooting

Fix a broken file.

Duration: 1 hr Scoring: 15 points

Quiz: Quiz

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 10 points

Explore: Bonus Content

Explore extra content from the unit.

Duration: 0 hrs 30 mins Scoring: 0 points

UNIT 8: EPIC WIN

LESSON 1: THE WINNING CONDITION

Study: The Winning Condition

Add a victory condition and reset points and player state on game over.

Duration: 1 hr Scoring: 0 points

Review: The Winning Condition Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 2: A SPLASH OF COLOR

Study: A Splash of Color

Edit our code to announce the winner and celebrate their victory.

Duration: 1 hr Scoring: 0 points

Review: A Splash of Color Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 3: WRAP UP

Practice: Troubleshooting

Fix a broken file.

Duration: 1 hr Scoring: 15 points

Quiz: Quiz

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 10 points

UNIT 9: IN GOOD TIME

LESSON 1: IT'S GAME TIME

Study: It's Game Time

Add a timer that displays how much time is left in the game.

Duration: 1 hr Scoring: 0 points

Review: It's Game Time Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 2: THE FINAL COUNT DOWN

Study: The Final Countdown

Bring our timer to life by counting it down and trigger game over when it reaches zero.

Duration: 1 hr Scoring: 0 points

Review: The Final Countdown Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 3: WAIT A MINUTE

Study: Wait a Minute

Count down minutes and add a method to reset the timer.

Duration: 1 hr Scoring: 0 points

Review: Wait a Minute Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 4: WRAP UP

Practice: Troubleshooting

Fix a broken file.

Duration: 1 hr Scoring: 15 points

Quiz: Quiz

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 10 points

Explore: Bonus Content

Explore extra content from the unit.

Duration: 0 hrs 30 mins Scoring: 0 points

UNIT 10: SCAVENGER HUNT

LESSON 1: SACRED BLOCKS

Study: Sacred Blocks

Add a new way for teams to earn points, by mining blocks and returning items to their base.

Duration: 1 hr Scoring: 0 points

Review: Sacred Blocks Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 2: BLOCK RECOVERY

Study: Block Recovery

Save the locations of the ore in your map, and restore those blocks when the game resets.

Duration: 1 hr Scoring: 0 points

Review: Block Recovery Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 3: WRAP UP

Practice: Troubleshooting

Fix a broken file.

Duration: 1 hr Scoring: 15 points

Quiz: Quiz

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 10 points

UNIT 11: RULE THE RULES

LESSON 1: LAY OUT THE RULES

Study: Lay Out the Rules

Add instructions that will guide your players through the rules of the game.

Duration: 1 hr Scoring: 0 points

Review: Lay Out the Rules Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 2: EASTER EGGS

Study: Easter Eggs

Program some hidden easter eggs on your server.

Duration: 1 hr Scoring: 0 points

Review: Easter Eggs Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 3: CUSTOM COMMANDS

Study: Custom Commands

Add cheats to your server that the players can use to have a little extra power.

Duration: 1 hr Scoring: 0 points

Review: Custom Commands Review

Review key concepts and skills from the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

LESSON 4: WRAP UP

Practice: Troubleshooting

Fix a broken file.

Duration: 1 hr Scoring: 15 points

Quiz: Quiz

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 10 points

UNIT 12: FINAL TOUCHES

LESSON 1: STANDARDS OF EXCELLENCE

Study: Standards of Excellence

Ensure your game meets the standards of excellence.

Duration: 1 hr Scoring: 0 points

LESSON 2: EXPORT AND UPLOAD

Project: Export and Upload

Upload your course project for review.

Duration: 1 hr Scoring: 200 points

UNIT 13: ADVANCED TOPICS

LESSON 1: PARTICLES AND SOUNDS

Study: Particles and Sounds

Add particles and sounds to your project.

Duration: 1 hr Scoring: 0 points

LESSON 2: BOSS BATTLE

Study: Boss Battle

Build an arena for your boss battle.

Duration: 1 hr Scoring: 0 points

LESSON 3: CAPTURE THE FLAG

Study: Capture the Flag

Create a capture the flag server.

Duration: 1 hr Scoring: 0 points

LESSON 4: SURVIVAL GAMES

Study: Survival Games

Create a survival games server from scratch.

Duration: 1 hr Scoring: 0 points