



Unity + USC Games Unlocked Course Toolkit

Use this toolkit to help you ideate, design, build, test, and release your game.

ABOUT THIS TOOLKIT

Throughout the Unity + USC Games Unlocked course, we created assignments to simulate real game development practices. This course is all about learning by doing.

We created this course toolkit to help you plan your game development and production. The more you continue to practice a game development process, the better you'll get at bringing your games to life.

Bringing a Game to Life

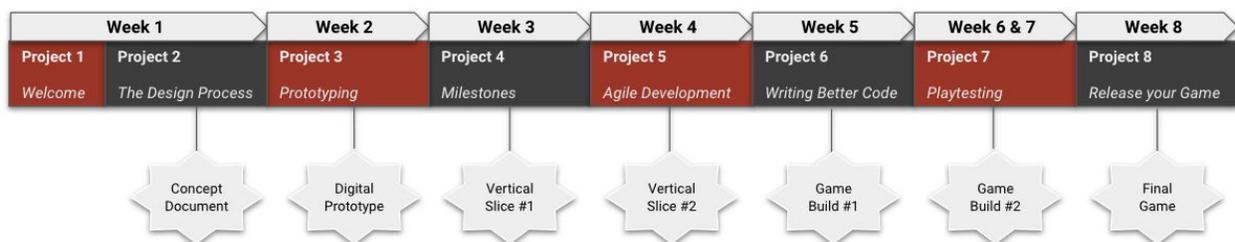
Lots of people start games, but it's surprisingly hard to finish one. This course guides you through a process to help you build a game from idea to release. We'll teach you the same design and production techniques used by professional game makers to develop their ideas, keep their projects on track and deliver a complete, released game. This process will help you choose an idea that's the right size, refine and test it to "find the fun", and make a workable plan to finish it.



- Every game starts with a **concept**. We'll give you examples, guidelines and a theme to help you come up with an idea that you can implement within weeks rather than years.
- Then you'll **prototype** your game – test different parts of your idea and see whether they're fun and whether you can actually pull them off.
- Once you've got an idea that seems workable and fun, we'll give you tools to **plan** your code and show you how to avoid common pitfalls, like writing all your code and then realizing you can't find the right visual assets.
- As you work on your project you'll check your progress against the specific development milestones used by game professionals. You'll get weekly feedback from your fellow students to keep on track, and we'll show you how to **playtest** your game – observe how your players see the game so you can refine the design.
- At the end of the course, you'll **release** a small but finished game, and you'll have the skills to bring your other game ideas to life.

Setting yourself up for success

We know time can be precious and work, life, school, and so on can be hard to balance with an online course. Ideally you will fly through this and get it done in 8 weeks. Then again it may take you much longer - you can take all the time you need. Use the sample timeline to think about how you will structure your time to complete the course and your game. To help you structure your time further you can also use our Learning Action Plan.



Unity Learning Action Plan

Use the Unity Learning Action Plan to help you set your goals and figure out how you can best achieve them. Map out the amount of time you will take for each course Project and assess if, in addition to what you learn in the course about the game development process, if you need to build your Unity skills to help you reach your goals.

Self-Assessment Prior to Learning Experience

Some questions to ask as you map out your course approach and duration:

- Where do you feel your skills are at right now with Unity? Use this to be honest about your skill set, in order to think about the kind of game you can realistically build.
- What Unity skills do you still need to learn and how will you build time in for that?
- Who can you connect with to get feedback on your game and learning goals?

Course Projects	Assignments	Suggested Duration	Your Plan
Project 1: Welcome	Finding your community	Week 1: <i>1 hour coursework</i>	
Project 2: The Design Process	Concept Document	Week 1: <i>2-3 hours coursework</i>	
Project 3: Prototyping	Digital Prototype	Week 2: <i>1 hour coursework</i> <i>2-4 hours in Unity Engine</i>	
Project 4: Milestones	Vertical Slice #1	Week 3: <i>1 hour coursework</i> <i>2-4 hours in Unity Engine</i>	
Project 5: Agile Development	Vertical Slice #2	Week 4: <i>1 hour coursework</i> <i>2-4 hours in Unity Engine</i>	
Project 6: Writing Better Code	Build #1	Week 5: <i>1 hour coursework</i> <i>2-4 hours in Unity Engine</i>	
Project 7: Playtesting	Build #2	Week 6 & 7: <i>1 hour coursework</i> <i>4-8 hours in Unity Engine</i>	
Project 8: Release your game	Final Game	Week 8: <i>1 hour coursework</i> <i>2-4 hours in Unity Engine</i>	

Assessments

This course relies on your fellow learners to community of learners taking this course with you to provide feedback. It also relies on you self evaluating your work along the way. Use the guiding questions provided with each assignment to get the most out of these assessments.

Project 1: Goal Setting and Community Building

Learning Goals

- Confirm readiness for course
- Define personal goals
- Identify Unity skills and knowledge areas for review
- Understand course structure and resources

Assignments

- Assignment #1: Introduction and Course Planning

Project 2: Design and Planning

Learning Goals

- Understand role of constraints in design process
- Understand your own skills and resources as constraints
- Understand the concept of scope
- Assess your own skills and resources (including time) as part of scope
- Use a given constraint to develop an original game concept

Assignments:

- Assignment #1: Review examples of concept documents
- *Milestone Assignment: Concept Document*
 - Step 1: Fill in the Concept and Scope Check template with information about your game concept.
 - Step 2: Save your document as a pdf and upload it to the gallery.
 - Step 3: Provide peer feedback in the gallery to at least 2 other learners

Project 3: Prototyping

Learning Goals

- Understand the purpose of prototyping and the practice of divergent prototyping
- Create prototypes with Unity

Assignments:

- Assignment #1: Make an Asset Inventory
- Assignment #2: Prototype your game

Project 4: Milestones

Learning Goals

- Determine design priorities, identify features that can be cut
- Understand the importance of creating and testing asset plans
- Create a production plan for a small game project

Assignments

- Assignment #1: Backlog
- Assignment #2: Class-Responsibility-Collaboration (CRC) Cards
- *Milestone Assignment: Build your Vertical Slice*
 - Step 1: Identify the core of your game and make a list of the features and assets you will need and prioritize them
 - Step 2: Use CRC cards and digital prototype to build your first vertical slice of your game
 - Step 3: Get started building in Unity
 - Step 4: Turn in your build
 - Step 5: Provide peer assessment for at least one fellow learner

Project 5: Agile Development

Learning Goals

- Understand and apply Agile methodology to a game project
- Understand Agile terms and artifacts: backlog, sprint plan, burndown chart
- Create a sprint plan for this week's iteration

Assignments

- Assignment #1: Sprint Plan for Vertical Slice Part 2
- *Milestone Assignment: Vertical Slide Part 2*
 - Step 1: Get started building in Unity
 - Step 2: Turn in your build
 - Step 3: Browse the gallery and provide feedback to your fellow learners

Project 6: Writing Better Code

Learning Goals

- Understand the concept of code architecture
- Understand the concrete consequences of good or poor architecture
- Describe qualities of good architecture
- Understand the relationship between game design and code architecture
- Use tools (CRC cards and class diagrams) to develop a class diagram for a small game

Assignments

- Assignment #1: Refactoring Plan
- Assignment #2: Sprint Plan for Playtest Build
- *Milestone Assignment: Game Build 1 for Playtesting*
 - Step 1: Get started building in Unity
 - Step 2: Upload your project.
 - Step 3: Use peer feedback instructions, and provide peer review for someone else's game

Project 7: Playtesting

Learning Goals

- Determine the best method for playtesting a game
- Plan and run a playtest for a game
- Implement Unity Analytics to measure key game metrics (optional)
- Generate action items from playtest and (optionally) Unity Analytics reports

Assignments

- Assignment #1: Playtest
- Assignment #2: Sprint Plan after Playtest
- *Milestone Assignment: Game Build 2 after Playtesting*
 - Step 1: Get started building in Unity
 - Step 2: Upload your project.
 - Step 3: Browse the gallery and provide feedback to your fellow learners

Project 8: Release your game

Learning Goals

- Understand the pros and cons of developing custom tools for production
- Identify and describe professional tools, such as version control and project management/Agile software, that support a structured production process

Assignments

- *Milestone Assignment: Release your Game*
 - Fix any bugs
 - Make, test and save your final build
 - Upload your game and submit the link in the gallery
 - Reward yourself by playing your classmates' games
- Assignment 2: Make a Trailer (Optional)
- Assignment 3: Postmortem