

Advanced Game Design: A Systems Approach

"With an increasing use of vido games in various disciplines within the scientific community, this book seeks to understand the nature of effective games and to provide guidance for how best to harness the power of gaming technology to successfully accomplish a more serious goal"--Provided by publisher.

Presents over 100 sets of questions, or different lenses, for viewing a game's design. Written by one of the world's top game designers, this book describes the deepest and most fundamental principles of game design, demonstrating how tactics used in board, card, and athletic games also work in video games. It provides practical instruction on creating world-class games that will be played again and again. New to this edition: many great examples from new VR and AR platforms as well as examples from modern games such as Uncharted 4 and The Last of Us, Free to Play games, hybrid games, transformational games, and more.

Design accessible and creative games across genres, platforms, and development realities
Key Features
Implement the skills and techniques required to work in a professional studio
Ace the core principles and processes of level design, world building, and storytelling
Design interactive characters that animate the gaming world
Book Description
If you are looking for an up-to-date and highly applicable guide to game design, then you have come to the right place! Immerse yourself in the fundamentals of game design with this book, written by two highly experienced industry professionals to share their profound insights as well as give valuable advice on creating games across genres and development platforms. Practical Game Design covers the basics of game design one piece at a time. Starting with learning how to conceptualize a game idea and present it to the development team, you will gradually move on to devising a design plan for the whole project and adapting solutions from other games. You will also discover how to produce original game mechanics without relying on existing reference material, and test and eliminate anticipated design risks. You will then design elements that compose the playtime of a game, followed by making game mechanics, content, and interface accessible to all players. You will also find out how to simultaneously ensure that the gameplay mechanics and content are working as intended. As the book reaches its final chapters, you will learn to wrap up a game ahead of its release date, work through the different challenges of designing free-to-play games, and understand how to significantly improve their quality through iteration, polishing and playtesting. What you will learn
Define the scope and structure of a game project
Conceptualize a game idea and present it to others
Design gameplay systems and communicate them clearly and thoroughly
Build and validate engaging game mechanics
Design successful business models and prepare your games for live operations
Master the principles behind level design, worldbuilding and storytelling
Improve the quality of a game by playtesting and polishing it
Who this book is for
Whether you are a student eager to design a game or a junior game designer looking for your first role as a professional, this book will help you with the fundamentals of game design. By focusing on best practices and a pragmatic approach, Practical Game Design provides insights into the arts and crafts from two senior game designers that will interest more seasoned professionals in the game industry.

Behavior Trees (BTs) provide a way to structure the behavior of an artificial agent such as a robot or a non-player character in a computer game. Traditional design methods, such as finite state machines, are known to produce brittle behaviors when complexity increases, making it very hard to add features without breaking existing functionality. BTs were created to address this very problem, and enables the creation of systems that are both modular and reactive. Behavior Trees in Robotics and AI: An Introduction provides a broad introduction as well as an in-depth exploration of the topic, and is the first comprehensive book on the use of BTs. This book introduces the subject of BTs from simple topics, such as semantics and design principles, to complex topics, such as learning and task planning. For each topic, the authors provide a set of examples, ranging from simple illustrations to realistic complex behaviors, to enable the reader to successfully combine theory with practice. Starting with an introduction to BTs, the book then describes how BTs relate to, and in many cases, generalize earlier switching structures, or control architectures. These ideas are then used as a foundation for a set of efficient and easy to use design principles. The book then presents a set of important extensions and provides a set of tools for formally analyzing these extensions using a state space formulation of BTs. With the new analysis tools, the book then formalizes the descriptions of how BTs generalize earlier approaches and shows how BTs can be automatically generated using planning and learning. The final part of the book provides an extended set of tools to capture the behavior of Stochastic BTs, where the outcomes of actions are described by probabilities. These tools enable the computation of both success probabilities and time to completion. This book targets a broad audience, including both students and professionals interested in modeling complex behaviors for robots, game characters, or other AI agents. Readers can choose at which depth and pace they want to learn the subject, depending on their needs and background.

Game Programming Patterns

Gamification Mindset

Theory of Fun for Game Design

A Book of Lenses, Second Edition

A Game Design Vocabulary

Game Balance

Introduction to Game Systems Design

"Game Feel" explores "feel" as a hidden language in game design that no one has fully articulated yet. The language could be compared to the building blocks of music (time signatures, chord progressions, verse) - no matter the instrument, style or time period - these building blocks come into play. Feel and sensation are similar building blocks where game design is concerned. They create the meta-sensation of involvement with a game. The understanding of how game designers create feel, and affect feel are only partially understood by most in the field and tends to be overlooked as a method or course of study, yet a game's feel is central to a game's success. This book brings the subject of feel to light by consolidating existing theories into a cohesive book. The book covers topics like the role of sound, ancillary indicators, the importance of metaphor, how people perceive things, and a brief history of feel in games. The associated web site contains a playset with ready-made tools to design feel in games, six key components to creating virtual sensation. There's a play palette too, so the designer can first experience the importance of that component by altering variables and feeling the results. The playset allows the reader to experience each of the sensations described in the book, and then allows them to apply them to their own projects. Creating game feel without having to program, essentially. The final version of the playset will have enough flexibility that the reader will be able to use it as a companion to the exercises in the book, working through each one to create the feel designed.

As games grow more complex and gamers' expectations soar, the discipline of game systems design becomes ever more important. Game systems designers plan a game's rules and balance, its characters' attributes, most of its data, and how its AI, weapons, and objects work and interact. Introduction to Game Systems Design is the first complete beginner's guide to this crucial discipline. Writing for all aspiring game professionals, even those with absolutely no experience, leading game designer and instructor Dax Gazaway presents a step-by-step, hands-on approach to designing game systems with industry-standard tools. Drawing on his experience building AAA-level game systems (including games in the Star Wars and Marvel franchises), Gazaway covers all this, and more: Exploring the essentials of game design and its emerging subdisciplines
Asking the essential questions at the heart of all design
Getting started with modern game system design tools, including the spreadsheets most professionals now use
Creating systems and data from a blank page
Populating and quantifying a world of data into a game
Tuning and balancing game systems
Testing game systems and data
Leveraging communication, psychology, and rewards within your games
Balancing game probability within systems
Whether you're a college freshman entering a game design program, an indie developer using Unreal or Unity, a Dungeon Master, or anyone who wants to really understand modern games, this guide will help you get where you want to go.

Good game design happens when you view your game from as many perspectives as possible. Written by one of the world's top game designers, The Art of Game Design presents 100+ sets of questions, or different lenses, for viewing a game's design, encompassing diverse fields such as psychology, architecture, music, visual design, film, software engineering, theme park design, mathematics, puzzle design, and anthropology. This Second Edition will be a Game Developer Front Line Award winner! Describes the deepest and most fundamental principles of game design
Demonstrates how tactics used in board, card, and athletic games also work in video games
Contains valuable insight from Jesse Schell, the former chair of the International Game Developers Association and award-winning designer of Disney online games
The Art of Game Design, Second Edition gives readers useful perspectives on how to make better game designs faster. It provides practical instruction on creating world-class games that will be played again and again.

Making a game can be an intensive process, and if not planned accurately can easily run over budget. The use of procedural generation in game design can help with the intricate and multifarious aspects of game development, thus facilitating cost reduction. This form of development enables games to create their play areas, objects and stories based on a set of rules, rather than relying on the developer to handcraft each element individually. Readers will learn to create randomized maps, weave accidental plotlines, and manage complex systems that are prone to unpredictable behavior. Tanya Short's and Tarn Adams' Procedural Generation in Game Design offers a wide collection of chapters from various experts that cover the implementation and enactment of procedural generation in games. Designers from a variety of studios provide concrete examples from their games to illustrate the many facets of this emerging sub-discipline. Key Features:
Introduces the differences between static/traditional game design and procedural game design
Demonstrates how to solve or avoid common problems with procedural game design in a variety of concrete ways
Includes industry leaders' experiences and lessons from award-winning games

World's finest guide for how to begin thinking about procedural design
A Systems Approach
Handbook of Digital Games
Fundamentals of Game Design
Designing, Producing and Launching Service Games

Level Up!

Elements of Game Design

Lifelong Kindergarten

How lessons from kindergarten can help everyone develop the creative thinking skills needed to thrive in today's society. In kindergartens these days, children spend more time with math worksheets and phonics flashcards than building blocks and finger paint. Kindergarten is becoming more like the rest of school. In Lifelong Kindergarten, learning expert Mitchel Resnick argues for exactly the opposite: the rest of school (even the rest of life) should be more like kindergarten. To thrive in today's fast-changing world, people of all ages must learn to think and act creatively—and the best way to do that is by focusing more on imagining, creating, playing, sharing, and reflecting, just as children do in traditional kindergartens. Drawing on experiences from more than thirty years at MIT's Media Lab, Resnick discusses new technologies and strategies for engaging young people in creative learning experiences. He tells stories of how children are programming their own games, stories, and inventions (for example, a diary security system, created by a twelve-year-old girl), and collaborating through remixing, crowdsourcing, and large-scale group projects (such as a Halloween-themed game called Night at Dreary Castle, produced by more than twenty kids scattered around the world). By providing young people with opportunities to work on projects, based on their passions, in collaboration with peers, in a playful spirit, we can help them prepare for a world where creative thinking is more important than ever before.

This hands-on guide covers both game development and design, and both Unity and C#. This guide illuminates the basic tenets of game design and presents a detailed, project-based introduction to game prototyping and development, using both paper and the Unity game engine.

*The Advanced Game Narrative Toolbox continues where the Game Narrative Toolbox ended. While the later covered the basics of writing for games, the Advanced Game Narrative Toolbox will cover techniques for the intermediate and professional writer. The book will cover topics such as how to adapt a novel to a game, how to revive IPs and how to construct transmedia worlds. Each chapter will be written by a professional with exceptional experience in the field of the chapter. Key Features
Learn from industry experts how to tackle today's challenges in storytelling for games. A learn by example and exercise approach, which was praised in the Game Narrative Toolbox. An in depth view on advanced storytelling techniques and topics as they are currently discussed and used in the gaming industry. Expand your knowledge in game writing as you learn and try yourself to design quests, write romances and build worlds as you would as a writer in a game studio. Improve your own stories by learning and trying the techniques used by the professionals of game writing.*

This book covers the state-of-the-art in digital games research and development for anyone working with or studying digital games and those who are considering entering into this rapidly growing industry. Many books have been published that sufficiently describe popular topics in digital games; however, until now there has not been a comprehensive book that draws the traditional and emerging facets of gaming together across multiple disciplines within a single volume.

Beep to Boom

A Game Designer's Guide to Virtual Simulation

Learns the art of game design through applicable skills and cutting-edge insights

Procedural Generation in Game Design

Create Amazing Web-based Games with JavaScript and HTML5

How Neuroscience and UX Can Impact Video Game Design

The Advanced Game Developer's Toolkit

To create a great video game, you must start with a solid game design: A well-designed game is easier to build, more entertaining, and has a better chance of succeeding in the marketplace. Here to teach you the essential skills of player-centric game design is one of the industry's leading authorities, who offers a first-hand look into the process, from initial concept to final tuning. Now in its second edition, this updated classic reference by Ernest Adams offers a complete and practical approach to game design, and includes material on concept development, gameplay design, core mechanics, user interfaces, storytelling, and balancing. In an easy-to-follow approach, Adams analyzes the specific design challenges of all the major game genres and shows you how to apply the principles of game design to each one. You'll learn how to: Define the challenges and actions at the heart of the gameplay. Write a high-concept document, a treatment, and a full design script. Understand the essentials of user interface design and how to define a game's look and feel. Design for a variety of input mechanisms, including the Wii controller and multi-touch iPhone. Construct a game's core mechanics and flow of resources (money, points, ammunition, and more). Develop appealing stories, game characters, and worlds that players will want to visit, including persistent worlds. Work on design problems with engaging end-of-chapter exercises, design worksheets, and case studies. Make your game accessible to broader audiences such as children, adult women, people with disabilities, and casual players. "Ernest Adams provides encyclopedic coverage of process and design issues for every aspect of game design, from the lessons that can be immediately applied to a design in-progress. He offers the best framework I've seen for thinking about the relationships between core mechanics, gameplay, and play—one that I've found useful for both teaching and research."—Michael Mateas, University of California at Santa Cruz, co-creator of Facade

The Model Driven Architecture defines an approach where the specification of the functionality of a system can be separated from its implementation on a particular technology platform. The idea being that the architecture will be able to easily be adapted for different situations, whether they be legacy systems, different languages or yet to be invented platforms. MDA is therefore, a significant evolution of the object-oriented approach to system development. Advanced System Design with Java, UML and MDA describes the factors involved in designing and constructing large systems, illustrating the design process through a series of examples, including a Scrabble player, a jukebox using web streaming, a security system, and others. The book first considers the challenges of software design, before introducing the Unified Modelling Language and Object Constraint Language. The book then moves on to discuss systems design as a whole, covering internet systems design, web services, Flash, XML, XSLT, SOAP, Servlets, Javascript and JSP. In the final section of the book, the concepts and terminology of the Model Driven Architecture are discussed. To get the most from this book, readers will need introductory knowledge of software engineering, programming in Java and basic knowledge of HTML. " Examines issues raised by the Model-Driven Architecture approach to development " Uses easy to grasp case studies to illustrate complex concepts " Focused on the internet applications and technologies that are essential for students in the online age

Want to start building great web games with HTML5 and JavaScript? Moving from Flash or other game platforms? Already building HTML5 games and want to get better and faster at it? This guide brings together everything you need: expert guidance, sample projects, and working code! Evan Burchard walks you step-by-step through quickly building 10 popular types of games. Each chapter implements a game within a well-understood genre; introduces a different free, open source, and easy-to-use HTML5 game engine; and is accompanied with full JavaScript source code listings. Each game recipe uses tested and well-proven patterns that address the development challenges unique to that genre, and shows how to use existing tools and engines to build complete substantial game projects in just hours. Need a quick JavaScript primer? Evan Burchard provides that, too! Coverage includes: Mastering an essential HTML5/JavaScript game development toolset: browser, text editor, terminal, JavaScript console, game engine, and more Accelerating development with external libraries and proven patterns Managing browser state with CSS3 and Chrome Getting up to speed on web development with a QUIZ game built with JavaScript, HTML, CSS, and JQuery Creating INTERACTIVE FICTION "gamebooks" that leverage new CSS3 features and impress.js Building PARTY games around the lightweight atom.js engine Developing PUZZLE games with the excellent graphics rendering engine Writing PLATFORMERS with melon.js and its integrated tilemap editor Coding intense 2-player FIGHTING games for web browsers with game.js Building a SPACE SHOOTER with the JQuery-based gameQuery game engine Implementing pseudo-3D techniques like ray casting for an FPS (First Person Shooter) style game Producing a 16 bit RPG (Role Playing Game) complete with interfaces for dialog, inventories, and turn-based battles with enchant.js Building an isometric RTS (Real Time Strategy) game that incorporates server components along with node.js, socket.io, and crafty.js Engaging players with content that encourages exploration Turn to The Web Game Developer's Cookbook for proven, expert answers—and the code you need to implement them. It's all you need to jumpstart any web game project!

Master the most important skills and techniques you need to know for professional HTML5 and JavaScript 2D game development. This book delves into many of the great classic techniques of video game design. You'll discover how to develop games and game levels using Tiled Editor, how to implement tile-based collision, how to design advanced pathfinding and enemy AI systems, the fundamentals of broad-phase collision, and how to make isometric games. All the techniques and supporting code are explained in an easy-to-understand manner and written in a general way so that they can be applied to any game engine or technology that you're comfortable using. You'll find detailed working examples, with dozens of illustrations and many concepts you can freely apply to your own projects. All the math and programming techniques are elaborately explained and examples are open-ended to encourage you to think of original ways to use these techniques in your own games. You can use what you learn in this book as the basis for making games for desktops, mobile phones, tablets, or the Web. The Advanced Game Developer's Toolkit is a great next step if you already have some JavaScript game-making experience, or a great continuation if you've already read Advanced Game Design with HTML5 and JavaScript by the same author. What You'll Learn Work with advanced tile-based design techniques for puzzle, platform and maze games Use Tiled Editor to build game worlds Build path-finding and AI systems using Line of Sight and A (A-Star) Make isometric games Manage complexity to build games of any size that scale seamlessly Who This Book Is For Video game developers with some experience who want to learn the essential techniques they need to know to take their skills to the next level and for readers who want to understand and fine-tune every line of code they write, without resorting to quick fixes.*

Game Feel

Innovate Smarter & Drive Deep Engagement with Design Techniques from Hit Games

Game Design Fundamentals

Serious Game Design and Development: Technologies for Training and Learning

Games, Design and Play

From Concept to Playable Game - With Unity and C#

Using JavaScript and HTML5 to Develop Games

Game design is changing. The emergence of service games on PC, mobile and console has created new expectations among consumers and requires new techniques from game makers. In The Pyramid of Game Design, Nicholas Lovell identifies and explains the frameworks and techniques you need to deliver fun, profitable games. Using examples of games ranging from modern free-to-play titles to the earliest arcade games, via PC strategy and traditional boxed titles, Lovell shows how game development has evolved, and provides game makers with the tools to evolve with it. Harness the Base, Retention and Superfan Layers to create a powerful Core Loop. Design the player Session to keep players playing while being respectful of their time. Accept that there are few fixed rules: just trade-offs with consequences. Adopt Agile and Lean techniques to "learn what you need to learn" quickly Use analytics, paired with design skills and player feedback, to improve the fun, engagement and profitability of your games. Adapt your marketing techniques to the reality of the service game era Consider the ethics of game design in a rapidly changing world.

Lovell shows how service games require all the skills of product game development, and more. He provides a toolset for game makers of all varieties to create fun, profitable games. Filled with practical advice, memorable anecdotes and a wealth of game knowledge, the Pyramid of Game Design is a must-read for all game developers.

Within the field of game design, game balance can best be described as a black art. It is the process by which game designers make a game simultaneously fair for players while providing them just the right amount of difficulty to be both exciting and challenging without making the game entirely predictable. This involves a combination of mathematics, psychology, and occasionally other fields such as economics and game theory. Game Balance offers readers a dynamic look into game design and player theory. Throughout the book, relevant topics on the use of spreadsheet programs will be included in each chapter. This book therefore doubles as a useful reference on Microsoft Excel, Google Spreadsheets, and other spreadsheet programs and their uses for game designers. FEATURES
Three first and only book to explore game balance as a topic in depth
Topics range from intermediate to advanced, while written in an accessible style that demystifies even the most challenging mathematical concepts to the point where a novice student of game design can understand and apply them
Contains powerful spreadsheet techniques which have been tested with all major spreadsheet programs and battle-tested with world-wide game design tasks
Provides short-form exercises at the end of each chapter to help with the techniques discussed therein along with three long-term projects divided into parts throughout the book that involve their creation
Written by award-winning designers with decades of experience in the field
Ian Schreiber has been in the industry since 2000, first as a programmer and then as a game designer. He has worked on eight published game titles, training/simulation games for three Fortune 500 companies, and has advised countless student projects. He is the co-founder of Global Game Jam, the largest in-person game jam event in the world. Ian has taught game design and development courses at a variety of colleges and universities since 2006. Brenda Romero is a BAFTA award-winning game director, entrepreneur, artist, and Fulbright award recipient and is presently game director and creator of the Empire of Sin franchise. As a game director, she has worked on 50 games and contributed to many seminal titles, including the Wizardry and Jagged Alliance series and titles in the Ghost Recon, Dungeons & Dragons, and Def Jam franchises.

Experts in data analytics and power engineering present techniques addressing the needs of modern power systems, covering theory and applications related to power system reliability, efficiency, and security. With topics spanning large-scale and distributed optimization, statistical learning, big data analytics, graph theory, and game theory, this is an essential resource for graduate students and researchers in academia and industry with backgrounds in power systems engineering, applied mathematics, and computer science.

This engaging book presents the essential mathematics needed to describe, simulate, and render a 3D world. Reflecting both academic and in-the-trenches practical experience, the authors teach you how to describe objects and their positions, orientations, and trajectories in 3D using mathematics. The text provides an introduction to mathematics for game designers, including the fundamentals of coordinate spaces, vectors, and matrices. It also covers orientation in three dimensions, calculus and dynamics, graphics, and parametric curves.

Principles and Practices from the Ground Up

Exploring the Foundational Principles Behind Good Game Design

Advanced Data Analytics for Power Systems

Practical Game Design

The Pyramid of Game Design

Advanced Systems Design with Java, UML and MDA

A Guide to Engineering Experiences

Design and build cutting-edge video games with help from video game expert Scott Rogers! If you want to design and build cutting-edge video games but aren't sure where to start, then this is the book for you. Written by leading video game expert Scott Rogers, who has designed the hits Pac Man World, Maxim vs. Army of Zin, and SpongeBob Squarepants, this book is full of Rogers's wit and imaginative style that demonstrates everything you need to know about designing great video games. Features an approachable writing style that considers game designers from all levels of expertise and experience
Covers the entire video game design field, understanding what gamers want, working with player actions, and more
Offers techniques for creating non-human characters and using the camera as a character
Shares helpful insight on the business of design and how to create design documents
So, put your game face on and start creating memorable, creative, and unique video games with this book!

Discusses the essential elements in creating a successful game, how playing games and learning are connected, and what makes a game boring or fun.

This in-depth resource teaches you to craft mechanics that generate challenging, enjoyable, and well-balanced gameplay. You'll discover at what stages to prototype, test, and implement mechanics in games and learn how to visualize and simulate game mechanics in order to design better games. Along the way, you'll practice what you've learned with hands-on lessons. A free downloadable simulation tool developed by Joris Dormans is also available in order to follow along with exercises in the book in an easy-to-use graphical environment. In Game Mechanics: Advanced Game Design, you'll learn how to:
Design and balance game mechanics to create engaging gameplay before you write a single line of code.
Visualize the internal economy so that you can immediately see what goes on in a complex game.
Use novel prototyping techniques that let you simulate games and collect vast quantities of gameplay data on the first day of development.
Apply design patterns for game mechanics—from a library in this book—to improve your game designs.
Explore the delicate balance between game mechanics and level design to create compelling, long-lasting game experiences.
Replace fixed, scripted events in your game with dynamic progression systems to give your players a new experience every time they play.
"I've been waiting for a book like this for ten years; packed with game design goodness that tackles the science without undermining the art."--Richard Bartle, University of Essex, co-author of the first MMORPG
Game Mechanics: Advanced Game Design by Joris Dormans & Ernest Adams formalizes game grammar quite well. Not sure I need to write a next book now!" --Raph Koster, author of A Theory of Fun for Game Design.

This book explores how gamification techniques are used to leverage users' natural desires for achievement, competition, collaboration, learning and more. Compared to other books on this topic, it gives more than just an introduction and develops the readers understanding through frameworks and models, based on research to make it easier to develop gamified systems. The concept of gamification achieved increased popularity in 2010 when a number of softwares and services started explaining their products as a 'gamification' design. Gamification Mindset explains how game elements and mechanics are important, how video games are learning systems and examines how video game aesthetics are vital in the development of gamification. The book will challenge some common beliefs when it comes to gamifications' abilities to immerse and change the user's intrinsic and extrinsic motivations. Gamification Mindset aims to develop new models in gamification to enable easier gamification scenarios. It is a comprehensive analysis and discussion about gamification and serves as a useful tool, since it acquaints readers with gamification and how to use it, through illustrated practical theoretical models. Academic researchers, students, educators and professional game and gamification designers will find this book invaluable.

Behavior Trees in Robotics and AI

The Advanced Game Narrative Toolbox

Chris Crawford on Game Design

Game Thinking

Rules of Play

AdvancED Game Design with Flash

Technologies for Training and Learning

Video Game Design is a visual introduction to integrating core design essentials, such as critical analysis, mechanics and aesthetics, prototyping, level design, into game design. Using a raft of examples from a diverse range of leading international creatives and award-winning studios, this is a must-have guide for budding game designers. Industry perspectives from game industry professionals provide fascinating insights into this creative field, and each chapter concludes with a workshop project to help you put what you've learnt into practice to plan and develop your own games. With over 200 images from some of the best-selling, most creative games of the last 30 years, this is an essential introduction to industry practice, helping readers develop practical skills for video game creation. This book is for those seeking a career making video games as part of a studio, small team or as an independent creator. It will guide you from understanding how games engage, entertain and communicate with their audience and take you on a journey as a designer towards creating your own video game experiences. Interviewees include: James Portnow, CEO at Rainmaker Games Brandon Sheffield, Gamasutra.com/Game Developer magazine Steve Gaynor, co-Kenneth Young, Head of Audio, Media Molecule Rex Crowle, Creative Lead, Media Molecule

An introduction to the basic concepts of game design, focusing on techniques used in commercial game production. This textbook by a well-known game designer introduces the basics of game design, covering tools and techniques used by practitioners in commercial game production. It presents a model for analyzing game design in terms of three interconnected levels--mechanics and systems, gameplay, and player experience--and explains how novice game designers can use these three levels as a framework to guide their design process. The text is notable for emphasizing models and vocabulary used in industry practice and focusing on the design of games as dynamic systems of gameplay.

*In Advanced Game Design, pioneering game designer and instructor Michael Sellers situates game design practices in a strong theoretical framework of systems thinking, enabling designers to think more deeply and clearly about their work, so they can produce better, more engaging games for any device or platform. Sellers offers a deep unifying framework in which practical game design best practices and proven systems thinking theory reinforce each other, helping game designers understand what they are trying to accomplish and the best ways to achieve it. Drawing on 20+ years of experience designing games, launching game studios, and teaching game design, Sellers explains: What games are, and how systems thinking can help you think about them more clearly
How to systematically promote engagement, interactivity, and fun
What you can learn from MDA and other game design frameworks
How to create gameplay and core loops
How to design the entire player experience, and how to build game mechanics that work together to create that experience
How to capture your game's "big idea" and Unique Selling Proposition
How to establish high-level and background design and translate it into detailed design
How to build, playtest, and iterate early prototypes
How to build your game design career in a field that keeps changing at breakneck speed*

During her time working on genre-defining games like The Sims, Rock Band, and Ultima Online, Amy Jo learned that customers stick with products that help them get better at something they care about, like playing an instrument or leading a team. Amy Jo has used her insights from gaming to help hundreds of companies like Netflix, Disney, The New York Times, Ubisoft and Happify innovate faster and smarter, and drive long-term engagement.

The Gamer's Brain

Cultivating Creativity through Projects, Passion, Peers, and Play

A Playcentric Approach to Creating Innovative Games, Fourth Edition

An Introduction

The Web Game Developer's Cookbook

The Art of Game Design

The Development of Advanced Runtime Sound Systems for Games and Extended Reality

Building Blocks of Tabletop Game Design: An Encyclopedia of Mechanisms compiles hundreds of different mechanisms, organized by category. Each has a description of how it works, discussion of its pros and cons, how it can be implemented, and examples of specific games that use it. Building Blocks can be read cover to cover, used as a reference when looking for inspiration for a new design, help solving a specific problem, or assist in getting unstuck in the midst of a project. This book, the first to collect mechanisms like this in the tabletop game design field, aims to be a practical guide that will be a great starting point for beginning designers, a handy guidebook for the experienced, and an ideal classroom textbook. Key Features
The first compendium of its kind in the tabletop game field. Covers the nuts and bolts of design to resolve specific challenges. Serves as a practical guide, a great starting point for beginning designers, and a reference for seasoned professionals.
Contains discussion of a series of standalone mechanisms, in a standard format and style, with cross-links to related mechanics and specific examples. Includes hundreds of mechanism entries with accompanying diagrams and sample games to study. Ideal for professional or classroom use.

A piece in the field of game design and development draws on his own experiences to present a useful collection of insider tips, wisdom, advice, skills, and techniques, along with an overview of the history of game programming, low and high interactivity designs, the importance of storytelling, and more. Original. (Intermediate)

An impassioned look at games and game design that offers the most ambitious framework for understanding them to date. As pop culture, games are as important as film or television—but game design has yet to develop a theoretical framework or critical vocabulary. In Rules of Play Katie Salen and Eric Zimmerman present a much-needed primer for this emerging field. They offer a unified model for looking at all kinds of games, from board games and sports to computer and video games. As active participants in game culture, the authors have written Rules of Play as a catalyst for innovation, filled with new concepts, strategies, and methodologies for creating and understanding games. Building an aesthetics of interactive systems. Salen and Zimmerman define core concepts like "play," "design," and "interactivity." They look at games through a series of eighteen "game design schemas," or conceptual frameworks, including games as systems of emergence and information, as contexts for social play, as a storytelling medium, and as sites of cultural resistance. Written for game scholars, game developers, and interactive designers, Rules of Play is a textbook, reference book, and theoretical guide. It is the first comprehensive attempt to establish a solid theoretical framework for the emerging discipline of game design.

How do you make a video game? Advanced Game Design with HTML5 and JavaScript is a down to earth education in how to make video games from scratch, using the powerful HTML5 and JavaScript technologies. This book is a point-by-point round up of all the essential techniques that every game designer needs to know. You'll discover how to create and render game graphics, add interactivity, sound, and animation. You'll learn how to build your own custom game engine with reusable components so that you can quickly develop games with maximum impact and minimum code. You'll also learn the secrets of vector math and advanced collision detection techniques, all of which are covered in a friendly and non-technical manner. You'll find detailed working examples, with hundreds of illustrations and thousands of lines of source code that you can freely adapt for your own projects. All the math and programming techniques are elaborately explained and examples are open-

ended to encourage you to think of original ways to use these techniques in your own games. You can use what you learn in this book to make games for desktops, mobile phones, tablets or the Web. Advanced Game Design with HTML5 and JavaScript is a great next step for experienced programmers or ambitious beginners who already have some JavaScript experience, and want to jump head first into the world of video game development. It's also great follow-up book for readers of Foundation Game Design with HTML5 and JavaScript (by the same author) who want to add depth and precision to their skills. The game examples in this book use pure JavaScript, so you can code as close to the metal as possible without having to be dependent on any limiting frameworks or game engines. No libraries, no dependencies, no third-party plugins: just you, your computer, and the code. If you're looking for a book to take your game design skills into the stratosphere and beyond, this is it!

Building Blocks of Tabletop Game Design

The Guide to Great Video Game Design

An Encyclopedia of Mechanisms

Game Mechanics

3D Math Primer for Graphics and Game Development, 2nd Edition

A Detailed Approach to Iterative Game Design

Advanced Game Design with HTML5 and JavaScript

The biggest challenge facing many game programmers is completing their game. Most game projects fizzle out, overwhelmed by the complexity of their own code. Game Programming Patterns tackles that exact problem. Based on years of experience in shipped AAA titles, this book collects proven patterns to untangle and optimize your game, organized as independent recipes so you can pick just the patterns you need. You will learn how to write a robust game loop, how to organize your entities using components, and take advantage of the CPUs cache to improve your performance. You'll dive deep into how scripting engines encode behavior, how quadrees and other spatial partitions optimize your engine, and how other classic design patterns can be used in games.

The play-focused, step-by-step guide to creating great game designs This book offers a "play-focused, process-oriented" approach for designing games people will love to play. Drawing on a combined 35 years of design and teaching experience, Colleen Macklin and John Sharp link the concepts and elements of play to the practical tasks of game design. Using full-color examples, they reveal how real game designers think and work, and illuminate the amazing expressive potential of great game design. Focusing on practical details, this book guides you from idea to prototype to playtest and fully realized design. You'll walk through conceiving and creating a game's inner workings, including its core actions, themes, and especially its play experience. Step by step, you'll assemble every component of your videogame, creatingpractically every kind of play: from cooperative to competitive, from chance-based to role-playing, and everything in between. Macklin and Sharp believe that games are for "everyone," and game design is an exciting art form with a nearly unlimited array of styles, forms, and messages. Cutting across traditional platform and genre boundaries, they help you find inspiration wherever it exists. "Games, Design and Play" is for all game design students, and for beginning-to-intermediate-level game professionals, especially independent game designers. Bridging the gaps between imagination and production, it will help you craftoutstanding designs for incredible play experiences! Coverage includes: Understanding core elements of play design: actions, goals, rules, objects, playspace, and players Mastering tools such as constraint, interaction, goals, challenges, strategy, chance, decision, storytelling, and context Comparing types of play and playerexperiences Considering the demands videogamesmake on players Establishing a game's design values Creating design documents, schematics, and tracking spreadsheets Collaborating in teams on a shared design vision Brainstorming and conceptualizing designs Using prototypes to realize and playtest designs Improving designs by making the most of playtesting feedback Knowing when a design is ready for production Learning the rules so you can break them! "

Master the Principles and Vocabulary of Game Design Why aren't videogames getting better? Why does it feel like we're playing the same games, over and over again? Why aren't games helping us transform our lives, like great music, books, and movies do? The problem is language. We still don't know how to talk about game design. We can't share our visions. We forget what works (and doesn't). We don't learn from history. It's too hard to improve. The breakthrough starts here. A Game Design Vocabulary gives us the complete game design framework we desperately need—whether we create games, study them, review them, or build businesses on them. Craft amazing experiences. Anna Anthropy and Naomi Clark share foundational principles, examples, and exercises that help you create great player experiences...complement intuition with design discipline...and craft games that succeed brilliantly on every level. Liberate yourself from stale clichés and genres Tell great stories: go way beyond cutscenes and text dumps Control the crucial relationships between game "verbs" and "objects" Weld the full power of development, conflict, climax, and resolution Shape scenes, pacing, and player choices Deepen context via art, animation, music, and sound Help players discover, understand, engage, and "talk back" to you Effectively use resistance and difficulty: the "push and pull" of games Design holistically: integrate visuals, audio, and controls Communicate a design vision everyone can understand

Creating games in Flash is a never-ending journey of exploration, learning, and most of all, fun. Once you've mastered the basics, a new world is opened up to you, enabling you to take your existing skills to the next level and discover new skills that will in turn open new doors. This book is a direct continuation of Foundation Game Design with Flash, and is a complete point-by-point roundup of the most important skills a Flash game designer needs to know. You'll increase your ActionScript knowledge and your game design skills while creating some excellent example games. You'll learn advanced collision detection skills; professional AI and pathfinding; and how to load and save game data, create destructible environments, and build and switch game levels. Each chapter highlights a new advanced technique illustrated by practical examples. Examples of games are given in a variety of genres, all of which take an object-oriented programming approach. Advanced game design topics are covered, including vector-based collision reaction, pathfinding, billiard ball physics, and modeling game data.

Designing Games

A Book of Lenses, Third Edition

Game Design Workshop

Advanced Game Design

Video Game Design

Introduction to Game Design, Prototyping, and Development

Ready to give your design skills a real boost? This eye-opening book helps you explore the design structure behind most of today's hit video games. You'll learn principles and practices for crafting games that generate emotionally charged experiences—a combination of elegant game mechanics, compelling fiction, and pace that fully immerses players. In clear and approachable prose, design pro Tynan Sylvester also looks at the day-to-day process necessary to keep your project on track, including how to work with a team, and how to avoid creative dead ends. Packed with examples, this book will change your perception of game design. Create game mechanics to trigger a range of emotions and provide a variety of play Explore several options for combining narrative with interactivity Build interactions that let multiplayer gamers get into each other's heads Motivate players through rewards that align with the rest of the game Establish a metaphor vocabulary to help players learn which design aspects are game mechanics Plan, test, and analyze your design through iteration rather than deciding everything up front Learn how your game's market positioning will affect your design

Drawing on decades of experience, Beep to Boom: The Development of Advanced Runtime Sound Systems for Games and Extended Reality is a rigorous, comprehensive guide to interactive audio runtime systems. Packed with practical examples and insights, the book explains each component of these complex geometries of sound. Using practical, lowest-common-denominator techniques, Goodwin covers soundfield creation across a range of platforms from phones to VR gaming consoles. Whether creating an audio system from scratch or building on existing frameworks, the book also explains costs, benefits and priorities. In the dynamic simulated world of games and extended reality, interactive audio can now consider every intricacy of real-world sound. This book explains how and why to tame it enjoyably.

Making a successful video game is hard. Even games that are successful at launch may fail to engage and retain players in the long term due to issues with the user experience (UX) that they are delivering. The game user experience accounts for the whole experience players have with a video game, from first hearing about it to navigating menus and progressing in the game. UX as a discipline offers guidelines to assist developers in creating the experience they want to deliver, shipping higher quality games (whether it is an indie game, AAA game, or "serious game"), and meeting their business goals while staying true to their design and artistic intent. In a nutshell, UX is about understanding the gamer's brain: understanding human capabilities and limitations to anticipate how a game will be perceived, the emotions it will elicit, how players will interact with it, and how engaging the experience will be. This book is designed to equip readers of all levels, from student to professional, with neuroscience knowledge and user experience guidelines and methodologies. These insights will help readers identify the ingredients for successful and engaging video games, empowering them to develop their own unique game recipe more efficiently, while providing a better experience for their audience. Key Features Provides an overview of how the brain learns and processes information by distilling research findings from cognitive science and psychology research in a very accessible way. Topics covered include: "neuromyths", perception, memory, attention, motivation, emotion, and learning. Includes numerous examples from released games of how scientific knowledge translates into game design, and how to use a UX framework in game development. Describes how UX can guide developers to improve the usability and the level of engagement a game provides to its target audience by using cognitive psychology knowledge, implementing human-computer interaction principles, and applying the scientific method (user research). Provides a practical definition of UX specifically applied to games, with a unique framework. Defines the most relevant pillars for good usability (ease of use) and good "engage-ability" (the ability of the game to be fun and engaging), translated into a practical checklist. Covers design thinking, game user research, game analytics, and UX strategy at both a project and studio level. Offers unique insights from a UX expert and PhD in psychology who has been working in the entertainment industry for over 10 years. This book is a practical tool that any professional game developer or student can use right away and includes the most complete overview of UX in games existing today.

Game Design Workshop is a truly great book, and has become, in my opinion, the de facto standard text for beginner- to intermediate-level game design education. This updated new edition is extremely relevant, useful and inspiring to all kinds of game designers. — Richard Lemarchand, Interactive Media & Games Division, School of Cinematic Arts, University of Southern California — This is the perfect time for a new edition. The updates refresh elements of the book that are important as examples, but don't radically alter the thing about the book that is great: a playercentric approach to game design. — Colleen Macklin, Associate Professor, Parsons The New School for Design — Tracy Fullerton's Game Design Workshop covers pretty much everything a working or wannabe game designer needs to know. She covers game theory, conceiving, prototyping, testing and tuning, with stops along the way to discuss what it means to a professional game designer and how to land a job. When I started thinking about my game studies course at the University of Texas at Austin, this was one book I knew I had to use. — Warren Spector, Studio Director, OtherSide Entertainment — "Create the digital games you love to play." Discover an exercise-driven, non-technical approach to game design, without the need for programming or artistic expertise with Game Design Workshop, Fourth Edition. Tracy Fullerton demystifies the creative process with clear and accessible analysis of the formal and dramatic systems of game design. Using examples of popular games, illustrations of design techniques, and refined exercises to strengthen your understanding of how game systems function and give you the skills and tools necessary to create a compelling and engaging game. Game Design Workshop puts you to work prototyping, playtesting, and revising your own games with time-tested methods and tools. These skills will provide the foundation for your career in any facet of the game industry including design, producing, programming, and visual design. Tracy Fullerton is an award-winning game designer and educator with over 20 years of professional experience, most recently winning the Games for Change Game of the Year Award for her independent game Walden, a game. She has also been awarded the 2016 GDC Ambassador Award, the 2015 Games for Change Game Changer Award, and the IndieCade 2013 Trailblazer award for her pioneering work in the independent games community. Tracy is a Professor of Interactive Media & Games at the USC School of Cinematic Arts and the Director of the USC Games Program, the #1 game design program in North America as ranked by the Princeton Review. Key Features Provides step-by-step introduction to the art of game designing, prototyping and playtesting innovative games A design methodology used in the USC Interactive Media program, a cutting edge program with hands-on exercises that demonstrate key concepts and the design methodology Insights from top industry game designers presented through interview format