

Course outline: Games Design and Development

The MA in Games Design and Development is a specialisation within the broader **MA in Film and Television**.

Games Design and Development is an integrated two-year MA programme offering deep learning and skills development in Games Design, Cultural and Contextual Theory, Games Production, Games Art and Animation, and Software Development. It aligns as closely with the school's other programmes in film and television, and there is opportunity for dialogue and exchange between them.

The course represents a steady, structured progression. Year One covers technology, skills, contextual and critical studies, and together these are the foundation for students to develop the mastery needed to progress their creative potential. The second year allows students to continue this development, demonstrating their creativity through applied knowledge and original practice. It supports students in becoming independent learners and creatives, working with others on a portfolio project.

Year One

The first-year modules focus on specific project briefs which together enable the student to undertake a logical progression of knowledge, skills and understanding in key elements of game design and development, and in emergent areas of innovation in the field. The module projects are supported by lectures, classes and workshops on pertinent topics, and these are complimented by relevant contextual and critical studies. This enables games students to develop a broad and deep knowledge across all the sub-specialisms within games development, allowing them to develop a genuinely broad expertise as future innovators in the field. As the year progresses, students from other disciplines within the school are increasingly brought into the frame as collaborators on first year game projects, and the resulting partnerships formed are a valuable rehearsal for the more extended final major projects undertaken in the second year. The first year also includes a number of opportunities for students to pitch and present their projects at various stages of development, including initial concepts, formulated game designs, work-in-progress and near finished projects. These not only provide students with opportunities to share their ideas with collaborators from other NFTS disciplines, but also allow appropriate visiting tutors and industry specialists to join the core course team to offer advice and feedback on the work presented.

Lectures and seminars on different aspects and formal elements of game design are included periodically throughout the first year, and these are taken further in the

'Games Analysis' module. In addition, a series of briefings on the games industry as a contemporary commercial environment culminates in the 'Business of Games' module which completes early in the second year, prior to major project development.

All students undertake a dissertation. The research and theoretical underpinning of this is initiated through tutorials and seminars throughout the first year leading to the submission of a two-thousand-word research or dissertation proposal. In common with all other programmes at the school, the full dissertation is to be developed and completed by a set date towards the end of the second year, and the work is supported through regular dissertation tutorials and seminars.

Year Two

The second year is geared towards the production of the students' Final Major Projects: predominantly practical, but the work is complimented by master classes from industry specialists and further academic input from faculty. There are also short advanced cross-disciplinary workshops, some of them involving other NFTS departments, as well as more project focussed workshops in crucial aspects of game development, design and production management. We also invite in a stream of industry practitioners into the labs, not only to provide presentations of their latest work, but also to give students the benefit of one-to-one sessions with them in order to discuss their on-going projects.

In the first term, the 'Business of Games' module take place. This is an in-depth survey of the evolving commercial landscape of the games industry, featuring a series of high-powered seminars and lectures delivered by renowned specialists from the games business community, and culminating with a monthly one to ones with our Production tutor on creating a successful business plan.

Second year project development is structured around a series of measurable milestones: initially the student is encouraged to specify, document and present embryonic ideas, and these are carefully developed with the student into more tangible design specifications and initial prototypes. Students present their ideas to other specialisms within the school with a view to building the right team of peers to work alongside them from other departments, and where required occasionally from outside of the school.

Curriculum Components – Year One

Games is a multi-disciplinary endeavour, and students need to acquire knowledge from a number of core disciplines. These include **Design, Producing, Art and Animation Asset Creation, Programming and Technology** and **Cultural/Contextual Theory**. While these are not explicitly taught units or modules, elements of these disciplines run through course projects. Students gain knowledge of these areas through the experience of their projects, through taught workshops, lectures and seminar discussions, guided research and reading and – perhaps most importantly – through their own learning activities and individual studies. The areas which fall under these disciplines are listed here as a guide to what students should aim to know about and be able to apply through their practical projects and their

theoretical research. Also included are some indicative reading suggestions, many of which are stocked in the school's library, or are available within the department.

Core Disciplines: Game Design

Game design is a collision of disciplines and it is notoriously difficult to define. Indeed, game design covers an almost infinite variation of job descriptions. For our purposes, however, game design involves conceiving, defining, iterating, testing and managing both the creative and the technical aspects of game development. It involves concept development, structural specification, audience analysis, technical adaptation, documentation and communication. Key to the process is *innovation!* That is, developing new forms and formats; new ways to communicate, educate and entertain; and new ways of using digital media to engage audiences with meaning and purpose.

Key Topics

- Creativity and innovation
- Narrative theory, story development and character creation
- Game genres and game mechanics
- Game design documentation
- Prototyping strategies
- 2D and 3D Level design, architecture and layout
- Control systems and interactivity
- Game mechanics
- Interactive narrative
- Cinematography and Camera Control
- Game audio
- Augmented Reality, Virtual Reality and Transmedia
- Non-Digital Games

Core Disciplines: Cultural and Contextual Theory

Games and interactive media are a vibrant area for academic research and scholarship. The course embraces these debates and encourages students to engage with them. Such a cultural and contextual reflection on games compliments project-development, encouraging students to see their work as situated within those debates facing games as an industry and games as a medium generally. The lectures, discussions and research areas compliment, extend and broaden elements students encounter in the core NFTS Screen Arts programme and offer an interactive media specific context.

Key Topics

- Evolution and Psychology of Play
- Narrative Forms and Fictional Spaces
- Realism, Illusion and Synthesis
- Interactivity in Art, Design and Media
- Spectatorship and Participation
- Violence, Social Responsibility and Censorship in Games
- Postmodernism and Games

Core Disciplines: Game Production

Students need a solid grounding in games production processes, project management, and industry business models. Some of this is addressed through visiting lectures by industry practitioners in both Triple-A and Indie games, and this is further supported by developing students' practical expertise in scoping and managing their own projects, as well as critically appraising their creative and commercial viability in the contemporary market.

Key Topics

- Games Industry overview
- Platforms and demographics
- Games production process
- Project Management and Development Strategies
- Asset Management and Version Control
- Testing and QA
- Introduction to business models and project finance
- Production Models in Film and Television
- The Changing Nature of the Game Development Team
- New Models of Game Development and Production
- 'Agile' Project Development
- Project Planning and Work Flow
- Managing creativity, teams and collaborative development
- Presentation and Pitching
- Digital Marketing and Social Media
- Business and Finance

Core Disciplines – Game Art and Animation

Game Art and Animation includes many skillsets and knowledge bases, many of them shared across other fields, such as Digital FX and Animation. A comprehensive knowledge of this area includes both the theory and the practice of traditional digital art and design. This incorporates aesthetics, art direction, technical asset creation, character development, 3D modelling, and the principles and practice of animation. The course features workshops in 3D modelling, digital art and animation, as well as traditional studies in observation and invention – including life-drawing.

Key Topics

- Research, storyboarding and visual presentation
- Drawing
- Design and composition
- Environments and Architectures
- Character design
- Animation
- Materials, Textures and Mapping
- Real-time Camera and Lighting
- Particles, Shaders and Effects
- Rendering pipeline
- Game engine export

Core Disciplines: Software Development and Technology

Games are fundamentally computer programs, which manipulate and control audio-visual assets while responding meaningfully to player interaction through game peripherals. A fundamental understanding of programming (experience *and* practice in writing code) is critically important for games development. We do not expect graduates to become specialist software engineers, but the ability to program using a high-level scripting language (EG: C#) is an essential skill. This requires basic mathematical aptitude, a logical problem-solving approach, and plenty of practice, which is provided through the project briefs.

Key Topics

- Mathematics and Programming fundamentals
- Object Oriented Programming (OOP) and Component Based Design (CBD)
- Platforms
- Game System Architectures (Physics, AI, Animation, FX, Camera, Sound, UI etc)
- Scripting Languages
- Unity Engine

Project Briefs for Year One

in Year One, students follow a sequential pathway of practical modules. Each module is accompanied by a detailed brief-document, outlining the module specifics and the assessment criteria, and this is provided to the student at the beginning of the module. Each module is designed to challenge and stimulate, and allows the student to apply the skills, knowledge and understanding developed on the course. Students are encouraged to explore new and emerging areas of games development. Some modules are undertaken as team projects within the games cohort, and most will call on assistance and involvement from other specialisms across the school where relevant.

Year One modules are the core practical work for the course. The accompanying Module Brief document specifies the module aims, learning objectives outcomes and assessment criteria. The modules are:

1. Hello World: Build a Playable Game Environment

Using Maya, Unity and related software, students work in groups to collectively design and build a navigable 3D environment for a first-person perspective, single-player experience. The player must be able to interact with the environment meaningfully. Lighting should be expressive, the camera responsive, and audio should be embedded throughout.

The specific design and theme of the world is to be decided. Students should collectively design the environment alongside tutor guidance. Each student must respectfully negotiate which 'section' of the world they will build individually. Further, students are required to take on additional role(s) to support the project. Depending on the project, some roles may include:

- Technical Director / Pipeline
- Level Design
- Asset Manager

- Dynamics and Effects
- Vehicle Designer
- Camera & Lighting Designer
- Generic Elements / Props / Vegetation.
- Sound/Audio Designer

2. Code Camp: The Fundamentals of Programming

Code Camp is an intensive module in games programming and in programming fundamentals more generally. The module explores C# as a scripting language and its use inside the Unity engine for creating gameplay. Critical concepts are explored, such as variables, functions, loops, classes, components and more. Students work individually by applying their programming knowledge to create a short, mechanics-driven experience.

3. App Factory: Design and Build a Mobile Game

Using Unity and related tools (Such as Maya and Photoshop), students work individually within the games cohort to design and implement a mechanics-focused game for a mobile device, either iOS or Android (or both). Students should arrive at a feasible design with guidance from tutors and then implement that design, creatively applying their coding and development skills.

4. Synthesians: Create an Interactive Drama

In Synthesians, students work individually within the games cohort to develop a short, story-driven experience featuring one or more interactive 3D characters. The game must be compatible for desktop computers and it should be based on the creative interpretation of a culturally significant art work or an event that impacts the human situation. This module challenges and encourages students to deliver an engaging story expressed through animated and interactive 3D characters. Students are welcome to create the game for VR (Oculus Rift).

5. Moments of Consequence: Gaming and Experiences

Using the technical knowledge and creative skills from previous modules, students work collectively in small teams within the cohort. Each team must negotiate a design and build a dramatic, interactive experience in collaboration with screenwriters, producers, production designers, sound designers and DFX artists where appropriate. This is primarily an exercise in drama and its orchestration through interactivity; an ambitious, multidisciplinary culmination of the first year's work.

Curriculum Components – Year Two

Year Two is focused primarily on the production of the Final Major Project (FMP) (aka Graduation Projects), alongside workshops and skills development. The FMP represents the culmination of student skills and knowledge applied to a single, dedicated game project showcasing their creativity and learning. Engagement with other MA disciplines at the NFTS is encouraged and facilitated during development to provide additional expertise in specific areas and for additional creative resources, both conceptually and practically.

Contextual work continues with Dissertation Development Workshops running during the second year, culminating in the final dissertations before the start of the final

term. Career development workshops are offered in the final term, with a combination of industry visits, career advice and CV/Portfolio development sessions.

Final Major Project

The project follows a phased approach to game development:

- research and concept development
- creative and technical research
- game design specification
- production planning, pipeline and tools specification
- art asset and code development
- technical integration and implementation
- iterative project builds
- testing and tuning
- final version

Each project is allocated a modest budget that may be used to buy additional technical expertise, additional art assets, voice talent, or any other element necessary to make cost-effective contributions. Students are strongly encouraged to engage and collaborate with other specialist film and television disciplines at the NFTS, for example cinematography, sound design, production, animation, composing, SFX/VFX and others.

The Final Major Project provides students with:

- a supportive framework for conception, design and development of projects
- professional level self-management skills, initiative and team working
- an opportunity for the development, demonstration and implementation of creative vision, high production value and technical excellence
- in-depth working experience of the game development process

A detailed project specification and development protocol is separately provided to year 2 students, including assessment criteria and project presentation format.

Additional Curriculum Components

FMP work will be supported by tutorials, progress workshops and group seminars delivered by tutors and specialist practitioners at each stage. Students are encouraged to share resources, expertise and best practice with the rest of their cohort. In addition, students will learn the following where applicable:

(Production Focused)

- Team building and team working
- Intellectual property and legal frameworks
- Audiences and markets
- Marketing and Promotion
- Working with performers
- Contracts

(Design Focused)

- Level and World design
- Cameras, Control systems and Interfaces
- Game Design Concepts

- Collaboration strategies
- Script development, dialogue writing and directing voice talent
- Current debates in game design

(Art and Animation Focused)

- Animation and Performance
- UI and Graphic Design
- Motion Capture
- Game Camera and Lighting Systems
- Game Audio

Dissertation Development

Students continue dissertation work, undertaking an in-depth piece of research on a particular aspect of games design and development, or indeed on a tangential field within the general area of media and/or cultural studies. Students are encouraged to make reference to relevant literature from game design studies or from any other subject areas. Head of Department and tutors will advise and support research direction and development. One to one tutorial support is available on a regular basis.

Students will present a preliminary version of their dissertation approximately four weeks prior to the final hand-in, for peer review and formative feedback.

Into the Industry: Career Development

This is a short series of seminars, tutorials and possible studio visits taking place during term 3, designed to prepare students for their next career move. As well as up to date insight on industry opportunities, students are also offered CV and self-marketing surgeries, advice on digital portfolio presentation, setting up a small development studio, freelancing and other career development information.

All students graduating from the NFTS have their work presented to the industry through the screenings/showcase at the NFTS graduation show in central London. In lieu of a screening, games students exhibit projects in a bespoke exhibition space in the same venue as the fiction, animation, television and documentary screenings. During the latter part of their second-year games students also exhibit at key UK games events and expos such as Develop, EGX and GameCity.

Students are encouraged to submit their projects to all appropriate competitions and festivals, for example Nordic Games in Sweden, PC Gamer Weekender in London, and the Independent Games Festival (IGF) at GDC San Francisco in February, and assistance will be provided to do this where possible.

Student work can be showcased and promoted via the NFTS games websites and associated portals, including play-throughs, playable demos, prototypes and full versions of work where appropriate. This will form a useful repository of past and present work from the course.