PART A: GENERAL INFORMATION

1. Module Title		Programming for Games & VFX Production (EXTA 5001)
2. School		Escape Studios
3. Level		5
4. Total Credits/ ECTS Value		30 (15 ECTS)
5. Total Synchronous Contact Hours		90
6. Programme(s) to which the Module Contributes		Technical Art for Games & VFX BSc (Hons) Technical Art for Games & VFX (Integrated Masters) MSci (Hon)
7. Related Modules	**Pre-requisites**	None
	Co-requisites	None
	Post-requisites	None
	Excluded Combinations	None
8. External Accrediting Body *(If applicable)*		N/A
9. Modes of Study		Full-time
10. Delivery Site(s)		Escape Studios, London

PART B: MODULE LEARNING OUTCOMES

11. Learning Outcomes

On successfully completing the module students will be able to:

1. Demonstrate a comprehensive understanding of established theories, technology and tools relevant to their programming in their discipline
2. Critically evaluate established programming solutions and apply concepts to solve a range of creative problems
3. Produce a range of programming solutions applicable to the creative process to an industry-standard
4. Manage time and resources to deliver a range of projects within given constraints
5. Collaborate with others to produce discipline-specific work and improve their technical craft

PART C: RATIONALE AND DELIVERY

12. Synopsis of the Curriculum

- Advanced Scripting
- Visual Studio
- Shader Language

- Math and Logic
- Node based scripting in Game Engine
- The Problem Workshops
- Best practice in project structures and tool building

13. Learning and Teaching Methods

The module follows the Craft module model, with practical tutor-lead sessions in studio being the primary mode of delivery. In these sessions students are introduced to theory in the context of exercises, building their knowledge and understanding alongside their intellectual and practical skills.

14. Contact Hours

Module Credit Value	Scheduled Learning Activities	Guided Independent Study	Total Learning Hours
30 credits	Skills sessions (54 hours) Studio time (36 hours)	Preparation for classes, guided research, assignment preparation and development (210 hours)	300 hours

15. Assessment Methods

Formative Assessment

Formative assessment will be provided throughout the module, both in terms of feedback on work in progress during the contact hours.

Summative Assessment

Assignment 1: Project (75%)

Approximately 6 weeks of development work.

Assignment 2: Presentation (25%)

Approximately 10-15 minutes

Re-sits

Students who fail this Module will be permitted to submit revised re-sit the failed assessment components in accordance with the Academic Regulations

16. Map of Module Learning Outcomes to Learning, Teaching and Assessment Methods

Learning outcome	1	2	3	4	5
Learning/ teaching					
Skills Sessions	X	X	X		
Studio Time			X	X	X
Assessment method					
Project	X	X	X	X	X

Presentation	X	X			X

17. Indicative Reading List

This is an indicative list, correct at the time of publication. Reading lists will be published at least annually.

- Math for Programmers 3D graphics, machine learning, and simulations with Python, Paul Orland, Manning Publications, (2021)
- Grokking Algorithms: An Illustrated Guide for Programmers, Aditya Bhargava, Manning Publications, (2015)
- Doing Math with Python: Use Programming to Explore Algebra, Statistics, Calculus, and More!, Amit Saha, O'Reilly, (2015)
- Math Adventures with Python: An Illustrated Guide to Exploring Math with Code, Peter Farrell, No Starch Press, (2019)
- The Art of Doing Science and Engineering: Learning to Learn, Richard W. Hamming, Stripe Press, (2020)
- Technical Documentation and Process, Jerry C. Whitaker, Robert K. Mancini, CRC Press, (2012)

Electronic

- HLSL Shader Creation 1 - HLSL Shader Fundamentals https://www.youtube.com/playlist?list=PL78XDi0TS4lEDHfahG4ddRwZ3AUrOIYcq
- HLSL Shader Creation 2 - Light and Shading Models https://www.youtube.com/playlist?list=PL78XDi0TS4lE772rZflLkFe-WdhYEV4WE
- HLSL Shader Creation 3: Surface Shading & Transmission - YouTube https://www.youtube.com/playlist?list=PL78XDi0TS4lE6UnUO9OTC5M1Wo3bJLDe9
- UE4 Material Editor - Shader Creation https://www.youtube.com/playlist?list=PL78XDi0TS4lFlOVKsNC6LR4sCQhetKJqs
- Blueprints https://www.youtube.com/playlist?list=PLHjQE2fLIZu-jEK8gPpfohAIa15LoH9pD
- Shader Maths https://www.youtube.com/playlist?list=PLHjQE2fLIZu9Ozkg-Ll_dVlytGvR-paEs
- Game Art Tricks | Simon Schreibt. http://simonschreibt.de/game-art-tricks/

18. Inclusive Module Design

We recognise and have incorporated the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with relevant policies and support services. Furthermore, the module design has sought to embed inclusive curriculum content.

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