CARIBBEAN EXAMINATIONS COUNCIL

Caribbean Advanced Proficiency Examination® CAPE®

ANIMATION AND GAME DESIGN SYLLABUS

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Contents

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Please check the website www.cxc.org for updates on CXC's syllabuses.

Introduction

The Caribbean Advanced Proficiency Examination® (**CAPE**®) is designed to provide certification of the academic, vocational and technical achievement of students in the Caribbean who, having completed a minimum of five years of secondary education, wish to further their studies. The examinations address the skills and knowledge acquired by students under a flexible and articulated system where subjects are organised in 1-Unit or 2-Unit courses with each Unit containing three Modules. Subjects examined under **CAPE®** may be studied concurrently or singly.

The Caribbean Examinations Council offers three types of certification at the **CAPE**® level. The first is the award of a certificate showing each **CAPE**® Unit completed. The second is the **CAPE®** Diploma, awarded to candidates who have satisfactorily completed at least six Units, including Caribbean Studies. The third is the CXC Associate Degree, awarded for the satisfactory completion of a prescribed cluster of *eight* **CAPE**® Units including Caribbean Studies, Communication Studies *and Integrated Mathematics. Integrated Mathematics is not a requirement for the CXC Associate Degree in Mathematics.* The complete list of Associate Degrees may be found in the CXC Associate Degree Handbook.

For the **CAPE**® Diploma and the CXC Associate Degree, candidates must complete the cluster of required Units within a maximum period of five years*. To be eligible for a CXC Associate Degree, the educational institution presenting the candidates for the award, must select the Associate Degree of choice at the time of registration at the sitting (year) the candidates are expected to qualify for the award.* Candidates will not be awarded an Associate Degree for which they were not registered.

Animation and Game Design Syllabus

♦ **RATIONALE**

Animation and Game Design is a course of study that focuses on the process of creating motion and shape change illusion as well as the art of applying design and aesthetics for animation and game development. It facilitates the creative and deliberate use of traditional and new media to represent thoughts, issues, and messages to various audiences. Through a collaborative, highly practical and industry-driven approach, Animation and Game Design will provide opportunities for students not only to develop their aesthetic and technical competence, but to express creativity and conceptualise projects that integrate technology, arts and media to address local and international issues while creating a source of education, entertainment and employment. This syllabus will also empower students for further studies or immediate entry into the job market whether through waged or entrepreneurial employment, by providing goods or services on any feasible scale.

The study of the Animation and Game Design Syllabus will facilitate the achievement of core Twenty-first century student outcomes which include the mastery of information, media and technology skills, life and career skills, and learning and innovation skills. Given the current importance and dynamism of the field of Animation and Gaming both at the regional and international levels, the syllabus will help to increase the cadre of culturally aware practitioners such as content creators, animators, graphic artists, sound engineers/technicians and actors trained in the use of industry-specific skills to solve design and communication problems. This will result in the region being poised to secure and utilise the skillsets and knowledge base that are essential to building and sustaining the digital economy in the Caribbean.

Ultimately, this course of study in **CAPE**® Animation and Game Design will develop the Ideal Caribbean Person who, as articulated by CARICOM Heads of Government at their 18th Summit, is emotionally secure with a high level of self-confidence and self-esteem; sees ethnic, religious and other diversity as a source of potential strength and richness; has an informed respect for our cultural heritage; demonstrates multiple literacies, independent and critical thinking, questions the practices of past and present and brings this to bear on the innovative application of science and technology to problem solving; demonstrates a positive work ethic; and values and displays the creative imagination in its various manifestations and nurtures its development in economic and entrepreneurial spheres in all other areas of life. This course of study will also help candidates to meet the criteria of the UNESCO Pillar of Learning, which are, Learning to know, Learning to do and Learning to live together, and Learning to transform themselves and society.

♦ AIMS

This syllabus aims to:

1. develop a fundamental understanding of the principles and practices of animation and game design;

2. foster an appreciation of the value of animation and game design to society;

3. encourage the development of dynamic, creative, and sustainable solutions relevant to economic, educational, cultural and social contexts;

4. engender critical thinking, leadership and management with entrepreneurial skills and competencies necessary for functioning effectively in the current as well as future animation and game design environments; and,

5. facilitate the acquisition of relevant knowledge, skills and competencies through authentic learning experiences, in preparation for a career in the animation and games industry.

♦ SKILLS AND ABILITIES TO BE ASSESSED

The skills and abilities that students are expected to develop on completion of this syllabus have been grouped under three headings:

(a) Knowledge and Comprehension;

(b) Creativity, Innovation and Collaboration; and,

(c) Presentation and Communications Skills.

Knowledge and Comprehension

The ability to:

(a) define terms and concepts;

(b) describe current developments;

(c) explain the economic, social and cultural impacts;

(d) explain the entrepreneurial opportunities;

(e) explain intellectual property protection and compliance; and,

(f) describe ethical issues and considerations.

Creativity, Innovation and Collaboration

The ability to:

(a)   analyse information;

(b)   utilise process design principles;

(c)   troubleshoot and solve a problem;

(d)   conceptualise an innovative and creative design solution;

(e)   apply entrepreneurial models and approaches;

(f)   work with others to realise a product;

(g)   apply pre-production skills and techniques;

(h)   plan and design innovative solutions; and,

(i)   apply the creative process to solve local/regional problems.

Presentation and Communication skills

The ability to:

(a)   select and use appropriate tools/technology;

(b)   use appropriate terminology in discussing their discipline;

(c)   articulate ideas/concepts effectively during a pitch.

♦ PREREQUISITES OF THE SYLLABUS

Any person who has completed five years of secondary education or its equivalent should normally be able to pursue the course of study defined by the syllabus. However, it is desirable that a candidate has some knowledge of drawing and digital image processing, as well as good verbal and written communication skills.

♦ SOFTWARE AND EQUIPMENT

Candidates must be able to access equipment and materials that provide them with opportunities to participate in activities in a learning environment similar to that of a real animation and game design workplace. This access can be inside or outside of the classroom and should include open source software relevant to animation and game design.

♦ STRUCTURE OF THE SYLLABUS

The subject is organised in two Units. A Unit comprises three Modules each requiring 50 hours. The total time for each Unit, is therefore, expected to be 150 hours with at least 60 percent of the time dedicated to practical work. Given the nature of the discipline, teamwork is mandatory for students. Each Unit can independently offer students a comprehensive programme of study with appropriate balance between depth and coverage to provide a basis for further study in this field.

UNIT 1: Fundamentals of Animation and Game Design

Module 1   -   Understanding Animation and Game Design
Module 2   -   Drawing and Layout
Module 3   -   Story and Character Development

UNIT 2: Interactive Design and Game Development

Module 1   -   Introduction to Interactive Design
Module 2   -   Game Design and Development
Module 3   -   Animation for Games

In this syllabus, the specific objectives which are denoted by an asterisk (*) are particularly suitable for practical exercises. However, practical work should not necessarily be limited to these objectives.

♦ APPROACHES TO TEACHING THE SYLLABUS

The specific objectives indicate the scope of the content and the activities that should be covered. The students should be exposed to accurate and unbiased content and skills that will foster more creative and prepared citizens capable of effectively participating in a dynamic society. Therefore, the role of the teacher is to employ a collaborative, highly practical and industry-driven approach to facilitate students' learning.

♦ **UNIT 1: FUNDAMENTALS OF ANIMATION AND GAME DESIGN**
MODULE 1: UNDERSTANDING ANIMATION AND GAME DESIGN

GENERAL OBJECTIVES

On completion of this Module, students should:

1.   develop an understanding of animation and game design;

2.   demonstrate awareness of the appropriate use of animation and game designs for development;

3.   be aware of skill sets needed in animation and game design;

4.   assess the ethical considerations involved in animation and game designs and actions to circumvent unethical issues/challenges; and,

5.   understand the process of game design and animation methodologies.

SPECIFIC OBJECTIVES	CONTENT/EXPLANATORY NOTES
Students should be able to:	
1. define terms associated with animation and game design;	Animation. Game design. Other relevant terms.
2. outline the history and present use of animation and game design;	History of animation. History of game design. Current situation.
3. identify the roles and responsibilities of persons in the animation and game design industry;	Pre-production: contract service providers - console developers, software developers, tool developers, designer, animator, scriptwriter, sound engineer. Post-production: consumers, players, publishers, distributor, retailer.
4. discuss future trends in animation and game design;	VR, Augmented Reality, Gesture-based.
5. explain the different game goals and game genres;	Goals: educational, entertainment. Genres: Arcade, Action, Adventure, Puzzle, Role Play Game (RPG), Strategy, Simulator, Board, Sports.
6. discuss the methods of deploying games on various game platforms;	Platforms: Computers, handheld consoles, home consoles, mobiles, arcade, tabletop, and online. Deploying games on various platforms.

SPECIFIC OBJECTIVES	CONTENT/EXPLANATORY NOTES
Students should be able to:	
7. outline the elements of game play;	Rules, characters, sound, environment, storyline, actions, skills, choice, player modes including single, multiplayer.
8. explain game theory in animation and game design;	Strategy: mathematical and logical actions leading to winning, pure conflict (zero-sum), mutual gain (positive sum), mutual harm (negative sum).
9. outline the role and impact of the Animation and Gaming Industry on the Caribbean region;	Economic value of games and animation. Educational value of games and animation (Instructional materials, assessment).
10. discuss the skills that support employment and entrepreneurship in animation and game design;	Team/collaborative skills and approaches including virtual team approach to entrepreneurship versus individual practices. Outsourcing/Contract Services. Project management.
11. explain the relevance of animation and game designs to entrepreneurship;	Employment, Outsourcing/Contract Services.
12. *demonstrate the use of e-portfolios and use of pitching;	Hands-on activities: (a) preparing and using e-portfolios; and, (b) pitching.
13. identify project funding opportunities for animation and game design;	Project Planning.
14. evaluate project funding opportunities available for animation and game design;	Budgeting, contracts, scheduling. Project proposal. Project pitching. Types of funding: Loans, grants Sources of funding: Crowd funding, Angels, Venture Capitalist, Investor, Lending institutions.

UNIT 1
MODULE 1: UNDERSTANDING ANIMATION AND GAME DESIGN (cont'd)

SPECIFIC OBJECTIVES

Students should be able to:

CONTENT/EXPLANATORY NOTES

15.   present project proposals;

Skills and preparation required: research, time management, communication.

Guidelines for effective oral and written communication:

(a)   diction;
(b)   grammatical structures;
(c)   knowing your audience: relationship between audience and diction;
(d)   determine the purpose: inform, persuade, instruct, entertain;
(e)   structure: beginning, middle and end;
(f)   importance of the hook and types of hooks, for example, statistics and quotes.

Oral communication elements:

(a)   tone and pitch;
(b)   body language and movement;
(c)   use of visual aids with specific emphasis placed on multimedia;
(d)   equipment and room check; and,
(e)   importance of editing.

16.   identify concepts and skills required for animation and game design;

12 principles of Animation as developed by Walt Disney Studio.

Programming languages such as C#, Java and Python.

Game Development Tools such as: Construct 2 and Stencyl.

Examples of Open Source and Proprietary software useful for animation and game design.

SPECIFIC OBJECTIVES	CONTENT/EXPLANATORY NOTES
Students should be able to:	
17. *demonstrate basic sound editing techniques;	*Basic sound editing techniques: Recording, capturing sounds for sound effects, editing, exporting files, voice recording, layering, fading.
18. outline ethical issues associated with animation and game design;	Implications: ethical, moral and social issues.

Plagiarism

What is right or wrong about individuals' actions when dealing with animation and game design for example:

(a) downloading software that is too costly to purchase from file sharing networks;
(b) making copies of a borrowed CD or rented DVD before returning it; and,
(c) stripping DRM restrictions from downloaded media to make an unprotected copy.

Explain the Open Movement Philosophy:

(a) Open Source;
(b) Open Data;
(c) Open Educational Resources (OER);
(d) Open Source versus Public Domain; and,
(e) Creative Commons Licensing.

| 19. identify risks associated with animation and game design; | Explain intellectual property, patents and copyright protection as it relates to animation and game design: |

(a) reasons for and importance of intellectual property, patents and copyrights;
(b) what intellectual property, patents and copyrights protect;

SPECIFIC OBJECTIVES	CONTENT/EXPLANATORY NOTES
Students should be able to:	
	(c) penalties for infringement of intellectual property, patents, copyrights;
	(d) process involved in copyrighting and patenting one's work; and,
	(e) authorised use of copyrighted material.
20. develop solutions to mitigate the risks associated with animation and game design;	Examples: quality control, patents, copyrights.
21. identify the main stages of game design; and,	Creative process: brainstorming, ideation.
	Methodology: iterative process:
	(a) Rapid prototyping (conceptualisation, design, code, and test);
	(b) Play test;
	(c) Revision; and,
	(d) Repeat.
22. explain the importance of RAD in game design.	Compare to plan-based methods. For example, waterfall methods.
	Advantages and disadvantages of RAD.

Suggested Teaching and Learning Activities

To facilitate students' attainment of the objectives in this Module, teachers are advised to engage students in the following teaching and learning activities which may be done separately or merged to facilitate sequencing and portfolio development.

1.   Students can be shown online lectures on the history of animation.

2.   Have students create a timeline to illustrate the chronology of animation.

3.   Students should be arranged in groups or pairs to conduct a research on different stages of the history of animation or game design. They should use a "show and tell" approach via

props or multimedia to make their presentations. Facilitator can assign a stage in the chronology to a student, pair, or team for them to research and present.

4.   Have students create a character that illustrates the principles of good animation. They should justify with evidence, why they think their character embodies the principles.

5.   Assign students concepts for them to research and then engage them in discussions supported by teacher explanations of the principles of Design for various character archetypes. Follow up with students viewing an animated film with the objective being to note the different character archetypes that are evident in that film. (An example of an appropriate film is *Monsters, Inc.*).

6.   Discuss the economic impact of gaming and animation globally including success stories. Use case studies and news articles to illustrate the economic value of both industries.

7.   Access examples of e-portfolios online, and show videos of persons pitching using e-portfolios. Get students to use these as guides to prepare and make presentations which will assist them to make pitches later on.

8.   Arrange for guest lectures by persons in areas such as the animation and gaming industries, intellectual property agency and law enforcement agencies. They may be invited to the institution or field trips arranged for students to visit relevant sites. Students should also be guided to develop instruments for conducting interviews during the field trips or for asking questions after the lectures.

9.   Arrange for demonstrations to be done by industry experts as to how to distribute/share games online. These demonstrations may also be done by the teacher if the facilities are available on site, or if industry facilities and experts are not readily available.

RESOURCES

1.   Tablets
2.   Computers
3.   Drawing pads
4.   Drawing Tablets
5.   Relevant Software

Websites

http://animationsupplement.com/forum/entry.php?10-Chronology-History-of-Animation-Films-from-1926-to-1946

http://www.cta.int

http://unity3d.com/unity/multiplatform

http://video.mit.edu/watch/history-of-animation-3391/

http://elearningindustry.com/top-10-free-timeline-creation-tools-for-teachers

https://hcandelar8.wordpress.com/2013/06/11/monsters-inc-archetypes/
http://www.informationweek.com/software/7-ways-to-create-e-portfolios/d/d-id/1110673?

http://www.museumofplay.org/icheg-game-history/timeline/

https://www.inkydeals.com/basic-principles-for-great-character-design/

https://blog.udemy.com/archetypal-characters/

UNIT 1
MODULE 2: DRAWING AND LAYOUT

GENERAL OBJECTIVES

On completion of this Module, students should:

1.   employ design skills to create characters specific to gaming and animation;

2.   understand spatial concepts for compositing and layout design;

3.   understand the importance of applying social and cultural relevance to animation and game design; and,

4.   understand theories used to conceptualise ideas for animation and game design.

SPECIFIC OBJECTIVES	**CONTENT/EXPLANATORY NOTES**
Students should be able to:	
1. list types of motion drawings;	Motion analysis: gesture drawing; dynamic figure drawing; figure in motion; humanoid and non-humanoid characters.
2. *apply drawing and design principles for layout /environment and character development;	Life drawing; skeleton, muscle system, facial.
3. identify layers of an environment;	Midground, foreground, background layers.
4. *apply knowledge of design principles for environmental design;	Observational drawing: perspective. Colour theory and texture. Composition and layout: scene design, blocking.
5. define the concept of a level in game design;	Structuring the game play and designing levels.
6. outline the first three levels of a game;	Levels: mission, quest, episode, world, chapter.
7. apply socio-cultural context to the development of local ideas and concepts;	Caribbean art and heritage. Folklore as it applies to character development. Cultural studies – festivals, celebrations, monuments, artefacts, architecture.

UNIT 1
MODULE 2: DRAWING AND LAYOUT (cont'd)

SPECIFIC OBJECTIVES	CONTENT/EXPLANATORY NOTES
Students should be able to:	
8. identify the steps used for story development;	Basic Storyboarding. Story development.
9. *apply concepts to design a script for animation and game design;	Concepts: creative writing, story arc, character development.
10. *construct environment for various genres; and,	Environment design concepts.
11. *utilise digital image processing software to create digital artwork.	Digitise drawings: scanning, clean-up, colour pallet. Manipulate images.

Suggested Teaching and Learning Activities

To facilitate students' attainment of the objectives in this Module, teachers are advised to engage students in the following teaching and learning activities which may be done separately or merged to facilitate sequencing and portfolio development.

1.   Teachers may use a projector to present figure drawing techniques so students may model these. These examples should include humanoid and non-humanoid figures.

2.   Get students or other individuals to pose as live models for the teaching and learning of figure drawing techniques, and gesture drawing demonstrations.

3.   Engage students in activities where they paint the colour wheel to expose them to the experience of the colour changes, as well as for them to demonstrate their knowledge of the concept.

4.   Video tutorials on all topics can be disseminated to facilitate student practice outside of the timetabled class sessions.

5.   Using discussions based on research done by the students, make them aware of the basic principles of perspective. Follow up by engaging students in the production of artwork done through observation. As a part of the requirements, students should create perspectives with an animated/gaming world as the background.

6.   Still life can be set up using objects that are relevant to specific themes. Students are to observe and draw these objects. The teacher should ensure that the principles of observational drawing are taught, adhered to by the students and appropriately assessed.

7.   Take a snapshot of a game or animation frame for students to practise observational drawing.

8.   In order for students to investigate line, space, form, and shape, have them create a Pinterest board with elements that demonstrate their understanding of the concepts.

9.   Engage students in an activity to practise landscape drawing, then have them modify one of their landscape drawings to suit an animation or game environment. Emphasis should be placed on perspective and colour.

10.   Arrange for the students to access a computer lab/computers or studio on or off campus where over a period of time, they can see demonstrations of digital imaging including the use of drawing pads and digital art software. They should be allowed to practise the skills and create a simple product to demonstrate their knowledge of available and appropriate software as well as their competence in this area.

11.   Invite local animators and game designers to do guest lectures in which they explain the relevance of animation and game design for local ideas and concepts.

12.   Invite history and heritage experts or leaders of folk troupes to make presentations on Folklore and festivals. Emphasis must be placed on the characters in the Folklore and evolution of festivals in the region. Historical background must be explored to make students aware of the relevance of these characters to the culture of the Caribbean.

13.   Arrange visits to local galleries, museums, or artists to expose the students to the work of artists and view artefacts.

14.   Have students create Instagram or Pinterest accounts to host their work and share with peers and facilitators as they progress.

RESOURCES

1.   Drawing Pads
2.   Tablets
3.   Models
4.   Still Life Objects
5.   Mixed Media
6.   Digital Art Software: GIMP, Blender, Pixlr
7.   Camera

Websites

http://artists.pixelovely.com/practice-tools/figure-drawing/

http://www.wikihow.com/Practice-Gesture-Drawing

https://www.youtube.com/watch?v=74HR59yFZ7Y (Gesture drawing techniques)

UNIT 1
MODULE 2: DRAWING AND LAYOUT (cont'd)

http://www.awn.com/animationworld/animation-layout-getting-perspective

http://www.studentartguide.com/articles/realistic-observational-drawings

https://www.pinterest.com/

https://instagram.com/

UNIT 1
MODULE 3: STORY AND CHARACTER DEVELOPMENT

GENERAL OBJECTIVES

On completion of this Module, students should:

1.   understand concepts of story arcs and storytelling principles;

2.   understand Character Theory to create designs for different genres in games and animation;

3.   understand the concept and application of environment in design; and,

4.   develop Production documentation for Game and Animation.

SPECIFIC OBJECTIVES	CONTENT/EXPLANATORY NOTES
Students should be able to:	
1. *create a synopsis for a game or animation;	Synopsis development. The elevator pitch.
2. *write a narrative for a game and an animation based on story arcs and storytelling principles;	Story development. Story Arc. Scriptwriting.
3. *create a storyboard for a game or animation;	Storyboard creation. Camera angles.
4. explain character design as it relates to genre;	Character theory and design.
5. *design genre-appropriate characters;	Character Design Principle.
6. *create character turnarounds;	Turn-around designs of characters.
7. conceptualise an environment;	Environmental design – layers (background, midground, foreground).
8. *create environmental layers for backgrounds, midgrounds and foregrounds;	Drawing perspectives. Depth of fields.
9. *apply design theory to create environments for particular genres;	
10. explain concept art;	

UNIT 1
MODULE 3: STORY AND CHARACTER DEVELOPMENT (cont'd)

SPECIFIC OBJECTIVES	CONTENT/EXPLANATORY NOTES

Students should be able to:

11.   *create concept art for project; and,

12.   *create a Production Bible for game   Production Bible creation
         design and animation.

Suggested Teaching and Learning Activities

To facilitate students' attainment of the objectives in this Module, teachers are advised to engage students in the following teaching and learning activities which may be done separately or merged to facilitate sequencing and portfolio development.

1.   Provide students with sample storyboards and discuss these, then have them work in groups to create storyboards by sketching or using online tools.

2.   Provide sample synopses of stories for discussion, then have students create synopses based on a culturally relevant theme.

3.   Illustrate a five-point and an eight-point story arc, using a well-known story, then provide a scenario based on a culturally relevant theme and have students work in groups to create a story arc.

4.   Discuss with students the three-act structure of a story. Have students work in groups to create a three-act story based on a culturally relevant theme.

5.   Discuss script development after the class has viewed an animation. Students can begin to create a story journal.

6.   Use a video tutorial to illustrate how to create a concept design. Have students create a concept design based on a relevant theme. Allow students to practise and demonstrate mastery of colour and texture skills such as painting and modelling in environmental designs and concept art pieces. The pieces should include these in their portfolios.

7.   Use the story arc examples in the resource folder and have the students create a simple story concept and apply it to a story arc.

8.   Use online videos and/or live demonstrations in the classroom, or on appropriate sites outside of the classroom setting, to illustrate the concept of camera angles. Have students work in groups to create a storyboard for the first scene of an animation story. This should include at least three different camera angles. They should then name these camera angles and create a camera angle montage.

UNIT 1
MODULE 3: STORY AND CHARACTER DEVELOPMENT (cont'd)

9.   After demonstrations by the teacher and/or professional outside of the classroom setting to illustrate foreground, midground and background, engage students in guided discussions on environmental designs. Students may also view an animation or play a game to identify and describe the environmental layers. After the initial instructional activities, they should then work in groups to create a game concept on a particular theme, and create an Environment for a game using, Foregound, Midground, Background.

10. Engage students in a group activity where they create/design a character for a pre-schoolers adventure game or hero. They should indicate the use of his/her special abilities and props, and create a turnaround for this character.

11. Provide students with a sample production bible and demonstrate and discuss what it entails and how it is developed. Begin the SBA component of the syllabus with the sample as a guide.

RESOURCES

1.   Computer Microsoft Word
2.   Storyboard applications online
3.   Drawing tablet
4.   Scanners
5.   Relevant Software
6.   Mixed media
7.   Online tutorials
8.   Drawing tablet
9.   Camera

Websites

http://www.storyboardthat.com/

http://www.cooltoons2.com/various/artlessons/turnarounds.html

http://ydraw.com/wp-content/uploads/2012/04/Stop-Motion-Aids-Multimedia-Learning.pdf

http://www.dailywritingtips.com/how-to-structure-a-story-the-eight-point-arc/

http://digitalworlds.wordpress.com/2008/04/07/story-arcs-and-the-three-act-structure/

http://animationsupplement.com/forum/entry.php?10-Chronology-History-of-Animation-Films-from-1926-to-1946

http://www.sophia.org/tutorials/cinematography-intro-camera-angles-shots

http://www.digitaltutors.com/tutorial/1760-Understanding-Color-Theory-in-Concept-Art-and-Illustration

http://www.ctrlpaint.com/videos/film-studies-foreground-middleground-background

♦ **UNIT 2: INTERACTIVE DESIGN AND GAME DEVELOPMENT**
MODULE 1: INTRODUCTION TO INTERACTIVE DESIGN

GENERAL OBJECTIVES

On completion of this Module, students should:

1.   understand the evolution of animation and game design and development;

2.   understand what is Interactive Design;

3.   subscribe to the principles of Interactive Design;

4.   understand visual design as it relates to designing user interfaces (UI);

5.   subscribe to the principles of storytelling to develop interactive media products and services (game development);

6.   implement creative solutions based on demographics; and,

7.   be familiar with appropriate ethical business practices.

SPECIFIC OBJECTIVES	CONTENT/EXPLANATORY NOTES
Students should be able to:	
1. outline the history and present use of animation and game design and development;	History of animation and game design and development.
2. identify the different genres of game design;	Examples of genres of games: arcade, action, adventure, puzzle, role play game (RPG), strategy, simulator, board, sports.
3. define Interactive Design;	Interactive Design (also known as Interaction Design and IxD).
4. discuss the concepts that drive Interactive Design;	Concepts that drive Interactive Design: (a) Goal-driven design. (b) Interface as magic. (c) Usability. (d) Affordances. (e) Learnability.
5. outline the factors that influence user experience;	Factors that influence user experience: Useful, Usable, Desirable, Findable, Accessible, Credible.

SPECIFIC OBJECTIVES	CONTENT/EXPLANATORY NOTES
Students should be able to:	
6. identify the five key/main principles of Interactive Design;	Five key/main principles of Interactive Design: Consistent, Perceivable, Learnable, Predictable, Feedback
7. outline some prominent best practices for designing interactions;	Questions to consider when designing for interaction.
8. *employ design principles and best practices to create a wireframe of the user interface (UI) of a game;	Wireframing. Sketching.
9. identify the basic elements of visual design;	Basic elements of visual design: Line, Shape, Direction, Size, Texture, Colour, Value
10. outline the principles for creating a visual design;	Principles for creating a visual design: Unity, Gestalt, Space, Balance, Hierarchy, Contrast, Scale, Dominance, Similarity
11. identify the steps involved in creating a story arc;	Basic steps in creating a story arc: Exposition/Setup, rising action, catalyst, turning points, climax, resolution.
12. *employ the knowledge of writing scripts for games;	Story Development. Scriptwriting.
13. *create a storyboard;	Storyboard Development.
14. *present an idea for an interactive game;	Pitching. Communication Skills.
15. apply critical thinking to solve interactive design problems to meet customers' needs;	Understanding demographics including: (a) Target audience. (b) Location. (c) Age group.
16. define Colour Theory;	
17. outline the importance of Colour Theory in animation and game design;	Discuss the importance of colour theory in animation and game design.

18. outline the importance of culture in animation and game design;	Cultural Studies: folklore to include mythological characters that are culturally and geographically appropriate.
	Game rating: age appropriate. (See glossary for categories).
	Intellectual property violations.
	Role and responsibilities of monitoring agencies.

Suggested Teaching and Learning Activities

To facilitate students' attainment of the objectives in this Module, teachers are advised to engage students in the following teaching and learning activities which may be done separately or merged to facilitate sequencing and portfolio development.

1. Have students create Instagram or Pinterest accounts to host their work and share with peers and facilitators as they progress.

2. Have students research the history of animation and games and discuss how animation and games have evolved over time. Teacher can assign a stage in the chronology to a student or team for research and presentation.

3. Teacher should identify a set of games, and group students for them to identify major aspects such as the main character and other characters, the genre of the game, the demographic of the game and the story.

4. Teacher should provide a demographic for the students, and arrange them in groups to brainstorm ideas for a game, create game concepts and present them using Prezi or any other relevant presentation tool. They should do follow-up activities where students create a storyboard from game concepts and story arcs in the previous activities. They should start their e-portfolios and include these.

5. After selecting a set of games, teacher will allow students to group themselves and examine these based on a checklist which serves to guide discussion on the user interface of those games, highlighting good and bad aspects/elements using knowledge of guidelines.

6. After demonstrations by teacher or appropriate expert via teaching videos or face-to-face interactions, students should be encouraged to work in groups based on interest to engage in hands-on activities to develop their competence in the use of wireframe tools, such as Balsamic Mockups, Framebox OmniGraffle, iPlotz, Mockingbird, Pencil and MS Vizio.

7. Identify appropriate videos and have students observe and discuss them bearing in mind different aspects of game design. Have students work in groups to go through the relevant steps to design their own games based on culturally appropriate themes and different target audiences. These videos may be reused to focus on different topics and skills as necessary in lessons.

UNIT 2
MODULE 1: INTRODUCTION TO INTERACTIVE DESIGN (cont'd)

8.   After showing and discussing videos of successful/unsuccessful pitches, teacher should have groups of students pitch their game concept to a panel of experts.

9.   Arrange for guest lectures by persons in areas such as the animation and gaming industries, intellectual property agency and law enforcement agencies. They may be invited to the institution or field trips arranged for students to visit relevant sites. Students should also be guided to develop instruments for conducting interviews during the field trips or for asking questions after the lectures.

10.   Arrange for students to conduct research on the existing standards regarding Interface Design for Games. They should analyse these standards and create an interface checklist to demonstrate their understanding. This list is to be used to guide a game deconstruction exercise in which a game is played by a set of students and deconstructed by other members of the class.

11.   Invite history and heritage experts or leaders of folk troupes to make presentations on Folklore. Emphasis must be placed on the characters in the Folklore. Historical background must be explored to make students aware of the relevance of these characters to the culture of the Caribbean.

RESOURCES

Relevant Software
Online resources
Games
Celtx
Storyboard Template
Multimedia projector

Websites

http://scratch.mit.edu/

http://www.ixda.org/

http://www.uxbooth.com/articles/complete-beginners-guide-to-interaction-design/

http://www.usability.gov/what-and-why/user-experience.html

http://www.mif.vu.lt/~moroz/HCI/2%20usability_experience_principles.pdf

http://www.vervesearch.com/best-practice-guides/user-interaction-design/

http://tv.adobe.com/show/classroom-five-essential-principles-of-interaction-design/

http://www.usability.gov/what-and-why/interaction-design.html

http://www.uxbooth.com/articles/wireframing-tips-tools-and-techniques-pt-2/

http://www.gamasutra.com/view/feature/129843/designing_usable_and_accessible_.php?page=1

http://www.usability.gov/what-and-why/visual-design.html

http://www.johnlovett.com/test.htm

https://coronalabs.com/blog/2012/11/29/seven-steps-to-game-concept-development-guest-post/

UNIT 2
MODULE 2: GAME DESIGN AND DEVELOPMENT

GENERAL OBJECTIVES

On completion of this Module, students should:

1. understanding essential principles of game design;

2. develop an appreciation for Iterative Design;

3. know how to develop the mechanics for a game;

4. understand storytelling for games;

5. understand the principles of user interface design for games;

6. develop an understanding of game psychology in designing interfaces; and,

7. demonstrate proficiency in the use of game design software.

SPECIFIC OBJECTIVES	CONTENT/ EXPLANATORY NOTES
Students should be able to:	
1. define the common terms associated with game design;	See Glossary
2. state the types of careers in game design;	Examples of careers: Programmer, Artist, Designer, Producer, Tester, Composer, Sound Designer, Writer.
3. state the types of design associated with games;	Types of design: World Design, System Design, Content Design, Game Writing, Level Design, User Interface
4. explain the different types of design;	
5. distinguish among the different core dynamics of games;	Core dynamics of games: (a) Territorial acquisition. (b) Prediction. (c) Spatial Reasoning. (d) Survival. (e) Destruction. (f) Building. (g) Collection. (h) Chasing or Evading. (i) Trading. (j) Race to the End.

UNIT 2
MODULE 2: GAME DESIGN AND DEVELOPMENT (cont'd)

SPECIFIC OBJECTIVES	CONTENT/ EXPLANATORY NOTES
Students should be able to:	
6. identify the stages/steps associated with iterative design;	Stages/steps: (a) rapid prototyping; (b) playtest; (c) revision; (d) repeat; and, (e) Iterative Design.
7. identify some common mechanics used in games;	Common Mechanics: (a) Setup. (b) Victory conditions. (c) Progression of play. (d) Player actions; (e) Definition of game views.
8. *formulate the mechanics for a game;	Mechanics: (a) Rules. (b) Players. (c) Avatars. (d) Game state. (e) Game views.
9. distinguish between short term and long term goals for games;	Short term goals, such as, collecting coins. Long term goals, such as, winning the race.
10. identify the primary types of stories in games;	Primary types of stories in games:
11. differentiate among the types of stories in games;	(a) linear; (b) branching; (c) open-ended; (d) instances; (e) emergent; (f) thematic; (g) algorithmic.
12. describe the characters in a game;	(a) character design; (b) character archetypes: hero/ protagonist, shadow/villain/ antagonist, mentor, ally, guardian, trickster, herald.
13. describe the environment in a game;	Environment design to include scale, time of day, physical characteristics and camera view.

UNIT 2
MODULE 2: GAME DESIGN AND DEVELOPMENT (cont'd)

SPECIFIC OBJECTIVES	CONTENT/ EXPLANATORY NOTES
Students should be able to:	
14. state the process of user interface (UI) design for games;	Processes: (a) What are the inputs/outputs? (b) Prioritise. (c) Find affordances. (d) Give immediate feedback for your inputs. (e) Reduce everything. (f) Prototype. (g) Playtest.
15. distinguish between good and bad user interface design for games;	(a) Heuristics of user interface design. (b) Guidelines for UI designs for games. (c) Examples of good and bad UI designs for games.
16. *distinguish among the different camera views;	Camera views: Static, Scrollable, Parallax scrolling, First-Person, Third-Person, Isometric, Top-down.
17. identify prominent game design tools;	Examples of tools: Stencyl, Construct 2, Scratch, Unity, GameMaker, Unreal Engine.
18. *use a game design tool to create a game; and,	Examples of games created using different tools: (a) game environment; (b) characters; (c) assets; (d) behaviours; (e) sound; (f) scores.
19. discuss the constraints on game design.	To include: budget, time, audience. Explain how these impact the design of a game, for example, if pre-schoolers are the audience, then bright colours should be incorporated.

UNIT 2
MODULE 2: GAME DESIGN AND DEVELOPMENT (cont'd)

Suggested Teaching and Learning Activities

To facilitate students' attainment of the objectives in this Module, teachers are advised to engage students in the following teaching and learning activities which may be done separately or merged to facilitate sequencing and portfolio development.

1.   Have students create an infographic of careers in the gaming industry.

2.   Organise students in groups/pairs to conduct research on types of design associated with games. Their findings are to be presented in class and form the base of discussions.

3.   Organise students in groups/pairs to conduct research on the core dynamics of games. Their findings are to be presented in class and form the base of discussions. Identify a suitable game and play it in class to illustrate the core dynamics of games. Students must observe and document data regarding the dynamics as the game progresses.

4.   Identify suitable video tutorials on game mechanics. Arrange for students to watch this and discuss the lesson. If there is no accompanying quiz for this tutorial, develop one and administer it to ensure that students have grasped the concept.

5.   Organise students in groups/pairs to conduct research on types of stories in games. Their findings are to be presented in class and form the base of discussions.

6.   Assign students the task of carrying out research on characters, then find three distinctive characters (for example, Cute, Villain, Hero, Heroine, Red Herring) and have the students identify each. Students should then create a character that illustrates the principles of good design. Have students justify why their character embodies the principles.

7.   Use a video tutorial to illustrate the iterative design process. Discuss the material with the class and then have students work in teams and use any platform to design a game based on a relevant theme. Provide them with a fictional budget and other constraints. Allow students to practise and demonstrate knowledge of principles and mastery of the skills of game design and development such as stages in the iterative design, mechanics, environment, characters, camera views, and design tools. The pieces may include those in their e-portfolios and the exercise should add to the portfolio as well.

UNIT 2
MODULE 2: GAME DESIGN AND DEVELOPMENT (cont'd)

RESOURCES

Textbooks
Games
Stencyl
Construct 2
Scratch

<u>Websites</u>

http://piktochart.com/

http://fragileearthstudios.com/2012/11/21/mechanics-dynamics-and-aesthetics-in-game-design/

http://www.instructionaldesign.org/models/iterative_design.html

http://www.teachhub.com/implementing-game-mechanics-classroom-activities

https://gamedesignconcepts.wordpress.com/2009/07/30/level-10-nonlinear-storytelling/

https://www.inkydeals.com/basic-principles-for-great-character-design/

https://www.youtube.com/playlist?list=PL3bRqax9US6LhaAPLagGp7j5RtuvEUB0H

https://games.yahoo.com/arcade/

http://www.funbrain.com/brain/JustForFunBrain/JustForFunBrain.html

UNIT 2
MODULE 3: ANIMATION FOR GAMES

GENERAL OBJECTIVES

On completion of this Module, students should:

1.   demonstrate an appreciation for the principles of animation as applied to game design; and,

2.   know the appropriate animation tools and techniques.

SPECIFIC OBJECTIVES	CONTENT/ EXPLANATORY NOTES
Students should be able to:	
1. *design a one level interface;	
2. *design navigational tools;	Graphic Design
3. *employ design skills to create characters for different genres of games;	Important skills and content: (a) life drawing; (b) skeleton; (c) muscle system; and, (d) facial Character Theory.
4. *employ design skills to create environments relevant to the game concept;	Important skills and content: (a) layout and composition; (b) colour; and, (c) design for foreground, midground, background.
5. *use 3D software to create props, assets for games;	3D Modelling. Use of tools, including extrusion tools.
6. *apply texture and colour to 3D Object;	Basic texturing.
7. *use basic Lighting for 3D scene;	Lighting for 3D.
8. *create simple 2D animation movements;	
9. *create Bouncing Ball applying timing principle;	12 Basic principles of Animation as developed by Walt Disney Studio.
10. *create basic walk cycles;	
11. define the persistence of vision;	

SPECIFIC OBJECTIVES	CONTENT/ EXPLANATORY NOTES

Students should be able to:

12. *create simple stop-motion   Wire Bending.
     animation movements; and,

13. *build models for scenes within   Armature Design and Building.
     a stop motion animation.   Model Building.

Suggested Teaching and Learning Activities

To facilitate students' attainment of the objectives in this Module, teachers are advised to engage students in the following teaching and learning activities which may be done separately or merged to facilitate sequencing and portfolio development.

1. Arrange for demonstrations to be done by industry experts as to how to apply the various skills required in animation for games. These demonstrations may be conducted face to face or virtually, and may also be done by the teacher if the facilities are available on site, or if industry facilities and experts are not readily available.

2. Arrange for students to work in groups to do the following over time:

    (a) create a 3D stop motion animation using putty (plastercine/playdoh) and wire;
    (b) create an animated 2D and 3D bouncing ball and present their animations in class;
    (c) use design skills to create characters for different genres of games;
    (d) use design skills to create environments relevant to game concepts;
    (e) build models for scenes;
    (f) use 3D software to create props, assets for games;
    (g) use basic Lighting for 3D scenes;
    (h) create basic walk cycles.

These activities and outcomes should form a significant part of the SBA for the unit.

RESOURCES

Novak, J.   Game Development Essentials: An Introduction, 3rd
                                 Edition. New York: Delmar Cengage Learning, 2011.

Brathwaite, B. and Schreiber, I. Challenges for Game Designers. Boston: Course
                                 Technology, Cengage Learning, 2009.

Despain, W.   100 Principles of Game Design. New Riders: Pearson
                                 Education, 2013.

Schell, J.   The Art of Game Design: A book of Lenses. Burlington:
                                 Morgan Kaufman Publishing, 2008.

Darby, J.   Awesome Game Creation: No Programming Required,
                                                              3rd Edition. Boston: Thomson Learning Inc., 2008.

Schuytema, P.   Game Design: A Practical Approach, 1st Edition.
                                                              Cengage Learning, 2007

Anthropy, A. and Clark, N.   Game Design Vocabulary, A: Exploring the Foundational
                                                              Principles Behind Good Game Design, Addison-Wesley,
                                                              2015

Adams, E.   Fundamentals of Game Design, 3rd Edition, New Riders,
                                                              Pearson Education. 2013.

Thorn, A.   Game Development Principles, Cengage Learning, 2014

Mitchell, B. L.   Game Design Essentials, Indianapolis, Indiana: John
                                                              Wiley & Sons Inc., 2012.

Design Software
Tablets
Drawing Pads
Models
Armature Wire
Foam
Plastercine
Foil

Websites

http://artists.pixelovely.com/practice-tools/figure-drawing/

http://www.wikihow.com/Practice-Gesture-Drawing

http://www.awn.com/animationworld/animation-layout-getting-perspective

http://www.autodesk.com/education/free-software/maya

♦ OUTLINE OF ASSESSMENT

Each Unit of the syllabus will be assessed separately.

The Scheme of the assessment for each Unit will comprise two components: an External Assessment component which contributes 40 per cent of final mark and a School-Based Assessment component which contributes 60 per cent of final mark. Grades and marks will be awarded independently for each Unit and for each Module. These arrangements are detailed below.

EXTERNAL ASSESSMENT **(40 per cent)**

Paper 01 (1 hour)	This paper will consist of 45 multiple-choice item assessing achievement in all three modules.	(45 marks)
Paper 02 (2½ hours)	A structured essay paper assessing achievement in all three modules. Candidates will be required to apply theoretical knowledge and design skills.	(75 marks)

SCHOOL-BASED ASSESSMENT **(60 percent)**

UNIT 1

Each piece of work submitted for assessment must include the date on which it was produced.

Part A	A critical analysis assessing achievement over all three modules. Candidates must choose an animation or game from the prescribed list published in the syllabus.	(60 marks)
Part B	A digital/transmedia production bible of an animation or game assessing achievement over all three modules.	(60 marks)

NB. If a student chooses to analyse an animation for Part A he/she MUST produce a production bible for Part B, and vice versa.

UNIT 2

Each piece of work submitted for assessment must include the date on which it was produced.

Part A	A showreel of no more than 1 minute assessing achievement over all three modules. Candidates are expected to show evidence of the development of 3D assets.	(36 marks)
Part B	Design and develop a single player interactive 2D educational or entertainment game. It provides opportunity for expression, innovation and the demonstration of skills, abilities and knowledge in the fundamentals and application of animation and game design. The game should take no longer than 10 minutes to play through.	(69 marks)

ASSESSMENT DETAILS

Details of External Assessment by Written and Production Papers (40 per cent of Total Assessment)

Paper 01 – Multiple-Choice Paper (1 hour)

1. **Composition of Paper**

   This paper comprises 45 multiple-choice items with 15 items from each module.

2. **Syllabus Coverage**

   (a) Knowledge of the entire Unit will be required.

   (b) The intention of this paper is to test candidates' theoretical and in-depth knowledge of the entire Unit.

3. **Question Type**

   The questions will cover cognitive abilities including, but not limited to comprehension, application and analysis.

4. **Mark Allocation**

   (a) One mark will be assigned for each multiple-choice question.

   (b) The total number of marks available for this paper is 45.

   (c) Paper 01 will contribute 15 per cent to the candidate's final grade.

5. **Examination environment**

   The examination should be held in a controlled environment. Computer screens should be covered with privacy filter screens. This paper will be delivered online to all registered candidates.

Paper 02 – Structured Essay (2½ hours)

1. **Composition of Paper**

   This paper consists of a set of structured essay questions assessing achievement in all three Modules. The questions will require of the candidate to apply theoretical knowledge and design skills.

2. **Syllabus Coverage**

   The intention of this paper is to test candidates' proficiency in using methods and techniques in animation and game design to demonstrate the required skills and competencies.

3. **Mark Allocation**

   The total number of marks available for this paper is 75.

DIGITAL DELIVERY OF EXAMINATION

(a)   Papers 01 and 02 for both Units of the examination will be delivered online through CXC's Examination Platform (EP).

(b)   The URL to access the examination will be https://ep2017.cxc.org

        Please note that ep2017 means that the exam sitting is May–June 2017. The 2018 sitting of the exam will use the URL https://ep2018.cxc.org

(c)   The login credentials will be provided by the Local Registrar of each territory by way of the report **Candidate Access Listing by Centre** as produced by the Online Registration System (ORS).

(d)   The Local Registrar will release these credentials to a designated Technical Officer (who could be the subject teacher) during the month of April.

(e)   The Technical Officer will distribute the instructions and assets required to complete the examination to each candidate's computer.

(f)   All computers to be used for Paper 01, the multiple choice paper, must have Safe Exam Browser installed. Safe Exam Browser (SEB) may be downloaded free from http://www.safeexambrowser.org

(g)   Prior to the sitting of the Paper 01 exam, CXC will provide a client configurable SEB file which must be saved to each computer. Each candidate must open this file in order to take the Paper 01 exam (use of the URL will not be necessary).

        Without SEB installed to the computer the candidate will not be able to access the Paper 01.

SCHOOL-BASED ASSESSMENT

School-Based Assessment is an integral part of candidates' achievement in the content covered by this syllabus. The activities for the School-Based Assessment are linked to the Modules in each Unit and are the outcome of teaching and learning of the principles and practice in the content of the syllabus.

During the course of study of the subject, candidates obtain marks for competencies developed during the production and completion of School-Based Assessment assignments. These marks and grades contribute to the final marks and grades that are awarded to candidates for their performance in the **CAPE**® Animation and Game Design examination.

The guidelines provided in this syllabus are for selecting appropriate tasks and are intended to assist teachers and candidates in planning and scheduling assignments for the School-Based Assessment. These guidelines are also intended to assist teachers in awarding marks for achievement in the School-Based Assessment component of the syllabus. In order to ensure that the marks awarded by teachers are in alignment with the CXC standards, the Council undertakes the moderation of a sample of the School-Based Assessment assignments marked by each teacher.

School-Based Assessment provides an opportunity to individualise a part of the **CAPE**® syllabus and facilitates feedback to the students at various stages of the experience. This helps to build the self-

confidence of the students as they proceed with their studies. School-Based Assessment further facilitates the development of essential investigative and practical skills that allow the candidate to function more effectively in his or her chosen vocation. School-Based Assessment, therefore, makes a significant and unique contribution to both the development of relevant skills and the testing and rewarding of students for the development of those skills.

The School-Based Assessment in Animation and Game Design tests a range of skills for creative production, problem solving, critical thinking and inquiry through research, as well as practical skills in design and composition, craftsmanship and innovation.

SUBMISSION REQUIREMENTS FOR SCHOOL-BASED ASSESSMENT

(a)   The School-Based assessment samples should be uploaded to the Examination Platform (EP).

(b)   The URL to access this platform will be https://ep2017.cxc.org

Please note that ep2017 means that the exam sitting is May/June 2017. The 2018 sitting of the exam will use the URL https://ep2018.cxc.org

(c)   The login credentials will be provided by the Local Registrar of each territory by way of the report **Teacher Access Listing by Centre** as produced by the Online Registration System (ORS).

(d)   The Local Registrar will release these credentials to the centre during the month of April.

(e)   The relevant Technical Officer will facilitate the upload of the samples to the examination platform.

MODERATION OF SCHOOL-BASED ASSESSMENT

Each school submitting students for **CAPE**® Animation and Game Design examination is required to submit through the Local Registrar to reach CXC by 31 May of the year of the examination the following:

1.   School-Based Assessment Record of Marks Form.
2.   Completed Moderation Form.
3.   Order of Merit.

CXC will indicate through the e-SBA system the names of candidates whose works have been selected for moderation. Only the names and scores of candidates selected for moderation should be included on the Moderation form.

Skills to be assessed in the School-Based Assessment – Units 1 and 2

The skills, abilities and knowledge to be internally assessed for the Critical Analysis, Portfolios, Creative Project and Illustrated Journal are given below:

Critical Analysis – Unit 1

1.   Layout and presentation:

(a) design of critical analysis report (title page, layout of text and visual materials, and aesthetic appeal); and,

(b) relevance of visual material (when used) to research report.

2. Enquiry:

(a) Sources (presentation of references).

3. Content and Critical Thinking:

(a) content: visual design, animation style and principles, subject matter, plot, characters, conflict, resolution of conflict, story told in the animation and the role of audio in support of the animation;

(b) environment Analysis: description, interpretation, synthesis and evaluation of scenes, topic and content; and,

(c) communication of information in a logical way using correct grammar.

Digital/Transmedia Production Bible: Unit 1

1. Pitch: clearly presenting and describing the concept of the project.

2. Treatment.

3. Technology and design specifications

4. Business and Marketing to include Budget, market research and production schedule.

Showreel: Unit 2

1. Level of skills in manipulation of digital tool/software in creating and finishing of product.

2. Use of relevant software tool.

3. Creative use of technology: Use of graphics, animation/elements, photos, color and audio, among others.

4. Showreel construction and management: Use of program tools, animation/elements, navigation.

5. Product content choice: Product shows student progress and knowledge of curriculum content, very clearly presented.

6. Demonstration of personal expression and creativity.

2-Dimensional Game: Unit 2

1.   Demo (no longer than 5 minutes) to sell the idea of the product

        (a)   Description of the concept of the project.

        (b)   Clarity and impact of the presentation.

2.   Quality of the product (Interactive game)

        (a)   2D animation with 3D components.

        (b)   Appropriate user experience.

        (c)   Playability.

        (d)   Implementation.

GUIDELINES FOR SCHOOL-BASED ASSESSMENT

UNIT 1: FUNDAMENTALS OF ANIMATION AND GAME DESIGN

1. Aims of the Project

(a)   Develop candidate's understanding and application of animation.

(b)   Provide opportunities for all candidates to demonstrate their creative thinking, innovation and problem-solving skills to create digital solutions.

2. Requirements

Each group is required to develop a digital/transmedia production bible for an animation or game design (preferably for a local social element or one that is entrepreneurial). In addition, the candidate is required to include his/her progress which must be shown incrementally, as well as the process that was used.

3. Integration of Project into the course

(a)   The activities related to project work should be integrated into the course so as to enable candidates to learn and practise the skills of undertaking a successful project.

(b)   Some time in class should be allocated for general discussion of project work. For example, discussion of how data should be collected, how data should be analysed and how data should be presented.

(c)   Class time should also be allocated for discussion between teacher and student and student and student.

4. Management of Project

(a)   Planning: An early start to planning project work is highly recommended and the schedule of the dates for submission should be developed by teachers and candidates.

(b)   Length: The length of each part of the project should be between 1000 and 1500 words excluding diagrams, graphs, tables and bibliography.

(c)   Guidance: Each candidate should know the requirements of the project and its assessment process. Although candidates may consult with resource persons in addition to the teacher the candidate's submission should be his or her own work.
The teacher is expected to give appropriate guidance at all stages of project work, for example, chapters to read, alternative procedures to follow and other sources of information.

5.   **Authenticity**

Teachers are required to ensure that all projects are the candidates' work. A recommended procedure is to:

(a)   engage candidates in discussion;

(b)   ask candidates to describe procedures used and summarise findings either orally or written; and,

(c)   ask candidates to explain specific aspects of the analysis.

6.   **Submission Guidelines**

The candidate should utilise digital submission when delivering milestones to the teacher. Teachers should collect the candidate's completed SBA in a digital format, since the submission of the samples for moderation must be uploaded to CXC online facility.

UNIT 2: INTERACTIVE DESIGN AND GAME DEVELOPMENT

1.   **Aims of the Project**

(a)   Develop candidate's personal insights into the fundamentals of the application of animation and game design.

(b)   Provide opportunities for all candidates to demonstrate their creative thinking and innovation that will be expressed via digital tools.

2.   **Requirements**

Each group is required to develop a showreel and design an interactive 2D game (preferably for education, entertainment or one that is entrepreneurial) and create a demo, that must be presented to an audience of at least five (this audience may include classmates, other students, parents and teachers/industry professionals).

3.   **Integration of Project into the course**

(a)   The activities related to project work should be integrated into the course so as to enable candidates to learn and practise the skills of undertaking a successful project.

(b)   Some time in class should be allocated for general discussion of project work. For example, discussion of how data should be collected, how data should be analysed and how data should be presented.

(c)   Class time should also be allocated for discussion between teacher and student, and student and student.

4. **Management of Project**

   (a)   Planning: An early start to planning project work is highly recommended and the schedule of the dates for submission should be developed by teachers and candidates.

   (b)   Length: The length of the showreel should be no more than 1 minute. The game must be 2-dimensional with 3-dimensional components and should take no longer than 10 minutes to play through. A demo (oral presentation) of no longer than 5 minutes should also be included.

   (c)   Guidance: Each candidate should know the requirements of the project and its assessment process. Although candidates may consult with resource persons, in addition to the teacher, the candidate's submission should be his or her own work. The teacher is expected to give appropriate guidance at all stages of project work, for example, chapters to read, alternative procedures to follow and other sources of information.

5. **Authenticity**

   Teachers are required to ensure that all projects are the candidates' work. A recommended procedure is to:

   (a)   engage candidates in discussion;

   (b)   ask candidates to describe procedures used and summarise findings either orally or in writing; and,

   (c)   ask candidates to explain specific aspects of the analysis.

6. **Submission Guidelines**

   The candidate should utilise digital submission when delivering milestones to the teacher. Teachers should collect the student's completed SBA in a digital format, since the submission of the samples for moderation must be uploaded to CXC online facility.

THE CRITICAL ANALYSIS PAPER

The Critical Analysis is a subjective analysis of a given animated video or game in the study of the fundamentals of animation and game design.

Requirements:

The Guidelines for preparing the Critical Analysis are as follows:

1.   the study will be done over one academic year; and,

2.   teachers should discourage duplication of material; although two groups may choose the same animation or game, there must be evidence of individual work.

If the critical analysis is not submitted, the candidate will be considered absent from the entire examination.

Presentation:

The Guidelines for presenting the Critical Analysis are as follows:

1.   a title page should be included as the cover page;

2.   a table of contents should be included after the title page;

3.   the number of words should be stated at the end of the analysis;

4.   a list of sources of information or references, in alphabetical order, should be given at the end of the paper;

5.   the layout of the pages of the Critical Analysis should be neat and legible;

6.   visual material should be suitably chosen, labelled and integrated into the report;

7.   presentation should be well organised and demonstrate coherence, continuity and completeness; and,

8.   copyright rules should be strictly adhered to when using information or visuals from the internet, books or other secondary sources.

DIGITAL/TRANSMEDIA PRODUCTION BIBLE

The Production Bible provides opportunity for expression and innovation and to demonstrate skills, abilities and knowledge in Animation and Game Design.

The candidate will be considered absent from the entire examination if the showreel is not submitted.

<u>Presentation</u>

The guidelines for preparing and presenting the Production bible are as follows:

1.   The Production Bible should be created over one academic year.

2.   If the Creative Project is not submitted, the candidate will be considered absent from the entire examination.

THE SHOWREEL

The showreel is a one minute electronic collection of animation and game designs completed by a student over an academic year and must reflect the candidates' best work.

The guidelines for preparing the showreel are as follows:

1.   The showreel should be compiled over one (1) academic year.

2.   The showreel should contain different kinds of completed work including a photographic record showing the various stages of development.

The candidate will be considered absent from the entire examination if the showreel is not submitted.

<u>Presentation</u>

The guidelines for presenting the showreel are as follows:

1.   Presentations should be well organised, demonstrating cohesion, continuity and completeness.

2.   The showreel must be no more than one minute in length.

THE INTERACTIVE GAME

The interactive game is 2-dimensional with 3-dimensional components demonstrating skills in animation and game designs.

The guidelines for preparing the game are as follows:

1.   The game should be 2-diemnsional with 3-dimensional components and completed over one academic year.

2.   The game should be accompanied by a 5-minute oral presentation to sell the idea of the game.

The candidate will be considered absent from the entire examination if the game is not submitted.

<u>Presentation</u>

The guidelines for presenting the game are as follows:

1.   Oral presentation should be well-presented in clarity and diction, impact the audience, clearly describe the concept of the project.

2.   The game must be no more than 10 minutes in length.

MARK SCHEMES

CRITICAL ANALYSIS

The following Table gives the allocation of raw marks by skill for the Critical Analysis for Unit 1, Module 1.

SKILLS		MARKS
Layout and Presentation (a) Basic Information (b) Visual Design (c) Animation/Game Design Principles	3 marks 9 marks 6 marks	18
Content and Critical Thinking (a) Environment Analysis (b) Deconstruction of Design and Critical Analysis (c) Communication of information	10 marks 18 marks 9 marks	37
Enquiry Sources	5 marks	5
TOTAL		**60**

DETAILED BREAKDOWN OF MARK SCHEME FOR THE
MARKING OF THE CRITICAL ANALYSIS REPORT

This part of the project will be graded out of a total of 60 marks and marks will be allocated to each task as outlined below. Candidates will be awarded marks for communicating information in a logical manner using correct grammar and terminology.

	MODULE 1	MODULE 2	MODULE 3	TOTAL (MAX)
1. Layout and Presentation (18 marks)				
(a) Socio–cultural Context				
Justification should include relevance to Caribbean heritage, Folklore as it applies to character development, Cultural studies – festivals, celebrations, monuments, artefacts, architecture.				
Full justification of the socio–cultural relevance of the game/animation to the Caribbean region with reference to any one aspect.		3		3
Partial justification of the socio–cultural relevance of the game/animation to the Caribbean region with reference to any one aspect.		2		
Partial and incoherent justification of the socio–cultural relevance of the game/animation to the Caribbean region with reference to any one aspect.		1		
(b) Visual Design				
excellent analysis of drawing style, colour themes, pattern, etc		9–8		9
very good analysis of drawing style, colour themes, pattern, etc		7–6		
good analysis of drawing style, colour themes, pattern, etc		5–4		
satisfactory analysis of drawing style, colour themes, pattern, etc.		3–2		
limited analysis of drawing style, colour themes, pattern, etc		1–0		
(c) Animation/Game Design Principles				
excellent analysis of animation/game design principles observed.	6			6
very good analysis of animation/game design principles observed.	5			
good analysis of animation/game design principles observed.	4			
satisfactory analysis of animation/game design principles observed.	3			
limited analysis of animation/game design principles observed.	2			
very limited analysis of animation/game design principles observed.	1			
2. Content and Critical Thinking (40 marks)				
(a) Environment Analysis				
Analysis of : appropriateness of environment, layout of the environment, colour scheme, mood, layers, use of props, camera angles,				
any five elements		10–9		10
any four elements		8–7		
any three elements		6–5		
any two elements		4–3		
any one element		2–1		
None		0		
(b) Deconstruct the design and critically analyse the concept of the game or animation				
The use of design to identify the genre, target audience, platform, feature-list, character archetype				
excellent critique of at least four elements		9–8	9–8	18

	MODULE 1	MODULE 2	MODULE 3	TOTAL (MAX)
very good critique of four elements		7–6	7–6	
good critique of three elements		5–4	5–4	
satisfactory critique of two elements		3–2	3–2	
limited critique of one element		1-0	1–0	
(c) Communication of information in a logical way using correct grammar				
communicates information in a logical way using correct grammar and appropriate terminology ALL of the time	9–7			9
communicates information in a logical way using correct grammar and appropriate terminology MOST of the time	6–5			
communicates information in a logical way using correct grammar and appropriate terminology SOME of the time	4–3			
communicates information in a logical way using correct grammar and appropriate terminology RARELY	2–1			
3. Enquiry Skills (5 marks)				
(a) Sources				
excellent documentation of sources	5			5
good documentation of sources	4			
fair documentation of sources	3			
limited documentation of sources	2			
very limited documentation of sources	1			
MODULE TOTAL	**20**	**31**	**9**	**60**

UNIT 1 – Digital/Transmedia Production Bible:

The following Table gives the allocation of raw marks by skill for the Creative Project:

SKILLS	MARKS
Pitch	18
Treatment	23
Technology and Design Specifications	5
Business and Marketing	14
TOTAL	**60**

**DETAILED BREAKDOWN OF MARK SCHEME FOR THE
TRANSMEDIA/PRODUCTION BIBLE**

This part of the project will be graded out of a total of 60 marks and marks will be allocated to each task as outlined below.

	MODULE 1	MODULE 2	MODULE 3	TOTAL
Pitch (3-5 minutes oral presentation, to sell the idea) **[15 marks]**				
Clearly describes the concept of the project				
Game play summary/synopsis			2	**2**
Competitive advantage	2			**2**
Character description			2	**2**
Rationale	2			**2**
Target audience	1			**1**
Presentation				
Eye contact			1	**1**
Clarity and diction			1	**1**
Impact			2	**2**
Appearance			1	**1**
Use of digital media		4		**4**
Treatment [23 marks]				
Synopsis				
includes tag lines		1		**1**
Gameplay summary/Treatment		1	1	**2**
Character designs/turnarounds				
Front			1	**1**
Side			1	**1**
Three quarter front			1	**1**
Environment designs				
Assets/props for games			1	**1**
Camera angles		1		**1**
Layers : foreground, background and midground			1	**1**

	MODULE 1	MODULE 2	MODULE 3	TOTAL
Concept Design				
Concept art			2	**2**
Mood			1	**1**
Feature-list breakout				
Number of players			1	**1**
Game strategy			1	**1**
Number of levels			1	**1**
Number of characters/enemies			1	**1**
Type of game play			1	**1**
Replay ability			1	**1**
Audio specifications			1	**1**
Graphic specifications			1	**1**
Awards and achievements			1	**1**
Online activities (high scores, etc.)			2	**2**
Technology and design specifications [5 marks]				
Platforms	1			**1**
Development tools	2			**2**
Storyboards		1	1	**2**
Business and Marketing [14 marks]				
Production Schedule				
Presents production schedule	2			**2**
Indicates milestones	2			**2**
Market Research – competitive analysis				
Complete SWOT Analysis	4			**4**
In-game advertising	1			**1**
Demographic breakdown				
Primary/Core		1		**1**
Budget				
[thorough (3), adequate (2), basic (1)]	3			**3**
Evidence of application of the creative process			1	**1**
MODULE TOTAL	**20**	**9**	**31**	**60**

UNIT 2

SHOWREEL

The following Table gives the allocation of raw marks by skill for EACH piece in the Portfolio:

SKILLS			MARKS
Craftsmanship			
(a)	Level of skill in manipulation of tools and/or software	10 marks	15
(b)	Use of relevant software	5 marks	
Design and Composition			
(a)	creative use of technology	6 marks	
(b)	showreel construction and management	5 marks	26
(c)	product content choice	15 marks	
Innovation			10
TOTAL			**51**

<u>**DETAILED BREAKDOWN OF MARK SCHEME FOR THE**</u>
<u>**MARKING OF SHOWREEL**</u>

	MODULE 1	MODULE 2	MODULE 3	TOTAL
1. Craftsmanship (15 marks)				
Level of skill in manipulation of digital tool/software (10 marks)				
excellent skills in creating and finishing of product		10–9		10
very good skills in creating and finishing of product		8–7		
good skills in creating and finishing of product		6–5		
satisfactory skills in creating and finishing of product		4–3		
limited skills in creating and finishing of product		2–1		
Use of relevant software tools (5 marks)				
excellent demonstration of the use of relevant software tools			5	5
very good demonstration of the use of relevant software tools			4	
good demonstration of the use of relevant software tools			3	

	MODULE 1	MODULE 2	MODULE 3	TOTAL
satisfactory demonstration of the use of relevant software tools			2	
limited demonstration of the use of relevant software tools			1	
2. Design and Composition (21 marks)				
Creative use of technology (6 marks)				
excellent use of graphics, animation/elements, color, audio, etc: superior presentation.		6		6
very good use of graphics, photos, colour, audio, etc; keeps reader's attention.		5		
good use of graphics, photos, colour, audio, etc; predictable presentation.		4		
satisfactory use of graphics, photos, colour, audio; does not fully keep the reader's attention.		3		
limited use of graphics, photos, colour , audio;		2		
very limited use of graphics, photos, colour, audio;		1		
Showreel Construction and Management (5 marks)				
excellent use of programme tools, animation/elements, use of navigation. Works flawlessly.			5	5
good use of programme tools, animation/elements, use of navigation.			4	
satisfactory use of programme tools, animation/elements, use of navigation.			3	
limited use of programme tools, animation/elements, use of navigation.			2	
very limited use of programme tools, animation/elements, use of navigation.			1	
Product Content Choice (15 marks)				
Includes rough sketch and final for 2 characters, backgrounds, 3D asset for game, storyboard, an example of 2D animation and accompanied by audio				
Includes 9-10 elements. Product show student progress and knowledge of curriculum content, very clearly presented; definitely demonstrates competency of meeting standards.	15–13			15
Includes 7-8 elements. Products show student progress and some knowledge of curriculum content. Clearly presented; adequately demonstrates competency of meeting standards	12–10			
Includes 5-6 elements. Products show student progress and some knowledge of curriculum content. Clearly presented; adequately	9–7			

	MODULE 1	MODULE 2	MODULE 3	TOTAL
demonstrates competency of meeting standards				
Includes 3-4 elements. Random selection choice**;** some knowledge of curriculum content. No clear presentation; has difficulty demonstrating competency of meeting standards	6–4			
Includes 1-2 elements. Random selection choice; no apparent knowledge of curriculum content. No clear presentation; has difficulty demonstrating competency of meeting standards	3–1			
3. Innovation (10 marks)				
Demonstration of personal expression and creativity				
excellent creative, imaginative or original interpretation of theme or topic	10–9			10
very good creative, imaginative or original interpretation of theme or topic	8–7			
good creative, imaginative or original interpretation of theme or topic	6–5			
limited creative, imaginative or original interpretation of theme or topic	4–3			
very limited creative, imaginative or original interpretation of theme or topic	2–1			
MODULE TOTAL	**25**	**16**	**10**	**51**

The following Table gives the allocation of raw marks by skill for the Creative Project:

SKILLS	MARKS
Demo	15
Product	54
TOTAL	**69**

The project will be graded out of a total of 69 marks and marks will be allocated to each task as outlined below.

	MODULE 1	MODULE 2	MODULE 3	TOTAL
Demo (5 minute oral presentation, to sell the idea) **[15 marks]**				
Clearly describes the concept of the project				
Game play summary/synopsis	1	1		2
Competitive advantage	2			2
Character description	1	1		2
Rationale	2			2
Target audience	1			1
Presentation				
Eye contact	1			1
Clarity and diction	1			1
Impact	2			2
Appearance	1			1
Use of digital media	1			1
Product [54 marks]				
Interactive game				
2D Animation			2	2
3D component			2	2
Appropriate use of design and composition principles				
Good overall composition		1	1	2
Good use of colours or texture		1	1	2
Good use of space		1	2	3
Good use of typography or camera angles		1	2	3
Appropriate user experience				

	MODULE 1	MODULE 2	MODULE 3	TOTAL
Ease of starting the game		1	1	2
Playability				
Pausing		1	1	2
Continuing		1	1	2
Ending		1	1	2
Advancing through levels		1	1	2
Game play *(any 3 identified – 1 mark each: unique solutions, emergence, nonlinearity, modelling reality, input/output)*		1	2	3
Game story *(any five identified – 1 mark each: setting, characters,*		5		5
Game mechanics (rules)		2		2
Feedback *(Game progress - 1, score - 1, end state - 1, in-game instructions -2)*		5		5
Game stability			2	2
Audio	2			2
Background music			2	2
Sound cues *(3 appropriate cues – 2 marks each)*			6	6
Implementation of animation in the game			3	3
MODULE TOTAL	**15**	**24**	**30**	**69**

STANDARDISATION

Teachers will be required to allocate marks to each skill according to the criteria in the above Tables. It is imperative that teachers adhere to the mark schemes provided. This is to ensure that there is a standard distribution of marks across the Modules.

♦ REGULATIONS FOR PRIVATE CANDIDATES

A private candidate is one not entered through a school or other approved educational institution. **Private candidates will be required to sit all components of the examination**. Private candidates would be required to write all papers.

A private candidate must identify a teacher or tutor from a registered institution (school or technical institute or community college) who will assess and approve the candidate's submissions for the School-Based Assessment components of the syllabus. The name, school, and territory of the identified teacher or tutor should be submitted to the Council on registration for the subject.

♦ REGULATIONS FOR RESIT CANDIDATES

1. Resit candidates must repeat the examinations in the academic year immediately following the first sitting and must at registration indicate that they are re-sit candidates.

2. Resit candidates who at their first sitting successfully completed the School-Based Assessment, that is, obtained 50 per cent or more of CXC moderated marks, may elect not to repeat this component of the examination.

3. Resit candidates who failed to achieve 50 per cent of the total School-Based Assessment marks must:

    -   repeat ONLY the School-Based Assessment assignments in which they were unsuccessful.

4. All resit candidates may enter through schools, recognised educational institutions, or the Local Registrar's Office.

♦ ASSESSMENT GRID

The Assessment Grids for Unit 1 and Unit 2, showing marks assigned to each paper and to each Module and the percentage contribution of each paper to the total score, are provided.

UNIT 1

PAPERS	Module 1	Module 2	Module 3	Total Marks	%
External Assessment Paper 01 45 Multiple Choice Items	15	15	15	120	**40**
Paper 02 Structured Essay	25	25	25		
School-Based Assessment Critical Analysis Digital/Transmedia bible	40 (60)	40 (60)	40 (60)	120 (180)	**60**
TOTAL	**100**	**100**	**100**	**300**	**100**

UNIT 2

PAPERS	Module 1	Module 2	Module 3	Total Marks	%
External Assessment Paper 01 45 Multiple Choice Items	15	15	15	120	**40**
Paper 02 Structured Essay	25	25	25		
School-Based Assessment Showreel 2D Interactive Game	40 (60)	40 (60)	40 (60)	120 (180)	**60**
TOTAL	**100**	**100**	**100**	**300**	**100**

♦ GLOSSARY OF ANIMATION AND GAME DESIGN TERMS

Alpha	This is a stage in game development where the game code and mechanics are developed, though it may still need to be balanced.
Animation	The process of producing images which appear to come to life on screen in films, commercials, computer games, and other media. This includes working with drawings, specialist software, models, or puppets, capturing separate images of each stage of a movement. When the images are viewed at speed the character appears to move.
Animator	A person who possesses the artistic and professional skills required to produce images which appear to come to life on screen in films, commercials, computer games, and other media.
Arcade game	Also known as coin-op. It is a coin-operated entertainment machine, usually installed in public businesses, such as restaurants, bars, and particularly amusement arcades. Most arcade games are video games, pinball machines, electro-mechanical games, redemption games, and merchandisers. The term is also used to refer to an action video game that was designed to play similarly to an arcade game with frantic, addictive gameplay. The focus of arcade action games is on the user's reflexes, and the games usually feature very little puzzle-solving, complex thinking, or strategy skills.
Armature	The skeleton frame that makes the base for a puppet to be used in animated movement for stop motion animation.
Augmented Reality (AR)	A live direct or indirect view of a physical, real-world environment whose elements are augmented (or supplemented) by computer-generated sensory input such as sound, video, graphics or GPS data. Augmentation is conventionally in real-time and in semantic context with environmental elements, such as sports scores on TV during a match. With the help of advanced AR technology (such as, adding computer vision and object recognition) the information about the surrounding real world of the user becomes interactive and digitally manipulable. Artificial information about the environment and its objects can be overlaid on the real world. Augmented reality allows gamers to experience digital game play in a real world environment. Over time there have been improvements of technology, resulting in better movement detection.
Avatar	An icon or figure representing a player in a game.
Background	The plane in a composition perceived furthest from the viewer.
Balance	Refers to the placement of objects to create the perception of equal distribution. In gaming, it refers to the concept and the practice of tuning a game's rules, usually with the goal of preventing any of its component systems from being ineffective or otherwise undesirable

when compared to their peers. This process ensures that the game is not too easy or too difficult.

Beta	The version of a game where the game is more stable than the alpha version and all content is in. Many bugs and balancing issues would be addressed at this point.
Blocking	The precise movement and staging of actors on a stage in order to facilitate the performance of a play, ballet, film or opera. Each scene in a play for example, is usually "blocked" as a unit, after which the director will move on to the next scene. The positioning of actors on stage in one scene will usually affect the possibilities for subsequent positioning.
Brainstorming	A process where a group discussion is used to formulate ideas.
Bugs	Errors in design, code, art, sound, or writing of a game.
Character	A fictional/imaginary person represented in film/animation or any Media.
Clean up	A part of the workflow in the production of hand-drawn animation, in which "clean" versions of the "rough" animation drawings are produced. The first drawings are called "roughs" or "rough animation" because they are often done in a very loose fashion. If the animation is successfully pencil tested and approved by the director, clean versions of the drawings have to be done. In larger studios this task is given to the animator's assistant, or, in a more specialised setting, to a clean-up-artist. The artist doing the clean-ups is responsible for the final line and finished look of the shot. Clean-ups generally are done on a new sheet of paper. They can be done on the same sheet as the rough animation if this was done with a "non-copy blue" pencil. This certain tone of blue will be invisible for photocopying machines or grayscale scanners, where the finished animation will be copied on cels or transferred into a computer for further processing. Character animation is not really complete until the second phase, the final phase, the clean-up phase is done.
Colour theory	In the visual arts it is a body of practical guidance to colour mixing and the visual effects of a specific colour combination. It focuses on the use of colours to convey meaning in design.
Console	A device used for playing games. A handheld game console is a specific lightweight and portable device for playing video games. A home video game console or simply home console is a video game device that is primarily used for home gamers. Home consoles are one type of video game consoles, in contrast to the handheld game consoles which are smaller and portable, allowing people to carry them and play them at any time or place, as well as the microconsoles and the dedicated consoles.

Contrast	Focuses on making items stand out by emphasising differences in size, colour, direction, and other characteristics.
Creative Commons License (CC)	One of several public copyright licenses that enable the free distribution of an otherwise copyrighted work. A CC license is used when an author wants to give people the right to share, use, and build upon a work that they have created. CC provides an author flexibility (for example, they might choose to allow only non-commercial uses of their own work) and protects the people who use or redistribute an author's work from concerns of copyright infringement as long as they abide by the conditions that are specified in the license by which the author distributes the work. There are several types of CC licenses. The licenses differ by several combinations that condition the terms of distribution.
Deconstruction	Game Analysis Guidelines. This is a list of general guidelines to analyze a videogame or a specific segment of it. It can also be helpful to compare different games. This is not a template, but rather a list of aspects that can be part of your analysis. Every section relates to all the others; they are listed in an order that would facilitate building up the argument, but can be rearranged depending on the goal of your analysis. Which sections you should expand on depends on the focus of your discussion. Whether you are analyzing a whole game and its context, or your experience of playing the game, or one specific game mechanic, are all factors that will shape your analysis. A game analysis should be a critique, rather than a review. A critique breaks down the object of study, using theoretical concepts systematically to structure and support it. Critiques are based on argumentation and supported by evidence. Reviews evaluate the quality of the game reviewed, and even though they also have to be supported by argumentation, they also tend to be more subjective. The goal of a game analysis is not to establish how good or bad a game is, but highlight and rationalise the aspects that make the game worth studying and contribute to understanding videogames better. Thus, you will be expected to write a critique, which is very different from a review for a blog.
Dominance	The use of one element as the focal point and others being subordinate. This is often done through scaling and contrasting based on size, colour, position and shape, for example.
Drawing perspectives	An approximate representation, on a flat surface (such as paper), of an image as it is seen by the eye.
Engine	The basic software of a video game. This is the core program that the game may run on (for example, Unreal and Gamebryo).
Electronic-portfolio	(Also known as an eportfolio, e-portfolio, digital portfolio, or online portfolio). It is a collection of electronic evidence assembled and managed by a user, usually on the Web. Such electronic evidence may include inputted text, electronic files, images, multimedia, blog entries, and hyperlinks. E-portfolios are both demonstrations of the

user's abilities and platforms for self-expression, and, if they are online, they can be maintained dynamically over time. An e-portfolio can be seen as a type of learning record that provides actual evidence of achievement.

There are three main types of e-portfolios: developmental (such as, working), assessment, and showcase. A developmental e-portfolio can show the advancement of skill over a period of time. The main purpose is to provide an avenue for communication between student and instructor. An assessment portfolio will demonstrate skill and competence in a particular domain or area. A showcase portfolio highlights stellar work in a specific area and it is typically shown to potential employers to gain employment. When it is used for job application it is sometimes called career portfolio. Most e-portfolios are a mix of the three main types to create a hybrid portfolio.

Environment	The surroundings in which characters exist in a game or animation.
Feature List	A list of key features of a game; typically the selling points for the game.
Figure drawing	Figure drawing. Drawing of the human form.
Folklore	Traditional customs.
Foreground (of a composition)	The visual plane that appears closest to the viewer.
Game Design	The art of applying design and aesthetics to create a game to facilitate interaction between players for playful, healthful, educational, or simulation purposes. It create goals, rules, and challenges to define a sport, tabletop game, role-playing game, or simulation that produces desirable interactions among its participants and possibly, spectators.
Game Jam	A gathering of game developers for the purpose of planning, designing, and creating one or more games within a short span of time, usually ranging between 24 and 48 hours.
Game Rating	A system used for the classification of video games into the appropriate age group based on the content and nature of each game. Entertainment Software Rating Board (ESRB) currently has six ratings for games: Early Childhood, Everyone, Everyone 10+, Teens, Mature, Adults Only.
Genre	A category of artistic composition.
Gestalt	In visual design, is the perception that an image, though consisting of many parts, is viewed as a whole. It helps users perceive the overall design as opposed to individual elements. If the design elements are arranged properly, the Gestalt of the overall design will be very clear.
Gesture-based computing	Refers to interfaces where the human body interacts with digital resources without using common input devices, such as a keyboard,

mouse, game controller, or voice-entry mechanism. The introduction of the mouse allowed computer inputs to move beyond the linear dimension of the keyboard to two dimensions. Gesture-based computing is the next step in that evolution, enabling three-dimensional input that involves users in the computing activity. These interfaces could enable a more active and intuitive learning style that often seems more like play, and one particularly promising area is the combination of gesture-based computing with augmented reality. Gesture-based systems may offer new ways to interact with immersive 3D content and to investigate immersive scenarios.

Gesture drawing	Drawing defined by rapid execution (quick pose).
Gold	The term used to refer to the final version of a game that is ready to be released.
Hierarchy	Shows the difference in significance between items. In visual design, it refers to the use of font sizes, colours and position to show the difference in significance of objects. Designers often create hierarchies through different font sizes, colours, and placement on the page. Usually, items at the top are perceived as most important. In animation, it refers to the levels of control in the rigging of a character or object as it relates to the movement of the skeleton rig.
Intellectual property (IP)	A legal term that refers to creations of the mind. Examples of intellectual property include music, literature, and other artistic works; discoveries and inventions; and words, phrases, symbols, and designs. Under intellectual property laws, owners of intellectual property are granted certain exclusive rights. Some common types of intellectual property rights (IPR) are copyright, patents, and industrial design rights; and the rights that protect trademarks, trade dress, and in some jurisdictions trade secrets. Intellectual property rights are themselves a form of property, called intangible property.
Interaction Design (IxD)	In design, human–computer interaction, and software development, interaction design, often abbreviated IxD, is about shaping digital things for people's use, alternately defined as the practice of designing interactive digital products, environments, systems, and services. Like many other design fields interaction design also has an interest in form but its main focus is on behavior. What clearly marks interaction design as a design field as opposed to a science or engineering field, is that it is synthesis and imagining things as they might be, more so than focusing on how things are. It is heavily focused on satisfying the needs and desires of the users of the product.
Iterative process	The act of repeating a process with the aim of approaching a desired goal, target or result. It is also known as Amiration. Each repetition of the process is also called an "iteration", and the results of one iteration are used as the starting point for the next.
Layout	An arrangement or plan outlined by drawing. It is like designing a set which supports all the action in the story. The focus is on the

relationship between the characters' actions and the background, so layout explains the set and the relationship between the set and characters with drawings.

Mechanics	This is essentially the rules associated with a game.
Mediated reality	A concept in which a view of reality is modified (possibly even diminished rather than augmented) by a computer. As a result, the technology functions by enhancing one's current perception of reality.
Milestone	This is a segment or point where something significant is achieved or content is delivered. This may be a document, major assets for a game, or a prototype.
Middleground	The visual plane located between both the foreground and background.
Motion analysis	A technique used to get information about moving objects from video. The motion analysis technique usually involves a high-speed camera and a computer that has software allowing frame-by-frame playback of the video. There are many commercial packages that enable frame by frame or real-time video motion analysis. The objective for video motion analysis will determine the type of software used.
Motion in drawing	A method that allows for visual presentation of a variety of information charged with emotion and high aesthetic values. It involves the organisation of the different segments of an image in order to give a sense of action using forms, shapes, textures and lines that shift the eye throughout the artwork. In this method, individual sketches could also stand alone because they always contain a reflection, riddle or surprise. They can also be modified to suit various occasions.
Mutual gain	An approach to gaming where multiple players coordinate/negotiate to achieve a desirable outcome.
Mutual harm	An approach to gaming where all players' winnings are reduced by a change in the game state. Players may seek to minimize their losses through strategy.
Outsourcing	An allocation of specific business processes to a specialist external service provider. Most of the times an organisation cannot handle all aspects of a business process internally.
Palette	In computer graphics, this is either a given, finite set of colors for the management of digital images (that is, a color palette), or a small on-screen graphical element for choosing from a limited set of choices, not necessarily colors (such as a tools palette). For a given application, the palette may be only a subset of all the colors that can be physically displayed. For example, a computer system can display millions of unique colors, but a given program would use only 200 of them at a time if the display is in 200-color mode. The computer system's palette, therefore, would consist of the millions of colors, but the

program's palette would contain only the 200-color subset. A palette is also called a CLUT (color look-up table). On monochrome systems, the term palette is sometimes used to refer to the available fill patterns.

In paint and illustration programs, a palette is a collection of symbols that represent drawing tools. For example, a simple palette might contain a paintbrush, a pencil, and an eraser.

Perspective	A technique used to illustrate dimension through a flat surface.
Pitch	An animated summation of a script with emphasis on the main characters, the conflict, and the genre. When pitching a script, you use this summation to persuade industry professionals to option the work (purchase it for consideration).
	Pitches come in two forms: the two-minute pitch, also known as the teaser, and the story pitch, which is traditionally 10 to 20 minutes in length, though the shorter the better.
Plagiarism	The "wrongful appropriation" and "stealing and publication" of another author's "language, thoughts, ideas, or expressions" and the representation of them as one's own original work.
Plan-based methods	A development approach characterized by extensive planning prior to development, a common example is the waterfall model.
Platform	The console, device, or system upon which a game will be played.
Playtest	The process by which a game designer tests a new game for bugs and design flaws before bringing it to market. Playtests can be run "open", "closed", "beta", or otherwise, and are very common with computer games, board games and role-playing games, where they have become an established part of the quality control process.
Positive sum	Also known as non-zero-sum or variable-sum. A game in which players have some common interests. It is different from constant-sum, which means that win-win or lose-lose is possible in two-person games.
Post-production	The final stage in the process of creating an animation, and it involves exporting or rendering out the animation frames and then editing the pieces of animation together using video editing software. The sound track, including sound effects, is also added during the final edit. The Post-production stage may also involve further advanced processes such as compositing and colour correction.
Pre-production	The process of preparing all the elements involved in a film, play, or other performance. There are three parts in a production: pre-production, production, and post-production. Pre-production is the phase of further developing ideas and planning prior to the process of production. In a live action movie sense it is the period before filming starts. In an animation sense it is the period before any real animating takes place. Pre-production ends when the planning ends and the content starts being produced.

Production	In the world of animation it is the process of animating scenes. The production phase is often the longest and busiest phase of the animation project. On a mainstream project many animators and artists will be working together in teams.
Production bible (Digital/Transmedia)	It is a best-practice guide to the thinking, planning, documentation and supporting materials required when developing a property across multiple media platforms.
Project proposal	A document designed to present a plan of action, outline the reasons why the action is necessary, and convince the reader to agree with and approve the implementation of the actions recommended in the body of the document. In many cases, the document is drafted as a response to a Request for Proposal (RFP) that is issued by a current or prospective client. However, a document of this type may also be prepared to serve an internal purpose. In any situation, it must be clearly arranged so that readers can follow a logical progression of thought to the conclusion. The guidelines usually identify five key components or sections of any project proposal: the introduction, background, strategy, budgeting or financing, and outcome.
Prototype	An early playable demonstration version of a game or part of a game.
Pure conflict	An approach to gaming where the gain of utility of one player results in the loss of utility of another player.
RAD	Rapid application development (RAD) is both a general term used to refer to alternatives to the conventional waterfall model of software development as well as the name for James Martin's approach to rapid development. In general, RAD approaches to software development put less emphasis on planning tasks and more emphasis on development. In contrast to the waterfall model, which emphasises rigorous specification and planning, RAD approaches emphasise the necessity of adjusting requirements in reaction to knowledge gained as the project progresses.
Rapid prototyping	Rapid prototyping is a group of techniques used to quickly fabricate a scale model of a physical part or assembly using three-dimensional computer aided design (CAD) data. Construction of the part or assembly is usually done using 3D printing or "additive layer manufacturing" technology.
Role Play Game	(RPG, and sometimes roleplaying game) is a game in which players assume the roles of characters in a fictional setting. Players take responsibility for acting out these roles within a narrative, either through literal acting or through a process of structured decision-making or character development. Actions taken within many games succeed or fail according to a formal system of rules and guidelines. There are several forms of RPG. The original form, sometimes called the tabletop RPG, is conducted through discussion, whereas in live action role-playing games (LARP) players physically perform their

characters' actions. In both of these forms, an arranger called a game master (GM) usually decides on the rules and setting to be used and acts as referee, while each of the other players plays the role of a single character.

Scale	Identifies a range of sizes. It creates interest and depth by demonstrating how each item relates to each other based on size.
Script	Written words (text) that detail a story including dialogue.
Scriptwriter	An individual who is responsible for crafting/writing a script.
Similarity	Refers to the use of objects with similar characteristics to create continuity throughout a design without direct duplication or repetition. Similarity is used to make pieces work together over an interface and help users learn the interface quicker.
Simulator	A program that allows a user to imitate the conditions of a physical environment or physical process in a virtual environment.
Software	The programs used to instruct the operations of a computer. Software enables the working of computers.
Sound editing	The capturing and modification of audio to create a final audio production.
Space	Refers to the blank distance between and around two objects. It is defined when something is placed in it. Incorporating space into a design helps reduce noise, increase readability, and/or create illusion. White space is an important part of your layout strategy.
Spatial Augmented Reality (SAR)	Refers to the principle of augmenting real world objects and scenes without the use of special displays such as monitors, head mounted displays or hand-held devices. SAR makes use of digital projectors to display graphical information onto physical objects. The key difference in SAR is that the display is separated from the users of the system. Because the displays are not associated with each user, SAR scales naturally up to groups of users, thus allowing for collocated collaboration between users. Examples include shader lamps, mobile projectors, virtual tables, and smart projectors. Shader lamps mimic and augment reality by projecting imagery onto neutral objects, providing the opportunity to enhance the object's appearance with materials of a simple unit, such as, a projector, camera, and sensor. Other applications include table and wall projections.
Stop-motion animation	Used to describe animation created by physically manipulating real-world objects and photographing them one frame of film at a time to create the illusion of movement. There are many different types of stop-motion animation, usually named after the medium used to create the animation.

Story arc	A continuing storyline in an episodic storytelling media such as television, comic books, video games, and films.
Storyboard	A sequence of drawings, typically with some directions and dialogue, representing the shots planned for a visual production (animation, movies, television).
Strategic moves	Moves which manipulate the rules of the game to a player's advantage. There are three types of strategic moves: commitments, threats, and promises. Only a credible strategic move will have the desired effect. (See Strategy)
Strategy	The plan of action used to advance successfully throughout a game.
System	A collection of game mechanics that is responsible for producing a given outcome within a larger game such as character creation, combat, or casting spells.
Target audience	Refers to all persons for which a publication, advertisement, or other message such as a game or animation is aimed or suited.
Texture	The visual and especially tactile quality of a surface.
Turnaround	Drawings that show the character from 3 or more angles, including front, side and back.
Unity	(In visual design) has to do with all elements on a screen/frame/page visually or conceptually appearing to belong together. Visual design must strike a balance between unity and variety to avoid a dull or overwhelming design.
User interface design (UID) or user interface engineering	The design of user interfaces for machines and software, such as computers, home appliances, mobile devices, and other electronic devices, with the focus on maximising the user experience. The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user goals (user-centered design). Good user interface design facilitates finishing the task at hand without drawing unnecessary attention to itself. Graphic design and typography are utilised to support its usability, influencing how the user performs certain interactions and improving the aesthetic appeal of the design. Design aesthetics may enhance or detract from the ability of users to use the functions of the interface. The design process must balance technical functionality and visual elements (such as, mental model) to create a system that is not only operational but also usable and adaptable to changing user needs.
Virtual Reality	A concept of the view of reality in which the real world is replaced with a simulated one.

Virtual team	A number of individuals who work online towards the achievement of common goals. Team members do not meet physically but may use video-conferencing technology and other online tools to collaborate.
Waterfall method/ model	A conventional method/model of software development which emphasises rigorous specification and planning. It is in contrast to RAD approaches to software development which put less emphasis on planning tasks and more emphasis on development, emphasising the necessity of adjusting requirements in reaction to knowledge gained as the project progresses.
Wire bending	The use of malleable wire to create an outline/sculpture of a figure. In animation the process involves making a rough shape of the figure intended for 3D animation.
Wire framing	The process of creating a basic visual layout of the intended finished product such as a website or user interface.
Zero-sum	(Constant-sum) A game in which one player's winnings are the others' losses, so the net gain is zero across all players.
2D	The traditional animation method that has existed since the late 1800s. It is one drawing followed by another in a slightly different pose, followed by another in a slightly different pose, on and on for 24 frames a second. 2D animation focuses on creating characters, storyboards and backgrounds in two-dimensional environments. The figures can move up and down, left and right. They do not appear to move toward or away from the viewer, as they would in 3D animation. 2D animation uses bitmap and vector graphics to create and edit the animated images and is created using computers and software programs, such as Adobe Photoshop, Flash, After Effects and Encore. These animations may be used in advertisements, films, television shows, computer games or websites.
3D	The creation of moving pictures in a three-dimensional digital environment. This is done by sequencing consecutive images, or frames, that simulate motion by each image showing the next in a gradual progression of steps, filmed by a virtual camera and then output to video by a rendering engine. The eye can be fooled into perceiving motion when these consecutive images are shown at a rate of 24 frames per second or faster. 3D techniques usually build virtual worlds in which characters and objects move and interact. 3D animation can create images that seem real to the viewer.

GLOSSARY OF TERMS USED IN THE ANIMATION AND GAME DESIGN EXAMINATION

WORD	DEFINITION/MEANING	COGNITIVE LEVEL
Analyse	Examine methodically and in detail, the elements of a process, a situation or a theory, and then draw (a) conclusion(s).	UK
Apply	Use knowledge and/or principles, approaches or theories to solve problems.	UK
Arrange	Put in specific or logical order.	CK
Assess	Present reasons for the importance of particular structures, relationships or processes. Compare the advantages and disadvantages or the merits and demerits of a particular structure, relationship or process.	UK
Classify	Put into groups according to given criteria and observable characteristics.	CK
Comment	State opinion or view with supporting reasons.	CK
Compare and contrast	State, describe and elaborate on the similarities and differences. An explanation of the significance of each similarity and difference stated may be required for comparisons which are other than structural.	UK
Construct/ Compose/ Create	Combine knowledge, principles and elements to produce something new. For example, to build a model.	UK
Deduce	Make a logical connection between two or more pieces of information; use data to arrive at a conclusion.	UK
Define	Provide a precise statement giving the **nature** or the **scope** or the **meaning** of a term; or use the term in one or more sentences so that the meaning is clear and precise.	CK
Demonstrate	Show (how a process is carried out in steps/ stages).	UK
Describe	Provide a detailed account, including significant characteristics or elements of an issue or situation.	CK
Design	Plan and present with appropriate practical detail.	UK
Develop	Combine knowledge, principles and elements to produce	UK

WORD	DEFINITION/MEANING	COGNITIVE LEVEL
	something new. For example, to build a model.	
Diagram	Simplified representation showing the relationship between components.	UK
Differentiate/ distinguish (between/ among)	State or explain briefly those differences between or among items or situations which can be used to define them or place them into separate categories.	UK
Discuss	Write an extended answer defining key concepts, stating what is, exploring **related** concepts and issues, present reasoned arguments for and against, using detailed examples but not necessarily drawing a conclusion.	UK
Draw	Make a simple freehand diagram showing relevant proportions and any important details.	CK
Evaluate	Weigh evidence and make judgements based on given criteria. The use of logical supporting reasons for a particular point of view is more important than the view held; usually both sides of an argument should be considered.	UK
Explain	Provide statements on **what** happened, **how** it happened and **why** it happened. Provide elaboration of particular terms, concepts, and approaches.	CK
Give	State/Provide factual information in concise terms.	CK
Identify	Name or point out specific components or features. Point out, indicate without explanation or recognise and select.	CK
Illustrate	Show clearly by using appropriate examples or diagrams, sketches.	UK
Investigate	Use appropriate procedures to observe, research, record data and draw logical conclusions.	UK
Justify	Explain the correctness of/ give reasons for the selection of.	UK
Label	Add names to identify structures or parts indicated by pointers.	CK
List	Itemise without detail such as explanation or description.	CK
Name	Give only the name of.	CK
Outline	Give main points only. Basic steps or features. Provide in skeletal form.	CK UK

WORD	DEFINITION/MEANING	COGNITIVE LEVEL
Plan	Prepare to conduct an activity by showing a series of systematic steps which, when followed, will lead to a solution.	UK
Select	Choose from a list	CK
Show	Demonstrate (how a process is carried out in steps/stages)	UK
Sketch	Outline/Make a simple freehand diagram showing relevant proportions and any important details.	CK
State	Give/Provide factual information in concise terms.	CK
Suggest	Offer an explanation deduced from information provided or previous knowledge. (... a hypothesis; provide a generalisation which offers a likely explanation for a set of data or observations.)	UK
Use	Employ knowledge/skill to produce something new.	UK

Western Zone Office
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