2025 Interactive Media Technology

Program CIP: 50.0411 - Game and Interactive Media Design

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The Research and Curriculum Unit (RCU), located in Starkville, as part of Mississippi State University (MSU), was established to foster educational enhancements and innovations. In keeping with the land-grant mission of MSU, the RCU is dedicated to improving the quality of life for Mississippians. The RCU enhances intellectual and professional development of Mississippi students and educators while applying knowledge and educational research to the lives of the people of the state. The RCU works within the contexts of curriculum development and revision, research, assessment, professional development, and industrial training.

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Acknowledgments

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Dr. Lance Evans, State Superintendent of Education, Executive Secretary
Mr. Glen V. East, Chair
Mr. Matt Miller, Vice-Chair
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Mr. Matt Mayo
Ms. Kate Riddle, Student Representative
Mr. Crosby Parker, Student Representative

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Standards

Standards and alignment crosswalks are referenced in the appendices. Depending on the curriculum, these crosswalks should identify alignment to the standards mentioned below, as well as possible related academic topics as required in the Subject Area Testing Program in Algebra I, Biology I, English II, and U.S. History from 1877, which could be integrated into the content of the units. Mississippi's CTE Interactive Media Technology (IMT) is aligned to the following standards:

Common Career Technical Core Standards for the Arts, Audio-Video Technology, and Communications Career Cluster

The Common Career Technical Core (CCTC) is a state-led initiative coordinated by the National Association of State Directors of Career Technical Education/National Career Technology Education Foundation (NASDCTEc/NCTEF) to establish a set of rigorous, high-quality standards for CTE that states can adopt. A diverse group of teachers, business and industry experts, administrators, and researchers helped guide the development of the CCTC from beginning to end to ensure CTE students will have the knowledge and skills to thrive in a global economy. The IMT curriculum will be aligned to the CCTC Standards for the Arts, Audio-Video Technology, and Communications Cluster. Copyright 2012. NASDCTEc/NCTEF. All rights reserved. Retrieved from careertech.org/CCTC.

College- and Career-Ready Standards

College- and career-readiness standards emphasize critical thinking, teamwork, and problem-solving skills. Students will learn the skills and abilities demanded by the workforce of today and the future. Mississippi adopted *Mississippi College and Career Ready Standards* (*MCCRS*) to provide a consistent, clear understanding of what students are expected to learn and so teachers and parents know what they need to do to help them.
mdek12.org/OAE/college-and-career-readiness-standards

International Society for Technology in Education Standards (ISTE)

Reprinted with permission from *ISTE Standards for Students* (2016). All rights reserved. Permission does not constitute an endorsement by ISTE (iste.org).

Framework for 21st Century Learning

In defining 21st century learning, the Partnership for 21st Century Skills has embraced key themes and skill areas that represent the essential knowledge for the 21st century: global awareness; financial, economic, business, and entrepreneurial literacy; civic literacy; health literacy; environmental literacy; learning and innovation skills; information, media, and technology skills; and life and career skills.
p21.org/storage/documents/docs/P21_Framework_Definitions_New_Logo_2015.pdf

Preface

Secondary CTE programs in Mississippi face many challenges resulting from sweeping educational reforms at the national and state levels. Schools and teachers are increasingly being held accountable for providing applied learning activities to every student in the classroom. This accountability is measured through increased requirements for mastery and attainment of competency as documented through both formative and summative assessments. This document provides information, tools, and solutions that will aid students, teachers, and schools in creating and implementing applied, interactive, and innovative lessons. Through best practices, alignment with national standards and certifications, community partnerships, and a hands-on, student-centered concept, educators will be able to truly engage students in meaningful and collaborative learning opportunities.

The courses in this document reflect the statutory requirements as found in Section 37-3-49, *Mississippi Code of 1972*, as amended (Section 37-3-46). In addition, this curriculum reflects guidelines imposed by federal and state mandates (Laws, 1988, Ch. 487, §14; Laws, 1991, Ch. 423, §1; Laws, 1992, Ch. 519, §4 eff. from and after July 1, 1992; Strengthening Career and Technical Education for the 21st Century Act, 2019 [Perkins V]; and Every Student Succeeds Act, 2015).

Mississippi Teacher Professional Resources

The following are resources for Mississippi teachers:

Curriculum, Assessment, Professional Learning
: Program resources can be found at the RCU's website, rcu.msstate.edu.

Learning Management System: An Online Resource
: Learning management system information can be found at the RCU's website, under Professional Learning.

Should you need additional instructions, contact the RCU at 662.325.2510 or helpdesk@rcu.msstate.edu.

Executive Summary

Pathway Description:
The Interactive Media Technology (IMT) pathway is an innovative program designed to equip students with the skills and knowledge needed to thrive in the rapidly evolving fields of game design, interactive media, and digital storytelling. This curriculum builds upon foundational principles from the Simulation and Animation Design (SAD) program and integrates advanced techniques in game development, interactive simulations, and multimedia production. The IMT pathway emphasizes hands-on, project-based learning experiences that mirror real-world industry practices, preparing students for postsecondary education and immediate entry into the workforce.

College, Career, and Certifications:
Research with industry professionals in Mississippi has informed the curriculum design, ensuring alignment with current industry standards and workforce needs. The IMT curriculum prepares students for certifications such as the Autodesk Certified Associate in 3ds Max and Unity Certified Developer. These certifications validate the skills required for careers in game design, interactive media, and related fields.

Grade Level and Class Size Recommendations:
Students are recommended to begin the IMT program in the 10th grade. To ensure an optimal learning environment, it is recommended that class sizes do not exceed 15 students per instructor, allowing for personalized instruction and ample access to technological resources.

Student Prerequisites
For students to experience success in the program, the following student prerequisites are suggested:

1. C or higher in English (the previous year)
2. C or higher in high school level math (last course taken or the instructor can specify the level of math instruction needed)
3. Instructor approval and TABE reading score (eighth grade or higher)

or

1. TABE reading and math score (eighth grade or higher)
2. Instructor approval

or

1. Instructor approval

Assessment
The latest assessment blueprint for the curriculum can be found at rcu.msstate.edu/curriculum.

Applied Academic Credit
The latest academic credit information can be found at mdek12.org/ESE/Approved-Course-for-the-Secondary-Schools.

Teacher Licensure

The latest teacher licensure information can be found at mdek12.org/oel/apply-for-an-educator-license.

Professional Learning

If you have specific questions about the content of any training sessions provided, please contact the RCU at 662.325.2510 or helpdesk@rcu.msstate.edu.

Course Outlines

Option 1—Four 1-Carnegie Unit Courses

This curriculum consists of four 1-credit courses, which should be completed in the following sequence:

1. **Foundations of Interactive Media Technology—Course Code: 994402**
2. **Interactive Media Design and Development—Course Code: 994403**
3. **Advanced Game Design and Interactive Applications—Course Code: 994404**
4. **Capstone Project in Interactive Media Technology—Course Code: 994405**

Course Description: Foundations of Interactive Media Technology
This course introduces students to the essential skills and knowledge necessary for success in the interactive media industry. Key areas of focus include safety, ethical issues, career exploration, and foundational technical skills. Students will learn the basics of UI/UX, pre-production processes, and begin building a professional portfolio.

Course Description: Interactive Media Design and Development
Building on the foundations course, students will delve deeper into the principles and practices of interactive media design. They will explore game mechanics, 3D asset creation, environment and level design, and UI/UX design. Emphasis is placed on hands-on projects and refining their portfolio.

Course Description: Advanced Game Design and Interactive Applications
This course focuses on advanced topics in game design and interactive media, including localization, quality assurance, user testing, and multiplayer design. Students will engage in mentorship and apprenticeship opportunities, receive industry feedback, and refine their portfolios with advanced projects.

Course Description: Capstone Project in Interactive Media Technology
The capstone course provides students with the opportunity to apply their knowledge and skills in a comprehensive project. Working in teams, students will develop a significant interactive media project from concept to completion. The course culminates in a showcase presentation, allowing students to demonstrate their work to an audience.

Foundations of Interactive Media Technology—Course Code: 994402

Unit	Unit Title	Hours
1	Orientation, Safety and Interactive Media Fundamentals	10
2	Career Exploration and Industry Awareness	20
3	Ethics and Responsibility in Interactive Media Design	20
4	The Art of Pre-Production	40
5	UI/UX and Accessibility	30
6	Portfolio Foundations and Capstone Planning	20
Total		**140**

Interactive Media Design and Development—Course Code: 994403

Unit	Unit Title	Hours
7	Game Mechanics (Architecture and Mechanics in Interactive Media)	30
8	Create and Import Original Assets (Using a 3D Game Engine)	30
9	Environments and Level Design	30
10	UI/UX Design for Interactive Experiences	30
11	Portfolio Refinement and Capstone Proposal	20
Total		**140**

Advanced Game Design and Interactive Applications—Course Code: 994404

Unit	Unit Title	Hours
12	Localization and Marketing for Interactive Experiences	30
13	Quality Assurance, Debugging, and Technical Considerations	30
14	User Testing and Evaluation for Interactive Experiences	30
15	Basics of Multiplayer (Multiplayer, Co-op)	30
16	Mentorship/Apprenticeship Review/Evaluation	20
Total		**140**

Capstone Project in Interactive Media Technology—Course Code: 994405

Unit	Unit Title	Hours
17	Portfolio Showcase, Publishing, and Capstone Preparation	10
18	Team Formation, Ideation, and Proposal	10
19	Capstone Development (Phase 1)	30
20	Capstone Development (Phase 2)	30
21	Capstone Development (Phase 3)	30
22	Capstone Showcase and Presentation	30
Total		**140**

Option 2—Two 2-Carnegie Unit Courses

This curriculum consists of two 2-credit courses, which should be completed in the following sequence:

1. **Interactive Media Technology I—Course Code: 994400**
2. **Interactive Media Technology II—Course Code: 994401**

Course Description: Interactive Media Technology I
This course introduces the fundamentals of interactive media design, focusing on essential skills and concepts that form the foundation of the field. Students will become proficient in core software tools (such as Unreal Engine, Blender, Adobe Photoshop, and Audacity), develop an understanding of interactive media applications, and explore diverse career opportunities within the industry. The curriculum emphasizes ethical design practices, pre-production processes, UI/UX principles, and the creation of a professional portfolio. Throughout the course, students will engage in project-based learning, fostering collaboration, creativity, and critical thinking.

Course Description: Interactive Media Technology II
Building on the foundations established in Interactive Media Technology I, this course delves deeper into advanced concepts and practices within interactive media design. Students will explore localization, marketing strategies, quality assurance, and user testing for interactive experiences. The curriculum includes the design and implementation of multiplayer functionalities, mentorship and apprenticeship experiences, and extensive capstone project development. Emphasis is placed on refining professional portfolios, developing comprehensive project proposals, and showcasing final projects. This course prepares students for higher education and career opportunities in the interactive media industry, with a strong focus on real-world applications and industry standards.

Interactive Media Technology I—Course Code: 994400

Unit	Unit Title	Hours
1	Introduction, Safety, and Orientation	10
2	Career Exploration and Industry Awareness	20
3	Ethics and Responsibility in Interactive Media Design	20
4	The Art of Pre-Production	40
5	UI/UX and Accessibility	30
6	Portfolio Foundations and Capstone Planning	20
7	Game Mechanics (Architecture and Mechanics in Interactive Media)	30
8	Create and Import Original Assets (Using a 3D Game Engine)	30
9	Environments and Level Design	30
10	UI/UX Design for Interactive Experiences	30
11	Portfolio Refinement and Capstone Proposal	20
Total		**280**

Interactive Media Technology II—Course Code: 994401

Unit	Unit Title	Hours
12	Localization and Marketing for Interactive Experiences	30

13	Quality Assurance, Debugging, and Technical Considerations	30
14	User Testing and Evaluation for Interactive Experiences	30
15	Basics of Multiplayer (Multiplayer, Co-op)	30
16	Mentorship/Apprenticeship Review/Evaluation	20
17	Portfolio Showcase, Publishing, and Capstone Preparation	10
18	Team Formation, Ideation, and Proposal	10
19	Capstone Development (Phase 1)	30
20	Capstone Development (Phase 2)	30
21	Capstone Development (Phase 3)	30
22	Capstone Showcase and Presentation	30
Total		**280**

Career Pathway Outlook

Overview
The Interactive Media Technology (IMT) pathway focuses on preparing students for careers in the game design and interactive media industry. This pathway equips students with foundational knowledge, technical skills, and hands-on experience in creating, developing, and producing interactive media projects. Emphasizing both creative and technical aspects, the curriculum covers topics such as game mechanics, user experience design, 3D modeling, and digital storytelling. Students will also develop professional portfolios and participate in capstone projects to showcase their skills.

Needs of the Future Workforce
Mississippi's interactive media and game design industry is growing steadily, although at a smaller scale compared to national figures. The demand for digital content and interactive media solutions is increasing, providing new opportunities for careers in game design, multimedia development, and related fields.

Table 1.1: Current and Projected Occupation Report

Description	Jobs, 2020	Projected Jobs, 2030	Change (Number)	Change (Percent)	Average Hourly Earning, 2024
Game Designers	450	500	50	11.1%	$35.50
Multimedia Artists and Animators	600	660	60	10.0%	$31.00
Software Developers (Applications)	1,800	2,000	200	11.1%	$46.50
Audio and Video Equipment Technicians	230	280	50	21.7%	$21.53

Source: Mississippi Department of Employment Security; mdes.ms.gov (2024).

Perkins V Requirements and Academic Infusion
The Interactive Media Technology (IMT) curriculum meets Perkins V requirements of introducing students to and preparing them for high-skill, high-wage occupations in IMT fields. It also offers students a program of study, including secondary, postsecondary, and institutions of higher learning courses, that will further prepare them for IMT careers. Additionally, this curriculum is integrated with academic college- and career-readiness standards. Lastly, it focuses on ongoing and meaningful professional development for teachers as well as relationships with industry.

Transition to Postsecondary Education
The latest articulation information for secondary to postsecondary can be found at the Mississippi Community College Board website, mccb.edu.

Best Practices

Innovative Instructional Technologies

Classrooms should be equipped with tools that will teach today's digital learners through applicable and modern practices. The Interactive Media Technology (IMT) educator's goal should be to include teaching strategies that incorporate current technology. To make use of the latest online communication tools—wikis, blogs, podcasts, and social media platforms, for example—the classroom teacher is encouraged to use a learning management system that introduces students to education in an online environment and places more of the responsibility of learning on the student.

Differentiated Instruction

Students learn in a variety of ways, and numerous factors—students' background, emotional health, and circumstances, for example—create unique learners. By providing various teaching and assessment strategies, students with various learning preferences can have more opportunities to succeed.

CTE Student Organizations

Teachers should investigate opportunities to sponsor a student organization. There are several here in Mississippi that will foster the types of learning expected from the IMT curriculum. SkillsUSA, TSA, and FBLA are examples of student organizations with many outlets for multimedia careers. Student organizations provide participants and members with growth opportunities and competitive events. They also open the doors to the world of IMT careers and scholarship opportunities.

Cooperative Learning

Cooperative learning can help students understand topics when independent learning cannot. Therefore, you will see several opportunities in the IMT curriculum for group work. To function in today's workforce, students need to be able to work collaboratively with others and solve problems without excessive conflict. The IMT curriculum provides opportunities for students to work together and help each other complete complex tasks. There are many field experiences within the IMT curriculum that will allow and encourage collaboration with professionals currently in the multimedia field.

Work-Based Learning

Work-based learning is an extension of understanding competencies taught in the IMT classroom. This curriculum is designed in a way that necessitates active involvement by the students in the community around them and the global environment. These real-world connections and applications link all types of students to knowledge, skills, and professional dispositions. Work-based learning should encompass ongoing and increasingly more complex involvement with local companies and IMT professionals. Thus, supervised collaboration and immersion into the multimedia platforms around the students are key to students' success, knowledge, and skills development.

Professional Organizations

Association of Career and Technical Education
acteonline.org

Future Business Leaders of America
fbla-pbl.org

International Game Developers Association
igda.org

International Society for Technology in Education
iste.org

Technology Student Association
tsaweb.org

Using This Document

Competencies and Suggested Objectives
A competency represents a general concept or performance that students are expected to master as a requirement for satisfactorily completing a unit. Students will be expected to receive instruction on all competencies. The suggested objectives represent the enabling and supporting knowledge and performances that will indicate mastery of the competency at the course level.

Teacher Resources
All teachers should request to be added to the Canvas Resource Guide for their course. For questions or to be added to the guide, send a Help Desk ticket to the RCU by emailing helpdesk@rcu.msstate.edu.

Perkins V Quality Indicators and Enrichment Material
Some of the units may include an enrichment section at the end. This material will greatly enhance the learning experiences of students. If the Interactive Media Technology (IMT) program is using a national certification, work-based learning, or another measure of accountability that aligns with Perkins V as a quality indicator, this material could very well be assessed on that quality indicator. It is the responsibility of the teacher to ensure all competencies for the selected quality indicator are covered throughout the year.

Unit 1: Introduction, Safety, and Orientation

Competencies and Suggested Objectives
1. Demonstrate proficiency with the interfaces and essential tools in core software. DOK2 a. Develop familiarity with interfaces and navigation in multiple software options (e.g., Unreal Engine, Unity, Blender, Adobe Photoshop, GNU image Manipulation Program (GIMP), Audacity, GarageBand). b. Utilize image editing tools for basic image editing and manipulation. c. Explore audio editing tools for audio editing and basic sound design techniques.
2. Demonstrate safe, organized, and responsible digital practices. DOK3 a. Implement effective file management practices within the interactive media design workflow. b. Adhere to version control protocols for collaborative projects using tools like Git or SVN. c. Practice responsible online conduct and basic cybersecurity measures.
3. Understand and apply safety protocols relevant to interactive media technology. DOK2 a. Identify and follow safety procedures specific to interactive media production environments. b. Complete a safety test demonstrating understanding of safety protocols and procedures. c. Maintain a safe and ergonomic workspace.

Unit 2: Career Exploration and Industry Awareness

Competencies and Suggested Objectives
1. Discover careers in interactive media design. DOK2 a. Research diverse roles within the interactive media industry, including but not limited to user experience (UX) designer, concept artist, interactive programmer, and sound designer. b. Identify the required skills, knowledge, and educational pathways for various interactive media careers. c. Conduct informational interviews with professionals in the field and present findings to the class.
2. Explore the interactive media industry. DOK2 a. Research major companies and influential figures in the interactive media industry. b. Evaluate potential social and cultural impacts of interactive media design choices. c. Promote respectful collaboration and contribute to positive online communities.
3. Craft a personal exploration roadmap. DOK3 a. Reflect on individual interests and strengths aligning with interactive media careers. b. Develop a plan with short-term learning goals and exploration resources (online tutorials, workshops, relevant extracurriculars).

Unit 3: Ethics and Responsibility in Interactive Media Design

Competencies and Suggested Objectives
1. Analyze ethical considerations in interactive media design. DOK2 a. Investigate concepts of accessibility, representation, inclusion, and responsible design. b. Evaluate potential social and cultural impacts of interactive media design choices.
2. Practice ethical and inclusive design. DOK3 a. Understand, respect, and apply intellectual property, copyright, and fair use practices. b. Promote respectful collaboration and contribute to positive online communities.
3. Understand the ethical use of artificial intelligence (AI) in interactive media. DOK2 a. Explore ethical concerns and guidelines for using AI in media creation and user interaction. b. Analyze the benefits and risks of AI applications in interactive media.
4. Examine case studies of ethical dilemmas in interactive media. DOK3 a. Study historical and contemporary examples of ethical dilemmas in interactive media design. b. Develop strategies for addressing ethical challenges in future projects.
5. Develop and maintain a digital portfolio to showcase student work. DOK3 a. Continuously update the digital portfolio with work from each unit. b. Reflect on personal growth and learning through the portfolio entries.

Unit 4: The Art of Pre-Production

Competencies and Suggested Objectives
1. Implement the pre-production design process. DOK3 a. Explain the iterative stages of pre-production (conceptualization, brainstorming, prototyping, etc.). b. Create effective design documentation (problem statements, user personas, sketches, flowcharts). c. Develop storyboards and wireframes for project planning.
2. Prototype interactive experiences. DOK3 a. Select appropriate tools for rapid prototyping (physical, digital, or a combination). b. Design and implement core interactive elements within a prototype demonstrating a clear concept. c. Evaluate and iterate on prototypes based on feedback and testing.
3. Develop storytelling and narrative techniques. DOK3 a. Integrate narrative structures into interactive media projects. b. Create compelling characters, settings, and plots for interactive experiences. c. Utilize techniques for nonlinear storytelling.
4. Understand and apply user-centered design principles. DOK3 a. Define and apply user-centered design principles in pre-production. b. Conduct user research to inform design decisions. c. Develop and use personas to guide design and development.
5. Develop and maintain a digital portfolio to showcase student work. DOK3 a. Continuously update the digital portfolio with work from each unit. b. Reflect on personal growth and learning through the portfolio entries.

Unit 5: User Interface (UI)/User Experience(UX) and Accessibility

Competencies and Suggested Objectives
1. Analyze principles of UI/UX and accessibility. DOK3 a. Define key UI/UX concepts (usability, navigation, feedback, visual hierarchy, accessibility principles). b. Critically evaluate the UI/UX of various interactive examples, identifying strengths, weaknesses, and accessibility considerations. c. Discuss the importance of accessibility in interactive media design.
2. Design user-centered and inclusive interfaces. DOK3 a. Apply UI design principles (layout, color theory, typography, etc.) to create wireframes or mockups. b. Design for accessibility (e.g., alternative input methods, adjustable settings). c. Incorporate user feedback through usability testing.
3. Implement UI/UX design in interactive media projects. DOK3 a. Develop user interfaces for interactive media projects using design software (e.g., Adobe XD, Figma, Sketch). b. Integrate accessibility features into interactive media projects. c. Test and iterate on user interface designs based on user feedback.
4. Understand the role of UI/UX in user experience. DOK2 a. Analyze how UI/UX affects overall user experience in interactive media. b. Explore case studies of successful and unsuccessful UI/UX designs.
5. Develop and maintain a digital portfolio to showcase student work. DOK3 a. Continuously update the digital portfolio with work from each unit. b. Reflect on personal growth and learning through the portfolio entries.

Unit 6: Portfolio Foundations and Capstone Planning

Competencies and Suggested Objectives
1. Curate an interactive media portfolio. DOK3 a. Identify essential elements of a compelling interactive media portfolio. b. Select and showcase projects demonstrating skills, interests, and design thinking. c. Develop presentation skills for showcasing work (oral, written, pictorial, video, and peer review).
2. Conceptualize and plan a team capstone project. DOK3 a. Brainstorm potential project ideas in collaboration with team members, aligning with individual strengths and course competencies. b. Define the scope, goals, target audience, and accessibility considerations for the capstone project. c. Develop a collaborative project plan outlining methodology, resource requirements, timeline, and individual roles (using Trello or a similar task management tool).

Unit 7: Game Mechanics (Architecture and Mechanics in Interactive Media)

Competencies and Suggested Objectives
1. Analyze game mechanics in diverse interactive media. DOK3 a. Deconstruct mechanics in various genres (platformers, simulations, strategy, etc.), identifying their core elements and functions. b. Examine how mechanics create different player experiences, drive engagement, and support the overall design goals. c. Analyze the balance between challenge and skill in-game mechanics to maintain player engagement.
2. Design and implement game mechanics. DOK3 a. Conceptualize game mechanics aligned with desired player experiences and project themes. b. Utilize game engine scripting tools (e.g., Blueprints, C++, Unity scripts) to implement and refine core game mechanics. c. Test and iterate on game mechanics based on player feedback and performance data. d. Integrate advanced game mechanics such as physics-based interactions, AI behaviors, and procedural generation.
3. Evaluate the impact of game mechanics on user experience DOK3 a. Assess how different mechanics affect user engagement, satisfaction, and retention. b. Conduct user testing to gather qualitative and quantitative data on player interactions with game mechanics. c. Use analytics tools to measure the effectiveness of implemented mechanics and identify areas for improvement.
4. Determine the ethical considerations of in-game mechanics design. DOK3 a. Explore the ethical implications of game mechanics, such as loot boxes, difficulty settings, and in-game purchases. b. Design game mechanics that promote positive player behavior and inclusivity. c. Evaluate the social and cultural impacts of game mechanics on diverse player groups.

Unit 8: Create and Import Original Assets (Using a 3D Game Engine)

Competencies and Suggested Objectives
1. Master essential 3D modeling techniques. DOK3 a. Develop proficiency in 3D modeling software (e.g., Blender, Maya, 3ds Max) to create basic and complex models. b. Apply texturing and UV unwrapping techniques to prepare models for real-time rendering. c. Optimize 3D models for performance, considering polygon count and texture resolution.
2. Integrate assets into an interactive experience. DOK3 a. Understand file formats and import pipelines for 3D assets within a game engine (e.g., Unreal Engine, Unity). b. Apply materials, lighting, and physics properties to imported assets within the game engine. c. Troubleshoot common issues in asset integration and rendering.
3. Design and develop interactive environments. DOK3 a. Utilize environment design principles to create immersive game worlds. b. Implement modular design techniques for efficient building of the environment. c. Integrate assets into the game environment to enhance storytelling and gameplay.

Unit 9: Environments and Level Design

Competencies and Suggested Objectives
1. Understand principles of interactive environment design. DOK3 a. Analyze level design in various interactive media, focusing on pacing, guidance, storytelling through environment, and themes. b. Apply concepts of modular design, asset reuse, and worldbuilding techniques to create engaging environments. c. Evaluate the impact of environmental design on player experience and engagement.
2. Build interactive environments. DOK3 a. Utilize 3D modeling tools (e.g., Blender, Maya, 3ds Max) to create modular environment assets. b. Design, assemble, and light levels within a game engine (e.g., Unreal Engine, Unity) to demonstrate effective layout, player guidance, and thematic consistency. c. Integrate environmental storytelling elements to enhance the narrative and player immersion. d. Implement and test dynamic environments that respond to player actions and changes within the game world.

Unit 10: UI/UX Design for Interactive Experiences

Competencies and Suggested Objectives
1. Analyze UI/UX in interactive experiences. DOK3 a. Define key UI/UX concepts such as usability, navigation, feedback, visual hierarchy, and consistency. b. Evaluate the UI/UX of various interactive examples, identifying strengths, weaknesses, and how it supports gameplay. c. Understand the role of UI/UX design in enhancing player engagement and overall user experience.
2. Design and implement user interfaces. DOK3 a. Apply UI design principles within design software (e.g., Adobe Photoshop, Figma, Sketch) to create wireframes and mockups. b. Utilize game engine UI tools (e.g., Unreal Engine's UMG/Widget Blueprints, Unity's UI system) to design and implement functional in-game user interfaces. c. Integrate user feedback through usability testing to refine and improve UI designs. d. Ensure accessibility considerations are met in the design of user interfaces.
3. Prototype interactive experiences. DOK3 a. Select appropriate tools for rapid prototyping (physical, digital, or a combination, including basic visual scripting within Unreal Engine). b. Design and implement core interactive elements within a prototype demonstrating a clear concept. c. Iteratively test and refine prototypes based on user feedback.
4. Develop and maintain a digital portfolio. DOK3 a. Continuously update the digital portfolio with work from each unit. b. Reflect on personal growth and learning through the portfolio entries. c. Showcase projects that demonstrate skills, interests, and design thinking.

Unit 11: Portfolio Refinement and Capstone Proposal

Competencies and Suggested Objectives
1. Enhance and present interactive media portfolio. DOK3 a. Refine and expand the interactive media portfolio, incorporating projects from previous units to showcase the progression of skills and interests. b. Develop compelling presentation materials (e.g., project briefs, videos, process documentation) to articulate design choices and technical achievements. c. Practice presenting the portfolio, highlighting strengths and effectively communicating the creative process.
2. Finalize and propose capstone project. DOK3 a. In collaboration with team members, refine the capstone project scope, goals, and detailed plan outlining methodology, resource requirements, timeline, and individual roles. b. Create a comprehensive capstone proposal document or presentation clearly communicating the project's vision, potential impact, and feasibility. c. Conduct peer reviews to receive constructive feedback and further refine the capstone proposal.

Unit 12: Localization and Marketing for Interactive Experiences

Competencies and Suggested Objectives
1. Understand localization for interactive experiences. DOK2 a. Define localization and its importance in adapting interactive media for global audiences. b. b. Explore challenges and best practices in localizing assets (text, audio, visuals, gameplay elements).
2. Develop a marketing strategy for interactive experiences. DOK3 a. Identify key elements of a marketing plan for interactive media products. b. Research target audiences and create marketing materials that resonate with their interests. c. Understand and apply principles of digital marketing, including social media strategies and analytics.
3. Analyze the impact of cultural differences on interactive media. DOK3 a. Evaluate how cultural differences affect user experience and engagement. b. Adapt design elements to suit diverse cultural contexts.

Unit 13: Quality Assurance, Debugging, and Technical Considerations

Competencies and Suggested Objectives
1. Implement quality assurance practices. DOK3 a. Understand the role of quality assurance (QA) in interactive media development. b. Design test cases and conduct debugging sessions to identify and resolve issues. c. Report issues effectively using bug tracking tools.
2. Optimize for performance and cross-platform compatibility. DOK3 a. Identify technical considerations for cross-platform development (e.g., UI scaling, input methods). b. Apply optimization techniques to improve performance on various devices. c. Conduct performance testing to ensure smooth gameplay across different platforms.
3. Incorporate advanced debugging techniques. DOK3 a. Utilize advanced debugging tools and techniques to troubleshoot complex issues. b. Implement automated testing scripts to streamline the QA process. c. Analyze debugging data to identify recurring issues and develop long-term solutions.

Unit 14: User Testing and Evaluation for Interactive Experiences

Competencies and Suggested Objectives
1. Conduct user testing for interactive experiences. DOK3 a. Understand different user testing methodologies and their suitability for various development stages (playtesting, usability testing, accessibility testing, concept testing). b. Design test plans outlining goals, target participants, and specific tasks or scenarios to be tested. c. Recruit diverse participants, moderate testing sessions, and collect feedback effectively.
2. Analyze and apply user feedback. DOK3 a. Utilize qualitative and quantitative analysis methods to interpret user feedback. b. Identify patterns and prioritize issues based on user feedback. c. Propose design solutions and iterations based on user testing insights.
3. Evaluate the effectiveness of user testing. DOK3 a. Assess the effectiveness of user testing methodologies in identifying usability issues. b. Evaluate the impact of user feedback on the development process. c. Reflect on the overall user testing process and suggest improvements for future projects.

Unit 15: Basics of Multiplayer (Multiplayer, Co-op)

Competencies and Suggested Objectives
1. Evaluate fundamentals of multiplayer design. DOK3 a. Explore multiplayer concepts such as networking, synchronization, and gameplay modes. b. Analyze multiplayer features in existing interactive experiences, understanding their impact on player engagement and social interaction. c. Discuss the challenges and best practices in designing and implementing multiplayer experiences.
2. Prototype a multiplayer experience. DOK3 a. Utilize game engine networking tools to implement basic multiplayer functionality (e.g., Unreal Engine's networking tools, Unity's Mirror). b. Design and test a simple co-op or competitive multiplayer experience. c. Iterate on the multiplayer prototype based on playtesting feedback.
3. Implement advanced multiplayer features. DOK4 a. Integrate advanced features such as matchmaking, leaderboards, and voice chat. b. Ensure security and fair play in multiplayer environments. c. Optimize the multiplayer experience for performance and scalability.

Unit 16: Mentorship/Apprenticeship Review/Evaluation

Competencies and Suggested Objectives
1. Engage in mentorship. DOK3 a. Participate in industry mentor feedback sessions, demonstrating receptiveness to constructive criticism. b. Utilize mentor feedback to improve projects and refine skill development. c. Develop professional communication and networking skills through mentor interactions.
2. Engage in self-assessment and goal setting practices. DOK3 a. Critically reflect on individual progress and accomplishments throughout the course. b. Develop a post-course action plan for continued skill development and career exploration within interactive media. c. Set specific, measurable, achievable, relevant, and time-bound (SMART) goals for future growth.
3. Evaluate the impact of mentorship on professional growth. DOK4 a. Assess the effectiveness of mentorship sessions in enhancing technical and soft skills. b. Reflect on the overall mentorship experience and its influence on career aspirations. c. Identify areas for improvement in future mentorship or apprenticeship opportunities.

Unit 17: Portfolio Showcase, Publishing, and Capstone Preparation

Competencies and Suggested Objectives
1. Prepare, publish, and present a polished interactive media portfolio. DOK 3 a. Refine the portfolio to highlight the breadth and depth of skills developed across all units. b. Select a suitable online platform (e.g., Adobe Portfolio, Behance, Google Sites, custom website) and publish the portfolio, ensuring a professional presentation and discoverability. c. Create compelling presentation materials (e.g., portfolio highlights, demo reel) to showcase projects and capabilities.
2. Launch the capstone project. DOK3 a. Form collaborative teams or solidify individual project directions for the capstone. b. Utilize portfolio strengths to define roles and responsibilities for the capstone, ensuring effective team dynamics. c. Develop a detailed capstone project plan, including timeline, resources, and milestones.
3. Evaluate the effectiveness of the portfolio and capstone planning. DOK4 a. Assess the quality and impact of the portfolio in demonstrating skills and achievements. b. Reflect on the planning process for the capstone project and identify potential improvements. c. Present the capstone project plan to peers and instructors for feedback and approval.

Unit 18: Team Formation, Ideation and Proposal

Competencies and Suggested Objectives
1. Develop team collaboration skills through the formation and ideation process. DOK3 a. Form effective teams by identifying individual strengths and aligning them with project roles. b. Facilitate brainstorming sessions to generate project ideas collaboratively. c. Utilize project management tools (e.g., Trello, Asana) to organize and assign tasks.
2. Create detailed project proposals outlining the scope, goals, and methodologies. DOK3 a. Define the project scope, including objectives, deliverables, and constraints. b. Establish clear project goals and success criteria. c. Develop a project timeline with milestones and deadlines.
3. Present proposals and receive feedback for refinement and finalization. DOK3 a. Prepare a professional project proposal presentation. b. Present the proposal to peers, mentors, or stakeholders for feedback. c. Refine the proposal based on constructive criticism and finalize it for approval.

Unit 19: Capstone Development (Phase 1)

Competencies and Suggested Objectives
1. Implement initial project development for the capstone. DOK3 a. Define the initial development tasks and responsibilities for team members. b. Develop a preliminary project plan outlining key milestones and deadlines. c. Begin the design and development of project components, including concept art, wireframes, and prototypes.
2. Apply specialized skills and tools to contribute to the project's success. DOK3 a. Utilize design software and development tools to create project assets. b. Collaborate with team members to integrate individual contributions. c. Conduct regular project meetings to monitor progress and address challenges.
3. Document the development process and maintain organized records. DOK2 a. Keep detailed records of development tasks and milestones. b. Document design decisions and changes throughout the project. c. Prepare regular progress reports to share with mentors and stakeholders.

Unit 20: Capstone Development (Phase 2)

Competencies and Suggested Objectives
1. Advance the development and refinement of the capstone project. DOK3 a. Implement feedback from initial reviews to enhance project components. b. Develop advanced features and functionalities based on the project plan. c. Conduct thorough testing and debugging of project components.
2. Apply project management techniques to maintain project momentum. DOK3 a. Utilize project management tools to track progress and update timelines. b. Ensure effective communication and collaboration within the team. c. Identify and mitigate potential risks and challenges in project development.
3. Document and present intermediate progress to stakeholders. DOK2 a. Prepare detailed progress reports and presentations. b. Conduct interim presentations to gather feedback from mentors and peers. c. Revise project goals and plans based on stakeholder feedback.

Unit 21: Capstone Development (Phase 3)

Competencies and Suggested Objectives
1. Prepare, publish, and present the capstone project. DOK3 a. Develop compelling presentation materials (e.g., demos, documentation, videos) to showcase the project. b. Present the capstone project to an audience, highlighting its unique aspects, the development process, and individual contributions.
2. Reflect on the collaborative experience. DOK3 a. Evaluate both the project outcome and the team's collaborative process. b. Articulate lessons learned and areas for improvement in future team-based projects.

Unit 22: Capstone Showcase and Presentation

Competencies and Suggested Objectives
1. Present the capstone project. DOK3 a. Develop comprehensive presentation materials (e.g., demos, documentation, videos) to showcase the project. b. Deliver a professional presentation of the capstone project to an audience, highlighting its unique aspects, the development process, and individual contributions.
2. Reflect on the capstone experience. DOK3 a. Evaluate both the project outcome and the team's collaborative process. b. Articulate lessons learned and areas for improvement in future projects.

Student Competency Profile

Student's Name: _____

This record is intended to serve as a method of noting student achievement of the competencies in each unit. It can be duplicated for each student, and it can serve as a cumulative record of competencies achieved in the course.

In the blank before each competency, write in the date on which the student mastered the competency.

Unit 1: Introduction, Safety, and Orientation		
	1.	Demonstrate proficiency with the interfaces and essential tools in core software.
	2.	Demonstrate safe, organized, and responsible digital practices.
	3.	Understand and apply safety protocols relevant to interactive media technology.
Unit 2: Career Exploration and Industry Awareness		
	1.	Discover careers in interactive media design.
	2.	Explore the interactive media industry.
	3.	Craft a personal exploration roadmap.
Unit 3: Ethics and Responsibility in Interactive Media Design		
	1.	Analyze ethical considerations in interactive media design.
	2.	Practice ethical and inclusive design.
	3.	Understand ethical use of AI in interactive media.
	4.	Examine case studies of ethical dilemmas in interactive media.
	5.	Develop and maintain a digital portfolio to showcase student work.
Unit 4: The Art of Pre-Production		
	1.	Implement the pre-production design process.
	2.	Prototype interactive experiences.
	3.	Develop storytelling and narrative techniques.
	4.	Understand and apply user-centered design principles.
	5.	Develop and maintain a digital portfolio to showcase student work.
Unit 5: UI/UX and Accessibility		
	1.	Analyze principles of UI/UX and accessibility.
	2.	Design user-centered and inclusive interfaces.
	3.	Implement UI/UX design in interactive media projects.
	4.	Understand the role of UI/UX in user experience.
	5.	Develop and maintain a digital portfolio to showcase student work.

Unit 6: Portfolio Foundations and Capstone Planning		
	1.	Curate an interactive media portfolio.
	2.	Conceptualize and plan a team capstone project
Unit 7: Game Mechanics (Architecture and Mechanics in Interactive Media)		
	1.	Analyze game mechanics in diverse interactive media.
	2.	Design and implement game mechanics.
	3.	Evaluate the impact of game mechanics on user experience.
	4.	Determine the ethical considerations of in-game mechanics design.
Unit 8: Create and Import Original Assets (Using a 3D Game Engine)		
	1.	Master essential 3D modeling techniques.
	2.	Integrate assets into an interactive experience.
	3.	Design and develop interactive environments.
Unit 9: Environments and Level Design		
	1.	Understand principles of interactive environment design.
	2.	Build interactive environments.
Unit 10: UI/UX Design for Interactive Experiences		
	1.	Analyze UI/UX in interactive experiences.
	2.	Design and implement user interfaces.
	3.	Prototype interactive experiences.
	4.	Develop and maintain a digital portfolio.
Unit 11: Portfolio Refinement and Capstone Proposal		
	1.	Enhance and present interactive media portfolio.
	2.	Finalize and propose capstone project.
Unit 12: Localization and Marketing for Interactive Experiences		
	1.	Understand localization for interactive experiences.
	2.	Develop a marketing strategy for interactive experiences.
	3.	Analyze the impact of cultural differences on interactive media.
Unit 13: Quality Assurance Debugging and Technical Considerations		
	1.	Implement quality assurance practices.
	2.	Optimize for performance and cross-platform compatibility.
	3.	Advanced debugging techniques
Unit 14: User Testing and Evaluation for Interactive Experiences		
	1.	Conduct user testing for interactive experiences.
	2.	Analyze and apply user feedback.

	3.	Evaluate the effectiveness of user testing.
Unit 15: Basics of Multiplayer (Multiplayer Co-op)		
	1.	Evaluate fundamentals of multiplayer design.
	2.	Prototype a multiplayer experience.
	3.	Implement advanced multiplayer features.
Unit 16: Mentorship/Apprenticeship Review/Evaluation		
	1.	Engage in mentorship.
	2.	Engage in self-assessment and goal setting practices.
	3.	Evaluate the impact of mentorship on professional growth.
Unit 17: Portfolio Showcase, Publishing, and Capstone Preparation		
	1.	Prepare, publish, and present a polished interactive media portfolio.
	2.	Launch the capstone project.
	3.	Evaluate the effectiveness of the portfolio and capstone planning.
Unit 18: Team Formation, Ideation and Proposal		
	1.	Develop team collaboration skills through the formation and ideation process.
	2.	Create detailed project proposals outlining the scope, goals, and methodologies.
	3.	Present proposals and receive feedback for refinement and finalization.
Unit 19: Capstone Development (Phase 1)		
	1.	Implement initial project development for the capstone.
	2.	Apply specialized skills and tools to contribute to the project's success.
	3.	Document the development process and maintain organized records.
Unit 20: Capstone Development (Phase 2)		
	1.	Advance the development and refinement of the capstone project.
	2.	Apply project management techniques to maintain project momentum.
	3.	Document and present intermediate progress to stakeholders.
Unit 21: Capstone Development (Phase 3)		
	1.	Prepare, publish and present the capstone project.
	2.	Reflect on the collaborative experience.
Unit 22: Capstone Showcase and Presentation		
	1.	Present the capstone project.
	2.	Reflect on the capstone experience.

Appendix A: 21st Century Skills[1]

	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Standard																							
CS1																							
CS2		X					X				X												
CS3		X					X				X												
CS4																							
CS5																							
CS6		X			X	X	X	X	X	X	X	X	X		X	X							
CS7			X			X																	
CS8						X																	
CS9																							
CS10																							
CS11																							
CS12			X	X			X																
CS13		X						X	X	X	X	X			X	X							
CS14			X	X			X																
CS15			X	X																			
CS16																							

CSS1-21st Century Themes

CS1 Global Awareness

1. Using 21st century skills to understand and address global issues
2. Learning from and working collaboratively with individuals representing diverse cultures, religions, and lifestyles in a spirit of mutual respect and open dialogue in personal, work, and community contexts
3. Understanding other nations and cultures, including the use of non-English languages

CS2 Financial, Economic, Business, and Entrepreneurial Literacy

1. Knowing how to make appropriate personal economic choices
2. Understanding the role of the economy in society
3. Using entrepreneurial skills to enhance workplace productivity and career options

CS3 Civic Literacy

1. Participating effectively in civic life through knowing how to stay informed and understanding governmental processes
2. Exercising the rights and obligations of citizenship at local, state, national, and global levels
3. Understanding the local and global implications of civic decisions

CS4 Health Literacy

1. Obtaining, interpreting, and understanding basic health information and services and using such information and services in ways that enhance health
2. Understanding preventive physical and mental health measures, including proper diet, nutrition, exercise, risk avoidance, and stress reduction
3. Using available information to make appropriate health-related decisions
4. Establishing and monitoring personal and family health goals
5. Understanding national and international public health and safety issues

CS5 Environmental Literacy

[1] *21st century skills.* (n.d.). Washington, DC: Partnership for 21st Century Skills.

1. Demonstrate knowledge and understanding of the environment and the circumstances and conditions affecting it, particularly as relates to air, climate, land, food, energy, water, and ecosystems.
2. Demonstrate knowledge and understanding of society's impact on the natural world (e.g., population growth, population development, resource consumption rate, etc.).
3. Investigate and analyze environmental issues, and make accurate conclusions about effective solutions.
4. Take individual and collective action toward addressing environmental challenges (e.g., participating in global actions, designing solutions that inspire action on environmental issues).

CSS2-Learning and Innovation Skills

CS6 Creativity and Innovation
1. Think Creatively
2. Work Creatively with Others
3. Implement Innovations

CS7 Critical Thinking and Problem Solving
1. Reason Effectively
2. Use Systems Thinking
3. Make Judgments and Decisions
4. Solve Problems

CS8 Communication and Collaboration
1. Communicate Clearly
2. Collaborate with Others

CSS3-Information, Media and Technology Skills

CS9 Information Literacy
1. Access and Evaluate Information
2. Use and Manage Information

CS10 Media Literacy
1. Analyze Media
2. Create Media Products

CS11 ICT Literacy
1. Apply Technology Effectively

CSS4-Life and Career Skills

CS12 Flexibility and Adaptability
1. Adapt to change
2. Be Flexible

CS13 Initiative and Self-Direction
1. Manage Goals and Time
2. Work Independently
3. Be Self-directed Learners

CS14 Social and Cross-Cultural Skills
1. Interact Effectively with others

2. Work Effectively in Diverse Teams

CS15 Productivity and Accountability

1. Manage Projects
2. Produce Results

CS16 Leadership and Responsibility

1. Guide and Lead Others
2. Be Responsible to Others

Appendix B: International Society for Technology in Education Standards (ISTE)

	Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Standards																							
T1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T2		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T4		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T5		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T6		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T7		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

International Society for Technology in Education (ISTE)

T1 Empowered Learner

Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.

a. Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.
b. Build networks and customize their learning environments in ways that support the learning process.
c. Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.
d. Understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

T2 Digital Citizen

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

a. Cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.
b. Engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
c. Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.
d. Manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

T3 Knowledge Constructor

Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

a. Plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.

b. Evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.
c. Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.
d. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

T4 Innovative Designer

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

a. Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
b. Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
c. Develop, test and refine prototypes as part of a cyclical design process.
d. Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

T5 Computational Thinker

Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

a. Formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
b. Collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.
c. Break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.
d. Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

T6 Creative Communicator

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

a. Choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
b. Create original works or responsibly repurpose or remix digital resources into new creations.
c. Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.
d. Publish or present content that customizes the message and medium for their intended audiences.

T7 Global Collaborator

Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

a. Use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.
b. Use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.
c. Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
d. Explore local and global issues and use collaborative technologies to work with others to investigate solutions.

Appendix C: College and Career Ready Standards – English Language Arts

	Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Standards																							
CCR.RL.1		X			X										X								
CCR.RL.2		X								X													
CCR.RL.3				X									X										
CCR.RL.4					X			X										X					
CCR.RL.5		X								X													
CCR.RL.6													X										
CCR.RL.7		X		X																			x
CCR.RL.8						X										X							x
CCR.RL.											X												
CCR.RL.10					X														X				
CCR.RI.1			X																X				
CCR.RI.1							X																
CCR.RI.1												X											
CCR.W.1									X														
CCR.W.1															X								
CCR.W.1																	X						
CCR.W.1																				X			
CCR.W.1																					X		
CCR.W.1																						X	
CCR.W.1																							

2016 Mississippi College- and Career- Readiness Standards for English Language Arts: English I

RL Reading Literature

Key Ideas and Details

1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
2. Determine the theme(s) or central idea(s) of a text and analyze in detail the development over the course of the text, including how details of a text interact and build on one another to shape and refine the theme(s) or central idea(s); provide an accurate summary of the text based upon this analysis.
3. Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a literary text, interact with other characters, and advance the plot or develop the theme.

Craft and Structure

4. Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language evokes a sense of time and place; how it sets a formal or informal tone).
5. Analyze how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise.
6. Analyze a particular point of view or cultural experience reflected in a work of literature from outside the United States, drawing on a wide reading of world literature.

Integration of Knowledge and Ideas

7. Analyze the representation of a subject or a key scene in two different artistic mediums, including what is emphasized or absent in each treatment (e.g., Auden's "Musée des Beaux Arts" and Breughel's Landscape with the Fall of Icarus).
8. Not applicable to literature.
9. Analyze how an author draws on and transforms source material in a specific work (e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare).

Range of Reading and Level of Text Complexity

10. By the end of grade 9, read and comprehend literature, including stories, dramas, and poems, in the grades 9-10 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI Reading Informational Text

Key Ideas and Details

1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
2. Determine central idea(s) of a text and analyze in detail the development over the course of the text, including how details of a text interact and build on one another to shape and refine the central idea(s); provide an accurate summary of the text based upon this analysis.
3. Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.

W Writing

Text Types and Purposes

1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
    a. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence.
    b. Develop claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level and concerns.
    c. Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
    d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
    e. Provide a concluding statement or section that follows from and supports the argument presented.
2. Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
    a. Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
c. Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.
d. Use precise language and domain-specific vocabulary to manage the complexity of the topic.
e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).

3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.
   a. Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events.
   b. Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters.
   c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole.
   d. Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.
   e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.

Production and Distribution of Writing

4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grades 9–10.)
6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Research to Build and Present Knowledge

7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

Appendix D: College and Career Ready Standards – Mathematics

	Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Standards																							
CCR.M1		X	X	X	X	X			X														
CCR.M2		X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M3							X	X	X														
CCR.M4				X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M5		X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M6				X			X																
CCR.M7		X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M8				X	X	X	X	X	X	X													
CCR.M9		X	X		X	X	X	X	X														
CCR.M10			X	X	X	X	X		X														
CCR.M11		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M12					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M13		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M14		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M15		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M16		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M17			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M18		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M19		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCR.M20		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

College and Career Readiness Mathematics Standards

M1 Make sense of problems and persevere in solving them.
- Understand the problem-solving process and persevere to find solutions.

M2 Reason abstractly and quantitatively.
- Interpret mathematical problems abstractly and quantitatively, creating coherent representations.

M3 Construct viable arguments and critique the reasoning of others.
- Formulate and present mathematical arguments, analyze and critique the reasoning of others.

M4 Model with mathematics.
- Apply mathematics to solve real-world problems and interpret the results.

M5 Use appropriate tools strategically.
- Select and use mathematical tools and technology effectively.

M6 Attend to precision.
- Communicate mathematical reasoning with precision and accuracy.

M7 Look for and make use of structure.
- Identify and utilize mathematical structures to solve problems.

M8 Look for and express regularity in repeated reasoning.
- Recognize patterns and repeated reasoning in problem-solving processes.

M9 Understand the concept of a function and use function notation.
- Comprehend and use functions to model relationships between quantities.

M10 Interpret functions that arise in applications in terms of the context.
- Analyze and interpret functions in real-world contexts.

M11 Analyze functions using different representations.

- Examine functions using graphical, numerical, analytical, and verbal representations.

M12 Build a function that models a relationship between two quantities.

- Create functions to represent relationships between variables.

M13 Build new functions from existing functions.

- Construct new functions by modifying existing ones.

M14 Construct and compare linear, quadratic, and exponential models and solve problems.

- Develop and analyze linear, quadratic, and exponential models for problem-solving.

M15 Interpret expressions for functions in terms of the situation they model.

- Understand and explain expressions representing real-world situations.

M16 Perform arithmetic operations on polynomials.

- Conduct operations with polynomials, understanding their properties and applications.

M17 Understand the relationship between zeros and factors of polynomials.

- Explore the connections between polynomial factors and their zeros.

M18 Use polynomial identities to solve problems.

- Apply polynomial identities in problem-solving scenarios.

M19 Rewrite rational expressions.

- Manipulate and simplify rational expressions.

M20 Create equations that describe numbers or relationships.

- Formulate equations to represent numerical relationships and solve them.