Information Technology Career Cluster
Foundations of Interactive Design (MS-CS-FID)
Course Number: 11.01300

Course Description: This course will provide an exploratory foundation in design and development of websites and games. It is designed to be taught in a 9-week rotation in 45-minute daily classes. Standards should be taught in the order presented with the exception of Standard 1 being an embedded standard with ongoing learning regarding employability and career opportunities. Through integrated instructional activities, students will have opportunities to apply employability skills and to research possible career options in the information technology area. They will also complete many hands-on activities to build a strong foundation in designing interactive programs. Capstone projects should be incorporated at the completion of all standards as time allows. Students who successfully complete this course will be prepared for the following pathways upon entering high school: Web & Digital Design, Web Development, and Game Design. This course may be taught in 6th, 7th, or 8th grade.

Requirements for teaching this and other computer science courses: This course should be taught in a lab setting with a 1:1 ratio of student to personal computer. Additional devices, such as tablets, robots, Raspberry pi computers, and drones will enhance the program and can be shared in groups of 2-3 students. All devices should be current technology with strong connectivity capabilities. To further enhance student learning, the lab should contain at least one personal computer that students can disassemble and reassemble to learn the working parts within the computer.

Course Standard 1

MS-CS-FIF-1
Demonstrate employability skills required by business and industry.
The following elements should be integrated throughout the content of this course.

1.1   Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.

Person-to-Person Etiquette	Telephone and Email Etiquette	Communicating at Work	Listening
Interacting with Your Boss	Telephone Conversations	Improving Communication Skills	Reasons, Benefits, and Barriers
Interacting with Subordinates	Barriers to Phone conversations	Effective Oral Communication	Listening Strategies
Interacting with Co-workers	Making and Returning Calls	Effective Written Communication	Ways We Filter What We Hear
		Effective Nonverbal Skills	Developing a Listening Attitude
		Effective Word Use	Show You Are Listening
		Giving and Receiving Feedback	Asking Questions
			Obtaining Feedback
			Getting Others to Listen

Nonverbal Communication	Written Communication	Speaking	Applications and Effective Résumés
Communicating Nonverbally	Writing Documents	Using Language Carefully	Completing a Job Application

Reading Body Language and mixed Messages		One-on-One Conversations	Writing a Cover Letter
Matching Verbal and Nonverbal communication		Small Group Communication	Things to Include in a Résumé
Improving Nonverbal Indicators		Large Group Communication	Terms to Use in a Résumé
Nonverbal Feedback		Making Speeches	Organizing Your Résumé
Showing Confidence Nonverbally		Answering Questions	Writing an Electronic Résumé
Showing Assertiveness		Visual and Media Aids	
		Errors in Presentation	

1.2   Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.

Teamwork and Problem Solving	Meeting Etiquette
Thinking Creatively	Preparation and Participation in Meetings
Taking Risks	Conducting Two-Person or Large Group Meetings
Building Team Communication	Inviting and Introducing Speakers
	Preparing Visual Aids

1.3   Exhibit critical thinking and problem-solving skills to locate, analyze and apply information in career planning and employment situations.
   a.   Investigate educational requirements, job responsibilities, employment trends, and opportunities within the national career clusters using credible sources.

Problem Solving	Customer Service	The Application Process	Interviewing Skills	Finding the Right Job
Transferable Job Skills	Gaining Trust and Interacting with Customers	Providing Information, Accuracy and Double Checking	Preparing for an Interview	Locating Jobs and Networking
Becoming a Problem Solver	Learning and Giving Customers What They Want	Online Application Process	Questions to Ask in an Interview	Job Shopping Online
Identifying a Problem	Keeping Customers Coming Back	Following Up After Submitting an Application	Things to Include in a Career Portfolio	Job Search Websites
Becoming a Critical Thinker	Seeing the Customer's Point	Effective Résumés:	Traits Employers are Seeking	Staying Motivated to Search
	Selling Yourself and the Company	Matching Your Talents to a Job	Considerations Before Taking a Job	
		When a Résumé Should be Used		

1.4   Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.

Workplace Ethics	Personal Characteristics	Employer Expectations	Business Etiquette	Communicating at Work
Demonstrating Good Work Ethic	Demonstrating a Good Attitude	Behaviors Employers Expect	Language and Behavior	Handling Anger
Behaving Appropriately	Gaining and Showing Respect	Objectionable Behaviors	Keeping Information Confidential	Dealing with Difficult Coworkers
Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss

Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers
Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict
Showing Responsibility	Gaining Coworkers' Trust		Appropriate Work Texting	
Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			

1.5   Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply teamwork skills.

Expected Work Traits	Teamwork	Time Management
Demonstrating Responsibility	Teamwork Skills	Managing Time
Dealing with Information Overload	Reasons Companies Use Teams	Putting First Things First
Transferable Job Skills	Decisions Teams Make	Juggling Many Priorities
Managing Change	Team Responsibilities	Overcoming Procrastination
Adopting a New Technology	Problems That Affect Teams	Organizing Workspace and Tasks
Use Technology Ethically & Efficiently	Expressing Yourself on a Team	Staying Organized
Interact Appropriately in a Digital World	Giving and Receiving Constructive Criticism	Finding More Time
		Managing Projects
		Prioritizing Personal and Work Life

1.6   Present a professional image through appearance, behavior and language.

On-the-Job Etiquette	Person-to-Person Etiquette	Communication Etiquette	Presenting Yourself
Using Professional Manners	Meeting Business Acquaintances	Creating a Good Impression	Looking Professional
Introducing People	Meeting People for the First Time	Keeping Phone Calls Professional	Dressing for Success
Appropriate Dress	Showing Politeness	Proper Use of Work Email	Showing a Professional Attitude
Behavior at Conventions		Proper Use of Cell Phone	Using Good Posture
Working in a Cubicle		Proper Use in Texting	Presenting Yourself to Associates
			Accepting Criticism
			Demonstrating Leadership

Course Standard 2

MS-CS-FID-2

Develop a plan to create, design, and build a website with digital content to a specific target market.

2.1   Identify the objectives (e.g., increase sales, promote new products, increase company awareness, target new customers) for the website's target market.

2.2   Specify website requirements, including timeline and resources, and organize them into a requirements document.

2.3   Find and evaluate similar websites (in terms of overall function and layout) using an evaluation instrument for side-by-side comparison. Consider major design elements (ease of use, responsiveness, adaptability to mobile, tablet and desktop, etc.).

2.4   Evaluate a variety of web design tools and development platforms using an evaluation instrument and choose the appropriate platform.

2.5   Create a plan on paper or in a word processing document that outlines the content of the website.

Course Standard 3

MS-CS-FID-3

Design digital products that reveal a professional layout and look by applying design principles to produce professional quality digital products.

3.1   Identify graphical elements and the appropriate use of elements on a web site.

3.2   Explore and apply color principles to digital products.

3.3   Establish a brand through consistent use of graphics, color, layout and text.

3.4   Analyze the look and layout of a website based on the first impression of content and page elements. Get feedback from independent users and incorporate where appropriate.

Course Standard 4

MS-CS-FID-4

Create a single functional web page using a web development platform based on a design mockup and user requirements.

4.1   Create and edit images and graphics for website publication.

4.2   Plan, produce, and edit digital audio for website publication.

4.3   Plan, produce, edit, and post a multimedia-rich video project to a website.

4.4   Plan, produce, and edit animations for website publication.

Course Standard 5

MS-CS-FID-5

Develop and use a test plan to debug each new website version to ensure it runs as intended and meets the end-user requirements for a responsive site.

5.1   Create a test and debug plan. Resolve issues and fix any errors that surface during the test and debug process.

5.2   Create an end user testing plan, get user feedback, and incorporate feedback into the final website.

5.3   Prepare website for publishing and promotion.

Course Standard 6

MS-CS-FID-6

Develop a plan to create, design, and build a game with digital content for a specific target market.

6.1   Explore various game types, including role-playing games (RPG), real-time strategy (RTS), simulations, puzzles, educational, massively multiplayer online (MMO), and others.

6.2   Create a Game Design Document (GDD), which includes, characters, story, theme, and gameplay mechanics.

Course Standard 7

MS-CS-FID-7
Develop a visual model of a game using the Game Design Document (GDD).
7.1   Create storyboards from the GDD that demonstrate game progression and consistent use of a theme.
7.2   Use the GDD to design the wireframes and comprehensive layout for the user experience (UX).

Course Standard 8

MS-CS-FID-8
Create a functional game, using a game development platform, based on the storyboards, wireframes, and comprehensive layout.
8.1   Create game elements, backgrounds, and characters.
8.2   Use scripting languages to create desired game mechanics, and to control the environment, user interface (UI), and character behaviors.
8.3   Plan, produce, and edit graphics and animations for game publication.
8.4   Plan, produce, and edit digital audio for game publication.

Course Standard 9

MS-CS-FID-9
Develop a test plan to debug and use each time a version of the game is released to ensure it runs as intended and meets the end-user requirements.
9.1   Create a test and debug plan. Resolve any issues and fix any errors that surface during the test and debug process.
9.2   Create an end user testing plan, get user feedback, and incorporate feedback into the final game.
9.3   Prepare final game for publishing prior to publishing to the target audience.

Course Standard 10

MS-BMF-FBM-10
Examine how related student organizations are integral parts of career and technology education courses through leadership development, school and community service projects, and competitive events.
10.1 Research the history of Future Business Leaders of America (FBLA).
10.2 Discuss the mission, purpose, motto, colors, official dress, and other distinguishing characteristics of FBLA.
10.3 Explain how participation in FBLA can promote lifelong responsibility for community service, professional growth, and development.
10.4 Create a personal leadership plan to participate in programs, conferences, community service, and competitive events on the local, state, and national level that align with the competencies, skills, and knowledge of this course.