

**Finance Career Clusters
Coding for FinTech
Course Number: 11.46300**

Course Description: This course covers the design and development of dynamic, data-driven financial applications using client- and server-side architecture. It focuses on various application development techniques for user and mobile friendly design. It also introduces how to develop financial applications conforming to the industry standards. Various forms of technologies and internet research will be highlighted to expose students to the resources available on financial technology (FinTech). In this course students will develop a functional model financial application across the full development stack from model to view, using the Model-View-Controller (MVC) programming paradigm.

For purposes of dual enrollment and articulation, this course is directly aligned to University System of Georgia (USG) course number FTA 2410 Coding for FinTech. Students may take this course at their high school and earn articulated college credit for FTA 2410 if the teacher of this course meets the requirements set forth by USG. Likewise, students may take the course through USG and earn dual enrollment credit towards the FinTech pathway.

Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of the employability skills standard for this course. Coding for FinTech is the final course in the FinTech pathway in the Finance Career Cluster. Students enrolled in this course should have successfully completed Introduction to Financial Technology and Financial Technologies and Services.

Course Standard 1

FIN-CFT-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.

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 team work 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

FIN-CFT-2

Design, develop, and maintain a dynamic web/mobile financial application.

- 2.1 Develop scripting code using Javascript, Python, or other scripting languages.
- 2.2 Analyze existing industry Application Programming Interfaces (API) used in financial services code.
- 2.3 Write a sample API that models financial services code used in industry.
- 2.4 Identify security protocols used in industry to secure financial transactions and records, including encryption, User Authentication, two-part authentication, and biometrics.
- 2.5 Identify protections against intrusion such as cross-site scripting, Structured Query Language (SQL) injection, denial of service, and other forms of attack.
- 2.6 Identify anti-money laundering, counterterrorism, and social engineering attacks involving the movement of money.

Course Standard 3

FIN-CFT-3

Develop web/mobile financial applications that can dynamically access databases.

- 3.1 Create a database that models a financial system.
- 3.2 Demonstrate knowledge of Structured Query Language (SQL) access to a database table.
- 3.3 Create and edit a database-stored procedure.
- 3.4 Connect a computer program to a database using a connection string that is not hard coded into source code.

Course Standard 4

FIN-CFT-4

Apply controller architecture to connect client-side views to server-side data models.

- 4.1 Program a controller that safely connects an application's data model to appropriate user views using an industry standard programming language, (e.g., C#, .NET Core, Ruby on Rails).
- 4.2 Create and summarize the user validation login system for the application.

Course Standard 5

FIN-CFT-5

Program a well-designed User Interface (UI) for use within FinTech.

- 5.1 Investigate real-world banking applications and develop a model application's UI.
- 5.2 Demonstrate and explain use of UI platforms such as Bootstrap, Rails, or other interface models to program the interface designed in element 5.1.

Course Standard 6

FIN-CFT-6

Evaluate and validate web/mobile financial applications for conformance to financial services industry standards.

- 6.1 Review industry financial security standards including Sarbanes Oxley Act (SOX), Payment Card Industry Data Security Standard (PCI DSS), Gramm-Leach-Bliley Act (GLBA), Federal Financial Institutions Examination Council (FFIEC), and others.
- 6.2 Identify and explain the use and implementation of software security protocols related to digital identity such as Multi-Factor Authentication (MFA), Google Authenticator, Microsoft Authenticator, Open Authorization (OAuth) APIs that integrate with each other, use of tokenization/Anonymization of Pay Card Industry (PCI) and Personally Identifying Information (PII) data, and PCI/DSS.
- 6.3 Detail the use of consumer (user) disclosures and how it relates to privacy and information security.
- 6.4 Discuss accessibility issues surrounding e-commerce and banking.

Course Standard 7

FIN-CFT-7

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.

- 7.1 Research the history of Future Business Leaders of America (FBLA).
- 7.2 Discuss the mission, purpose, motto, colors, official dress, and other distinguishing characteristics of FBLA.
- 7.3 Explain how participation in FBLA can promote lifelong responsibility for community service, professional growth, and development.
- 7.4 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.