

CompuScholar, Inc.
Alignment to Alabama Standards
Computer Science for Business

Alabama Course Details:

Course Title:	Computer Science for Business
Career Cluster(s):	Business Management and Administration
Course Credit:	1
Grade Levels:	9 - 12

CompuScholar Course Details:

Course Title:	Java Programming
Course ISBN:	978-1-946113-99-3
Course Year:	2021

Note 1: Citation(s) listed may represent a subset of the instances where objectives are met throughout the course.

Note 2: Citation(s) for a "Lesson" refer to the "Lesson Text" elements and associated "Activities" within the course, unless otherwise noted. The "Instructional Video" components are supplements designed to introduce or re-enforce the main lesson concepts, and the Lesson Text contains full details.

Note 3: Citation(s) to "Supplemental" or "Suppl." chapters refer to Supplemental Chapters found at the end of the main sequence of numbered chapters within the course.

Note 4: This course comes with two syllabi for pacing and guidance. Computer Science for Business teachers will follow the "**Introductory Computer Science**" syllabus, which provides significant flexibility to select relevant chapters and lessons to meet specific state requirements.

Alabama Course Description

Computer Science for Business provides an understanding of basic computer programming concepts and logic for the business workforce. The course introduces programming through a variety of projects and object-based programming activities and applications. Business-related skills such as teamwork, interpersonal skills, and professionalism will be explored and demonstrated through project-based learning.

Alabama Course Standards

Foundational Standards	CITATION(S)
1. Incorporate safety procedures in handling, operating, and maintaining tools and machinery; handling materials; utilizing personal protective equipment; maintaining a safe work area; and handling hazardous materials	N/A (See Digital Savvy, Chapter 24, Lesson 3)
2. Demonstrate effective workplace and employability skills, including communication, awareness of diversity, positive work ethic, problem-solving, time management, and teamwork.	Chapter 27, Lesson 1 Suppl. Chapter 1, Lesson 1

3. Explore the range of careers available in the field and investigate their educational requirements, and demonstrate job-seeking skills including resume-writing and interviewing.	Suppl. Chapter 2, Lesson 2
4. Advocate and practice safe, legal, responsible, and ethical use of information and technology tools specific to the industry pathway.	Chapter 1, Lessons 4, 5 Suppl. Chapter 3, Lessons 1, 4
5. Participate in a Career and Technical Student Organization (CTSO) to increase knowledge and skills and to enhance leadership and teamwork.	Suppl. Chapter 2, Lesson 3
6. Discuss and demonstrate ways to value diversity.	Chapter 27, Lesson 1

Software Application	CITATION(S)
1. Describe large-scale software and device design processes, data usage, and implementation plans.	Chapter 27 Suppl. Chapter 2, Lesson 1

Abstraction	CITATION(S)
2. Decompose an everyday problem into parts, then filter the important information to create a new sequence to solve the problem.	Chapter 13, Lessons 1, 2 Chapter 14, Lesson 1 Chapter 26, Lessons 1, 2 Suppl. Chapter 3, Lesson 3
3. Explain how code or other systems work in the background in ways that may not be apparent to the user. Example: Millions of lines of code control the subsystems within an automobile.	Suppl. Chapter 3, Lesson 3

Algorithms	CITATION(S)
4. Adapt existing algorithms to solve computational problems.	Chapter 13, Lessons 3, 4 Chapter 18, Lessons 4, 5 Chapter 21, Lesson 4
5. Plan algorithms using pseudocode, then compare and convert the code to a programming language.	Chapter 13, Lesson 4
6. Explain the differences among sequential statements, conditional statements, and and/or iterations.	Chapter 8 Chapter 12
7. Determine the benefits and disadvantages of choosing one control structure over another. Examples: sequence control structure, decision control structure, loop control structure	Chapter 8, Lesson 4 Chapter 12, Lesson 2
8. Determine when a solution to a problem requires decisions to be made among alternatives. Examples: an iterative loop, selection constructs, recursion	Chapter 8, Lesson 4 Chapter 12, Lesson 2 Chapter 24, Lesson 1

Data	CITATION(S)
9. Model the methods and procedures by which computing devices translate digital information into a user interface that can be read, viewed, and interpreted.	Chapters 30, 31, 32 Suppl. Chapter 1, Lessons 1, 2
10. Collect data using computational tools and transform the data into visualizations that translate the story the data is conveying. Examples: charts, graphs, tables, maps	Chapter 27, Activities 1, 2 Suppl. Chapter 1, Lesson 4

Design	CITATION(S)
11. Use the design process to create or improve a product which has broad applications in business.	Chapter 27
12. Use the design thinking or engineering process, including mistakes and feedback, to diagnose and correct a problem.	Chapter 11 Chapter 27, Lesson/Activity 3

Digital Identity	CITATION(S)
13. Explain how digital identity is created and maintained, including the persistence and public availability of artifacts.	Suppl. Chapter 3, Lesson 1
a. Compare and contrast strategies to manage digital identity and reputation.	Suppl. Chapter 3, Lesson 1

Human and Computer Partnerships	CITATION(S)
14. Collect feedback from a wide variety of users and systematically design and develop programs for different target audiences. Examples: games, utilities, mobile applications	Chapter 27 Suppl. Chapter 2, Lesson 1
15. Research problems that can be solved only by humans and machines working in tandem.	Suppl. Chapter 3, Lesson/Activity 3
a. Decompose the problem-solving process to determine which part of the problem is solved by humans and which is dependent on the machine. Examples: facial recognition, personal virtual assistance, GPS maps, social media feeds	Suppl. Chapter 3, Lesson/Activity 3

Impact of Computing	CITATION(S)
16. Research and share information on ways technology facilitates the disruption of traditional businesses, institutions, and services, including ways companies have successfully adapted to the changes. Examples: digital currencies, ridesharing, autonomous vehicles, retail, Internet of Things	Suppl. Chapter 3, Lesson 2
17. Select a career field and gather information about how computing has impacted it in both positive and negative ways. Examples: government, business, medicine, entertainment, education, transportation	Suppl. Chapter 2, Lesson 2 Suppl. Chapter 3, Lesson 2

a. Gather and present information about emerging employment opportunities in a selected career path.	Suppl. Chapter 2, Activity 2
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Legal and Ethical Behavior	CITATION(S)
18. Demonstrate responsible use of digital devices and resources as outlined in school, district, or business policies and procedures.	Chapter 1, Lesson 4
19. Locate and curate information from digital sources.	N/A (See Digital Savvy, Chapter 7)
a. Evaluate the credibility of information from digital sources.	N/A (See Digital Savvy, Chapter 7)
b. Give proper credit to sources used for written and audio-visual presentations.	N/A (See Digital Savvy, Chapter 7)
20. Discuss the impact of malicious hacking on governments, businesses, and individuals. Examples: ransomware, dissemination of privileged information	Chapter 1, Lesson 5
a. Gather and share information on instances of malicious hacking which targeted businesses and government agencies.	Chapter 1, Lesson 5
b. Write an argument for or against paying ransom to a hacker.	Chapter 1, Lesson 5

Modeling	CITATION(S)
21. Develop a model or simulation to formulate, test, and refine a hypothesis. Examples: robotics lab, machine learning design, app user interface, science lab, space exploration	Chapter 27 Chapter 33, Lesson 2 Suppl. Chapter 1, Lesson 4

Programming and Development	CITATION(S)
22. Compare and contrast a wide variety of programming languages that are commonly used in the business world, indicating situations in which each language would be effective.	Chapter 2, Lesson 1
23. Construct digital projects to be used in a business environment, using a variety of programming tools including those which encourage the creation of code.	Chapters 2+ all have hands-on coding projects using online or external IDEs
24. Develop and use a series of test cases to verify that a program performs according to its design specifications.	Chapter 27, Lesson/Activity 3
a. Collaborate with others in a code review process to identify correctness, efficiency, scalability, and readability of program code.	Chapter 11, Lesson 1 Chapter 27, Activity 2

Safety, Privacy and Security	CITATION(S)
25. Identify, isolate, and report incidents (threats) that pose personal and business safety issues while using devices and online resources.	Chapter 1, Lessons 4, 5 Suppl. Chapter 3, Lesson 1
26. Discuss the provisions and ramifications of end-user license agreements and terms of service associated with granting rights to personal data and media to other entities.	Chapter 1, Lesson 4
27. Gather, evaluate, and share information about tradeoffs between allowing information to be public and keeping business information private and secure.	Chapter 1, Lesson 5

Systems	CITATION(S)
28. Diagnose and resolve performance and connectivity issues with computers and peripherals.	N/A (See Digital Savvy, Chapter 5, Lessons 1, 3)
29. Describe problems that can impact network functionality.	Suppl. Chapter 4, Lessons 2, 4
a. Describe the relationship between network components that could cause issues with the reliability of the network.	Suppl. Chapter 4, Lessons 2, 4
30. Identify the responsibilities of operating system software. Examples: manage memory, manage data storage and I/O devices, common code that applications can use	Chapter 1, Lesson 3