Georgia Performance Standards Computing Career Pathway (Computing in the Modern World, Beginning Programming, and Intermediate Programming) Alignment to the Association for Computing Machinery (ACM) model curriculum *A Model Curriculum for K-12 Computer Science. http://csta.acm.org/Curriculum/sub/ACMK12CSModel.html*

ACM Model Curriculum	CMW	BP	IP
Level II, Topic 1: Principles of computer organization and the major components (input, output, memory, storage, processing, software, operating system, etc.)	4		
Level II, Topic 2: The basic steps in algorithmic problem-solving (problem statement and exploration, examination of sample instances, design, program coding, testing and verification)	19		
Level II, Topic 3: The basic components of computer networks (servers, file protection, routing protocols for connection/communication, spoolers and queues, shared resources, and fault-tolerance).	8		
Level II, Topic 4: Organization of Internet elements, Web page design (forms, text, graphics, client- and server-side scripts), and hypermedia (links, navigation, search engines and strategies, interpretation, and evaluation).	15		
Level II, Topic 5: The notion of hierarchy and abstraction in computing, including high-level languages, translation (compilers, interpreters, linking), machine languages, instruction sets, and logic circuits.	2		
Level II, Topic 6: The connection between elements of mathematics and computer science, including binary numbers, logic, sets, and functions.	6		
Level II, Topic 7: The notion of computers as models of intelligent behavior (as found in robot motion, speech and language understanding, and computer vision), and what distinguishes humans from machines.			
Level II, Topic 8: Examples (like programming a telephone answering system) that identify the broad interdisciplinary utility of computers and algorithmic problem solving in the modern world.	16		
Level II, Topic 9: Ethical issues that relate to computers and networks (including security, privacy, intellectual property, the benefits and drawbacks of public domain software, and the reliability of information on the Internet), and the positive and negative impact of technology on human culture.	3		
Level II, Topic 10: Identification of different careers in computing and their connection with the subjects studied in this course (e.g., information technology specialist, Web page designer, systems analyst, programmer, CIO).	1	1	
Level III, Topic 1: Fundamental ideas about the process of program design and problem solving, including style, abstraction, and initial discussions of correctness and efficiency as part of the software design process.		5 13 6	5
Level III, Topic 2: Simple data structures and their uses	23	9 10 11 12	9 10

Level III, Topic 3: Topics in discrete mathematics: logic, functions, sets, and their relation to computer science	12		1
Level III, Topic 4: Design for usability: Web page design, interactive games, documentation		6	4
Level III, Topic 5: Fundamentals of hardware design		2	1
Level III, Topic 6: Levels of language, software, and translation: characteristics of compilers, operating systems, and networks		3	2
Level III, Topic 7: The limits of computing: what is a computationally “hard” problem? (e.g., ocean modeling, air traffic control, gene mapping) and what kinds of problems are computationally unsolvable (e.g., the halting problem)	21	13	12
Level III, Topic 8: Principles of software engineering: software projects, teams, the software life cycle			3
Level III, Topic 9: Social issues: software as intellectual property, professional practice		1	3
Level III, Topic 10: Careers in computing: computer scientist, computer engineer, software engineer, information technologist		1	