Correlation of

Fundamentals of Python: First Programs, 2/E,
by Kenneth A. Lambert, © 2019,
ISBN: 9781337560092

to

Georgia
Information Technology Career Cluster,
Foundations of Computer Programming; 11.01200
Grades 6-8

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Georgia Standards of Excellence	Page References
Course Description: This course will provide an exploratory foundation in computer programming. 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 computer coding. 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: Internet of Things, Programming, and Computer Science. This course may be taught in 6th, 7th, or 8th grade.	
Course Standard 1	
MS-CS-FCP-1 Demonstrate employability skills required by business and industry and explore, research, and present careers in information technology.	
1.1 Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.	This objective is addressed throughout. For example, see: 2-5, 29, 30-31, 32-33, 59-62, 114, 125, 131-132, 432
1.2 Demonstrate an understanding of collaborative interactions in the digital world.	This objective is not directly addressed in this edition of Fundamentals of Python.
1.3 Model work-readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.	This objective is not directly addressed in this edition of Fundamentals of Python.
1.4 Exhibit critical thinking and problem-solving skills to locate, analyze, and apply information in career planning and employment situations.	This objective is not directly addressed in this edition of Fundamentals of Python.
1.5 Present a professional image through appearance, behavior and language.	This objective is not directly addressed in this edition of Fundamentals of Python.
1.6 Investigate educational requirements, job responsibilities, employment trends, and opportunities within information technology career pathways using credible sources.	This objective is not directly addressed in this edition of Fundamentals of Python.

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Course Standard 2	
MS-CS-FCP-2 Explore and explain the basic components of computers and their relationships to programming.	
2.1 Identify the basic components of the computer (processor, operating system, memory, storage, ethernet ports) by disassembling and reassembling a demonstration model personal computer (may be done 'virtually' online if demo model is not available).	This objective is not directly addressed in this edition of Fundamentals of Python.
2.2 Demonstrate an understanding of key functional components (input/output devices, software applications, wi-fi and/or Ethernet, and IP addresses).	The opportunity to address this objective exists. For example, see: 6, 9-28, 34-45, 372-378
2.3 Demonstrate an understanding of the fundamental concepts for how computers process programming commands (hex, binary language, sequence of commands, conditional structures, looping structures).	The opportunity to address this objective exists. For example, see: 41-45, 47-48, 50-52, 54-57, 68, 91, 111-112, 403
Course Standard 3	
MS-CS-FCP-3 Utilize computational thinking to solve problems.	
3.1 Make observations and organize the concepts of modularity, including functions and methods, as it relates to programming code reusability and cloud computing in the software industry.	54-57, 135-144, 146-148, 167-203
3.2 Develop a working vocabulary of computational thinking including sequences, algorithms, binary, pattern matching, decomposition, abstraction, parallelization, data, automation, data collection, data analysis, Boolean, integer, branches (if...then...else), and iteration {loops (For, While)}.	41-44, 47, 50-52, 54-57, 77-84, 86-91, 148, 264
3.3 Analyze the problem-solving process, the input-process-output-storage model of a computer, and how computers help humans solve problems.	7-8, 24, 168-171, 172-177, 364-370
3.4 Develop an algorithm to decompose a problem of a daily task.	5, 396, 405-408, 420
Course Standard 4	
MS-CS-FCP-4 Design, develop, debug and implement computer programs.	
4.1 Develop a working vocabulary of programming including flowcharting and/or storyboarding, coding, debugging, user interfaces, usability, variables, lists, loops, conditionals, programming language, and events.	150-152, 165, 178, 244-287, 299, 317, 445
4.2 Utilize the design process to brainstorm, implement, test, and revise an idea.	167-171, 172-174, 176-180

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4.3 Cite evidence on how computers represent data and media (sounds, images, video, etc.).	xlv, 7, 10, 19-20, 31, 47, 206, 444
4.4 Design a user interface and test with other users using a paper prototype.	The opportunity to address this objective exists. For example, see: 254, 259, 267, 282-287
4.5 Implement a simple algorithm in a computer program.	xiii, 2-5, 39, 62, 391-396, 400-401, 405, 419-429
4.6 Develop an event driven program.	248-259, 265, 271, 326
4.7 Create a program that accepts user and/or sensor input and stores the result in a variable.	38, 160-162, 173-176
4.8 Create a computer program that implements a loop.	The opportunity to address this objective exists. For example, see: 70, 72, 74-76, 80-81, 173-176, 228
4.9 Develop a program that makes a decision based on data or user input.	38, 160-162, 173-176
4.10 Debug a program with an error.	339-344
Course Standard 5	
MS-CS-FCP-5 Explore the relationship between computer hardware and software.	
5.1 Develop a working vocabulary of embedded computing including digital, analog, events, microcontrollers, sensors, light emitting diodes (LED), switches, servos, cloud computing, and internet of things.	The opportunity to address this objective exists. For example, see: 2-5, 6-8, 9-21, 28-29
5.2 Investigate how software interacts with hardware in the boot process.	This objective is not directly addressed in this edition of Fundamentals of Python.
5.3 Analyze and explain how computers communicate information with simple hardware inputs and outputs.	This objective is not directly addressed in this edition of Fundamentals of Python.
5.4 Create a product that analyzes how simple computer hardware can be used to develop innovative new products that interact with the physical world.	This objective is not directly addressed in this edition of Fundamentals of Python.
5.5 Design a computer program that senses something in the real world and changes an output based on the input.	The opportunity to address this objective exists. For example, see: 38-59, 73, 150-153

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Course Standard 6	
MS-CS-FCP-6 Create digital artifacts to address a current issue requiring resolution.	
6.1 Summarize ethical, privacy, and legal issues of a digital world using current case studies.	This objective is not directly addressed in this edition of Fundamentals of Python.
6.2 Collaborate as a team to develop an artifact that represents multiple perspectives regarding a global crisis.	This objective is not directly addressed in this edition of Fundamentals of Python.
6.3 Analyze and explain the functionality and suitability (or appropriateness) of a computational artifact.	168-171, 338-345
6.4 Develop a program for creative expression or to satisfy personal curiosity which may have visual, audible, and/or tactile results.	206-216, 218, 232-233, 301-309
6.5 Develop a program specifically with the goal of solving a problem, creating new knowledge, or helping people, organizations, or society.	150, 381-386, 388