Individual Test Item Specifications

9007210 Foundations of Programming

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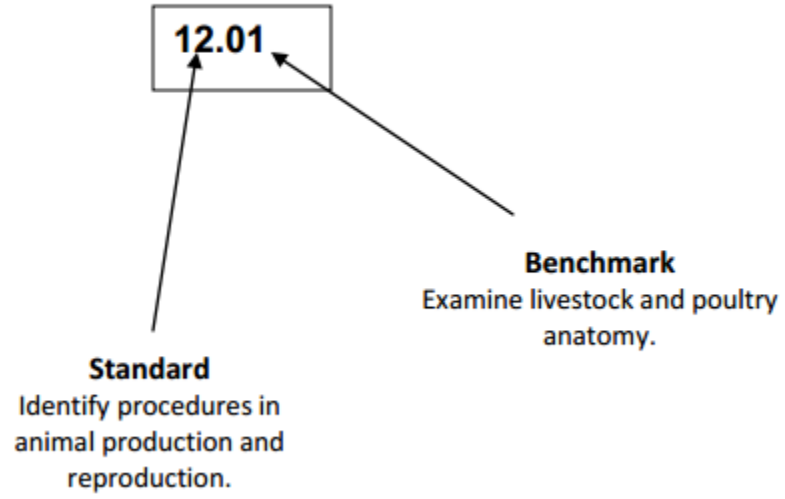
I. Guide to the Individual Benchmark Specifications

Content specific guidelines are given in the *Individual Benchmark Specifications* for each course. The *Specifications* contains specific information about the alignment of items with the Florida Standards. It identifies the manner in which each benchmark is assessed, provides content limits and stimulus attributes for each benchmark, and gives specific information about content, item types, and response attributes.

Benchmark Classification System

- Each Career and Technical Education course has its own set of course standards. The benchmarks are organized numerically, with two numbers separated by a decimal point. The first number is the standard number, and the second number is the benchmark number. You will see these numbers on the Item Specifications for each course.

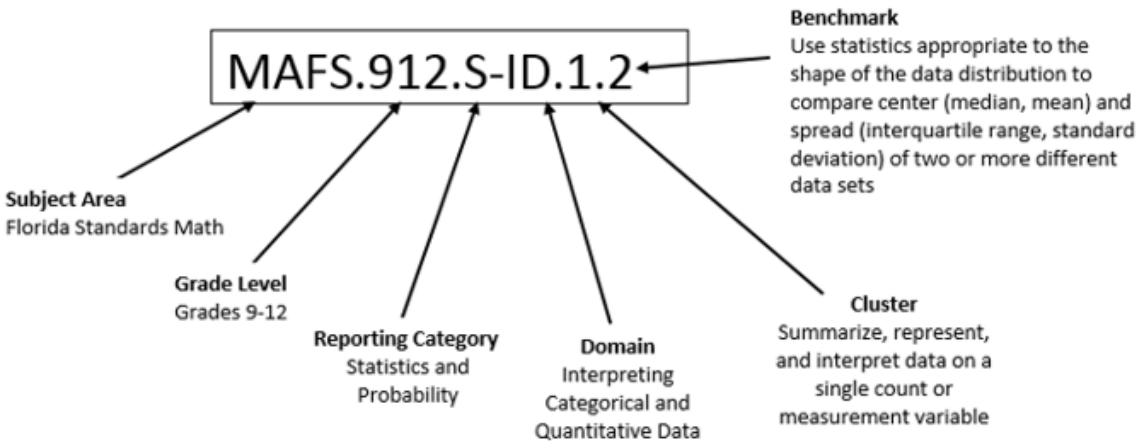
An example, from Agritechnology 1:



The image above describes the components of a Career and Technical Education Standard and Benchmark classification system.

Each MAFS benchmark is labeled with a system of letters and numbers.

- The four letters in the *first position* of the label identify the **Subject**.
- The number(s) in the *second position* represents the **Grade Level**.
- The letter(s) in the *third position* represents the **Category**.
- The number in the fourth position shows the **Domain**.
- The number in the *fifth position* identifies the **Cluster**.
- The number in the last position identifies the specific **Benchmark**.



The image above describes the components of a Florida Standard and Benchmark classification system.

Definitions of Benchmark Specifications

The *Individual Benchmark Specifications* provides standard-specific guidance for assessment item development for the Florida Department of Education Career and Technical Education item banks. For each benchmark assessed, the following information is provided.

Reporting Category	is a grouping of related benchmarks that can be used to summarize and report achievement.
Standard	refers to the standard statement presented in the Florida Standards.
Benchmark	refers to the benchmark statement presented in the Florida Standards. In some cases, two or more related benchmarks are grouped together because the assessment of one benchmark addresses another benchmark.
Item Types	are used to assess the benchmark or group of benchmark.
Cognitive Complexity	ideal level at which item should be assessed.
Benchmark Clarifications	explain how achievement of the benchmark will be demonstrated by students. In other words, the clarification statements explain what the student will do when responding to questions.
Content Limits	define the range of content knowledge and that should be assessed in the items for the benchmark.
Stimulus Attributes	define the types of stimulus materials that should be used in the items, including the appropriate use of graphic materials and item context or content.
Response Attributes	define the characteristics of the answers that a student must choose or provide.
Content Focus	addresses the broad key terms and concepts associated with the examples found in the standards, benchmarks, or benchmark clarifications.
Sample Items	are provided for each type of question assessed. The correct answer for all sample items is provided.

II. Individual Benchmark Specifications

Standard	31.0 Explore the characteristics, tasks, work attributes, options, and tools associated with a career in software development. – The student will be able to:
Benchmark	31.02 Identify tasks performed by programmers.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand the work of a software programmer.
Content Focus	Steps, language, code, software, operating system, debuggers
Content Limits	The items are limited to the types of activities a software programmer performs.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: Software developers write the computer programs used for everything from the systems that allow computers to run properly to the latest software applications for mobile devices. What is most of their time spent on? a. creating applications b. learning programming languages c. problem solving d. writing storyboards Correct Answer: d

Standard	31.0 Explore the characteristics, tasks, work attributes, options, and tools associated with a career in software development. – The student will be able to:
Benchmark	31.03 Describe how businesses use computer programming to solve business problems.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand the different uses of computer programming by businesses.
Content Focus	Applications, problem solving, management, accounting, design, communication
Content Limits	The items are limited to the applications for computer programming in a business setting.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What mass communication technology has replaced the postal service and fax machines in business? a. cloud computing b. email c. integrated packaging d. web services Correct Answer: b

Standard	31.0 Explore the characteristics, tasks, work attributes, options, and tools associated with a career in software development. – The student will be able to:
Benchmark	31.05 Explain different specializations and the related training in the computer programming field.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand the different paths available in software programming.
Content Focus	Pathways, system, application, game design, desktop publishing, digital marketing, database
Content Limits	The items are limited to the different areas that can be focused on in software programming.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What type of programming will you mostly do If you want to be a systems programmer? a. computer applications b. mobile computing software c. operating systems software d. programming software Correct Answer: c

Standard	31.0 Explore the characteristics, tasks, work attributes, options, and tools associated with a career in software development. – The student will be able to:
Benchmark	31.07 Explain enterprise software systems and how they impact business.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand the functions and effect of enterprise software on businesses.
Content Focus	Manage information, integration, packages, best practices, share information
Content Limits	The items are limited to the uses for enterprise software in business.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What type of system does business use to send and receive messages through email and use video conferences to coordinate projects? a. cloud computing b. communication software system c. enterprise software system d. software suite Correct Answer: c

Standard	31.0 Explore the characteristics, tasks, work attributes, options, and tools associated with a career in software development. – The student will be able to:
Benchmark	31.08 Describe ethical responsibilities of computer programmers.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand ethical dilemmas in computer programming.
Content Focus	Digital piracy, digital media, copyright holder, strategic responses, violence, social issues, publisher reviewer relationship, critics, reviews
Content Limits	The items are limited to the industry expectations are in ethical dilemmas.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: Melissa works for a software programming company and her department is aware of a flaw in the new system. Her company is going to publish the software next month. If she does not tell management about the flaw what is one way the company could get in trouble? a. breach of warranty b. contributory negligence c. copyright d. strict warranty Correct Answer: a

Standard	31.0 Explore the characteristics, tasks, work attributes, options, and tools associated with a career in software development. – The student will be able to:
Benchmark	31.09 Describe the role of customer support to software program quality.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand how servicing the product leads to program quality.
Content Focus	Complaint, loyalty, improvement, feedback, principles, standards
Content Limits	The items are limited to how sales service effects software program quality.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What is a systematic approach to identifying best practices in an organization? a. customer relationship management b. customer retention c. relationship rating scale d. total quality management Correct Answer: d

Standard	32.0 Demonstrate an understanding of the characteristics, use, and selection of numerical, non-numerical, and logical data types. – The student will be able to:
Benchmark	32.02 Explain the types and uses of variables in programs.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand the kinds and purpose of program variables.
Content Focus	Values, names, roles, format, assignment, data type, categorical, continuous, independent, dependent, interval, ratio
Content Limits	The items are limited to determine the variables in a program and its uses.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: Gender, ethnicity, or political affiliations are examples of what type of variable? a. categorical b. continuous c. interval d. ratio Correct Answer: a

Standard	32.0 Demonstrate an understanding of the characteristics, use, and selection of numerical, non-numerical, and logical data types. – The student will be able to:
Benchmark	32.03 Determine the best data type to use for given programming problems.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	Student will be able to understand the way to determine the best data to use when solving a problem using programming.
Content Focus	Bit, boolean, byte, character, integer, string
Content Limits	The items are limited to how to determine the correct data to use in a programming.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: When using data, what is used to identify a value in memory that does not change during the execution of the program? a. bit b. byte c. constant d. mod Correct Answer: c

Standard	32.0 Demonstrate an understanding of the characteristics, use, and selection of numerical, non-numerical, and logical data types. – The student will be able to:
Benchmark	32.04 Identify the types of operations that can be performed on different data types.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand what type of operation can be used with different types of data.
Content Focus	Operations, more than, less than, equivalent, not equal to
Content Limits	The items are limited to what types of data can be used for programming.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: In programming, what does "!" stand for? a. equivalent to b. less than c. more than d. not equals to Correct answer: d

Standard	32.0 Demonstrate an understanding of the characteristics, use, and selection of numerical, non-numerical, and logical data types. – The student will be able to:
Benchmark	32.08 Explain how national and international standards (i.e., ASCII, UNICODE) are used to represent non-numerical data.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand how industry standard codes are used to represent non-numerical data.
Content Focus	ASCII, UNICODE, NIST, EBCDIC
Content Limits	The items are limited to how to represent non-numerical data.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What is an industry standard for the consistent encoding, representation, and handling of text expressed in most of the world's writing systems? a. ASCII b. EBCDIC c. NIST d. UNICODE Correct answer: d

Standard	32.0 Demonstrate an understanding of the characteristics, use, and selection of numerical, non-numerical, and logical data types. – The student will be able to:
Benchmark	32.09 Use Boolean logic to perform logical operations.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate
Benchmark Clarification	The student will be able to understand how to use Boolean logic in programming.
Content Focus	Condition, selection, structure, decision, conditional
Content Limits	The items are limited to how to use Boolean logic in logical programming operations.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What Boolean logic operator determines whether the relationship exists between two values? a. conditional operator b. relative operator c. relational operator d. variable operator Correct answer: c

Standard	33.0 Distinguish between iterative and non-iterative program control structures. – The student will be able to:
Benchmark	33.01 Explain non-iterative programming structures (e.g., if, if/else) and their uses.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate
Benchmark Clarification	The student will be able to understand non-iterative programming structures.
Content Focus	Procedure, mechanism, loop, repetition, subroutines, block structures
Content Limits	The items are limited to non-iterative programming structures and their uses.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: When the number of when iterations are known, which is the best looping process? a. for b. if c. if/else d. while Correct answer: a

Standard	33.0 Distinguish between iterative and non-iterative program control structures. – The student will be able to:
Benchmark	33.02 Explain iterative programming structures (e.g., while, do/while) and their uses.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate
Benchmark Clarification	The student will be able to understand iterative programming structures.
Content Focus	Procedure, mechanism, loop, repetition, subroutines, block structures33 Distinguish between iterative and non-iterative program control structures. – The student will be able to:
Content Limits	The items are limited to iterative programming structures and their uses.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What are the three structures of structured programming? a. for/if/while b. selection, loop and iteration c. sequence, selection, and loop d. string, process and loop Correct answer: c

Standard	34.0 Differentiate among high level, low level, procedural, object-oriented, compiled, interpreted, and translated programming languages. – The student will be able to:
Benchmark	34.01 Identify the characteristics, uses, and limits of low-level programming languages.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand the uses and limits of low programming languages.
Content Focus	Assembly, microprocessor, compiler, decompiler, architecture, decoding, assembler34 Differentiate among high level, low level, procedural, object-oriented, compiled, interpreted, and translated programming languages. – The student will be able to:
Content Limits	The items are limited to the attributes of low programming languages including their uses and limits.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What program converts programs written in high-level language may be converted to a low-level machine language? a. compiler b. decompiler c. markup languages d. scripting languages Correct answer: a

Standard	34.0 Differentiate among high level, low level, procedural, object-oriented, compiled, interpreted, and translated programming languages. – The student will be able to:
Benchmark	34.02 Identify the characteristics, uses, and limits of high-level programming languages.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand the uses and limits of high programming languages.
Content Focus	Ada, Algol, BASIC, COBOL, C, C++, FORTRAN, LISP, Pascal, Prolog, sentences, microprocessor, compiler, decompiler
Content Limits	The items are limited to the attributes of high programming languages including their uses and limits.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What are the three main types of computer programming languages? a. BASIC, C++, FORTRAN, b. Functional Language, High Level, Low Level c. Machine language, Assembly language, High level language d. Pascal, Basic, and Functional Correct answer: b

Standard	34.0 Differentiate among high level, low level, procedural, object-oriented, compiled, interpreted, and translated programming languages. – The student will be able to:
Benchmark	34.03 Identify the characteristics, uses, and limits of rapid development programming languages.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand the uses and limits of rapid programming languages.
Content Focus	Segments, waterfall model, spiral model
Content Limits	The items are limited to the attributes of rapid programming languages including their uses and limits.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What type of system is dependent on the previous step being completed first? a. agile b. rapid development c. spiral d. waterfall Correct answer: d

Standard	34.0 Differentiate among high level, low level, procedural, object-oriented, compiled, interpreted, and translated programming languages. – The student will be able to:
Benchmark	34.04 Describe object-oriented concepts.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand the uses of object oriented concepts.
Content Focus	Wrappers, procedure, encapsulation, interface, polymorphism, actions, data, logic, input data, output data
Content Limits	The items are limited to object oriented concepts are and how to describe it.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: Which of the following is an advantage of using object oriented programming? a. can create only one instance b. output is determined c. platform independent d. specialized language Correct answer: c

Standard	35.0 Describe the processes, methods, and conventions for software development and maintenance. – The student will be able to:
Benchmark	35.04 List and explain the steps in the program development cycle.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate
Benchmark Clarification	The student will be able to understand what the program development cycle is and what steps are needed.
Content Focus	Analyze, design, algorithm, interface, code, language, compile, test, language, compile
Content Limits	The items are limited to the steps in program development cycle.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What step in the analysis phase determines a clear statement of the goals and objectives of the project? a. choose the user interface b. compile and test the program c. design general solution- algorithm d. program specification Correct answer: d

Standard	35.0 Describe the processes, methods, and conventions for software development and maintenance. – The student will be able to:
Benchmark	35.07 Describe different methods companies use to facilitate program updates for enhancements and defects (e.g., how customers receive patches, updates, new versions, upgrades).
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate
Benchmark Clarification	The student will be able to understand different methods of delivering upgrades, versions, etc.
Content Focus	Configuration management, version control, infrastructure, discovery, change modeling
Content Limits	The items are limited to the different ways to distribute product upgrades and enhancements
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What is NOT a reason that version-control is difficult for WebApps? a. has automatic documentation b. they can have multiple authors c. has an uncontrolled environment d. making changes to the same files from multiple locations Correct answer: a

Standard	35.0 Describe the processes, methods, and conventions for software development and maintenance. – The student will be able to:
Benchmark	35.08 Describe different methods used to facilitate version control and change management.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate
Benchmark Clarification	The student will be able to understand the different ways to manage versions and changes.
Content Focus	Configuration management, version control, infrastructure, discovery, change modeling,
Content Limits	The items are limited to how to handle version changes using different methods.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: In version-control systems, what are the shared documents that are placed into shared directories called? a. configuration point b. libraries c. share point d. synchronous Correct answer: b

Standard	36.0 Explain the types, uses, and limitations of testing for ensuring quality control. – The student will be able to:
Benchmark	36.01 Explain the uses and limits of testing in ensuring program quality.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate
Benchmark Clarification	The student will be able to understand the testing process for program quality.
Content Focus	Acceptance, accessibility, ad hoc, agile, ABI, API, ASQ, automated, basic, beta, dependent, dynamic, end to end, top down
Content Limits	The items are limited to how to test for program quality.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What is it called when customers, or clients, allow users to test or preview the software by running it for a limited time free of charge? a. productivity b. proprietary c. shareware d. simulation Correct answer: c

Standard	36.0 Explain the types, uses, and limitations of testing for ensuring quality control. – The student will be able to:
Benchmark	36.06 Explain different types of testing (e.g., usability, automated, regression) and testing tools.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate
Benchmark Clarification	The student will be able to understand the different methods of testing programs.
Content Focus	Usability, automated, regression, endurance, exhaustive, functionally, glass box, gorilla, integration, loop, ramp, security
Content Limits	The items are limited to how to use the testing tools to test programs.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What is not a category of defects during regression testing? a. dependency b. extra c. missing d. wrong Correct answer: d

Standard	38.0 Describe information security risks, threats, and strategies associated with software development. – The student will be able to:
Benchmark	38.03 Identify methods to protect against different threats to computer systems.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand ways to be protect against viruses, malware and other threats.
Content Focus	Cybercrime, identity theft, scam, virus, malware, hackers, trojan horse, worms, restricted access, data safety
Content Limits	The items are limited to how to protect against computer system threats.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What is the small text files called that allow some websites to automatically store on your hard drives to provide information about your browsing habits? a. biometric authentication b. cookies c. malware d. viruses Correct answer: b

Standard	38.0 Describe information security risks, threats, and strategies associated with software development. – The student will be able to:
Benchmark	38.05 Identify alternative methods for data storage and backup (e.g., mirroring, fail-over, high availability, types of backups).
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low
Benchmark Clarification	The student will be able to understand different ways to store and backup computer data.
Content Focus	Mirroring, failover, high availability, types of backups, encryption, website, cloud, SSD, network drive,
Content Limits	The items are limited to how to store data and backup computer systems.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	None specified
Sample Item	Multiple Choice: What is the strongest method possible to encrypt data on a removable storage device? a. AES b. DES c. ECC d. 3DES Correct answer: a