WebXam

End of Course (EOC) Test Blueprints

Programming and Software Development

Table of Contents

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Ohio | **Department of Education**

About Test Blueprints

Test blueprints are created to provide guidance to Subject Matter Experts (SMEs) during the item writing phase of test development. In addition, we believe that they can assist those instructors who did not participate in item writing (and administrators) to understand the broad content of the item bank. Items are formally allocated across a course outline in a three-step process*:

1. CETE psychometricians use a formula which assumes that all competencies within a course outline are *essential* and of equal importance to produce a suggested test blueprint for review by Ohio Department of Education program specialists and SMEs.

2. SMEs are formed into small groups during item writing and focus on writing a specific EOC test. Once in small groups, SMEs review the course outline and associated test blueprint and have the ability to make revisions/changes to the blueprint with a persuasive rationale based on their experience and expertise.

3. The blueprints created during small group work must be approved by the larger/full panel of SMEs attending an item writing workshop, which is the last step and produces the final blueprint which is summarized here.

Test blueprints can provide high-level guidance to instructors on preparing students for testing. It is important to keep in mind that the blueprint is a tool that is used when developing the test item bank during initial item writing and test creation. As with all tests, the End-of-Course test forms are a sample of the item bank.

Interpreting the Blueprints

Test blueprints display the total number of test items SMEs planned to write to a particular *outcome* (as designated in the course outline created by the Ohio Department of Education Office of Career-Technical Education or by a vendor). The blueprint describes the item bank which is the total pool of test items created. Final test forms of 40-items are created from the item bank.

*This process for producing test blueprints was implemented October 1, 2015. All tests created prior to this date were done so under a different blueprint process and therefore will not have these blueprint reports available.

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Design Techniques
ODE Subject Code: 145095

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.04	Emerging Technologies	2.11
2.09	Project Concept Proposal	8.42
2.13	Rollout and Handoff	6.32
Strand 7. Digital Media		
7.01	Interactive Media	10.53
7.02	Multimedia Tools	12.63
7.03	Production	10.53
7.04	Graphics	21.05
7.05	Typography	15.79
7.09	Photographs	12.63

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Animation
ODE Subject Code: 145115

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.04	Emerging Technologies	3.16
2.07	Web Architecture	8.42
2.09	Project Concept Proposal	7.37
2.12	Performance Tests and Acceptance Plans	7.37
2.13	Rollout and Handoff	7.37
Strand 7. Digital Media		
7.01	Interactive Media	12.63
7.02	Multimedia Tools	13.68
7.03	Production	12.63
7.04	Graphics	13.68
7.05	Typography	6.32
7.06	Animation	7.37

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Computer and Mobile Applications
ODE Subject Code: 145020

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.09	Project Concept Proposal	6.32
2.11	Troubleshooting	7.37
2.13	Rollout and Handoff	5.26
Strand 3. Information Security		
3.02	General Security Compliance	4.21
Strand 5. Programming and Software Systems		
5.01	Programming Concepts	8.42
5.02	Computational and String Operations	5.26
5.03	Logical Operations and Control Structures	12.63
5.04	Integrated Development Environment	4.21
5.05	Programming Conventions	6.32
5.06	Software Development Lifecycle	15.79
5.07	Configuration/Change Management	1.05
Strand 6. Web Development		
6.02	Links and Multimedia	4.21
6.03	Configuration/Change Management	2.11
Strand 7. Digital Media		
7.02	Multimedia Tools	8.42
7.04	Graphics	8.42

Database Administration
ODE Subject Code: 145080

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.03	Data Encoding	3.16
2.04	Emerging Technologies	5.26
2.08	Databases	14.74
2.09	Project Concept Proposal	9.47
2.11	Troubleshooting	12.63
2.12	Performance Tests and Acceptance Plans	9.47
2.13	Rollout and Handoff	8.42
Strand 8. Databases		
8.01	Data modeling	14.74
8.02	Design and Creation	6.32
8.03	Data Entry and Access	9.47
8.04	Database Management	6.32

Database Applications Development
ODE Subject Code: 145085

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.04	Emerging Technologies	2.11
2.08	Databases	9.47
2.09	Project Concept Proposal	5.26
2.11	Troubleshooting	2.11
2.12	Performance Tests and Acceptance Plans	3.16
2.13	Rollout and Handoff	2.11
Strand 5. Programming Concepts		
5.01	Programming Concepts	7.37
5.02	Computational and String Operations	5.26
5.03	Logical Operations and Control Structures	12.63
5.04	Integrated Development Environment	5.26
5.05	Programming Conventions	6.32
5.06	Software Development Lifecycle	17.90
5.07	Configuration/Change Management	3.16
Strand 8. Data Modeling		
8.01	Data Modeling	7.37
8.02	Design and Creation	4.21
8.03	Data Entry and Access	6.32

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Game Design
ODE Subject Code: 145090

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.09	Project Concept Proposal	5.26
2.12	Performance Tests and Acceptance Plans	3.16
2.13	Rollout and Handoff	2.11
Strand 5. Programming and Software Systems		
5.02	Computational and String Operations	5.26
5.03	Logical Operations and Control Structures	14.74
5.04	Integrated Development Environment	10.53
5.05	Programming Conventions	15.79
5.06	Software Development Lifecycle	17.89
5.07	Configuration/Change Management	6.32
Strand 7. Digital Media		
7.02	Multimedia Tools	18.95

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Information Technology
ODE Subject Code: 145005

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 1. Business Operations/21st Century Skills		
1.01	Employability Skills	9.47
1.02	Leadership and Communication	11.58
1.03	Business Ethics and Law	7.37
1.04	Knowledge Management and Information Technology	6.32
Strand 2. IT Fundamentals		
2.01	Security, Risks, and Safeguards	10.53
2.02	Networking Fundamentals	6.32
2.03	Data Encoding	2.11
2.04	Emerging Technologies	3.16
2.05	Maintain Operating Systems	5.26
2.06	Install and Configuration	5.26
2.07	Web Architecture	6.32
2.08	Databases	7.37
2.09	Project and Concept Proposal	5.26
2.10	Equipment	7.37
2.11	Troubleshooting	6.32

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Interactive Applications Development
ODE Subject Code: 145125

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.04	Emerging Technologies	2.11
2.07	Web Architecture	4.21
2.09	Project Concept Proposal	5.26
2.11	Troubleshooting	3.16
2.12	Performance Tests and Acceptance Plans	5.26
2.13	Rollout and Handoff	3.16
Strand 6. Web Development		
6.01	Web Development	6.32
6.02	Links and Multimedia	2.11
6.03	Scripting	2.11
6.04	Web Forms	7.37
6.05	Websites	12.63
Strand 7. Digital Media		
7.01	Interactive Media	8.42
7.02	Multimedia Tools	10.53
7.03	Production	9.47
7.04	Graphics	9.47
7.05	Typography	4.21

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Multimedia and Image Management
ODE Subject Code: 145105

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.04	Emerging Technologies	2.11
2.07	Web Architecture	2.11
2.09	Project Concept Proposal	5.26
2.10	Equipment	3.16
2.11	Troubleshooting	2.11
2.12	Performance Tests and Acceptance Plans	5.26
2.13	Rollout and Handoff	5.26
Strand 7. Digital Media		
7.01	Interactive Media	9.47
7.02	Multimedia Tools	10.53
7.03	Production	9.47
7.04	Graphics	11.58
7.05	Typography	6.32
7.06	Animation	5.26
7.07	Video	6.32
7.08	Audio	6.32
7.09	Photographs	9.47

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Object Oriented Programming
ODE Subject Code: 145065

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.03	Data Encoding	2.11
2.04	Emerging Technologies	2.11
2.09	Project Concept Proposal	5.26
2.11	Troubleshooting	2.11
2.12	Performance Tests and Acceptance Plans	6.32
2.13	Rollout and Handoff	6.32
Strand 5. Programming and Software Systems		
5.01	Programming Concepts	12.63
5.02	Computational and String Operations	10.53
5.03	Logical Operations and Control Structures	15.79
5.04	Integrated Development Environment	7.37
5.05	Programming Conventions	12.63
5.06	Software Development Lifecycle	14.74
5.07	Configuration/Change Management	2.11

Programming
ODE Subject Code: 145060

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.03	Data Encoding	2.11
2.09	Project Concept Proposal	6.32
2.12	Performance Tests and Acceptance Plans	6.32
2.13	Rollout and Handoff	4.21
Strand 5. Programming and Software Systems		
5.01	Programming Concepts	14.74
5.02	Computational and String Operations	14.74
5.03	Logical Operations and Control Structures	21.05
5.04	Integrated Development Environment	6.32
5.05	Programming Conventions	12.63
5.06	Software Development Lifecycle	8.42
5.07	Configuration/Change Management	3.16

Systems Analysis and Design
ODE Subject Code: 145075

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 1. Business Operations/21ˢᵗ Century Skills		
1.04	Knowledge Management and Information Technology	3.16
Strand 2. IT Fundamentals		
2.03	Data Encoding	1.05
2.04	Emerging Technologies	3.16
2.09	Project Concept Proposal	15.79
2.12	Performance Tests and Acceptance Plans	6.32
2.13	Rollout and Handoff	6.32
Strand 5. Programming and Software Systems		
5.01	Programming Concepts	15.79
5.02	Computational and String Operations	10.53
5.03	Logical Operations and Control Structures	10.53
5.06	Software Development Lifecycle	21.05
5.07	Configuration Management	6.32

Video and Sound
ODE Subject Code: 145110

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.09	Project Concept Proposal	5.26
2.10	Equipment	1.07
Strand 7. Digital Media		
7.01	Interactive Media	5.26
7.02	Multimedia Tools	9.47
7.03	Production	33.68
7.07	Video	28.42
7.08	Audio	16.84

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Visual Programming
ODE Subject Code: 145070

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.03	Data Encoding	2.11
2.04	Emerging Technologies	3.16
2.09	Project Concept Proposal	6.32
2.12	Performance Tests and Acceptance Plans	6.32
2.13	Rollout and Handoff	6.32
Strand 3. Information Security		
3.02	General Security Compliance	8.42
Strand 5. Programming and Software Systems		
5.01	Programming Concepts	8.42
5.02	Computational and String Operations	7.37
5.03	Logical Operations and Control Structures	15.79
5.04	Integrated Development Environment	8.42
5.05	Programming Conventions	6.32
5.06	Software Development Lifecycle	17.89
5.07	Configuration/Change Management	3.16

Web Design
ODE Subject Code: 145010

Outcome #	Outcome Name	% Items Approved by SMEs
Strand 2. IT Fundamentals		
2.04	Emerging Technologies	3.16
2.07	Web Architecture	8.42
2.09	Project Concept Proposal	6.32
2.11	Troubleshooting	8.42
2.12	Performance Tests and Acceptance Plans	6.32
2.13	Rollout and Handoff	6.32
Strand 4. Infrastructure Systems		
4.06	Network Protocols	2.11
Strand 6. Web Development		
6.01	Webpages	21.1
6.02	Links and Multimedia	11.6
6.03	Scripting	3.16
6.04	Web Forms	7.37
6.05	Websites	15.8

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