

## End of Course (EOC) Test Blueprints

# Engineering Technologies

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**THE OHIO STATE UNIVERSITY**  
CENTER ON EDUCATION AND  
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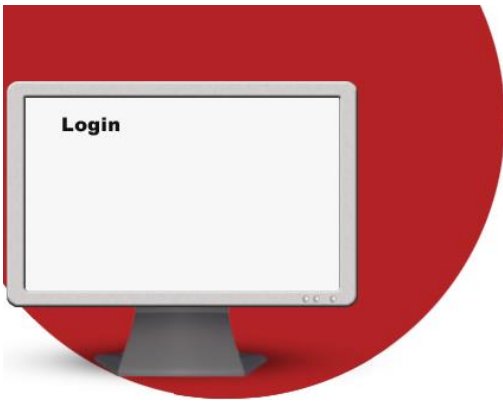
**Department  
of Education**



## 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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# Digital Electronics

ODE Subject Code: 175007

Outcome #	Outcome Name	% Items Approved by SMEs
<b>Strand 1. Business Operations/21<sup>st</sup> Century Skills</b>		
1.1.	Employability Skills	6.32
1.2.	Leadership and Communications	2.11
1.3.	Business Ethics and Law	2.11
1.4.	Knowledge Management and Information Technology	1.05
1.5.	Global Environment	1.05
1.6.	Business Literacy	1.05
1.9.	Financial Management	1.05
<b>Strand 2. Electrical/Electronics</b>		
2.1.	Electronic Theory	12.63
2.2.	Circuits	11.58
2.3.	Codes and Regulations	2.11
2.4.	Electronic Components	8.42
2.5.	Electronic Soldering Connections	6.32
2.6.	Digital Electronics	40.00
<b>Strand 5. Pre-Engineering: Design and Development</b>		
5.2.	Sketching and Visualization	4.21



# Engineering Principles

ODE Subject Code: 175002

Outcome #	Outcome Name	% Items Approved by SMEs
<b>Strand 1. Business Operations/21<sup>st</sup> Century Skills</b>		
1.1.	Employability Skills	5.26
1.2.	Leadership and Communications	5.26
1.3.	Business Ethics and Law	2.11
1.4.	Knowledge Management and Information Technology	2.11
1.5.	Global Environment	2.11
1.6.	Business Literacy	2.11
1.9.	Financial Management	2.11
<b>Strand 2. Electrical/Electronics</b>		
2.1.	Electronic Theory	8.42
2.2.	Circuits	10.53
2.3.	Codes and Regulations	2.11
2.4.	Electronic Components	6.32
<b>Strand 3. Computer Integrated Manufacturing</b>		
3.4.	Power Technologies	6.32
<b>Strand 5. Pre-Engineering: Design and Development</b>		
5.1.	The Design Process	10.53
5.2.	Sketching and Visualization	8.42
5.3.	Computer-Aided Modeling	10.53
5.4.	Computer-Aided Drafting	7.37
5.6.	Production and Process Design	8.42



## Engineering Logic

ODE Subject Code: 175017

Outcome #	Outcome Name	% Items Approved by SMEs
<b>Strand 1. Business Operations/21<sup>st</sup> Century Skills</b>		
1.1.	Employability Skills	4.21
1.2.	Leadership and Communications	3.16
1.3.	Business Ethics and Law	3.16
1.4.	Knowledge Management and Information Technology	3.16
1.5.	Global Environment	3.16
1.6.	Business Literacy	3.16
1.9.	Financial Management	3.16
<b>Strand 2. Electrical/Electronics</b>		
2.1.	Electronic Theory	9.47
2.2	Circuits	12.63
2.4	Electronic Components	8.42
2.5	Electronic Soldering Connections	8.42
2.6	Digital Electronics	37.89

## Principles of Manufacturing

ODE Subject Code: 176010

Outcome #	Outcome Name	% Items Approved by SMEs
<b>Strand 1. Business Operations/21<sup>st</sup> Century Skills</b>		
1.1.	Employability Skills	4.21
1.2.	Leadership and Communications	3.16
1.3.	Business Ethics and Law	3.16
1.4.	Knowledge Management and IT	3.16
1.5.	Global Environment	3.16
1.6.	Business Literacy	3.16
1.9.	Financial Management	3.16
<b>Strand 3. Computer Integrated Manufacturing</b>		
3.1	Computer Numerical Control (CNC)	15.79
<b>Strand 5. Pre-Engineering: Design and Development</b>		
5.1	The Design Process	12.63
5.2	Sketching and Visualization	11.58
5.3	Computer-Aided Modeling	12.63
5.6	Production and Process Design	12.63
<b>Strand 6. Precision Machining</b>		
6.2	Layout and Planning	11.58

