

APPENDIX A: EB DEPARTMENT ECONOMICS FIELD EXAM

Since 2010 the EB department has administered a comprehensive economics exam in the Senior Seminar course. This exam attempts to establish a baseline of understanding for the economics portion of the major. The content and style of the test was patterned after the Council for Economic Education's, TUCE (Test of Understanding in College Economics), a nationally normed test for Principles of Economics courses. Content on the TUCE covers the concepts of scarcity, opportunity cost, choice, supply and demand, utility, elasticity, price ceilings and floors, theory of the firm including revenues, costs, marginal analysis, market structures, wages, rents, interest, profits, income distribution, the microeconomic role of government including public goods, maintaining competition, externalities, taxation, income redistribution, public choice, comparative advantage, trade, and exchange rates. These are all topics that are part of the Principles of Economics sequence and are examined more deeply in the upper division courses. Content coverage on the department was similar to the TUCE with the additional feature of coverage of Econometrics and upper division Microeconomics and Macroeconomics. The department believes that the content distribution for the test was true to the goal of economic literacy for our EB majors. Percentages on the TUCE include those for both their Microeconomics and Macroeconomics tests.

Department Economics Field Exam Content					
	Question #'s	Question #'s	% of		
	Form A	Form B	Test		
Test Item Topic	Including Intermediate Micro, Form A	Including Intermediate Macro, Form B	Including Intermediate Micro, Form A	Including Intermediate Macro, Form B	TUCE %
The Basic Economic Problem-- Scarcity, Opportunity Cost, Choice	13, 14, 16, 26, 28, 38, 50, 69	13, 14, 16, 28, 30, 52, 70,	13	12	10-15
Markets and Price Determination; Supply and Demand	17, 34, 47, 51, 53, 54, 56	17, 37, 41, 53, 54, 56, 58,	12	12	20-25
Markets and Price Determination; utility, elasticity, price ceilings and floors	32, 35, 39, 65	35, 42, 66,	7	5	
Theory of the firm; Revenue, Costs, Marginal Analysis, Market Structures	15, 20, 23, 25, 29, 36, 37, 45, 68, 70	15, 19, 20, 39, 47, 68, 69, 71	17	13	25-30

Factor Markets, Wages, Rents, Interest, Profit, Income Distribution	58, 71	72,	3	2	10-15
The Microeconomic Role of Government; Public Goods, Externalities, Taxation, Income Redistribution, Public Choice	18, 22, 27, 49, 52, 66	18, 29, 51, 55, 67	10	8	15-20
International Economics; Comparative Advantage, Trade, And Exchange Rates, Development	41, 44, 55, 64	44, 46,	7	7	10-15
Measuring Macroeconomic Performance	31, 57, 59, 72	33, 34, 59, 61	7	7	10-15
Aggregate Supply and Demand	40, 42	43, 45,	3	3	25-30
Money and Financial Markets	24, 33,	25, 36	3	3	
Macro Theory, Schools of Thought, Policy Debates	63,	19, 21, 22, 27, 31, 38, 40, 49, 60, 64	2	17	25-30
Monetary and Fiscal Policies	21, 48, 60	23, 24, 26, 32, 50, 62	5	10	25-30
Isoquant analysis	19, 62		3	0	n.a.
Indifference Curve Analysis	30, 67		3	0	n.a.
Econometrics	43, 46, 61	48, 63	5	3	n.a.

from TUCE material *Test of Understanding in College Economics* By William B. Walstad, Michael W. Watts, Ken Rebeck:

http://books.google.com/books?id=EBS613e6x68C&dq=national+standards+for+college+economic+education&printsec=frontcover&source=in&hl=en&ei=cYlITO_qOpHonQfw4zBDw&sa=X&oi=book_result&ct=result&resnum=12&ved=0CEQQ6AEwCw#v=onepage&q&f=false

Item analysis of the 2012 test showed that most test items were within a reasonable difficulty range and discriminated between the better and worse performing students. Revisions based on past item analysis included the following:

- Item 19 on test form B was clarified; the revised item performed well with a discrimination score of 40 percent and a difficulty level of 76 percent.
- Item 22 on test form B was revised. The new item had a discrimination score of 40

- percent and a difficulty level of 24 percent.
- Item 40 on test form A (item 43 on test form B) on the concept of the expenditures multiplier was replaced by a new question on the same topic. The new question performed well with a 50 percent discrimination score and a difficulty level of 69 percent.
- Item 72 on test form A (item 34 on form B) was replaced with a question on the same topic. The new item had a satisfactory discrimination score of 25 percent and a difficulty score of 82 percent.

An item analysis of the 2013 test again showed that most test items were within a reasonable difficulty range and discriminated between the better and worse performing students. Following up on the revisions based on past item analysis included the following:

- Item 19 on test form B clarified in 2012 performed well with a discrimination score of 100 percent and a difficulty level of 50 percent.
- Item 22 on test form B was revised. The new item, which had a discrimination score of 40 percent and a difficulty level of 24 percent in 2012 did not discriminate in 2013 with a score of -17 percent. It should be reviewed and improved.
- Item 40 on test form A (item 43 on test form B) on the concept of the expenditures multiplier was replaced by a new question on the same topic. In 2012 the new question performed well with a 50 percent discrimination score and a difficulty level of 69 percent. On the 2013 test, the new question also performed well with a difficulty level of 80% and a discrimination score of 44 percent.
- Item 72 on test form A (item 34 on form B) was replaced with a question on the same topic. In 2012, the new item had a satisfactory discrimination score of 25 percent and a difficulty score of 82 percent. In 2013, the new item had a discrimination score of 11 percent and a difficulty score of 80 percent.

For the 2014 test, eleven items should be reviewed and improved or replaced as noted in the table above.

In general, items with difficulty levels scores below 20 percent that do not discriminate well have the potential to be improved.

On test reliability, the 2012 department test proved to perform reasonably well. Twelve students, who had taken the Intermediate Microeconomics course, took form A with its heavier emphasis on microeconomics. Form A had a test reliability of 70 percent, a mean of 68.8 percent, a top score of 85 percent, and a bottom score of 53.3 percent. Twenty-one students, who had taken the Intermediate Macroeconomics course, took form B with its heavier emphasis on macroeconomics. Form B had a test reliability of 80%, a mean of 64.5 percent, a top score of 90 percent, and a bottom score of 40 percent. Students were not given any preparation prior to the test.

The 2013 department test also performed reasonably well. Ten students, who had taken the Intermediate Microeconomics course, took form A with its heavier emphasis on microeconomics. Form A had a test reliability of 60 percent, a mean of 67.5 percent, a top score of 80 percent, and a bottom score of 55 percent. Twenty-four students, who had taken the Intermediate Macroeconomics course, took form B with its heavier emphasis on macroeconomics. Form B had a test reliability of 80%, a mean of 67.5 percent, a top score of 88.3 percent, and a bottom score of 43.3 percent. There was improvement in the mean score for form B. Students were not given any preparation prior to the test.

Based on the data collected by the department field test the following actions will be pursued in the department:

- The "field test" will be further revised to improve test validity and reliability. For 2014, eleven test items identified by test item analysis will be reviewed and revised.
- Economics courses will seek to raise the performance level indicated by the field test results.

2013 Economics Field Test Item Analysis: Difficulty & Discrimination						
Test Item Number		Difficulty			Discrim	Question
Form A	Form B	Form A	Form B	Weighted Ave	Index	Status
13	13	0.18	0.38	0.31	0.56	
14	14	1.00	1.00	1.00	0.00	
15	15	0.64	0.58	0.60	-0.11	Review
16	16	0.64	0.75	0.71	0.33	
17	17	0.73	0.67	0.69	0.11	
18	18	0.64	0.42	0.49	0.11	
19	n.a.	0.09	n.a.	0.09	0.00	Review
n.a.	19	n.a.	0.50	0.50	1.00	
n.a.	21	n.a.	0.38	0.38	0.83	
n.a.	22	n.a.	0.25	0.25	-0.17	Review
n.a.	23	n.a.	0.71	0.71	1.00	
20	68	0.64	0.63	0.63	0.11	
21	24	0.45	0.58	0.54	0.11	
22	n.a.	0.82	n.a.	0.82	0.33	
n.a.	27	n.a.	0.63	0.63	0.33	
23	20	0.36	0.25	0.29	0.56	
n.a.	25	n.a.	0.54	0.54	0.33	
24	26	0.82	0.83	0.83	0.33	
25	n.a.	0.73	n.a.	0.73	0.33	
26	28	0.91	0.96	0.94	0.11	
27	29	1.00	0.96	0.97	0.11	
28	30	0.73	0.71	0.71	0.44	
29	n.a.	0.64	n.a.	0.64	0.33	
30	n.a.	0.45	n.a.	0.45	0.67	
n.a.	31	n.a.	0.63	0.63	0.00	Review
n.a.	32	n.a.	0.33	0.33	0.17	
31	33	0.45	0.67	0.60	0.78	
32	35	0.36	0.63	0.54	0.22	
33	36	0.00	0.21	0.14	0.33	
34	37	0.91	0.88	0.89	0.11	
n.a.	38	n.a.	0.58	0.58	0.00	Review
35	n.a.	0.82	n.a.	0.82	0.00	
36	39	0.91	0.88	0.89	0.22	
37	n.a.	0.82	n.a.	0.82	-0.33	Review
38	41	0.73	0.75	0.74	0.44	
n.a.	40	n.a.	0.42	0.42	0.17	
39	42	0.91	0.96	0.94	0.00	

40	43	0.82	0.79	0.80	0.44	
41	44	0.73	0.75	0.74	0.22	
42	45	0.45	0.54	0.51	0.56	
43	n.a.	0.18	n.a.	0.18	0.00	Review
44	46	0.73	0.83	0.80	0.33	
45	47	0.09	0.17	0.14	0.44	
46	48	0.91	0.83	0.86	0.11	
n.a.	49	n.a.	0.92	0.92	0.00	
47	n.a.	0.73	n.a.	0.73	-0.67	Review
48	50	0.45	0.63	0.57	-0.22	Review
49	51	0.91	0.88	0.89	0.22	
50	52	0.82	0.96	0.91	0.22	
51	53	0.82	1.00	0.94	0.11	
n.a.	54	n.a.	0.46	0.46	0.67	
52	55	0.91	0.88	0.89	0.44	
53	56	0.73	0.63	0.66	0.44	
54	n.a.	0.82	n.a.	0.82	0.33	
55	57	0.91	0.96	0.94	0.22	
56	58	0.45	0.38	0.40	0.22	
57	59	0.91	0.92	0.91	0.22	
58	n.a.	0.64	n.a.	0.64	-0.33	Review
59	61	0.73	0.83	0.80	-0.11	
n.a.	60	n.a.	0.67	0.67	0.44	
60	62	0.55	0.58	0.57	0.33	
61	63	0.82	0.75	0.77	0.00	
62	n.a.	0.55	n.a.	0.55	0.00	
63	64	1.00	0.96	0.97	-0.11	Review
64	65	0.82	0.92	0.89	0.33	
65	66	0.55	0.75	0.69	0.22	
66	67	0.55	0.50	0.51	0.56	
67	n.a.	0.73	n.a.	0.73	0.33	
68	69	0.73	0.58	0.63	0.67	
69	70	0.91	0.75	0.80	0.44	
70	71	0.91	0.75	0.80	0.22	
71	72	0.27	0.42	0.37	0.56	
72	34	0.73	0.83	0.80	0.11	