

Report title: Subject Matter Report by Major and Examination

Exams administered: Jan 01—Jun 30, 2016

Examinees included: First-Time Examinees from EAC/ABET-Accredited Engineering Programs

Graduation Date: Examinees Testing within 12 months of Graduation Date

Name of Institution:	Unive	ersity of Kentucky, Lexing	ton
Major:	Agricultural	FE Examination:	Civil

	Institution	ABET Comparator ²
No. Examinees Taking ¹	1	3
No. Examinees Passing	1	2
Percent Examinees Passing	100%	67%

Uncertainty Range for Scaled Score ⁴ ± 1.00

	Number of Exam Questions	Institution Average Performance Index ³	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score ⁴	Scaled Score ⁴
Mathematics	7	8.3	10.6	3.1	0.78	-0.74
Probability and Statistics	4	7.6	8.4	0.9	0.90	-0.89
Computational Tools	4	8.5	12.8	3.1	0.66	-1.39
Ethics and Professional Practice	4	7.6	8.3	0.6	0.92	-1.17
Engineering Economics	4	9.8	13.3	2.5	0.74	-1.40
Statics	7	10.4	10.9	3.1	0.95	-0.16
Dynamics	4	15.0	10.4	3.6	1.44	1.28
Mechanics of Materials	7	11.4	10.2	1.5	1.12	0.80
Materials	4	9.7	11.0	2.9	0.88	-0.45
Fluid Mechanics	4	8.8	10.0	3.7	0.88	-0.32
Hydraulics and Hydrologic Systems	8	11.1	9.9	1.8	1.12	0.67
Structural Analysis	6	7.7	8.2	1.1	0.94	-0.45
Structural Design	6	5.9	9.9	3.8	0.60	-1.05
Geotechnical Engineering	9	10.8	8.5	2.1	1.27	1.10
Transportation Engineering	8	15.0	11.7	2.5	1.28	1.32
Environmental Engineering	6	10.4	9.3	0.9	1.12	1.22
Construction	4	7.2	7.9	1.0	0.91	-0.70
Surveying	4	15.0	10.2	3.4	1.47	1.41

- 1. $\underline{\mathbf{0}}$ examinees have been removed from this data because they were flagged as a random guesser.
- 2. Comparator includes all examinees from programs accredited by the ABET commission noted.
- 3. Performance index is based on a 0–15 scale.
- 4. These scores are made available for assessment purposes. See the NCEES publication entitled Using the FE as an Outcomes Assessment Tool at http://ncees.org/licensure/educator-resources/.

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Graduation Date: Examinees Testing within 12 months of Graduation Date

Name of Institution:		University of Kentucky, Lex	ington
Major:	Agricultural	FE Examination:	Other Disciplines

	Institution	ABET Comparator ²
No. Examinees Taking ¹	1	64
No. Examinees Passing	1	59
Percent Examinees Passing	100%	92%

Uncertainty Range for Scaled Score ⁴ ± 1.00

	Number of Exam Questions	Institution Average Performance Index ³	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score ⁴	Scaled Score ⁴
Mathematics and Advanced Engineering Mathematics	12	10.1	9.4	1.6	1.07	0.44
Probability and Statistics	6	10.7	10.1	2.4	1.06	0.25
Chemistry	7	10.5	9.6	2.3	1.09	0.39
Instrumentation and Data Acquisition	4	6.4	10.2	2.7	0.63	-1.41
Ethics and Professional Practice	3	8.4	12.6	3.5	0.67	-1.20
Safety, Health, and Environment	4	8.9	9.7	3.0	0.92	-0.27
Engineering Economics	7	10.5	10.2	2.4	1.03	0.13
Statics	8	9.1	9.8	1.8	0.93	-0.39
Dynamics	7	9.0	9.7	1.9	0.93	-0.37
Strength of Materials	8	9.7	10.0	1.7	0.97	-0.18
Materials Science	6	8.1	9.6	1.7	0.84	-0.88
Fluid Mechanics and Dynamics of Liquids	8	9.5	10.0	1.6	0.95	-0.31
Fluid Mechanics and Dynamics of Gases	4	9.7	10.7	3.2	0.91	-0.31
Electricity, Power, and Magnetism	7	8.4	9.8	1.9	0.86	-0.74
Heat, Mass, and Energy Transfer	9	10.6	9.7	1.8	1.09	0.50

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Name of Institution:	University of Kentucky, Lexington		
Major:	Chemical	FE Examination:	Chemical

	Institution	ABET Comparator
No. Examinees Taking ¹	4	1,017
No. Examinees Passing	4	803
Percent Examinees Passing	100%	79%

Uncertainty
Range for
Scaled
Score 4
+ 0.50

						± 0.50
	Number of Exam Questions	Institution Average Performance Index ³	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score ⁴	Scaled Score ⁴
Mathematics	8	10.7	10.6	3.2	1.01	0.03
Probability and Statistics	4	11.5	10.5	3.4	1.10	0.29
Engineering Sciences	4	10.9	10.3	3.5	1.06	0.17
Computational Tools	4	11.6	10.3	3.4	1.13	0.38
Materials Science	4	13.4	10.4	3.3	1.29	0.91
Chemistry	8	10.8	10.3	3.0	1.05	0.17
Fluid Mechanics/Dynamics	8	9.8	9.6	2.3	1.02	0.09
Thermodynamics	8	9.6	9.4	1.9	1.02	0.11
Material/Energy Balances	8	9.9	9.7	2.5	1.02	0.08
Heat Transfer	8	9.7	9.9	2.4	0.98	-0.08
Mass Transfer and Separation	8	11.3	9.6	2.1	1.18	0.81
Chemical Reaction Engineering	8	12.1	9.7	2.1	1.25	1.14
Process Design and Economics	8	10.7	9.9	2.8	1.08	0.29
Process Control	5	10.7	9.8	3.2	1.09	0.28
Safety, Health, and Environment	5	12.6	9.6	3.5	1.31	0.86
Ethics and Professional Practice	2	15.0	10.8	5.4	1.39	0.78

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Graduation Date: Examinees Testing within 12 months of Graduation Date

Name of Institution:	University of Kentucky, Lexington			
Major:	Civil	FE Examination:	Civil	

	Institution	ABET Comparator ²
No. Examinees Taking ¹	30	5,409
No. Examinees Passing	24	3,819
Percent Examinees Passing	80%	71%

Uncertainty
Range for
Scaled
Score 4
± 0.18

	Number of Exam Questions	Institution Average Performance Index ³	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score ⁴	Scaled Score ⁴
Mathematics	7	10.9	9.7	2.8	1.12	0.43
Probability and Statistics	4	11.0	9.8	3.3	1.12	0.36
Computational Tools	4	11.1	10.4	3.6	1.07	0.19
Ethics and Professional Practice	4	11.2	10.7	3.7	1.05	0.14
Engineering Economics	4	11.5	9.9	3.6	1.16	0.44
Statics	7	9.9	9.5	2.7	1.04	0.15
Dynamics	4	10.0	9.9	3.5	1.01	0.03
Mechanics of Materials	7	9.2	9.3	2.3	0.99	-0.04
Materials	4	9.7	9.5	3.2	1.02	0.06
Fluid Mechanics	4	10.4	10.3	3.5	1.01	0.03
Hydraulics and Hydrologic Systems	8	9.7	9.2	2.1	1.05	0.24
Structural Analysis	6	9.5	9.1	2.4	1.04	0.17
Structural Design	6	8.6	8.9	2.5	0.97	-0.12
Geotechnical Engineering	9	8.8	9.3	2.0	0.95	-0.25
Transportation Engineering	8	9.1	9.2	2.2	0.99	-0.05
Environmental Engineering	6	9.6	9.4	2.5	1.02	0.08
Construction	4	11.5	9.7	3.5	1.19	0.51
Surveying	4	9.6	8.6	3.6	1.12	0.28

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Name of Institution:		University of Kentu	cky, Lexington
Major:	Electrical	FE Examination:	Electrical and Computer

	Institution	ABET Comparator ²
No. Examinees Taking ¹	3	1,103
No. Examinees Passing	3	820
Percent Examinees Passing	100%	74%

Uncertainty Range for Scaled Score ⁴ ± 0.58

	Number of Exam Questions	Institution Average Performance Index ³	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score ⁴	Scaled Score ⁴
Mathematics	11	11.0	9.9	2.5	1.11	0.44
Probability and Statistics	4	10.3	10.0	3.6	1.03	0.08
Ethics and Professional Practice	3	15.0	11.4	4.1	1.32	0.88
Engineering Economics	3	10.3	9.6	4.1	1.07	0.17
Properties of Electrical Materials	4	12.7	9.7	3.3	1.31	0.91
Engineering Sciences	6	13.5	10.2	3.2	1.32	1.03
Circuit Analysis (DC and AC Steady State)	10	12.2	9.4	2.1	1.30	1.33
Linear Systems	5	8.2	9.2	2.8	0.89	-0.36
Signal Processing	5	10.8	9.2	2.9	1.17	0.55
Electronics	7	9.3	9.3	2.2	1.00	0.00
Power	8	9.5	9.4	2.1	1.01	0.05
Electromagnetics	5	8.8	9.5	2.9	0.93	-0.24
Control Systems	6	9.0	9.4	2.6	0.96	-0.15
Communications	5	11.0	9.1	2.7	1.21	0.70
Computer Networks	3	15.0	9.5	4.1	1.58	1.34
Digital Systems	7	9.9	9.4	2.4	1.05	0.21
Computer Systems	4	7.6	9.0	3.6	0.84	-0.39
Software Development	4	15.0	10.4	3.6	1.44	1.28

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Name of Institution:		University of Kentucky, Lexington	
Major:	Mechanical	FE Examination:	Mechanical

	Institution	ABET Comparator ²
No. Examinees Taking ¹	25	3,626
No. Examinees Passing	22	2,906
Percent Examinees Passing	88%	80%

Uncertainty Range for Scaled Score ⁴ ± 0.20

	Number of Exam Questions	Institution Average Performance Index ³	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score ⁴	Scaled Score ⁴	
Mathematics	6	10.5	10.4	3.0	1.01	0.03	
Probability and Statistics	4	11.5	10.0	3.2	1.15	0.47	
Computational Tools	3	11.7	10.8	4.0	1.08	0.23	
Ethics and Professional Practice	3	12.0	11.5	4.0	1.04	0.13	
Engineering Economics	3	11.9	10.3	4.1	1.16	0.39	
Electricity and Magnetism	3	9.4	10.3	3.9	0.91	-0.23	
Statics	8	10.4	9.7	2.4	1.07	0.29	
Dynamics, Kinematics, and Vibrations	9	10.5	9.6	2.1	1.09	0.43	
Mechanics of Materials	8	10.2	9.5	2.1	1.07	0.33	
Material Properties and Processing	8	9.5	9.8	2.3	0.97	-0.13	
Fluid Mechanics	9	9.9	9.8	2.2	1.01	0.05	
Thermodynamics	13	9.5	9.3	1.5	1.02	0.13	
Heat Transfer	9	9.7	9.6	2.2	1.01	0.05	
Measurements, Instrumentation, and Controls	5	10.4	9.4	3.0	1.11	0.33	
Mechanical Design and Analysis	9	9.6	9.3	2.3	1.03	0.13	

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Graduation Date: Examinees Testing within 12 months of Graduation Date

	Name of Institution:		University of Kentucky, Lexing	yton
Ì	Major:	Mining/Mineral	FE Examination:	Other Disciplines

	Institution	ABET Comparator ²
No. Examinees Taking ¹	5	78
No. Examinees Passing	2	52
Percent Examinees Passing	40%	67%

Uncertainty Range for Scaled Score ⁴ ± 0.45

	Number of Exam Questions	Institution Average Performance Index ³	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score ⁴	Scaled Score ⁴
Mathematics and Advanced Engineering Mathematics	12	8.5	8.7	1.9	0.98	-0.11
Probability and Statistics	6	8.2	8.9	2.8	0.92	-0.25
Chemistry	7	8.4	9.5	2.7	0.88	-0.41
Instrumentation and Data Acquisition	4	9.0	8.3	3.4	1.08	0.21
Ethics and Professional Practice	3	15.0	11.8	4.0	1.27	0.80
Safety, Health, and Environment	4	9.4	10.2	3.3	0.92	-0.24
Engineering Economics	7	9.4	10.2	2.9	0.92	-0.28
Statics	8	8.3	9.3	2.2	0.89	-0.45
Dynamics	7	8.4	9.1	2.0	0.92	-0.35
Strength of Materials	8	7.4	8.6	1.9	0.86	-0.63
Materials Science	6	9.9	9.3	2.0	1.06	0.30
Fluid Mechanics and Dynamics of Liquids	8	8.7	9.1	1.6	0.96	-0.25
Fluid Mechanics and Dynamics of Gases	4	6.2	9.1	3.0	0.68	-0.97
Electricity, Power, and Magnetism	7	9.8	9.1	2.4	1.08	0.29
Heat, Mass, and Energy Transfer	9	8.3	9.1	1.4	0.91	-0.57

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