

Examination: Fundamentals of Engineering (FE)
Report title: Subject Matter Report by Major and Examination
Exams administered: Jan 01—May 31, 2014
Examinees included: First-Time Examinees from EAC/ABET-Accredited Engineering Programs
Graduation Date: Examinees Testing within 9 months of Graduation Date

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

	Institution	ABET Comparator 2
No. Examinees Taking ¹	4	693
No. Examinees Passing	4	575
Percent Examinees Passing	100%	83%

**Uncertainty
Range for
Scaled
Score ⁴**
± 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	9	13.9	11.0	3.1	1.26	0.94
Probability and Statistics	4	10.2	10.3	3.3	0.99	-0.03
Engineering Sciences	4	13.3	10.8	3.2	1.23	0.78
Computational Tools	6	13.6	11.0	3.5	1.24	0.74
Materials Science	4	12.4	10.9	3.0	1.14	0.50
Chemistry	8	13.8	10.9	3.1	1.27	0.94
Fluid Mechanics/Dynamics	8	11.7	10.2	2.4	1.15	0.63
Thermodynamics	8	9.5	9.6	1.9	0.99	-0.05
Material/Energy Balances	8	11.1	9.8	2.4	1.13	0.54
Heat Transfer	9	11.6	10.2	2.4	1.14	0.58
Mass Transfer and Separation	10	11.7	9.8	2.2	1.19	0.86
Chemical Reaction Engineering	9	10.9	9.7	2.4	1.12	0.50
Process Design and Economics	8	11.3	9.5	2.8	1.19	0.64
Process Control	7	11.5	10.3	3.1	1.12	0.39
Safety, Health and Environment	6	10.8	9.0	3.3	1.20	0.55
Ethics and Professional Practice	2	15.0	11.4	5.3	1.32	0.68

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- Comparator includes all examinees from programs accredited by the ABET commission noted.
- Performance index is based on a 0–15 scale.
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Name of Institution:	University of Kentucky, Lexington		
Major:	Civil	FE Examination:	Civil

	Institution	ABET Comparator 2
No. Examinees Taking ¹	13	3,126
No. Examinees Passing	7	2,318
Percent Examinees Passing	54%	74%

Uncertainty Range for Scaled Score ⁴ ± 0.28
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	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	9.4	10.2	2.8	0.92	-0.29
Probability and Statistics	4	10.2	10.7	3.4	0.95	-0.15
Computational Tools	4	10.0	10.4	3.7	0.96	-0.11
Ethics and Professional Practice	4	11.0	11.2	3.8	0.98	-0.05
Engineering Economics	4	8.4	10.2	3.7	0.82	-0.49
Statics	7	9.0	10.0	2.8	0.90	-0.36
Dynamics	4	8.3	10.2	3.4	0.81	-0.56
Mechanics of Materials	8	9.5	9.9	2.5	0.96	-0.16
Materials	4	9.0	9.3	3.0	0.97	-0.10
Fluid Mechanics	4	10.0	11.0	3.5	0.91	-0.29
Hydraulics and Hydrologic Systems	9	8.7	9.4	2.2	0.93	-0.32
Structural Analysis	8	8.3	9.1	2.4	0.91	-0.33
Structural Design	8	8.5	8.9	2.4	0.96	-0.17
Geotechnical Engineering	10	7.9	9.2	1.9	0.86	-0.68
Transportation Engineering	9	8.5	9.0	2.1	0.94	-0.24
Environmental Engineering	7	8.1	9.0	2.7	0.90	-0.33
Construction	5	8.6	9.6	3.7	0.90	-0.27
Surveying	4	8.3	8.4	3.7	0.99	-0.03

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

	Institution	ABET Comparator 2
No. Examinees Taking ¹	2	672
No. Examinees Passing	2	550
Percent Examinees Passing	100%	82%

Uncertainty Range for Scaled Score ⁴ ± 0.71
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	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	9.1	10.4	2.6	0.88	-0.50
Probability and Statistics	4	15.0	10.5	3.4	1.43	1.32
Ethics and Professional Practice	3	10.3	11.7	4.0	0.88	-0.35
Engineering Economics	3	12.4	10.1	4.1	1.23	0.56
Properties of Electrical Materials	6	12.8	10.6	2.6	1.21	0.85
Engineering Sciences	7	11.6	11.8	3.3	0.98	-0.06
Circuit Analysis	11	8.3	9.9	2.4	0.84	-0.67
Linear Systems	5	9.7	9.5	2.8	1.02	0.07
Signal Processing	6	9.6	9.7	2.8	0.99	-0.04
Electronics	7	7.5	9.6	2.1	0.78	-1.00
Power	9	10.1	9.6	2.2	1.05	0.23
Electromagnetics	6	9.5	10.2	3.2	0.93	-0.22
Control Systems	6	7.9	9.5	2.5	0.83	-0.64
Communications	6	6.8	9.2	2.5	0.74	-0.96
Computer Networks	4	12.4	10.2	3.9	1.22	0.56
Digital Systems	7	9.9	9.4	2.5	1.05	0.20
Computer Systems	5	8.7	9.1	3.4	0.96	-0.12
Software Development	4	11.9	11.1	4.2	1.07	0.19

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

	Institution	ABET Comparator 2
No. Examinees Taking ¹	7	2,316
No. Examinees Passing	5	1,976
Percent Examinees Passing	71%	85%

Uncertainty Range for Scaled Score ⁴ ± 0.38
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	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	11.6	10.8	3.1	1.07	0.26
Probability and Statistics	5	13.0	10.6	3.3	1.23	0.73
Computational Tools	3	10.9	11.3	4.1	0.96	-0.10
Ethics and Professional Practice	3	12.7	12.0	3.8	1.06	0.18
Engineering Economics	3	10.1	10.5	4.2	0.96	-0.10
Electricity and Magnetism	3	8.9	11.1	3.8	0.80	-0.58
Statics	9	10.8	10.2	2.6	1.06	0.23
Dynamics, Kinematics, and Vibrations	9	11.7	10.0	2.1	1.17	0.81
Mechanics of Materials	11	10.7	9.8	2.2	1.09	0.41
Material Properties and Processing	8	8.6	10.1	2.3	0.85	-0.65
Fluid Mechanics	9	8.4	10.1	2.1	0.83	-0.81
Thermodynamics	14	9.4	9.6	1.6	0.98	-0.13
Heat Transfer	11	10.2	9.9	2.1	1.03	0.14
Measurement, Instrumentation, and Controls	6	7.9	9.3	3.4	0.85	-0.41
Mechanical Design and Analysis	10	6.4	8.9	2.5	0.72	-1.00

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Name of Institution: University of Kentucky, Lexington	
Major: Mining/Mineral	FE Examination: Other Disciplines

	ABET Institution	ABET Comparator 2
No. Examinees Taking ¹	11	37
No. Examinees Passing	10	31
Percent Examinees Passing	91%	84%

Uncertainty Range for Scaled Score ⁴ ± 0.30
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	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	9.6	9.5	2.0	1.01	0.05
Probability and Statistics	6	8.7	9.9	2.8	0.88	-0.43
Chemistry	7	10.3	10.2	2.6	1.01	0.04
Instrumentation and Data Acquisition	6	7.4	8.5	3.1	0.87	-0.35
Ethics and Professional Practice	3	11.9	12.0	3.5	0.99	-0.03
Safety, Health, and Environment	6	9.9	10.9	3.1	0.91	-0.32
Engineering Economics	7	10.1	11.3	2.7	0.89	-0.44
Statics	10	9.5	9.0	1.6	1.06	0.31
Dynamics	9	10.0	9.5	2.0	1.05	0.25
Strength of Materials	8	8.8	8.7	1.2	1.01	0.08
Materials Science	6	9.7	9.5	2.1	1.02	0.10
Fluid Mechanics and Dynamics of Liquids	8	9.7	9.8	1.9	0.99	-0.05
Fluid Mechanics and Dynamics of Gases	6	11.9	10.6	3.0	1.12	0.43
Electricity, Power, and Magnetism	7	10.0	9.5	1.7	1.05	0.29
Heat, Mass, and Energy Transfer	9	8.5	9.1	1.5	0.93	-0.40

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