

**Examination:** Fundamentals of Engineering (FE)  
**Report title:** Subject Matter Report by Major and Examination  
**Exams administered:** Jan 01—Jun 30, 2018  
**Examinees included:** First-Time Examinees from EAC/ABET-Accredited Engineering Programs  
**Graduation Date:** Examinees Testing within 12 months of Graduation Date

Name of Institution:	University of Kentucky, Lexington		
Major:	Agricultural	FE Examination:	Environmental

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	4	9
No. Examinees Passing	3	5
Percent Examinees Passing	75%	56%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> ± 0.50
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	Number of Exam Questions	Institution Average Performance Index <sup>3</sup>	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score <sup>4</sup>	Scaled Score <sup>4</sup>
Mathematics	4	10.2	9.7	3.0	1.05	0.17
Probability and Statistics	3	11.5	9.4	4.6	1.22	0.46
Ethics and Professional Practice	5	9.9	9.9	3.0	1.00	0.00
Engineering Economics	4	10.4	9.0	2.5	1.16	0.56
Materials Science	3	10.3	7.5	3.9	1.37	0.72
Environmental Science and Chemistry	11	9.0	9.1	2.4	0.99	-0.04
Risk Assessment	5	9.6	9.1	3.4	1.05	0.15
Fluid Mechanics	9	11.1	9.6	2.2	1.16	0.68
Thermodynamics	3	13.0	12.3	3.9	1.06	0.18
Water Resources	10	9.3	9.2	1.5	1.01	0.07
Water and Wastewater	14	9.1	8.9	1.1	1.02	0.18
Air Quality	10	9.5	9.2	1.4	1.03	0.21
Solid and Hazardous Waste	10	10.3	9.0	2.6	1.14	0.50
Groundwater and Soils	9	8.8	9.1	1.1	0.97	-0.27

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

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	2	79
No. Examinees Passing	2	65
Percent Examinees Passing	100%	82%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> ± 0.71
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	Number of Exam Questions	Institution Average Performance Index <sup>3</sup>	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score <sup>4</sup>	Scaled Score <sup>4</sup>
Mathematics and Advanced Engineering Mathematics	12	9.3	9.1	1.7	1.02	0.12
Probability and Statistics	6	9.0	9.6	2.0	0.94	-0.30
Chemistry	7	9.7	9.1	1.5	1.07	0.40
Instrumentation and Data Acquisition	4	9.7	10.2	3.0	0.95	-0.17
Ethics and Professional Practice	3	10.8	11.7	3.9	0.92	-0.23
Safety, Health, and Environment	4	12.4	10.6	3.2	1.17	0.56
Engineering Economics	7	9.3	9.8	2.4	0.95	-0.21
Statics	8	9.6	9.6	2.1	1.00	0.00
Dynamics	7	11.8	10.0	2.4	1.18	0.75
Strength of Materials	8	9.7	9.9	2.0	0.98	-0.10
Materials Science	6	9.3	9.9	2.5	0.94	-0.24
Fluid Mechanics and Dynamics of Liquids	8	9.4	9.9	2.3	0.95	-0.22
Fluid Mechanics and Dynamics of Gases	4	11.8	10.1	3.4	1.17	0.50
Electricity, Power, and Magnetism	7	11.9	9.7	2.1	1.23	1.05
Heat, Mass, and Energy Transfer	9	10.2	9.5	1.6	1.07	0.44

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

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	4	1,030
No. Examinees Passing	4	777
Percent Examinees Passing	100%	75%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> ± 0.50
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	Number of Exam Questions	Institution Average Performance Index <sup>3</sup>	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score <sup>4</sup>	Scaled Score <sup>4</sup>
Mathematics	8	10.0	10.3	3.0	0.97	-0.10
Probability and Statistics	4	10.9	10.6	3.6	1.03	0.08
Engineering Sciences	4	13.6	10.2	3.5	1.33	0.97
Computational Tools	4	10.7	10.2	3.3	1.05	0.15
Materials Science	4	12.4	10.0	3.4	1.24	0.71
Chemistry	8	10.4	10.2	3.0	1.02	0.07
Fluid Mechanics/Dynamics	8	11.8	9.7	2.3	1.22	0.91
Thermodynamics	8	10.3	9.5	2.1	1.08	0.38
Material/Energy Balances	8	11.7	9.7	2.5	1.21	0.80
Heat Transfer	8	9.7	9.9	2.5	0.98	-0.08
Mass Transfer and Separation	8	10.1	9.6	2.1	1.05	0.24
Chemical Reaction Engineering	8	11.6	9.8	2.4	1.18	0.75
Process Design and Economics	8	8.6	9.7	2.5	0.89	-0.44
Process Control	5	6.8	9.8	3.1	0.69	-0.97
Safety, Health, and Environment	5	11.3	9.6	3.4	1.18	0.50
Ethics and Professional Practice	2	9.5	11.6	5.1	0.82	-0.41

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

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	44	5,855
No. Examinees Passing	37	4,086
Percent Examinees Passing	84%	70%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> ± 0.15
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	Number of Exam Questions	Institution Average Performance Index <sup>3</sup>	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score <sup>4</sup>	Scaled Score <sup>4</sup>
Mathematics	7	9.9	9.6	2.7	1.03	0.11
Probability and Statistics	4	9.9	9.7	3.4	1.02	0.06
Computational Tools	4	10.7	10.4	3.6	1.03	0.08
Ethics and Professional Practice	4	10.9	10.3	3.4	1.06	0.18
Engineering Economics	4	10.7	10.1	3.7	1.06	0.16
Statics	7	9.9	9.4	2.6	1.05	0.19
Dynamics	4	9.8	9.6	3.4	1.02	0.06
Mechanics of Materials	7	9.1	9.0	2.1	1.01	0.05
Materials	4	10.5	9.9	3.4	1.06	0.18
Fluid Mechanics	4	10.2	10.1	3.6	1.01	0.03
Hydraulics and Hydrologic Systems	8	9.8	9.4	2.4	1.04	0.17
Structural Analysis	6	8.7	8.9	2.4	0.98	-0.08
Structural Design	6	8.0	8.8	2.5	0.91	-0.32
Geotechnical Engineering	9	9.6	9.2	2.0	1.04	0.20
Transportation Engineering	8	9.4	9.2	2.1	1.02	0.10
Environmental Engineering	6	10.0	9.2	2.6	1.09	0.31
Construction	4	11.0	9.8	3.5	1.12	0.34
Surveying	4	8.4	8.8	3.5	0.95	-0.11

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

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	1	101
No. Examinees Passing	1	65
Percent Examinees Passing	100%	64%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> ± 1.00
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	Number of Exam Questions	Institution Average Performance Index <sup>3</sup>	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score <sup>4</sup>	Scaled Score <sup>4</sup>
Mathematics	11	8.1	9.4	2.6	0.86	-0.50
Probability and Statistics	4	9.7	9.5	3.5	1.02	0.06
Ethics and Professional Practice	3	7.6	11.0	4.0	0.69	-0.85
Engineering Economics	3	9.2	8.9	4.4	1.03	0.07
Properties of Electrical Materials	4	15.0	9.2	2.5	1.63	2.32
Engineering Sciences	6	9.3	9.5	3.5	0.98	-0.06
Circuit Analysis (DC and AC Steady State)	10	11.1	8.6	2.3	1.29	1.09
Linear Systems	5	7.3	8.2	3.3	0.89	-0.27
Signal Processing	5	10.7	8.6	2.5	1.24	0.84
Electronics	7	9.7	8.9	1.9	1.09	0.42
Power	8	9.1	8.4	1.8	1.08	0.39
Electromagnetics	5	8.2	8.7	2.6	0.94	-0.19
Control Systems	6	9.7	8.4	2.4	1.15	0.54
Communications	5	9.2	8.8	2.4	1.05	0.17
Computer Networks	3	9.8	10.9	3.4	0.90	-0.32
Digital Systems	7	8.5	10.2	2.7	0.83	-0.63
Computer Systems	4	0.0	9.8	3.7	0.00	-2.65
Software Development	4	6.1	11.6	3.5	0.53	-1.57

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

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	5	1,255
No. Examinees Passing	3	929
Percent Examinees Passing	60%	74%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> $\pm 0.45$
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	Number of Exam Questions	Institution Average Performance Index <sup>3</sup>	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score <sup>4</sup>	Scaled Score <sup>4</sup>
Mathematics	11	8.7	9.8	2.5	0.89	-0.44
Probability and Statistics	4	10.9	9.9	3.6	1.10	0.28
Ethics and Professional Practice	3	15.0	11.6	4.1	1.29	0.83
Engineering Economics	3	13.5	9.9	4.3	1.36	0.84
Properties of Electrical Materials	4	10.4	9.7	3.4	1.07	0.21
Engineering Sciences	6	11.2	10.3	3.3	1.09	0.27
Circuit Analysis (DC and AC Steady State)	10	9.4	9.6	2.2	0.98	-0.09
Linear Systems	5	10.1	9.2	2.8	1.10	0.32
Signal Processing	5	9.9	9.4	2.8	1.05	0.18
Electronics	7	9.0	9.3	2.3	0.97	-0.13
Power	8	9.5	9.3	2.1	1.02	0.10
Electromagnetics	5	8.3	9.3	2.8	0.89	-0.36
Control Systems	6	7.9	9.4	2.6	0.84	-0.58
Communications	5	7.4	8.8	2.7	0.84	-0.52
Computer Networks	3	11.3	10.0	4.0	1.13	0.33
Digital Systems	7	8.6	9.4	2.5	0.91	-0.32
Computer Systems	4	8.8	9.0	3.6	0.98	-0.06
Software Development	4	7.4	9.9	3.6	0.75	-0.69

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

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	16	4,329
No. Examinees Passing	16	3,444
Percent Examinees Passing	100%	80%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> ± 0.25
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	Number of Exam Questions	Institution Average Performance Index <sup>3</sup>	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score <sup>4</sup>	Scaled Score <sup>4</sup>
Mathematics	6	9.5	10.0	2.8	0.95	-0.18
Probability and Statistics	4	8.5	9.8	3.3	0.87	-0.39
Computational Tools	3	10.9	10.5	4.0	1.04	0.10
Ethics and Professional Practice	3	11.2	11.2	3.9	1.00	0.00
Engineering Economics	3	8.8	10.1	4.1	0.87	-0.32
Electricity and Magnetism	3	9.1	10.4	4.0	0.88	-0.33
Statics	8	10.2	9.7	2.3	1.05	0.22
Dynamics, Kinematics, and Vibrations	9	9.5	9.6	2.2	0.99	-0.05
Mechanics of Materials	8	10.1	9.5	2.0	1.06	0.30
Material Properties and Processing	8	9.7	9.6	2.1	1.01	0.05
Fluid Mechanics	9	9.4	9.6	2.1	0.98	-0.10
Thermodynamics	13	9.6	9.3	1.5	1.03	0.20
Heat Transfer	9	9.6	9.7	2.1	0.99	-0.05
Measurements, Instrumentation, and Controls	5	9.9	9.4	3.2	1.05	0.16
Mechanical Design and Analysis	9	9.5	9.2	2.2	1.03	0.14

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

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	3	107
No. Examinees Passing	3	42
Percent Examinees Passing	100%	39%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> ± 0.58
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	Number of Exam Questions	Institution Average Performance Index <sup>3</sup>	ABET Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score <sup>4</sup>	Scaled Score <sup>4</sup>
Mathematics and Advanced Engineering Mathematics	12	11.6	8.2	1.7	1.41	2.00
Probability and Statistics	6	12.1	8.4	2.2	1.44	1.68
Chemistry	7	13.6	9.0	2.3	1.51	2.00
Instrumentation and Data Acquisition	4	11.8	8.6	2.5	1.37	1.28
Ethics and Professional Practice	3	10.6	10.4	4.3	1.02	0.05
Safety, Health, and Environment	4	13.0	9.8	3.4	1.33	0.94
Engineering Economics	7	12.3	8.7	2.2	1.41	1.64
Statics	8	13.1	8.5	2.6	1.54	1.77
Dynamics	7	11.7	8.5	2.2	1.38	1.45
Strength of Materials	8	10.6	8.4	1.6	1.26	1.38
Materials Science	6	13.8	8.7	1.7	1.59	3.00
Fluid Mechanics and Dynamics of Liquids	8	13.6	8.2	2.0	1.66	2.70
Fluid Mechanics and Dynamics of Gases	4	11.7	8.7	3.0	1.34	1.00
Electricity, Power, and Magnetism	7	11.6	8.2	2.3	1.41	1.48
Heat, Mass, and Energy Transfer	9	9.4	8.3	1.9	1.13	0.58

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