

**Examination:** Fundamentals of Engineering (FE)  
**Report title:** Subject Matter Report by Major and Examination  
**Exams administered:** Jul 01—Dec 31, 2019  
**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:	Civil

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

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> $\pm 1.00$
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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	7	10.7	11.2	2.3	0.96	-0.22
Probability and Statistics	4	9.4	11.1	2.3	0.85	-0.74
Computational Tools	4	9.3	10.9	2.4	0.85	-0.67
Ethics and Professional Practice	4	15.0	13.6	2.4	1.10	0.58
Engineering Economics	4	6.9	8.5	1.0	0.81	-1.60
Statics	7	8.8	8.8	0.8	1.00	0.00
Dynamics	4	9.6	9.8	0.4	0.98	-0.50
Mechanics of Materials	7	7.8	8.9	0.6	0.88	-1.83
Materials	4	7.9	7.5	0.5	1.05	0.80
Fluid Mechanics	4	15.0	12.2	2.8	1.23	1.00
Hydraulics and Hydrologic Systems	8	9.5	10.3	0.7	0.92	-1.14
Structural Analysis	6	8.9	8.6	1.0	1.03	0.30
Structural Design	6	7.9	7.7	2.0	1.03	0.10
Geotechnical Engineering	9	10.1	8.4	1.9	1.20	0.89
Transportation Engineering	8	9.4	8.9	0.7	1.06	0.71
Environmental Engineering	6	8.8	10.1	2.8	0.87	-0.46
Construction	4	15.0	8.2	5.4	1.83	1.26
Surveying	4	15.0	10.5	2.7	1.43	1.67

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- Performance index is based on a 0–15 scale.
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Name of Institution:	University of Kentucky, Lexington		
Major:	Agricultural	FE Examination:	Environmental

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	3	4
No. Examinees Passing	2	3
Percent Examinees Passing	67%	75%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> $\pm 0.58$
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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	4	8.5	8.1	1.5	1.05	0.27
Probability and Statistics	3	8.3	7.9	1.3	1.05	0.31
Ethics and Professional Practice	5	11.0	10.6	2.6	1.04	0.15
Engineering Economics	4	12.8	11.4	3.7	1.12	0.38
Materials Science	3	11.7	10.9	2.4	1.07	0.33
Environmental Science and Chemistry	11	9.2	9.1	0.3	1.01	0.33
Risk Assessment	5	8.3	10.0	3.5	0.83	-0.49
Fluid Mechanics	9	12.3	11.5	2.2	1.07	0.36
Thermodynamics	3	12.1	11.2	3.9	1.08	0.23
Water Resources	10	11.4	10.9	2.5	1.05	0.20
Water and Wastewater	14	8.4	8.5	1.5	0.99	-0.07
Air Quality	10	11.6	10.7	2.8	1.08	0.32
Solid and Hazardous Waste	10	8.6	8.5	1.0	1.01	0.10
Groundwater and Soils	9	10.5	10.2	1.0	1.03	0.30

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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>	1	38
No. Examinees Passing	1	34
Percent Examinees Passing	100%	89%

<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 and Advanced Engineering Mathematics	12	15.0	9.2	1.6	1.63	3.63
Probability and Statistics	6	10.9	9.7	2.2	1.12	0.55
Chemistry	7	15.0	9.6	2.5	1.56	2.16
Instrumentation and Data Acquisition	4	15.0	9.8	2.9	1.53	1.79
Ethics and Professional Practice	3	15.0	11.4	3.7	1.32	0.97
Safety, Health, and Environment	4	10.3	10.8	3.2	0.95	-0.16
Engineering Economics	7	15.0	10.1	2.4	1.49	2.04
Statics	8	9.0	9.9	2.0	0.91	-0.45
Dynamics	7	8.7	10.0	2.2	0.87	-0.59
Strength of Materials	8	11.1	9.8	1.2	1.13	1.08
Materials Science	6	8.5	10.0	2.3	0.85	-0.65
Fluid Mechanics and Dynamics of Liquids	8	8.9	10.2	1.9	0.87	-0.68
Fluid Mechanics and Dynamics of Gases	4	15.0	10.0	3.3	1.50	1.52
Electricity, Power, and Magnetism	7	10.8	10.0	2.2	1.08	0.36
Heat, Mass, and Energy Transfer	9	11.1	9.0	2.5	1.23	0.84

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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	556
No. Examinees Passing	3	406
Percent Examinees Passing	75%	73%

<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	9.6	10.5	3.1	0.91	-0.29
Probability and Statistics	4	11.8	10.4	3.6	1.13	0.39
Engineering Sciences	4	9.2	10.4	3.5	0.88	-0.34
Computational Tools	4	10.8	10.1	3.2	1.07	0.22
Materials Science	4	10.0	10.4	3.4	0.96	-0.12
Chemistry	8	10.3	10.1	2.8	1.02	0.07
Fluid Mechanics/Dynamics	8	7.9	9.9	2.4	0.80	-0.83
Thermodynamics	8	10.1	9.5	2.0	1.06	0.30
Material/Energy Balances	8	9.4	9.5	2.7	0.99	-0.04
Heat Transfer	8	9.2	9.8	2.8	0.94	-0.21
Mass Transfer and Separation	8	9.4	9.5	2.2	0.99	-0.05
Chemical Reaction Engineering	8	9.0	9.6	2.6	0.94	-0.23
Process Design and Economics	8	9.1	9.4	2.4	0.97	-0.13
Process Control	5	9.8	9.6	3.2	1.02	0.06
Safety, Health, and Environment	5	11.8	9.4	3.5	1.26	0.69
Ethics and Professional Practice	2	15.0	11.1	5.2	1.35	0.75

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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>	24	3,620
No. Examinees Passing	16	2,397
Percent Examinees Passing	67%	66%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> $\pm 0.20$
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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	9.1	9.7	2.8	0.94	-0.21
Probability and Statistics	4	9.3	9.6	3.5	0.97	-0.09
Computational Tools	4	9.6	10.0	3.4	0.96	-0.12
Ethics and Professional Practice	4	11.4	10.2	3.5	1.12	0.34
Engineering Economics	4	10.3	9.8	3.6	1.05	0.14
Statics	7	8.2	9.3	2.7	0.88	-0.41
Dynamics	4	9.1	9.6	3.6	0.95	-0.14
Mechanics of Materials	7	8.8	9.2	2.3	0.96	-0.17
Materials	4	8.6	9.2	3.3	0.93	-0.18
Fluid Mechanics	4	10.5	9.9	3.6	1.06	0.17
Hydraulics and Hydrologic Systems	8	9.5	9.2	2.3	1.03	0.13
Structural Analysis	6	7.9	8.9	2.3	0.89	-0.43
Structural Design	6	7.8	8.9	2.5	0.88	-0.44
Geotechnical Engineering	9	8.8	9.0	1.9	0.98	-0.11
Transportation Engineering	8	9.5	9.1	2.0	1.04	0.20
Environmental Engineering	6	8.9	9.3	2.5	0.96	-0.16
Construction	4	9.8	9.7	3.6	1.01	0.03
Surveying	4	8.9	8.6	3.7	1.03	0.08

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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	62
No. Examinees Passing	1	36
Percent Examinees Passing	100%	58%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> $\pm 1.00$
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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	15.0	9.2	2.8	1.63	2.07
Probability and Statistics	4	15.0	9.5	3.6	1.58	1.53
Ethics and Professional Practice	3	7.2	11.6	4.1	0.62	-1.07
Engineering Economics	3	0.0	9.1	3.8	0.00	-2.39
Properties of Electrical Materials	4	9.4	8.7	3.2	1.08	0.22
Engineering Sciences	6	15.0	9.3	3.2	1.61	1.78
Circuit Analysis (DC and AC Steady State)	10	8.0	8.6	2.1	0.93	-0.29
Linear Systems	5	10.3	8.1	2.8	1.27	0.79
Signal Processing	5	10.9	9.0	2.8	1.21	0.68
Electronics	7	7.3	8.4	2.3	0.87	-0.48
Power	8	5.4	8.1	2.1	0.67	-1.29
Electromagnetics	5	10.2	8.3	2.8	1.23	0.68
Control Systems	6	6.5	8.2	2.3	0.79	-0.74
Communications	5	11.0	8.7	3.1	1.26	0.74
Computer Networks	3	7.2	9.9	3.6	0.73	-0.75
Digital Systems	7	15.0	9.6	2.4	1.56	2.25
Computer Systems	4	7.3	9.7	3.5	0.75	-0.69
Software Development	4	15.0	10.5	3.8	1.43	1.18

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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>	7	906
No. Examinees Passing	6	636
Percent Examinees Passing	86%	70%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> $\pm 0.38$
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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	11.3	9.6	2.3	1.18	0.74
Probability and Statistics	4	11.2	9.9	3.5	1.13	0.37
Ethics and Professional Practice	3	14.0	11.4	4.1	1.23	0.63
Engineering Economics	3	11.3	9.8	4.3	1.15	0.35
Properties of Electrical Materials	4	8.9	9.5	3.4	0.94	-0.18
Engineering Sciences	6	9.7	10.0	3.3	0.97	-0.09
Circuit Analysis (DC and AC Steady State)	10	9.2	9.4	2.2	0.98	-0.09
Linear Systems	5	9.7	9.2	2.9	1.05	0.17
Signal Processing	5	8.0	9.1	2.6	0.88	-0.42
Electronics	7	8.7	9.1	2.2	0.96	-0.18
Power	8	9.5	9.1	2.1	1.04	0.19
Electromagnetics	5	7.8	9.3	2.7	0.84	-0.56
Control Systems	6	10.1	9.2	2.6	1.10	0.35
Communications	5	9.8	9.1	2.8	1.08	0.25
Computer Networks	3	11.4	9.2	3.9	1.24	0.56
Digital Systems	7	9.8	9.3	2.5	1.05	0.20
Computer Systems	4	10.0	8.9	3.5	1.12	0.31
Software Development	4	10.3	9.6	3.9	1.07	0.18

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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>	9	2,709
No. Examinees Passing	8	2,092
Percent Examinees Passing	89%	77%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> ± 0.33
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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	12.2	10.1	2.8	1.21	0.75
Probability and Statistics	4	13.7	9.6	3.2	1.43	1.28
Computational Tools	3	12.0	10.6	3.9	1.13	0.36
Ethics and Professional Practice	3	12.8	11.1	3.9	1.15	0.44
Engineering Economics	3	11.7	10.3	4.1	1.14	0.34
Electricity and Magnetism	3	10.0	10.0	4.1	1.00	0.00
Statics	8	10.2	9.5	2.2	1.07	0.32
Dynamics, Kinematics, and Vibrations	9	9.6	9.4	2.0	1.02	0.10
Mechanics of Materials	8	10.4	9.4	2.1	1.11	0.48
Material Properties and Processing	8	9.3	9.5	2.1	0.98	-0.10
Fluid Mechanics	9	11.1	9.5	2.0	1.17	0.80
Thermodynamics	13	10.5	9.3	1.5	1.13	0.80
Heat Transfer	9	11.5	9.6	2.2	1.20	0.86
Measurements, Instrumentation, and Controls	5	11.4	9.4	3.0	1.21	0.67
Mechanical Design and Analysis	9	10.5	9.2	2.2	1.14	0.59

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