

**Examination:** Fundamentals of Engineering (FE)  
**Report title:** Subject Matter Report by Major and Examination  
**Exams administered:** Jan 01—Jun 30, 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:	Environmental

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	3	4
No. Examinees Passing	3	4
Percent Examinees Passing	100%	100%

<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	8.2	7.9	1.0	1.04	0.30
Probability and Statistics	3	11.0	10.2	2.8	1.08	0.29
Ethics and Professional Practice	5	9.5	10.9	2.4	0.87	-0.58
Engineering Economics	4	13.1	11.7	3.3	1.12	0.42
Materials Science	3	12.3	13.0	3.5	0.95	-0.20
Environmental Science and Chemistry	11	9.3	9.2	1.0	1.01	0.10
Risk Assessment	5	10.3	11.5	3.9	0.90	-0.31
Fluid Mechanics	9	8.9	8.6	0.7	1.03	0.43
Thermodynamics	3	12.1	11.1	4.0	1.09	0.25
Water Resources	10	8.4	8.6	0.9	0.98	-0.22
Water and Wastewater	14	8.8	9.3	1.1	0.95	-0.45
Air Quality	10	8.2	8.4	0.7	0.98	-0.29
Solid and Hazardous Waste	10	8.8	9.0	1.8	0.98	-0.11
Groundwater and Soils	9	7.9	7.7	1.0	1.03	0.20

- 0 examinees have been removed from this data because they were flagged as a random guesser.
- 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:	Agricultural	FE Examination:	Mechanical

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	1	6
No. Examinees Passing	1	6
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	6	15.0	9.8	2.4	1.53	2.17
Probability and Statistics	4	15.0	11.8	2.3	1.27	1.39
Computational Tools	3	9.0	11.1	2.8	0.81	-0.75
Ethics and Professional Practice	3	15.0	13.9	2.5	1.08	0.44
Engineering Economics	3	15.0	9.4	5.0	1.60	1.12
Electricity and Magnetism	3	9.5	11.4	3.7	0.83	-0.51
Statics	8	15.0	10.2	2.9	1.47	1.66
Dynamics, Kinematics, and Vibrations	9	9.3	9.5	0.7	0.98	-0.29
Mechanics of Materials	8	15.0	11.8	2.4	1.27	1.33
Material Properties and Processing	8	11.3	11.0	2.0	1.03	0.15
Fluid Mechanics	9	9.6	9.4	1.1	1.02	0.18
Thermodynamics	13	12.5	10.3	1.4	1.21	1.57
Heat Transfer	9	10.4	9.5	1.3	1.09	0.69
Measurements, Instrumentation, and Controls	5	15.0	11.3	2.7	1.33	1.37
Mechanical Design and Analysis	9	12.0	10.3	1.1	1.17	1.55

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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>	5	1,047
No. Examinees Passing	3	806
Percent Examinees Passing	60%	77%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> ± 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	8	9.9	10.1	2.8	0.98	-0.07
Probability and Statistics	4	10.9	10.1	3.4	1.08	0.24
Engineering Sciences	4	10.0	10.0	3.5	1.00	0.00
Computational Tools	4	10.8	10.3	3.4	1.05	0.15
Materials Science	4	11.2	10.1	3.4	1.11	0.32
Chemistry	8	9.3	10.2	3.0	0.91	-0.30
Fluid Mechanics/Dynamics	8	8.8	9.8	2.3	0.90	-0.43
Thermodynamics	8	9.5	9.3	2.0	1.02	0.10
Material/Energy Balances	8	9.2	9.5	2.5	0.97	-0.12
Heat Transfer	8	9.2	9.8	2.4	0.94	-0.25
Mass Transfer and Separation	8	11.6	9.7	2.0	1.20	0.95
Chemical Reaction Engineering	8	9.7	9.7	2.3	1.00	0.00
Process Design and Economics	8	9.2	9.7	2.6	0.95	-0.19
Process Control	5	8.8	9.8	3.1	0.90	-0.32
Safety, Health, and Environment	5	11.2	9.8	3.3	1.14	0.42
Ethics and Professional Practice	2	13.4	11.8	5.0	1.14	0.32

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

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	1	6
No. Examinees Passing	1	6
Percent Examinees Passing	100%	100%

<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	4	15.0	8.9	5.2	1.69	1.17
Probability and Statistics	3	9.1	13.0	2.9	0.70	-1.34
Ethics and Professional Practice	5	9.2	10.7	3.1	0.86	-0.48
Engineering Economics	4	15.0	10.2	3.6	1.47	1.33
Materials Science	3	9.7	11.7	3.5	0.83	-0.57
Environmental Science and Chemistry	11	10.7	10.3	0.7	1.04	0.57
Risk Assessment	5	6.5	9.4	2.8	0.69	-1.04
Fluid Mechanics	9	15.0	11.0	2.1	1.36	1.90
Thermodynamics	3	15.0	11.7	3.3	1.28	1.00
Water Resources	10	8.1	10.0	1.1	0.81	-1.73
Water and Wastewater	14	10.9	9.9	1.3	1.10	0.77
Air Quality	10	10.0	9.4	1.4	1.06	0.43
Solid and Hazardous Waste	10	9.7	9.6	0.7	1.01	0.14
Groundwater and Soils	9	9.4	8.9	0.8	1.06	0.63

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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>	36	6,301
No. Examinees Passing	29	4,377
Percent Examinees Passing	81%	69%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> $\pm 0.17$
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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	9.8	9.8	2.8	1.00	0.00
Probability and Statistics	4	10.2	9.8	3.4	1.04	0.12
Computational Tools	4	10.7	10.3	3.6	1.04	0.11
Ethics and Professional Practice	4	10.5	10.2	3.4	1.03	0.09
Engineering Economics	4	9.9	9.9	3.5	1.00	0.00
Statics	7	9.9	9.3	2.6	1.06	0.23
Dynamics	4	9.5	9.8	3.5	0.97	-0.09
Mechanics of Materials	7	9.2	9.1	2.2	1.01	0.05
Materials	4	9.9	9.5	3.3	1.04	0.12
Fluid Mechanics	4	10.0	9.8	3.4	1.02	0.06
Hydraulics and Hydrologic Systems	8	9.2	9.6	2.4	0.96	-0.17
Structural Analysis	6	8.8	8.9	2.4	0.99	-0.04
Structural Design	6	8.7	8.9	2.4	0.98	-0.08
Geotechnical Engineering	9	9.4	9.2	1.9	1.02	0.11
Transportation Engineering	8	10.0	9.3	2.1	1.08	0.33
Environmental Engineering	6	9.3	9.2	2.4	1.01	0.04
Construction	4	11.1	9.8	3.4	1.13	0.38
Surveying	4	10.0	8.9	3.5	1.12	0.31

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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	89
No. Examinees Passing	0	68
Percent Examinees Passing	0%	76%

<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	6.7	9.7	2.4	0.69	-1.25
Probability and Statistics	4	7.5	10.0	2.8	0.75	-0.89
Ethics and Professional Practice	3	8.9	12.4	3.5	0.72	-1.00
Engineering Economics	3	8.0	10.0	3.9	0.80	-0.51
Properties of Electrical Materials	4	7.1	10.5	3.5	0.68	-0.97
Engineering Sciences	6	7.5	9.5	2.7	0.79	-0.74
Circuit Analysis (DC and AC Steady State)	10	8.7	9.4	2.4	0.93	-0.29
Linear Systems	5	6.8	9.1	2.6	0.75	-0.88
Signal Processing	5	6.4	9.2	3.0	0.70	-0.93
Electronics	7	7.8	9.3	2.2	0.84	-0.68
Power	8	8.1	8.8	2.1	0.92	-0.33
Electromagnetics	5	9.5	9.0	2.2	1.06	0.23
Control Systems	6	7.0	8.8	2.5	0.80	-0.72
Communications	5	7.8	9.1	2.8	0.86	-0.46
Computer Networks	3	7.5	10.7	4.0	0.70	-0.80
Digital Systems	7	8.5	11.2	3.0	0.76	-0.90
Computer Systems	4	8.9	11.5	3.2	0.77	-0.81
Software Development	4	7.9	12.5	3.3	0.63	-1.39

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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>	9	1,340
No. Examinees Passing	5	957
Percent Examinees Passing	56%	71%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> $\pm 0.33$
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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	11	9.0	9.6	2.3	0.94	-0.26
Probability and Statistics	4	9.2	9.8	3.5	0.94	-0.17
Ethics and Professional Practice	3	10.5	11.6	4.1	0.91	-0.27
Engineering Economics	3	8.4	9.9	4.3	0.85	-0.35
Properties of Electrical Materials	4	9.9	9.7	3.3	1.02	0.06
Engineering Sciences	6	8.1	10.0	3.1	0.81	-0.61
Circuit Analysis (DC and AC Steady State)	10	9.1	9.4	2.2	0.97	-0.14
Linear Systems	5	8.2	9.1	2.8	0.90	-0.32
Signal Processing	5	7.5	9.2	2.7	0.82	-0.63
Electronics	7	7.9	9.2	2.2	0.86	-0.59
Power	8	9.5	9.3	2.0	1.02	0.10
Electromagnetics	5	8.4	9.3	2.8	0.90	-0.32
Control Systems	6	8.4	9.1	2.5	0.92	-0.28
Communications	5	6.8	8.8	2.8	0.77	-0.71
Computer Networks	3	8.3	9.2	4.0	0.90	-0.23
Digital Systems	7	9.3	9.4	2.6	0.99	-0.04
Computer Systems	4	9.3	9.1	3.4	1.02	0.06
Software Development	4	9.5	10.1	3.7	0.94	-0.16

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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>	20	4,219
No. Examinees Passing	20	3,354
Percent Examinees Passing	100%	79%

<b>Uncertainty Range for Scaled Score <sup>4</sup></b> $\pm 0.22$
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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	10.8	10.1	3.0	1.07	0.23
Probability and Statistics	4	11.0	9.8	3.3	1.12	0.36
Computational Tools	3	11.0	10.8	4.0	1.02	0.05
Ethics and Professional Practice	3	11.2	11.3	3.9	0.99	-0.03
Engineering Economics	3	11.4	10.1	4.1	1.13	0.32
Electricity and Magnetism	3	11.2	10.1	4.1	1.11	0.27
Statics	8	11.1	9.6	2.3	1.16	0.65
Dynamics, Kinematics, and Vibrations	9	10.6	9.4	2.1	1.13	0.57
Mechanics of Materials	8	10.4	9.5	2.0	1.09	0.45
Material Properties and Processing	8	9.5	9.6	2.1	0.99	-0.05
Fluid Mechanics	9	10.1	9.6	2.1	1.05	0.24
Thermodynamics	13	10.1	9.3	1.5	1.09	0.53
Heat Transfer	9	10.0	9.7	2.2	1.03	0.14
Measurements, Instrumentation, and Controls	5	10.6	9.4	2.9	1.13	0.41
Mechanical Design and Analysis	9	10.2	9.2	2.3	1.11	0.43

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