

Examination: Fundamentals of Engineering (FE)
Report title: Subject Matter Report by Major and Examination
Exams administered: Jan 01 – Jun 30, 2020
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 ²
No. Examinees Taking ¹	1	8
No. Examinees Passing	0	5
Percent Examinees Passing	0%	63%

Uncertainty Range for Scaled Score ⁴ ± 1.00
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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	4	9.4	7.9	1.5	1.19	1.00
Probability and Statistics	3	6.3	10.3	3.7	0.61	-1.08
Ethics and Professional Practice	5	7.0	9.4	2.3	0.74	-1.04
Engineering Economics	4	7.1	9.8	3.1	0.72	-0.87
Materials Science	3	15.0	11.3	5.3	1.33	0.70
Environmental Science and Chemistry	11	7.2	9.5	1.8	0.76	-1.28
Risk Assessment	5	9.8	8.9	1.7	1.10	0.53
Fluid Mechanics	9	8.9	8.7	1.3	1.02	0.15
Thermodynamics	3	15.0	9.9	4.1	1.52	1.24
Water Resources	10	11.4	9.2	1.4	1.24	1.57
Water and Wastewater	14	7.3	9.0	0.8	0.81	-2.13
Air Quality	10	8.1	8.2	0.9	0.99	-0.11
Solid and Hazardous Waste	10	7.8	8.6	0.7	0.91	-1.14
Groundwater and Soils	9	7.8	8.9	1.6	0.88	-0.69

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

	Institution	ABET Comparator ²
No. Examinees Taking ¹	1	44
No. Examinees Passing	1	39
Percent Examinees Passing	100%	89%

Uncertainty Range for Scaled Score ⁴ ± 1.00
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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	8.1	8.8	1.3	0.92	-0.54
Probability and Statistics	6	8.3	9.4	1.9	0.88	-0.58
Chemistry	7	8.6	9.3	1.9	0.92	-0.37
Instrumentation and Data Acquisition	4	15.0	9.6	3.3	1.56	1.64
Ethics and Professional Practice	3	15.0	12.0	3.7	1.25	0.81
Safety, Health, and Environment	4	15.0	11.3	3.1	1.33	1.19
Engineering Economics	7	8.9	10.1	2.4	0.88	-0.50
Statics	8	10.3	9.1	1.6	1.13	0.75
Dynamics	7	10.1	9.8	2.2	1.03	0.14
Strength of Materials	8	8.7	9.7	2.0	0.90	-0.50
Materials Science	6	8.5	9.5	2.6	0.89	-0.38
Fluid Mechanics and Dynamics of Liquids	8	11.3	10.0	1.5	1.13	0.87
Fluid Mechanics and Dynamics of Gases	4	15.0	10.5	2.9	1.43	1.55
Electricity, Power, and Magnetism	7	7.6	9.9	2.4	0.77	-0.96
Heat, Mass, and Energy Transfer	9	11.6	9.9	2.6	1.17	0.65

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

	Institution	ABET Comparator ²
No. Examinees Taking ¹	1	480
No. Examinees Passing	1	358
Percent Examinees Passing	100%	75%

Uncertainty Range for Scaled Score ⁴ ± 1.00
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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	8	9.0	10.0	3.0	0.90	-0.33
Probability and Statistics	4	8.9	10.5	3.7	0.85	-0.43
Engineering Sciences	4	9.0	10.2	3.4	0.88	-0.35
Computational Tools	4	15.0	10.4	3.2	1.44	1.44
Materials Science	4	15.0	10.3	3.5	1.46	1.34
Chemistry	8	9.6	9.9	2.6	0.97	-0.12
Fluid Mechanics/Dynamics	8	10.4	9.6	2.4	1.08	0.33
Thermodynamics	8	10.3	9.3	1.9	1.11	0.53
Material/Energy Balances	8	9.1	9.6	2.6	0.95	-0.19
Heat Transfer	8	11.0	9.9	2.6	1.11	0.42
Mass Transfer and Separation	8	11.8	9.6	2.0	1.23	1.10
Chemical Reaction Engineering	8	9.4	9.6	2.4	0.98	-0.08
Process Design and Economics	8	7.4	9.5	2.6	0.78	-0.81
Process Control	5	7.5	9.7	2.9	0.77	-0.76
Safety, Health, and Environment	5	10.5	9.5	3.3	1.11	0.30
Ethics and Professional Practice	2	15.0	11.3	5.3	1.33	0.70

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

	Institution	ABET Comparator ²
No. Examinees Taking ¹	14	3,615
No. Examinees Passing	12	2,663
Percent Examinees Passing	86%	74%

Uncertainty Range for Scaled Score ⁴ ± 0.27
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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	9.2	9.8	2.8	0.94	-0.21
Probability and Statistics	4	9.2	10.0	3.4	0.92	-0.24
Computational Tools	4	10.9	10.1	3.3	1.08	0.24
Ethics and Professional Practice	4	10.5	10.7	3.5	0.98	-0.06
Engineering Economics	4	10.4	10.4	3.6	1.00	0.00
Statics	7	10.8	9.5	2.6	1.14	0.50
Dynamics	4	9.4	10.0	3.6	0.94	-0.17
Mechanics of Materials	7	9.4	9.3	2.3	1.01	0.04
Materials	4	9.8	9.6	3.2	1.02	0.06
Fluid Mechanics	4	9.1	10.0	3.4	0.91	-0.26
Hydraulics and Hydrologic Systems	8	10.3	9.7	2.4	1.06	0.25
Structural Analysis	6	9.0	9.1	2.4	0.99	-0.04
Structural Design	6	8.3	9.0	2.5	0.92	-0.28
Geotechnical Engineering	9	9.8	9.3	1.9	1.05	0.26
Transportation Engineering	8	11.3	9.4	2.0	1.20	0.95
Environmental Engineering	6	9.7	9.3	2.5	1.04	0.16
Construction	4	10.4	9.9	3.4	1.05	0.15
Surveying	4	8.7	9.0	3.6	0.97	-0.08

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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	674
No. Examinees Passing	2	499
Percent Examinees Passing	100%	74%

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	10.1	9.7	2.3	1.04	0.17
Probability and Statistics	4	15.0	10.2	3.4	1.47	1.41
Ethics and Professional Practice	3	11.4	11.6	3.9	0.98	-0.05
Engineering Economics	3	4.1	10.2	4.2	0.40	-1.45
Properties of Electrical Materials	4	11.9	10.0	3.3	1.19	0.58
Engineering Sciences	6	15.0	10.1	3.1	1.49	1.58
Circuit Analysis (DC and AC Steady State)	10	11.7	9.6	2.2	1.22	0.95
Linear Systems	5	7.2	9.3	2.9	0.77	-0.72
Signal Processing	5	9.2	9.3	2.7	0.99	-0.04
Electronics	7	9.4	9.2	2.2	1.02	0.09
Power	8	10.4	9.4	2.2	1.11	0.45
Electromagnetics	5	12.8	9.2	2.7	1.39	1.33
Control Systems	6	6.4	9.6	2.9	0.67	-1.10
Communications	5	8.9	9.3	2.9	0.96	-0.14
Computer Networks	3	12.7	9.2	3.9	1.38	0.90
Digital Systems	7	9.8	9.5	2.5	1.03	0.12
Computer Systems	4	10.3	9.2	3.5	1.12	0.31
Software Development	4	15.0	10.4	3.7	1.44	1.24

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

	Institution	ABET Comparator ²
No. Examinees Taking ¹	8	2,126
No. Examinees Passing	6	1,705
Percent Examinees Passing	75%	80%

Uncertainty Range for Scaled Score ⁴ ± 0.35
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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	9.7	10.0	2.7	0.97	-0.11
Probability and Statistics	4	9.8	10.0	3.3	0.98	-0.06
Computational Tools	3	11.6	10.8	4.0	1.07	0.20
Ethics and Professional Practice	3	11.4	11.3	3.9	1.01	0.03
Engineering Economics	3	10.6	10.0	4.0	1.06	0.15
Electricity and Magnetism	3	11.7	10.3	4.0	1.14	0.35
Statics	8	10.8	9.7	2.3	1.11	0.48
Dynamics, Kinematics, and Vibrations	9	9.8	9.5	2.1	1.03	0.14
Mechanics of Materials	8	9.7	9.6	2.0	1.01	0.05
Material Properties and Processing	8	9.9	9.5	2.1	1.04	0.19
Fluid Mechanics	9	8.8	9.7	2.1	0.91	-0.43
Thermodynamics	13	9.2	9.4	1.5	0.98	-0.13
Heat Transfer	9	10.1	9.7	2.2	1.04	0.18
Measurements, Instrumentation, and Controls	5	10.3	9.6	2.9	1.07	0.24
Mechanical Design and Analysis	9	9.0	9.3	2.2	0.97	-0.14

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