

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 ²
No. Examinees Taking ¹	4	9
No. Examinees Passing	3	5
Percent Examinees Passing	75%	56%

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	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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2. Comparator includes all examinees from programs accredited by the ABET commission noted.

3. Performance index is based on a 0–15 scale.

 These scores are made available for assessment purposes. See the NCEES publication entitled Using the FE as an Outcomes Assessment Tool at http://ncees.org/licensure/educator-resources/.

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Graduation Date:	Examinees Testing within 12 months of Graduation Date

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

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

Uncertainty
Range for
Scaled
Score ⁴
± 0.71

	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	9.3	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	Chemical FE Examination: Chemical			
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	Institution	ABET Comparator ²
No. Examinees Taking ¹	4	1,030
No. Examinees Passing	4	777
Percent Examinees Passing	100%	75%

	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	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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Graduation Date:	Examinees Testing within 12 months of Graduation Date

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

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

Uncertainty Range for Scaled Score⁴ ± 0.15

	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	9.9	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		
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	Institution	ABET Comparator ²
No. Examinees Taking ¹	1	101
No. Examinees Passing	1	65
Percent Examinees Passing	100%	64%

	Number of Exam Questions	Institution Average Performance Index ³	ABE I Comparator Average Performance Index	ABET Comparator Standard Deviation	Ratio Score ⁴	Scaled Score ⁴
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

ARET

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Graduation Date:	Examinees Testing within 12 months of Graduation Date

Name of Institution:	University of Kentucky, Lexington				
Major:	Electrical	FE Examination:	Electrical and Computer		
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	Institution	ABET Comparator ²
No. Examinees Taking ¹	5	1,255
No. Examinees Passing	3	929
Percent Examinees Passing	60%	74%

Mathematics118.7Probability and Statistics410.9Ethics and Professional Practice315.0Engineering Economics313.5Properties of Electrical Materials410.4Engineering Sciences611.2Circuit Analysis (DC and AC Steady State)109.4Linear Systems510.1	Performance Index	Comparator Standard Deviation	Ratio Score ⁴	Scaled Score ⁴
Ethics and Professional Practice315.0Engineering Economics313.5Properties of Electrical Materials410.4Engineering Sciences611.2Circuit Analysis (DC and AC Steady State)109.4Linear Systems510.1	9.8	2.5	0.89	-0.44
Engineering Economics313.5Properties of Electrical Materials410.4Engineering Sciences611.2Circuit Analysis (DC and AC Steady State)109.4Linear Systems510.1	9.9	3.6	1.10	0.28
Properties of Electrical Materials410.4Engineering Sciences611.2Circuit Analysis (DC and AC Steady State)109.4Linear Systems510.1	11.6	4.1	1.29	0.83
Engineering Sciences611.2Circuit Analysis (DC and AC Steady State)109.4Linear Systems510.1	9.9	4.3	1.36	0.84
Circuit Analysis (DC and AC Steady State)109.4Linear Systems510.1	9.7	3.4	1.07	0.21
Linear Systems 5 10.1	10.3	3.3	1.09	0.27
	9.6	2.2	0.98	-0.09
	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

ARET

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Name of Institution:		University of Kentucky, L	exington
Major:	Mechanical	FE Examination:	Mechanical
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	Institution	ABET Comparator ²
No. Examinees Taking ¹	16	4,329
No. Examinees Passing	16	3,444
Percent Examinees Passing	100%	80%

Uncertainty Range for Scaled Score⁴ ± 0.25

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

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

Uncertainty Range for Scaled Score⁴ ± 0.58

	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	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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