Fundamentals of Engineering (FE) Subject Matter Report by Major and Examination Jul 01-Dec 31, 2019 First-Time Examinees from EAC/ABET-Accredited Engineering Programs Examinees Testing within 12 months of Graduation Date

Name of Institution:	University of Kentucky, Lexington					
Major:	Agricultural	FE Examination:	Civil			
		Institution	ABET Comparator ²			

No. Examinees Taking ¹	1	4
No. Examinees Passing	1	4
Percent Examinees Passing	100%	100%

						± 1.00
	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	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

1. <u>0</u> examinees have been removed from this data because they were flagged as a random guesser.

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

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

4. These scores are made available for assessment purposes. See the NCEES publication entitled

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Name of Institution:		University of Kentu	University of Kentucky, Lexington			
Major:	Agricultural	FE Examination:	Environmental			
			Institution	ABET Comparator ²		
No. Examinees Taking ¹			3	4		
No. Examinees Passing			2	3		

Percent Examinees Passing

Uncertainty Range for Scaled Score ⁴ ± 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
4	8.5	8.1	1.5	1.05	0.27
3	8.3	7.9	1.3	1.05	0.31
5	11.0	10.6	2.6	1.04	0.15
4	12.8	11.4	3.7	1.12	0.38
3	11.7	10.9	2.4	1.07	0.33
11	9.2	9.1	0.3	1.01	0.33
5	8.3	10.0	3.5	0.83	-0.49
9	12.3	11.5	2.2	1.07	0.36
3	12.1	11.2	3.9	1.08	0.23
10	11.4	10.9	2.5	1.05	0.20
14	8.4	8.5	1.5	0.99	-0.07
10	11.6	10.7	2.8	1.08	0.32
10	8.6	8.5	1.0	1.01	0.10
9	10.5	10.2	1.0	1.03	0.30
	of Exam Questions 4 3 5 4 3 11 5 9 3 10 14 10 14 10 10	Number of Exam Questions Average Performance Index 3 4 8.5 3 8.3 5 11.0 4 12.8 3 11.7 11 9.2 5 8.3 9 12.3 3 12.1 10 11.4 14 8.4 10 11.6 10 8.6	Number of Exam Questions Institution Average Performance Index ³ Comparator Average Performance Index 4 8.5 8.1 3 8.3 7.9 5 11.0 10.6 4 12.8 11.4 3 11.7 10.9 11 9.2 9.1 5 8.3 10.0 9 12.3 11.5 3 12.1 11.2 10 11.4 10.9 14 8.4 8.5 10 11.6 10.7 10 8.6 8.5	Number of Exam Questions institution Average Performance Index 3 Comparator Average Performance Index ABET Comparator Standard Deviation 4 8.5 8.1 1.5 3 8.3 7.9 1.3 5 11.0 10.6 2.6 4 12.8 11.4 3.7 3 11.7 10.9 2.4 11 9.2 9.1 0.3 5 8.3 10.0 3.5 9 12.3 11.5 2.2 3 12.1 11.2 3.9 10 11.4 10.9 2.5 14 8.4 8.5 1.5 10 11.6 10.7 2.8 10 8.6 8.5 1.0	Number of Exam Questions institution Average Performance Index ³ Comparator Average Performance Index ABET Comparator Standard Deviation Ratio Score ⁴ 4 8.5 8.1 1.5 1.05 3 8.3 7.9 1.3 1.05 5 11.0 10.6 2.6 1.04 4 12.8 11.4 3.7 1.12 3 11.7 10.9 2.4 1.07 11 9.2 9.1 0.3 1.01 5 8.3 10.0 3.5 0.83 9 12.3 11.5 2.2 1.07 3 12.1 11.2 3.9 1.08 10 11.4 10.9 2.5 1.05 14 8.4 8.5 1.5 0.99 10 11.6 10.7 2.8 1.08

67%

75%

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Name of Institution:	University of Kent	ersity of Kentucky, Lexington				
Major:	Agricultural	FE Examination:	Other D	isciplines		
			Institution	ABET Comparator ²		
No. Examinees Taking ¹			1	38		
No. Examinees Passing			1	34		

Percent Examinees Passing

Uncertainty Range for Scaled Score ⁴ ± 1.00

	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	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

100%

89%

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Name of Institution:		University of Ken	versity of Kentucky, Lexington				
Major:	Chemical	FE Examination:		Chemical			
			Institution	ABET Comparator ²			
No. Examinees Taking ¹			4	556			
No. Examinees Passing			3	406			

No. Examinees Passing	
Percent Examinees Passing	

						± 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	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

75%

73%

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Name of Institution:	University of	University of Kentucky, Lexington			
Major:	Civil	FE Examination:		Civil	
			Institution	ABET Comparator ²	
No. Examinees Taking ¹			24	3,620	

No. Examinees Passing Percent Examinees Passing

						Score ⁴ ± 0.20
	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	9.1	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

16

67%

2,397

66%

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Name of Institution:		University of	University of Kentucky, Lexington				
Major:	Computer	FE Examination:	Electrical and Computer				
			Institution	ABET Comparator ²			
No. Examinees Taking ¹			1	62			
No. Examinees Passing			1	36			
Percent Examinees Passing			100%	58%			

ABET Institution ABET Number Comparator Average Comparator Ratio Scaled of Exam Average Performance Score ⁴ Score ⁴ Standard Questions Performance Index ³ Deviation Index Mathematics 2.8 2.07 11 15.0 9.2 1.63 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 0.22 4 9.4 8.7 3.2 1.08 **Engineering Sciences** 9.3 3.2 1.61 1.78 6 15.0 Circuit Analysis (DC and AC Steady State) 10 8.0 8.6 2.1 0.93 -0.29 0.79 Linear Systems 5 10.3 8.1 2.8 1.27 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 6 0.79 **Control Systems** 6.5 8.2 2.3 -0.74 Communications 5 11.0 8.7 3.1 1.26 0.74 3 0.73 Computer Networks 7.2 9.9 3.6 -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:		f Kentucky, Lexington				
Major:	Electrical	FE Examination:	Electrical and Co	d Computer		
			Institution	ABET Comparator ²		
No. Examinees Taking ¹			7	906		
No. Examinees Passing			6	636		

Percent	Examinees	Passing

Uncertainty Range for Scaled Score ⁴ ± 0.38

	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	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

86%

70%

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Name of Institution:	University of Kentu	University of Kentucky, Lexington				
Major:	Mechanical	chanical FE Examination:		Mechanical		
			Institution	ABET Comparator ²		
No. Examinees Taking ¹			9	2,709		

No. Examinees Passing Percent Examinees Passing

						± 0.33	
	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	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	

8

89%

2,092

77%

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