



# NCEES



**Examination:** Fundamentals of Engineering (FE)  
**Report title:** Subject Matter Report by Major and Examination  
**Exams administered:** Jul 01 – Dec 31, 2021  
**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>	1	5
No. Examinees Passing	1	2
Percent Examinees Passing	100%	40%

Uncertainty  
 Range for  
 Scaled  
 Score <sup>4</sup>  
 ± 1.00

ABET Comparator Standard Deviation	Ratio Score <sup>4</sup>	Scaled Score <sup>4</sup>
3.2	1.34	1.19
3.6	1.40	1.19
2.9	0.97	-0.10
3.9	1.47	1.23
1.1	1.18	1.45
2.7	1.04	0.15
2.3	1.03	0.13
2.5	1.32	1.16
3.4	1.38	1.21
2.0	1.23	1.05
1.2	1.25	1.92
1.9	1.40	1.74
1.4	1.17	1.00
0.8	1.08	0.87
1.1	1.26	1.82

	Number of Exam Questions	Institution Average Performance Index <sup>3</sup>	ABET Comparator Average Performance Index
Mathematics	5	15.0	11.2
Probability and Statistics	4	15.0	10.7
Ethics and Professional Practice	5	9.4	9.7
Engineering Economics	5	15.0	10.2
Fundamental Principles	7	10.7	9.1
Environmental Chemistry	7	10.4	10.0
Health Hazards and Risk Assessment	4	11.1	10.8
Fluid Mechanics and Hydraulics	12	12.0	9.1
Thermodynamics	3	15.0	10.9
Surface Water Resources and Hydrology	9	11.3	9.2
Groundwater, Soils, and Sediments	8	11.5	9.2
Water and Wastewater	12	11.6	8.3
Air Quality and Control	8	9.7	8.3
Solid and Hazardous Waste	7	10.0	9.3
Energy and Environment	4	9.7	7.7

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- Comparator includes all examinees from programs accredited by the ABET commission noted.
- Performance Index is based on a 0-15 scale.
- These scores are made available for assessment purposes. See the NCEES publication [Using the FE as an Outcomes Assessment Tool at https://ncees.org/education/outcomes-assessment/](https://ncees.org/education/outcomes-assessment/).

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publication entitled  
outcomes-assessment/.

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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>	2	21
No. Examinees Passing	1	15
Percent Examinees Passing		50%

Uncertainty  
 Range for  
 Scaled  
 Score <sup>4</sup>  
 ± 0.71

71%

ABET Comparator Average Performance	ABET Comparator Standard Deviation	Ratio Score <sup>4</sup>	Scaled Score <sup>4</sup>	Score <sup>4</sup> ± 0.71	Number of Exam Questions	Institution Average Performance <sup>3</sup>
9.7	9.2	2.3	1.05	0.22	Mathematics	8
8.4	9.2	2.5	0.91	-0.32	Probability and Statistics	6
9.2	10.1	3.3	0.91	-0.27	Chemistry	5
9.0	11.6	3.1	0.78	-0.84	Instrumentation and Controls	4
11.9	12.1	3.4	0.98	-0.06	Engineering Ethics and Societal Impacts	5
9.5	10.8	3.1	0.88	-0.42	Safety, Health, and Environment	6
9.9	10.0	2.4	0.99	-0.04	Engineering Economics	6
8.7	9.7	1.9	0.90	-0.53	Statics	9
9.7	9.6	2.1	1.01	0.05	Dynamics	9
8.2	9.4	1.9	0.87	-0.63	Strength of Materials	9
7.1	9.3	2.7	0.76	-0.81	Materials	6
9.3	9.2	1.6	1.01	0.06	Fluid Mechanics	12
8.3	8.7	3.5	0.95	-0.11	Basic Electrical Engineering	6
7.8	8.8	1.9	0.89	-0.53	Thermodynamics and Heat Transfer	9

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 2. Comparator includes all examinees from programs accredited by the ABET.  
 3. Performance index is based on a 0-15 scale.  
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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>	3	304
No. Examinees Passing	3	224
Percent Examinees Passing	100%	74%

Uncertainty  
Range for  
Scaled  
Score <sup>4</sup>  
± 0.58

ABET Comparator Standard Deviation	Ratio Score <sup>4</sup>	Scaled Score <sup>4</sup>
3.1	1.31	1.00
3.6	1.04	0.11
3.5	1.19	0.51
3.4	1.02	0.06
3.0	1.01	0.03
2.4	0.94	-0.25
1.8	1.09	0.44
2.3	1.19	0.74
2.4	1.19	0.75
2.3	1.13	0.52
3.6	0.99	-0.03
2.4	1.10	0.42
3.8	1.26	0.68
2.6	1.27	1.00
3.5	1.20	0.54
3.4	1.26	0.74
4.2	1.07	0.19

	Number of Exam Questions	Institution Average Performance Index <sup>3</sup>	ABET Comparator Average Performance Index
Mathematics	6	13.0	9.9
Probability and Statistics	4	10.4	10.0
Engineering Sciences	4	11.5	9.7
Materials Science	4	10.4	10.2
Chemistry and Biology	7	10.1	10.0
Fluid Mechanics/Dynamics	8	8.7	9.3
Thermodynamics	8	10.0	9.2
Material/Energy Balances	10	10.6	8.9
Heat Transfer	8	11.3	9.5
Mass Transfer and Separation	8	10.7	9.5
Solids Handling	3	10.0	10.1
Chemical Reaction Engineering	7	10.7	9.7
Economics	4	12.6	10.0
Process Design	7	12.3	9.7
Process Control	4	11.4	9.5
Safety, Health, and Environment	5	12.2	9.7
Ethics and Professional Practice	3	12.6	11.8

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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>	21	3,608
No. Examinees Passing	17	2,227
Percent Examinees Passing	81%	62%

Uncertainty  
 Range for  
 Scaled  
 Score <sup>4</sup>  
 ± 0.22

ABET Comparator Standard	Ratio Score <sup>4</sup>	Scaled Score <sup>4</sup>		Number of Exam	Institution Average Performance	ABET Comparator Average
2.4	1.06	0.25	Mathematics and Statistics	8	9.9	9.3
3.6	1.16	0.47	Ethics and Professional Practice	4	12.3	10.6
3.2	0.99	-0.03	Engineering Economics	5	9.4	9.5
2.4	1.03	0.13	Statics	8	9.4	9.1
3.5	1.09	0.26	Dynamics	4	10.5	9.6
2.4	1.00	0.00	Mechanics of Materials	7	8.9	8.9
2.7	1.18	0.59	Materials	5	10.7	9.1
2.8	1.20	0.68	Fluid Mechanics	6	11.3	9.4
2.4	1.07	0.25	Surveying	6	9.7	9.1
2.0	1.04	0.20	Water Resources and Environmental Engineering	10	9.4	9.0
1.8	0.94	-0.28	Structural Engineering	10	8.1	8.6
2.0	1.07	0.30	Geotechnical Engineering	10	9.5	8.9
2.1	1.11	0.48	Transportation Engineering	9	10.0	9.0
2.5	1.11	0.40	Construction Engineering	8	10.1	9.1

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Name of Institution:	University of Kentucky, Lexington		
Major:	Electrical	FE Examination:	Electrical and Computer

	<b>Institution</b>	<b>ABET Comparator<sup>2</sup></b>
No. Examinees Taking <sup>1</sup>	2	746
No. Examinees Passing	2	561
Percent Examinees Passing	100%	75%

Uncertainty  
 Range for  
 Scaled  
 Score <sup>4</sup>  
 ± 0.71

ABET	Number	Institution	ABET Comparator
9.6	2.4	0.92	-0.33
10.4	3.6	0.95	-0.14
11.3	3.7	1.33	1.00
10.0	3.0	0.88	-0.40
10.0	3.4	0.88	-0.35
9.5	2.3	1.00	0.00
9.3	2.9	0.86	-0.45
9.2	2.9	0.78	-0.69
9.3	2.2	1.03	0.14
9.2	2.1	0.95	-0.24
9.5	3.4	0.73	-0.76
9.5	2.6	0.93	-0.27
9.2	2.7	0.95	-0.19
9.4	3.2	1.03	0.09
9.5	2.3	0.91	-0.39
9.3	3.2	0.83	-0.50
10.0	3.7	1.22	0.59
Mathematics	11	8.8	
Probability and Statistics	4	9.9	
Ethics and Professional Practice	4	15.0	
Engineering Economics	5	8.8	
Properties of Electrical Materials	4	8.8	
Circuit Analysis (DC and AC Steady State)	11	9.5	
Linear Systems	5	8.0	
Signal Processing	5	7.2	
Electronics	7	9.6	
Power Systems	8	8.7	
Electromagnetics	4	6.9	
Control Systems	6	8.8	
Communications	5	8.7	
Computer Networks	4	9.7	
Digital Systems	8	8.6	
Computer Systems	5	7.7	
Software Engineering	4	12.2	

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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>	15	2,423
No. Examinees Passing	13	1,721

**Uncertainty  
 Range for  
 Scaled  
 Score <sup>4</sup>**  
 ± 0.26

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>
10.9	9.8	2.9	1.11	0.38
10.3	9.7	3.3	1.06	0.18
9.7	10.9	3.7	0.89	-0.32
11.3	10.2	3.6	1.11	0.31
9.8	9.4	3.0	1.04	0.13
9.8	9.4	2.2	1.04	0.18
9.7	9.3	2.1	1.04	0.19
10.5	9.1	2.0	1.15	0.70
10.2	9.4	2.4	1.09	0.33
9.5	9.2	2.0	1.03	0.15
9.2	9.0	1.8	1.02	0.11
9.0	9.5	2.5	0.95	-0.20
9.5	9.1	2.8	1.04	0.14
9.7	9.1	2.1	1.07	0.29

	Number of Exam Questions
Mathematics	6
Probability and Statistics	4
Ethics and Professional Practice	4
Engineering Economics	4
Electricity and Magnetism	5
Statics	9
Dynamics, Kinematics, and Vibrations	10
Mechanics of Materials	9
Material Properties and Processing	7
Fluid Mechanics	10
Thermodynamics	10
Heat Transfer	7
Measurements, Instrumentation, and Controls	5
Mechanical Design and Analysis	10

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

	Institution	ABET Comparator <sup>2</sup>
No. Examinees Taking <sup>1</sup>	1	15
No. Examinees Passing		
Percent Examinees Passing		

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>	Uncertainty Range for Scaled Score <sup>4</sup> ± 1.00	Subject
	0%	33%					
8	7.1	7.4	1.1	0.96	-0.27		Mathematics
6	7.8	8.2	1.3	0.95	-0.31		Probability and Statistics
5	7.2	8.2	1.2	0.88	-0.83		Chemistry
4	15.0	10.1	4.3	1.49	1.14		Instrumentation and Controls
5	5.7	9.2	3.2	0.62	-1.09		Engineering Ethics and Societal Impact
6	7.2	9.6	3.2	0.75	-0.75		Safety, Health, and Environment
6	8.0	8.3	1.7	0.96	-0.18		Engineering Economics
9	10.6	8.6	1.3	1.23	1.54		Statics
9	0.0	7.3	2.5	0.00	-2.92		Dynamics
9	10.0	7.9	1.4	1.27	1.50		Strength of Materials
6	8.7	10.0	3.5	0.87	-0.37		Materials
12	8.7	8.0	1.8	1.09	0.39		Fluid Mechanics
6	5.5	7.5	2.5	0.73	-0.80		Basic Electrical Engineering
9	8.8	8.0	2.4	1.10	0.33		Thermodynamics and Heat Transfer

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1. 0 examinees
2. Comparison
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