Subject Matter Reports

An outcomes assessment tool for educators

NCEES
advancing licensure for engineers and surveyors

The right tool for the right job

The FE as an Outcomes Assessment Tool

Subject
Matter Reports

How do your program's and your students' performances compare?

NCEES provides an institution- and degree-specific report known as the Subject Matter Report. The Subject Matter Report details the performance of currently enrolled students at your institution who take the Fundamentals of Engineering (FE) exam.

In January and July of each calendar year, we produce and distribute free detailed Subject Matter Reports containing summary exam results by subject area for all EAC/ABET-, ETAC/ABET-, and ANSAC/ABET-accredited engineering programs. Educators use the reports to compare their students' performance against that of all examinees from ABET-accredited programs who declared the same major and who chose the same discipline-specific exam.

Learn more about why the Subject Matter Report is the right tool for outcomes assessment. Find out how to receive your report.

Contact

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Examination: Fundamentals of Engineering (FE)
Report title: Subject Matter Report by Major and Examination
Exams administered: Jul 01—Nov 30, 20XX
Examinees included: First-Time Examinees from EAC/ABET-Accredited Engineering Programs
Graduation Date: Examinees Testing within 12 months of Graduation Date

Name of Institution:	**EXAMPLE**		
Major:	**Civil**	FE Examination:	**Civil**

	Institution	**ABET Comparator[2]**
No. Examinees Taking [1]	31	2,499
No. Examinees Passing	26	1,760
Percent Examinees Passing	84%	70%

Uncertainty Range for Scaled Score [4]
± 0.18

	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 Statistics	8	9.8	9.8	2.7	1.00	0.00
Ethics and Professional Practice	4	10.4	10.1	3.5	1.03	0.09
Engineering Economics	5	10.2	9.9	3.7	1.03	0.08
Statics	8	12.3	11.1	3.8	1.11	0.32
Dynamics	4	10.7	10.1	3.6	1.06	0.17
Mechanics of Materials	7	10.7	9.5	2.8	1.14	0.43
Materials	5	10.9	10.3	3.6	1.06	0.17
Fluid Mechanics	6	9.7	9.7	2.5	1.00	0.00
Surveying	6	8.7	9.2	3.1	0.95	-0.16
Water Resources and Environmental Engineering	10	10.5	10.9	3.4	0.96	-0.12
Structural Engineering	10	9.7	9.4	2.2	1.03	0.14
Geotechnical Engineering	10	9.5	9.4	2.1	1.01	0.05
Transportation Engineering	9	9.2	9.0	2.2	1.02	0.09
Construction Engineering	8	11.5	9.5	3.7	1.21	0.54

1. **0** 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 NCESS publication entitled Using the FE as an Outcomes Assessment Tool at https://ncees.org/engineering/educator-resources/.

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Name of Institution:	**EXAMPLE**	
Major:	**Electrical**	FE Examination: **Electrical and Computer**

	Institution	**ABET Comparator[2]**
No. Examinees Taking [1]	14	595
No. Examinees Passing	13	462
Percent Examinees Passing	93%	78%

Uncertainty Range for Scaled Score [4]
± 0.27

	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	10.6	10.1	2.4	1.05	0.21
Probability and Statistics	4	9.8	10.3	3.2	0.95	-0.16
Ethics and Professional Practice	4	13.4	11.8	4.0	1.14	0.40
Engineering Economics	5	11.6	9.9	4.1	1.17	0.41
Properties of Electrical Materials	4	10.8	11.0	2.9	0.98	-0.07
Circuit Analysis (DC and AC Steady State)	11	10.1	9.9	2.6	1.02	0.08
Linear Systems	5	9.9	9.4	3.0	1.05	0.17
Signal Processing	5	10.2	9.7	3.0	1.05	0.17
Electronics	7	10.8	9.7	2.3	1.11	0.48
Power Systems	8	9.5	9.6	2.1	0.99	-0.05
Electromagnetics	4	11.6	10.0	3.1	1.16	0.52
Control Systems	6	9.4	9.2	2.5	1.02	0.08
Communications	5	10.0	9.0	2.8	1.11	0.36
Computer Networks	4	9.7	9.5	4.3	1.02	0.05
Digital Systems	8	10.7	9.2	2.7	1.16	0.56
Computer Systems	5	10.1	8.9	3.7	1.13	0.32
Software Engineering	4	11.9	10.5	4.4	1.13	0.32

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Name of Institution:	**EXAMPLE**		
Major:	**Mechanical**	FE Examination:	**Mechanical**

	Institution	**ABET Comparator[2]**
No. Examinees Taking [1]	3	1,707
No. Examinees Passing	2	1,452
Percent Examinees Passing	67%	85%

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]
Mathematics	6	10.3	10.5	3.0	0.98	-0.07
Probability and Statistics	4	8.7	10.5	3.2	0.83	-0.56
Ethics and Professional Practice	4	15.0	11.8	3.9	1.27	0.82
Engineering Economics	4	8.2	10.2	4.2	0.80	-0.48
Electricity and Magnetism	5	13.2	11.0	3.8	1.20	0.58
Statics	9	10.2	10.1	2.6	1.01	0.04
Dynamics, Kinematics, and Vibrations	10	10.5	10.0	2.3	1.05	0.22
Mechanics of Materials	9	11.3	9.9	2.1	1.14	0.67
Material Properties and Processing	7	9.8	9.9	2.1	0.99	-0.04
Fluid Mechanics	10	10.5	10.3	2.2	1.02	0.09
Thermodynamics	10	9.5	9.6	1.5	0.99	-0.07
Heat Transfer	7	10.8	9.9	2.2	1.09	0.41
Measurements, Instrumentation, and Controls	5	8.6	9.5	3.1	0.91	-0.29
Mechanical Design and Analysis	10	9.4	9.1	2.4	1.03	0.13

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Name of Institution:	**EXAMPLE**		
Major:	**Petroleum**	FE Examination:	**Other Disciplines**

	Institution	**ABET Comparator[2]**
No. Examinees Taking [1]	7	81
No. Examinees Passing	6	54
Percent Examinees Passing	86%	67%

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	8	8.8	9.0	1.8	0.98	-0.11
Probability and Statistics	6	9.3	9.2	1.9	1.01	0.05
Chemistry	5	9.9	9.6	2.3	1.03	0.13
Instrumentation and Controls	4	7.0	9.0	3.4	0.78	-0.59
Engineering Ethics and Societal Impacts	5	13.1	11.4	3.7	1.15	0.46
Safety, Health, and Environment	6	11.6	11.2	3.4	1.04	0.12
Engineering Economics	6	11.5	9.8	2.8	1.17	0.61
Statics	9	9.1	8.8	2.5	1.03	0.12
Dynamics	9	10.3	9.5	2.3	1.08	0.35
Strength of Materials	9	9.4	8.7	2.0	1.08	0.35
Materials	6	8.4	8.9	2.3	0.94	-0.22
Fluid Mechanics	12	9.4	9.0	2.3	1.04	0.17
Basic Electrical Engineering	6	9.8	8.6	3.1	1.14	0.39
Thermodynamics and Heat Transfer	9	9.3	8.5	2.2	1.09	0.36

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