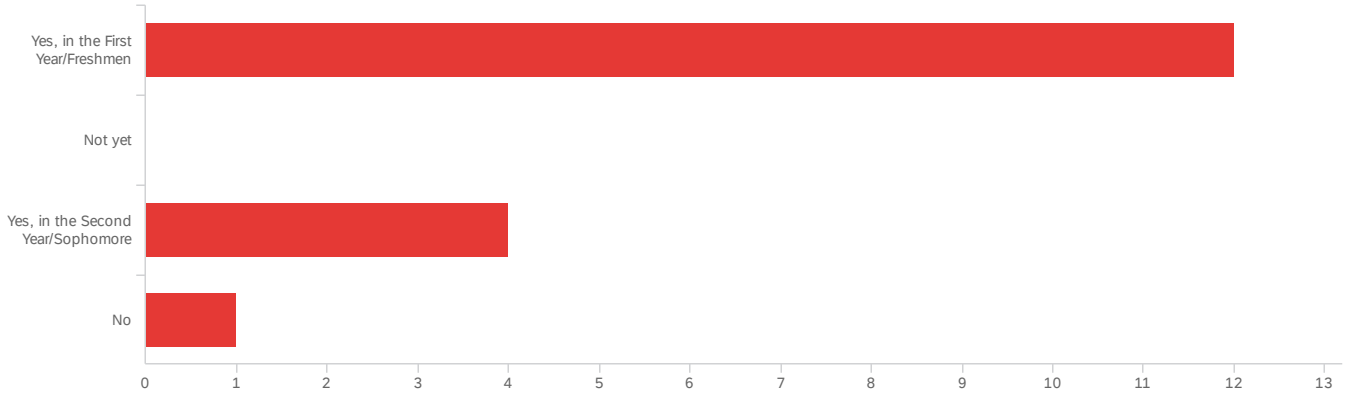
Default Report

BEEC's BME Intro Course Share and Learn

October 20, 2021 2:05 PM MDT

Q11 - Does your program/curriculum offer a BME Introduction Course? BME Introduction Course - foundational course introducing students to concepts and skills related to the BME field.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Does your program/curriculum offer a BME Introduction Course? BME Introduction Course - foundational course introducing students to concepts and skills related to the BME field.	1.00	5.00	1.94	1.47	2.17	17

#	Field		Choice Count
1	Yes, in the First Year/Freshmen	70.59%	12
2	Not yet	0.00%	0
4	Yes, in the Second Year/Sophomore	23.53%	4
5	No	5.88%	1
			17

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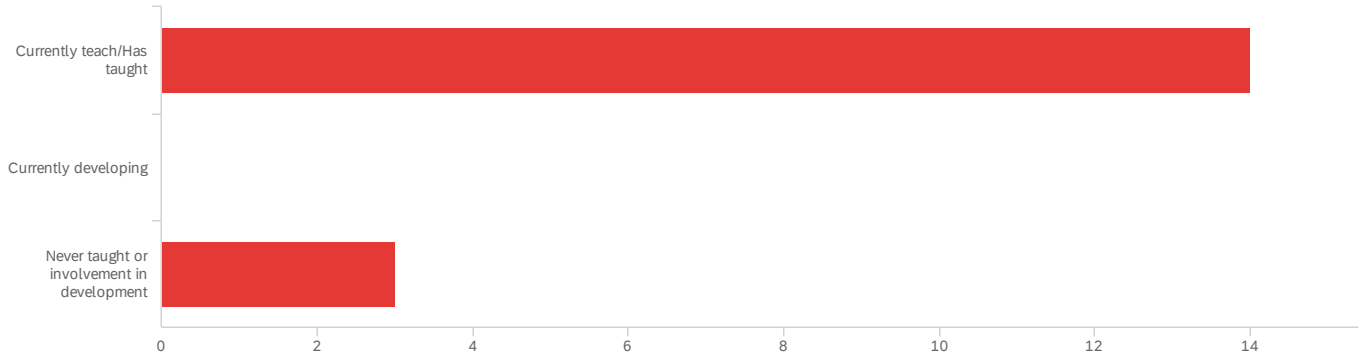
Q1 - What has your involvement been for this BME Intro course in your curriculum?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	What has your involvement been for this BME Intro course in your curriculum?	1.00	6.00	1.88	1.91	3.63	17

#	Field		Choice Count
1	Currently teach/Has taught	82.35%	14
2	Currently developing	0.00%	0
6	Never taught or involvement in development	17.65%	3
			17

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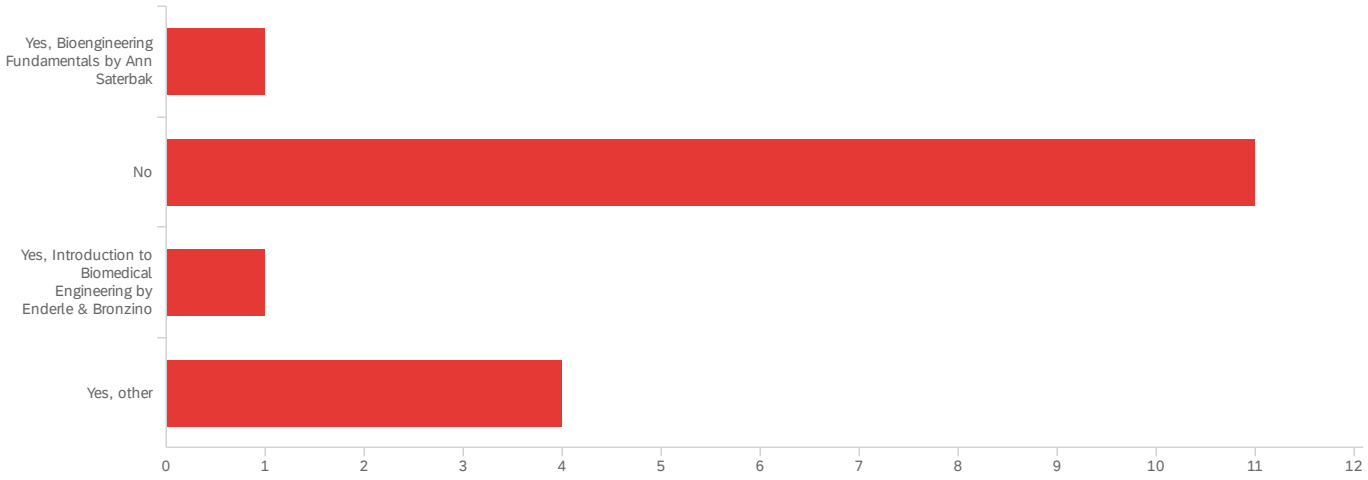
Q2 - Do you have a required textbook?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Do you have a required textbook?	7.00	10.00	8.47	0.92	0.84	17

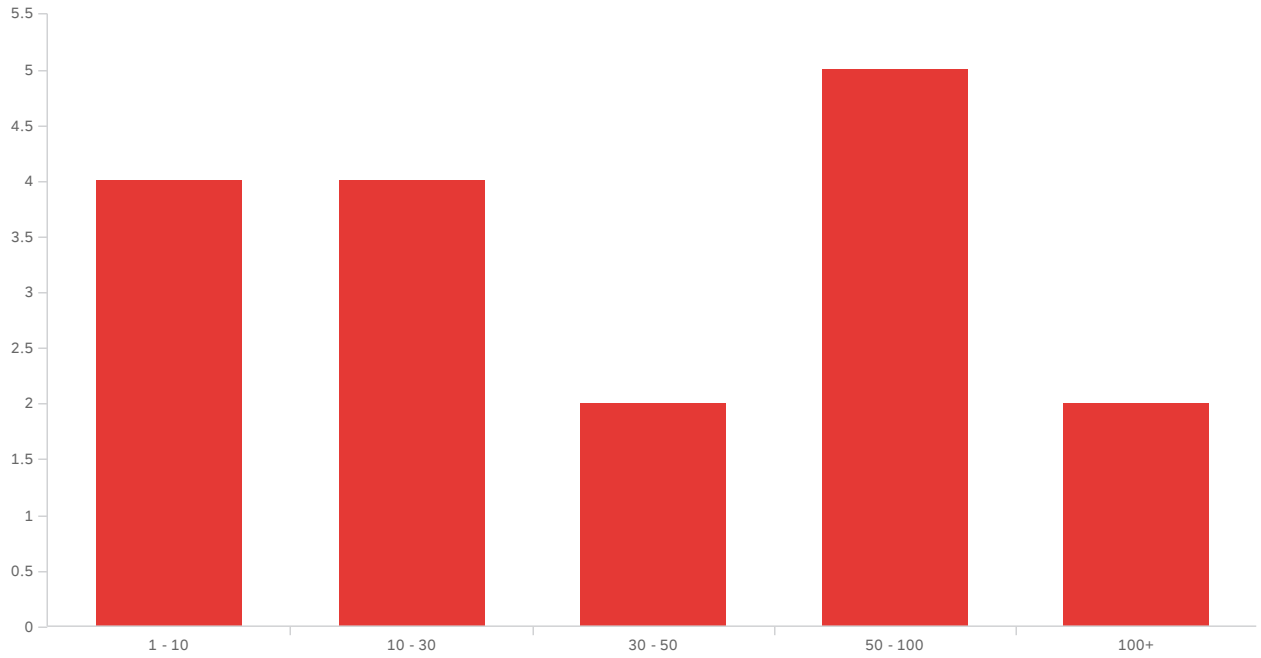
#	Field		Choice Count
7	Yes, Bioengineering Fundamentals by Ann Saterbak	5.88%	1
8	No	64.71%	11
9	Yes, Introduction to Biomedical Engineering by Enderle & Bronzino	5.88%	1
10	Yes, other	23.53%	4
			17

Showing rows 1 - 5 of 5

Q12 - What other book?

What other book?
Human Physiology by Fox and Medical Physiology by Boron and Boulpaep
Introduction to Biomedical Engineering, Douglas Christensen
Medical Device Design and Regulation by Carl T. DeMarco
DeMarco, Carl T., Medical Device Design and Regulation, ASQ, Quality Press. 2011

Q4 - How many students are typically in your course?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How many students are typically in your course?	1.00	5.00	2.82	1.38	1.91	17

#	Field		Choice Count
1	1 - 10	23.53%	4
2	10 - 30	23.53%	4
3	30 - 50	11.76%	2
4	50 - 100	29.41%	5
5	100+	11.76%	2
			17

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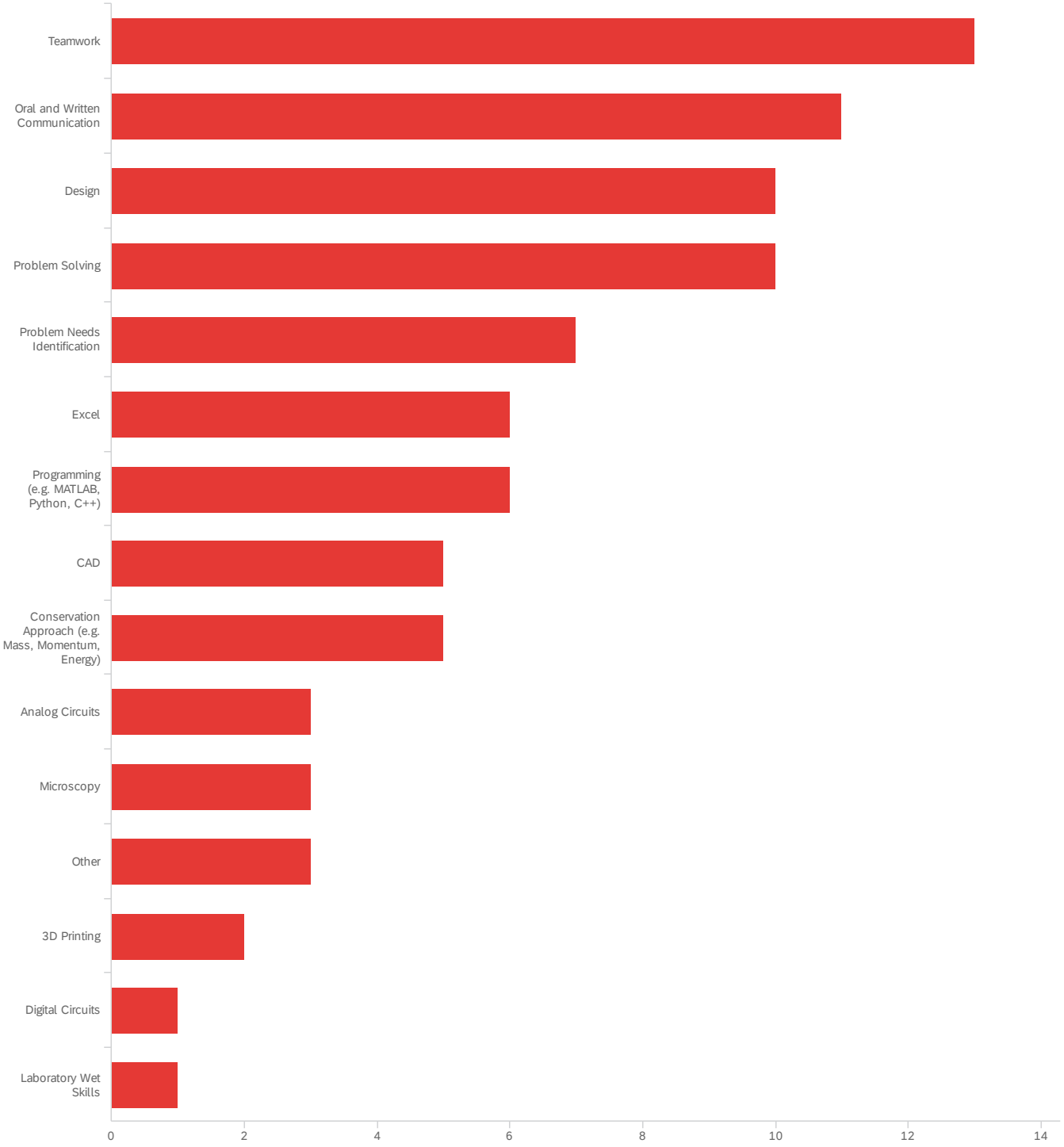
Q5 - What skills are taught in this course?



#	Field	Choice Count
1	Excel	6.98% 6
2	Analog Circuits	3.49% 3

#	Field		Choice Count
3	Digital Circuits	1.16%	1
4	Programming (e.g. MATLAB, Python, C++)	6.98%	6
5	CAD	5.81%	5
6	Design	11.63%	10
7	Microscopy	3.49%	3
8	Teamwork	15.12%	13
9	Oral and Written Communication	12.79%	11
10	Problem Needs Identification	8.14%	7
11	Problem Solving	11.63%	10
12	Laboratory Wet Skills	1.16%	1
13	3D Printing	2.33%	2
15	Other	3.49%	3
16	Conservation Approach (e.g. Mass, Momentum, Energy)	5.81%	5
			86

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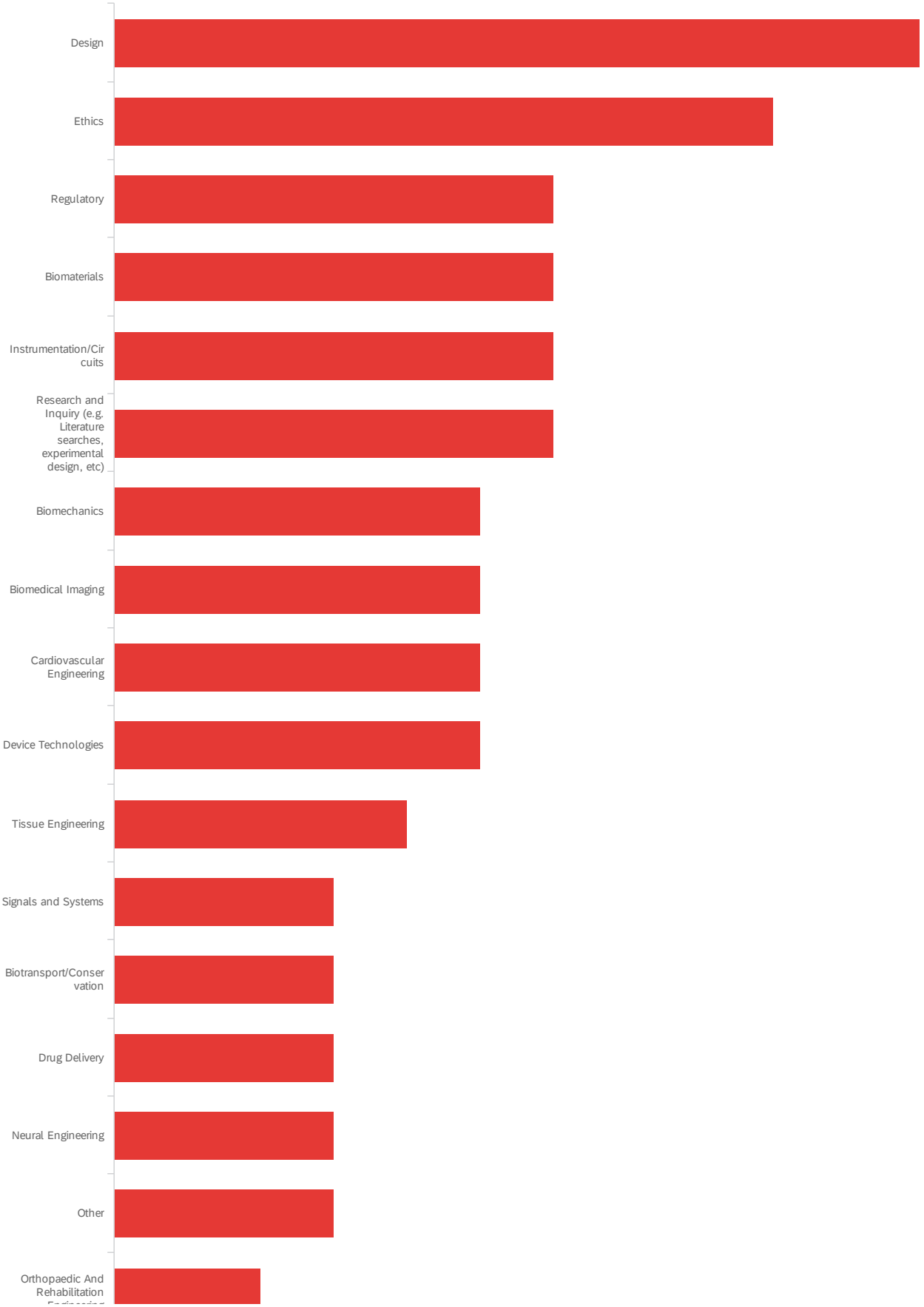
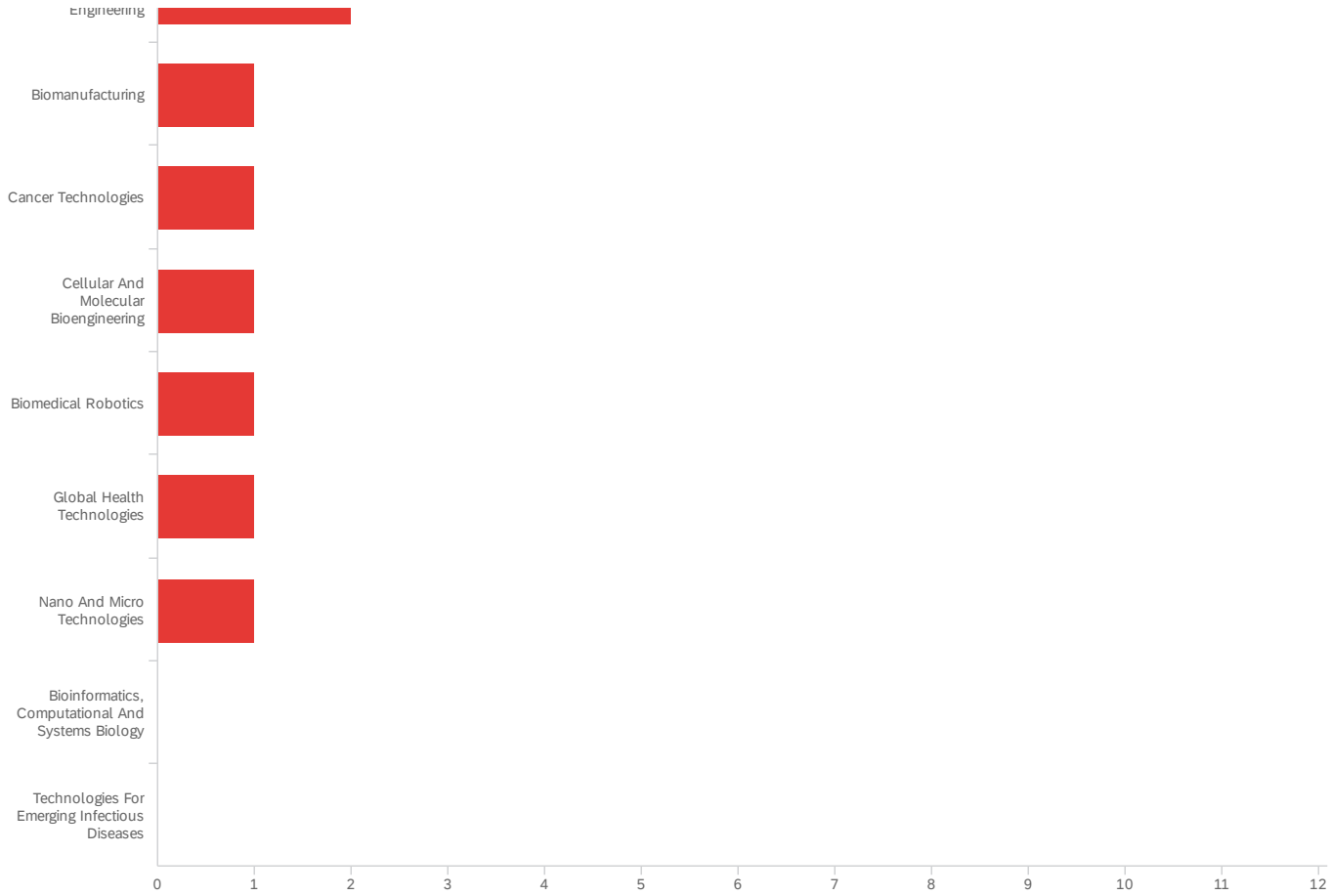
Q9 - If other skills, which?

If other skills, which?
Quantitative physiology; mathematical modeling with physics
FDA regulations

Q6 - What topics are discussed in this course? (List includes some BMES track topics)





#	Field	Choice Count	
1	Signals and Systems	3.30%	3
2	Ethics	9.89%	9
3	Biotransport/Conservation	3.30%	3
4	Regulatory	6.59%	6
5	Bioinformatics, Computational And Systems Biology	0.00%	0
6	Biomanufacturing	1.10%	1
7	Biomaterials	6.59%	6
8	Biomechanics	5.49%	5
9	Biomedical Imaging	5.49%	5
10	Instrumentation/Circuits	6.59%	6
11	Cancer Technologies	1.10%	1
12	Cardiovascular Engineering	5.49%	5
13	Cellular And Molecular Bioengineering	1.10%	1

#	Field		Choice Count
14	Device Technologies	5.49%	5
15	Biomedical Robotics	1.10%	1
16	Drug Delivery	3.30%	3
17	Global Health Technologies	1.10%	1
18	Nano And Micro Technologies	1.10%	1
19	Neural Engineering	3.30%	3
20	Orthopaedic And Rehabilitation Engineering	2.20%	2
21	Technologies For Emerging Infectious Diseases	0.00%	0
22	Tissue Engineering	4.40%	4
23	Research and Inquiry (e.g. Literature searches, experimental design, etc)	6.59%	6
24	Design	12.09%	11
25	Other	3.30%	3
			91

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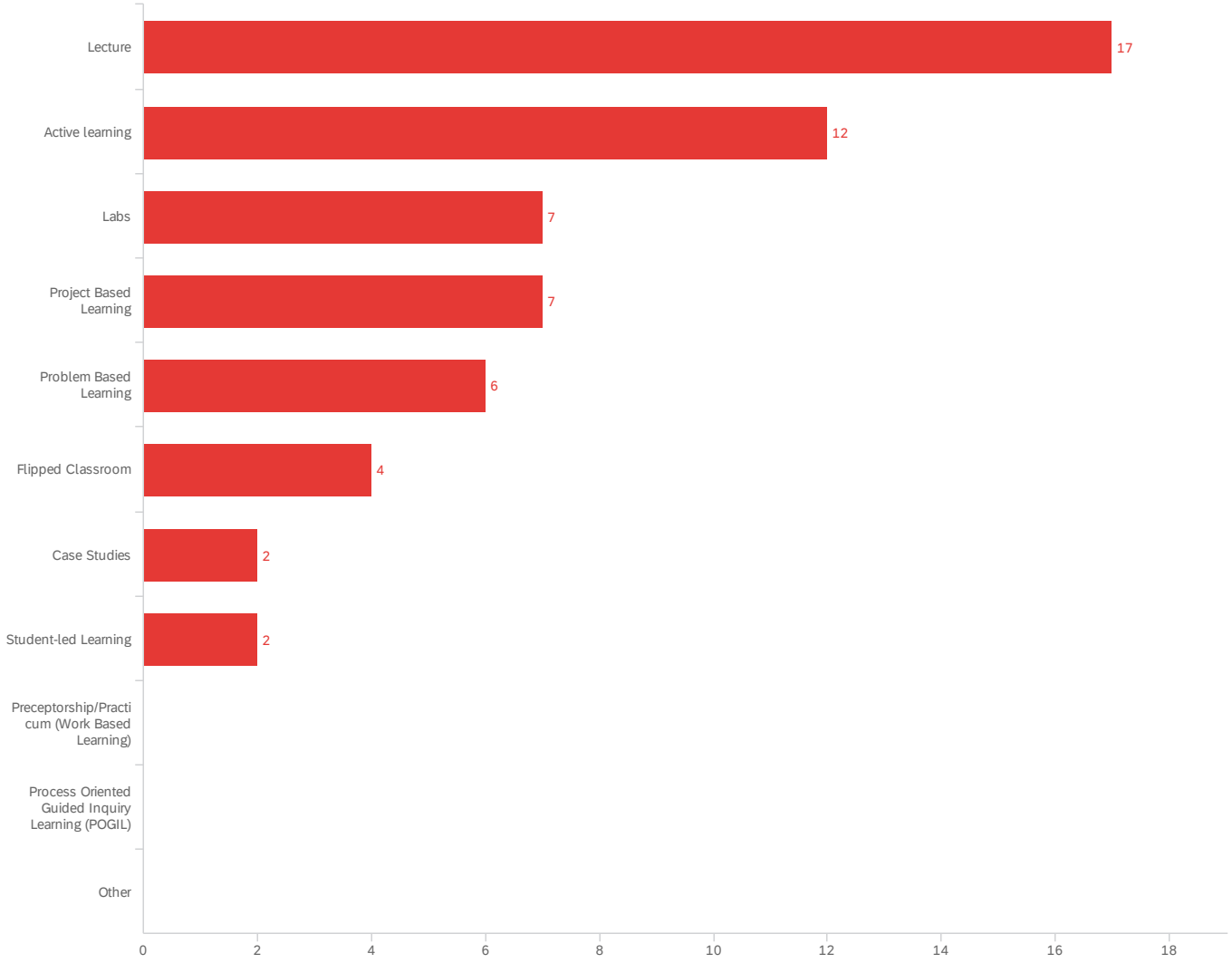
Q8 - If other topics, which?

If other topics, which?
Physiology; modeling systems using basic math and physics
topics related to biomedical engineering, medical device technologies, and biomedical industrial practices 1. Fundamentals and History 3. Regulatory Affairs 5. Risk Management
Biotechnology (diagnostic test development), statistics,

Q7 - What teaching methods are used in your course?



#	Field		Choice Count
1	Lecture	29.82%	17
2	Labs	12.28%	7
3	Active learning	21.05%	12
4	Preceptorship/Practicum (Work Based Learning)	0.00%	0
5	Case Studies	3.51%	2
6	Problem Based Learning	10.53%	6
7	Student-led Learning	3.51%	2
9	Process Oriented Guided Inquiry Learning (POGIL)	0.00%	0

#	Field		Choice Count
10	Flipped Classroom	7.02%	4
11	Project Based Learning	12.28%	7
12	Other	0.00%	0
			57

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Q10 - If you use another teaching method, which?

If you use another teaching method, which?

Q13 - What ABET student learning outcomes are assessed in this introduction course?

(ABET Outcomes: LINK)

#	Field		Choice Count
1	(1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	12.50%	7
2	(2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	14.29%	8
3	(3) an ability to communicate effectively with a range of audiences	16.07%	9
4	(4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	16.07%	9
5	(5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	14.29%	8
6	(6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	7.14%	4
7	(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	19.64%	11
			56

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#	Field		Choice Count
1	(1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	12.50%	7
2	(2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	14.29%	8
3	(3) an ability to communicate effectively with a range of audiences	16.07%	9
4	(4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	16.07%	9
5	(5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	14.29%	8
6	(6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	7.14%	4
7	(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	19.64%	11
			56

Showing rows 1 - 8 of 8

Q14 - What BME program criteria are assessed in this introduction course?

#	Field		Choice Count
1	(a) Applying principles of engineering, biology, human physiology, chemistry, calculus-based physics, mathematics (through differential equations) and statistics;	33.33%	8
2	(b) Solving bio/biomedical engineering problems, including those associated with the interaction between living and non-living systems;	29.17%	7
3	(c) Analyzing, modeling, designing, and realizing bio/biomedical engineering devices, systems, components, or processes; and	16.67%	4
4	(d) Making measurements on and interpreting data from living systems.	20.83%	5
			24

Showing rows 1 - 5 of 5

#	Field		Choice Count
1	(a) Applying principles of engineering, biology, human physiology, chemistry, calculus-based physics, mathematics (through differential equations) and statistics;	33.33%	8
2	(b) Solving bio/biomedical engineering problems, including those associated with the interaction between living and non-living systems;	29.17%	7
3	(c) Analyzing, modeling, designing, and realizing bio/biomedical engineering devices, systems, components, or processes; and	16.67%	4
4	(d) Making measurements on and interpreting data from living systems.	20.83%	5
			24

Showing rows 1 - 5 of 5

End of Report