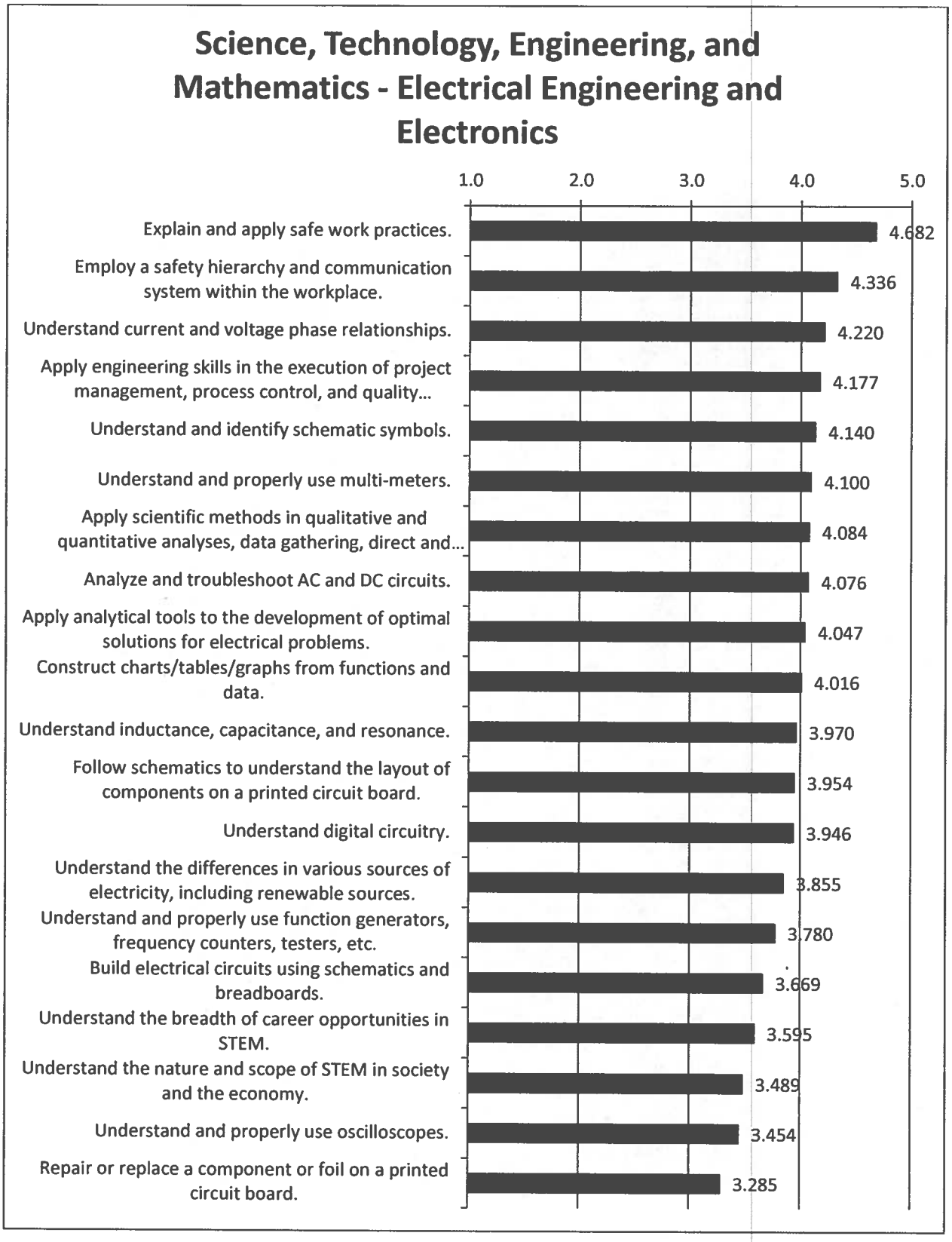
II. STEM – Electrical Engineering and Electronics



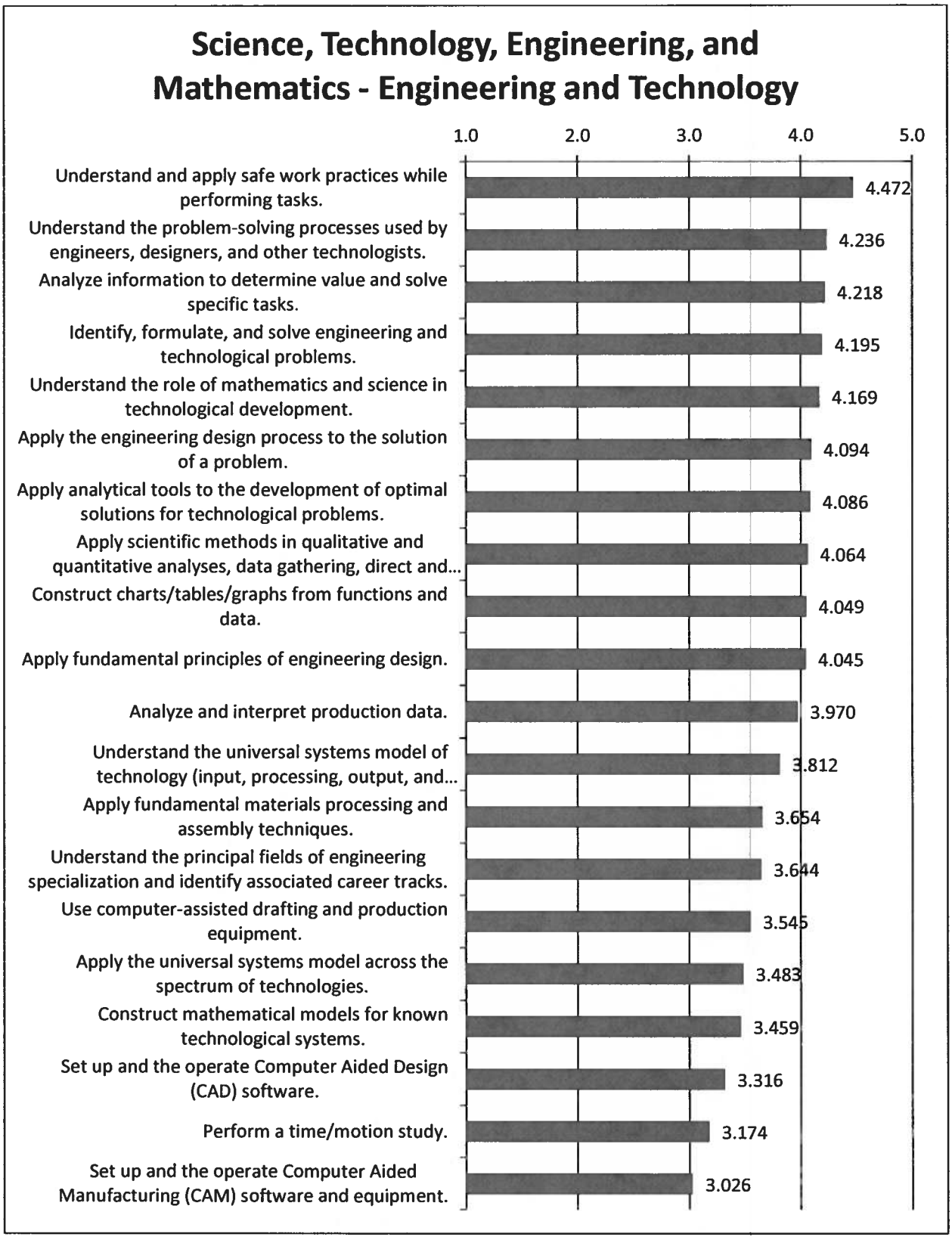
Science, Technology, Engineering, and Mathematics - Electrical Engineering and Electronics

Skill/Knowledge Set	Mean	Minimum	Maximum	Mode	Standard Error of Mean	Valid N
Explain and apply safe work practices.	4.682	1	5	5	.065	132
Employ a safety hierarchy and communication system within the workplace.	4.336	1	5	5	.095	131
Understand current and voltage phase relationships.	4.220	1	5	5	.104	132
Apply engineering skills in the execution of project management, process control, and quality assurance.	4.177	1	5	5	.100	130
Understand and identify schematic symbols.	4.140	1	5	5	.102	129
Understand and properly use multi-meters.	4.100	1	5	5	.105	130
Apply scientific methods in qualitative and quantitative analyses, data gathering, direct and indirect observation, predictions, and problem identification.	4.084	1	5	5	.100	131
Analyze and troubleshoot AC and DC circuits.	4.076	1	5	5	.110	131
Apply analytical tools to the development of optimal solutions for electrical problems.	4.047	1	5	5	.107	129
Construct charts/tables/graphs from functions and data.	4.016	1	5	5	.098	128
Understand inductance, capacitance, and resonance.	3.970	1	5	5	.109	132
Follow schematics to understand the layout of components on a printed circuit board.	3.954	1	5	5	.109	131
Understand digital circuitry.	3.946	1	5	5	.113	130
Understand the differences in various sources of electricity, including renewable sources.	3.855	1	5	5	.114	131
Understand and properly use function generators, frequency counters, testers, etc.	3.780	1	5	5	.109	132
Build electrical circuits using schematics and breadboards.	3.669	1	5	5	.117	130
Understand the breadth of career opportunities in STEM.	3.595	1	5	5	.115	131
Understand the nature and scope of STEM in society and the economy.	3.489	1	5	4	.110	131
Understand and properly use oscilloscopes.	3.454	1	5	5	.119	130
Repair or replace a component or foil on a printed circuit board.	3.285	1	5	4	.116	130

Suggested Additional Skills and Other Responses

proficiency in English
Understand PLC/HMI Computer driven controls
Determine best materials for electrical repair
Electrical Control Troubleshooting
Understand the nature of cheistry in electrical systems
Understand Plant for Networking/Data Collection methods
recognize the signs of unwanted resistance and its causes

III. STEM – Engineering and Technology

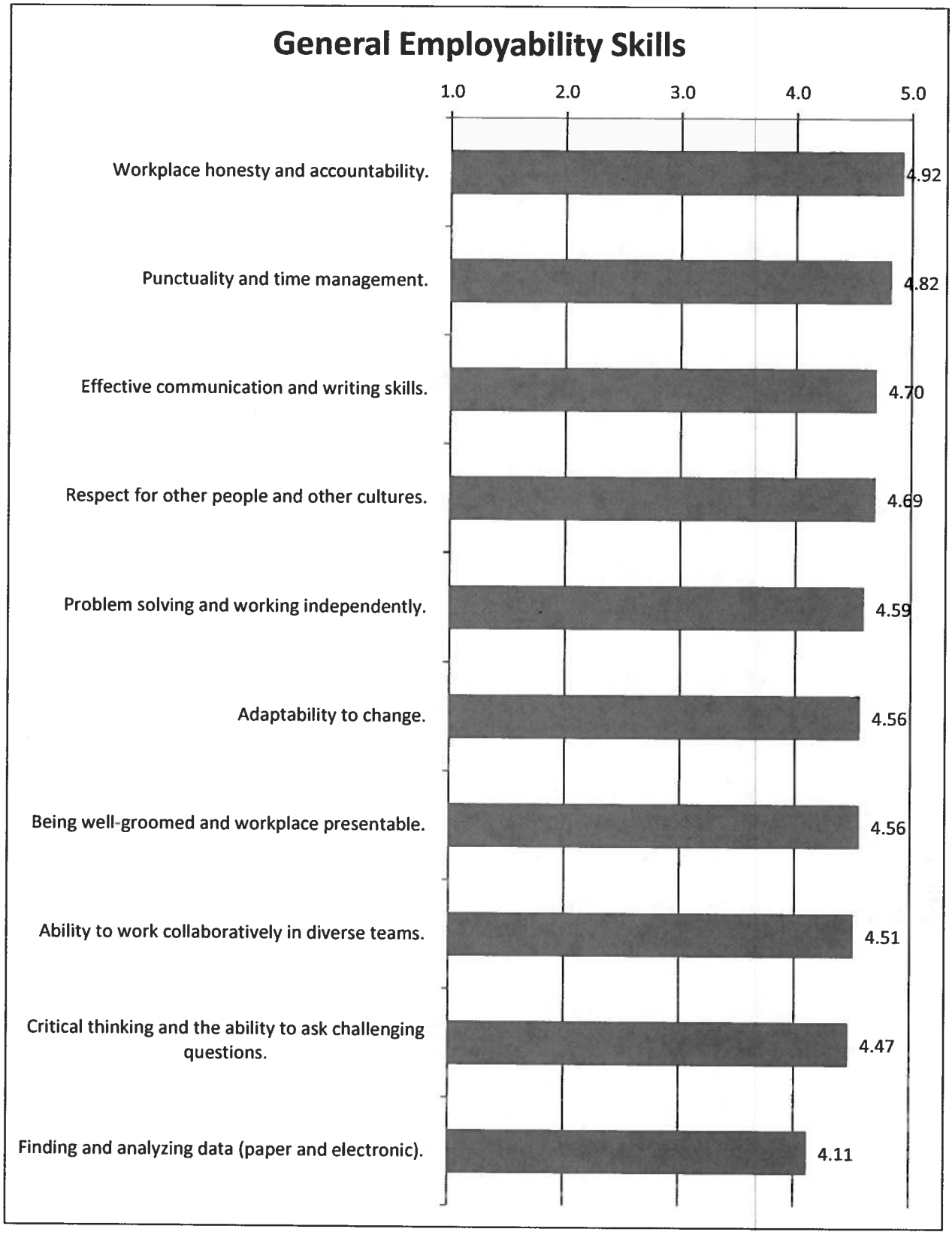


Science, Technology, Engineering, and Mathematics - Engineering and Technology

Skill/Knowledge Set	Mean	Minimum	Maximum	Mode	Standard Error of Mean	Valid N
Understand and apply safe work practices while performing tasks.	4.472	1	5	5	.054	267
Understand the problem-solving processes used by engineers, designers, and other technologists.	4.236	1	5	5	.067	267
Analyze information to determine value and solve specific tasks.	4.218	1	5	5	.063	266
Identify, formulate, and solve engineering and technological problems.	4.195	1	5	5	.068	267
Understand the role of mathematics and science in technological development.	4.169	1	5	5	.067	266
Apply the engineering design process to the solution of a problem.	4.094	1	5	5	.071	267
Apply analytical tools to the development of optimal solutions for technological problems.	4.086	1	5	5	.067	266
Apply scientific methods in qualitative and quantitative analyses, data gathering, direct and indirect observation, predictions, and problem identification.	4.064	1	5	5	.072	264
Construct charts/tables/graphs from functions and data.	4.049	1	5	5	.064	266
Apply fundamental principles of engineering design.	4.045	1	5	5	.073	266
Analyze and interpret production data.	3.970	1	5	5	.073	266
Understand the universal systems model of technology (input, processing, output, and feedback).	3.812	1	5	5	.076	266
Apply fundamental materials processing and assembly techniques.	3.654	1	5	5	.080	266
Understand the principal fields of engineering specialization and identify associated career tracks.	3.644	1	5	4	.079	264
Use computer-assisted drafting and production equipment.	3.545	1	5	5	.082	266
Apply the universal systems model across the spectrum of technologies.	3.483	1	5	4	.079	265
Construct mathematical models for known technological systems.	3.459	1	5	4	.082	266
Set up and the operate Computer Aided Design (CAD) software.	3.316	1	5	5	.085	266
Perform a time/motion study.	3.174	1	5	4	.084	264
Set up and the operate Computer Aided Manufacturing (CAM) software and equipment.	3.026	1	5	4	.084	266

Suggested Additional Skills and Other Responses
Understanding different Engineering fields (Mechanical, Electrical, Industrial, etc.)
Use computer-assisted drafting to develop electrical drawings
Hands on Experience
Communication skills
Materials resourcing on a global scale
3D modeling - CATIA
Hands on projects
Financial Management
BASIC programming
Creative Problem Solving

I. General Employability Skills



General Employability Skills

Skill/Knowledge Set	Mean	Minimum	Maximum	Mode	Standard Error of Mean	Valid N
Workplace honesty and accountability.	4.92	1	5	5	.009	2173
Punctuality and time management.	4.82	1	5	5	.011	2172
Effective communication and writing skills.	4.70	1	5	5	.014	2179
Respect for other people and other cultures.	4.69	1	5	5	.015	2169
Problem solving and working independently.	4.59	1	5	5	.015	2163
Adaptability to change.	4.56	1	5	5	.015	2179
Being well-groomed and workplace presentable.	4.56	1	5	5	.016	2178
Ability to work collaboratively in diverse teams.	4.51	1	5	5	.017	2180
Critical thinking and the ability to ask challenging questions.	4.47	1	5	5	.016	2172
Finding and analyzing data (paper and electronic).	4.11	1	5	5	.021	2175

Suggested Additional Skills and Other Responses	Frequency
Creativity	19
Ability to learn new skills or improve upon skills	22
Other	23
Leadership skills & ability to follow directions	44
Flexibility	55
Adhere to workplace ethics & rules (Being responsible)	99
Communication, Cooperation, Collaboration	120
Attitude (positive, take initiative, motivated, etc.)	121
Being effective and efficient	129
Competent in necessary skills	217