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Educational Requirements of Omaha Area Engineering, Scientific and Technical Companies

Center for Public Affairs Research (CPAR)
University of Nebraska at Omaha

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Prepared for the
Engineering Task Force
Greater Omaha Chamber of Commerce

by the

Center for Public Affairs Research
College of Public Affairs and Community Service
University of Nebraska at Omaha

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GREATER OMAHA CHAMBER ENGINEERING TASK FORCE ON SCIENTIFIC, ENGINEERING AND TECHNICAL EMPLOYEES: EDUCATIONAL REQUIREMENTS QUESTIONNAIRE TABULATIONS

Q4. How many years have you been with this company?

Number of Years With Company	Frequency	Percentage
0-5	21	23.4
6-10	20	22.2
11-15	17	18.9
16-20	16	17.8
20-25	6	6.7
25-40	10	11.1
Total	90	100.0*

Q6. Please state the total number of employees in your company.

Number of Employees**	Frequency	Percentage
2-49	28	37.8
50-99	12	16.2
100-499	17	23.0
500-999	5	6.8
1,000 and above	12	16.2
Total	74	100.0*

Q6a. Classification of the type of company based on primary activity.

Type	Frequency	Percentage
Architecture	8	8.9
Construction/transportation	16	17.8
Manufacturing/sales	24	26.7
Engineering	28	31.1
Utilities/government	10	11.1
Medical/education	4	4.4
Total	90	100.0

*Totals may not add to 100 due to rounding.
**Please note that these categories are not continuous.

Q6b. Efforts by your business to recruit and keep engineering talent in Omaha is hindered by the lack of credit and/or noncredit engineering courses offered in the Omaha area. (Based on completed surveys.)

Response	Frequency	Percentage
Yes	23	38.3
No	37	61.7
Total	60	100.0

Q6b1. Efforts by your business to recruit and keep engineering talent in Omaha is hindered by the lack of credit and/or noncredit engineering courses offered in the Omaha area. (Based on surveys not returned.)

Response	Frequency	Percentage
Yes	13	41.9
No	18	58.1
Total	31	100.0

Q6c. If yes, to what degree is your business hindered? (Based on completed surveys.)

Degree	Frequency	Percentage
Slight	9	36.0
Moderate	8	32.0
Definite	8	32.0
Total	25	100.0

Q6c1. If yes, to what degree is your business hindered? (Based on surveys not completed.)

Degree	Frequency	Percentage
Slight	8	50.0
Moderate	5	31.3
Definite	3	18.8
Total	16	100.0

6d. Type of company by recruitment problem?

	Recruitment Problem		Total and Percent
Company Type	Yes	No	
Architecture	1	5	6 10.0
Construction/transportation	4	8	12 20.0
Manufacturing/sales	4	7	11 18.3
Engineering	9	11	20 33.3
Utilities/government	3	5	8 13.3
Medical/education	2	1	3 5.0
Total	23 38.3	37 61.7	60 100.0

6e. Type of company by degree of problem.

Company Type	Degree of Problem			Total and Percent
	Slight	Moderate	Definite	
Architecture	1	0	0	1 4.0
Construction/transportation	1	1	3	5 20.0
Manufacturing/sales	0	3	1	4 16.0
Engineering	2	3	4	9 36.0
Utilities/government	3	0	0	3 12.0
Medical/education	2	1	0	3 12.0
Total	9 36.0	8 32.0	8 32.0	25 100.0

6f. Number of employees by recruitment problem.

Number of Employees	Recruitment Problem		Total and Percent
	Yes	No	
2-49	7	15	22 43.1
50-99	3	8	11 21.6
100-499	4	7	11 21.6
500-999	0	2	2 3.9
1,000 and above	3	2	5 9.8
Total	17 33.3	34 66.7	51 100.0

6g. Number of employees by degree of problem.

Number of Employees	Degree of Problem			Total and Percent
	Slight	Moderate	Definite	
2-49	2	1	5	8 42.1
50-99	1	2	1	4 21.1
100-499	2	2	0	4 21.1
1,000 and above	1	1	1	3 15.8
Total and Percent	6 31.6	6 31.6	7 36.8	19 100.0

B. SPECIFIC INFORMATION: This section deals with specific information relating to your company needs.

Q8. Does your company engage in any of the following activities?

Activity	Yes	No	Total Respondents
1. Basic research:			
Number	13	61	74
Percent	17.6	82.4	
2. Applied research:			
Number	24	49	73
Percent	32.9	67.1	
3. Engineering design:			
Number	62	16	78
Percent	79.5	20.5	
4. Product development:			
Number	27	47	74
Percent	36.5	63.5	
5. Service development:			
Number	25	46	71
Percent	35.2	64.8	
6. Manufacturing:			
Number	22	51	73
Percent	30.1	69.9	
7. Providing engineering services:			
Number	54	28	82
Percent	65.9	34.1	
8. Providing architectural services:			
Number	20	53	73
Percent	27.4	72.6	
9. Marketing:			
Number	52	24	76
Percent	68.4	31.6	
10. Sales:			
Number	42	34	76
Percent	55.3	44.7	
11. Construction:			
Number	33	42	75
Percent	44.0	56.0	
12. Government services:			
Number	27	46	73
Percent	37.0	63.0	
13. Utilities:			
Number	13	59	72
Percent	18.1	81.9	
14. Other:			
Number	18	33	51
Percent	35.3	64.7	

1. Graphics/printing
2. Heavy highway & industrial construction
3. Landscape design
4. Gas transportation
5. Liaison
6. Computer outsourcing
7. Defense contracting
8. Construction management
9. Placement of engineer marketing personnel
10. Environmental services personnel
11. Road maintenance
12. Surface mining
13. Management engineering consulting
14. Surveying
15. Interior design
16. Studies
17. Hazardous waste
18. Environmental chemical material testing

Q9. Please indicate whether your company:
(a) Distributes its services or products in the following geographical areas,
(b) Has offices located in these geographical locations,
(c) Hires engineers from these geographical areas.

Geographical Area	(a) Service/Product Distribution		(b) Has Offices		(c) Hires	
	Yes	No	Yes	No	Yes	No
1. Within Omaha Metro area:						
Number	81	3	88	0	80	5
Percent	96.4	3.6	100	0	94.1	5.9
2. Throughout Nebraska:						
Number	66	16	21	53	52	28
Percent	80.5	19.5	28.4	71.6	65.0	35.0
3. Throughout Midwest:						
Number	64	19	30	46	50	31
Percent	77.1	22.9	39.5	60.5	61.7	38.3
4. A few regions in the U.S.:						
Number	24	38				
Percent	38.7	61.3				
1. Florida, Iowa, Illinois, Washington						
2. LA/DC						
3. Phoenix, Seattle, Tampa, Salt Lake, Minneapolis						
4. All except SE						
5. Montana, North Dakota, S.D., Minnesota, Iowa						
6. NW, Midwest, SW						
7. Many states, Ohio, Wyoming, Colorado						
8. West/Gr. Plains						
9. Denver, San Francisco, Wichita						
10. All						
11. SE						
12. Southwest Iowa						
13. MW. only						
14. Midwest, Southeast						
15. West of Mississippi						
16. OK, TX, CA, IN						
Number			24	45		
Percent			34.8	65.2		
1. LA/DC						
2. Colorado, Missouri						
3. All except						
4. Northeast						
5. Iowa, Georgia						
6. All						
7. San Jose						
Number					25	42
Percent					37.3	62.7
1. LA/DC						
2. All except SE						
3. All						
5. Throughout the United States:						
Number	47	33	30	48	39	40
Percent	58.8	41.3	38.5	61.5	49.4	50.6
6. In foreign countries:						
Number	29	51	21	56	14	63
Percent	36.3	63.8	27.3	72.7	18.2	81.8

Q10. Which of the following positions require Professional Engineering Registration for:
(a) Initial employment
(b) Professional advancement after initial hire?

(Please circle the appropriate responses.)

Position	(a) Initial Hire		(b) Professional Advancement	
	Yes	No	Yes	No
1. All engineering staff:				
Number	5	79	26	55
Percent	6.0	94.0	32.1	67.9
2. Engineering team leaders:				
Number	31	54	31	48
Percent	36.5	63.5	39.2	60.8
3. Engineering managers:				
Number	35	49	36	44
Percent	41.7	58.3	45.0	55.0
4. Executive officers:				
Number	26	57	28	51
Percent	31.3	68.7	35.4	64.6

Q11. Indicate the areas in which your company needs to have its scientific, engineering, or technical staff members obtain ADDITIONAL college-credit training or education. (Please note that this question pertains to college CREDIT training. Please circle appropriate responses.)

Areas of Need	Type of Position					
	Scientific		Engineering		Technical	
Applicable?:	Yes	No	Yes	No	Yes	No
. . . . .	12	36	31	19	34	19
. . . . .	25.0	75.0	62.0	38.0	64.2	35.8
A. Technical Field						
1. Certificate:						
Number	5	24	14	27	31	5
Percent	17.2	82.8	34.1	65.9	67.4	32.6
2. Associate:						
Number	8	21	15	26	35	14
Percent	27.6	72.4	36.6	63.4	71.4	28.6
3. B.S.:						
Number	14	17	40	13	30	18
Percent	45.2	54.8	75.5	24.5	62.5	37.5
4. M.S.:						
Number	13	18	26	22	11	33
Percent	41.9	58.1	54.2	45.8	25.0	75.0
5. Ph.D.:						
Number	8	22	8	34	4	36
Percent	26.7	73.3	19.0	81.0	4.4	39.6
B. Engineering Management						
1. Certificate:						
Number	4	22	11	30	13	24
Percent	15.4	84.6	26.8	73.2	35.1	64.9
2. Associate:						
Number	4	21	10	31	12	25
Percent	16.0	84.0	24.4	75.6	32.4	67.6
3. Bachelors:						
Number	12	16	32	17	18	23
Percent	42.9	57.1	65.3	34.7	43.9	56.1
4. Masters:						
Number	10	18	27	22	9	30
Percent	35.7	64.3	55.1	44.9	23.1	76.9
5. Ph.D.:						
Number	5	21	7	35	3	35
Percent	19.2	80.8	16.7	83.3	7.9	92.1
C. Business Management						
1. Certificate:						
Number	5	24	9	30	12	28
Percent	17.2	82.8	23.1	76.9	30.0	70.0
2. Associate:						
Number	5	24	8	31	11	28
Percent	17.2	82.8	20.5	79.5	28.2	71.8
3. Bachelors:						
Number	14	18	25	20	23	21
Percent	43.8	56.3	55.6	44.4	52.3	47.7
4. Masters:						
Number	10	18	23	21	16	28
Percent	35.7	64.3	52.3	47.7	36.4	63.6
5. Ph.D.:						
Number	7	21	8	32	6	34
Percent	25.0	75.0	20.0	80.0	15.0	85.0

D. Additional college credit providing knowledge and skills in: (Please specify and provide example)

	Yes	No
1. Analysis:		
Number	30	30
Percent	50.0	50.0

Cost, structural, traffic, roadway water resources, statistical analysis
Polymer science
CE, ME, EE
Automatic control concepts/theories
Traffic engineering
Math
Quality control and testing
Civil, structural, transportation
Business
Military operations
Communications systems
Finite element analysis, structural load analysis
Civil materials, chemical environment
Engineering problems, business problems
Metallurgy

2. Design:		
Number	39	21
Percent	65.0	35.0

Advanced degrees, instrumentation controls, water/wastewater and water resources
Conrete form, high strength concretes
CE, ME, EE
Interior design
Finite element analysis
Street and sewer design
HVAC, lighting, power
Computer algorithm
Concrete mix-structural design
Civil, structural, transportation
Building systems
Structural
Communications system
Gear design, low cost plastic components
Civil - materials - soils
New tech - electronic, electrical mechanical, computer science business sytems
Architectural engineering
Landfill
Packaging engineering

3. Application:		
Number	32	27
Percent	54.2	45.8

Computer science for engineers
High strength concrete, use of special concrete
Computer programs-software
New concrete technologies
Building construction
Comm. systems
Soil and water management
Nuclear physics, electronic tech and computer science
Metallurgy
Packaging engineering

	Yes	No
4. Development:		
Number	22	33
Percent	40.0	60.0
Management and business, engineers - project manager		
Algorithms - data base		
Concrete aggregate products		
Marketing/new product		
Computer software development		
Bus sales		
Computer science and management systems		
E. Other areas (Please specify):		
Number	8	19
Percent	29.6	70.4
Project management		
Business management		
Advanced degrees mgt.		
Statistical analysis		
Management		
CADD		
Marketing/sales of eng. services		
Management		
Marketing		
Environmental engineering		
Number	8	12
Percent	40.0	60.0
Marketing		
Marketing		
Computer application		
Nat'ls-non metallic		
Bus. Mgmt.		
Research		
Computer programming		
Number	3	13
Percent	18.8	81.3
Human resources mgt.		
Data base management		

Q12. Please indicate your company's NON-CREDIT CONTINUING ENGINEERING needs in scientific, engineering and technical areas, in terms of:

1. specific topic,
2. estimated average number of employees who would annually enroll in courses focusing on such topics, and
3. additional comments per topic area.

Non-credit Continuing Education	Annual Enrollments
S.P.C.	50
Personnel	3
High strength concrete & tech. trng.	16
Project management	109
Technical seminars	6
CADD	86
Engineering classes	9
HVAC design	3
Structural steel drafting	16
Environmental engineering	12
Building codes	8
Civil engineer	12
Marketing/sales of eng. services	7
Ergonomics	4
Technical report writing	18
Architectural register	3
Statistics	2
Electronic components & engineering	8
Transportation eng.	2
Environmental audits & regs. sciences	18
Computer science, design applications	16
Industrial finishing	3
Fire protection	7
Distrb. systems engr.	1
Network optimization	2
Office mgmt, time management, & quality mgmt.	16
Contracting	20
Environmental sciences	19
Chemistry	4
Process control technology	4
Systems analysis	2
Bridge design	5
Tooling	1
Temperature controls	2
HTGL air cond.	1
Distb. line skating	1
Process control	10
Mechanical eng., transmission systems	18
Office automation	2
Design of experiments & specification	54
Legal/liability	20
General employee dup.	20
P.E. refresher	17
Cost estimating	13
Geotechnical engineering	4
Accounting basics	2
Systems design	2
Drafting	14
Multiplex systems	4
Loss prevention	20
CPM scheduling	2
Materials engineering	4
AOV. PC software	2
Traffic & roadway design	4
Construction mkt.	4
Structural design	1
Sound systems & telephone	8
Instrumentation	2

Engineering mngmt.	2
Software arch - integration	20
Professional eng. exam prep	3
Civil: soils material environmental	4
Specs writing	6
NEC codes	3
OSHA 40 hour training	4
Soil and water management	15
Computer tech	1
Contract adm	3
Lighting and power	3
Metallurgy	3
OSHA 8 hour trng	14
Basic hydraulic theory	10
"Corrision" control	2
Heating and ventilating	4
Eng. for non engineers	15
State Regis	3
Spec. civil eng. courses	2
Cooling	3
OSHA	6
Spec mechanical eng courses	2
Quality control	3
Welding	1
Basic MFG. processes	1
Energy management	2
Project management	4
Fire protection	4

Q13. (a) On a scale from 1 to 5 please indicate **how frequently** your company uses the listed mechanism in order to address its educational needs in engineering, technical, and scientific fields (NOTE: 1 = very infrequently, 2 = infrequently, 3 = neutral, 4 = frequently, 5 = very frequently), and

(b) On a scale from 1 to 5, please indicate **how important** each of the following mechanisms are to you in addressing educational needs in engineering, technical, and scientific fields (NOTE: 1 = extremely unimportant, 2 = unimportant 3 = neutral, 4 = important, 5 = extremely important

	(a) Frequency of Use					(b) Importance				
MECHANISM	1	2	3	4	5	1	2	3	4	5
1. Internally supplied company training programs:										
Number	13	11	17	29	12	11	6	11	32	20
Percent	15.9	13.4	20.7	35.4	14.6	13.8	7.5	13.8	40.0	25.0
2. External consultants:										
Number	19	28	20	10	4	11	10	35	14	9
Percent	23.5	34.6	24.7	12.3	4.9	13.9	12.7	44.3	17.7	11.4
3. Correspondence courses:										
Number	50	16	7	3	1	42	16	15	2	1
Percent	64.9	20.8	9.1	3.9	1.3	55.3	21.1	19.7	2.6	1.3
4. One-day seminars/work-shops in the Omaha area:										
Number	9	22	18	25	6	6	8	25	32	7
Percent	11.3	27.5	22.5	31.3	7.5	7.7	10.3	32.1	41.0	9.0
5. One-day seminars/work-shops in the Lincoln area:										
Number	38	16	8	13	4	32	8	20	14	4
Percent	48.1	20.3	10.1	16.5	5.1	41.0	10.3	25.6	17.9	5.1
6. Non-credits short courses in the Omaha area:										
Number	20	24	22	11	3	11	9	29	24	5
Percent	25.0	30.0	27.5	13.8	3.8	14.1	11.5	37.2	30.8	6.4
7. Non-credit short courses in the Lincoln area:										
Number	44	16	13	2	3	28	10	29	7	3
Percent	56.4	20.5	16.7	2.6	3.8	36.4	13.0	37.7	9.1	3.9
8. Non-credit short courses outside nebraska:										
Number	42	15	12	10	1	29	9	23	13	3
Percent	52.5	18.8	15.0	12.5	1.3	37.7	11.7	29.9	16.9	3.9
9. On-campus college credit courses in Omaha area:										
Number	18	21	23	15	3	11	8	23	22	15
Percent	22.5	26.3	28.8	18.8	3.8	13.9	10.1	29.1	27.8	19.0
10. On-campus college courses in the Lincoln area:										
Number	51	15	8	3	2	33	14	19	8	4
Percent	64.6	19.0	10.1	3.8	2.5	42.3	17.9	24.4	10.3	5.1
11. College credit courses delivered to work-site via instructional television (such as Corpnet):										
Number	56	11	7	4	2	32	13	22	6	5
Percent	70.0	13.8	8.8	5.0	2.5	41.0	16.7	28.2	7.7	6.4

MECHANISM	(a) Frequency of Use 1	2	3	4	5	(b) Importance 1	2	3	4	5
12. Literature (periodicals):										
Number	6	7	17	28	22	5	5	15	36	18
Percent	7.5	8.8	21.3	35.0	27.5	6.3	6.3	19.0	45.6	22.8
13. On-site vendor training:										
Number	15	14	24	16	8	11	7	31	18	9
Percent	19.5	18.2	31.2	20.8	10.4	14.5	9.2	40.8	23.7	11.8
14. Off-site vendor training:										
Number	19	21	18	17	3	15	13	27	16	5
Percent	24.4	26.9	23.1	21.8	3.8	19.7	17.1	35.5	21.1	6.6
15. Other (Please specify):										
Number	1	1	1	1	2	0	0	2	2	2
Percent										

Q14. Please rank by order of preference, the time of day when your company should offer engineering, technical, and scientific educational training. (Circle 1,2,3,4 to indicate order of preference, where 1 indicates least preferable and 4 indicates most preferable). If you think training is unnecessary, please circle number 5.

	1	2	3	4
1. Early morning, before work on workdays:				
Number	25	15	12	13
Percent	38.5	23.1	18.5	20.0
2. Evening on workdays:				
Number	8	15	12	38
Percent	10.8	20.3	16.2	51.4
3. During the workday:				
Number	24	17	19	9
Percent	34.8	24.1	27.5	13.0
4. Saturdays:				
Number	14	18	22	16
Percent	20.0	25.7	31.4	22.9

5. Not necessary: Number 36
Percent 100.0

Q15. Please estimate the current annual company expenditure on employees for engineering, technical, and scientific education for;

	Frequency	Percent
1. College credit expenditure:		
$100-$500	6	13.7
$501-$1,000	5	11.4
$1,001-$2,000	7	15.9
$2,001-$4,000	5	11.4
$4,001-$6,000	12	27.4
$6,001-$8,000	0	0.0
$8,001-$10,000	2	4.6
$10,001-$30,000	5	11.3
$40,000 and above	2	4.6
Total	44	100.0
2. Non-credit continuing education:		
$100-$500	8	14.2
$501-$1,000	5	8.9
$1,001-$2,000	8	14.1
$2,001-$4,000	7	12.4
$5,000-$6,000	7	7.7
$7,000-$8,000	2	3.5
$9,000-$10,000	4	7.0
$10,001-$20,000	7	12.3
$20,001-$30,000	3	5.3
$40,000 and above	6	10.7
Total	57	100.0
Total expenditure:		
$100-$2000	9	17.9
$2,001-$4,000	6	11.8
$4,001-$7,000	12	23.5
$7,001-$11,000	2	4.0
$11,001-$15,000	3	5.9
$15,001-$30,000	9	17.9
$30,001-$55,000	5	9.9
$70,000-$120,000	2	4.0
$300,000 and above	3	6.0
Total	51	100.0

Q16. Please state if your company (a) pays for college-credit employee education, (b) pays for non-credit employee education, or (c) provides release time for engineering, technical, and scientific educational training. (If your response is yes, indicate whether it pays all educational costs, 1/2 or less, or more than 1/2.)

Circle appropriate responses.	Yes			No	Please explain (narrative)
	all	1/2 or less	more than 1/2		
a. Pays for college-credit employee education:					
Number	39	15	19	10	
Percent	47.0	18.1	22.9	12.0	
b. Pays for non-credit employee education:					
Number	50	12	13	10	
Percent	58.8	14.1	15.3	11.8	
c. Provides release time for engineering, technical, and scientific educational training:					
Number	54	5		16	
Percent	72.0	6.7		21.3	

Q17. In the table below (a) please indicate the number of employees holding bachelors, masters, Ph.Ds in terms of the current DEGREES HELD. (b) Of these indicate the number of employees in terms of the degrees they SHOULD have beyond those they presently hold. Also include additional employees you may presently need.

Please note that in determining current employee area of specialization, you must provide specialization in terms of the formal degree he/she holds, rather than the position held. So that a person holding a degree in electrical engineering, but employed in a management position must be classified as an electrical engineer and not as a manager.

	(a) Current degree held			(b) Degree that SHOULD be held		
	B.S.	M.S.	Ph.D.	B.S.	M.S.	Ph.D.
Engineers:						
Aerospace	7	3	1	2	1	0
Agriculture	14	2	0	2	0	0
Architectural	92	25	0	143	31	0
Biomedical	2	1	50	2	1	0
Ceramic	1	0	0	0	0	0
Chemical	26	6	10	5	6	0
Civil	642	120	3	109	42	1
Computer	102	21	0	99	25	1
Electrical	162	16	0	80	13	0
Environmental	42	22	1	8	9	1
Industrial	61	16	2	9	1	0
Engineering Management	14	10	1	6	8	0
Manufacturing	9	5	1	1	0	0
Mechanical	222	24	1	47	14	0
Metallurgy	2	2	0	2	0	0
Nuclear	2	3	0	0	2	0
Petroleum	0	1	0	0	1	0
Other - Be specific (e.g., structure) Packaging	5	0	0	0	2	0
Structural eng.	15	6	0	14	3	0
Construction eng.	14	0	0	7	1	0
Architectural studies	3	0	0	0	0	0
General 801	10	2	0	0	0	0
Marine	3	0	0	0	0	0
Business	6	0	0	4	2	0
Psychology	0	1	0	0	0	0
Systems eng.	0	1	0	0	0	0
Administration	10	6	0	0	0	0
Mining	1	1	1	0	0	0
Electronics	2	0	0	0	0	0
Bridge eng.	3	0	0	0	0	0
Construction eng./geological eng./science eng.	5	0	0	0	0	0
Construction mgmt.	4	0	1	8	1	0

	(a) Current degree held			(b) Degree that SHOULD be held		
	B.S.	M.S.	Ph.D.	B.S.	M.S.	Ph.D.
Chemist	0	0	1	0	0	0
Construction management	2	0	0	0	0	0
Structures	9	3	0	0	0	0
Business and engineering	1	0	0	1	0	0
Geo-technical	4	0	0	4	2	0
Geology	5	1	0	0	5	0
General	1	0	0	0	0	0
Tribology	0	0	1	0	0	0
Education	0	1	0	0	0	0
Transportation	1	1	0	0	1	0
Safety/agricultural structural	4	5	0	0	0	0
Law	0	0	1	0	0	0
Other	10	2	0	0	0	0
Eng. admin./general eng.	26	1	0	0	0	0
Scientists:						
Biological	70	14	4	30	5	1
Chemical	65	28	3	27	6	0
Computer	47	10	4	51	18	0
Mathematical	58	12	7	26	11	2
Physics	7	3	4	2	1	0
Other						
Hygienist	0	1	0	0	0	0
Industrial hygienist	10	0	0	0	0	0
Quan. analysis	0	1	0	0	1	0
Agronomy	3	3	0	0	0	0
Microbiology	0	1	0	0	0	1
Business	7	5	0	0	0	0
Geodesy	1	0	0	0	0	0
Microbiology	0	0	0	1	0	0
Geologists 1350	16	7	0	0	0	0
Political science	0	1	0	0	1	0
Animal science	2	2	0	0	0	1
Food & meat science	1	2	2	2	4	2
Education	4	0	0	0	0	0
Food/micro	2	2	0	0	0	0
Other	8	3	0	0	0	0
"Hyrrogeological"	3	2	0	2	3	1

	(a) Current degree held			(b) Degree that SHOULD be held		
	B.S.	M.S.	Ph.D.	B.S.	M.S.	Ph.D.
Technologists:						
Architectural	19	0		5	0	
Chemical	5	0		4	0	
Construction	24	0		15	0	
Computer	328	23		311	17	
Drafting	9	0		9	0	
Electronics	10	0		12	0	
Industrial	6	0		5	0	
Manufacturing	0	0		2	0	
Mechanical	3	0		5	0	
Nuclear	0	0		0	0	
Other:						
Business mgmt.	0	1		0	1	
Math	3	0		0	3	
Aviation managem.	5	0		0	0	
Bus. adm.	3	0		0	3	
Education and business	2	0		0	0	

	(a) Current degree held		(b) Degree that SHOULD be held	
	Certificate	Associate	Certificate	Associate
Technicians:				
Civil	125	134	17	15
Computer	114	140	1	7
Drafting	27	85	9	33
Electronics	257	153	241	249
Transportation	2	6	0	3
Welding	19	6	16	0
Mechanical	18	57	0	11
Construction	37	44	1	4
Manufacturing	10	5	0	0
Air Conditioning	31	7	48	11
Other:				
Structural	2	7	0	8
Electro/mech. tech.	0	1	0	0
Architectural	0	9	0	9
Electrical	3	28	0	10
Business various	3	0	3	0
Chemical	0	3	0	3
Bridge inspections	2	0	2	0
Quality control	0	1	0	1
Computer drafting	1	0	0	0
Architectural	2	1	0	0
Lab tech	1	0	0	0
Gen energy/conserv., eng./ instrumentation engr.	0	9	0	0
Diesel technology	0	1	0	0
Microbiological	0	3	0	3
Lineman school	1	0	0	0
Petroleum engr./architect engr.	0	4	0	0
Safety engr./aeronautical engr.	2	0	2	0
Electrical	2	0	0	0

Q18. The following question deals with the TOTAL:
(a) Estimated company needs in three years
(b) Estimated company needs in five years

	(a) Estimated total number needed in 3 years			(b) Estimated total number needed in 5 years		
	B.S.	M.S.	Ph.D.	B.S.	M.S.	Ph.D.
Engineers:						
Aerospace	1	4	6	0	6	6
Agriculture	2	0	0	2	0	0
Architectural	46	27	0	57	42	0
Biomedical	0	0	0	0	0	0
Ceramic	0	0	0	0	0	0
Chemical	15	8	0	21	12	0
Civil	161	21	0	233	36	0
Computer	70	42	7	118	63	14
Electrical	112	40	0	166	66	2
Environmental	16	17	0	24	24	1
Industrial	17	0	0	17	0	0
Engineering Management	18	15	2	15	23	4
Manufacturing	6	0	0	5	0	0
Mechanical	109	26	0	144	39	0
Metallurgy	4	0	0	4	0	0
Nuclear	5	6	2	8	13	4
Petroleum	0	1	0	0	1	0
Other (specify):						
Packaging	1	1	0	0	0	0
Electronics	3	0	0	0	0	0
Transportation	4	1	0	5	1	0
Food eng.	1	0	0	0	0	0
Structural	34	17	0	98	25	0
Construction	8	0	0	11	0	0
Geology	3	0	0	0	3	0
Structures	3	0	0	6	0	0
Geotechnical	3	2	0	4	2	1
Scientists:						
Biological	15	1	0	19	1	0
Chemical	10	4	2	16	4	2
Computer	52	18	1	80	29	3
Mathematical	25	11	2	30	14	2
Physics	7	3	1	7	3	1

	(a) Estimated total number needed in 3 years			(b) Estimated total number needed in 5 years		
	B.S.	M.S.	Ph.D.	B.S.	M.S.	Ph.D.
Other (specify): F.D.S.C./FD eng.	0	1	0	0	1	0
Geologist	1	1	0	2	2	0
Research	1	1	0	0	0	0
"Ind. Hyg."	0	0	1	0	0	1
Geotechnical	3	3	1	4	6	1
Technologists:						
Architectural	12	0		22	0	
Chemical	1	0		1	0	
Construction	8	0		17	0	
Computer	213	21		323	301	
Drafting	12	0		18	0	
Electronics	3	0		6	0	
Industrial	0	0		0	0	
Manufacturing	1	0		0	0	
Mechanical	3	0		6	0	
Nuclear	0	0		0	0	
Other (specify) _____	0	0		0	0	

	(a) Estimated total number needed in 3 years		(b) Estimated total number needed in 5 years	
	Certificate	Associate	Certificate	Associate
Technicians:				
Civil	37	28	57	43
Computer	108	29	212	112
Drafting	18	54	26	76
Electronics	11	82	10	132
Transportation	2	4	0	10
Welding	19	9	20	14
Mechanical	5	45	15	65
Construction	9	17	13	21
Manufacturing	15	13	17	20
Air Conditioning	77	15	101	19
Other (specify): Structural	2	7	0	14
Architectural	5	14	5	22
Electrical	2	12	5	12
Chemical	0	2	0	0
Bridge inspector	2	0	2	0
Lab tech	1	0	0	0
Microbiological	0	2	0	0

Q19. Do you have any additional comments on anticipated or current needs? Please be specific.*

- Firm deals with placement of qualified eng./env. services.
  Goal 1 years = 20-30 "Qualified People"
  3 years = 40-50 "
- Need for personnel to obtain degrees in:
  FD.Sci/Tech/FD.Engr., Microbiology, meat science, packaging, food, industrial, chemical engr.
- Mech and electrical staff and training in commercial building. Hard to find
- • Office in Bellevue supports SAC as a maintenance contractor.
  • Scientist not critical.
  • Issue of moving major engineering firms to Omaha from L.A. problem misperception of L.A. people of not thinking there is higher education in midwest states.
- Improved materials and structures laboratory at Omaha campus.
- • Difficult to find good qualified civil engineer technicians.
  • Many lack very basic drafting skills
  • Difficult to recruit civil or structural engineers with 2-4 years experience.
- Great idea to having short, inexperience, and non-credit courses available concerning engineering & technical areas.
- Need better colleges and more non-credit courses in mech. and elect. eng.
- • Pushing students in design engineering technology is wrong.
  • The degree is not equal to an eng. degree and that's what most students think it is equal
  • They cannot become licensed with a design eng. tech.
- No engineers, we work on contract work and flight operations with a background in computer only.
- Many of our current employees desire coursework toward a BSEE not offered in Omaha and Lincoln.
- The future holds a higher degree of importance on packaging engineering, i.e., changes in technology and environmental concerns for materials used.
  • Our engineering staff at corporate is anticipating some growth (3-5 jobs). Most employees already have degrees (a degree is required).
  • We occasionally look for a BS in chemistry or microbiology in the quality assurance area.
  • Our R & D area does recruit candidate with a bachelor in food science. This growth will depend on the success of new business ventures.
- The best estimate of technical openings for the next 5-year period would be 20 to 25 positions. Traditionally, electric utilities require people with knowledge, skills and experience in technical fields related to Mechanical, Electrical, Electronic, Computer Science and other engineering disciplines.

*Please note that these comments are verbatim.

Q9.1(a) Number of employees by science product/distribution within Omaha metro area.

Number of Employees	Yes	No	Total and Percent
2-49	25	1	26 37.7
50-99	11	0	11 15.9
100-499	15	2	17 24.6
500-999	5	0	5 7.2
1,000 and above	10	0	10 14.5
Total	66 95.7	3 4.3	69 100.0

Q9.1(b) Could not be computed.

Q9.1(c) Number of Employees by hires within the metro area.

Number of Employees	Yes	No	Total and Percent
2-49	22	4	26 27.1
50-99	11	0	11 15.7
100-499	16	1	17 24.3
500-999	5	0	5 7.1
1,000 and above	11	0	11 15.7
Total	65 92.9	5 7.1	70 100.0

Q9.2(a) Number of employees by service/product distribution throughout Nebraska.

Number of Employees	Yes	No	Total and Percent
2-49	18	8	26 38.8
50-99	8	3	11 16.4
100-499	13	2	15 22.4
500-999	3	2	5 7.5
1,000 and above	10	0	10 14.9
Total	52 77.6	15 22.4	67 100.0

Q9.2(b) Number of employees by has offices throughout Nebraska

Number of Employees	Yes	No	Total and Percent
2-49	4	20	24 39.3
50-99	1	10	11 18.0
100-499	4	9	13 21.3
500-999	2	3	5 8.2
1,000 and above	6	2	8 13.1
Total	17 27.9	44 72.1	61 100.0

Q9.2(c) Number of employees by hires throughout Nebraska.

Number of Employees	Yes	No	Total and Percent
2-49	13	13	26 38.8
50-99	6	5	11 16.4
100-499	13	3	16 23.9
500-999	4	1	5 7.5
1,000 and above	7	2	9 13.4
Total	43 64.2	24 35.8	67 100.0

Q9.3(a) Number of employees by service/product distribution throughout Midwest.

Number of Employees	Yes	No	Total and Percent
2-49	20	6	26 38.2
50-99	6	5	11 16.2
100-499	14	3	17 25.0
500-999	3	2	5 7.4
1,000 and above	7	2	9 13.2
Total	50 73.5	18 26.5	68 100.0

Q9.3(b) Number of employees by has offices throughout the Midwest.

Number of Employees	Yes	No	Total and Percent
2-49	4	18	22 34.9
50-99	1	10	11 17.5
100-499	11	5	16 25.4
500-999	2	3	5 7.9
1,000 and above	4	5	9 14.3
Total	22 34.9	41 65.1	63 100.0

Q9.3(c) Number of employees by hires throughout the Midwest.

Number of Employees	Yes	No	Total and Percent
2-49	13	13	26 38.2
50-99	5	6	11 16.2
100-499	14	3	17 25.0
500-999	4	1	5 7.4
1,000 and above	4	5	9 13.2
Total	40 58.8	28 41.2	68 100.0

Q9.4(a) Number of employees by service/product distribution in a few regions in the United States.

Number of Employees	Yes	No	Total and Percent
2-49	10	11	21 40.4
50-99	3	7	10 19.2
100-499	3	8	11 21.2
500-999	0	4	4 7.7
1,000 and above	2	4	6 11.5
Total	18 34.6	34 65.4	52 100.0

Q9.4(b) Number of employees by has offices in a few regions in the United States.

Number of Employees	Yes	No	Total and Percent
2-49	4	16	20 34.5
50-99	4	8	12 20.7
100-499	7	7	14 24.1
500-999	0	4	4 6.9
1,000 and above	3	5	8 13.8
Total	18 31.0	40 69.0	58 100.0

Q9.4(c) Number of employees by hires from a few regions in the United States.

Number of Employees	Yes	No	Total and Percent
2-49	6	15	21 36.8
50-99	3	9	12 21.1
100-499	5	7	12 21.1
500-999	0	4	4 7.0
1,000 and above	4	4	8 14.0
Total	18 31.6	39 68.4	57 100.0

Q9.5(a) Number of employees by service/product distribution throughout the United States.

Number of Employees	Yes	No	Total and Percent
2-49	16	9	25 37.9
50-99	3	7	10 15.2
100-499	8	7	15 22.7
500-999	2	3	5 7.6
1,000 and above	8	3	11 16.7
Total	37 56.1	29 43.9	66 100.0

Q9.5(b) Number of employees by has offices throughout the United States.

Number of Employees	Yes	No	Total and Percent
2-49	7	17	24 37.5
50-99	1	9	10 15.6
100-499	4	10	14 21.9
500-999	2	3	5 7.8
1,000 and above	7	4	11 17.2
Total	21 32.8	43 67.2	64 100.0

Q9.5(c) Number of employees by hires throughout the United States.

Number of Employees	Yes	No	Total and Percent
2-49	12	14	26 39.4
50-99	2	8	10 15.2
100-499	7	7	14 21.2
500-999	2	3	5 7.6
1,000 and above	7	4	11 16.7
Total	30 45.5	36 54.5	66 100.0

Q9.6(a) Number of employees by service/product distribution in foreign countries.

Number of Employees	Yes	No	Total and Percent
2-49	10	16	26 40.0
50-99	1	8	9 13.8
100-499	4	10	14 21.5
500-999	2	3	5 7.7
1,000 and above	5	6	11 16.9
Total	22 33.8	43 66.2	65 100.0

Q9.6(b) Number of employees by has offices in foreign countries.

Number of Employees	Yes	No	Total and Percent
2-49	6	18	24 38.7
50-99	1	8	9 14.5
100-499	1	12	13 21.0
500-999	2	3	5 8.1
1,000 and above	5	6	11 17.7
Total	15 24.2	47 75.8	62 100.0

Q9.6(c) Number of employees by hires from foreign countries.

Number of Employees	Yes	No	Total and Percent
2-49	2	24	26 41.3
50-99	0	9	9 14.3
100-499	1	12	13 20.6
500-999	2	3	5 7.9
1,000 and above	4	6	10 15.9
Total	9 14.3	54 85.7	63 100.0

Q10.1(a) Number of employees by P.E.R. for all engineering staff on initial hire.

Number of Employees	Yes	No	Total and Percent
2-49	1	25	26 37.7
50-99	1	10	11 15.9
100-499	1	16	17 24.6
500-999	0	5	5 7.2
1,000 and above	2	8	10 14.5
Total	5 7.2	64 92.8	69 100.0

Q10.1(b) Number of employees by P.E.R. for all engineering staff for professional advancement.

Number of Employees	Yes	No	Total and Percent
2-49	9	15	24 36.4
50-99	6	5	11 16.7
100-499	4	13	17 25.8
500-999	2	3	5 7.6
1,000 and above	2	7	9 13.6
Total	23 34.8	43 65.2	66 100.0

Q10.2(a) Number of employees by P.E.R. for engineering team leaders on initial hire.

Type of Company	Yes	No	Total and Percent
2-49	9	17	26 37.7
50-99	6	6	12 17.4
100-499	5	12	17 24.6
500-999	2	3	5 7.2
1,000 and above	3	6	9 13.0
Total	25 36.2	44 63.8	69 100.0

Q10.2(b) Number of employees by P.E.R. for engineering team leaders for professional advancement.

Number of Employees	Yes	No	Total and Percent
2-49	9	14	23 36.5
50-99	5	5	10 15.9
100-499	5	12	17 27.0
500-999	4	1	5 7.9
1,000 and above	2	6	8 12.7
Total	25 39.7	38 60.3	63 100.0

Q10.3(a) Number of employees by P.E.R. for engineering managers on initial hire.

Number of Employees	Yes	No	Total and Percent
2-49	13	13	26 37.7
50-99	5	6	11 15.9
100-499	5	12	17 24.6
500-999	4	1	5 7.2
1,000 and above	4	6	10 14.5
Total	31 44.9	38 55.1	69 100.0

Q10.3(b) Number of employees by P.E.R. for engineering managers for professional advancement.

Number of Employees	Yes	No	Total and Percent
2-49	12	12	24 36.9
50-99	5	5	10 15.4
100-499	5	12	17 26.2
500-999	4	1	5 7.7
1,000 and above	3	6	9 13.8
Total	29 44.6	36 55.4	65 100.0

Q.10.4(a) Number of employees by P.E.R. for executive officers on initial hire.

Number of Employees	Yes	No	Total and Percent
2-49	12	13	25 36.8
50-99	5	6	11 16.2
100-499	2	15	17 25.0
500-999	2	3	5 7.4
1,000 and above	2	8	10 14.7
Total	23 33.8	45 66.2	68 100.0

Q10.4(b) Number of employees by P.E.R. for executive officers for professional advancement.

Number of Employees	Yes	No	Total and Percent
2-49	12	12	24 37.5
50-99	5	5	10 15.6
100-499	3	14	17 26.6
500-999	2	3	5 7.8
1,000 and above	2	6	8 12.5
Total	24 37.5	40 62.5	64 100.0

Q9.1(a) Type of company by service/product distribution within Omaha metro area.

Type of Company	Yes	No	Total and Percent
Architecture	8	0	8 9.5
Construction/transportation	13	2	15 17.9
Manufacturing/sales	22	0	22 26.2
Engineering	26	0	26 31.0
Utilities/government	9	1	10 11.9
Medical/education	3	0	3 3.6
Total	81 96.4	3 3.6	84 100.0

Q9.1(b) Could not be computed.

Q9.1(c) Type of company by hires within Omaha metro area.

Type of Company	Yes	No	Total and Percent
Architecture	7	0	7 8.2
Construction/transportation	14	2	16 18.8
Manufacturing/sales	22	0	22 25.9
Engineering	23	3	26 30.6
Utilities/government	10	0	10 11.8
Medical/education	4	0	4 4.7
Total	80 94.1	5 5.9	85 100.0

Q9.2(a) Type of company by service/product distribution throughout Nebraska.

Type of Company	Yes	No	Total and Percent
Architecture	7	1	8 9.8
Construction/transportation	12	3	15 18.3
Manufacturing/sales	20	1	21 25.6
Engineering	19	7	26 31.7
Utilities/government	5	4	9 11.0
Medical/education	3	0	3 3.7
Total	66 80.5	16 19.5	82 100.0

Q9.2(b) Type of company by has offices throughout Nebraska.

Type of Company	Yes	No	Total and Percent
Architecture	1	5	6 8.1
Construction/transportation	6	9	15 20.3
Manufacturing/sales	6	11	17 23.0
Engineering	3	20	23 31.1
Utilities/government	4	5	9 12.2
Medical/education	1	3	4 5.4
Total	21 28.4	53 71.6	74 100.0

Q9.2(c) Type of company by hires throughout Nebraska.

Type of Company	Yes	No	Total and Percent
Architecture	6	1	7 8.8
Construction/transportation	9	7	16 20.0
Manufacturing/sales	16	3	19 23.8
Engineering	13	12	25 31.3
Utilities/government	5	4	9 11.3
Medical/education	3	1	4 5.0
Total	52 65.0	28 35.0	80 100.0

Q9.3(a) Type of company by service/product distribution throughout the Midwest.

Type of Company	Yes	No	Total and Percent
Architecture	6	2	8 9.6
Construction/transportation	13	3	16 19.3
Manufacturing/sales	19	3	22 26.5
Engineering	19	6	25 30.1
Utilities/government	5	4	9 10.8
Medical/education	2	1	3 3.6
Total	64 77.1	19 22.9	83 100.0

Q9.3(b) Type of company by has offices throughout Midwest.

Type of Company	Yes	No	Total and Percent
Architecture	2	5	7 9.2
Construction/transportation	6	8	14 18.4
Manufacturing/sales	10	9	19 25.0
Engineering	7	15	22 28.9
Utilities/government	5	5	10 13.2
Medical/education	0	4	4 5.3
Total	30 39.5	46 60.5	76 100.0

Q9.3(c) Type of company by hires throughout the Midwest.

Type of Company	Yes	No	Total and Percent
Architecture	3	4	7 8.6
Construction/transportation	8	8	16 19.8
Manufacturing/sales	14	5	19 23.5
Engineering	17	8	25 30.9
Utilities/government	5	5	10 12.3
Medical/education	3	1	4 4.9
Total	50 61.7	31 38.3	81 100.0

Q9.4(a) Type of company by service/product distribution in a few regions in the United States.

Type of Company	Yes	No	Total and Percent
Architecture	2	5	7 11.3
Construction/transportation	3	8	11 17.7
Manufacturing/sales	7	7	14 22.6
Engineering	10	11	21 33.9
Utilities/government	2	6	8 12.9
Medical/education	0	1	1 1.6
Total	24 38.7	38 61.3	62 100.0

Q9.4(b) Type of company by has office in a few regions in the United States.

Type of Company	Yes	No	Total and Percent
Architecture	3	5	8 11.6
Construction/transportation	4	9	13 18.8
Manufacturing/sales	7	9	16 23.2
Engineering	8	13	21 30.4
Utilities/government	2	6	8 11.6
Medical/education	0	3	3 4.3
Total	24 34.8	45 65.2	69 100.0

Q9.4(c) Type of company by hires in a few regions in the United States.

Type of Company	Yes	No	Total and Percent
Architecture	3	5	8 11.9
Construction/transportation	4	11	15 22.4
Manufacturing/sales	5	9	14 20.9
Engineering	9	10	19 28.4
Utilities/government	3	5	8 11.9
Medical/education	1	2	3 4.5
Total	25 37.3	42 62.7	67 100.0

Q9.5(a) Type of company by service/product throughout the United States.

Type of Company	Yes	No	Total and Percent
Architecture	4	3	7 8.8
Construction/transportation	5	9	14 17.5
Manufacturing/sales	19	4	23 28.8
Engineering	16	9	25 31.3
Utilities/government	2	6	8 10.0
Medical/education	1	2	3 3.8
Total	47 58.8	33 41.3	80 100.0

Q9.5(b) Type of company by has offices throughout the United States.

Type of Company	Yes	No	Total and Percent
Architecture	2	4	6 7.7
Construction/transportation	3	11	14 17.9
Manufacturing/sales	14	8	22 28.2
Engineering	9	15	24 30.8
Utilities/government	2	6	8 10.3
Medical/education	0	4	4 5.1
Total	30 38.5	48 61.5	78 100.0

Q9.5(c) Type of company by hires throughout the United States.

Type of Company	Yes	No	Total and Percent
Architecture	2	4	6 7.6
Construction/transportation	4	11	15 19.0
Manufacturing/sales	14	7	21 26.6
Engineering	16	9	25 31.6
Utilities/government	2	6	8 10.1
Medical/education	1	3	4 5.1
Total	39 49.4	40 50.6	79 100.0

Q9.6(a) Type of company by service/product distribution in foreign countries.

Type of Company	Yes	No	Total and Percent
Architecture	1	5	6 7.5
Construction/transportation	2	12	14 17.5
Manufacturing/sales	14	9	23 28.8
Engineering	9	16	25 31.3
Utilities/government	2	7	9 11.3
Medical/education	1	2	3 3.8
Total	29 36.3	51 63.8	80 100.0

Q9.6(b) Type of company by has offices in foreign countries.

Type of Company	Yes	No	Total and Percent
Architecture	1	5	6 7.8
Construction/transportation	2	12	14 18.2
Manufacturing/sales	9	11	20 26.0
Engineering	6	18	24 31.2
Utilities/government	2	7	9 11.7
Medical/education	1	3	4 5.2
Total	21 27.3	56 72.7	77 100.0

Q9.6(c) Type of company by hires from foreign countries.

Type of Company	Yes	No	Total and Percent
Architecture	1	5	6 7.8
Construction/transportation	0	15	15 19.5
Manufacturing/sales	7	12	19 24.7
Engineering	3	21	24 31.2
Utilities/government	2	7	9 11.7
Medical/education	1	3	4 5.2
Total	14 18.2	63 81.8	77 100.0

Q10.1(a) Type of company by P.E.R. for all engineering staff on initial hire.

Type of Company	Yes	No	Total and Percent
Architecture	0	7	7 8.3
Construction/transportation	0	16	16 19.0
Manufacturing/sales	1	22	23 27.4
Engineering	1	24	25 29.8
Utilities/government	2	8	10 11.9
Medical/education	1	2	3 3.6
Total	5 6.0	79 94.0	84 100.0

Q10.1(b) Type of company by P.E.R. for all engineering staff for professional advancement.

Type of Company	Yes	No	Total and Percent
Architecture	3	4	7 8.6
Construction/transportation	3	12	15 18.5
Manufacturing/sales	0	21	21 25.9
Engineering	14	11	25 30.9
Utilities/government	4	6	10 12.3
Medical/education	2	1	3 3.7
Total	26 32.1	55 67.9	81 100.0

Q10.2(a) Type of company by P.E.R. for engineering team leaders on initial hire.

Type of Company	Yes	No	Total and Percent
Architecture	4	4	8 9.4
Construction/transportation	3	13	16 18.8
Manufacturing/sales	2	20	22 25.9
Engineering	15	11	26 30.6
Utilities/government	5	5	10 11.8
Medical/education	2	1	3 3.5
Total	31 36.5	54 63.5	85 100.0

Q10.2(b) Type of company by P.E.R. for engineering team leaders for professional advancement.

Type of Company	Yes	No	Total and Percent
Architecture	5	2	7 8.9
Construction/transportation	5	10	15 19.0
Manufacturing/sales	0	20	20 25.3
Engineering	14	10	24 30.4
Utilities/government	5	5	10 12.7
Medical/education	2	1	3 3.8
Total	31 39.2	48 60.8	79 100.0

10.3(a) Type of company by P.E.R. for engineering managers on initial hire.

Type of Company	Yes	No	Total and Percent
Architecture	6	1	7 8.3
Construction/transportation	4	12	16 19.0
Manufacturing/sales	1	22	23 27.4
Engineering	16	9	25 29.8
Utilities/government	6	4	10 11.9
Medical/education	2	1	3 3.6
Total	35 41.7	49 58.3	84 100.0

Q10.3(b) Type of company by P.E.R. for engineering managers for professional advancement.

Type of Company	Yes	No	Total and Percent
Architecture	6	1	7 8.8
Construction/transportation	6	9	15 18.8
Manufacturing/sales	0	21	21 26.3
Engineering	15	9	24 30.0
Utilities/government	7	3	10 12.5
Medical/education	2	1	3 3.8
Total	36 45.0	44 55.0	80 100.0

Q10.4(a) Type of company by P.E.R. for executive officers on initial hire.

Type of Company	Yes	No	Total and Percent
Architecture	5	2	7 8.4
Construction/transportation	3	13	16 19.3
Manufacturing/sales	0	22	22 26.5
Engineering	14	11	25 30.1
Utilities/government	4	6	10 12.0
Medical/education	0	3	3 3.6
Total	26 31.3	57 68.7	83 100.0

Q10.4(b) Type of company by P.E.R. for executive officers for professional advancement.

Type of Company	Yes	No	Total and Percent
Architecture	5	2	7 8.9
Construction/transportation	6	9	15 19.0
Manufacturing/sales	1	21	22 27.8
Engineering	12	11	23 29.1
Utilities/government	4	6	10 12.7
Medical/education	0	2	2 2.5
Total	28 35.4	51 64.6	79 100.0

Q13.1(a) Number of employees by frequency of use of internally supplied company training programs.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	8	5	10	23 34.3
50-99	2	4	5	11 16.4
100-499	2	7	7	16 23.9
500-999	3	1	1	5 7.5
1,000 and above	4	0	8	12 17.9
Total	19 28.4	17 25.4	31 46.3	67 100.0

Q13.1(b) Number of employees by importance of internally supplied company training programs

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	7	5	10	22 33.8
50-99	1	2	8	11 16.9
100-499	2	1	12	15 23.1
500-999	2	1	2	5 7.7
1,000 and above	2	0	10	12 18.5
Total	14 21.5	9 13.8	42 64.6	65 100.0

Q13.2(a) Number of employees by frequency of use of external consultants.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	13	6	2	21 32.3
50-99	8	2	1	11 16.9
100-499	9	5	2	16 24.6
500-999	5	0	0	5 7.7
1,000 and above	5	2	5	12 18.5
Total	40 61.5	15 23.1	10 15.4	65 100.0

Q13.2(b) Number of employees by importance of external consultants

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	9	9	3	21 32.8
50-99	2	6	3	11 17.2
100-499	3	7	5	15 23.4
500-999	2	3	0	5 7.8
1,000 and above	2	5	5	12 18.8
Total	18 28.1	30 46.9	16 25.0	64 100.0

Q13.3(a) Number of employees by frequency of use of correspondence courses.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	17	1	2	20 32.3
50-99	9	2	0	11 17.7
100-499	14	1	1	16 25.8
500-999	4	1	0	5 8.1
1,000 and above	10	0	0	10 16.1
Total	54 87.1	5 8.1	3 4.8	62 100.0

Q13.3(b) Number of employees by importance of correspondence courses.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	15	4	1	20 32.8
50-99	7	3	1	11 18.0
500-499	13	2	0	15 24.6
500-999	3	2	0	5 8.2
1,000 and above	9	1	0	10 16.4
Total	47 77.0	12 19.7	2 3.3	61 100.0

Q13.4(a) Number of employees by frequency of use of one day seminars/workshops in the Omaha area.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	10	5	8	23 35.9
50-99	5	2	4	11 17.2
100-499	7	3	6	16 25.0
500-999	0	1	4	5 7.8
1,000 and above	4	2	3	9 14.1
Total	26 40.6	13 20.3	25 39.1	64 100.0

Q13.4(b) Number of employees by importance of one day seminars/workshops in the Omaha area.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	7	4	12	23 36.5
50-99	2	4	5	11 17.5
100-499	1	7	7	15 23.8
500-999	0	1	4	5 7.9
1,000 and above	2	3	4	9 14.3
Total	12 19.0	19 30.2	32 50.8	63 100.0

Q13.5(a) Number of employees by frequency of use of one day seminars/workshops in the Lincoln area.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	14	2	6	22 34.4
50-99	9	1	1	11 17.2
100-499	12	0	4	16 25.0
500-999	3	0	2	5 7.8
1,000 and above	7	0	3	10 15.6
Total	45 70.3	3 4.7	16 25.0	64 100.0

13.5(b) Number of employees by importance of one day seminars/workshops in the Lincoln area.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	12	4	6	22 34.9
50-99	5	5	1	11 17.5
100-499	9	3	3	15 23.8
500-999	2	1	2	5 7.9
1,000 and above	5	2	3	10 15.9
Total	33 52.4	15 23.8	15 23.8	63 100.0

Q13.6(a) Number of employees by frequency of use of non-credit courses in Omaha.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	13	4	6	23 35.9
50-99	6	5	0	11 17.2
100-499	10	3	3	16 25.0
500-999	1	2	2	5 7.8
1,000 and above	5	3	1	9 14.1
Total	35 54.7	17 26.6	12 18.8	64 100.0

Q13.6(b) Number of employees by importance of non-credit courses in Omaha.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	7	4	12	23 36.5
50-99	2	8	1	11 17.5
100-499	6	5	4	15 23.8
500-999	1	1	3	5 7.9
1,000 and above	3	5	1	9 14.3
Total	19 30.2	23 36.5	21 33.3	63 100.0

Q13.7(a) Number of employees by frequency of use of non-credit courses in Lincoln.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	15	4	3	22 34.9
50-99	9	2	0	11 17.5
100-499	14	1	1	16 25.4
500-999	3	1	1	5 7.9
1,000 and above	7	2	0	9 14.3
Total	48 76.2	10 15.9	5 7.9	63 100.0

Q13.7(b) Number of employees by importance of non-credit courses in Lincoln.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	14	4	4	22 35.5
50-99	4	7	0	11 17.7
100-499	8	5	2	15 24.2
500-999	2	1	2	5 8.1
1,000 and above	5	4	0	9 14.5
Total	33 53.2	21 33.9	8 12.9	62 100.0

Q13.8(a) Number of employees by frequency of use of non-credit courses outside Nebraska.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	19	2	1	22 34.4
50-99	6	3	2	11 17.2
100-499	12	2	2	16 25.0
500-999	1	2	2	5 7.8
1,000 and above	8	1	1	10 15.6
Total	46 71.9	10 15.6	8 12.5	64 100.0

Q13.8(b) Number of employees by importance of non-credit courses outside Nebraska.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	15	4	3	22 35.5
50-99	4	5	2	11 17.7
100-499	7	4	3	14 22.6
500-999	0	4	1	5 8.1
1,000 and above	5	3	2	10 16.1
Total	31 50.0	20 32.3	11 17.7	62 100.0

Q13.9(a) Number of employees by frequency of use of college credit courses in Omaha.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	13	4	6	23 35.4
50-99	7	3	1	11 16.9
100-499	11	2	3	16 24.6
500-999	0	4	1	5 7.7
1,000 and above	3	4	3	10 15.4
Total	34 52.3	17 26.2	14 21.5	65 100.0

Q13.9(b) Number of employees by importance of college credit courses in Omaha.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	8	5	10	23 35.9
50-99	3	7	1	11 17.2
100-499	6	5	4	15 23.4
500-999	0	1	4	5 7.8
1,000 and above	1	3	6	10 15.6
Total	18 28.1	21 32.8	25 39.1	64 100.0

Q13.10(a) Number of employees by frequency of use of college credit courses in Lincoln.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	18	2	2	22 34.4
50-99	10	0	1	11 17.2
100-499	15	0	1	16 25.0
500-999	4	1	0	5 7.8
1,000 and above	7	2	1	10 15.6
Total	54 84.4	5 7.8	5 7.8	64 100.0

Q13.10(b) Number of employees by importance of college credit courses in Lincoln.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	15	2	5	22 34.9
50-99	7	4	0	11 17.5
100-499	11	2	2	15 23.8
500-999	4	1	0	5 7.9
1,000 and above	5	3	2	10 15.9
Total	42 66.7	12 19.0	9 14.3	63 100.0

Q13.11(a) Number of employees by frequency of use of instructional television.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	18	2	2	22 34.4
50-99	9	1	1	11 17.2
100-499	14	1	1	16 25.0
500-999	4	1	0	5 7.8
1,000 and above	9	0	1	10 15.6
Total	54 84.4	5 7.8	5 7.8	64 100.0

Q13.11(b) Number of employees by importance of instructional television.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	12	7	3	22 34.9
50-99	7	3	1	11 17.5
100-499	10	3	2	15 23.8
500-999	3	2	0	5 7.9
1,000 and above	7	2	1	10 15.9
Total	39 61.9	17 27.0	7 11.1	63 100.0

Q13.12(a) Number of employees by frequency of use of periodicals.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	6	4	13	23 35.4
50-99	0	6	5	11 16.9
100-499	3	3	10	16 24.6
500-999	0	1	4	5 7.7
1,000 and above	2	0	8	10 15.4
Total	11 16.9	14 21.5	40 61.5	65 100.0

Q13.12(b) Number of employees by importance of periodicals.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	6	4	13	23 35.9
50-99	0	3	8	11 17.2
100-499	2	4	9	15 23.4
500-999	0	0	5	5 7.8
1,000 and above	2	0	8	10 15.6
Total	10 15.6	11 17.2	43 67.2	64 100.0

Q13.13(a) Number of employees by frequency of use of on-site vendor training.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	9	6	7	22 35.5
50-99	2	4	4	10 16.1
100-499	8	4	4	16 25.8
500-999	1	3	1	5 8.1
1,000 and above	2	1	6	9 14.5
Total	22 35.5	18 29.0	22 35.5	62 100.0

Q13.13(b) Number of employees by importance of on-site vendor training.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	8	6	8	22 36.1
50-99	0	6	4	10 16.4
100-499	5	5	5	15 24.6
500-999	0	5	0	5 8.2
1,000 and above	1	2	6	9 14.8
Total	14 23.0	24 39.3	23 37.7	61 100.0

Q13.14(a) Number of employees by frequency of use of off-site vendor training.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	15	5	3	23 36.5
50-99	3	4	4	11 17.5
100-499	8	2	5	15 23.8
500-999	3	1	1	5 7.9
1,000 and above	1	3	5	9 14.3
Total	30 47.6	15 23.8	18 28.6	63 100.0

Q13.14(b) Number of employees by importance of use of off-site vendor training.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	14	5	3	22 36.1
50-99	1	6	4	11 18.0
100-499	6	4	4	14 23.0
500-999	2	3	0	5 8.2
1,000 and above	1	3	5	9 14.8
Total	24 39.3	21 34.4	16 26.2	61 100.0

Q13.15(a) Number of employees by frequency of use of other mechanisms.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
2-49	0	0	1	1 16.7
50-99	1	0	2	3 50.0
100-499	0	1	0	1 16.7
1,000 and above	1	0	0	1 16.7
Total	2 33.3	1 16.7	3 50.0	6 100.0

Q13.15(b) Number of employees by importance of other mechanisms.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
2-49	0	0	1	1 16.7
50-99	0	1	2	3 50.0
100-499	0	1	0	1 16.7
1,000 and above	0	0	1	1 16.7
Total	0	2 33.3	4 66.7	6 100.0

Q13.1(a) Type of company by frequency of use of internally supplied company training programs.

Number of Employees	Infrequently	Neutral	Frequently	Total and Percent
Architecture	1	1	4	6 7.3
Construction/transportation	1	5	9	15 18.3
Manufacturing/sales	10	3	10	23 28.0
Engineering	9	5	11	25 30.5
Utilities/government	3	2	4	9 11.0
Medical/education	0	1	3	4 4.9
Total	24 29.3	17 20.7	41 50.0	82 100.0

Q13.1(b) Type of company by importance of internally supplied company training programs.

Number of Employees	Unimportant	Neutral	Important	Total and Percent
Architecture	1	0	5	6 7.5
Construction/transportation	1	5	8	14 17.5
Manufacturing/sales	5	1	16	22 27.5
Engineering	8	4	13	25 31.3
Utilities/government	2	1	6	9 11.3
Medical/education	0	0	4	4 5.0
Total	17 21.3	11 13.8	52 65.0	80 100.0

Q13.2(a) Type of company by frequency of use of external consultants.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	5	1	1	7 8.6
Construction/transportation	6	6	2	14 17.3
Manufacturing/sales	13	5	5	23 28.4
Engineering	16	7	1	24 29.6
Utilities/government	6	1	2	9 11.1
Medical/education	1	0	3	4 4.9
Total	47 58.0	20 24.7	14 17.3	81 100.0

Q13.2(b) Type of company by importance of external consultants.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	4	2	0	6 7.6
Construction/transportation	3	8	3	14 17.7
Manufacturing/sales	5	8	9	22 27.8
Engineering	8	12	4	24 30.4
Utilities/government	1	5	3	9 11.4
Medical/education	0	0	4	4 5.1
Total	21 26.6	35 44.3	23 29.1	79 100.0

Q13.3(a) Type of company by frequency of use of correspondence courses.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	5	0	1	6 7.8
Construction/transportation	11	0	3	14 18.2
Manufacturing/sales	22	0	0	22 28.6
Engineering	19	4	0	23 29.9
Utilities/government	6	2	0	8 10.4
Medical/education	3	1	0	4 5.2
Total	66 85.7	7 9.1	4 5.2	77 100.0

Q13.3(b) Type of company by importance of correspondence courses.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	4	1	1	6 7.9
Construction/transportation	10	4	0	14 18.4
Manufacturing/sales	20	1	0	21 27.6
Engineering	17	4	2	23 30.3
Utilities/government	4	4	0	8 10.5
Medical/education	3	1	0	4 5.3
Total	58 76.3	15 19.7	3 3.9	76 100.0

Q13.4(a) Type of company by frequency of use of one day seminars/workshops in the Omaha area.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	1	2	4	7 8.8
Construction/transportation	4	2	8	14 17.5
Manufacturing/sales	10	8	4	22 27.5
Engineering	11	5	10	26 32.5
Utilities/government	5	0	3	8 10.0
Medical/education	0	1	2	3 3.8
Total	31 38.8	18 22.5	31 38.8	80 100.0

Q13.4(b) Type of company by importance of one day seminars/workshops in the Omaha area.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	1	1	4	6 7.7
Construction/transportation	2	4	8	14 17.9
Manufacturing/sales	3	11	7	21 26.9
Engineering	7	4	15	26 33.3
Utilities/government	1	3	4	8 10.3
Medical/education	0	2	1	3 3.8
Total	14 17.9	25 32.1	39 50.0	78 100.0

Q13.5(a) Type of company by frequency of use of one day seminars/workshops in the Lincoln area.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	2	0	4	6 7.6
Construction/transportation	9	3	2	14 17.7
Manufacturing/sales	19	1	2	22 27.8
Engineering	16	4	5	25 31.6
Utilities/government	6	0	2	8 10.1
Medical/education	2	0	2	4 5.1
Total	54 68.4	8 10.1	17 21.5	79 100.0

Q13.5(b) Type of company by importance of one day seminars/workshops in the Lincoln area.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	2	0	4	6 7.7
Construction/transportation	7	5	2	14 17.9
Manufacturing/sales	14	5	2	21 26.9
Engineering	13	6	6	25 32.1
Utilities/government	3	3	2	8 10.3
Medical/education	1	1	2	4 5.1
Total	40 51.3	20 25.6	18 23.1	78 100.0

Q13.6(a) Type of company by frequency of use of non-credit courses in Omaha.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	5	2	0	7 8.8
Construction/transportation	5	4	5	14 17.5
Manufacturing/sales	15	5	2	22 27.5
Engineering	13	8	5	26 32.5
Utilities/government	5	1	2	8 10.0
Medical/education	1	2	0	3 3.8
Total	44 55.0	22 27.5	14 17.5	80 100.0

Q13.6(b) Type of company by importance of non-credit courses in Omaha.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	3	2	1	6 7.7
Construction/transportation	3	4	7	14 17.9
Manufacturing/sales	6	10	5	21 26.9
Engineering	5	8	13	26 33.3
Utilities/government	2	3	3	8 10.3
Medical/education	1	2	0	3 3.8
Total	20 25.6	29 37.2	29 37.2	78 100.0

Q13.7(a) Type of company by frequency of use of non-credit courses in Lincoln.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	4	2	0	6 7.7
Construction/transportation	10	2	2	14 17.9
Manufacturing/sales	20	1	1	22 28.2
Engineering	19	5	1	25 32.1
Utilities/government	5	2	1	8 10.3
Medical/education	2	1	0	3 3.8
Total	60 76.9	13 16.7	5 6.4	78 100.0

Q13.7(b) Type of company by importance of non-credit courses in Lincoln.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	3	3	0	6 7.8
Construction/transportation	7	4	3	14 18.2
Manufacturing/sales	12	6	3	21 27.3
Engineering	14	9	2	25 32.5
Utilities/government	1	5	2	8 10.4
Medical/education	1	2	0	3 3.9
Total	38 49.4	29 37.7	10 13.0	77 100.0

Q13.8(a) Type of company by frequency of use of non-credit courses outside Nebraska.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	5	1	1	7 8.8
Construction/transportation	9	2	3	14 17.5
Manufacturing/sales	18	3	2	23 28.8
Engineering	18	5	2	25 31.3
Utilities/government	6	0	2	8 10.0
Medical/education	1	1	1	3 3.8
Total	57 71.3	12 15.0	11 13.8	80 100.0

Q13.8(b) Type of company by importance of non-credit courses outside Nebraska.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	4	1	1	6 7.8
Construction/transportation	8	3	3	14 18.2
Manufacturing/sales	12	7	3	22 28.6
Engineering	13	8	4	25 32.5
Utilities/government	0	4	3	7 9.1
Medical/education	1	0	2	3 3.9
Total	38 49.4	23 29.9	16 20.8	77 100.0

Q13.9(a) Type of company by frequency of use of college credit courses in Omaha.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	3	3	0	6 7.5
Construction/transportation	8	2	4	14 17.5
Manufacturing/sales	9	7	6	22 27.5
Engineering	15	5	6	26 32.5
Utilities/government	3	4	2	9 11.3
Medical/education	1	2	0	3 3.8
Total	39 48.8	23 28.8	18 22.5	80 100.0

Q13.9(b) Type of company by importance of college credit courses in Omaha.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	3	2	1	6 7.6
Construction/transportation	5	2	7	14 17.7
Manufacturing/sales	1	6	14	21 26.6
Engineering	8	8	10	26 32.9
Utilities/government	1	3	5	9 11.4
Medical/education	1	2	0	3 3.8
Total	19 24.1	23 29.1	37 46.8	79 100.0

Q13.10(a) Type of company by frequency of use of college credit courses in Lincoln.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	4	1	1	6 7.6
Construction/transportation	11	1	2	14 17.7
Manufacturing/sales	21	1	0	22 27.8
Engineering	23	1	1	25 31.6
Utilities/government	5	3	1	9 11.4
Medical/education	2	1	0	3 3.8
Total	66 83.5	8 10.1	5 6.3	79 100.0

Q13.10(b) Type of company by importance of college credit courses in Lincoln.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	4	1	1	6 7.7
Construction/transportation	8	1	5	14 17.9
Manufacturing/sales	14	6	1	21 26.9
Engineering	17	6	2	25 32.1
Utilities/government	3	3	3	9 11.5
Medical/education	1	2	0	3 3.8
Total	47 60.3	19 24.4	12 15.4	78 100.0

Q13.11(a) Type of company by frequency of use of instructional television.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	5	2	0	7 8.8
Construction/transportation	10	1	3	14 17.5
Manufacturing/sales	21	0	1	22 27.5
Engineering	21	3	1	25 31.3
Utilities/government	7	1	1	9 11.3
Medical/education	3	0	0	3 3.8
Total	67 83.8	7 8.8	6 7.5	80 100.0

Q13.11(b) Type of company by importance of instructional television.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	3	2	1	6 7.7
Construction/transportation	8	3	3	14 17.9
Manufacturing/sales	13	4	4	21 26.9
Engineering	14	9	2	25 32.1
Utilities/government	4	4	1	9 11.5
Medical/education	3	0	0	3 3.8
Total	45 57.7	22 28.2	11 14.1	78 100.0

Q13.12(a) Type of company by frequency of use of periodicals.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	1	0	5	6 7.5
Construction/transportation	7	2	5	14 17.5
Manufacturing/sales	2	4	17	23 28.8
Engineering	2	7	17	26 32.5
Utilities/government	1	3	4	8 10.0
Medical/education	0	1	2	3 3.8
Total	13 16.3	17 21.3	50 62.5	80 100.0

Q13.12(b) Type of company by importance of periodicals.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	0	1	5	6 7.6
Construction/transportation	5	4	5	14 17.7
Manufacturing/sales	1	5	16	22 27.8
Engineering	4	3	19	26 32.9
Utilities/government	0	2	6	8 10.1
Medical/education	0	0	3	3 3.8
Total	10 12.7	15 19.0	54 68.4	79 100.0

Q13.13(a) Type of company by frequency of use of on-site vendor training.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	1	3	2	6 7.8
Construction/transportation	5	5	4	14 18.2
Manufacturing/sales	10	3	9	22 28.6
Engineering	9	9	6	24 31.2
Utilities/government	4	2	2	8 10.4
Medical/education	0	2	1	3 3.9
Total	29 37.7	24 31.2	24 31.2	77 100.0

Q13.13(b) Type of company by importance of on-site vendor training.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	1	3	2	6 7.9
Construction/transportation	4	5	5	14 18.4
Manufacturing/sales	5	7	9	21 27.6
Engineering	8	9	7	24 31.6
Utilities/government	0	5	3	8 10.5
Medical/education	0	2	1	3 3.9
Total	18 23.7	31 40.8	27 35.5	76 100.0

Q13.14(a) Type of company by frequency of use of off-site vendor training.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Architecture	2	3	1	6 7.7
Construction/transportation	5	5	5	15 19.2
Manufacturing/sales	11	1	9	21 26.9
Engineering	17	6	2	25 32.1
Utilities/government	4	1	3	8 10.3
Medical/education	1	2	0	3 3.8
Total	40 51.3	18 23.1	20 25.6	78 100.0

Q13.14(b) Type of company by importance of off-site vendor training.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Architecture	2	3	1	6 7.9
Construction/transportation	4	6	4	14 18.4
Manufacturing/sales	6	6	8	20 26.3
Engineering	14	7	4	25 32.9
Utilities/government	1	3	4	8 10.5
Medical/education	1	2	0	3 3.9
Total	28 36.8	27 35.5	21 27.6	76 100.0

Q13.15(a) Type of company by frequency of use of other mechanisms.

Type of Company	Infrequently	Neutral	Frequently	Total and Percent
Construction/transportation	0	0	1	1 16.7
Manufacturing/sales	1	0	0	1 16.7
Engineering	0	0	2	2 33.3
Utilities/government	1	1	0	2 33.3
Total	2 33.3	1 16.7	3 50.0	6 100.0

Q13.15(b) Type of company by importance of other mechanisms.

Type of Company	Unimportant	Neutral	Important	Total and Percent
Construction/transportation	0	0	1	1 16.7
Manufacturing/sales	0	0	1	1 16.7
Engineering	0	0	2	2 33.3
Utilities/government	0	2	0	2 33.3
Total	0	2 33.3	4 66.7	6 100.0

Q14.1 Number of employees by training early morning before work on workdays.

Number of Employees	Least Preferable	Somewhat Preferable	Preferable	Most Preferable	Total and Percent
2-49	8	4	1	5	18 31.6
50-99	2	3	3	3	11 19.3
100-499	7	2	3	2	14 24.6
500-999	3	0	0	1	4 7.0
1,000 and above	5	2	2	1	10 17.5
Total	25 43.9	11 19.3	9 15.8	12 21.1	57 100.0

Q14.2 Number of employees by training on workdays in evenings.

Number of Employees	Least Preferable	Somewhat Preferable	Preferable	Most Preferable	Not Necessary	Total and Percent
2-49	4	1	1	13	0	19 31.7
50-99	1	2	4	4	0	11 18.3
100-499	2	2	2	9	0	15 25.0
500-999	0	1	0	3	0	4 6.7
1,000 and above	0	2	3	5	1	11 18.3
Total	7 11.7	8 13.3	10 16.7	34 56.7	1 1.7	60 100.0

Q14.3 Number of employees by training during the workday.

Number of Employees	Least Preferable	Somewhat Preferable	Preferable	Most Preferable	Total and Percent
2-49	5	8	5	0	18 30.5
50-99	2	4	3	2	11 18.6
100-499	6	3	3	3	15 25.4
500-999	3	0	0	1	4 6.8
1,000 and above	4	2	2	3	11 18.6
Total	20 33.9	17 28.8	13 22.0	9 15.3	59 100.0

Q14.4 Number of employees by training on Saturdays.

Number of Employees	Least Preferable	Somewhat Preferable	Preferable	Most Preferable	Total and Percent
2-49	1	5	11	1	18 31.0
50-99	2	4	2	3	11 19.0
100-499	5	4	3	3	15 25.9
500-999	1	0	2	1	4 6.9
1,000 and above	3	3	3	1	10 17.2
Total	12 20.7	16 27.6	21 36.2	9 15.5	58 100.0

Q14.5 Number of employees by training unnecessary.

	Not Necessary	Total and Percent
2-49	12	12 42.9
50-99	7	7 25.0
100-499	4	4 14.3
500-999	2	2 7.1
1,000 and above	3	3 10.7
Total	28 100.0	28 100.0

Q15.1 Type of company by college credit expenditure.

Type of Company	$100-$500	$501-$1,000	$1,001-$2,000	$2,001-$4,000	$4,001-$6,000	$8,001-$10,000	$10,001-$30,000	$40,000 and Above	Total and Percent
Architecture	0	0	0	0	1	0	1	0	2 4.5
Construction/transp.	2	2	0	1	1	1	1	0	8 18.2
Manufacturing/sales	1	0	4	1	4	0	1	0	11 25.0
Engineering	2	3	3	3	2	0	0	1	14 31.8
Utilities/government	0	0	0	0	3	1	2	1	7 15.9
Medical/education	1	0	0	0	1	0	0	0	2 4.5
Total	6 13.6	5 11.4	7 15.9	5 11.4	12 27.3	2 4.5	5 11.4	2 4.5	44 100.0

Q15.2 Type of company by non-credit expenditure.

Type of Company	$100-$500	$501-$1,000	$1,001-$2,000	$2,001-$4,000	$5,000-$6,000	$7,000-$8,000	$9,000-$10,000	$10,001-$20,000	$20,0001-$30,000	$40,000 and Above	Total and Percent
Architecture	0	1	0	1	0	0	0	1	0	2	5 8.8
Construction/transp.	5	0	1	1	1	0	0	1	1	2	12 21.1
Manufacturing/sales	2	0	1	0	3	1	2	1	1	0	11 19.3
Engineering	1	4	4	4	2	0	1	1	1	0	18 31.6
Utilities/government	0	0	0	0	1	1	1	3	0	2	8 14.0
Medical/education	0	0	2	1	0	0	0	0	0	0	3 5.3
Total	8 14.0	5 8.8	8 14.0	7 12.3	7 12.3	2 3.5	4 7.0	7 12.3	3 5.3	6 10.5	57 100.0

Q15.3 Type of company by total expenditure.

Type of Company	$100-$2,000	$2,001-$4,000	$4,001-$7,000	$7,001-$11,000	$11,001-$15,000	$15,001-$30,000	$30,001-$55,000	$70,000-$120,000	$300,000 and Above	Total and Percent
Architecture	1	0	0	0	0	1	1	1	0	4 7.8
Construction/transp.	4	1	2	0	0	1	1	0	2	11 21.6
Manufacturing/sales	1	0	3	2	1	2	0	0	0	9 17.6
Engineering	2	4	6	0	1	2	1	0	0	16 31.4
Utilities/government	0	0	0	0	1	3	2	1	1	8 15.7
Medical/education	1	1	1	0	0	0	0	0	0	3 5.9
Total	9 17.6	6 11.8	12 23.5	2 3.9	3 5.9	9 17.6	5 9.8	2 3.9	3 5.9	51 100.0

Q16.a Number of employees by company paying for college-credit employee education.

Number of Employees	All	Half or Less	More Than Half	None	Total and Percent
2-49	10	7	2	5	24 35.3
50-99	4	3	3	1	11 16.2
100-499	10	1	2	3	16 23.5
500-999	2	2	1	0	5 7.4
1,000 and above	5	1	6	0	12 17.6
Total	31 45.6	14 20.6	14 20.6	9 13.2	68 100.0

Q16.b Number of employees by company paying for non-credit employee education.

Number of Employees	All	Half or Less	More Than Half	None	Total and Percent
2-49	12	5	2	7	26 37.1
50-99	6	0	5	1	12 17.1
100-499	12	2	1	0	15 21.4
500-999	3	1	1	0	5 7.1
1,000 and above	6	2	3	1	12 17.1
Total	39 55.7	10 14.3	12 17.1	9 12.9	70 100.0

Q16.c Number of employees by providing release time.

Number of Employees	All	Half or Less	None	Total and Percent
2-49	16	1	8	25 41.0
50-99	8	0	1	9 14.8
100-499	8	1	3	12 19.7
500-999	3	1	0	4 6.6
1,000 and above	7	2	2	11 18.0
Total	42 68.9	5 8.2	14 23.0	61 100.0

Q16.a Type of company paying for college-credit employee education.

Type of Company	All	Half or Less	More Than Half	None	Total and Percent
Architecture	1	3	1	3	8 9.6
Construction/transportation	3	2	6	2	13 15.7
Manufacturing/sales	15	0	5	4	24 28.9
Engineering	13	6	5	1	25 30.1
Utilities/government	4	3	2	0	9 10.8
Medical/education	3	1	0	0	4 4.8
Total	39 47.0	15 18.1	19 22.9	10 12.0	83 100.0

Q16.b Type of company paying for non-credit employee education.

Type of Company	All	Half or Less	More Than Half	None	Total and Percent
Architecture	4	2	0	2	8 9.4
Construction/transportation	7	4	4	1	16 18.8
Manufacturing/sales	17	1	3	2	23 27.1
Engineering	13	4	4	4	25 29.4
Utilities/government	7	1	1	0	9 10.6
Medical/education	2	0	1	1	4 4.7
Total	50 58.8	12 14.1	13 15.3	10 11.8	85 100.0

Q16.c Type of company providing release time.

Type of Company	All	Half or Less	None	Total and Percent
Architecture	7	0	1	8 10.7
Construction/transportation	11	0	1	12 16.0
Manufacturing/sales	11	3	7	21 28.0
Engineering	17	1	5	23 30.7
Utilities/government	5	1	2	8 10.7
Medical/education	3	0	0	3 4.0
Total	54 72.0	5 6.7	16 21.3	75 100.0

GREATER OMAHA CHAMBER ENGINEERING TASK FORCE ON SCIENTIFIC, ENGINEERING AND TECHNICAL EMPLOYEES: EDUCATIONAL REQUIREMENTS QUESTIONNAIRE

Thank you in advance for your time.

A. GENERAL INFORMATION: This section deals with some general questions relating to your position in your company. Once again, bear in mind that your names will remain confidential.

Q1. Please state the name and address of your company.

_____

_____

Q2. Please state your name.

_____

Q3. What is your title?

_____

Q4. How many years have you been with this company? (If less than 1 year, please write "1"). Please round off to the nearest whole number. _____

Q5. What is your company phone number? _____-_____

Q6. Please state the total number of employees in your company. _____

Q7. Today's date _____/_____/_____

B. SPECIFIC INFORMATION: This section deals with specific information relating to your company needs.

Q8. Does your company engage in any of the following activities? (Please circle appropriate responses.)

	Activity	Yes	No
1.	Basic research	1	2
2.	Applied research	1	2
3.	Engineering design	1	2
4.	Product development	1	2
5.	Service development	1	2
6.	Manufacturing	1	2
7.	Providing engineering services	1	2
8.	Providing architectural services	1	2
9.	Marketing	1	2
10.	Sales	1	2
11.	Construction	1	2
12.	Government services	1	2
13.	Utilities	1	2
14.	Other (Please specify)_____	1	2

Q9. Please indicate whether your company:
(a) Distributes its services or products in the following geographical areas,
(b) Has offices located in these geographical locations,
(c) Hires engineers from these geographical areas. (Please circle the appropriate responses.)

Geographical Area	(a) Service/Product Distribution		(b) Has Offices		(c) Hires	
	Yes	No	Yes	No	Yes	No
1. Within Omaha Metro area	1	2	1	2	1	2
2. Throughout Nebraska	1	2	1	2	1	2
3. Throughout Midwest	1	2	1	2	1	2
4. A few regions in the U.S.	1	2	1	2	1	2
(Specify) _____						
5. Throughout the United States	1	2	1	2	1	2
6. In foreign countries	1	2	1	2	1	2

Q10. Which of the following positions require Professional Engineering Registration for:
(a) Initial employment
(b) Professional advancement after initial hire?
(Please circle the appropriate responses.)

Position	(a) Initial Hire		(b) Professional Advancement	
	Yes	No	Yes	No
1. All engineering staff	1	2	1	2
2. Engineering team leaders	1	2	1	2
3. Engineering managers	1	2	1	2
4. Executive officers	1	2	1	2

Q11. Indicate the areas in which your company needs to have its scientific, engineering, or technical staff members obtain ADDITIONAL college-credit training or education. (Please note that this question pertains to college CREDIT training. Please circle appropriate responses.)

Areas of Need	Type of Position					
	Scientific		Engineering		Technical	
	Yes	No	Yes	No	Yes	No
Applicable?	1	2	1	2	1	2
A. Technical Field						
1. Certificate	1	2	1	2	1	2
2. Associate	1	2	1	2	1	2
3. B.S.	1	2	1	2	1	2
4. M.S.	1	2	1	2	1	2
5. Ph.D.	1	2	1	2	1	2
B. Engineering Management						
1. Certificate	1	2	1	2	1	2
2. Associate	1	2	1	2	1	2
3. Bachelors	1	2	1	2	1	2
4. Masters	1	2	1	2	1	2
5. Ph.D.	1	2	1	2	1	2
C. Business Management						
1. Certificate	1	2	1	2	1	2
2. Associate	1	2	1	2	1	2
3. Bachelors	1	2	1	2	1	2
4. Masters	1	2	1	2	1	2
5. Ph.D.	1	2	1	2	1	2

D. Additional college credit providing knowledge and skills in: (Please specify and provide example)

	Yes	No
1. Analysis _____	1	2
2. Design _____	1	2
3. Application _____	1	2
4. Development _____	1	2
E. Other areas (Please specify)	1	2
_____	1	2
_____	1	2

Q12. Please indicate your company's NON-CREDIT CONTINUING ENGINEERING needs in scientific, engineering and technical areas, in terms of:

1. specific topic,
2. estimated average number of employees who would annually enroll in courses focusing on such topics, and
3. additional comments per topic area.

	Continuing Education Topics	Annual Enrollments	Comments
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

Q13. (a) On a scale from 1 to 5 please indicate **how frequently** your company uses the listed mechanism in order to address its educational needs in engineering, technical, and scientific fields (NOTE: 1 = very infrequently, 2 = infrequently, 3 = neutral, 4 = frequently, 5 = very frequently), and

(b) On a scale from 1 to 5, please indicate **how important** each of the following mechanisms are to you in addressing educational needs in engineering, technical, and scientific fields (NOTE: 1 = extremely unimportant, 2 = unimportant 3 = neutral, 4 = important, 5 = extremely important

		(a) Frequency of Use					(b) Importance				
	MECHANISM	1	2	3	4	5	1	2	3	4	5
1.	Internally supplied company training programs	1	2	3	4	5	1	2	3	4	5
2.	External consultants	1	2	3	4	5	1	2	3	4	5
3.	Correspondence courses	1	2	3	4	5	1	2	3	4	5
4.	One-day seminars/work-shops in the Omaha area	1	2	3	4	5	1	2	3	4	5
5.	One-day seminars/work-shops in the Lincoln area	1	2	3	4	5	1	2	3	4	5
6.	Non-credits short courses in the Omaha area	1	2	3	4	5	1	2	3	4	5
7.	Non-credit short courses in the Lincoln area	1	2	3	4	5	1	2	3	4	5
8.	Non-credit short courses outside nebraska	1	2	3	4	5	1	2	3	4	5
9.	On-campus college credit courses in Omaha area	1	2	3	4	5	1	2	3	4	5
10.	On-campus college courses in the Lincoln area	1	2	3	4	5	1	2	3	4	5
11.	College credit courses delivered to work-site via instructional television (such as Corpnet)	1	2	3	4	5	1	2	3	4	5
12.	Literature (periodicals)	1	2	3	4	5	1	2	3	4	5
13.	On-site vendor training	1	2	3	4	5	1	2	3	4	5
14.	Off-site vendor training	1	2	3	4	5	1	2	3	4	5
15.	Other (Please specify) _____ _____	1	2	3	4	5	1	2	3	4	5

Q14. Please rank by order of preference, the time of day when your company should offer engineering, technical, and scientific educational training. (Circle 1,2,3,4 to indicate order of preference, where 1 indicates least preferable and 4 indicates most preferable). If you think training is unnecessary, please circle number 5.

1. Early morning, before work on workdays	1	2	3	4
2. Evening on workdays	1	2	3	4
3. During the workday	1	2	3	4
4. Saturdays	1	2	3	4
5. Not necessary				5

Q15. Please estimate the current annual company expenditure on employees for engineering, technical, and scientific education for;

1. College credit . . . . . .$_____
2. Non-credit continuing education . . . . . .$_____

TOTAL . . . . . .$_____

Q16. Please state if your company (a) pays for college-credit employee education, (b) pays for non-credit employee education, or (c) provides release time for engineering, technical, and scientific educational training. (If your response is yes, indicate whether it pays all educational costs, 1/2 or less, or more than 1/2.)

Circle appropriate responses.	Yes			No	Please explain (narrative)
	all	1/2 or less	more than 1/2		
a. Pays for college-credit employee education	1	2	3	4	
b. Pays for non-credit employee education	1	2	3	4	
c. Provides release time for engineering, technical, and scientific educational training		1		2	

Q17. In the table below (a) please indicate the number of employees holding bachelors, masters, Ph.Ds in terms of the current DEGREES HELD. (b) Of these indicate the number of employees in terms of the degrees they SHOULD have beyond those they presently hold. Also include additional employees you may presently need.

Please note that in determining current employee area of specialization, you must provide specialization in terms of the formal degree he/she holds, rather than the position held. So that a person holding a degree in electrical engineering, but employed in a management position must be classified as an electrical engineer and not as a manager.

	(a) Current degree held			(b) Degree that SHOULD be held		
	B.S.	M.S.	Ph.D.	B.S.	M.S.	Ph.D.
Engineers:						
Aerospace						
Agriculture						
Architectural						
Biomedical						
Ceramic						
Chemical						
Civil						
Computer						
Electrical						
Environmental						
Industrial						
Engineering Management						
Manufacturing						
Mechanical						
Metallurgy						
Nuclear						
Petroleum						
Other - Be specific (e.g., structure)						
_____						
_____						
_____						
Scientists:						
Biological						
Chemical						
Computer						
Mathematical						
Physics						
Other _____						
_____						
_____						

	(a) Current degree held			(b) Degree that SHOULD be held		
	B.S.	M.S.	Ph.D.	B.S.	M.S.	Ph.D.
Technologists:						
Architectural						
Chemical						
Construction						
Computer						
Drafting						
Electronics						
Industrial						
Manufacturing						
Mechanical						
Nuclear						
Other _____						
_____						
_____						

	(a) Current degree held		(b) Degree that SHOULD be held	
	Certificate	Associate	Certificate	Associate
Technicians:				
Civil				
Computer				
Drafting				
Electronics				
Transportation				
Welding				
Mechanical				
Construction				
Manufacturing				
Air Conditioning				
Other _____				
_____				
_____				

Q18. The following question deals with the TOTAL:
(a) Estimated company needs in three years
(b) Estimated company needs in five years

	(a) Estimated total number needed in 3 years			(b) Estimated total number needed in 5 years		
	B.S.	M.S.	Ph.D.	B.S.	M.S.	Ph.D.
Engineers:						
Aerospace						
Agriculture						
Architectural						
Biomedical						
Ceramic						
Chemical						
Civil						
Computer						
Electrical						
Environmental						
Industrial						
Engineering Management						
Manufacturing						
Mechanical						
Metallurgy						
Nuclear						
Petroleum						
Other (specify) _____						
_____						
_____						
Scientists:						
Biological						
Chemical						
Computer						
Mathematical						
Physics						
Other (specify) _____						
_____						
_____						

	(a) Estimated total number needed in 3 years			(b) Estimated total number needed in 5 years		
	B.S.	M.S.	Ph.D.	B.S.	M.S.	Ph.D.
Technologists:						
Architectural						
Chemical						
Construction						
Computer						
Drafting						
Electronics						
Industrial						
Manufacturing						
Mechanical						
Nuclear						
Other (specify) _____						
_____						
_____						

	(a) Estimated total number needed in 3 years		(b) Estimated total number needed in 5 years	
	Certificate	Associate	Certificate	Associate
Technicians:				
Civil				
Computer				
Drafting				
Electronics				
Transportation				
Welding				
Mechanical				
Construction				
Manufacturing				
Air Conditioning				
Other (specify)_____				
_____				
_____				

Q19. Do you have any additional comments on anticipated or current needs? Please be specific.