TECHNICAL WRITING

Needs Assessment

Prepared by:

Office of Institutional Planning & Analysis
Oakland Community College

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OAKLAND COMMUNITY COLLEGE
TECHNICAL WRITING
NEEDS ASSESSMENT

EXECUTIVE SUMMARY

-In 1985, there were approximately 650 Technical Writers employed in Michigan. Employment is expected to grow faster than the average for all occupations through the year 2000 (MOIS).

-The Technical Writer's ability to prepare written material in simple terms should also be in greater demand as industrial and scientific equipment becomes more complex.

-Of those surveyed, just under two-thirds (61.5%) are currently hiring Technical Writers while the remaining third are not currently hiring. The general reason cited for not currently hiring was the slow economic situation that overshadowed the definite need for Technical Writers.

-In commenting on the current need of Technical Writers, a full 100% of employers surveyed agreed that there is a growing need.

-Survey respondents indicated annual salary ranges for entry level Technical Writers are between $23,232 and $42,857.

-Local employers highly recommend prior work-related experience (engineering), prior Technical Writing experience, or a Bachelors degree in fields such as English, Journalism, Communications, or a specialized technical field. All of these criteria were required by approximately sixty to seventy percent of responding employers. On the other hand, an associates degree was required by less than forty percent.

-Technical Writing covers such a broad area of diverse markets, the degree program should allow for a variety of specialization areas of study for students.

-The associates degree is seen by many employers as *minimal entry requirement*. Many suggest that the associate degree program should act as a foundation for the career, but a bachelors degree is really needed for any significant advancement.

-Demand in southeastern Michigan is primarily for Technical Writers to work in the automobile, manufacturing, and computer information sectors.

OAKLAND COMMUNITY COLLEGE
TECHNICAL WRITING PROGRAM
NEEDS ASSESSMENT

INTRODUCTION

The purpose of this report is to present information to assist in evaluating the need for a Technical Writing program at Oakland Community College. Initiated by Bea Catherino, English Faculty, Auburn Hills and Bill Rose, Dean of Academic Services, Auburn Hills, this assessment involved a literature review including information from the Michigan Occupational Information System (MOIS), an examination of other Technical Writing programs in other community colleges and a targeted survey of twenty one local employers of Technical Writers.

Description of Proposed Program

The proposed Technical Writing program would provide general, supportive, and technical education necessary for the student who completes the program to obtain a technical writing position as well as additional education for those professionals in need of returning to the classroom to update their skills in areas such as the following:

-English and technical writing skills
-Interpersonal skills
-Computer knowledge, (software and hardware)
-Technical publishing skills

The proposed program, resulting in a two-year associates degree in Technical Writing, would consist of the courses displayed in Table 1. Remaining degree hours may be taken from technical programs and include courses in statistics, physics, electrical circuitry, automotive technology, climate control, landscaping, biology and/or health sciences, etc. Electives will be important for students to develop a specific field to enter with their Technical Writing degree.

This report more clearly identifies technical needs and desires of local employers like Computer Aided Design, and Graphic User Interface applications. This emphasizes that "technical knowledge represents only one-half of the Technical Writing degree" (See Appendix E for further comments).

Methods of Data Analysis

Seventy-six percent (16) of the twenty-one firms surveyed responded. Nearly sixty-two percent (61.9%) of the respondents currently employ Technical Writers. Data were analyzed by frequency distributions and narrative response content analysis.

ANALYSIS

Employment

In 1985, there were approximately 650 Technical Writers employed in Michigan. Employment is expected to grow faster than the average for all occupations through the year 2000 (MOIS). In addition, MOIS data also revealed that opportunities are forecasted to be best for experienced Writers and beginners who have the appropriate education, such as computer science or electronics and also possess the ability to write effectively. Consequently, those with minimum qualifications may face stiff competition.

Technical Writing positions will require an advanced knowledge of sophisticated documentation techniques, as well as technical knowledge of computer hardware, and software applications. The field will be affected by the continuing growth of scientific and technical information and the amount of government spending for basic research and product development.

Scientific and technical information needs to be put into language that corporate managers, sales representatives, and service technicians can understand. The Technical Writer's ability to prepare written material in simple terms should also be in greater demand as industrial and scientific equipment becomes more complex. Employers surveyed echoed these general conclusions:

"a technical writer can view technical products like a user rather than a technician"

and

"technology only works when it is used...it can only be used when it is explained."

Slightly over eighty percent (13) of respondents indicated they currently employ Technical Writers. Of that group, 70% of the Technical Writers were employed full-time, 7% part-time, and 23% were employed as free-lance employees. These findings are supported by MOIS data which indicates that approximately 31% of all Technical Writers in Michigan are self-employed (free-lance).

TABLE 2
PROJECTED HIRING OF TECHNICAL WRITERS
1991-1996

NUMBER NEEDED	PERCENT OF FIRMS
0	38.5%
1-3	30.8%
4-6	15.4%
7 or more	15.4%

Source: OCC Survey

Of those surveyed, just under two-thirds (61.5%) are currently hiring Technical Writers while the remaining third are not currently hiring. The general reason cited for not currently hiring was the slow economic situation that overshadowed the definite need for Technical Writers.

Although some firms like EDS were rather large and employed an unknown number of Technical Writers, most firms surveyed were generally small businesses that typically were involved in the automotive or computer information industries. The average number of Technical Writers (all categories) employed by the responding firms was eleven.

Table 3
Rating of Technical Writing as a Career

RATING	#	%
Excellent	4	30.8
Good	7	53.8
Fair	2	15.4

Source: OCC Survey

In commenting on the current need of Technical Writers, a full 100% of employers surveyed agreed that there is a growing need. A majority further commented that the field is also not yet appropriately recognized for its need and contribution to business and manufacturing. Also, all agreed that technical language needs to be well-documented to keep pace with the increasing rate of technology in business and manufacturing today.

Employment Benefits

Salaries for Technical Writers are heavily dependent upon education, experience, employer, and the field of specialized writing. According to MOIS (1988), nationally, salaries range from $26,000 to $38,700 in manufacturing industries. Furthermore, Technical Writers specializing in user manuals and internal reference materials typically earn between $22,000 and $35,000 with highly experienced writers can expect to earn between $30,000 and $42,000 annually.

In general, MOIS supports the findings derived from the survey of local employers. Survey respondents indicated annual salary ranges for entry level Technical Writers are between $23,232 and $42,857.

TABLE 4
SALARY LEVELS
(Average)

LEVEL	LOW	HIGH
Entry Level	$23,232	$42,857
Upper Level	$43,702	$65,199

* 36% of the respondents said the upper level salary is unlimited.
Source: OCC Survey

In the area of career advancement, many firms reported a variety of different job positions and titles that would be possible for an experienced Technical Writer to advance to over time. These titles and positions are as follows:

Project Manager	Promotion	Advertising
Product Manager	Team Leader	Senior Writer
Editor	Supervisor	General Manager
Department Manager	Quality Assurance	Trainer
Senior Tech Writer	Consultant	Operation Manager
Prod. Coordinator	Prod. Marketer	Instit. Trainer

Career Preparation

In most Michigan Colleges and University educational programs in Technical Writing are mainly a series of course offerings. Only a few offer degrees specifically in the field of Technical Writing. Table 5 shows those institutions that offer degree programs.

Table 5
Degree Programs in Michigan

Two-Year Degree	Four-Year Degree
Lawrence Technological University	Ferris State University
Macomb Community College	Northern Michigan University
Washtenaw Community College	Saginaw Valley State University

Of the respondents, 90% agreed that there is a definite need for a community college program in Technical Writing.

Table 6
Educational Requirements

REQUIREMENT	YES	PERCENT
Prior related exp.	9	69.2
Prior work exp/Tech Wri	8	61.5
Assoc Degree	5	38.5
Bach. Degree	9	69.2

Source: OCC Survey

As Table 6 indicates, local employers highly recommend prior work-related experience (engineering), prior Technical Writing experience, or a Bachelors degree in fields such as English, Journalism, Communications, or a specialized technical field. All of these criteria were required by sixty to seventy percent of responding employers while an Associates degree was required by less than forty percent. This finding raises the question of the "long-term" value of an associates degree in Technical Writing (see Appendix E, survey question #12).

With practical experience being an important element to employment upon graduation, internships play a vital role toward the future success of students. In response to the survey question "would your firm be willing to take an OCC student as an intern while they complete their degree?", 38.5% (5) said YES, while an additional 46.2% (6) were UNCERTAIN (mainly dependent upon budgetary constraints).

General Comments

Although there is an apparent need for Technical Writers (currently), a number of important suggestions were made by employers, professionals, and academics.

Technical Writing covers such a broad area of diverse markets, the degree program should allow for a variety of specialization areas of study for students. Employers suggested providing "background on Instructional Systems Design since much technical writing is done in the context of developing technical training." Others focused on a more "hands-on approach" rather than academically orientated, through skill building in analyzing, interviewing, writing, and editing by "actually doing it" and not just talking about it.

Other areas of concentration suggested by employers were "on-line documentation...documentation is not just a hard copy piece of text", students need "...a fundamental working knowledge of automotive electrical, mechanical, instruction service...90% is currently being written by people outside the industry with no knowledge...especially in southeastern Michigan."

However, as mentioned in Table 6, the associates degree is seen by many employers as *minimal entry requirement*. Many suggest that the associate degree program should act as a foundation for the career, but a bachelors degree is really needed for any significant advancement.

After developing the degree program in Technical Writing at WCC, Dr. Dan Minock has been the Director of the Employment Referral Service for the Society for Technical Communication for the last two years. He said, "it is absolutely essential that the lead faculty member become significantly involved with STC." His involvement has greatly increased his contact with the employment market and has enabled him to make appropriate adjustments to the program while increasing the placement of the programs graduates.

Local employers said essentially two things in their responses to the survey: yes, there is a need for a community college program in Technical Writing, however, an associates degree will not allow for advancement in the profession. As a result, a two plus two program with a university may possibly meet the needs of both graduates and local employers. For a four-year program curriculum, some employers said that Northern Michigan University has a model four-year program in existence (see Appendix E, survey question #14).

SUMMARY

Demand in southeastern Michigan is primarily for Technical Writers to work in the automotive, manufacturing, and computer information sectors (see Appendix F). Survey findings indicate local employers are optimistic for the future of Technical Writers (technical documentation will always be needed). Employers and specialists in the field show a definite need for Technical Writers with their employment opportunities somewhat dependant upon the status of the economy and level of the students training.

APPENDIX A

PROPOSED TECHNICAL WRITING
PROGRAM CURRICULUM DESCRIPTION

The proposed program, resulting in a two-year associates degree in Technical Writing, would consist of the following curriculum:

ENG 135 - Business Communications - (3)
ENG 211 - Technical Writing - (3)
ENG 221 - Business Writing - (3)

In addition to 10 additional English credits.

Possible new English courses:

ENG 222 - Proposals and Writing Teams
A three credit hour course that is an extension of the skills learned in English 221 with a focus on organization and creation of needs assessment studies, proposals, and formal final reports. Emphasis on group work: organizing a writing team, coordinating a proposal for publication, binding, and distribution.

ENG 224 - Technical Manual Design
A three credit hour course that is an extension of the skills learned n English 211 with a focus on organization and creation of a technical manual from concept through publication. Document must be designed for maximum readability, and usability. Careful attention to appropriate choices of text and graphics. Attention to distribution and systems for updating information.

* ENG 226, 227, 228, 229 (1 credit hour each; maximum 4 credits)

Internship or work educational laboratory required

19 credit hours of English - Minimum

Computer Related Skills

* Use of planning and organizational software
* Use of word processing software
* Use of document editing software
* Creation of simple graphics using graphics software
* Use of desk top publishing software

Business Information Systems Courses:
BIS 100 (or test out) Keyboarding - (2)
BIS 101 (or test out) Keyboarding skills - (2)
BIS 105 Formatting - (2)
BIS 106 Proofreading/Text Editing - (2)
BIS 107 Word Processing - (3)
BIS 116 Shorthand/Notetaking - (4)

(recommended elective)

BIS 200 Desk Top Publishing (IBM based) - (3)

* BIS 201 Desk Top Publishing - MacIntosh based - (3)

* BIS 202 MacDraw/MacPaint/MacChart - MacIntosh based - (3)

Communication Skills

Effective verbal communication

* SPE 129 - Interpersonal Communication - (3)

Remaining degree hours may be taken from technical programs and include courses in statistics, physics, electrical circuitry, automotive technology, climate control, landscaping, biology and/or health sciences, etc.

Appendix B

NEEDS ASSESSMENT
SURVEY INSTRUMENT AND RESPONSES
WASHTENAW COMMUNITY COLLEGE

Washtenaw Community College

November 24, 1987

Dear Employer:

If you use technical writers in your organization, completing and returning the enclosed survey may help you to find qualified communicators who have been trained to do what you need them to do.

Here at Washtenaw Community College, we are considering establishing a program in Technical Writing. We need the information which the survey is designed to give us in order to decide if there is a need for such a program in Washtenaw and surrounding counties. If there is such a need, the completed surveys will also help us to decide what such a program should consist of, and so help our Advisory Committee to fashion a program.

Please fill out and return the survey in the enclosed postage-paid envelope by Tuesday, December 22. If you would like to talk to me, the very best times are Monday from 9:00 a.m. to noon or Friday from noon to 3:00 p.m. at (313) 973-3647. Thank you.

Sincerely,

Daniel W. Minock, Ph.D.

4800 East Huron River Drive • P.O. Box D-1 • Ann Arbor, Michigan 48106-0978 • (313) 973-3300

Technical Writer Needs Survey

Please read the following definition, respond to the questions below and return this survey in the postage-paid envelope provided. All information provided will be kept confidential and used in summary data only.

Definition: **A technical writer is a person who conveys technical and scientific information and ideas with words, images and format appropriate to the intended audience.**

1. a) Do you currently employ technical writers as described (or partly described) in the definition above?

___ Yes ___ No

b) If no, do you foresee hiring a technical writer in the next 1-3 years?

___ Yes ___ No

c) If our definition of a technical writer does not match yours, please note the differences in the space below.

2. As specifically as possible, tell us your writers' principal product (e.g., computer-based training, software documentation).

3. In the following list, check the duties that apply to technical writers in your organization.

WRITING AND EDITING DUTIES

___ Write proposals
___ Create forms
___ Write technical reports (annual reports, progress reports, lab reports)
___ Write technical articles for newspapers, magazines or journals
___ Write speeches about technical subjects
___ Make oral presentations
___ Write scripts about technical subjects for movies, filmstrips or video
___ Write user manuals
___ Write specifications
___ Prepare tables and charts
___ Prepare graphs
___ Write correspondence
___ Write interactive training material using computers, filmstrips, videodiscs
___ Write help screens
___ Write specifications and/or data sheets
___ Write technical correspondence
___ Edit others' documents
___ Other (please list)

_____

_____

PRODUCTION DUTIES

___ Plan graphics
___ Design documents
___ Choose ink, type and paper
___ Oversee printing
___ Other (please list)

_____

_____

MANAGEMENT DUTIES

___ Read and interpret technical documents
___ Plan and conduct meetings
___ Plan budgets
___ Train new employees
___ Other (please list)

_____

_____

4. Please rate the following skills according to this scale:

A - Very important
B - Important
C - Not important

___ Strong writing ability
___ Editing skills
___ Interviewing skills
___ Time management skills
___ Ability to learn quickly
___ Ability to communicate through graphics
___ Ability to collaborate
___ Research method skills
___ Problem-solving skills
___ Ability to apply production techniques
___ Instructional design skills
___ Ability to apply business organization principles
___ Advertising techniques
___ Word processing
___ Desktop publishing
___ Software documentation
___ Hardware documentation
___ Other (please list)

_____

_____

5. a) What is the employment status of your technical writers?

___ Part-time

___ Full-time

___ Free-lance

b) What educational background do your technical writers have? (If different writers have different backgrounds, please check all applicable items.)

___ High-school graduate
___ Some college, but no degree or certificate
___ Community college degree or certificate
___ College graduate with a liberal arts degree
___ College graduate with a science, technical or Technical Writing degree
___ Graduate study
___ College graduate (liberal arts) plus community college study (technical field)
___ Other (please describe)

_____

_____

6. If Washtenaw Community College developed a state-approved Technical Writing program, would you consider hiring its graduates under the following circumstances:

a) If the graduate holds a two-year Associate Degree?

___ Yes ___ No

b) If the graduate is a college graduate with an additional one-year certificate in Technical Writing?

___ Yes ___ No

(over, please)

c) If the graduate is a college graduate with an additional two-year Associate degree in Technical Writing?

___ Yes ___ No

7. If Yes to any of the last three questions:

a) Would you be more likely to hire someone who had served an internship as a technical writer or editor?

___ Yes, much more

___ Yes, somewhat more

___ No

b) Would your company be interested in working with such interns?

___ Yes

___ Possibly

___ No

8. What is the range of a beginning Technical Writers' salary in your organization?

___ $15 - 20K

___ $20 - 25K

___ $25 - 30K

___ $30K+

9. a) How many technical writers are employed by your organization now?

___

b) Estimate the number of technical writers you will employ in later years.

___ in 1988 ___ in 1990

___ in 1989 ___ in 1991

10. Would you like to be kept informed about any program developments for technical writers at Washtenaw Community College?

___ Yes ___ No

11. Please write below any comments that will assist us as we evaluate the feasibility of developing a Technical Writing program. We appreciate your candor and your suggestions.

PLEASE RETURN BY DECEMBER 22
- THANK YOU -

Name_____

Company _____

Address_____

_____

Technical Writer Needs Survey-- Compilation

[SEE THE APPENDICES AT THE END OF THE SURVEY FOR VERBAL RESPONSES, EXCEPT FOR RESPONSES AT 1A, 5B, 6A, 6B, 7B & 9A.]

Definition: A technical writer is a person who conveys technical and scientific information and ideas with words, images and format appropriate to the intended audience.

1. a) Do you currently employ technical writers as described (or partly described) in the definition above?

23 Yes 4 No

Yes, as a part of many engineering and marketing classifications.

We now have Systems Consultants who perform many of the Technical Writer's functions

b) If no, do you foresee hiring a technical writer in the next 1-3 years?

1 Yes 3 No

c) If our definition of a technical writer does not match yours, please note the differences in the space below.

SEE APPENDIX 1

2. As specifically as possible, tell us your writers' principal product (e.g., computer-based training, software documentation).

SEE APPENDIX 2

3. In the following list, check the duties that apply to technical writers in your organization.

WRITING AND EDITING DUTIES

9 Write proposals
11 Create forms
11 Write technical reports (annual reports, progress reports, lab reports)
12 Write technical articles for newspapers, magazines or journals
3 Write speeches about technical subjects
9 Make oral presentations
8 Write scripts about technical subjects for movies, film-strips or video
24 Write user manuals
12 Write specifications
15 Prepare tables and charts
11 Prepare graphs
9 Write correspondence
11 Write interactive training material using computers, filmstrips, videodiscs
7 Write help screens
11 Write specifications and/or data sheets
5 Write technical correspondence
23 Edit others' documents
___ Other (please list)

SEE APPENDIX 3

PRODUCTION DUTIES

13 Plan graphics
11 Design documents
8 Choose ink, type and paper
10 Oversee printing
___ Other (please list)

SEE APPENDIX 4

MANAGEMENT DUTIES

14 Read and interpret technical documents
13 Plan and conduct meetings
7 Plan budgets
15 Train new employees
___ Other (please list)

SEE APPENDIX 5

4. Please rank the following skills according to this scale:

A - Very important
B - Important
C - Not important

A(23) B(1) D(1)	Strong writing ability
A(18) B(8)	Editing skills
A(5) B(11) C(9)	Interviewing skills
A(11) B(12) C(2)	Time management skills
A(17) B(9)	Ability to learn quickly
A(5) B(18) C(2)	Ability to communicate through graphics
A(11) B(11) C(2) D(1)	Ability to collaborate
A(5) B(12) C(8)	Research method skills
A(12) B(9) C(5)	Problem-solving skills
A(3) B(15) C(7)	Ability to apply production techniques
A(2) B(14) C(9)	Instructional design skills
A(4) B(10) C(9)	Ability to apply business organization principles
B(9) C(18)	Advertising techniques

(List continued on next page)

A(8) B(12) C(6)	Word processing
A(6) B(10) C(9)	Desktop publishing
A(14) B(4) C(8)	Software documentation
A(4) B(8) C(14)	Hardware documentation
___	Other (please list)

SEE APPENDIX 6

5. a) What is the employment status of your technical writers?

5 Part-time

19 Full-time

8 Free-lance

(5) b) What educational background do your technical writers have? (If different writers have different backgrounds, please check all applicable items.)

2 High-school graduate
5 Some college, but no degree or certificate
4 Community college degree or certificate
16 College graduate with a liberal arts degree
13 College graduate with a science, technical or Technical Writing degree
4 Graduate study
3 College graduate (liberal arts) plus community college study (technical field)
___ Other (please describe)

Ph.D. in education/training

6. If Washtenaw Community College developed a state-approved Technical Writing program, would you consider hiring its graduates under the following circumstances:

a) If the graduate holds a two-year Associate Degree?

12 Yes 7 No
2 Maybe

b) If the graduate is a college graduate with an additional one-year certificate in Technical Writing?

23 Yes 2 No
1 Maybe

c) If the graduate is a college graduate with an additional two-year Associate degree in Technical Writing?

23 Yes 1 No

7. If Yes to any of the last three questions:

a) Would you be more likely to hire someone who had served an internship as a technical writer or editor?

17 Yes, much more

7 Yes, somewhat more

1 No

b) Would your company be interested in working with such interns?

4 Yes

21 Possibly

___ No

Please call me about this. It sounds like a great idea! We've had computer programming interns from the U of M. I'd love to have an internship here for writers. Our organization is changing rapidly and I think we can offer anyone a good exposure to the Information Systems and Health Care environment.

8. What is the range of a beginning Technical Writers' salary in your organization?

7 $15 - 20K

16 $20 - 25K

1 $25 - 30K

___ $30K+

9. a) How many technical writers are employed by your organization now?

54 (19 responses) (2.84 writers per organization)

Around 5-6 but they are not really just writers. They do a lot of other things.

b) Estimate the number of technical writers you will employ in later years.

64 (19) (3.37) in 1988
56 (16) (3.50) in 1989
50 (12) (4.16) in 1990
48 (10) (4.80) in 1991

10. Would you like to be kept informed about any program developments for technical writers at Washtenaw Community College?

23 Yes 4 No

11. Please write below any comments that will assist us as we evaluate the feasibility of developing a Technical Writing program. We appreciate your candor and your suggestions.

SEE APPENDIX 7

APPENDIX 1

If our definition of a technical writer does not match yours, please note the differences in the space below

Technical must imply declarative information and process information.

Images seems too broad--I would prefer the term *graphics.*

We use program writers to write training programs

We do not have a job description currently--but feel the above is appropriate.

APPENDIX 2

2. As specifically as possible, tell us your writers' principal product (e.g., computer-based training, software documentation).

Bearing Product Applications

Technology literacy, hard- and software documentation, procedures and administration manuals

Software[,] technical and end-user documentation

Sales oriented documents; proposals and brochures

Technical user manuals for hardware and software

Software and hardware documentation for an automated computer-controlled manufacturing process.

Software documentation

Software documenation, specifically users' guides and supervisors' guides

Operation manuals

Technical reports in disciplines such as physics and chemistry. Also, reports and brochures for more general audiences, such as company annual reports.

Procedures & guidelines for transmission design

It varies. User manuals, some software documentation, forms, business memos.

On-line help, hypertext browsing documents, internal doc., user reference, user training, etc.

(continued)

[Appendix 2, cont.]

Software documentation--user guides

Annual Reports, Brochures and Catalogs, Commercial Manuals, Feature Articles, Product and Literature Releases, Industrial Advertising, Technical Illustrations, Audio-Visual Training, Displays, Integrated Logistics Support Documentation

Production Training Programs

Technical manuals, Service procedures

Software documentation

Training--computer and non-computer based documentation

APPENDIX 3

WRITING AND EDITING DUTIES

. . .

___ Other (please list)

Instructional design for technical training.

On-line databases

Write sales brochure

Prepare technical videos/photography

News releases, brochures, newsletter

Write procedures and guidelines

Write technical reference manuals

Procedures, specifications, research summary reports, customer correspondence

Operation/Service maintenance manuals, Instructor Guide, Student workbooks

Computer Machine Vision Systems

Software documentation, technical articles (?)

APPENDIX 4

PRODUCTION DUTIES

. . .

___ Other (please list)

Non-technical personnel in our organization do all these things--tech personnel consult, suggest.

Production activities handled with close coordination with artists.

Manage contract graphic artist

Text entry

Produce and/or coordinate production of graphics

Coordinate production of entire document, enforce standards.

Oversee duplication, binding and distribution--also manage archiving and document revisions

Manage Writing dept, art dept; video and photography

APPENDIX 5

MANAGEMENT DUTIES

. . .

___ Other (please list)

Manage research & development projects, bank of freelancers

Provide orientation training to electronic publishing systems

Planning and conducting meetings, training new employees are expected only of the senior writers.

Establish and coordinate project priorities. Monitor & schedule progress.

Plan documents and families of documents

APPENDIX 6

4. Please rank the following skills according to this scale:

A - Very important
B - Important
C - Not important

. . .

___ Other (please list)

Familiarity with principles of information design; discourse analysis, with special attention to reference. Note: All the others [i.e., unmarked skills] would depend on the situation, so I don't want to say "C"; this is what's important for me.

Good grasp of details

Ability to tailor writing to different types of reader (for example, a different writing style and vocabulary is better for users' guides than for engineering or programming manuals.

APPENDIX 7

11. Please write below any comments that will assist us as we evaluate the feasibility of developing a Technical Writing program. We appreciate your candor and your suggestions.

It's important to stay informed on the current industry trends. Professionals need to continue learning as advances are made. Areas such as online interactive documentation & training, desktop publishing, production changes, etc. come to mind. I think working professionals would benefit from, and be interested in, weekend seminars, mini-courses, etc. on current trends.

My company is small (50 people), and is only now moving into heavily technical work, so my answers may not be typical. More technical writing programs badly needed! Suggest you put together an advisory board from area companies to suggest curriculum, internship strategies, permanent placement mechanisms, etc. I edit the STC newsletter--copy enclosed [see p. 2] and we run a student issue column (new this year). I could put you in touch with the author & regional sponsor. Anything I can do to help from the outside?

The program would be most helpful to us by providing technical writing skills to engineers and mktg personnel who continually write technical material for customers. If the subject was taught in two or three semesters, as opposed to a 2 year program, it would probably be received better by our employees.

Development of a useful internal style guide for standards in electronic publishing software is a recent, essential accomplishment by our tech writer.

More than the possession of a "college" degree, candidates must be able to show me they can handle technical material and write well. Editing tests during the interviews can

(continued on next page)

[Appendix 7 cont.]

help us ascertain this, but actual technical documents in hand allow us to better analyze the candidate's skills. These documents could be produced as a result of an internship or of "real" classroom

assignments that required interpretation of technical information and high standards for quality. Push your students to write not for their college professor, but for their future employer and they'll leave your university with a suitable portfolio. Also, the more the classroom assignments simulate real working conditions for a technical writer, the more knowledgeable and insightful the student will be during their job interview--they can ask more intelligent questions about the potential job, do a better job of projecting their own objectives and skills, and overall cast a stronger image of a beginner who knows what they want and offers lots of potential.

Designing a technical writing course should emphasize research and interviewing skills to a degree equal to writing skills. At least a full year should be devoted to production topics such as graphics, printing, copy preparation.

Documentation design and layout should be included as part of the required courses. As a four-year technical writing graduate, I would have appreciated receiving this type of background in college.

Writing aptitude, ability, experience, and publications background can outweigh technical writing training. Journalism, psychology, organizational behavior and Dale Carnegie courses--are also beneficial. In short, your program would be of value but its difficult to define that value. It depends on the person. In terms of what would be beneficial to WCC, I think that comprehensive courses oriented to persons already established as technical writers will consistently attract enrollments.

(continued on next page)

[Appendix 7 cont.]

I have hired graduates of other technical writing programs. In my experience, they tend to be taught by use of "rules" and on the job they tend to look for a high degree of structure. I recommend students learn more of a problem-solving approach and learn to be more flexible in their approach to the work. Also, while editing skills can be taught on the job, writing skills cannot. I recommend a heavy emphasis on writing (and some editing) of technical material. Finally, successful completion of a project almost always involves teamwork. I recommend a workshop in which teams work to solve problems, e.g., produce document X in a particular format and establish roles for the students to play. A book like Fisher and Ury's Getting to Yes would be a good reference work. And finally (again), I'd recommend that they learn about the profession in its broadest sense; don't just teach writing and editing, but also graphics (illustration and photography) methods, printing methods, etc.

If you pursue a Technical Writing program, suggest you get in touch with the Society for Technical Communication (STC). Contact
Mr. William Stolgitis, Exec Dir, STC
815 15th St. NW
Washington, DC 20005
202/737-0035

Technical writers must be both professional writers with interest and skill in the field AND technically conversant in one or more scientific fields. It is interdisciplinary! Emphasis is on experience rather than theory.

Our experience indicates that both writing and thinking are teachable to a person with a sufficiently high raw intelligence. We have never found a tech writer we didn't have to train

DO IT. Good tech writers are hard to find.

(continued on next page)

[Appendix 7 cont.]

Our technical writers are not solely that. Technical writing is a critical skill that we expect many of our employees to possess--particularly QA and Research & Development personnel. We do not anticipate hiring for this skill alone but do anticipate the need to have above mentioned personnel skilled in this area to a higher degree than present.

Most of what I've seen is too academic & not real-world oriented.
[Also, respondent wrote the following in an attached letter: "You hit a nerve with your survey. There is a tremendous need for qualified technical writers that are real-world oriented. Our need is for writers with a broad base of general knowledge and the ability to understand the documentation provided. ¶ I have been talking to other colleges locally for almost three years to little avail. I also discussed this problem with the Michigan Department of Commerce. Their responses were frustrating due to their inability to comprehend the problem."]

Our writers are Union employees. They are selected from the production workforce. We do not hire program writers as such.

Technical writers must be able to understand the field they are writing about, unfortunately these fields are becoming more complex everyday (electronics, computers, lasers, etc.). We find that foremost articles and manuals that the engineers themselves must write the material, to employ someone just to edit their material at this stage is not cost effective. Technical writers to be effective will almost have to have a technical degree plus good writing skills.

We all do technical writing, but not under that job description.

I vote 100% for this program!

Appendix C

LIST OF LOCAL EMPLOYERS SURVEYED

Tech Writing Survey
Mailing List
(* would hire OCC intern)

1.	United Training Services c/o Mike Dinda 17320 W. 12 Mile Rd. Southfield, MI 48076	559-6940
2.*	Unisys Corporation c/o Ruth Reed Plymouth Activities Plymouth, MI 48170	451-4142
3.*	Sun Technicom c/o Karen Kroodsma 24555 Hallwood Dr. Farmington Hills, MI 48335	476-9100
4.	Techworld Fred Meinberg 3001 W. Big Beaver Troy, MI 48084	589-2850
5.	Decision Consultants c/o Karen Alfanos 24800 Denso Southfield, MI 48034	352-8650
6.	Alexsis c/o Kay Wright 41000 W. 7 Mile Rd. Suite 200 P.O. Box 3000 Northville, MI 48167	348-2202
7.	Triad Performance Technology c/o Anna Apkins 30101 Northwestern Hwy. Farmington Hills, MI 48334	732-3300
8.*	Advanced Resources John J. Buehner, President 675 E. Big Beaver Rd. Troy, MI 48083	538-2510
9.	Micro Engineering Solutions Inc. c/o Cynthia Grochowski 26200 Town Center Dr. Novi, MI 48375	347-9650

10.*	AMI Engineering c/o John Bell 32575 Industrial Dr. Madison Heights, MI 48071	589-2551
11.	Automated Programming Technologies Inc. c/o Gray Reynolds 30100 Telegraph Rd. Suite 402 Bingham Farms, MI 48025	540-9877
12.	Digital Equipment Corp. c/o Beth Baerman 34119 W. 12 Mile Rd. Farmington Hills, MI 48331	553-5631
13.*	Rockwell Engineering Automotive c/o Bruce Hendershot 2135 W. Maple Rd. Troy, MI 48084	435-1428
14.	Blue Care Network c/o Clarine Green 27000 W. 11 Mile Rd. Southfield, MI 48034	350-4094
15.	MPACT-EDI Systems c/o Kathy VanHorn 17197 N. Laurel Park Suite 201 Livonia, MI 48152	462-2244
16.	Electronic Data Systems Systems Documentation c/o Steve Shucard Troy Office Center 300 E. Big Beaver Troy, MI 48083	528-5692
17.	St. Claire Inc. c/o Chet Zgoda 37440 Hills Tech Dr. Farmington Hills, MI 48331	553-2424
18.	GM FANUC Robotics Corp. c/o Emily Bopp 2000 S. Adams Rd. Auburn Hills, MI 48326	377-7580
19.	Electronic Data Systems Staffing/5th Floor c/o Kathy Stroud 700 Tower Dr. Troy, MI 48007	265-6082

20. High Performance Group 443-1540
c/o Carol Carpenter
17117 W. 9 Mile Rd.
Suite 1545
Southfield, MI 48075

21. Merit 879-7600
c/o Karen Rosales
5800 Crooks Rd.
Troy, MI 48098

Appendix D

SURVEY INSTRUMENT

October 18, 1991

Dear :

Oakland Community College is currently assessing the need for a proposed *Technical Writing* program. At this stage in the assessment process we need to ascertain current and future employment for technical writers. As a potential employer you can provide us with the insight that is needed to further determine the future of this program.

Enclosed is a brief description of the proposed *Technical Writing* program. Please take five minutes to read the program description and complete the enclosed questionnaire. Once you have completed the questionnaire, please return it to us in the self-addressed, postage-paid envelope which is provided. Your comments will help Oakland Community College in making decisions with regard to the establishment of this program. If you should have any questions, please feel free to contact me at (313) 471-7746. Thank you.

Sincerely,

Martin A. Orlowski, Director
Office of Institutional Planning & Analysis

MAO/rv
Enclosure

OAKLAND COMMUNITY COLLEGE
TECHNICAL WRITING
PROGRAM DESCRIPTION

The proposed *technical writing* program would result in a two-year associate degree. Students will develop strong English and technical writing skills, strong interpersonal communication skills, and computer software knowledge for technical publishing.

Our anticipated focus is on technical manual and instructional writing. Graduates of the program would be defined as a technical writer, or an individual who conveys technical and scientific information and ideas with words, images, and format appropriate to the intended audience.

COMMENTS:

OAKLAND COMMUNITY COLLEGE
TECHNICAL WRITING PROGRAM
NEEDS ASSESSMENT SURVEY

Instructions: Please respond to each of the following questions based on your knowledge of the current and future status of *Technical Writing* in your firm. When finished, place the completed survey in the pre-addressed, postage-paid envelope and mail. Thank you for your help.

1. How many *Technical Writers* does your firm currently employ?
   _____ Full time permanent
   _____ Part time permanent
   _____ Free-lance

2. Are you currently in need of hiring *Technical Writers*?
   _____ Yes, If yes, how many?_____
   _____ No

3. How many new *Technical Writers* do you anticipate hiring in the next five years?
   _____

4. How would you rate *Technical Writing* as a career to enter currently?
   _____ Excellent
   _____ Good
   _____ Fair
   _____ Poor

   Why do you feel this way?_____

   _____

   _____

5. What percent of *Technical Writers* that your firm currently employs will need formal (classroom) upgrading of their skills on an annual basis?
   _____%

6. Do you feel there is a growing need for *Technical Writers*?
   _____ Yes
   _____ No

7. Please rate (circle) the following skills by considering:
   1=Very important, 2=Important, 3=Not important

1 2 3	Strong writing ability	1 2 3	Editing skills
1 2 3	Time management skills	1 2 3	Interviewing skills
1 2 3	Ability to learn quickly	1 2 3	Ability to use graphics
1 2 3	Problem solving skills	1 2 3	Apply production techniques
1 2 3	Instructional manual design	1 2 3	Advertising techniques
1 2 3	Word processing	1 2 3	Desktop publishing
1 2 3	Software documentation	1 2 3	Hardware documentation
1 2 3	Other (please list)_____		

   _____

8. What is the annual salary range you offer to *Technical Writers*?

   Entry level $_____ to $_____
   Upper level $_____ to $_____

Over

9. Are *Technical Writing* positions available to persons with disabilities?
___ Yes
___ No, please explain _____

_____

10. What credentials are required by your firm for *Technical Writers*? (check all that apply)
___ No prior related work experience
___ No prior formal related training (education)
___ Prior related work experience
___ Prior work experience as a *Technical Writer*
___ Associate's Degree in *Technical Writing*
___ Bachelor's Degree, please list fields _____
___ Other, please explain _____

11. What related advancement opportunities are available to *Technical Writers*? Please give examples of job titles: _____
_____

_____

_____

12. Is there a need for community college *Technical Writing* programs?
_____ Yes
_____ No

13. Would your firm be willing to have an Oakland Community College student work as an intern during their academic training?
_____ Yes
_____ No
_____ Uncertain,please explain_____

14. General comments:_____

_____

_____

_____

In case we have follow-up questions after reviewing your responses, would you please provide your name and phone number where you can be contacted during regular office hours? Thank you.

Name:_____ Phone:_____

Title:_____

Name of firm:_____

The information you provided in this survey will help OCC determine the future of the *Technical Writing* program. Please place the completed survey in the pre-addressed, postage-paid envelope and drop it in the mail today. Thank you.

Oakland Community College, Office of Planning & Analysis - 27055 Orchard Lake Road - Farmington Hills, MI - 48334 (313) 471-7746

Appendix E

SURVEY NARRATIVE RESPONSES

TECHNICAL WRITING NARRATIVES

Program Description Comments:

01
Excellent! Too few programs currently exist!

02
Many companies (like ours) have "Technical Writers" whose jobs really consist of not only the research & writing of a project but also coordinating the production and printing of the job.

03
Make sure you study "How people learn" "Audience analysis" "How to teach effectiveness of manuals"

Interview successful tech companies who use tech writers - what do they look for in a tech writer? My experience has been that most companies have pre-conceived notions on what a tech writer is or should be.

04
Writing and editing skills would obviously be important, but of almost equal importance would be exposure to project management tasks - developing project plans, scheduling, budgeting, manpower estimating, and reporting. You would want to build into your curriculum familiarity with one or two influential quality improvement systems (e.g. Deming or Crosby) and awareness of various hardware platforms used for publishing (PC's, Macintosh, work stations, mainframes), as well as software programs.

05
May need to provide background on Instructional Systems Design (ISD) since much of the technical writing is done in the context of developing technical training. For example, being able to conduct a task analysis is very critical for our technical writers who also write performance objectives, criterion-referenced pre/post tests, etc. Our tech writers need strong client relationship skills since they work directly with clients, including facilitating client meetings or conducting focus groups.

06
In better business times we could hire people with this two year program.

This program could fill a void since a 4 yr. degree is not a requirement.

07
Also include instructional technology - systems approach.

09
I think is would be difficult to structure exercise without use of very appropriate, true-to-life kinds of assignments. This

should be a less academic more hands-on approach. Learn to analyze, interview, write, edit, test, desk top publish by doing it. I learned much more in my job as a technical writer in the first year or two than I learned in college (4 years & post graduate study) about how to be a good T. Writer. Good (no, excellent) writing skills are, however, essential. So are analytical & editorial skills.

Good luck with your program!

12
Need background in electrical and electronics, mechanical, and programming to be appropriately well-rounded. Associates degree in tech writing would be considered minimal qualifications and would probably not be preferred over a liberal arts degree with related work experience. (Perhaps my perception is clouded by some of the tech writing graduates I've met).

Tech writing courses would be valuable for business and engineering students, as well as tech writers.

Also, emphasize images, not must words! Very important that writers are able to use graphics effectively, particularly for international companies that face issues of translation.

TECHNICAL WRITING NARRATIVES

Question #2: Are you currently in need of hiring Technical Writers?

02
1 or 2 - But have no budget to do so. Laid off 7 of 12 people in dept. last Jan.

03
3-4 Contractors

04
The recession has imposed restrictions on outside hiring.

TECHNICAL WRITING NARRATIVES

Question #4: How would you rate Technical Writing as a career to enter currently? Why do you feel this way?

01
It is a growing field, but economically, this is not a good time to be seeking entry-level employment.

02
Pay can be good. Work can be interesting. Litigation requires that products be supported by publications with extensive cautions & warnings.

03
Technology only works when it is used. The better the use of the technology is explained, the more the technology is used. Documentation is 50% of the product according to our Japanese partners.

04
Compensation will never be lucrative, but the need to bridge the gap between user knowledge of hardware and software and system diversity and complexity will increase.

05
Due to poor economy, companies decreasing training. Also using many of our own employees to do technical writing. However, the need for technical writers exists.

06
All technical careers slow now.

07
As technology advances, the need to document is ever present.

08
The work load fluctuates with the economy.

09
Especially for liberal arts majors. Pay is much better than traditional positions for English/Journalism majors.

10
Computerized systems need effective documentation. Organizing complex info. writer is able to view product like user rather than technician.

11
Growth industry.

12
Would say excellent, but doesn't pay enough to justify excellent. Also this field doesn't yet command the respect is should.

13
An essential part of public.

TECHNICAL WRITING NARRATIVES

Question #7: Please rate (circle) the following skills by considering:

03
Other (please list): Audience evaluation. You have to know who is going to read your document, their skill level & purpose for reading document & what they should be able to accomplish after they read it.

04
Other (please list): Students should have exposure to project management tasks.

05
Other (please list): ISD - Instructional Systems Design is critical.

09
Other (please list): Familiarity w/software applications & documentation already in the field. You need a feel for how others are doing their documentation. Also a working knowledge of computers (PCs/ Macs/ Mainframes, etc.).

11
Other (please list): applications, not skills.

12
Other (please list): Technical expertise - electrical, electronic, mechanical, programming.

13
Technical knowledge background specific - 1/2 of writing degree.

TECHNICAL WRITING NARRATIVES

Question #8: What is the annual salary range you offer to Technical Writers?

01
Entry level $22,000 to $25,000
Upper level $42,000 to $48,000

02
Entry level $30,000 to $33,000
Upper level $38,000 to $42,000

03
Entry level $28,000 to unknown
Upper level $32,000 to unknown

04
Entry level $26,000 to unknown
Upper level $35,000 to 46,000

In 1990, the median salary for a technical writer/editor was $35,000. For consultants/independent contractors the figure was $46,000. For those with less than 2 years experience, the median salary was $26,000.

05
Don't use entry level
Upper level $35,000 to $45,000

06
Entry level $14,560 to $18,720
Upper level $18,720 to $31,200

07
Entry level $27,000 to $30,000
Upper level unknown

08
Entry level $20,000 to unknown
Upper level $50,000 to unknown

09
Entry level $23,000 to $25,000
Upper level $45,000 to $60,000

10
Entry level $18,000 to $22,000
Upper level $50,000 to unknown

11
Entry level $24,000 to $32,000
Upper level $35,000 to $45,000

13

Entry level	$23,000 to NA
Upper level	unlimited

TECHNICAL WRITING NARRATIVES

Question #9: Are Technical Writing positions available to persons with disabilities?

03
Sit & type, clear and inquisitive thinking & effective communications skills & good audience evaluation can be done by many types of people with physical limitations.

05
Currently & in the near future, do not anticipate need for any new technical writing positions. Person w/disabilities is considered We have both staff & freelancers w/disabilities.

09
I'm unsure. If the disability didn't conflict w/ the ability to do the job, I don't see why a position wouldn't be made available.

12
Provided they can interview people, work with product, operate word processing.

TECHNICAL WRITING NARRATIVES

Question #10: What credentials are required by your firm for Technical Writers?

01
Bachelor's Degree, please list fields: Or equivalent experience - English Journalism, Computer Sciences

02
Bachelor's Degree, please list fields: English, Journalism preferred

03
Other, please explain: CAD/CAM understanding, graphic user interface applications

04
Other, please explain: We would look for appropriate credentials and would hire the most competitive candidate who seemed a match for the job and the company.

05
Other, please explain: Samples of work completed for other projects, solid references, client experience in selected fields a plus.

07
Bachelor's Degree, please list fields: Communications, journalism, Instructional technology

08
Bachelor's Degree, please list fields: Engineering, Computers, Business common sense

09
Bachelor's Degree, please list fields: Journalism, English, Engineering, Technical Communication
Other, please explain: Master's Degree in related field is nice to have. Evidence of Scholarship.

10
Bachelor's Degree, please list fields: Preferred English, Communications, Minoring Tech. Wr.

11
Prior work experience as a Technical Writer: Only for senior positions
Bachelor's Degree, please list fields: Technical Writing, English Composition

12
Other, please explain: Bachelor's degree (no field specified) or related work experience

13
Bachelor's Degree, please list fields: technical degree

TECHNICAL WRITING NARRATIVES

Question #12: Is there an need for community college Technical Writing programs?

03
All I had in the late 70's at U of D was one class, & it was way off base with the real world. I had to learn on mu own & at expensive seminars.

04
I think that we would be inclined to prefer more advanced degrees but would not rule out an associate degree, particularly with strong related work experience.

09
Yes & No. Some employers only require Associates Degrees. Most require more. I think an associates degree program would "de-professionalize" my profession.

10
Field is getting attention.

11
If it feeds into a B.A. or B.S. program

TECHNICAL WRITING NARRATIVES

Question #11: What related advancement opportunities are available to Technical Writers? Please give examples of job titles:

02
Dept. Mgr, Sales/Promotion/Advertising, Product Mgr.

03
Customer services marketing support, product marketing support

04
Technical Publications Supervisors & Managers

05
Our company does not use "technical writer" as job title. We use "program developer" or "professional staff." We are small company (25) & are not big on titles. Advancement is through expansion of job responsibilities.

06
Publications Mgr.

08
Operations Manager, General Manager, Sales/Marketing, Production Coordinator

09
None really - We have Technical Writers - w/ no distinctions between Junior/Senior Associate/Junior/Senior etc. I've worked other places w/ more stratifications, however. Management positions are usually made available in other places.

10
Tech Writer, Senior Tech Writer, Inst. Developer & Trainer, Inst. Developer, consultant level tech writer (High form).

11
Department Manager, Quality Assurance, Trainer

12
Supervisor, Manager

13
Project managers, Team leaders.

TECHNICAL WRITING NARRATIVES

Question #13: Would your firm be willing to have an Oakland Community College student work as an intern during their academic training?

01
Not at this time - perhaps in a year

02
I would love it, but would need approval

03
If they had #10 qualifications, maybe

04
I think that under satisfactory terms this would be possible

05
B.S. or B.A. is minimum degree we require

07
Budget dependent

09
Probably not. While I have no problem, my manager insists on a Bachelor's degree to do the kind of work we do. He doesn't feel an individual with an Associates Degree could "cut it".

10
Unpaid

TECHNICAL WRITING NARRATIVES

Question #14: General comments:

03
Please, get instructors who work in the real world, whose writing wins reader's and customer's approval, not contests for presentations.

09
Personally, having had to recruit technical writers for Unisys (past employer), I would welcome an employee pool such as would be offered by this kind of program. I believe only Michigan Tech & Bowling Green have accredited Tech. Writing Programs on the BA/BS level. However I think that an AA-level employee could only be hired into intern/entry level positions w/out a Bachelors. I have grave concerns about downgrading the Educational requirements for my professional (typically a Bachelors at least, Masters preferred.) I've worked for 8 years as a T. Writer/Editor in all facets of the industry - get paid comparably to a software engineer - & would be wary of the dilution of professional standards that this kind of program could represent. (I'll bet doctors felt this way about physician's assistants; lawyers w/paralegals, etc.)
I'd love however, to be involved with teaching in this kind of position - to make sure that your standards were kept high. Technical Writing is a terrific career!

10
Documentation is not just a hard copy piece of text. Quickly refer to on line help, well documented and kept up to date. Think about on-line documentation.

11
Suggest students be required to complete Technical as well as communications program. Use Northern Michigan as a model.

12
If you can graduate students with tech writing skills as well as technical familiarity with mechanical, electrical, etc. - you will have a dynamite program!

13
In SE MI. no institution offers Automotive documentation. STC very outspoken. Need fundamental working knowledge of automotive electrical, mechanical, instruction service. Being written 90% outside of Auto.

TECHNICAL WRITING NARRATIVES

Name and phone number where you can be contacted during regular office hours.

01
Cathy Keller 462-2244
Manager, Technical Communications and Training
MPACT EDI Systems

02
Bruce Hendershot 435-1428
Marketing Communications Supervisor
Rockwell International Automotive Operations

03
Cynthia J. Grochowski 1-800-832-9592
Technical Writer after 12/01/91 (313) 878-9831
Micro Engineering Solutions/Solution 3000

04
Stephen D. Shucard, PhD 528-5692
Documentation Supervisor
EDS

05
Carol Carpenter 443-1540
Vice President & /Co-owner
High Performance Group

06
John Boll 589-2551
Recruiter
AMI Engineering

07
Kay Wright 348-2202
Manager Trng & Dev.
Alexsis, Inc.

08
Fred Meinberg 589-2850
President
Techworld, Inc.

09
Gray R. Reynolds 540-9877 (W)
Technical Writer 442-2291 (H)
Automated Programming Technologies, Inc.

10
John J. Buehner
President
Advanced Resources

11
Ruth Reed 451-4142
Manager, Publications and Technical Training
Unisys Plymouth

12
Emily Bopp 377-7580
Supervisor - Documentation
GM Fanuc Robotics

13
Karen Kroodsma 476-9100
Director Sales & Marketing
Sun Technicom

Appendix F

NEWSPAPER ADVERTISEMENTS
FOR TECHNICAL WRITERS

salary require. to PEG, M-F, 8-5 at:
WISE PERSONNEL SERVICES
St. Joseph, MI 49085
1-800-526-6843 FAX 616-983-2043

TECHNICAL WRITERS

Responsible for revising existing procedures to comply with audit findings and regulatory guidelines. Ability to interpret nuclear plant terms, technical specifications and information. Individual should have at least 1 year in a Nuclear Environment along with a mechanical background. Send resume and salary history in confidence to:

American Nuclear Resources
2095 Niles Rd.
St. Joseph, MI 49085
CALL 616-983-4835
FAX 616-983-6040
Attn: Mike Smith

TECHNICIAN

PROPOSAL MANAGER

HERITAGE™

Heritage Environmental Services, Inc. is an environmental firm dedicated to innovative environmental problem solving. An excellent opportunity exists at our St. Louis remediation/engineering location for a Proposal Manager. Applicants should have a college degree, excellent oral and written communication skills, and 3-5 years environmental project estimating and/or project management experience. Responsibilities will include writing and overseeing the production of proposals.

Heritage offers an excellent compensation and benefit package, including profit sharing and 401K plan. Send resume to:

Personnel Coordinator - PM/St. Louis
Heritage Environmental Services, Inc.
7901 W. Morris Street
Indianapolis, IN 46231

Equal Opportunity Employer

7-28-91

Warren, MI
(between 8-10 Mile)
Apply Mon-Fri 9-4

WRITER
GRANTS and PROPOSALS

Special assistant to the president for foundation relations at a small Christian liberal arts college. We have an immediate opening for a full time grants writer who has experience with foundations and a successful record of writing proposals. Responsibilities include liaison with local, regional and national foundations, proposal development, assistance to faculty in grant writing and associated office duties. Qualifications: MA or MBA desired; at least 5 years experience with foundations; commitment to liberal arts in a Christian setting and success at managerial level. Resume to:

Detroit News/Free Press
Drawer C 2457 P.O. Box 29,
Detroit, MI 48231

TECHNICAL WRITER

Position available for a writer with 1-4 years experience, including micro-processor, computer systems and digital logic experience. Excellent interpersonal skills. Wordperfect and MacIntosh experience preferred. Associates or Bachelor's Degree required.

Our client offers a competitive compensation and benefits package in addition to career advancement. Qualified individuals, please forward a resume including salary history in confidence to:

NAS CONFIDENTIAL REPLY
Dept. 9DE81 bh/dn
300 River Place
Suite 5550
Detroit, MI 48207

Replies Mailed Unopened To Client

Equal Opportunity Employer

Technician
AUTOMATION RESEARCH

TECHNICAL WRITERS BURROUGHS

We have an immediate opportunity for candidates with 2 years technical writing experience. Please call, fax or mail your resume to:

AAne Jones
Director of Customer Services
Strategic Staffing Solutions, Inc
600 Woodbridge Place
Detroit, MI
FAX: 313-

WRITERS FREELANCE

Technical writing for consulting firm; workbooks, video script, training materials. Must have experience. We have lots of work and need help now! Send resume to: Ms. Johnson, 3000 Town Center, Ste. 2960, Southfield, MI. 48075

X-RAY TECHNOLOGIST — Registered, full time. Mamography exper. helpful for busy private

TECHNICAL WRITERS

For production of automotive service manuals and training materials. Bachelor's degree in automotive, mechanical or electrical engineering; or in a communications-oriented discipline; or equivalent experience. Send resume and salary history to: Detroit News/Free Press, Drawer C 3601, P.O. Box 29, Detroit, MI 48231

WRITERS/TECHNICAL (Freelance) — Herman-Miller Inc., the world's largest publicly held manufacturer of office furniture, is seeking freelance Technical Writers for a variety of projects. Meticulous attention to detail and a strong background in technical writing are required. Send resume to: Marketing Communications, 0310, Herman Miller Inc., 8500 Byron Rd., Zeeland, MI 49464

Youth Program Coordinators (4)
Education/Training/
Emp...

8-18-91

Sun., Aug.

Technicians
"see ad today under Automotive"
BARTECH

TECH WRITER

Exper. in documentation of robotic assembly plant operations. Rush resumes to:

CONCORD TECH SVS
2155 S. HAMMOND LAKE
W. Bloomfield MI, 48324

P.O. Box 841, Novi, 48376

TECHNICAL WRITER

Progressive manufacturing firm is looking for a self-motivated individual to maintain and develop service manuals for our automated manufacturing systems. Experience with personal computers and WordPerfect 5.1 is required. Manufacturing experience is preferred. Excellent wage and benefit package including medical benefits, paid vacations and 401K retirement program. Send resume or apply in person: Detroit Center Tool, Inc., 20101 Hoover, Detroit, MI 48205

TECHNICAL WRITERS

We need experienced writers who possess skills writing documentation and manuals for Management Information Systems. Ideal candidates will be well versed on several writing and graphics software packages. Send resume to: Comprehensive Data Processing
Attn: Tony Holleman
500 East Larned, Suite 200
Detroit, MI 48226
...964-3950

9-1-91

STAFF WRITER
CARS & PARTS MAGAZINE

Cars & Parts Magazine, a leading automotive publication specializing in special interest cars, has a Staff Writer position available in our editorial department. This is a unique opportunity if you are a car lover who has a journalism degree and 1 to 3 years of practical writing experience to merge your writing talents and your expertise in cars into one exciting career.

If you are interested in this opportunity to become a key contributor to our highly respected car publication, send your resume, cover letter, and samples of your work to:

PERSONNEL MANAGER
RE: STAFF WRITER
AMOS PRESS INC.
BOX 783
SIDNEY OHIO 45365
An equal opportunity employer

TECHNICAL WRITER

Fox Software, an international corporation specializing in microcomputer database management systems based near Toledo, Ohio, is seeking a technical writer. Qualified candidates should possess a Bachelor's degree in Technical Writing, English, Journalism, Communication or similar discipline. We also require candidates who have experience with or knowledge of programming languages in an MS-DOS or Macintosh environment, preferably the Xbase language. Previous technical writing experience preferred but not required. Desk top publishing experience, especially with Ventura Publisher, is also preferred.
Fox Software offers a competitive salary, comprehensive fringe benefits and a bonus program. Qualified applicants willing to relocate should respond with resume to:

9-8-91

Technical Writing Manager
c/o Fox Software
P.O. Box 344
Perrysburg, OH 43552

...HERS/CARE...
infants and toddle...
downtown childcare cente...
gree and/or exp. req. Re...
Box 36051, Grosse Pte., MI 48236

TEACHER

Special Education (EI, LD, or EMI certified) needed for Wayne County residential facility. Full benefits. Please call Donna Kula for application and more information at: 833-7777.
Deadline: November 4, 1991

TECHNICAL WRITER

5 plus years experience in:

- Automation
- Elec./Mech./Pneu./Hyd. Print interpretation
- Welding background
- P.C. experience

Call or send resume to:
STELLAR ENGINEERING
5505 13 Mile Rd., Warren 48092
313-978-8444
E.O.E.

10-20-91

PROPOSAL MANAGER

Due to our continued growth, we need an experienced professional with proposal knowledge of special in-process assembly and test equipment.

Must have 5 years experience in proposals including knowledge of:

Mechanics, Hydraulics, Pneumatics and Controls.

Will require customer contact and travel.

We offer a competitive salary and benefits package.

For confidential consideration, send resume to:

PROEL SYSTEM, USA
Attention: Ms. Sid Bruce
24727 Gibson, Warren, MI 48089
Equal Opportunity Employer

9-1-91

DIRECTOR OF COMMUNICATIONS

Public relations professional sought to create public relations and communications program for international insurance organization. Candidate should possess:

- Bachelor's degree in liberal arts, journalism or related field of study
- Minimum of 5 years experience in communication field
- Familiarity with media employee and community relations public affairs, speech writing, quantitative research and institutional advertising
- Person will counsel senior management and serve as a spoke person for the organization. Accredited candidates preferred.
- Ability to relocate to Port Huron, MI.

Please send resume along with salary history to:

Detroit News/Free Press
DRAWER C 4731
10-27-91 **P.O. BOX 29** 10-29-91
Detroit MI 48231

●● WRECKER DRIVERS ●●
Experienced [illegible]

WRITERS – For publications on Wellness for the layperson. Resume to: A.I.P.M. 26450 Evergreen, Ste. 200, Southfield, 48075.
10-29

X-RAY FILM 91

Interviews now being scheduled! Send resume to:
Opportunity Center
265 S. Main St.
Akron, OH 44308
Or fax: 216-762-7071

TECHNICAL WRITER
Must have automotive experience. Send resume and salary requirements to: P.O. Box 2539 Dearborn, MI 48124

REFERENCES

Literature

Michigan Occupational Information Systems, MOISCRIPT #335.
Dictonary of Occupational Titles, Vol. I, Fourth Edition Revised, 1991. US Dept. of Labor, JIST Works, Inc. Indianapolis, IN. Page 88.

Personnel

Dr. Daniel Minock (Professor Washtenaw Community College, Ph 973-3647)
Mr. Charles Shuler (Professor Oakland Community College, Ph 7774)
Ms. Nancy J. Hoffman (Publications Manager, Society for Technical Communication, Southeastern Michigan Chapter)

```
GET FILE='TWR.SYS'.
The SPSS/PC+ system file is read from
    file TWR.SYS
The file was created on 11/14/91 at  6:08:55
and is titled TECHNICAL WRITING COMMAND FILE
The SPSS/PC+ system file contains
     15 cases, each consisting of
     42 variables (including system variables).
     42 variables will be used in this session.
```

```
This procedure was completed at  6:10:48
SELECT IF (ID GE 01).
SELECT IF (ID LT 99).
FREQUENCIES VARIABLES=ALL/STATISTICS=ALL.
The raw data or transformation pass is proceeding
     13 cases are written to the compressed active file.

***** Memory allows a total of   8753 Values, accumulated across all Variables.
      There also may be up to    1094 Value Labels for each Variable.
```

- -

ID RESPONDENTS ID NUMBER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	1	7.7	7.7	7.7
	2	1	7.7	7.7	15.4
	3	1	7.7	7.7	23.1
	4	1	7.7	7.7	30.8
	5	1	7.7	7.7	38.5
	6	1	7.7	7.7	46.2
	7	1	7.7	7.7	53.8
	8	1	7.7	7.7	61.5
	9	1	7.7	7.7	69.2
	10	1	7.7	7.7	76.9
	11	1	7.7	7.7	84.6
	12	1	7.7	7.7	92.3
	13	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

ID RESPONDENTS ID NUMBER

Mean	7.000	Std err	1.080	Median	7.000
Mode	1.000	Std dev	3.894	Variance	15.167
Kurtosis	-1.200	S E Kurt	1.191	Skewness	.000
S E Skew	.616	Range	12.000	Minimum	1.000
Maximum	13.000	Sum	91.000		

* Multiple modes exist. The smallest value is shown.

Valid cases 13 Missing cases 0

- -

FULL NUMBER OF CURRENT FULL-TIME EMPLOYEES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	2	15.4	16.7	16.7
	2	1	7.7	8.3	25.0
	4	1	7.7	8.3	33.3
	5	1	7.7	8.3	41.7
	6	4	30.8	33.3	75.0
	10	1	7.7	8.3	83.3
	25	1	7.7	8.3	91.7
	30	1	7.7	8.3	100.0
NO RESPONSE/DK	9	1	7.7	Missing	
	Total	13	100.0	100.0	

FULL NUMBER OF CURRENT FULL-TIME EMPLOYEES

Mean	8.500	Std err	2.681	Median	6.000
Mode	6.000	Std dev	9.288	Variance	86.273
Kurtosis	2.247	S E Kurt	1.232	Skewness	1.786
S E Skew	.637	Range	29.000	Minimum	1.000
Maximum	30.000	Sum	102.000		

Valid cases 12 Missing cases 1

- -

PART NUMBER OF CURRENT PART-TIME EMPLOYEES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	10	76.9	83.3	83.3
	2	1	7.7	8.3	91.7
	10	1	7.7	8.3	100.0
NO RESPONSE/DK	9	1	7.7	Missing	
	Total	13	100.0	100.0	

PART NUMBER OF CURRENT PART-TIME EMPLOYEES

Mean	1.000	Std err	.835	Median	.000
Mode	.000	Std dev	2.892	Variance	8.364
Kurtosis	10.771	S E Kurt	1.232	Skewness	3.247
S E Skew	.637	Range	10.000	Minimum	.000
Maximum	10.000	Sum	12.000		

Valid cases 12 Missing cases 1

- -

FREE NUMBER OF CURRENT FREE LANCE EMPLOYEES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	6	46.2	50.0	50.0
	1	2	15.4	16.7	66.7
	2	1	7.7	8.3	75.0
	6	1	7.7	8.3	83.3
	8	1	7.7	8.3	91.7
	15	1	7.7	8.3	100.0
NO RESPONSE/DK	9	1	7.7	Missing	
	Total	13	100.0	100.0	

FREE NUMBER OF CURRENT FREE LANCE EMPLOYEES

Mean	2.750	Std err	1.349	Median	.500
Mode	.000	Std dev	4.673	Variance	21.841
Kurtosis	3.813	S E Kurt	1.232	Skewness	2.011
S E Skew	.637	Range	15.000	Minimum	.000
Maximum	15.000	Sum	33.000		

Valid cases 12 Missing cases 1

- -

NEED CURRENTLY IN NEDD OF HIRING TECHNICAL WR

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	8	61.5	61.5	61.5
NO	5	5	38.5	38.5	100.0
	Total	13	100.0	100.0	

NEED CURRENTLY IN NEDD OF HIRING TECHNICAL WR

Mean	2.538	Std err	.562	Median	1.000
Mode	1.000	Std dev	2.025	Variance	4.103
Kurtosis	-2.056	S E Kurt	1.191	Skewness	.539
S E Skew	.616	Range	4.000	Minimum	1.000
Maximum	5.000	Sum	33.000		

Valid cases 13 Missing cases 0

- -

MANY HOW MANY ARE NEEDED

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	1	7.7	9.1	9.1
	2	1	7.7	9.1	18.2
	3	2	15.4	18.2	36.4
	4	2	15.4	18.2	54.5
DOES NOT APPLY	88	5	38.5	45.5	100.0
NO RESPONSE/DK	99	2	15.4	Missing	
	Total	13	100.0	100.0	

MANY HOW MANY ARE NEEDED

Mean	41.545	Std err	13.413	Median	4.000
Mode	88.000	Std dev	44.485	Variance	1978.873
Kurtosis	-2.443	S E Kurt	1.279	Skewness	.212
S E Skew	.661	Range	87.000	Minimum	1.000
Maximum	88.000	Sum	457.000		

Valid cases 11 Missing cases 2

- -

NEW HOW MANY OVER NEXT FIVE YEARS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	1	7.7	7.7	7.7
	1	1	7.7	7.7	15.4
	2	3	23.1	23.1	38.5
	4	1	7.7	7.7	46.2
	12	1	7.7	7.7	53.8
	15	1	7.7	7.7	61.5
	20	1	7.7	7.7	69.2
	30	1	7.7	7.7	76.9

50	1	7.7	7.7	84.6
98	1	7.7	7.7	92.3
99	1	7.7	7.7	100.0
Total	13	100.0	100.0	

NEW HOW MANY OVER NEXT FIVE YEARS

Mean	25.769	Std err	9.796	Median	12.000
Mode	2.000	Std dev	35.320	Variance	1247.526
Kurtosis	1.244	S E Kurt	1.191	Skewness	1.558
S E Skew	.616	Range	99.000	Minimum	.000
Maximum	99.000	Sum	335.000		

Valid cases 13 Missing cases 0

- -

RATE RATING OF TECHNICAL WRITING AS A CAREER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
EXCELLENT	1	4	30.8	30.8	30.8
GOOD	3	7	53.8	53.8	84.6
FAIR	5	2	15.4	15.4	100.0
	Total	13	100.0	100.0	

RATE RATING OF TECHNICAL WRITING AS A CAREER

Mean	2.692	Std err	.382	Median	3.000
Mode	3.000	Std dev	1.377	Variance	1.897
Kurtosis	-.496	S E Kurt	1.191	Skewness	.203
S E Skew	.616	Range	4.000	Minimum	1.000
Maximum	5.000	Sum	35.000		

Valid cases 13 Missing cases 0

- -

PERCENT PERCENT NEEDING RETRAINING

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	5	38.5	41.7	41.7
	20	2	15.4	16.7	58.3

	50	1	7.7	8.3	66.7
	100	4	30.8	33.3	100.0
NO RESPONSE/DK	999	1	7.7	Missing	
	Total	13	100.0	100.0	

PERCENT PERCENT NEEDING RETRAINING

Mean	40.833	Std err	13.284	Median	20.000
Mode	.000	Std dev	46.015	Variance	2117.424
Kurtosis	-1.808	S E Kurt	1.232	Skewness	.527
S E Skew	.637	Range	100.000	Minimum	.000
Maximum	100.000	Sum	490.000		

Valid cases 12 Missing cases 1

- -

FEEL GROWING NEED FOR TECHNICAL WRITERS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	13	100.0	100.0	100.0
	Total	13	100.0	100.0	

FEEL GROWING NEED FOR TECHNICAL WRITERS

Mean	1.000	Std err	.000	Median	1.000
Mode	1.000	Std dev	.000	Variance	.000
Range	.000	Minimum	1.000	Maximum	1.000
Sum	13.000				

Valid cases 13 Missing cases 0

- -

WRITING WRITING ABILITY

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	13	100.0	100.0	100.0
	Total	13	100.0	100.0	

WRITING WRITING ABILITY

Mean	1.000	Std err	.000	Median	1.000
Mode	1.000	Std dev	.000	Variance	.000
Range	.000	Minimum	1.000	Maximum	1.000
Sum	13.000				

Valid cases 13 Missing cases 0

- -

TIME TIME MANAGEMENT SKILLS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	8	61.5	61.5	61.5
IMPORTANT	2	5	38.5	38.5	100.0
	Total	13	100.0	100.0	

TIME TIME MANAGEMENT SKILLS

Mean	1.385	Std err	.140	Median	1.000
Mode	1.000	Std dev	.506	Variance	.256
Kurtosis	-2.056	S E Kurt	1.191	Skewness	.539
S E Skew	.616	Range	1.000	Minimum	1.000
Maximum	2.000	Sum	18.000		

Valid cases 13 Missing cases 0

- -

LEARN ABILITY TO LEARN QUICKLY

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	10	76.9	76.9	76.9
IMPORTANT	2	3	23.1	23.1	100.0
	Total	13	100.0	100.0	

LEARN ABILITY TO LEARN QUICKLY

Mean	1.231	Std err	.122	Median	1.000

Mode	1.000	Std dev	.439	Variance	.192
Kurtosis	.095	S E Kurt	1.191	Skewness	1.451
S E Skew	.616	Range	1.000	Minimum	1.000
Maximum	2.000	Sum	16.000		

Valid cases 13 Missing cases 0

- -

PROBLEM PROBLEM SOLVING SKILLS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	8	61.5	61.5	61.5
IMPORTANT	2	5	38.5	38.5	100.0
	Total	13	100.0	100.0	

PROBLEM PROBLEM SOLVING SKILLS

Mean	1.385	Std err	.140	Median	1.000
Mode	1.000	Std dev	.506	Variance	.256
Kurtosis	-2.056	S E Kurt	1.191	Skewness	.539
S E Skew	.616	Range	1.000	Minimum	1.000
Maximum	2.000	Sum	18.000		

Valid cases 13 Missing cases 0

- -

MANUAL INSTRUCTIONAL MANUAL DESIGN

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	8	61.5	61.5	61.5
IMPORTANT	2	4	30.8	30.8	92.3
NOT IMPORTANT	3	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

MANUAL INSTRUCTIONAL MANUAL DESIGN

Mean	1.462	Std err	.183	Median	1.000
Mode	1.000	Std dev	.660	Variance	.436
Kurtosis	.645	S E Kurt	1.191	Skewness	1.191
S E Skew	.616	Range	2.000	Minimum	1.000

Maximum	3.000	Sum	19.000

Valid cases 13 Missing cases 0

- -

WORD WORD PROCESSING

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	3	23.1	23.1	23.1
IMPORTANT	2	9	69.2	69.2	92.3
NOT IMPORTANT	3	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

WORD WORD PROCESSING

Mean	1.846	Std err	.154	Median	2.000
Mode	2.000	Std dev	.555	Variance	.308
Kurtosis	.901	S E Kurt	1.191	Skewness	-.143
S E Skew	.616	Range	2.000	Minimum	1.000
Maximum	3.000	Sum	24.000		

Valid cases 13 Missing cases 0

- -

SOFTWARE SOFTWARE DOCUMENTAION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	3	23.1	23.1	23.1
IMPORTANT	2	7	53.8	53.8	76.9
NOT IMPORTANT	3	3	23.1	23.1	100.0
	Total	13	100.0	100.0	

SOFTWARE SOFTWARE DOCUMENTAION

Mean	2.000	Std err	.196	Median	2.000
Mode	2.000	Std dev	.707	Variance	.500
Kurtosis	-.618	S E Kurt	1.191	Skewness	.000
S E Skew	.616	Range	2.000	Minimum	1.000
Maximum	3.000	Sum	26.000		

Valid cases 13 Missing cases 0

- -

OTHERA OTHER SKILLS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	4	30.8	66.7	66.7
IMPORTANT	2	2	15.4	33.3	100.0
NO RESPONSE/DK	9	7	53.8	Missing	
	Total	13	100.0	100.0	

OTHERA OTHER SKILLS

Mean	1.333	Std err	.211	Median	1.000
Mode	1.000	Std dev	.516	Variance	.267
Kurtosis	-1.875	S E Kurt	1.741	Skewness	.968
S E Skew	.845	Range	1.000	Minimum	1.000
Maximum	2.000	Sum	8.000		

Valid cases 6 Missing cases 7

- -

EDITING EDITING SKILLS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	10	76.9	76.9	76.9
IMPORTANT	2	3	23.1	23.1	100.0
	Total	13	100.0	100.0	

EDITING EDITING SKILLS

Mean	1.231	Std err	.122	Median	1.000
Mode	1.000	Std dev	.439	Variance	.192
Kurtosis	.095	S E Kurt	1.191	Skewness	1.451
S E Skew	.616	Range	1.000	Minimum	1.000
Maximum	2.000	Sum	16.000		

Valid cases 13 Missing cases 0

- -

INTRVIEW INTERVIEWING SKILLS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	7	53.8	53.8	53.8
IMPORTANT	2	4	30.8	30.8	84.6
NOT IMPORTANT	3	2	15.4	15.4	100.0
	Total	13	100.0	100.0	

INTRVIEW INTERVIEWING SKILLS

Mean	1.615	Std err	.213	Median	1.000
Mode	1.000	Std dev	.768	Variance	.590
Kurtosis	-.580	S E Kurt	1.191	Skewness	.849
S E Skew	.616	Range	2.000	Minimum	1.000
Maximum	3.000	Sum	21.000		

Valid cases 13 Missing cases 0

- -

GRAPHICS ABILITY TO USE GRAPHICS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	4	30.8	30.8	30.8
IMPORTANT	2	8	61.5	61.5	92.3
NOT IMPORTANT	3	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

GRAPHICS ABILITY TO USE GRAPHICS

Mean	1.769	Std err	.166	Median	2.000
Mode	2.000	Std dev	.599	Variance	.359
Kurtosis	.051	S E Kurt	1.191	Skewness	.065
S E Skew	.616	Range	2.000	Minimum	1.000
Maximum	3.000	Sum	23.000		

Valid cases 13 Missing cases 0

- -

PRODTECH APPLY PRODUCTION TECHNIQUES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	1	7.7	7.7	7.7
IMPORTANT	2	10	76.9	76.9	84.6
NOT IMPORTANT	3	2	15.4	15.4	100.0
	Total	13	100.0	100.0	

PRODTECH APPLY PRODUCTION TECHNIQUES

Mean	2.077	Std err	.137	Median	2.000
Mode	2.000	Std dev	.494	Variance	.244
Kurtosis	2.573	S E Kurt	1.191	Skewness	.262
S E Skew	.616	Range	2.000	Minimum	1.000
Maximum	3.000	Sum	27.000		

Valid cases 13 Missing cases 0

- -

ADVERTIS ADVERTISING SKILLS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
IMPORTANT	2	2	15.4	15.4	15.4
NOT IMPORTANT	3	11	84.6	84.6	100.0
	Total	13	100.0	100.0	

ADVERTIS ADVERTISING SKILLS

Mean	2.846	Std err	.104	Median	3.000
Mode	3.000	Std dev	.376	Variance	.141
Kurtosis	3.223	S E Kurt	1.191	Skewness	-2.179
S E Skew	.616	Range	1.000	Minimum	2.000
Maximum	3.000	Sum	37.000		

Valid cases 13 Missing cases 0

- -

DESKTOP DESKTOP PUBLISHING

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	4	30.8	30.8	30.8
IMPORTANT	2	8	61.5	61.5	92.3
NOT IMPORTANT	3	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

DESKTOP DESKTOP PUBLISHING

Mean	1.769	Std err	.166	Median	2.000
Mode	2.000	Std dev	.599	Variance	.359
Kurtosis	.051	S E Kurt	1.191	Skewness	.065
S E Skew	.616	Range	2.000	Minimum	1.000
Maximum	3.000	Sum	23.000		

Valid cases 13 Missing cases 0

- -

HARDWARE HARDWARE DOCUMENTATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY IMPORTANT	1	2	15.4	15.4	15.4
IMPORTANT	2	7	53.8	53.8	69.2
NOT IMPORTANT	3	4	30.8	30.8	100.0
	Total	13	100.0	100.0	

HARDWARE HARDWARE DOCUMENTATION

Mean	2.154	Std err	.191	Median	2.000
Mode	2.000	Std dev	.689	Variance	.474
Kurtosis	-.496	S E Kurt	1.191	Skewness	-.203
S E Skew	.616	Range	2.000	Minimum	1.000
Maximum	3.000	Sum	28.000		

Valid cases 13 Missing cases 0

- -

SALE1 ENTRY LEVEL SALARY (LOW)

	Valid	Cum

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	14560	1	7.7	9.1	9.1
	18000	1	7.7	9.1	18.2
	20000	1	7.7	9.1	27.3
	22000	1	7.7	9.1	36.4
	23000	2	15.4	18.2	54.5
	24000	1	7.7	9.1	63.6
	26000	1	7.7	9.1	72.7
	27000	1	7.7	9.1	81.8
	28000	1	7.7	9.1	90.9
	30000	1	7.7	9.1	100.0
NO RESPONSE/DK	99999	2	15.4	Missing	
	Total	13	100.0	100.0	

SALE1 ENTRY LEVEL SALARY (LOW)

Mean	23232.727	Std err	1367.273	Median	23000.000
Mode	23000.000	Std dev	4534.731	Variance	20563781.8
Kurtosis	-.094	S E Kurt	1.279	Skewness	-.443
S E Skew	.661	Range	15440.000	Minimum	14560.000
Maximum	30000.000	Sum	255560.000		

Valid cases 11 Missing cases 2

- -

SALE2 ENTRY LEVEL SALARY (HIGH)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	18720	1	7.7	11.1	11.1
	22000	1	7.7	11.1	22.2
	25000	2	15.4	22.2	44.4
	30000	1	7.7	11.1	55.6
	32000	1	7.7	11.1	66.7
	33000	1	7.7	11.1	77.8
UNLIMITED	99998	2	15.4	22.2	100.0
NO RESPONSE/DK	99999	4	30.8	Missing	
	Total	13	100.0	100.0	

SALE2 ENTRY LEVEL SALARY (HIGH)

Mean	42857.333	Std err	10907.362	Median	30000.000
Mode	25000.000	Std dev	32722.086	Variance	1070734903
Kurtosis	.593	S E Kurt	1.400	Skewness	1.533
S E Skew	.717	Range	81278.000	Minimum	18720.000
Maximum	99998.000	Sum	385716.000		

* Multiple modes exist. The smallest value is shown.

Valid cases 9 Missing cases 4

- -

SALU1 UPPER LEVEL SALARY (LOW)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	18720	1	7.7	9.1	9.1
	32000	1	7.7	9.1	18.2
	35000	3	23.1	27.3	45.5
	38000	1	7.7	9.1	54.5
	42000	1	7.7	9.1	63.6
	45000	1	7.7	9.1	72.7
	50000	2	15.4	18.2	90.9
UNLIMITED	99998	1	7.7	9.1	100.0
NO RESPONSE/DK	99999	2	15.4	Missing	
	Total	13	100.0	100.0	

SALU1 UPPER LEVEL SALARY (LOW)

Mean	43701.636	Std err	6233.250	Median	38000.000
Mode	35000.000	Std dev	20673.353	Variance	427387517
Kurtosis	6.346	S E Kurt	1.279	Skewness	2.207
S E Skew	.661	Range	81278.000	Minimum	18720.000
Maximum	99998.000	Sum	480718.000		

Valid cases 11 Missing cases 2

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SALU2 UPPER LEVEL SALARY (HIGH)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	31200	1	7.7	9.1	9.1
	42000	1	7.7	9.1	18.2
	45000	2	15.4	18.2	36.4
	46000	1	7.7	9.1	45.5
	48000	1	7.7	9.1	54.5
	60000	1	7.7	9.1	63.6
UNLIMITED	99998	4	30.8	36.4	100.0
NO RESPONSE/DK	99999	2	15.4	Missing	
	Total	13	100.0	100.0	

SALU2 UPPER LEVEL SALARY (HIGH)

Mean	65199.273	Std err	8552.216	Median	48000.000
Mode	99998.000	Std dev	28364.490	Variance	804544321
Kurtosis	-1.887	S E Kurt	1.279	Skewness	.471
S E Skew	.661	Range	68798.000	Minimum	31200.000
Maximum	99998.000	Sum	717192.000		

Valid cases 11 Missing cases 2

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DISABLE POSITIONS AVAILABLE TO HANDICAPPED

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	13	100.0	100.0	100.0
	Total	13	100.0	100.0	

DISABLE POSITIONS AVAILABLE TO HANDICAPPED

Mean	1.000	Std err	.000	Median	1.000
Mode	1.000	Std dev	.000	Variance	.000
Range	.000	Minimum	1.000	Maximum	1.000
Sum	13.000				

Valid cases 13 Missing cases 0

- -

NPREWORK NO PRIOR WORK EXPERIENCE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	2	15.4	15.4	15.4
NO	5	11	84.6	84.6	100.0
	Total	13	100.0	100.0	

NPREWORK NO PRIOR WORK EXPERIENCE

Mean	4.385	Std err	.417	Median	5.000
Mode	5.000	Std dev	1.502	Variance	2.256
Kurtosis	3.223	S E Kurt	1.191	Skewness	-2.179
S E Skew	.616	Range	4.000	Minimum	1.000
Maximum	5.000	Sum	57.000		

Valid cases 13 Missing cases 0

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NPTRAIN NO PRIOR FORMAL RELATED TRAINING

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	5	13	100.0	100.0	100.0
	Total	13	100.0	100.0	

NPTRAIN NO PRIOR FORMAL RELATED TRAINING

Mean	5.000	Std err	.000	Median	5.000
Mode	5.000	Std dev	.000	Variance	.000
Range	.000	Minimum	5.000	Maximum	5.000
Sum	65.000				

Valid cases 13 Missing cases 0

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PRIWORK PRIOR WORK RELATED EXPERIENCE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	9	69.2	69.2	69.2
NO	5	4	30.8	30.8	100.0
	Total	13	100.0	100.0	

PRIWORK PRIOR WORK RELATED EXPERIENCE

Mean	2.231	Std err	.533	Median	1.000
Mode	1.000	Std dev	1.922	Variance	3.692
Kurtosis	-1.339	S E Kurt	1.191	Skewness	.946
S E Skew	.616	Range	4.000	Minimum	1.000
Maximum	5.000	Sum	29.000		

Valid cases 13 Missing cases 0

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PTWRWORK PRIOR WORK EXPERIENCE AS TECHNICAL WRITE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	8	61.5	61.5	61.5
NO	5	5	38.5	38.5	100.0
	Total	13	100.0	100.0	

PTWRWORK PRIOR WORK EXPERIENCE AS TECHNICAL WRITE

Mean	2.538	Std err	.562	Median	1.000
Mode	1.000	Std dev	2.025	Variance	4.103
Kurtosis	-2.056	S E Kurt	1.191	Skewness	.539
S E Skew	.616	Range	4.000	Minimum	1.000
Maximum	5.000	Sum	33.000		

Valid cases 13 Missing cases 0

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ASSOCDEG ASSOCIATES DEGREE IN TECHNICAL WRITING

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	5	38.5	38.5	38.5
NO	5	8	61.5	61.5	100.0
	Total	13	100.0	100.0	

ASSOCDEG ASSOCIATES DEGREE IN TECHNICAL WRITING

Mean	3.462	Std err	.562	Median	5.000
Mode	5.000	Std dev	2.025	Variance	4.103
Kurtosis	-2.056	S E Kurt	1.191	Skewness	-.539
S E Skew	.616	Range	4.000	Minimum	1.000
Maximum	5.000	Sum	45.000		

Valid cases 13 Missing cases 0

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BACHDEG BACHELORS DEGREE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	9	69.2	69.2	69.2
NO	5	4	30.8	30.8	100.0
	Total	13	100.0	100.0	

BACHDEG BACHELORS DEGREE

Mean	2.231	Std err	.533	Median	1.000
Mode	1.000	Std dev	1.922	Variance	3.692
Kurtosis	-1.339	S E Kurt	1.191	Skewness	.946
S E Skew	.616	Range	4.000	Minimum	1.000
Maximum	5.000	Sum	29.000		

Valid cases 13 Missing cases 0

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OTHERB OTHER CREDENTIALS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	6	46.2	46.2	46.2
NO	5	7	53.8	53.8	100.0
	Total	13	100.0	100.0	

OTHERB OTHER CREDENTIALS

Mean	3.154	Std err	.576	Median	5.000
Mode	5.000	Std dev	2.075	Variance	4.308
Kurtosis	-2.364	S E Kurt	1.191	Skewness	-.175
S E Skew	.616	Range	4.000	Minimum	1.000
Maximum	5.000	Sum	41.000		

Valid cases 13 Missing cases 0

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PROGRAM NEED FOR COMMUNITY COLLEGE TECHNICAL WRI

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	9	69.2	90.0	90.0
NO	5	1	7.7	10.0	100.0
NO RESPONSE/DK	9	3	23.1	Missing	
	Total	13	100.0	100.0	

PROGRAM NEED FOR COMMUNITY COLLEGE TECHNICAL WRI

Mean	1.400	Std err	.400	Median	1.000
Mode	1.000	Std dev	1.265	Variance	1.600
Kurtosis	10.000	S E Kurt	1.334	Skewness	3.162
S E Skew	.687	Range	4.000	Minimum	1.000
Maximum	5.000	Sum	14.000		

Valid cases 10 Missing cases 3

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INTERN WILLING TO HAVE AN OCC INTERN

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	5	38.5	38.5	38.5
NO	5	2	15.4	15.4	53.8
UNCERTAIN	7	6	46.2	46.2	100.0
	Total	13	100.0	100.0	

INTERN WILLING TO HAVE AN OCC INTERN

Mean	4.385	Std err	.797	Median	5.000
Mode	7.000	Std dev	2.873	Variance	8.256
Kurtosis	-2.032	S E Kurt	1.191	Skewness	-.357
S E Skew	.616	Range	6.000	Minimum	1.000
Maximum	7.000	Sum	57.000		

Valid cases 13 Missing cases 0

This procedure was completed at 6:11:11
FINISH.

End of Include file.