5/80

Part 3

Michigan Department of Education
Higher Education Management Services
OCCUPATIONAL EDUCATION UNIT
Box 30009, Lansing, Michigan 48909

Direct questions regarding this form to Supervisor, Occupational Education Unit (517) 373-3360.

Sub-Part A — New Occupational Program Application for 1981-82 School Year

SUBMITTING EDUCATIONAL AGENCY	Legal Name of College: OAKLAND COMMUNITY COLLEGE	College Code Number: 2804
	College Program Title: QUALITY ASSURANCE TECHNOLOGY	U.S.O.E. Program Code: 16.01139

GENERAL INSTRUCTIONS: Prepare and submit this Program Prospectus for each new proposed program the college plans to implement during the 1981-82 academic year. Use reverse side or additional sheets if necessary.

MAILING INSTRUCTIONS: Return TWO copies for EACH new program by FEBRUARY 2, 1981, to the STATE address above.

1. COST PROJECTION

A. 1981-82	AMOUNT
1. Instructional Salaries & Fringes	$ 5,735.00
2. Salaries & Fringes of Aides & Paraprofessionals	4,956.00
3. Instructional Travel & Advisory Committees	
4. Instructional Supplies	2,000.00
5. Equipment Purchase/Lease 26,353.75	~~46,000.00~~
6. Facility Construction/Renovation	
7. Other Direct Cost (specify)	
8. Total Costs	$58,691.00

B. 1982-83	
1. Instructional Salaries & Fringes	$ 6,309.00
2. Salaries & Fringes of Aides & Paraprofessionals	5,452.00
3. Instructional Travel & Advisory Committees	
4. Instructional Supplies	2,000.00
5. Equipment Purchase/Lease	10,000.00
6. Facility Construction/Renovation	
7. Other Direct Cost (specify)	
8. Total Costs	$23,761.00

3. STUDENT HEADCOUNT PROJECTION

(Unduplicated)

1981-82	40
1982-83	80

4. STUDENT CREDIT HOUR PROJECTION

1981-82	600
1982-83	675

5. PERSONNEL

	Existing Faculty		New Faculty	
	Full-Time	Part-Time	Full-Time	Part-Time
1981-82		2		6
1982-83		3		8

2. REVENUE

	Tuition	Local	State	Federal	Other (specify)	Total
1981-82	$ 9,900.00		$18,248.00	$ 925.00	FEES* $3,700.00	$32,773.00
1982-83	$11,137.50		$19,487.00	$1,042.00	$1,800.00	$33,466.50

*Registration and Student Services

6. CERTIFICATION:

I certify that the information submitted on this application is accurate to the best of my knowledge.

Date _____ President _____ (Signature)

Occupational Dean _____ (Signature)

7. PROGRAM DESCRIPTION:

(Provide a succinct paragraph describing the program. Indicate the differences between the associate degree and certificate programs, if applicable. Indicate what skills and knowledges will be acquired by the student.)

Quality Assurance Technology is an Associate Degree Program in quality assurance and reliability with specialized concentrations. The Program prepares students for entry-level employment as engineering technicians and managers in controlling quality and reliability of goods and services. Typical job areas include new design review, incoming material evaluation, process control, supervision and management techniques, and product testing and evaluation.

Graduates of this Program will assist quality engineers, reliability engineers, and managers in controlling quality and reliability of goods and services. These tasks require specialized training in the concepts and techniques of quality control and reliability.

8. TYPE OF DEGREE(S) TO BE AWARDED:

[X] Associate Degree [X] One-Year Certificate [ ] Two-Year Certificate

9. DICTIONARY OF OCCUPATIONAL TITLES:

(List the occupations for which the student completing the program will be qualified. Refer to the Dean's Guide to Federally Reimbursed Community College Occupational Programs and the Dictionary of Occupational Titles.)

A. Quality Control Technician 012.261-014

B. Quality Control Inspector 701.261-010

C. Quality Control Assembly Test Technician (Electronics) 726.281-014

D. Quality Control Inspector (Electronics) 726.381-010

E.

F.

G.

H.

10. GEOGRAPHICAL AREA:

(Describe the geographical area to be served, within the college service area and within the region, and list similar programs at postsecondary public and private institutions in the same area.)

Oakland County

Similar Programs--Macomb County Community College, Wayne County Community College, Henry Ford Community College

11. ARTICULATION:

(Describe briefly your plans to articulate the proposed program with similar programs offered by any secondary and/or four-year baccalaureate degree granting institutions.)

Recruitment of area high school students through mailings of flyers and brochures.

12. PHYSICAL FACILITIES:

(Describe the facilities in which the program will be housed. Specify whether the proposed program will require the construction of new physical facilities, renovation of existing facilities, or use of temporary facilities.)

Oakland Community College's Auburn Hills Campus has a newly renovated technical building, which has a machine technology lab and a metallurgy lab. These labs have been deemed appropriate by faculty, administration and the advisory committee to house the Quality Assurance Technology Program without conflicting with existing programs.

13. ACCREDITATION:

(Describe the status of the recognition, accreditation, or licensing application by external agencies, if applicable.)

Oakland Community College has been accredited by the North Central Association and, as the Quality Assurance Technology Program develops, other accreditation will be established to directly benefit the students and the program.

14. CURRICULUM COMMITTEE:

(Describe the status of the review and approval by the college curriculum committee.)

The curriculum committee consists of several quality control personnel from major industries and firms in the Oakland County area. This committee has been involved in the development of this Program and its courses. These members have voiced and documented the need for and their support of this Program.

15. NEEDS STUDY:

(Respond in a short narrative form to the following areas.)

A. Job Opportunities: (Summarize the results of your need study in terms of actual numbers of job opportunities during the next two years for students completing the program. Include the total number of employers responding to the survey. Refer to A Handbook – Occupational Education Manpower Needs Study, January, 1980.)

The employment survey was sent to 115 firms in the metropolitan area. Only two gave negative responses to hiring persons with such training. New positions and replacement positions in the next five years totalled 138. Furthermore, advisory committee members feel that, with the strong public demand for improved quality control, many more firms will soon realize an increased need for such personnel.

B. Student Interest: (Summarize the results of your student interest survey in terms of the actual numbers of high school students, present community college students, and employed persons who indicate definite interest in the program. Include the total number of persons responding to the survey.)

In a survey of student interest in several new and proposed programs at OCC, administered during the Fall of 1980, 362 responses were received regarding the Quality Assurance Technology Program--92 from high school students and 270 from current OCC students. Of these responses, interest was displayed by 68 high school students and 252 college students.

16. ATTACHMENTS:

(The following must be attached to this application.)

A. Attachment A – Program Goal Statements:
(Provide a list of program goal statements. If both associate degree and certificate options are available, provide a copy of the goals for each program option.)

B. Attachment B – Course Sequence:
(Identify the program courses in sequence by term or semester in which they are to be taken by the student.)

C. Attachment C – Catalog Descriptions:
(Provide the catalog description for each specialty and supportive course required for the program.)

D. Attachment D – Available Equipment:
(Provide an inventory of available instructional equipment which may be used to support the proposed program.)

E. Attachment E – Advisory Committee:
(Provide evidence that the advisory council is actively advising representatives of the college on job opportunities and curriculum by providing minutes of recent meetings which include their recommendations.)

DESIGN CRITERION I

The student will gain an understanding of the concept of total quality control.

P. G. 1 - The student will be exposed to the function and scope of quality control.

P. G. 2 - The student will develop an appreciation for the various aspects of quality control.

DESIGN CRITERION II

The student will gain a basic knowledge of the techniques involved in quality control.

P. G. 1 - The student will obtain a basic knowledge of metrology.

P. G. 2 - The student will obtain a basic knowledge of the principles and methods of non-destructive testing.

P. G. 3 - The student will gain an understanding of the importance of following a product from beginning to end.

QUALITY ASSURANCE TECHNOLOGY

Attachment B

Quality Assurance Technology is an Associate Degree program in quality assurance and reliability with specialized concentrations. The program prepares students for entry-level employment as engineering technicians and managers in controlling quality and reliability of goods and servicies. Typical job areas include new design review, incoming material evaluation process control, supervision and management techniques, and product testing and evaluation.

MAJOR REQUIREMENTS				CREDITS
(N)	ERT 100*		Introductory Seminar in Engineering Technology	2
	QUAL 100*	(MEC 213)	Total Quality Control	3
	QUAL 101*	(MEC 214)	Principles of Quality Assurance	3
(N)	QUAL 102*		Fundamental Statistical Concepts Related to Total Quality Control	3
(N)	QUAL 106*		Metrology	4
(N)	QUAL 200*		Industrial Quality Seminar	3
(N)	QUAL 230*		Quality Cost Control	3
(N)	QUAL 260*		Non-Destructive Testing	3
(N)	QUAL 262*		Procurement Quality Assurance	3
(N)	QUAL 265*		Configuration Management	3

REQUIRED SUPPORTIVE COURSES			
MEC	101*	Introduction to Manufacturing Processes	3
MEC	102*	Manufacturing and Fabrication Practices	3
MEC	201*	Engineering Mechanics	3
MEC	202*	Mechanics of Materials	3
DRT	111	Introduction to Technical Drawing	3
MAT	155*	College Algebra	3
MAT	156*	Trigonometry	3
ENG	151*	English I	3
ENG	211*	Technical English	3
DPR	111	Principles of Computer Programming	3
ELT	101	Applied Electricity	3

GENERAL EDUCATION REQUIREMENT

A. The student will complete 12-16 hours of credit to include at least 3 of the following 4 categories:

1. Communications/English
2. Humanities
3. Math/Natural Science
4. Social Science

B. The student must also complete a State requirement with:

POL	151	American Government	3

A minimum of 62 credit hours will be required for an Associate Degree.

General Education courses listed as Required Supportive Courses may be used to meet requirements of the General Education Component.

*When all courses marked with an asterisk are completed, the student may apply for a Certificate of Achievement.

**No technical or applied courses will fulfill these requirements.

(N)-New Courses

Interested and qualified students may take ERT 140.3 and ERT 240.3, Co-op and Advanced Co-op, for additional credits not to be included in either the Certificate or Associate Degree Programs.

QUALITY ASSURANCE TECHNOLOGY

ERT 100 (N) Introductory Seminar in Engineering Technology 2 Credits

The student will become familiar with the two-year Associate Arts Degree programs in the Engineering Technology cluster. He will have an opportunity to elect a real or simulated activity in the laboratory to gain experience in areas of this interest. Guest speakers, multi-media and field trips will be utilized.

QUAL 100 Total Quality Control 3 Credits

A survey course that traces the development of the concept of total quality control. Emphasis will be on organization, quality costs, quality engineering, process control and quality information equipment.

QUAL 101 Principles of Quality Assurance 3 Credits
Prerequisite: QUAL 100
A basic course on scope and function quality assurance, including regulations, records, vendor selection, procurement quality inspection, and measurement techniques as applied to various industries.

QUAL 102 (N) Fundamental Statistical Concepts Related to Total Quality Control 3 Credits
Prerequisite: QUAL 100 and MAT 152
A continuation of QUAL 101, including the interpretation and use of quality assurance data. A study of the normal distribution, control charts, and acceptance sampling will be related to the four jobs of quality control.

QUAL 106 (N) Metrology 4 Credits
Prerequisite: MAT 151
Designed to develop dimensional measurement ability for skilled workers, inspectors, technicians, and for personnel entering a technical occupation. Instruction will be given in both the English and Metric systems of measurement. Measuring equipment and instruments used: scales, micrometers, calipers, gage blocks, indicators, production gages, comparators and optical flats.

QUAL 200 (N) Industrial Quality Seminar 3 Credits
Prerequisite: QUAL 100 and sophomore standing
A continuation of QUAL 100 with emphasis on quality planning and analysis, quality management of the quality function, and all the procedures industry employs to produce products and services that meet the quality requirements of the market.

QUAL 230 (N) Quality Cost Control 3 Credits
Prerequisite: QUAL 200
The student will be provided various quality cost control methods used by industry to assess the level of product quality and reliability. The student will obtain knowledge of the structure that accounts for separation of labor, external, internal and prevention costs. Training in the analysis of costs will provide the ability to support changes in process or procedure for the improvement of product quality.

QUAL 260 (N) Non-Destructive Testing 3 Credits
Prerequisite: QUAL 200
Will present to the student non-destructive testing and liquid penetrant test principles, filtered and magnetic particle test indication and equipment, radiation physics and sources, detecting and recording, film radiography, X-ray film processing and interpretation, Isotope radiation sources, high voltage radiography, laboratory administration, radiation protection, Ultrasonic and eddy current tests.

QUAL 262 (N) Procurement Quality Assurance 3 Credits
Prerequisite: QUAL 200
Will provide to the student a background in organizational structures and relationships involved with purchased parts quality assurance. In addition, will expose the student to developing material requirements, government and industrial specifications and inspection instruments, procurement practices, source inspections, receiving and sampling inspection, non-conformance, corrective action, vendor ratings, non-destructive test methods, inspection records, shipping inspection and review.

QUAL 265 (N) Configuration Management 3 Credits
Prerequisite: QUAL 200
Will introduce the student to the underlying concept of configuration management, organizational responsibilities, customer regulations, management and implementation of the many technical and administrative activities which identify control, and assure attainment of known product configuration.

REQUIRED SUPPORTIVE COURSE DESCRIPTIONS

MEC 101 Introduction to Manufacturing Processes 3 Credits
Prerequisite: Secondary school algebra and geometry or MAT 110
The student will explain basic manufacturing procedures in terms of materials tooling, machines, molding, measurements, gaging, automation and selected machine operations. Lab fee required.

MEC 102 Manufacturing and Fabrications Processes 3 Credits
Prerequisite: MEC 101
The student will identify and define the equipment and procedures used in welding, metal casting, forging, heat treatment extrusions, rolling and selected operations in welding and changing the shape of metals. Lab fee required.

MEC 201 Engineering Mechanics 3 Credits
Prerequisite: PHY 115 and MAT 122 or consent of instructor
The student will identify and define the principles of statics and dynamics by applying the theories to practical problems related to engineering technology.

MEC 202 Mechanics of Materials 3 Credits
Prerequisite: MEC 201
The student will identify and define the properties of materials as related to the theories of elasticity, stresses, torsion, strength of beams, joints, connections, and use selected laboratory testing machines. Lab fee required.

DRT 111 Introduction to Technical Drawing 3 Credits

The student will identify and define the theory of orthogonal projection and pictorial drawing. Using methods of descriptive geometry, he will solve spatial problems employing the geometric elements of points, lines, and planes. He will execute free-hand lettering, sketching and instrument drawing. Lab fee required.

MAT 155 College Algebra 3 Credits
Prerequisite: Two years of secondary school algebra or MAT 115
Properties of the real numbers; the field axioms; proof of theorems involving the real numbers; review of operations with polynomials, exponents and radicals; linear and quadratic relations and functions, and their graphs; conic sections; the algebra of functions, including composition; inverse functions; exponential and logarithmic functions; solution of equations and systems of equations; theory and use of matrices and determinants; complex numbers and vectors; theory of equations, including the factor and remainder theorem and the rational roots theorem; sequences and series.

MAT 156 Trigonometry 3 Credits

Prerequisites: Two years of secondary school algebra and one of geometry, or MAT 114 and MAT 115

Basic ideas, including review of sets, relations and functions; definition of the trigonometric functions as circular functions; graphs of the trigonometric functions; development and use of trigonometric identities; solution of trigonometric equations; inverse trigonometric functions; applications; definition of the trigonometric functions in a right triangle; solution of right triangles by trigonometry; solution of non-right trianlges by use of law of sines and law of consines; complex numbers and DeMoivre's Theorem.

ENG 151 English I 3 Credits

Placement in this course depends upon prior courses and scores on placement tests. The student will write compositions of various kinds, applying the rules of straight thinking and the basic principles of rhetoric and language structure.

ENG 211 Technical Writing 3 Credits

Prerequisite: ENG 131 or ENG 151

The student will design and write technical reports in various forms. He will also interpret and develop a variety of graphic presentations. Whenever appropriate, he will focus on forms applicable to his occupational needs.

DPR 111 Principles of Computer Programming 4 Credits

The student will be introduced to computer machine language and concepts of an assembly language. The student will develop several computer programs and run them in the computer laboratory. Concepts involving number systems, basic computer architecture and problem solving techniques will also be discussed. The course ends with examination of a high level language.

ELT 101 Applied Electricity 3 Credits

The student will identify and define basic electronic theory and circuits. He will define basic terms and explain and apply laws to the solution of problems in direct and alternating current circuits. In the laboratory, the student will perform selected laboratory experiments involving Ohm's Law, resistance capacitance, inductance, sine wave values, direct and alternating current and functional and effective circuits. The student will use properly and effectively such instrumentation as the VOM and VTVM.

QUALITY ASSURANCE TECHNOLOGY

Available Equipment

1 10-inch Sine Bar

2 Small surfact plates

1 True Center

1 (1,2,4,5) inch micrometers

OCC

QUALITY ASSURANCE TECHNOLOGY ADVISORY COMMITTEE MINUTES

December 16, 1980, 2:00 P.M.

PRESENT:

Hansraj Bajaria	-	Lawrence Institute of Technology
John Sawruk	-	Pontiac Motor Division
Norman Morrell	-	Budd Company
Russ Burrows	-	Computer Peripherals
Bill Rose	-	Oakland Community College
Ted Lowe	-	GMC Truck & Coach
Harry Campion	-	Oakland Community College
Yvonne Nielsen	-	" " "

1. Proposed equipment lists were submitted to Dr. Rose from The Budd Company and Pontiac Motor Division. This will facilitate finalization of the program proposal and enable it to begin through the Banded Model at the beginning of the year.

2. Mr. Campion voiced a concern about location and space for the proposed equipment. The facilities were toured and it was decided that the front portion of room A-102 along with the Inspection Room would be the most appropriate for the program.

3. Along with the program going through the Banded Model, each new course must also be approved through the process. In order to best facilitate this, sample Design Criteria and Performance Goals were distributed and advisory committee members were asked to select the course then felt most competent with and develop such Design Criteria and Performance Goals. The divisions were made as follows:

Hans Bajaria: QUAL 102 - Fundamental Statistical Concepts Related to total Quality Control.

Russ Burrows: QUAL 106 - Metrology

Norman Morrell: QUAL 230 - Quality Cost

Ted Lowe: QUAL 260 - Non-Destructive Testing

John Sawruk: QUAL 262 - Procurement Quality Assurance

QUALITY ASSURANCE MINUTES Continued

In addition, it was suggested that Don Merry be contacted to deal with QUAL 265 - Configuration Management. Dr. Rose agreed to do this. These items are to be submitted by January 9, 1981, ERT 100 - Introductory Seminar is Engineering Technology is already in existence but needs review and revision.

4. Within the curriculum, Mr. Campion suggested some additions. ENG. 151 - English I should be added as a prerequisite for ENG 211 - Technical English. Also MAT 156 - Trigononetry is a prerequisite for both MEC 201 - Engineering Mechanics and MEC 202 - Mechanics of Materials. This would bring the total number of credit hours required for an Associate Degree to 68.

5. All materials assembed will be sent to advisory committee members in the format used for the Banded Model. Notification of the next meeting will be sent at a later date.

BR/br

OAKLAND COMMUNITY COLLEGE
AUBURN HILLS CAMPUS 2900 FEATHERSTONE ROAD AUBURN HEIGHTS, MICHIGAN 48057 313-852-1000

QUALITY ASSURANCE MEETING MINUTES

October 28, 1980, 2:00 PM

Room B-217

PRESENT:

Russ Burrows	-	Computer Peripherals
Donald Merry	-	First Corporation Consultant, Inc.
Norman Morell	-	Budd Company
John Sawruk	-	Pontiac Motor Division
Mel Turner	-	Rockwell International
Linda Walker	-	Student Representative
Bill O'Mahoney	-	Dean, O.C.C.
Bill Rose	-	Dean, O.C.C.
Harry Campion	-	Chairman, E.R.T. Dept.
Yvonne Nielsen	-	Admin. Assistant

1. The results of the employers survey were distributed to the group. In general the response was favorable. There was a concern raised about question #12 of the third section. It is felt that "work/training site" may be misinterpreted to mean a site on which to conduct the program as opposed to a co-op site for qualified students. The suggested additional components were addressed as representing industry's present needs. The purpose of the program is not to produce inspectors. It is to establish quality assurance technicians. Ideally, there would be no inspectors; each individual would know they had done their job and had done it correctly. The quality assurance technicians would perform the function of checking received material for defects and standards, check for equipment wear, etc.

2. The challenge of this program will be to both prepare people to meet industry's immediate needs (what they think they need), and to ascertain that we can prepare them to meet future, rapidly changing demands. Mr. Turner extended an invitation to committee members to attend the showing of "NBC WHITE PAPER, IF JAPAN CAN...WHY CAN'T WE?" He will have further information about exact date and time sent to all committee members.

QUALITY ASSURANCE MINUTES continued

The entire quality assurance phenomenon will involve a re-education effort. The United States has always emphasized a demand for style, not quality. Now that emphasis must be redirected.

3. The proposed curriculum and course description were distributed. There were some changes suggested. The two co-op courses are to be optional courses, not to be included in either the associate degree or the certificate program. Instead, a sophomore level course entitled "Industrial Quality Seminar" (2 Credits) will be required. A course description will be available for the next meeting. BUS 258, Business and Industrial Organizational Behavior; MAT 115, Intermediate Algebra; and Introduction/Occupational Safety and Health were eliminated from the program.

   The course description for QUAL 265, Configuration Management had the word "traceability" added to further clarify the content. A copy of the revised curriculum is enclosed.

4. The next meeting is scheduled for Tuesday, December 16, 1980 at 2:00PM, at the Auburn Hills Campus

BR/br

Encl: 1

ity Assurance Technology is an Associate degree program in quality assurance d reliability with specialized concentrations. The program prepares students for entry-level employment as engineering technicians, and managers in controlling quality and reliability of goods and services. Typical job areas include new design review, incoming material evaluation process control, supervision and management techniques, and product testing and evaluation.

MAJOR REQUIREMENTS			CREDITS
(N)	ERT 100*	Introductory Seminar in Engineering Technology	2
	QUAL 100*(MEC 213)	Total Quality Control	3
	QUAL 101*(MEC 214)	Principles of Quality Assurance	3
(N)	QUAL 102*	Fundamental Statistical Concepts Related to Total Quality Control	3
(N)	QUAL 106*	Metrology	4
(N)	QUAL 230*	Quality Cost Control	3
(N)	QUAL 260*	Non-Destructive Testing	3
(N)	QUAL 262 *	Procurement Quality Assurance	3
(N)	QUAL 265 *	Configuration Management	3
	*	Industrial Quality Seminar	2
			29 credits

REQUIRED SUPPORTIVE COURSES			
	MEC 101*	Introduction to Manufacturing Processes	3
	MEC 102*	Manufacturing and Fabrication Practices	3
	MEC 201*	Engineering Mechanics	3
	MEC 202*	Mechanics of Materials	3
	DRT 111	Introduction to Technical Drawing	3
	MAT 155	College Algebra	3
	ENG 211	Technical English	3
	DPR 111	Principles of Computer Programming	3
	ELT 101	Applied Electricity	3
			27 credits

GENERAL EDUCATION REQUIREMENTS . . . . . 15 to 19 credits

A. The student will complete 12-16 hours of credit to include at least 3 of the following 4 categories.

1. Communications and English
2. Social Science
3. Humanities
4. Math/Natural Science

B. In addition, the student will fulfill the State requirement by completing POL 151.

A minimum of 62 credit hours will be required for an Associate Degree.

General Education courses listed as Required Supportive Courses may be used to meet requirement of the General Education component.

*When all courses marked with an asterisk are completed, the student may apply for a Certificate of Achievement.

**No technical or applied courses will fulfill these requirements.

(N) New courses

Interested and qualified students may take ERT 140.3 and ERT 240.3, Co-op and Advanced Co-op, for additional credits not to be included in either the Certificate or Associate Degree programs.

5/80
Part 3

James Folkening
(517) 373-3360

Higher Education Management Services
OCCUPATIONAL EDUCATION UNIT
Box 30009, Lansing, Michigan 48909

MAILING INSTRUCTIONS: Return TWO (2) copies for each PROGRAM by February 2, 1981 to the Occupational Education Unit.

Sub-Part B — Taxonomy Input for New Occupational Programs for 1981-82 School Year

PLEASE REFER TO INSTRUCTIONS ON BACK PRIOR TO COMPLETING THIS FORM

1. Legal Name of College	2. College Code Number	3. State Use Only	4. College Program Title
OAKLAND COMMUNITY COLLEGE	1 2804	(5)-(77)	20 QUALITY ASSURANCE TECHNOLOGY

5. Name of Contract Person Telephone — Area Code/Local No.	6. U.S.O.E. Program Code	7. H.E.G.I.S. Program Code	8. Type of Program
William J. O'Mahoney (313) 647-6200	16.01139 (5)	(13)	a. ASSOCIATE 17 XX b. CERTIFICATE 18 XX 1 Year 19 ☐ More Than 1 Year

1. OCCUPATIONAL COURSES

9. New Course	10. INSTITUTION COURSE CODE Prefix (10)	Number (14)	11. TITLE OF COURSE (19)	12. Total No. of Credit Hours Awarded for Course (58)	13. Total No. of Contact Hours for Course (62)	STATE USE ONLY State Code (66)	STATE USE ONLY Federal Code (67)	14. Total No. of FYES for New Course
			11.A. (9) SPECIALTY STUDY					
	ERT	100	Introductory Seminar in Engineering Technology	2	30			
X	QUAL	100	Total Quality Control (presently MEC 213)	3	45			9.6
X	QUAL	101	Principles of Quality Assurance (presently MEC 214)	3	45			2.4
X	QUAL	102	Fund. Stat. Concepts/Total Quality Control	3	45			2.4
X	QUAL	106	Metrology	4	60			2.4
X	QUAL	200	Industrial Quality Seminar	3	45			2.4
X	QUAL	230	Quality Cost Control	3	45			2.4
X	QUAL	260	Non-Destructive Testing	3	45			2.4
X	QUAL	262	Procurement Quality Assurance	3	45			2.4
X	QUAL	265	Configuration Management	3	45			2.4
			B. SUPPORTIVE STUDY					
	MEC	101	Intro. to Manufacturing Processes	3	60			
	MEC	102	Manufacturing and Fab. Processes	3	60			
	MEC	201	Engineering Mechanics	3	60			
	MEC	202	Mechanics of Materials	3	60			
	DRT	111	Intro. to Technical Drawing	3	60			
	MAT	155	College Algebra	3	45			
	MAT	156	Trigonometry	3	45			
	ENG	151	English I	3	45			
	ENG	211	Technical English	3	45			
	(continued)		C. GENERAL EDUCATION					
	POL	151	American Government	3	45			
			Is outlined in catalog as 12-16 credit hours in:					
			Communications/English					
			Humanities					
			Math/Natural Science					
			Social Science					

IF ADDITIONAL SPACE IS NEEDED, ATTACH EXTRA SHEETS.

5/80
Part 3

(517) 373-0360

OCCUPATIONAL EDUCATION UNIT
Box 30009, Lansing, Michigan 48909

copies for each PROGRAM by January 2
1981 to the Occupational Education Unit

Sub-Part B - Taxonomy Input for New Occupational Programs for 1981-82 School Year

PLEASE REFER TO INSTRUCTIONS ON BACK PRIOR TO COMPLETING THIS FORM

1. Legal Name of College	2. College Code Number (1)	3. State Use Only (5)-(77)	4. College Program Title (20)
5. Name of Contact Person, Telephone Area Code/Local No.	6. USOE Program Code (5)	7. HEGIS Program Code (13)	8. Type of Program: a. ASSOCIATE (17) ☐ ; b. CERTIFICATE (18) ☐ 1 Year (19) ☐ More Than 1 Year

1. OCCUPATIONAL COURSES

9. New Course	10. INSTITUTION COURSE CODE Prefix (10)	Number (14)	11. TITLE OF COURSE (19)	12. Total No. of Credit Hours Awarded for Course (58)	13. Total No of Contact Hours for Course (62)	STATE USE ONLY State Code (66)	STATE USE ONLY Federal Code (67)	14. Total No of FYES for New Course
			11.A (3) SPECIALTY STUDY					
			B. SUPPORTIVE STUDY (Continued)					
	DPR	111	Principles of Computer Programming	3	45			
	ELT	101	Applied Electricity	3	45			
			C. GENERAL EDUCATION					

IF ADDITIONAL SPACE IS NEEDED, ATTACH EXTRA SHEETS.

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Part 3

Direct questions regarding this form to Supervisor, Occupational Education Unit (517) 373-3360.

Michigan Department of Education
Higher Education Management Services
OCCUPATIONAL EDUCATION UNIT
Box 30009, Lansing, Michigan 48909

Sub-Part C — Application for Occupational Education Equipment for New Programs 1981-82

SUBMITTING EDUCATIONAL AGENCY	Legal Name of College: OAKLAND COMMUNITY COLLEGE	College Code Number: 2804	Contact Person: William J. O'Mahoney
	College Program Title: QUALITY ASSURANCE TECHNOLOGY	H.E.G.I.S. Program Code:	U.S.O.E. Program Code: 16.01139

MAILING INSTRUCTIONS: Return TWO copies to the STATE address indicated above by February 2, 1981.

GENERAL INSTRUCTIONS: Use this form for purchase, rental or lease of equipment. Use a separate form for equipment to be used in each program. Use page 5 to list the equipment items. Refer to the *Dean's Guide to Federally Reimbursed Community College Occupation Program*, which states the eligibility criteria for the equipment.

I. TIME USAGE OF EQUIPMENT

A. Total Number of Terms Per School Year	3
B. Total Number of Weeks Per Term	15
C. Total Contact Hour/Week Equipment Will Be Used For Proposed Program	50
D. Total Contact Hour/Year Equipment Will Be Used For All Eligible Programs	2300

II. EQUIPMENT INFORMATION (Data from Page 8)

A. Total No. of Attached Pages	1
B. **Total Cost — Equipment**	$26,353.75
C. Trade in Allowance of Replaced Items	$
D. **NET COST**	$26,353.75

III. REQUESTED ITEMS OF EQUIPMENT (Use as many copies of page 8 as necessary.)

IV. CERTIFICATION:

1. I certify that the information is accurate to the best of my knowledge.

2. Matching institutional funds have been committed toward the purchase of the specified equipment.

Date _____ President _____ (Signature)

Occupational Dean _____ (Signature)

Sub-Part C (continued)

SUBMITTING EDUCATIONAL AGENCY	Legal Name of College: OAKLAND COMMUNITY COLLEGE
	College Program Title: QUALITY ASSURANCE TECHNOLOGY

REQUESTED ITEMS OF EQUIPMENT

Item No. (State Use Only)	Item Name	Total Quan.	Unit Cost	Total Cost	Trade In Allowance	Net Cost
	DoAll 48" x 72" Granite Surface Plate-- A Grade Series 50	4	1,588.00	6,352.00		
	DoAll 48" x 72" Surface Plate Stands	4	398.00	1,592.00		
	Starrett 0 to 6" Outside Micrometer Set with Standards	4	366.00	1,464.00		
	Starrett 0 to 150 MM Outside Micrometer Set with Standards	4	386.80	1,547.20		
	Starrett Vernier Height Gage-Dual Reading	4	469.50	1,878.00		
	Starrett Universal Instrumentation Kit Includes: Combination Square Set 150 MM Blade Bevel Protractor 6" Inside Caliper 6" Outside Caliper 6" Dividers 6" Hermaphrodite Caliper 0-6" Micrometer Depth Gage Universal Surface Gage Last Word Dial Test Indicator Universal Dial Indicator V-Blocks and Clamp (5) 6" Steel Rule (Metric & Eng.)	4	540.00	2,160.00		
	Starrett Vernier Caliper 24" Dual Reading	4	381.25	1,525.00		
	Starrett 12" Steel Square	4	146.00	584.00		
	Brown & Sharp 5" Sine Bar	4	310.00	1,240.00		
	DoAll 14" Bench Model Optical Comparator	1	1,495.00	1,495.00		
	Starrett Master Precision Level	1	224.50	224.50		
	Starrett DIGI-CHEK Height Gage	1	1,307.75	1,307.75		
	Brown & Sharp English Gage Block	1	875.00	875.00		
	DoAll Universal Angle Plate 6"x8"x6"	8	130.00	1,040.00		
	Bendix Profilometer Group 6M	1	2,145.00	2,145.00		
	Bendix Spare Profilometer Tracer	1	445.00	445.00		
	Zyglo Inspection Kit	2	240.00	480.00		

IF ADDITIONAL SPACE IS NEEDED, ATTACH EXTRA SHEETS.

Sub-total this page: $26,353.75

(Carry sum of all sub-totals forward.)

STATE OF MICHIGAN

DEPARTMENT OF EDUCATION

VOCATIONAL-TECHNICAL EDUCATION SERVICE

Box 30009, Lansing, Michigan 48909

PHILLIP E. RUNKEL
Superintendent of
Public Instruction

F

Copy Rec

January 22, 1981

Mr. William J. O'Mahoney
Dean, Applied Arts and Sciences
Oakland Community College
2480 Opdyke Road
Bloomfield Hills, Michigan 48013

RE: Quality Assurance Technology Program

Dear Bill:

Staff of the Community College Services Unit concur with the recommendations of the College and the advisory committee to pursue development of the curriculum for the Quality Assurance Technical Program. This conclusion was made after reviewing the additional relevant material as submitted by your office. We are still concerned regarding the limited employer survey and the small response.

The fifteen hundred (1500) industries in Oakland County, as per your minutes of April 21, 1980, represent a viable employment resource and every effort should be made to incorporate their needs into this program.

The State Board of Education will be presented with the following statement concerning the evidence of need for this program:

> The needs study conducted by the College indicates 96 job opportunities forecast in the College district in the next five (5) years. Satisfactory student interest surveys were conducted at both the districts high schools and the College. The challenge of this program will be to prepare people to meet industries immediate needs by preparing quality assurance technicians.

A grant letter for curriculum development will be sent to President Roelofs from Dr. Phillip Runkel within the next two weeks.

Sincerely,

James H. Folkening
Supervisor
Community College Services Unit
Higher Education Management Services

JAN 26 1981

APPLIED SCIENCE AND ARTS

cc: Jerry Forrest

Updated:7/26/93

QUALITY ASSURANCE TECHNICIAN NEEDS ASSESSMENT
EMPLOYER SURVEY
CODE BOOK

Variable	Column	Description/Codes
ID	1-3	Survey ID number.
EMPLOY	4	1. Do you employ quality assurance technicians? 1 = Yes 0 = No
		3. Among your quality assurance employees, what are examples of their job titles and salary ranges for entry level positions?
TITLE1	5	a. Technician 1 = Yes 0 = No 9 = Unknown/No Response
WAGE1	6-10	b. annual salary. Actual number 99999 = Unknown/No Response 88888 = Does not apply
TITLE2	11	c. Inspector 1 = Yes 0 = No 9 = Unknown/No Response
WAGE2	12-16	d. annual salary. Actual number 99999 = Unknown/No Response 88888 = Does not apply
TITLE3	17	e. Manager 1 = Yes 0 = No 9 = Unknown/No Response
WAGE3	18-22	f. annual salary Actual number 99999 = Unknown/No Response 88888 = Does not apply
TITLE4	23	g. Other 1 = Yes 0 = No 9 = Unknown/No Response
WAGE4	24-28	h. annual salary Actual number 99999 = Unknown/No Response 88888 = Does not apply

NEED 29

4. In your opinion, over the next 12 months will your need for employees trained as quality assurance technicians:

2 = Increase
0 = Decrease
1 = Remain the same
9 = Unknown/No Response

5. Do you plan to meet that need by:

HIRING 30

a) Hiring new employees?

1 = Yes
0 = No
8 = Does not apply
9 = Unknown/No Response

RETRAIN 31

b) Retraining current employees
(Same as HIRING)

OTHER 32

c) Other.
(Same as HIRING)

6. What are the reasons for the growing need for Quality Assurance Technicians?

LACK 33

a) Employees are lacking these skills
1 = Yes
0 = No
8 = Does not apply
9 = Unknown/No Response

LEAVING 34

b) Employees with these skills are leaving the company
(Same as LACK)

EXPAND 35

c) Organization is expanding
(Same as LACK)

STANDARD 36

d) Keeping up with new industry standards
(Same as LACK)

OTHER2 37

e) Other reasons.
(Same as LACK)

7. What is the minimum educational qualification required by your company for entry-level personnel in quality assurance?

NONE 38

a) No specific educational requirement
0 = Yes
1 = No
9 = Unknown/No Response

HIGHSCH 39

b) High School diploma or equivalent
1 = Yes
0 = No
9 = Unknown/No Response

APPRENT	40	c) Completion of Apprenticeship (Same as HIGHSCH)
ASSOC	41	d) Associate Degree (Same as HIGHSCH)
BACHELOR	42	e) Bachelor Degree (Same as HIGHSCH)
CERTIF	43	f) Vocational certification (Same as HIGHSCH)
OTHERED	44	g) Other education or degree, not listed (Same as HIGHSCH)
ASQCCERT	45	8a. Do you require ASQC certification for entry level positions? 1 = Yes 0 = No 9 = Unknown/No Response
		8b. Which of the following certifications do you require?
INSPECT	46	a. Certified Mechanical Inspector 1 = Yes 0 = No 8 = Not Applicable 9 = Unknown/No Response
TECHNIC	47	b. Certified Quality Technician (Same as INSPECT)
QUALENG	48	c. Certified Quality Engineer (Same as INSPECT)
RELENG	49	d. Certified Reliability Engineer (Same as INSPECT)
QUALAUD	50	e. Certified Quality Auditor (Same as INSPECT)
OTHRCERT	51	f. Other (Same as INSPECT)
		9. Please consider the following list of skills and qualifications you as an employer would value when hiring Quality Control/Assurance personnel.
TEAM	52	a) Ability to work as a team member 3 = Very important 2 = Somewhat important 1 = Not important 9 = Unknown/No Response
ORGANIZE	53	b) Organizational skills (Same as TEAM)

INITIATE	54	c) Ability to use individual iniative (Same as TEAM)
WRITING	55	d) Writing skills (Same as TEAM)
PROBLEM	56	e) Problem solving skills (Same as TEAM)
DIFFICUL	57	12. Do you experience any difficulty finding well qualified entry level personnel? 1 = Yes 0 = No 9 = Unknown/No Response
		15. Please rate how important it is for entry level personnel to have a strong knowledge base in the following applications:
TQCPRIN	58	a) Principles of Total Quality Control 3 = Very Important 2 = Somewhat Important 1 = Not Important 8 = Unaware 9 = Unknown/No Response
SPC	59	b) Statistical Process Control (Same as TQCPRIN)
METROL	60	c) Metrology (Same as TQCPRIN)
NONDTEST	61	d) Non-Destructive Testing (Same as TQCPRIN)
PROCQUAL	62	e) Procurement Quality Assurance (Same as TQCPRIN)
DIMENS	63	f) Geometric Dimensioning & Tolerancing (Same as TQCPRIN)
TECHDRAW	64	g) Technical Drawing (Same as TQCPRIN)
TECHWRIT	65	h) Technical Writing (Same as TQCPRIN)
APPELEC	66	i) Applied Electricity (Same as TQCPRIN)
MANUFACT	67	j) Manufacturing Processes and Practices (Same as TQCPRIN)
ALGEBRA	68	k) College Algebra (Same as TQCPRIN)
EXPERIM	69	l) Design of Experiments (Same as TQCPRIN)

ENGMECH	70	m) Engineering Mechanics (Same as TQCPRIN)
MATMECH	71	n) Mechanics of Materials (Same as TQCPRIN)
SUPERVIS	72	o) Supervision & Management (Same as TQCPRIN)
COMPLIT	73	p) Computer Literacy (Same as TQCPRIN)
BLUEPRIN	74	q) Blueprint Reading (Same as TQCPRIN)
TRIG	75	r) Trigonometry (Same as TQCPRIN)
RETRAIN2	76	16. Would your company consider sending current employees to OCC for retraining in the Quality Assurance Technician program or courses? 1 = Yes 0 = No 7 = Uncertain 9 = Unknown/No Response
		17. Does your organization provide any formal in-house or external quality control/assurance training for employees?
INHOUSE	77	In-House training 1 = Yes 0 = No 9 = Unknown/No Response
EXTERNAL	78	External training 1 = Yes 0 = No 9 = Unknown/No Response
BPITRAIN	79	19. Is there any specialized training that OCC could provide for your company? 0 = No 7 = Uncertain 1 = Yes 9 = No Response
		20. Would your company consider offering internships (either paid or non-paid) for students in a Quality Assurance/Quality Control Technician program?
PAIDINTE	80	PAID? 1 = Yes 0 = No

7 = Uncertain
9 = Unknown/No Response

UNPAIDIN 81 UNPAID?
1 = Yes
0 = No
7 = Uncertain
9 = Unknown/No Response

HELPOCC 82 21. Would you be willing to help in the on-going development of our Quality Assurance Technician program?
1 = Yes
0 = No
7 = Uncertain
9 = Unknown/No Response