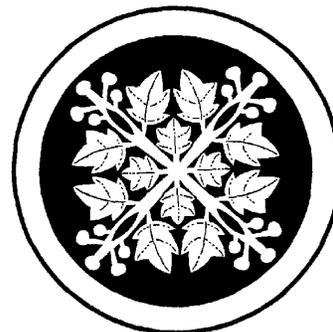


Report of the Associate in Science (AS) Degree Task Force

University of Hawai`i Community Colleges

December 5, 1994



REPORT OF THE ASSOCIATE IN SCIENCE DEGREE TASK FORCE

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SUMMARY

Charge

The charge to the Associate in Science Degree Task Force consisted of the following:

- Review “A Blueprint for Learning”
- Review the Associate in Science and Associate in Applied Science degrees and make recommendations
- Define the degree-level competencies (including the SCANS competencies)
- Define and describe other issues and components of the degrees
- Produce a final report

Conclusions

After reviewing “A Blueprint for Learning” and the reports of previous AS and AAS task forces, and after input and deliberation on each campus, the AS Degree Task Force (hereafter referred to as Task Force) recommends the following:

- Offer one AS degree with three options—
 - Associate in Science (**AS**)
 - Associate in Science, Applied (**AS, Applied**)
 - Associate in Science, Customized (**AS, Customized**)
- Recommend Technical/Occupational/Professional (**TechOP**) as the program name

In defining the degree competencies, all members agreed that the structure (see p. 6) and competencies (see Appendix 1, p. 16) defined by the SCANS report fit the goals of the TechOP program.

The Task Force recognized a number of issues (see p. 14) and also requested written input from each campus, which is presented in Appendix 3 (Commonly Asked Questions).

INTRODUCTION

National Trends

EDUCATIONAL REFORM: Education is a state function that must also be a national priority. We need challenging national academic standards to prepare students for responsible citizenship and a productive future: Every adult literate and able to compete in the work force.
(GOALS 2000: Educate America Act)

Preparing Hawai'i's Work Force: High Skills or Low Wages

The University of Hawai'i Community Colleges must respond to local, state, and national work force training needs. The challenges of rising unemployment, underemployment, and rapidly changing job requirements demand an associate degree that is relevant and more responsive to Hawai'i's needs.

Training in increasingly sophisticated technologies must go beyond teaching procedures for predefined situations; industry needs troubleshooters, not just operators. The changes in the nature of jobs brought about by technology must bring about a change in the way the community colleges approach TechOP education.

SCANS Report

Technical/Occupational/Professional (TechOP) education is more than specific job skills training. Effective education presents foundation skills and work competencies in the context in which they will be used. The following quotation from the *WHAT WORK REQUIRES OF SCHOOLS, A SCANS REPORT FOR AMERICA 2000* further defines the challenge:

The message to us was universal: good jobs will increasingly depend on people who can put knowledge to work. What we found was disturbing; more than half our young people leave school without the knowledge or foundation required to find and hold a good job. These young people will pay a very high price. They face the bleak prospect of dead-end work interrupted only by periods of unemployment.

Two conditions that arose in the last quarter of the 20th Century have changed the terms for our young people's entry into the world of work: the globalization of commerce and industry and the explosive growth of technology on the job. These

developments have barely been reflected in how we prepare young people for work or in how many of our workplaces are organized. Schools need to do a better job and so do employers. Students and workers must work smarter. Unless they do, neither our schools, our students, nor our businesses can prosper.¹

Background

Since January 1985 the University of Hawai'i Community Colleges have been engaged in an extensive review of the associate degree.

January 1985

A task force of faculty and administrators convened to examine the community college system's associate degree programs and to make recommendations to improve the programs based on curricular, student population needs, and trends. In August 1986 the task force completed its work.

August 1986

Three task forces were subsequently formed to review the Associate in Arts, Associate in Science, and Associate in Applied Science degrees and to make recommendations. These task forces completed their work in 1987 and developed a set of minimum desired competencies for each of the associate degrees. Their recommendations:

1. Revise the Associate in Arts degree so that the competencies which students attain are consistent with baccalaureate level performance.
2. Develop an Associate in Science degree in which the competencies students attain are consistent with baccalaureate level performance in an appropriate bachelor of science program.
3. Consistent with national practices, rename existing

¹ *WHAT WORK REQUIRES OF SCHOOLS*, A SCANS REPORT FOR AMERICA 2000. The Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor. [1991]

associate in science programs which are not designed to meet baccalaureate level requirements as associate in applied science.

4. Explore the establishment of an associate degree or certificate for those students whose objectives are not being met by any of the existing, (sic) or recommended associate degrees.

Fall 1988

In response to the 1987 report, a Liberal Arts Program Coordinating Council was convened to develop student competencies for the Associate in Arts degree. The objective was completed in November 1990.

Fall 1993

A task force was convened to study previous reports, to review the AS and AAS degrees, to develop competencies for the degree(s), to identify other issues, and to produce a final report.

Following intensive program coordinating council (PCC) work in TechOP program areas, the 1993 Task Force was formed to consider the Associate in Science degree. In the process of redefining the associate degree for TechOP programs, the Task Force developed a model of the competencies to be achieved and a direction for curriculum development. In doing so, it met the charge set forth in the August 1986 report of the Associate Degree Task Forces.

The proposed Associate in Science degree model for TechOP programs is a structure framed on three blocks: Learning Foundations, AS Degree Requirements, and AS Degree Exit Competencies.

Learning Foundations

Basic Skills
Thinking Skills
Personal Skills

Skills identified as entrance requirements and/or prerequisites needed prior to entrance to individual TechOP program.

AS Degree Requirements

TechOP Courses
General Skills Courses
General Education Courses

At least 60 course credit hours to graduate
At least 30 course credit hours
At least 6 course credit hours
At least 9 course credit hours

AS Degree Competencies

TechOP Program Exit Competencies

The model is based on the groundwork prepared by other work groups and publications. The sources of the model and the competencies are as follows:

Learning Foundations—	A SCANS Report for America 2000 ²
AS Degree Requirements —	
TechOP Courses —	A SCANS Report for America 2000
General Skills Courses —	AAS Degree Competencies ³
General Education Courses —	AAS Degree Competencies
	General Education for the AS Degree ⁴
AS Degree Competencies —	General Education for the AS Degree

² *WHAT WORK REQUIRES OF SCHOOLS*, A SCANS REPORT FOR AMERICA 2000. The Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor. [1991]

³ *Report of the Task Force for the Development of the Associate in Applied Sciences (AAS) Degree Competencies (Discussion Draft)*. Honolulu: Office of the Chancellor, UHCC, [1987].

⁴ *Curriculum Committee Report on General Education for the Associate in Science Degree*. Honolulu: Kapi`olani Community College, [1991]

Competency Areas for the Associate in Science Degree in Technical/Occupational/Professional (TechOP) Programs

Learning Foundations

Basic Skills

Reading
Writing
Arithmetic
Mathematics
Listening
Oral Communication

Thinking Skills

Creative Thinking
Decision Making
Problem Solving
Mental Visualization
Knowing How to Learn
Reasoning

Personal Skills

Responsibility
Self-Esteem
Sociability
Self-Management
Integrity/Honesty

Associate in Science Degree Requirements

At least 60 credit hours

TechOP Courses

At least 30 credit hours

General Skills Courses

At least 6 credit hours

General Ed Courses

At least 9 credit hours

Resources

Identifies, organizes, plans, and allocates resources.

Interpersonal

Works with others.

Information

Acquires and uses information.

Systems

Understands complex relationships.

Technology

Works with a variety of technologies.

TechOP Program Competencies

Specific program requirements.

Communication

Reading
Writing
Oral Communication and Listening
Non-Verbal

Thinking / Reasoning

Mathematics

Social Environment

Understands the evolving interdependent nature of societal institutions, the processes of production and consumption, and the world of work respective to their vocational program and personal life.

Natural Environment

Understands current explanations of the interdependent nature of the universe and the relationship of human beings to this universe.

Cultural Environment

Aware of and sensitive to historical events, diverse value and cultural systems, and the way personal perceptions are influenced by ethnocentrism respective to their vocational program and personal life.

Associate in Science Degree Competencies

A graduate of a University of Hawai'i Community College who completes the Associate in Science Degree in a Technical/Occupational/Professional program should be able to:

1. employ skills and understanding in language and mathematics essential to fulfill program requirements and to prepare for employment.
2. understand attitudes and values of various cultures and examine their potential for improving the quality of life and meaningfulness in work.
3. recognize effects of technology and science on the natural and human environments.
4. understand contemporary issues and problems and respond to the impact of current conditions.
5. demonstrate abilities of conceptual, analytic and critical modes of thinking.
6. develop insights into human experience and apply them to personal, occupational and social relationships.

7. recognize relevance of career choices to life-long learning.
8. demonstrate competence in a selected program/plan of study.

A MODEL FOR THE ASSOCIATE IN SCIENCE DEGREE FOR TECHNICAL/OCCUPATIONAL/PROFESSIONAL (TECHOP) PROGRAMS

The Task Force defined a single structure for the Associate in Science degree for the Technical/Occupational/Professional (TechOP) programs. All members of the Task Force agreed that the structure and competencies defined by the SCANS report fit the goals of the community colleges. The following is the framework for presenting and organizing the minimum requirements and competencies for the Associate in Science degree for TechOP programs. The expected competencies are described in greater detail in Appendix 1.

Learning Foundations

The Learning Foundations component of the model depicts the TechOP programs' pre-associate degree level student competencies. These competencies would need to be mastered before students entered a TechOP program. The competencies for this component are derived from the SCANS' *Three-part Foundation* document. Competencies are indicated in three areas:

- basic skills (reading, writing, arithmetic, mathematics, listening, and speaking)
- thinking skills (creative thinking, decision making, problem solving, mental visualization, knowing how to learning, and reasoning)
- personal qualities (responsibility, self-esteem, sociability, self-management, and integrity/honesty)

In line with SCANS, a set of competencies is established as a learning foundation for all students seeking an AS degree. These foundation skills or entrance competencies must be in place for students to succeed in a TechOP program.

While the foundation skills are divided into three sections, they should by no means be thought of as the sole responsibility of separate divisions or departments. Acceptance of SCANS is an acceptance of the philosophy that what we have called "basic skills" must be taught in the context of the development of responsible, successful students, workers, family members, and citizens. Classes which fulfill these learning foundations must address the range of competencies, not narrow slices defined by department boundaries.

After demonstrating mastery of the Learning Foundations, students would complete an Associate in Science degree curriculum in a TechOP program.

Associate in Science Degree Requirements (60 course credits, minimum)

A. Technical/Occupational/Professional (TechOP) Courses (30 credits, minimum)

This component describes the competencies to be mastered in specific TechOP program courses. These competencies are derived from (1) the work of the respective program coordinating council of each vocational program and (2) the SCANS' *Five Competencies* document. The competencies prescribed in this latter document include:

- resources (identifying, organizing, planning, and allocating resources)
- interpersonal (working with others)
- information (acquiring and using information)
- systems (understanding complex relationships)
- technology (working with a variety of technologies)

The degree requirements consist of TechOP courses, General Skills courses, and General Education courses, including liberal arts and/or other courses developed for the Associate in Science degree. Specific courses within the Associate in Science degree model would then be determined by each TechOP program.

B. General Skills Courses (6 credits, minimum)

Competencies in communication, thinking and reasoning, and mathematics comprise this component of the degree requirements. Students would need to master these skills on a level higher than that of the Learning Foundations competencies. The competencies for the General Skills component have been extracted from the 1987 Associate in Applied Science Task Force Report.

C. General Education Courses (9 credits, minimum)

The competencies of this component of the degree requirements would be tailored to meet the needs of the Associate in Science degree program and not be liberal arts courses per se. Applied academics, or academics that would be more relevant and meaningful to TechOP program students, would be the standard.

Competencies for this area were extracted from the 1987 Associate in Applied Science Task Force Report and the Kapi'olani Community College report on General Education for the AS Degree. These competencies would be included in TechOP courses as well as course work dealing with the social, natural, and cultural environment.

The Role of General Education in TechOP Programs

There has been much debate over the role of general education in the area of vocational education. This Task Force believes that the attainment of common core knowledge, beliefs, and values contribute to the development of the work ethic, a stronger workplace, as well as a stable community.

The goal of relevant general education is to prepare students to adapt to changes in their environment and to instill a desire for life-long learning. The acceptance of the inevitability of change and the development of coping skills and attitudes to meet the growing demands of the family, the workplace, and society as a whole will contribute to the individual's well being. For more background on this topic, refer to *Kapiolani Community College Report on General Education for the Associate in Science* in Appendix 1, p. 24.

Competency Areas for the Associate in Science Degree for TechOP Programs

The purpose of the Associate in Science degree is to prepare students for gainful employment. In addition, many of the TechOP programs provide in-service or continuing education. All Associate in Science degree courses will support one or more of the listed AS degree competencies.

Many elements of the proposed model for the AS degree for TechOP programs are familiar: a minimum of 60 courses credits is required for any TechOP program; no maximum is set. All courses are expected to be college level, i.e., no remedial or developmental courses would count toward the AS degree. Credits are distributed in a familiar way: a minimum of 9 courses credits in General Education, a minimum of 6 courses credits in General Skills, and a minimum of 30 course credits specific to the TechOP program. The distribution of the remaining 15 course credits will be determined by the TechOP program.

IMPLEMENTING THE ASSOCIATE IN SCIENCE DEGREE MODEL

Introduction

Concern for the student rather than concern for enrollment should determine the individual TechOP program requirements. Establishing entry-level skills which allow the student to succeed helps both the student and the TechOP program. A key component in moving toward student success in college-level TechOP programs will be student attainment of acceptable levels of mastery of the Learning Foundations upon graduation from high school. Presumably this preparatory work will be provided by the Department of Education through Tech Prep or similar articulation programs.

However, since applicants to TechOP programs enter community colleges from widely varying backgrounds, it will be necessary to verify and measure successful mastery of the Learning

Foundations skills prior to entry into TechOP programs. These minimum entry standards might be successfully met by the following:

- completion of Tech Prep high school courses
- completion of existing community college remedial or developmental courses which are designated as prerequisites to TechOP program requirements
- creation of new prerequisite courses designed specifically for individual TechOP programs.

Evaluation tools might include a variety of standardized tests and/or creation of other assessment instruments unique to the specific needs and Learning Foundation entry levels determined by individual TechOP programs. Exit competencies will be measured by professional program certification standards and testing, final course examinations, final program exit examinations, or other traditional means.

Goal of the Associate in Science Degree Model for TechOP Programs

The goal of the AS degree model is to promote a quality learning environment by taking the following actions:

11. Validate curriculum with business and community partners and use national and international standards when possible;
12. Work with high schools in Tech Prep and articulation programs;
13. Establish articulation agreements with baccalaureate programs where appropriate;
14. Use technology to produce competency-based curriculum and ancillary materials;
15. Integrate workplace values across the curriculum;
16. Encourage use of portfolios as assessment tools;
17. Provide staff development activities to facilitate faculty's ability to create appropriate student learning environments;
18. Provide staff development activities to encourage the incorporation of workplace values;

Implementation of the Associate in Science Degree for TechOP Programs

In designing the AS Degree, the Task Force first considered the implementation of the TechOP program in the form of three separate associate degrees. After considerable input and deliberation, the Task Force decided that three separate degrees

would be confusing to students, counselors, TechOP programs, and potential employers.

The Task Force then focused on the development of a single model for TechOP programs that would satisfy Recommendations 2, 3, and 4 as put forth by the 1986 task force (printed on p. 3). This model consists of three parts: Learning Foundations, AS Degree Requirements, and AS Degree Competencies. The model provides the common framework to implement three variations of the Associate in Science degree. These three variations of the Associate in Science Degree for TechOP programs may be implemented as follows:

Associate in Science Degree (AS)

This degree will consist entirely of college-level, baccalaureate-leading, transferable courses which respond to requirements of employers and four-year institutions (not necessarily the University of Hawaii at Manoa). The competencies that students attain in a TechOP program are consistent with baccalaureate-level performance in an appropriate program.

The Associate in Science degree will signify the completion of sixty or more credits of a college-level education program. Students will be exposed to the processes of learning so that they may develop broad intellectual skills and the ability to synthesize and utilize the information of applied academics (general education) and specific TechOP programs.

Although the Associate in Science degree concentrates on the preparation of students for work in specific fields, all courses will be college-level, numbered at the 100 level or higher (under the present scheme), and transferable to baccalaureate programs at four-year institutions. This degree is designed to prepare technical/professional workers to meet the needs of the global economy.

Associate in Science Degree, Applied (AS, Applied)

This degree will be comprised of college-level, technical, general skills, and related applied general education courses which will prepare students for entry into occupations which are clearly and technically defined although confined to technical training areas which do not require four-year degrees. These TechOP programs will not be designed to meet baccalaureate-level requirements.

The curricula to accomplish the purposes of the Associate in Science, Applied degree will consist of TechOP courses, general skills courses, and general education courses. This degree emphasizes the process of learning and the development of a broad interconnected body of knowledge that will support future

learning and decision-making. The TechOP courses will emphasize the detailed knowledge required for an occupation. The **AS, Applied** degree is a non-transferable degree for TechOP programs. The purpose of this degree is to prepare the student to compete in the work force.

An **AS, Applied** degree is necessary to provide an alternative for students who do not wish to continue their education at the baccalaureate level, but aspire to earn an Associate in Science degree. The graduate of this degree program is envisioned as being knowledgeable in a specific technical/occupational area as well as the environments (social, cultural, and natural) which enrich

life. As such, the graduate can be characterized as one who communicates effectively; thinks critically and creatively; understands the views of others; appreciates the influences of culture, science and technology; synthesizes the available body of knowledge to effect thoughtful life and career choices; and functions independently as a life-long learner.

Associate in Science Degree, Customized (AS, Customized)

This degree blends a mixture of college-level, technical, occupational, and/or baccalaureate-leading, transferable courses which prepare students for entry into emerging careers with educational or specialized training needs. These courses cross traditional departmental lines and technical fields. It is possible that the degree might require courses from different community colleges. The Associate in Science degree, Customized would provide the required flexibility for both students and colleges to meet, in a timely and cost-effective way, the changing demands of the workplace. For example, customized TechOP programs could be created in the following occupations:

- DeskTop Publishing technicians would take courses in journalism, computer science, computer art, commercial arts, and marketing
- Auto Body Appraisers would take courses in journalism, computer science, computer art, commercial arts, and marketing
- Home-Care Givers would take courses in nursing, entrepreneurship, human services, accounting, and human relations in business
- Damage Appraisers/Estimators would take courses in auto body repair and painting, automotive mechanics technology, written and oral communication, computing literacy, and human relations.

The objective of the Associate in Science Degree, Customized is to provide students the opportunity to pursue a vocational, career-oriented program of study in emerging career fields which cut across traditional TechOP program areas and departments.

While the **AS, Customized** degree is unique and is designed for a student's particular career goal, it serves to accommodate those students who need to draw upon a number of TechOP program skill areas or disciplines in order to accomplish their educational objective.

This educational objective must be clearly defined and validated by businesses, industries, and employers who have immediate, specialized training and certification needs for a limited number of employees. Proposing a new program to meet these limited needs would be neither appropriate nor practical.

The world of work is becoming increasingly complex--a world in which technical skills and disciplines merge; and this fact must be reflected in our Associate in Science degree for TechOP programs. The **AS, Customized** degree is more than one TechOP program.

Proper advising is a crucial element. All students seeking an **AS, Customized** degree must have both a faculty advisor and a counselor. An individual's degree proposal would require approval

from the dean or assistant dean of the community college. The proposal must be submitted in writing to the team of advisors who will forward it to the dean of instruction for approval.

All proposals under the **AS, Customized** degree must meet the minimum requirements of the Associate in Science Degree model. At least 30 of the minimum 60 credits must be taken after the **AS, Customized** degree proposal is approved. These proposals must have a career goal, a set of clearly defined competencies, and a planned sequence of courses to meet that goal.

The proposal must address connections between competencies needed and the competencies taught in specific courses. The proposal should also explain why the goal cannot be met through an established TechOP program. Before competencies are covered through non-credit courses, a mechanism for granting credit for the work must be established.

Each community college will determine the Associate in Science degree variation(s) appropriate for its campus. All required competencies will be satisfied through program entrance requirements, TechOP program course work, and program exit requirements. While courses offered within each competency area may not provide all competencies, all students will be expected to have acquired the degree competencies upon completion of the Associate in Science degree requirements for any TechOP program.

RECOMMENDATIONS

In the course of developing the model and establishing the competencies for the TechOP Associate in Science degree programs, the Task Force discussed countless alternatives and ramifications. After much deliberation, the Task Force strongly recommends:

- adoption of the model describing Learning Foundations, AS Degree Requirements, and AS Degree Competencies for the Associate in Science degree for TechOP programs at all University of Hawai`i community colleges
- approval by the University of Hawai`i Board of Regents for the AS Degree, Customized
- development and implementation of a system assessment instrument to determine whether existing programs are AS and/or AS, Applied degree awarding
- financial resources to facilitate implementation of the model, including anticipated staff development and course modification efforts, be made available to colleges.

The Task Force believes that its recommendations provide a starting point for serious consideration of a community college

paradigm shift. Across the United States, the movement toward accountability, the emergence of partnerships with business and industry, and the realization that the development of human resources involves more than the rote learning of predefined situations have been evolving. The adoption of this model and competencies is both timely and appropriate.

Much of the success of a TechOP program is dependent on the strength of the students' entry skills. Larger colleges have resources to divert to Learning Foundations, General Skills and General Education courses which may require special adaptations or course secitons. In turn, these decisions will further reinforce their TechOP programs and the resulting product, a better trained employee.

Accommodations must be made to provide some equity to colleges with less resources to maintain the level of quality outlined in this document across the system.

A list of issues which require further consideration at the system, campus, program, and state levels is also presented.

ISSUES

System

19. Program standards, course competencies, and prerequisites should be established by the Program Coordinating Committees, recommended to the campuses, and accepted systemwide.
2. The current course numbering proactices are confusing and outdated and should be reviewed to more accurately reflect course competencies, transferability and other issues.
3. The Community College System should provide support for programs experiencing low enrollment due to a lack of qualified students who have not yet mastered Learning Foundation skills.
4. General Education requirements should be applicable to TechOP program students. These courses will not necessarily be "off-the-shelf" liberal arts courses. Resources should be allocated to facilitate the development of "applied
5. A time line for the inclusion of a computing literacy competency requirement in the Learning Foundations and/or Associate in Science degree requirements for the Community College System should be developed.
6. Staff development funding to encourage redesign of curriculum and to foster development of quality learning experiences should be supported.

Campus

7. Individual community colleges should determine when a student masters Learning Foundation skills and can be accepted into a TechOP Associate in Science Degree program.

8. Campus faculty should be encouraged to develop applied academic curriculum to satisfy TechOP program requirements.
9. Appropriate campus units should explore and develop entry-level assessment tools and academic advising for students in TechOP programs. These may include portfolios, assessment of work/life experiences, and/or testing.
10. The colleges should expand on the present "across-the-curriculum" emphases.
11. Efforts in interdisciplinary course offerings should be supported.
12. Staff development activities to encourage curriculum updates and the design of quality learning experiences should be supported.
13. The Associate in Science degree competencies should be reviewed on individual campuses to best determine how the competencies will be addressed, evaluated, and measured in each TechOP course.

Program/Department

14. The Associate in Science degree in TechOp programs should foster educational growth. Consequently, if a student enters a program already satisfying a competency other than by college credit, he/she should be encouraged to enhance that competency by taking an appropriate course.
15. This document outlines the framework for determining the courses that satisfy minimum competencies. Programs should establish higher competencies if needed. Campuses should consider expansion of the level of competencies. (Refer to the Program Coordinating Committees' recommendations.)
16. Efforts in integrating workplace values across the curriculum should be strengthened.
17. Cooperative education, work experience, "live" work projects should be incorporated in the curriculum.

Linkages with Department of Education

18. High schools should be advised of Learning Foundations competencies to prepare students for associate degree matriculation.
19. The State of Hawaii K-12 and community college educational systems should fix responsibility for remedial work. While the colleges should provide appropriate means to assist

students who are not recent high school graduates to reach the program-entry level and to obtain the learning assistance they need once they have entered a program, the high schools need to be responsible for the achievement of the Learning Foundations skills by their graduates.

APPENDIX 1 — ASSOCIATE IN SCIENCE DEGREE COMPETENCIES FOR TECHNICAL/OCCUPATIONAL/PROFESSIONAL (TECHOP) PROGRAMS

Competency Areas for the Associate in Science Degree in Technical/Occupational/Professional (TechOP) Programs		
Learning Foundations		
Basic Skills Reading Writing Arithmetic Mathematics Listening Oral Communication	Thinking Skills Creative Thinking Decision Making Problem Solving Mental Visualization Knowing How to Learn Reasoning	Personal Skills Responsibility Self-Esteem Sociability Self-Management Integrity/Honesty
Associate in Science Degree Requirements At least 60 credit hours		
TechOP Courses At least 30 credit hours	General Skills Courses At least 6 credit hours	General Ed Courses At least 9 credit hours
Resources Identifies, organizes, plans, and allocates resources. Interpersonal Works with others. Information Acquires and uses information. Systems Understands complex relationships. Technology Works with a variety of technologies. TechOP Program Competencies Specific program requirements.	Communication Reading Writing Oral Communication and Listening Non-Verbal Thinking / Reasoning Mathematics	Social Environment Understands the evolving interdependent nature of societal institutions, the processes of production and consumption, and the world of work respective to their vocational program and personal life. Natural Environment Understands current explanations of the interdependent nature of the universe and the relationship of human beings to this universe. Cultural Environment Aware of and sensitive to historical events, diverse value and cultural systems, and the way personal perceptions are influenced by ethnocentrism respective to their vocational program and personal life.
Associate in Science Degree Competencies		
A graduate of a University of Hawai'i Community College who completes the Associate in Science Degree in a Technical/Occupational/Professional program should be able to:		
20. employ skills and understanding in language and mathematics essential to fulfill program requirements and to prepare for employment.		
21. understand attitudes and values of various cultures and examine their potential for improving the quality of life and meaningfulness in work.		
22. recognize effects of technology and science on the natural and human environments.		
23. understand contemporary issues and problems and respond to the impact of current conditions.		
24. demonstrate abilities of conceptual, analytic and critical modes of thinking.		
25. develop insights into human experience and apply them to		

- personal, occupational and social relationships.
26. recognize relevance of career choices to life-long learning.
27. demonstrate competence in a selected program/plan of study.

LEARNING FOUNDATIONS COMPETENCIES

Basic Skills

Student will be proficient in:

Reading:

- locate, decode, comprehend, and interpret written information;
- determine main ideas from documents;
- infer or locate meanings of unknown or technical vocabulary;
- judge accuracy, appropriateness, style, and plausibility of written material.

Writing:

- communicate feelings, thoughts, ideas, and information in writing;
- record information completely and accurately;
- create and compose documents with language, organization and format appropriate to the audience;
- revise and edit written materials.

Arithmetic:

- perform basic computations;
- use basic numerical concepts in practical situations;
- make reasonable estimates without calculator;
- use and understand tables, graphs, diagrams, charts.

Mathematics:

- approach practical problems by choosing appropriately from a variety of mathematical techniques;
- use quantitative data to construct logical explanations;
- express mathematical ideas and concepts orally and in writing;
- understand the role of chance in predicting outcomes.

Listening:

- receive, attend to, interpret, and respond to verbal messages and other cues such as body language in ways that are appropriate to the purpose.

Oral Communication:

- speak clearly;
- select an appropriate medium for conveying a message;
- organize ideas and communicate oral messages appropriate to listeners and situations;
- participate in conversation and discussions;
- use verbal and non verbal language appropriately;
- understand and respond to listener feedback;

-ask questions when needed.

Thinking Skills

Student will be proficient in:

Creative Thinking:

- generate and extend ideas;
- use imagination freely;
- change, reshape goals.

Decision Making:

- specify goals and constraints;
- generate alternatives;
- consider risks;
- evaluate and choose best alternatives.

Problem Solving:

- recognize that a problem exists;
- identify possible reasons for problem;
- devise and implement plan of action to resolve problem;
- evaluate and monitor progress of action taken;
- recognize and act on need for change;
- recognize perspectives of others in problem solving.

Mental Visualization:

- see things in the mind's eye;
- synthesize and organize elements toward achieving a goal.

Knowing How to Learn:

- select appropriate learning tools;
- use learning techniques to apply and adapt existing and new knowledge and skills.

Reasoning:

- discover and apply a rule or principle underlying a relationship between two or more things.

Personal Skills

Student will demonstrate:

Responsibility:

- exert a high level of effort and perseverance to goal attainment;
- work with goal toward excellence;
- pay attention to details in work;
- work well despite unpleasantness of a task;

- display high level of concentration;
- display high standards of professionalism in approaching and completing tasks.

Self Esteem:

- believe in own self worth;
- maintain positive view of self;
- demonstrate knowledge of own skills and abilities;
- be aware of one's impression on others;
- know own emotional capacity and how to handle it.

Sociability:

- demonstrate understanding, friendliness, adaptability, empathy, and politeness in new and ongoing group settings;
- assert self in familiar and unfamiliar social situations;
- relate well to others;
- respond appropriately in group, social situations;
- take interest in what others say or do;
- work as a member of a team;
- work as an individual.

Self Management:

- assess one's needs accurately;
- set realistic, meaningful goals;
- monitor progress toward goals set;
- respond to feedback unemotionally and without defensiveness;
- balance individual and group needs;
- develop self motivation skills.

Integrity/Honesty:

- recognize when faced with making a decision or exhibiting behavior that may break with commonly held personal or societal values;
- understand the effects upon oneself and others of violating codes of organizations;
- understand and apply ethics.

ASSOCIATE IN SCIENCE DEGREE REQUIREMENTS COMPETENCIES

TECHNICAL/OCCUPATIONAL/PROFESSIONAL COMPETENCIES

Resources

Student will be able to:

Manage Time:

- select and rank relevant, goal-related activities;
- allocate time to activities;

-follow and prepare schedules.

Manage Money:

-prepare and use budgets, make projections, keep records, and make adjustments to meet objectives, as appropriate to the program of study.

Manage Material and Facility Resources:

-acquire, store, and distribute materials appropriately.

Manage Human Resources:

-assess knowledge and skills;
-distribute work appropriately;
-evaluate human potential and performance;
-give feedback.

Interpersonal

Student will be able to:

Participate as a Member of a Team:

-work cooperatively with others and contribute to group efforts.

Teach Others:

-assist others in learning needed skills and knowledge.

Serve Clients/Customers:

-work and communicate with customers and clients to satisfy expectations.

Exercise Leadership:

-communicate thoughts, feelings, and ideas to justify a position;
-encourage, persuade, convince, or otherwise motivate an individual or group, including responsibly challenging existing procedures, policies, or authority.

Negotiate to Arrive at a Decision:

-gather information and understand range of concerns;
-work toward agreement that may involve exchanging specific resources or resolving divergent interests.

Work with Cultural Diversity:

-work well with people from a variety of ethnic, social, and educational backgrounds.

Information:

Student will be able to:

Acquire and Evaluate Information:

- identify a need for data, obtain or create the data, and evaluate their relevance and accuracy in problem solving.

Organize and Maintain Information:

- organize, process, and maintain written or computerized records and other forms of information in a systematic fashion.

Interpret and Communicate Information:

- select, analyze, and communicate information and results to others using oral, written, graphic, pictorial, or multimedia format.

Use Computers to Process Information:

- employ computers to acquire, organize, analyze, and communicate information.

Systems:

Student will be able to:

Understand Systems:

- identify a system as a regularly interacting or interdependent group of elements forming a unified whole.
- describe a collection of related elements treated as a unit when and where they interact.
- operate effectively within social, organizational, and technological systems.

Monitor and Correct Performance:

- distinguish trends, predict impacts, diagnose deviations, and take actions to correct performance.

Improve and Design Systems:

- make suggestions to modify existing systems for improvements;
- develop new or alternative systems.

Technology:

Student will be able to:

Select Technology:

- understand overall intent and choose appropriate procedures, tools or equipment, including computers and related technologies, for problem solving.

Apply Technology to Task:

- demonstrate the proper procedures for setting-up and operating machines, including computers and their programming systems.

Maintain and Troubleshoot Technology:

- prevent, identify, or solve problems in machines, computers and other technologies.

Technical/Occupational/Professional Program Competencies

Individual technical/occupational/professional programs are encouraged to set specific program competencies along the above categories; and to add categories, requirements, and statements if needed.

GENERAL SKILLS COMPETENCIES

Communications

Student will be proficient in:

Reading:

- identify and comprehend the main and subordinate ideas in a written work and summarize the ideas in one's own words;
- identify and comprehend courses of action of written instructions;
- recognize different purposes and methods of writing, identify a writer's point of view and tone, and interpret a writer's meaning inferentially as well as literally;
- separate one's personal opinions and assumptions from a writer's;
- use appropriate reference materials.

Writing:

- communicate ideas about a topic for the purpose of writing;
- conceive ideas about a topic for the purpose of writing;
- organize, select, develop, and relate ideas in coherent outline and paragraph structure;
- gather, analyze and summarize information from selected sources and report this information in appropriate formats;

Oral Communication and Listening:

- engage critically and constructively in the exchange of ideas;
- answer and ask questions coherently and concisely, and follow verbal instructions;
- identify and comprehend the main and subordinate ideas in verbal presentations, and report accurately what was said;
- conceive, develop and effectively express ideas appropriate to the nature of the audience.

Non Verbal:

- exhibit and respond appropriately to non-verbal communication.

Thinking / Reasoning

Student will be able to:

- identify and formulate problems, as well as the ability to propose and evaluate ways to solve them;
- use inductive and deductive reasoning and discern fallacies in reasoning;
- draw reasonable conclusions from information found in various sources, whether written, spoken, or displayed in tables and graphs, and to defend one's conclusions rationally;
- distinguish between fact and opinion;
- perform academic inquiry, which includes the ability to identify the issues in complex problems, to collect relevant information to test all arguments, to eliminate those that rest on faulty reasoning, to organize findings, to arrive at conclusions, and to choose the appropriate form of communication;
- utilize strategies of thinking that engender the enhancement of creativity.

Mathematics

Student will be able to:

- use effectively and efficiently the mathematics of integers, fractions, and decimals; ratios, proportions, and percentages; roots and powers; algebra and spatial relationships;
- select and use appropriate mathematical approaches in solving problems;
- formulate, interpret, and solve word problems in mathematical terms;
- make and use estimates and approximations, and judge the reasonableness of estimates, approximations and mathematical calculations;
- apply concepts of probability and statistics;
- make and use measurements in standard and metric units.

GENERAL EDUCATION COMPETENCIES**Social Environment:**

Students will be able to:

- understand issues involved in ethnocentrism;
- understand the issues in the formation of ethical principles;
- understand the relationships between political and economic institutions;
- understand economic cause and effect and how economic systems influence the behavior of individuals and groups;
- understand and utilize the processes involved in personal and career goal-setting and decision-making;
- understand the significance of work in our lives and how work patterns reflect values and shape the social climate of culture;
- identify, understand, and appreciate the uniqueness of oneself.

Natural Environment:

Students will be able to:

- demonstrate quantitative understanding in exploring the scientific domain;
- demonstrate the acquisition of detailed specific knowledge in the sciences and an appreciation of the historical development of that knowledge;
- use inquiry, questioning, experimentation and observation in problem solving and distinguishing scientific evidence and personal opinion;
- understand the pervasive uses of science and technology in society, and their limitations;
- understand the functions our species perform in the ecosphere.

Cultural Environment

Students will be able to:

- analyze cause and effect relationships in historical events and abstractions;
- understand the historical developments underlying present relationships and to discern the similarities among the world's peoples, as well as the major differences dividing them;
- understand the social and intellectual influences affecting artistic forms;
- understand the causes and reasons for international cooperation, competition, and strife;
- appreciate the attempts of others to decipher the ethical and fundamental questions of life posited throughout history;
- develop insights into the future based on historical knowledge.

The Role of General Education in the Associate in Science Degree

The existence of general education in the American college curriculum can be traced back to the early 19th century. The course of its popularity and acceptance as an essential part of the college curriculum is characterized by many peaks and valleys — generally as a result of new trends in the field of education or shifts in public sentiment.

General education is a concept that has always been a part of education programs at American colleges. Yet while most colleges recognize a need for general education, there is a wide divergence in the philosophies of general education. Though substantially different, each supports the need for breadth in general education.

The earliest colleges offered a broad classical education, but the growth of knowledge and the evolution of science and technology brought about the need for more specialized knowledge. Educational systems responded through a proliferation of highly specialized disciplines of study and through the growth of community colleges offered highly specialized vocational programs.

Historically, the biggest problem faced by faculties developing general education programs has been that of determining an acceptable and workable definition of the term. Many definitions exist, but they are either so narrow that they lack flexibility, or they are so broad that they become vague. The [task force] adopts the following definition as best suiting the community college students' needs and the vocational-technical associate degree programs:

General education is the process by which students acquire the common knowledge, skills, understandings, attitudes, and values needed to function effectively as students, workers, family members, and citizens.

General education for the community college vocational-technical associate degree students should complement their vocational-technical skills training and should allow them to develop an integrated view of knowledge, a more authentic view of life, and a more defined sense of community and social responsibility. A successful general education program enables students to develop the skills and understandings necessary to survive and succeed in an increasingly complex work-place and a fast-changing society.

Incorporated in the idea of this definition is that general education "...grounds the construct in the everyday affairs of a person: dealing with supervisors and co-workers, choosing associates, coping with family problems, and spending leisure time in socially desirable and personally satisfying ways. To be successful, a general education program not only makes explicit the skills and understanding to be attained but also relates those competencies to the external referents, to what people are doing when they have gained them" (Cohen and Brawer 318). In following, as educators we should strive to prepare our students with the professional and social skills needed for the world of work and instill in them the idea of life-long learning.

The unique role of general education courses in occupational education programs was recently explored by a Shared Vision Task Force comprised of community college presidents, deans, department chairs, and faculty. As part of their three year study, they defined and validated, through national surveys of community college faculty and administrators, as well as business and industry leaders, those general education competencies that students need in addition to the technical expertise of their respective careers.

The first round of survey findings indicated that community college faculty and administrators believe general education courses contribute to students' occupational development in the following ways. Studies in general education offer:

1. An appreciation for what is significant about human life — past, present, and projections for the future.
2. The ability to understand and empathize with others through the development of an understanding of human needs and problems.
3. An understanding, beyond proficiency in basic language skills, of the unavoidable ambiguities, vagaries, and value-laden nature of human language.
4. The ability to recognize the limits and goals in applying analytical skills to the resolution of human problems and dilemmas.
5. An appreciation of the variety of human purposes and values to be realized in solving problems.
6. The ability to approach and make decisions concerning problems that may not have a singular resolution.
7. An appreciation of the importance of responding appropriately to change as an essential and necessary human activity.
8. The ability to make judgments reflective of human values: ethical, aesthetic.
9. An appreciation of what human beings hold in common that encourages their sense of civic purpose and responsible citizenship.
10. An appreciation of the values of diverse cultures.

(Shared Vision Task Force of the National Council for Occupational Education and the Community College Humanities Association, 39-40)

General education, then, provides students the opportunity to develop understandings, abilities, values, and attributes which enable them to apply their knowledge, skills, and talents to make judicious decisions and to analyze and solve human problems within a multi-cultural community.

General education is that part of education which encompasses the common knowledge, skills, and attitudes needed by each individual to be effective as a person, a family member, a worker and a citizen. General education is integrated with, but different in emphasis and approach from special training for a job or a profession. Further, general education for the vocational-technical associate degree student should not be confused with liberal education for the baccalaureate student. General education should allow a student to gain a more integrated view of knowledge, a more realistic view of life and a more defined sense of community and social responsibility. Because of the belief that knowledge leads

to actions, students should be actively engaged in learning. This holistic point of view provides the student a foundation of lifelong learning in a changing world.⁵

ASSOCIATE IN SCIENCE DEGREE COMPETENCIES

A graduate of a University of Hawai`i Community College who completes the Associate in Science Degree in a Technical/Occupational/Professional (TechOP) program should be able to:

30. employ skills and understanding in language and mathematics essential to fulfill program requirements and to prepare for employment.
31. understand attitudes and values of various cultures and examine their potential for improving the quality of life and meaningfulness in work.
32. recognize effects of technology and science on the natural and human environments.
33. understand contemporary issues and problems and respond to the impact of current conditions.
34. demonstrate abilities of conceptual, analytic and critical modes of thinking.
35. develop insights into human experience and apply them to personal, occupational and social relationships.
36. recognize relevance of career choices to life-long learning.
37. demonstrate competence in a selected program/plan of study.

⁵ *Curriculum Committee Report on General Education for the Associate in Science Degree.* Honolulu: Kapi`olani Community College, [1991]

APPENDIX 2 — ASSOCIATE IN SCIENCE DEGREE TASK FORCE MEMBERS

The Associate in Science Degree Task Force consisted of:

Hawai`i Community College

Marsha Kayano
Harry Kawamura
Shirley Metcalf

Honolulu Community College

Valerie Evans
Miles Nakanishi
Stanley Oganeku

Kapi`olani Community College

Kent Killam
Leon Richards

Kauai Community College

Harold Nakamura
Helen Sina

Leeward Community College

Elena Bumanglag
Bob Hochstein

Maui Community College

Diane Meyer
Jeanne Pezzoli

Windward Community College

Karla Jones
Emi Troeger

Employment Training Center

Kay Beach
Peggy Cha

Office of the Chancellor for Community Colleges

Rg Logiakis
John Muth

APPENDIX 3 — COMMONLY ASKED QUESTIONS

POLICY

1. **Q:** Can a single program have both an AS and AS Applied? If yes, can this be automatic?
A: It is possible for a single program to offer both, but it would not be automatic. Existing programs first need to be determine the current degree variation to be awarded. The additional option would depend upon resource requirements and demonstrated need and may require separate BOR approval.

2. **Q:** What is "college level" for courses? and does it apply to all options? Does it have anything to do with course numbering?
A: College level has nothing to do with course numbering, but rather refers to course materials offered at levels which are appropriate to all programs. Generally this means at a level higher than in high-school where programs are commonly offered.

3. **Q:** What are the differences between the AS degree and the existing AA degree. Should all TechOP students desiring to transfer to UH-Manoa take the AS degree?
A: No. One of the main criteria for the AS degree is that it be transferable to a receiving four-year college. That four-year degree route varies for community colleges students whose goal is to graduate from UH-Manoa. For some, such as business, education and engineering majors, the completion of an AA will be necessary because of core requirements established by the receiving UH-Manoa programs. For others, such as nursing majors, the route is aligned with the AS degree TechOP program. It is essential that this information be stated clearly in print material for advising purposes.

PROCESS

1. **Q:** How will transcripts and/or other records account for the differences within the AS degree?
A: Transcripts should carry the notation: **AS; AS Applied; AS Customized** together with the program area. The diploma will indicate the awarding of an AS degree in a TechOP program.

2. **Q:** Do TechOP program courses numbered lower than 100 go into the Learning Foundations?

A: No. The learning foundations refer to certain basic skills, academic levels, and personal skills. The learning foundations are intended as pre-program foundations.

3. **Q:** Will **each AS Customized** program need to be approved by campus curriculum committees?
A: Not as described. The BOR would approve the degree for each campus that wishes to offer this option. The "putting together" process is defined in this document. Since this takes advantage of existing courses and resources, no separate curriculum committee approval is required.
4. **Q:** Will students be able to piggyback courses--have one or more courses satisfy requirements in different degree options?
A: Certainly courses may satisfy more than one option, but a student will be formally designated in only one AS degree variation.
5. **Q:** Competencies are so vague. How will they be evaluated? Can they be measured?
A: Competencies are intended to be guidelines and should be fulfilled at individual campuses. The specific requirements are intended to be program specific. Individual programs and PCC's are best able to determine their own competency definitions and measurement.
6. **Q:** Does Baccalaureate Level refer to "baccalaureate performance" or ability to transfer into some existing baccalaureate program at a four-year college?
A: Both interpretations are acceptable. A specific course can be termed baccalaureate level and numbered 100 or higher using either process.

MISCELLANEOUS

1. **Q:** Will the **AS Customized** be awarded by subject matter or occupation?
A: This is an occupation specific degree, not a general subject matter degree.
2. **Q:** Are we encouraging the use of portfolios as an assessment tool for entry or exit requirements?
A: Yes.
3. **Q:** Is the idea of learning foundations realistic given the placement of a large proportion of our entering student body? What effect will this have on the "Open Door" policy?
A: This will not close the Open Door, however it may impact student entrance into specific TechOP Programs.
4. **Q:** Should instructors be expected to take on the additional burden of social skills as noted in SCANS? Are these skills

measurable? Instructors currently have barely enough time just to teach the subject matter.

A: The proposed structure does indeed have implications for teaching and learning. This is a new paradigm for most instruction, and the implications are immense. The answer is, however, emphatically yes. Instructors may generally need some additional assistance and or training to implement this model successfully.

5. **Q:** How can an AS student gain all that is claimed as General Education in 9-15 credits? Does this represent a curriculum that is yet to be put in place in our community colleges?

A: The competencies are to be gained through the entire TechOP program and will be supported in the TechOP courses as well as the General Education courses. There will have to be curriculum modifications to include the General Education competencies into all AS degree courses.

6. **Q:** What assistance will be given to faculty and staff to implement the intent of this degree?

A: In order to be implemented successfully, faculty and staff will require additional training over a period of time. Additionally, this paradigm will require a reasonable time frame to implement fully. It will have to be an incremental process.

7. **Q:** Are separate general education courses for vocational education students going to become the norm? It would seem counterproductive to the goal of general education to fragment our curriculum and students this way.

A: While new courses may be developed to meet the General Education competencies for the TechOP AS degree programs they will be available and applicable to all students.