

COST DISTRIBUTION TO PROGRAMS

NEW JERSEY,
"

DEPARTMENT OF HIGHER EDUCATION,

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New Jersey
Department of Higher Education
Cost Distribution to Programs

C O N T E N T S

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PROGRAM CLASSIFICATION STRUCTURE

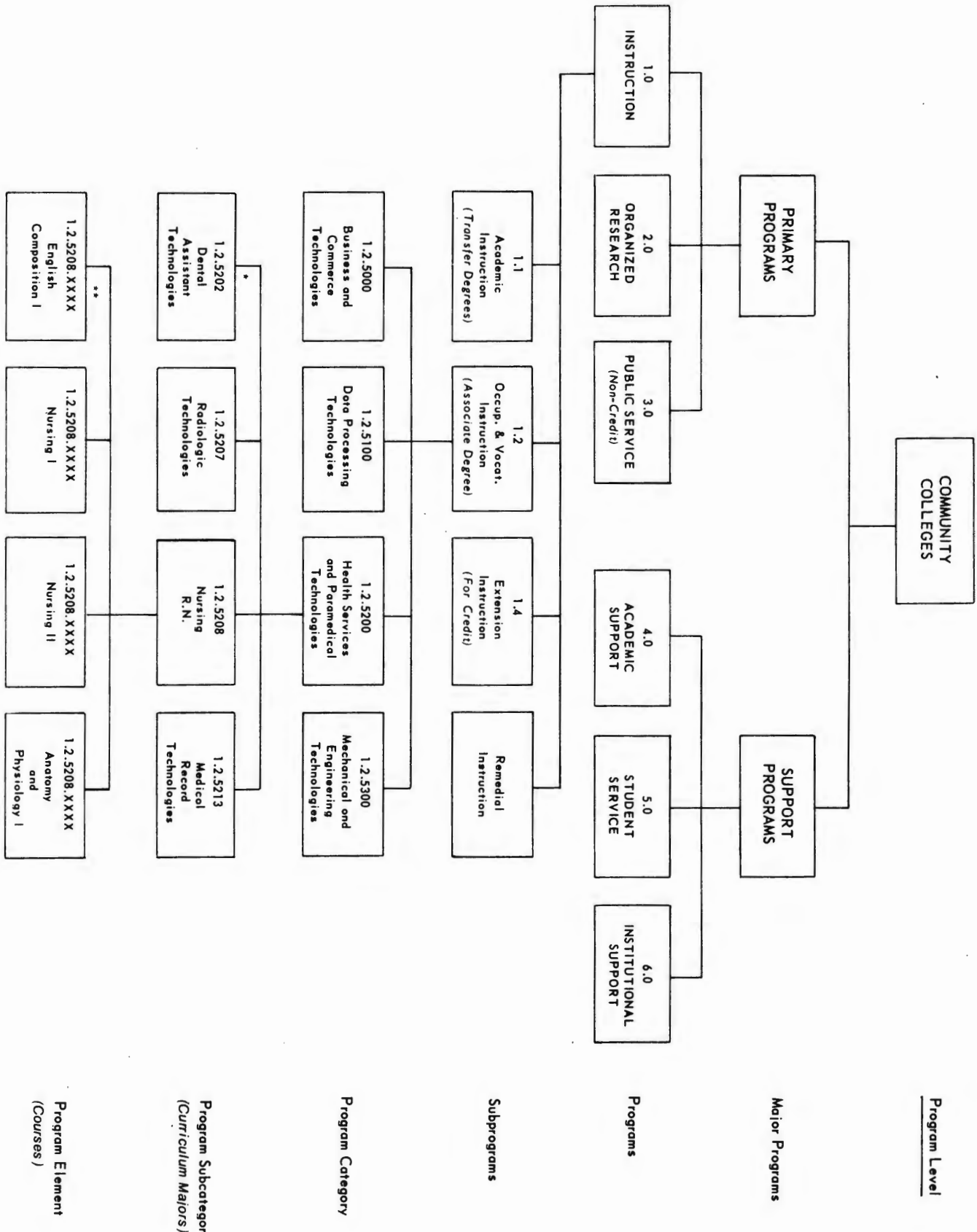


FIGURE 1

Program Level

Major Programs

Programs

Subprograms

Program Category

Program Subcategory
(Curriculum Majors)

Program Element
(Courses)

* Digits 3 through 6 are per the Hegis Taxonomy.
 ** Digits 7 through 10 are assigned by the individual colleges to identify their courses.

COST DISTRIBUTION TO PROGRAMS

SECTION I

OVERVIEW OF PROGRAM COST SYSTEM

General

This section will describe generally the basic program cost system which will be required of all community colleges of New Jersey.

In developing program costs the community colleges should familiarize themselves with the Program Classification Structure (PCS) developed by the National Center for Higher Education Management Systems (NCHEMS).¹

Definition of a Program

NCHEMS' definition of a program is "a set of program elements serving a common objective." An example of a program element is an instructional course such as Introduction to Accounting. A combination of courses with the common objective of forming a curriculum major is considered a program subcategory or a basic instructional program.

Courses and curriculum majors are only part of the Program Classification Structure (PCS) developed by NCHEMS. There are many levels in the NCHEMS' PCS of which the program element is the lowest level. Figure 1 illustrates the application of the NCHEMS' PCS to the community colleges.

The highest levels in the NCHEMS' PCS are the Primary and Support Programs which are divided as follows:

- Primary Programs
 - Instruction Programs
 - Public Service
 - Organized Research

- Support Programs
 - Academic Support Programs
 - Student Service Programs
 - Institutional Support Programs

¹ See Program Classification Structure, Technical Report No. 27; January 1972 Published by National Center for Higher Education Management Systems.

The main emphasis of the program cost system will be the development and reporting of the full cost of the primary programs for all program levels down to and including the program subcategories under the program, instruction. These are the curriculum majors, such as Accounting and Nursing, leading to a degree or certificate. To facilitate uniform reporting of these program subcategories each college will use the HEGIS Taxonomy² to identify their curriculum majors. The HEGIS taxonomy has been adopted by NCHEMS as the core portion of PCS.

Within the instruction program there is a subprogram called Extension Instruction for Credit (See Figure 1; 1.4). The student cost of credit courses taken by students who do not desire a degree or have not decided upon a curriculum major are combined to form this subprogram.

In addition to instruction programs the college also provides services to the public in the form of continuing education or extension courses. These are non-credit courses. The cost of these courses will be calculated and reported under public service programs within PCS (See Figure 1; 3.0).

Support programs are those activities necessary for the successful operation of the primary programs. They include the cost of libraries, administration and student services. These programs are the indirect costs of the primary programs. Once the support program costs have been determined they will be distributed to the primary programs.

Objective of Program Cost System

The objective of the program cost system is to develop budgeted and actual cost for the college's primary program subcategories. The cost developed for primary programs subcategories will be a full cost, reflecting all of the

² Standard taxonomy of fields of study used in the Higher Education General Information Survey (HEGIS) published by the National Center for Educational Statistics.

resources used or "consumed". For example, the cost of a primary program subcategory will include:

- Instructional Costs
 - Direct Costs
 - Indirect Costs

- Other Support Costs
 - Student Services
 - Institutional Support
 - Academic Support

- Depreciation Costs (Equipment/building)

Program Cost Centers

Each of the program types as shown on the Community College "PCS" classification structure (i.e., Figure 1) will be considered a program cost center. A separate program cost center will also be established to record depreciation costs. Thus, the program cost centers are as follows:

- Primary Cost Centers
 - Instruction
 - Public Service
 - Organized Research

- Support Cost Centers
 - Academic Support
 - Student Services
 - Institutional Support

- Depreciation

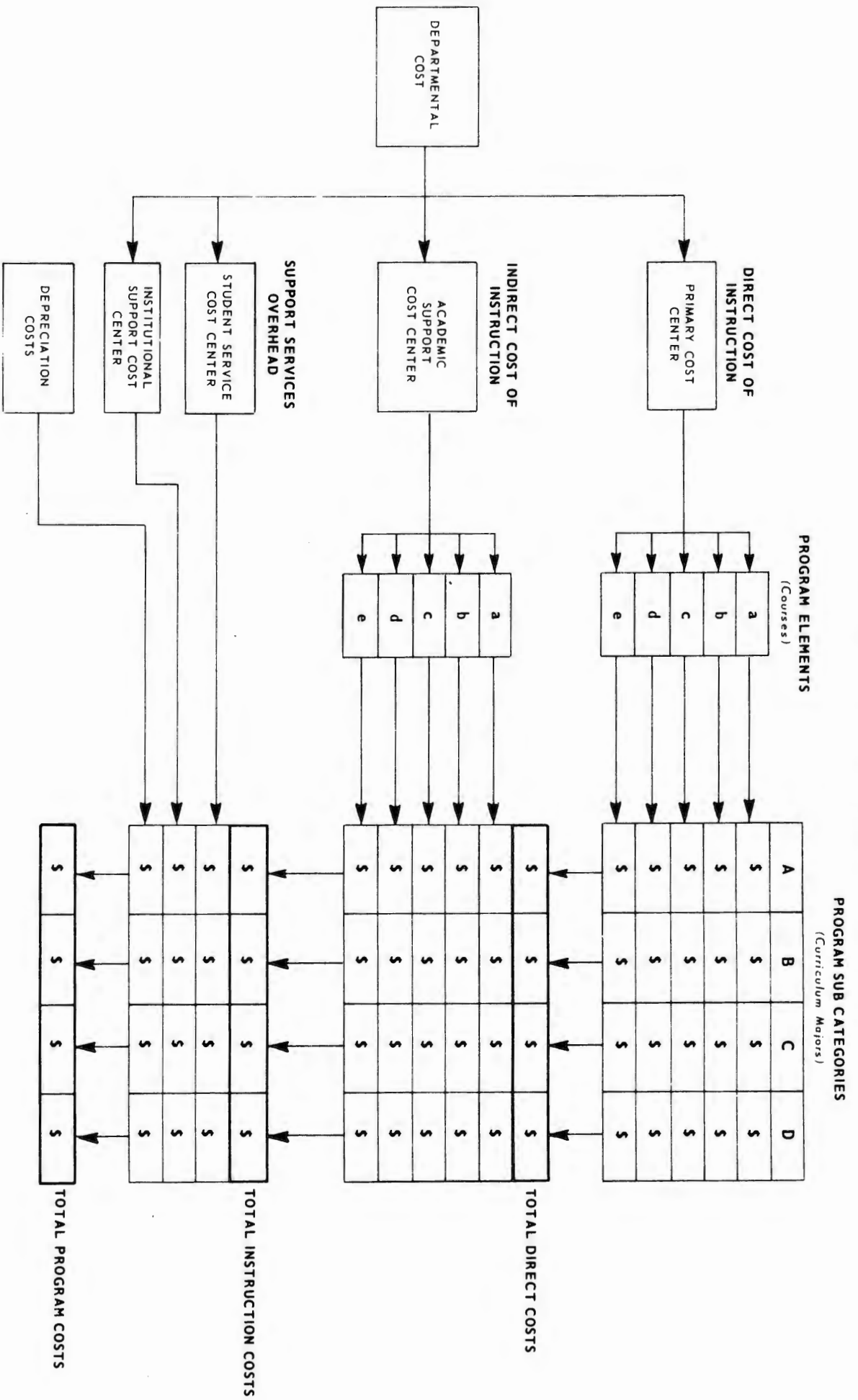
These cost centers are to be used to aggregate costs prior to distributing them to program subcategories. When support cost centers are distributed to primary program subcategories their identity within a program is not to be lost in the distribution process. Thus, within the total cost of a primary program subcategory it will be possible to identify how much of the total cost is related to each of the support programs.

General Description of the Program Cost Accounting Process

The program cost accounting process begins with the identification of departmental costs as presently maintained by the colleges. However, departments

FIGURE 2

PROGRAM COST ACCOUNTING PROCESS



of the college may support more than one of the various program subcategories. Thus, departmental costs must be allocated to program subcategories through the program cost distribution process.

The program cost distribution process will distribute costs to program subcategories based on actual usage or by a pro-rata allocation method that has a high correlation to the actual usage. As a general rule, costs will be distributed to program subcategories wherever possible according to actual usage. Where it is not possible or practical to use actual costs, the college will use the pro-rata allocation methods described in this chapter.

The program cost accounting process (See Figure 2) begins by distributing the departmental costs to the program cost centers. Then, the primary and academic support cost centers, which are the direct and indirect instructional costs respectively, are distributed to courses. Thus, the instructional cost for each course will be determined. Each course cost will then be pro-rated to a program subcategory according to the curriculum majors of the students enrolled. For example, the cost of an English 101 course of \$1,000 would be distributed as follows:

<u>Program Subcategory (Curriculum Major)</u>	<u>No. of Student</u>	<u>%</u>	<u>Cost</u>
Liberal Arts	60	50	\$ 500
Accounting	30	25	250
Nursing	30	25	<u>250</u>
			<u>\$1,000</u>

If a student enrolled in a course has not indicated a curriculum major, the cost of that student is charged to the sub-program, Extension Instruction-For Credit. The cost of non-credit courses should be identified as a separate "sub-program". Throughout the distribution process the Direct Instructional and Academic Support Costs will be kept separate.

The remaining support cost centers will be distributed directly to program subcategories based on program subcategory enrollment. For example:

<u>Cost Centers</u>	<u>Support Program Costs</u>	<u>Primary Programs Sub-Categories</u>			
		A	B	C	D
		<u>Enrollments</u>			
		100	400	350	150
Student Services	\$10,000	\$1,000	\$4,000	\$3,500	\$1,500
Institutional Support	15,000	\$1,500	\$6,000	\$4,250	\$2,250
Building Depreciation	5,000	\$ 500	\$2,000	\$1,750	\$ 750

Definition of Costs

Primary Program Subcategory Costs include:

1. Direct costs of instruction. These costs will be developed by course. The direct costs are:
 - a. Salaries and benefits of instructors and para-professionals paid for the teaching and grading of courses.
 - b. Educational supplies used directly by the teacher or the students of a course. Example: laboratory supplies.
 - c. Contract educational services which are employed for a specific course. Example: a chartered bus used in a class field trip.

2. Academic support costs which are the indirect costs of instruction. These costs will be developed by course. the indirect costs are:

- a. Department Administration which includes:
 - Cost of the Dean of Instruction and his office.
 - Administrative and clerical/secretarial salaries and benefits of the instruction departments.
 - Office expenses of the instruction departments including office supplies, telephone, postage, subscriptions, membership, travel, and other miscellaneous costs incurred by the Department.
 - Media Center costs which includes the preparation, purchase and maintenance of films and other audio visual aids.
 - b. Library Costs
 - c. Data processing costs related to instruction.
 - d. Equipment depreciation applicable to instruction.
It includes deprecation for classroom furniture and equipment plus office equipment used by the instruction departments.
 - e. Plant maintenance costs applicable to classrooms, class equipment and offices assigned to the instruction departments.
3. Support Services Overhead costs which are the Administrative indirect costs. They include:
- a. Student Services Cost Center
 - Financial Aid (administrative costs only)
 - Student Support
 - Counseling and Career Guidance
 - Social and Cultural Development

b. Institutional Support Cost Center Cost

- President's office
- Business office
- Security

4. Depreciation costs will be calculated on a straight line basis. Depreciation can be calculated per item or by the composite method. The composite method first converts the life to a percentage. The percentage is then applied to the cost of capital, in order to arrive at the amount of depreciation. For example, if the depreciable life is 40 years the percentage would be 2.5 (100 divided by 40). The 2.5% times the initial cost of capital of \$100,000 would provide a depreciation cost of \$2,500. The composite method as opposed to the depreciation by item method, does not allow for assets which might have exceeded their depreciable life. Depreciation Costs include:

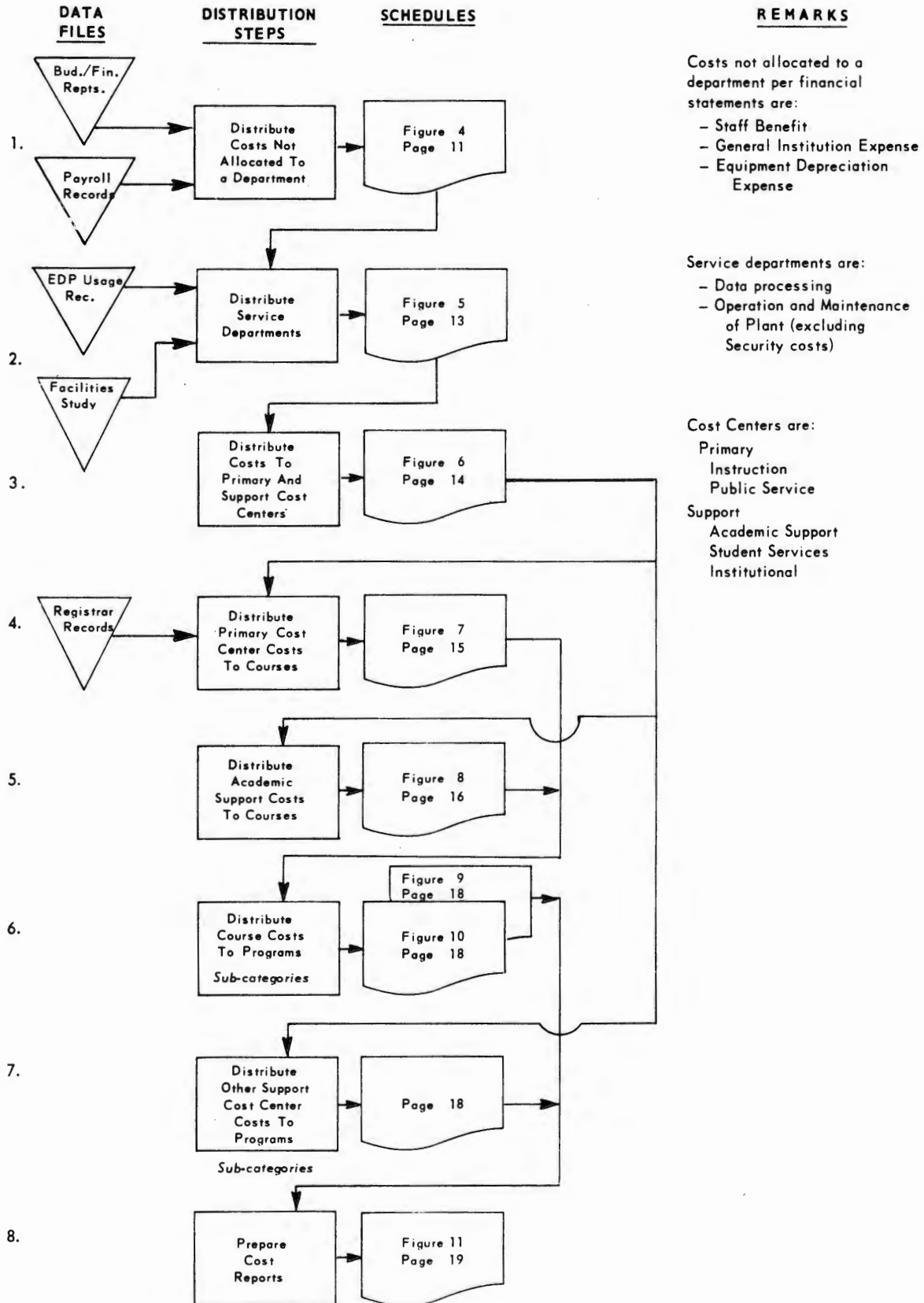
a. Equipment which will be grouped and assigned a depreciable life as follows:

	<u>Life</u>
Scientific equipment	5 years
Medical equipment	5 years
Furniture	10 years
Auto Equipment (Vehicles)	4 years
Office Machines	5 years
Plant Equipment	10 years
Audio Visual Equipment	5 years

b. Buildings which will be depreciated over a 40 year life.

FIGURE 3

STEPS TO DISTRIBUTE COSTS TO PROGRAMS



COST DISTRIBUTION TO PROGRAMS

SECTION II

DISTRIBUTION OF COSTS TO PROGRAMS

General

The following paragraphs describe in detail the steps necessary to distribute costs to program subcategories. Figure 3 shows the distribution steps and their sequence indicating the flow of input data and schedules.

The primary cost data to be distributed to programs will be that found on Schedule 5 of the Annual Budget Request. The first amount column in Figure 4 illustrates a typical Schedule 5. However, for purposes of this example, some of the departmental costs have been summarized. Depreciation costs for building and equipment are to be added to the bottom of Schedule 5 as reconciling items.

XYZ College

DISTRIBUTION OF NON-DEPARTMENTAL EXPENSES TO DEPARTMENTS

	Schedule 5 Costs	Staff Benefits(1)	Equipment Depreciation(2)	General Institutional	Departmental Costs
General Administration:					
President's Office	\$ 28,000	\$ 1,060	\$ 1,000		\$ 30,060
Business Office	32,700	1,190	5,000	\$12,000	50,890
General Expenses:					
Student Services	32,650	1,300	1,000		34,950
Staff Benefits	42,350	(42,350)			
General Institutional	22,800			(22,800)	
Data Processing	70,000	1,290	1,000		72,290
Instruction:					
Dean of Instruction					
Salaries	30,000	860			30,860
Other	5,000		1,000	2,000	8,000
Classroom Space			20,000		20,000
Department 1					
Salaries	220,000	7,970			227,970
Other	25,000		15,000	800	40,800
Department 2					
Salaries	420,000	15,930			435,930
Other	50,000		10,000	2,000	62,000
Organized Activities	7,100			1,000	8,100
Extension and Public Services	111,300	4,510		2,000	117,810
Learning Resources					
Administration	20,000	650	1,000	1,000	22,650
Library	34,700	860	10,000	1,000	46,560
Media Center	40,000	1,300	10,000		51,300
Operation and Maintenance of Plant					
	159,100	5,000	20,000	1,000	185,100
Other (3)	35,000	430	5,000		40,430
Total Current Expenditures	<u>1,385,700</u>	<u>-0-</u>	<u>100,000</u>	<u>-0-</u>	<u>1,485,700</u>
Depreciation:					
Equipment	100,000		(100,000)		
Buildings	100,000				100,000
Total Cost of Programs	<u>\$1,585,700</u>	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>	<u>\$1,585,700</u>

(1) Distributed on an actual cost basis or pro-rated equally over all salaries.

(2) Per inventory records.

(3) Auxiliary enterprises and student aid.

Distribution of Nondepartmental Expenses to Department

The first step, as shown in Figure 4, is to distribute to departments those expenses which are not budgeted by an individual department. Examples of these expenses are staff benefits, general institution expenses and, equipment depreciation expense. These expenses are distributed to departments as follows:

1. Staff benefits can be distributed to departments by either of the following.
 - Prorated equally over all salaries
 - On an actual cost basis. For example, FICA costs can usually be identified to a particular employee and thus to a department.
2. Equipment depreciation is distributed by identifying the equipment being depreciated to a particular department per plant inventory records. Classroom furniture and equipment which can be used by more than one instructional department should be charged initially to the Dean of Instruction office under the classification of cost of classrooms.
3. General institution expenses include such items as:
 - Postage
 - Telephone
 - Insurance
 - Legal and Accounting
 - Equipment service contracts

Expenses such as postage, telephone and equipment service contracts, which are used directly by the departments of the college, should be allocated to the departments incurring these expenses. The remaining general institution

expenses such as legal services, accounting, and insurance which are general in nature can be distributed at this point in the distribution process on the same basis as other administrative expenses.

FIGURE 5

XYZ College

DISTRIBUTION OF SERVICE DEPARTMENTS

	Net Assignable Square Feet	Departmental Costs	Operation and Maintenance of Plant (1)	Data Processing (2)	Departmental Costs
General Administration:					
President's Office	5,000	\$ 30,060	\$ 2,500		\$ 32,560
Business Office	10,000	50,890	5,000	\$25,000	80,890
General Expenses:					
Student Services	5,000	34,950	2,500	5,000	42,450
Data Processing	10,000	72,290	5,000	(77,290)	
Instruction:					
Dean of Instruction					
Salaries		30,860			30,860
Other	5,000	8,000	2,500	10,000	20,500
Classroom Space	140,000	20,000	70,000		90,000
Department 1					
Salaries		227,970			227,970
Other	5,000	40,800	2,500	30,000	73,300
Department 2					
Salaries		435,930			435,930
Other	5,000	62,000	2,500		64,500
Organized Activities					
		8,100			8,100
Extension and Public Services					
		117,810		7,290	125,100
Learning Resources:					
Administration	5,000	22,650	2,500		25,150
Library	25,000	46,560	12,500		59,060
Media Center	5,000	51,300	2,500		53,800
Operations and Maintenance of Plant:					
Plant Maintenance		110,000	(110,000)		
Security		75,100			75,100
Other (3)					
		40,430			40,430
Depreciation of Building					
		100,000			100,000
Totals	<u>220,000</u>	<u>\$1,585,700</u>	<u>\$ -0-</u>	<u>\$ -0-</u>	<u>\$1,585,700</u>

(1) Distributed on the Basis of Net Assignable Square Feet

(2) Data Processing distributed on the basis of actual usage by the department.

(3) Other consists of auxiliary enterprises and student aid.

Distribution of Service Departments

Departments identified as Service departments are those that are adjunct to or indirect support of other departments. They are:

- Data Processing
- Operation Maintenance of Plant
(excluding Security Costs).

Figure 5 illustrates the distribution of these costs. The departmental costs shown in the first column were brought forward from Figure 4. Examples of service departments' and their distributions are as follows:

1. Data Processing costs are to be distributed on the basis of actual usage of Data Processing Services.
2. The Operation and Maintenance of Plant costs (excluding Security cost) will be distributed on the basis of net assignable square feet.³ In determining the net assignable square feet for each department, areas such as corridors, stairwells, rest rooms, etc., will not be included. Areas such as classrooms, which can be used by many different departments, will require further allocation. However, at this point in the allocation procedure the total cost of classroom space will be assigned to the Dean of Instructions as shown in Figure 5. Once the net assignable square feet for each department has been calculated the cost of the Operation and Maintenance of Plant will be prorated to them.

³ See Facilities Standards and Planning Manual for New Jersey County Community Colleges, Revised September 1, 1970.

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DISTRIBUTION TO PRIMARY AND SUPPORT COST CENTERS

	Departmental		Primary Cost Centers		Support Cost Centers		
	Costs	Instruction	Public Service	Academic Support	Student Services	Institutional Support	Building Depreciation
General Administration:							
President's Office	\$ 32,560					\$ 32,560	
Business Office	80,890					80,890	
General Expenses:							
Student Services	42,450				\$42,450		
Instruction:							
Dean of Instruction							
Salaries	30,860			\$ 30,860			
Other	20,500			20,500			
Classroom Space	90,000			90,000			
Department 1							
Salaries	227,970	\$200,000		15,000	5,000	7,970	
Other	73,300	10,000		60,000	3,300		
Department 2							
Salaries	435,930	400,000		15,000	10,000	10,930	
Other	64,500	30,000		32,000	2,500		
Organized Activities	8,100				8,100		
Extension and Public Services	125,100		\$100,000	25,100			
Learning Resource:							
Administration	25,150			25,150			
Library	59,060			59,060			
Media Center	53,800			53,800			
Security	75,100					75,100	
Other	40,430					40,430	
Building Depreciation	100,000						\$100,000
Total Cost of Programs	<u>\$1,585,700</u>	<u>\$640,000</u>	<u>\$100,000</u>	<u>\$426,470</u>	<u>\$71,350</u>	<u>\$247,880</u>	<u>\$100,000</u>

Segregation of Departmental Costs into Primary and Support Cost Centers

Figure 6 is an example of how the departmental costs brought forward from Figure 5 are classified as primary and support cost centers. Primary and support cost centers are the direct cost of the corresponding primary and support programs. It is possible for a department's cost to be applicable to more than one cost center. For example, a salary paid to an instructor may include, in addition to his teaching duties, other duties such as guidance or administration.

The cost centers, to which departmental costs will be distributed, conform to the NCHEMS program classification structure. They are:

Primary Cost Centers (Direct Costs)

Instruction

Instructor's and paraprofessional assistant's salaries and benefits, direct supplies, and contracted costs for a course.

Public Service and Continuing Education (Non-credit Instruction)

Instructor's salaries and benefits, direct supplies, and contracted costs for a course.

Support Cost Centers (Indirect Costs)

Academic Support Costs (Indirect Instruction Costs)

Dean of Instruction Costs

Administrative and office expenses for instruction department.

Libraries

Media Center

Data Processing Costs applicable to instruction.

Course and Curriculum Development

Student Services

Financial Aid (Excludes agency funds)

Student Support

Counseling and Career Guidance

Social and Cultural Development

Institutional Support

President's office

Business office

Security

XYZ College

DISTRIBUTION OF PRIMARY COST CENTERS TO COURSES

	<u>Primary Cost Center</u>	<u>Salaries and Benefits Contact Hours</u>	<u>Cost Per(1) Course</u>	<u>Other Supplies Per Actual Usage</u>	<u>Primary Cost Center</u>
Instruction:					
Department 1					
Salaries	\$200,000		(\$200,000)		
Other	10,000			(\$10,000)	
Department 2					
Salaries	400,000		(400,000)		
Other	30,000			(30,000)	
Extension and Public Services	<u>100,000</u>		(100,000)		
Total Direct Instruction Costs	<u>\$740,000</u>		<u>(\$700,000)</u>	<u>(\$40,000)</u>	
		<u>Courses</u>			
Department 1					
a		600	\$ 60,000	\$ 5,000	\$ 65,000
b		700	70,000	---	70,000
c		400	40,000	5,000	45,000
d		<u>300</u>	<u>30,000</u>	<u>---</u>	<u>30,000</u>
Total Department 1		<u>2,000</u>	<u>200,000</u>	<u>10,000</u>	<u>210,000</u>
Department 2					
a		800	128,000	10,000	138,000
b		300	48,000	5,000	53,000
c		900	144,000	10,000	154,000
d		<u>500</u>	<u>80,000</u>	<u>5,000</u>	<u>85,000</u>
Total Department 2		<u>2,500</u>	<u>400,000</u>	<u>30,000</u>	<u>430,000</u>
Extension and Public Services		<u>1,000</u>	<u>100,000</u>	<u>---</u>	<u>100,000</u>
Totals		<u>5,500</u>	<u>\$700,000</u>	<u>\$40,000</u>	<u>\$740,000</u>

(1) Departmental faculty salaries and benefits are pro-rated over the courses taught by the department using Contact hours or other basis for compensation.

Distribution of Primary Cost Center Costs to Courses

Figure 7 illustrates the distribution of the primary cost center costs determined in Figure 6. The primary cost center costs to be distributed and their method of allocation are:

1. Salaries and benefits which will be distributed by department to the courses taught by that department. The method of allocating these costs can be one of the following:
 - Actual payroll costs applicable to a course.
 - A proration of total costs to the courses on the basis of compensation (contact hours, credit hours, points, etc.) Figure 5 uses contact hours in distributing the costs. However, any of the other ways in which an instructor's compensation is determined may be substituted.
2. Supplies which can be identified directly to a course. Supplies which are not applicable to a particular course will be distributed as part of the Academic Support cost center.
3. Contracted costs will be distributed directly to the course which contracted them. This can include such items as chartered buses and other special rental charges.

FIGURE 8

XYZ College

DISTRIBUTION OF ACADEMIC SUPPORT COSTS TO COURSES

	Allocation Parameters Contact Hours (1)	Enrollment Courses	Academic Support Costs	Classroom Space (2)	Data Processing (3)	Equipment Depreciation (4)	Media Center (5)	Remaining Cost of Instr. Depts. (6)	Remaining Academic Support Cost (7)	Total
Instruction:										
Dean of Instruction			\$ 30,860						(\$ 30,860)	
Salaries			20,500						(20,500)	
Other			90,000	(\$90,000)						
Classroom Space										
Department 1			15,000					(\$ 15,000)		
Salaries			60,000					(28,000)		
Other										
Department 2			15,000					(15,000)		
Salaries			32,000					(26,000)		
Other										
Extension and Public Service			25,100					(25,100)		
Learning Resource:										
Administration			25,150						(25,150)	
Library			59,060						(59,060)	
Media Center			53,800							
Total Academic Support Costs			\$426,470	(\$90,000)	(\$30,000)	(\$8,000)	(\$53,800)	(\$109,100)	(\$135,570)	\$
Department 1	a	600	200	\$ 9,800		\$1,000	\$ 6,000	\$ 12,900	\$ 17,380	\$ 46,080
	b	700	185	11,500			7,000	15,050	16,080	50,630
	c	400	100	6,500	\$30,000		4,000	8,600	8,690	57,790
	d	300	100	4,900		1,000	3,000	6,450	8,690	24,040
Total Department 1		2,000	585	32,700	30,000	2,000	20,000	43,000	50,840	178,540
Department 2	a	800	200	13,100		3,000	9,600	13,120	17,380	56,200
	b	300	100	4,900		3,000	3,600	4,920	8,690	25,110
	c	900	300	14,700			10,800	14,760	26,070	66,330
	d	500	125	8,200			6,000	8,200	10,860	33,260
Total Department 2		2,500	725	40,900		6,000	30,000	41,000	63,000	180,900
Extension and Public Services		1,000	250	16,400			3,800	25,100	21,730	67,030
Total		5,500	1,560	\$90,000	\$30,000	\$8,000	\$53,800	\$109,100	\$135,570	\$426,470

- (1) Classroom hours taught.
- (2) Pro-rated to courses on the basis of Contact Hours.
- (3) Distributed to courses on the basis of actual usage.
- (4) Distributed per equipment inventory records.
- (5) Identified by department on an actual basis. Departmental cost is the pro-rated to courses on the basis of Contact Hours.
- (6) The remaining costs within a department are pro-rated to the courses taught by the department on the basis of Contact Hours.
- (7) Pro-rated to courses on the basis of course enrollment.

Distribution of Academic Support Costs to Courses (Indirect Instruction)

The distribution of the Academic Support Costs is illustrated in Figure 8.

The methods used to distribute these costs to courses are as follows:

1. Classroom Space is to be allocated on the basis of contact hours. A unit cost per contact hour will be calculated by dividing the classroom space costs by the total contact hours taught. The unit cost calculated will then be multiplied times the contact hours of each course to determine the cost for that course. The use of contact hours, however, does not allow for the difference in classroom sizes which also affects the cost of a course. An alternative allocation method including the determination of classroom size is outlined in Section III under Facilities Management. The cost of classroom space includes:
 - Operation and Plant Maintenance Cost applicable to classrooms.
 - Depreciation of classroom furniture and equipment.
2. Data Processing Costs applicable to instruction should be allocated to instructional courses according to the time used by students enrolled in those courses.
3. Depreciation of equipment identified directly to a course shall be distributed to that course. The depreciation of equipment which cannot be identified to a course will be distributed with the remaining costs of that department (See Para. 6).

4. Media Center costs are to be distributed first to the instruction departments. This distribution can be based on actual costs incurred in response to departmental requirements, media inventory on hand, or student usage. The cost allocated to a department is then distributed to the courses taught by that department by one of the following:

- Contact hours
- Credit hours
- Students
- Courses

Courses requiring minimum or no use of the media center should not be included in the distribution process.

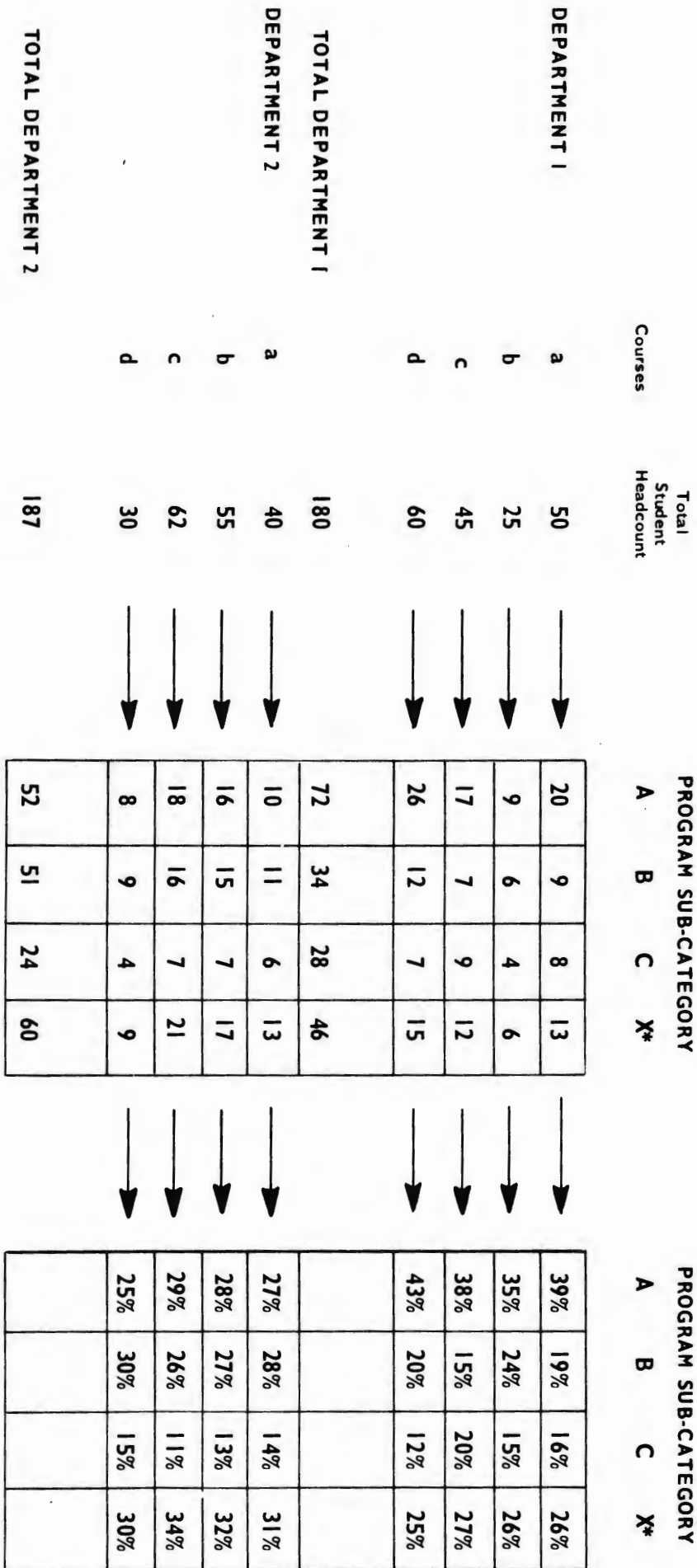
5. Remaining costs within an instruction department should be allocated to courses on the basis of contact hours. These costs include:

- Administrative and secretarial/clerical salaries and benefits.
- Supplies not directly identified to a course.
- Data processing costs not identified to a course.
- Other department expenses such as postage, telephone, travel, etc.

6. The remaining costs within the Academic Support cost center are prorated to courses on the basis of course headcount enrollment. The costs remaining include:

- Dean of instruction office.
- Library costs.
- Media costs which cannot be readily allocated.

**DETERMINATION OF COURSE ALLOCATION
PERCENTAGES BASED ON
STUDENT HEADCOUNTS BY MAJOR**

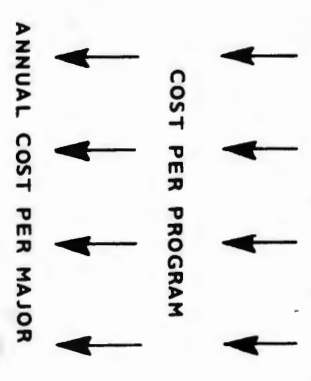


* No Major Specified

DISTRIBUTION OF COURSE COSTS TO PROGRAMS

Courses	Allocation of Discipline Costs	PROGRAM SUB-CATEGORY				PROGRAM SUB-CATEGORY			
		A	B	C	X*	A	B	C	X*
DEPARTMENT 1	a	39%	19%	16%	26%	\$	\$	\$	\$
	b	35%	24%	15%	26%	\$	\$	\$	\$
	c	38%	15%	20%	27%	\$	\$	\$	\$
	d	43%	20%	12%	25%	\$	\$	\$	\$
TOTAL DEPARTMENT 1						\$	\$	\$	\$
DEPARTMENT 2	a	27%	28%	14%	31%	\$	\$	\$	\$
	b	28%	27%	13%	32%	\$	\$	\$	\$
	c	29%	26%	11%	34%	\$	\$	\$	\$
	d	25%	30%	15%	30%	\$	\$	\$	\$
TOTAL DEPARTMENT 2						\$	\$	\$	\$

* No Major Specified



Distribution of Course Costs to Programs

Figures 9 and 10 illustrate the distribution of course costs to programs. Students enrolled in a course often represent more than one curriculum major. Therefore, the course costs will be prorated to programs according to the majors of the students enrolled. Figure 9 shows how the percentages for distributing costs are calculated based on a student headcount by major. Figure 10 demonstrates the use of the percentages, calculated in Figure 7, to distribute costs. It should be noted in the examples the prorated costs of students who have not specified a major field of study are allocated directly to the subprogram, Extension Instruction (Refer to Figure 1 - Extension Instruction for credit).

Distribution of Other Support Cost Center Costs to Programs

The other support cost centers to be distributed include:

- Student Services
- Institutional Support
- Building Depreciation

These cost centers are prorated directly to program subcategories based on the number of students enrolled in each program subcategory. For those colleges that desire a course cost that includes the above costs an additional allocation will be necessary. The above costs allocated to programs can be prorated to the courses, included in that program, on the basis of course enrollment.

XVZ College

Annual Report of Program Budgeted Cost

FIGURE 11

Program Level Instruction	Program Sub-Category	(1) FTE Students	(2) Student Credit Hours	(3) Primary Cost Direct Instruction	(4) Support Costs			(6) Institutional Support	(7) Total Operating Expenditures	(8) Building Depreciation	(9) Total Costs	(10) Cost Per FTE	
					(4) Academic Support	(5) Student Services	(6) Institutional Support					(10) Col. 7 + 1	(11) Total Col. 9 + 1
Transfer Programs (Program Category 1.1)													
	Liberal Arts and Sciences	15	200	\$ 10,000	\$ 3,000	\$ 2,000	\$ 6,000	\$ 21,000	\$ 600	\$ 21,600	\$1,400	\$1,440	
	Business Administrative	40	540	28,000	8,000	6,000	16,000	58,000	1,700	59,700	1,450	1,493	
	Secretarial Science Education	50	680	35,000	10,000	7,000	20,000	72,000	2,000	74,000	1,440	1,480	
	Accounting	30	400	21,000	6,000	4,000	12,000	43,000	1,500	44,500	1,433	1,483	
	Education	40	540	30,000	8,000	5,000	16,000	59,000	1,700	60,700	1,475	1,518	
Technical Career Programs (Program Category 1.2)													
	Secretarial Sciences	30	400	22,000	9,000	4,000	12,000	47,000	1,500	48,500	1,567	1,617	
	Data Processing	45	600	31,000	10,000	6,000	18,000	65,000	2,000	67,000	1,444	1,489	
	Marketing and Management	30	410	24,000	7,000	4,000	12,000	47,000	1,300	48,300	1,567	1,610	
	Chemical Technology	20	270	15,000	4,000	3,000	8,000	30,000	800	30,800	1,540	1,540	
	Civil Technology	15	210	12,000	3,000	2,000	7,000	24,000	600	24,600	1,600	1,640	
	Child Development Assistant	25	340	18,000	5,000	3,000	10,000	36,000	1,100	37,100	1,440	1,484	
	Nursing Technology	30	390	20,000	6,000	4,000	12,000	42,000	1,200	43,200	1,400	1,440	
	Police Science	40	550	26,000	9,000	5,000	17,000	57,000	1,700	58,700	1,425	1,468	
	Extension for Credit (Program Category 1.4)	100	2,270	96,000	34,000	33,000	68,000	231,000	8,400	239,400	2,310	2,394	
	Remedial Program	30	400	21,000	6,000	4,000	12,000	43,000	1,200	44,200	1,433	1,473	
	Extension and Public Services	60	800*	41,000	12,000	8,000	24,000	85,000	2,700	87,700	1,417	1,462	
	Total Cost	600	9,000	\$450,000	\$140,000	\$100,000	\$270,000	\$960,000	\$30,000	\$990,000	1,600	1,650	
	Equipment Depreciation included above			\$	\$ 15,000	\$ 5,000	\$ 20,000	\$ 40,000	\$	\$ 40,000			

* Equivalent credits if no credits were offered.

Program Cost Report

Upon completion of the cost distribution steps explained in the preceding paragraphs, the college will be able to prepare a program cost report as illustrated in Figure 11. This report can be prepared for both actual and budgeted program cost. Other reports can be prepared such as:

- Course costs - actual versus budget
- Program cost - actual versus budget

Frequency of Reporting

Each college will be expected to develop the capability to report their budgeted and actual costs by program on an annual basis.

COST DISTRIBUTION TO PROGRAMS

SECTION III

INTERNAL MANAGEMENT REPORTS

General

The basic program cost accounting system can be expanded to provide additional information concerning operations. An effective cost accounting system can provide more than the identification of costs. It can help to answer such questions as:

- What should have been the cost under full enrollment in courses?
- What was the cost of instructors applicable to under-enrolled courses?
- What was the cost of unused plant facilities?

To answer the above questions, requires the use of standards, established by each community college, against which actual performance can be measured.

These standards can include:

1. Standard number of students for each course. The standard will obviously vary from course-to-course.
2. Standard instructional space requirement per type of instruction. For example, a student will require more space for a laboratory course than a lecture course.
3. A standard functional capacity of each classroom. A classroom theoretically is available 24 hours a day. However, from a practical standpoint the maximum expected usage of a classroom might be only 10 hours. This is referred to as the functional capacity. Determining the functional capacity is important for two reasons.

- First, by determining a functional capacity you can now measure the actual usage against it.
- Secondly, functional capacity can be used in determining the cost of space in a particular classroom. For example, assume there are two classrooms of identical size, and that the total cost of each classroom is equal. However, one class is a general lecture classroom and the other is used for typing instruction. Because the typewriters in the one classroom, limits the use of that classroom it's functional capacity is only 5 hours per day. On the other hand the general classroom has a functional capacity of 10 hours. Therefore, the cost of the typing room is twice that of the other classroom on a functional capacity hour basis.

The above standards can be used in the program cost systems as described in the following paragraphs.

FIGURE 12

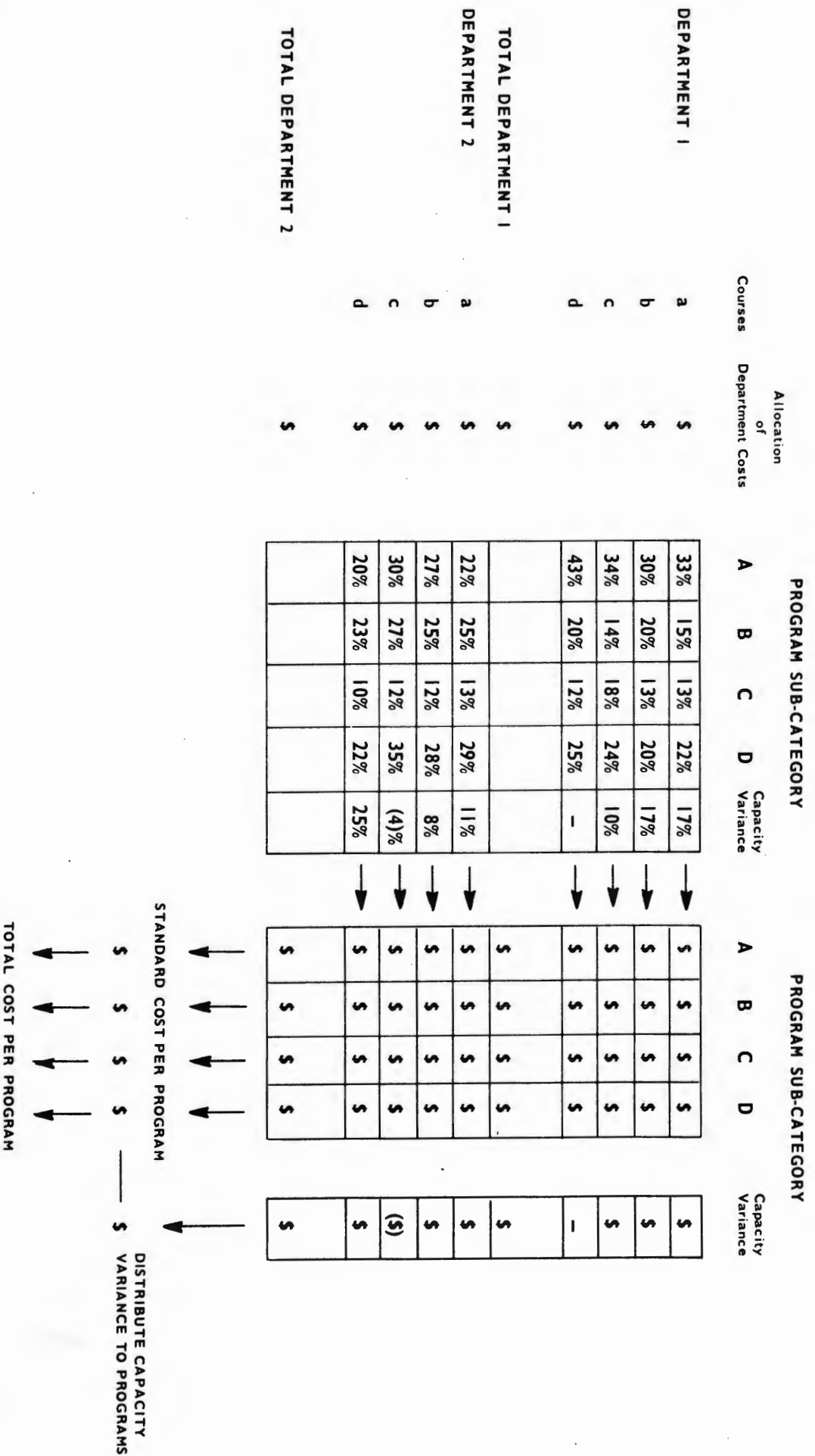
DETERMINATION OF COURSE ALLOCATION
PERCENTAGE BASED ON

STUDENT HEADCOUNTS BY MAJOR AND STANDARD COURSE SIZE

DEPARTMENT I	Courses	Standard Course Size	Actual Student Headcount	PROGRAM SUB-CATEGORY				Capacity Variance	PROGRAM SUB-CATEGORY				Capacity Variance		
				A	B	C	D		A	B	C	D			
a	60	50	→	20	9	8	13	10	→	33%	15%	13%	22%	17%	
b	30	25	→	9	6	4	6	5	→	30%	20%	13%	20%	17%	
c	50	45	→	17	7	9	12	5	→	34%	14%	18%	24%	10%	
d	60	60	→	26	12	7	15	-	→	43%	20%	12%	25%	-	
TOTAL DEPARTMENT I	200	180		72	34	28	46	20							
DEPARTMENT 2	a	45	40	→	10	11	6	13	5	→	22%	25%	13%	29%	11%
b	60	55	→	16	15	7	17	5	→	27%	25%	12%	28%	8%	
c	60	62	→	18	16	7	21	(2)	→	30%	27%	12%	35%	(4)%	
d	40	30	→	8	9	4	9	10	→	20%	23%	10%	22%	25%	
TOTAL DEPARTMENT 2	205	187		52	51	24	60	18							

FIGURE 13

DISTRIBUTION OF COURSE COSTS TO PROGRAMS CONSIDERING A CAPACITY VARIANCE




Indicating, In Financial Terms, How Effectively the Instructional Resources are Being Used

In the basic program cost system the cost of a course was prorated to programs based on the majors of the actual students enrolled. Figure 12 illustrates how a standard course enrollment affects the prorating of costs. It should be noted that the capacity variance calculated is the difference between the standard course size and the actual enrollment. This variance can be plus or minus. Percentages for distributing costs to programs are then based on standard course size.

Figure 13 illustrates the use of percentages to distribute course costs. The cost of the capacity variance per course is not distributed to the programs until a standard or functional cost of a program has been determined. The capacity variances are then distributed to the programs in order to arrive at the total actual cost of those programs.

The above computation of the capacity variances should be performed using the Budgeted Costs and the Actual Enrollments. The Budgeted Costs can then be compared to the Actual Program Cost to determine the spending variance. For example:

Actual Costs	\$105,000		\$ 5,000 Spending Variance
Budgeted Costs	\$100,000		\$10,000 Capacity Variance
Standard Costs	\$ 90,000		
			<u>\$15,000</u> Total Variance

XYZ College

Cost of Classroom Space Based on Square Footage and Functional Contact Hours

<u>Classroom Type</u>	<u>Classroom Number</u>	(1) <u>Cost Per Net Square Footage</u>	<u>Net Square Footage</u>	Weekly <u>Contact Hour Capacity</u>	(2) <u>Weighted Net Square Footage</u>	(3) <u>Cost Per Weighted N.S.F.</u>
General Classroom	1	\$ 9,000	900	30	27,000	
	2	9,000	900	30	27,000	
	5	<u>16,000</u>	<u>1,600</u>	20	<u>32,000</u>	
Total General Classroom		<u>34,000</u>	<u>3,400</u>		<u>86,000</u>	<u>\$.40</u>
General Laboratories	3	20,000	2,000	20	40,000	
	4	<u>20,000</u>	<u>2,000</u>	20	<u>40,000</u>	
Total General Laboratories		<u>40,000</u>	<u>4,000</u>		<u>80,000</u>	<u>\$.50</u>
Typing Room	6	<u>16,000</u>	<u>1,600</u>	15	<u>24,000</u>	
Total Typing Rooms		<u>16,000</u>	<u>1,600</u>		<u>24,000</u>	<u>\$.67</u>
Total		<u>\$90,000</u>	<u>9,000</u>		<u>190,000</u>	

- (1) An average unit cost is used to avoid penalizing a course because it was assigned to a newer and costly building. The cost per net assignable square feet was calculated by dividing the total cost (\$90,000) by the total classroom square footage (9,000).
- (2) Net square footage times Contact Hour Capacity.
- (3) Total cost for a type of classroom divided by the weighted net square footage.

Facilities Management

The National Center for Higher Education Management Systems at WICHE has stated that there are three basic objectives of facilities management.

1. Determine current demands for space
 - Weekly room hours
 - Persons requiring offices
 - Library books, readers, staff
2. Determine functional capacity of existing facilities.
3. Compare capacity with current demands.
 - Identify surpluses and deficiencies.

In Section I of this chapter plant costs were distributed to departments on the basis of net assignable square feet. The functional capacity of the classroom space or the cost of the unutilized space was not considered.

Figure 14 illustrates how the functional capacity is determined. For each classroom a standard number of weekly contact hours is determined. This is the functional capacity of each classroom. To simplify the standard, classrooms should be grouped into categories such as laboratories, general lecture halls, etc.

Classrooms of different sizes can be used for the same number of contact hours. Therefore, in determining a standard cost use the net assignable square feet weighted by contact hours. Thus, the unit cost developed reflects both classroom size and contact hour usage. The unit cost developed is then used in costing the actual usage (Figure 15) which can be compared to the total actual cost. The differences show the cost of unutilized space.

Figure 15 indicates how the actual usage is calculated. To make this calculation the following is required.

- Each course is assigned to one of the classroom categories found in Figure 14. Thus, if a classroom is considered a

general classroom the unit cost per weighted square footage is \$.40 per the example.

- The weighted net square footage is calculated for each course. A standard amount of square feet required per student must be determined for each category of classrooms. This is then multiplied by the standard number of students determined for the course and then multiplied by the number of contact hours for the course.
- The cost per course is then determined by multiplying the Unit Cost times the weighted net square footage.

A course may be assigned to a classroom which is much larger than the space required. The course is, in reality, only effectively using a portion of that space. Therefore, through the use of space standards, a course cost is not penalized by being assigned to a classroom that is either larger or smaller than the amount of classroom space required.