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ABSTRACT

The academic accounting system developed at Miami-Dade Junior College (Florida) is intended to aid in the instructional planning process. The objectives of the system are to: (1) compare various organizational arrangements for instruction; (2) provide a basis for the development of a cost effectiveness analysis system for instruction; (3) provide a system for planning various instructional arrangements; and (4) provide faculty with tools for planning instructional programs within known financial parameters. A semester-hour was decided on as a common measure for comparison. Accounting must include the following faculty activities: presentation, supervision, planning and development, administration and management. Additional considerations must be made for: teaching assistants, conversion to dollars, and additional services. A workbook format is presented with examples of academic accounting planning forms and a course instructional plan. (CA)

MIAMI-DADE JUNIOR COLLEGE

ACADEMIC ACCOUNTING

SYSTEM

Education stands at the brink of significant change in instructional practice. Technological advances in communications media and data handling equipment have introduced the capacity for dramatically expanded diversity in approaches to instruction. Education is just beginning to learn how to apply these technological advances. During the period following World War II, a significant body of knowledge has been developed concerning learning. The impact of this knowledge is barely visible in the day-to-day practices of our institutions. Increased costs, led by improvement in faculty salaries, are forcing review of all possible instructional processes in order to find the most effective and most efficient approach to providing educational services to the growing numbers of people requiring more and more education each year. All of this forecasts a much more intricate educational system with the accompanying requirement for more sophistication in planning. The Academic Accounting system is intended to aid in the instructional planning process.

I Objectives of the System

A. To allow a comparison of various organizational arrangements for instruction.

B. To provide a basis for the development of a cost effectiveness analysis system for instruction.

C. To provide a system for planning various instructional arrangements; a system that can account for all of the elements of an instructional plan so as to permit planning flexibility.

D. To provide the faculty with the tools for planning instruc-

tional programs within known financial parameters. Thus, allowing the introduction of new instructional strategies and the exercise of the faculties' creative abilities in developing these strategies.

II The Requirement for a Common Measure

Before any comparison between programs can be made, some common measure must be established as a basis for these comparisons. The most usual measure of cost used today in colleges is that of cost per student. This is generally derived by dividing the total operating cost of an institution by the number of full-time-equivalent students, or full-time students, that the institution services. Neither approach is appropriate for the academic accounting system for the following reasons:

(1) This system is concerned with the cost of instruction as distinguished from other costs that the institution might incur (research, administrative services, etc.). The direct costs of instruction must be segregated for analysis.

(2) There is considerable variation from institution to institution in computing full-time students; any system should be capable of comparison from institution to institution.

(3) The system is concerned with analyzing the cost of any course that is introduced. Therefore, the common measure must relate to a course rather than to a full program for a student. The cost of a full program for any student can be determined by multiplying the course costs and combining the appropriate courses, depending on the student's program. In this way, the average cost per student for any program can be determined.

It is necessary to establish a basic measure at the

level of the lowest identifiable element in the system. At first view, this lowest common element appears to be the contact hour. Persons interested in PPBS have tended to adopt the contact hour as a planning base. This is an error. The contact hour is not the appropriate measure base for the following reasons:

(1) Contact hours can change from semester to semester while semester hour value stays constant. An adjustment of laboratories such as two two-hour labs changed to one three-hour lab, would produce a false indication of decreased productivity if the contact hour were used as a base.

(2) When speaking of contact hours, people use catalog value contact hours, which frequently do not match with the actual contact hours of instruction.

(3) Contact hours are not considered the measure of completion by the institutions. One cannot graduate by accumulating contact hours. Graduation is based on semester hours.

(4) Catalog value contact hours vary from institution to institution more substantially than semester hours; therefore, they are less comparable.

(5) Any reasonable look into the future indicates the inappropriateness of the contact hour as a base. With variable instructional approaches, variable time requirements, and learning style based multiple track programs, it can be confidently predicted that the catalog contact hour will disappear in the near future as a recorded element. If one tried to use a contact hour measure, variations from semester to

semester c from year to year, of the cost of presenting a course, could show ariations in cost that, in fact, had not occurred. The ...n required to teach a course could stay constant while the cost of contact hours varied dramatically.

The semester hour is the obvio common measure for the following reasons:

(1) The institution asses es charges to students on the basis of semester hours.

(2) The in itution awards degrees on the basis of semester hours.

(3) Virtually all state support patterns are based on the semester hou

(4) Th predominant basis for determining faculty load is the semester hour.

(5) Only the semester hour value will tend to stay constant with variable approaches to instruction. The question is, "What does it cost to tea a course by one approach compared to another?" In this comparison, the semester hour value assigned to the course can be held constant while other factors, including contact hours, vary. Thus, a constant basis is provided for analyzing variable instructional strategies and plans.

III Accounting for All Types of Faculty Activities

Traditionally, colleges have assigned faculty members a class to teach and have hoped for some average class size. In order to determine what instructional costs were, it was only necessary to account for "teaching time" of faculty since all instruction was occurring in the same mode. There was the additional assumption that the faculty member should make a portion of his time available for conferences with students and should

take whatever time was necessary to prepare his lectures. One thing that is clear for the future is that the types of activities that faculty members will be called on to perform will change considerably. Most of the newer approaches to instruction require more planning time and more time spent in preparation of materials. Therefore, it is safe to say that a greater portion of the faculty members' time will be devoted to these activities. It is no longer reasonable to assume that the assigning of instruction in a course will produce an equal requirement for class preparation from semester to semester or from course to course. One must now determine how much time is necessary for planning, how much material preparation is required, how the course will be presented, and what groupings are desirable, to support the instructional approach that has been selected for a course. A system must be developed that accounts for all activities required by faculty members as part of their assignment. The consideration of all required activities will allow a judgment concerning the practicability of approaches that are suggested as well as equitable determination of faculty load. The following categories of activities should be used:

(1) Presentation

Time spent in presenting materials, the best example being the traditional lecture-teaching.

(2) Supervision

The supervision of students in a learning situation without the requirement of a prepared presentation. An example is the supervision of an individual learning area where students are involved in program learning and the faculty member is present to answer questions as required.

(3) Planning and Development

Either the planning and development of presentations that are to be made or the development and creation of materials that are going to be used in this course. Such time should be assigned when it is apparent that there should be a requirement for more planning and development than is typically used for a traditional lecture-teaching situation.

(4) Administration

Value would be assigned to this time to care for the handling of details and records that might be generated by conditions of the learning arrangement. An example is time allowed for the grading of papers generated by a particularly large section, or the handling of the administrative details generated by a large individual study arrangement.

(5) Management

The direction of the activities of a group of faculty members or professional staff. The best example is the time allowed for the duties of a department chairman.

In order to have some basis for assigning value to various activities, one must begin at some known point. As far as faculty are concerned, the best known component of work is the semester hour of presentation (lecture-teaching). Value in load assigned for other activities should be equated to semester hours of load. In the case of Miami-Dade, this is done through a point system which allows 4 points for each semester hour and equates other activities with this. A supervision hour is valued at 3 points and other decisions are made subjectively. For example, if a faculty member has 20%

of "released load" for a department chairman assignment (the load requirement is 60 points), this should be expressed as 12 points of management rather than 20% reduced load.

IV Planning the Instructional Arrangement For a Course

A. The first thing that must be done to compare various instructional arrangements for a course or to evaluate the financial feasibility of an arrangement is to determine the "productivity" for the particular approach. Since faculty salaries represent the greatest portion of instructional costs, the system presented will concentrate on measuring the value received in terms of productivity from a single faculty salary. It is recognized here that we are dealing strictly with quantity and that quality measures are necessary. In the long-range, a measure of both must be taken in order to make reasonable judgments concerning expenditures of the institution's funds. In order to obtain a product figure for a single faculty member engaged in a particular course, divide the total student semester hours to be generated (using enrollment projections) by the total faculty assigned.

In working with the examples presented, it is important to keep in mind the Miami-Dade load formula:

(a) 60 points is a load.

(b) An hour of presentation equals 4 points.

(c) An hour of supervision equals 3 points.

Example:

100 students will take course X, a 3 semester hour course

Course X will generate 300 student semester hours

1.2 faculty are assigned to the course

300 divided by 1.2 equals 250

250 is the average student semester hour product expectation for a faculty member engaged in the teaching of this course

The faculty product for this course is 250.

Work the following problems. The answers are to be found in the answer section at the back of the workbook.

Problems

IV(1) Course A is a 2 semester hour course and the expected enrollment is 300 students

1.5 faculty members are assigned to the teaching of this course

What is the faculty product for Course A.

IV(2) Course B is a 4 semester hour course and the anticipated enrollment is 250 students

4 faculty members are assigned to teach this course

What is the faculty product for Course B?

IV(3) Course C is a 4 semester hour course, and the anticipated enrollment is 200 students

2.5 faculty members are assigned to teach this course

What is the faculty product for Course C?

B. Determining the Number of Faculty Members Required to Staff a Course

The first thing to remember in determining the number of faculty required to staff a course is that faculty members may, and probably do, teach more than one course. Do not think in terms of "whole faculty members", or particular individuals, but in terms of what is being done in the course being dealt with. 5 faculty members assigned for 3 semester hours

each (each semester hour equals 4 points) to a course is the same as 1 faculty member assigned for 15 semester hours. The only time that the required number of faculty members is rounded to a whole is at a complete unit level. You would round off to an even number at a division or a department as you cannot hire faculty members in parts, even though you can assign them in parts.

It is essential that the proposed plan for instruction generate the requirements for faculty assignment. The purpose of this system is to allow analysis of requirements of each type of faculty activity for a course, and the assignment of an appropriate value in faculty load. Do not develop formula for assigning extra load as each plan will have different requirements. Many institutions have plans that award double value to faculty for making presentations that exceed some magic number -- 50 students or 100 students, or whatever. All such large group sections are not similar and do not generate the same requirements. One should avoid formula assignments of additional load. For example, in one case, a group of 100 students might produce 100 essays a week that have to be checked and graded. In another case of 100 students, the materials to be presented might already be well prepared, exams might be standardized and objective and there might be machine scoring. These are not equal situations and loads shoul not be assigned on equal basis; rather on a basis appropriate to the requirements that the course generates.

The load values assigned for presentation and supervision can be developed objectively, based on the number of hours in the activity. This is not possible for the other three types of faculty activity. In those cases, subjective judgments must be made after all the facts are collected.

C. Working With Each Type of Faculty Activity in Assigning Faculty Load Values

Each of the elements is listed with a guide for determining the faculty load values to be assigned.

(1) Presentation

Use the actual number of hours of presentation required in the plan for each week and award 4 points for each.

Example

There are 1,500 students taking sociology.

The plan calls for one large group session of 150 students once each week.

Requirement: 10 hours of presentation per week = 40 points

The plan calls for two typical group sessions of 30 students each per week.

Requirement: 100 hours of presentation per week = 400 points

Total requirement of faculty load for presentation = 440 points

Work the following problems. Answers are to be found in the answer section at the back of the workbook.

Problems:

IV(4) There are 500 students expected in course D. The instructional arrangement calls for 3 meetings per week in groupings of size 25.

How many points of faculty time are required to handle the presentation of this course?

IV(5) There are 900 students anticipated in Course E. The instructional arrangement calls for 2 meetings per week in groups of 250 and 1 meeting per week in groups of 10. How many points of faculty time are required for

presentation of Course E?

IV(6) The anticipated enrollment in Course F is 50 students. The instructional plan calls for Course F to be taught with 3 meetings per week in groups of 30. How many points of faculty time are required for presentation of Course F?

(2) Supervision

Use the actual number of contact hours of supervision (not requiring presentation) and convert those contact hours to points of faculty time.

Example:

There are 200 students anticipated in Math 100

The plan calls for 1 large group presentation each week to 200 students (computed under presentation).

The plan calls for students to spend approximately 2 hours in the Individual Study Center each week. The Center will be manned by one faculty member at all times from 10 a.m. to 4 p.m. Monday through Friday. Faculty contact hours of supervision required = 30. (Remember that you are not counting the number of hours that students spend in the Center, but the number of hours that it is manned by a faculty member. Since the Center is manned 6 hours per day 5 days per week, that requires 30 hours of supervision.)

Total points of faculty time for supervision = 90

Work the following problems. The answers are to be found in the answer section at the back of the workbook.

Problems

IV(7) Course G has an expected enrollment of 700 students. The instructional plan calls for 2 regular class sessions per week in groups of 30 and 3 hours per week in the Individual Study Center. The Individual Study Center will be manned by one faculty member from 8 a.m. to 5 p.m. daily Monday through Friday.

How many points of faculty load time are required to cover the supervision requirements of this course?

IV(8) There is an expected enrollment of 75 students in Course H. The instructional arrangement calls for 1 large lecture per week in groups up to 100 and one 3 hour laboratory per week (supervision) in groups of 25.

How many points of faculty load time are required to cover the supervision portion of this course?

IV(9) There is an expected enrollment of 800 students in Course I. The instructional arrangement for Course I calls for 1 meeting in groups of 200 in which a pre-prepared audiovisual presentation will be viewed. Two faculty members will be present for supervision. No presentation is required. There will be seminar meetings in groupings of 10 students meeting once a week for 1 hour each (presentation).

How many points of faculty time are required to cover the supervision in Course I?

(3) Planning and Development

A subjective judgment must be made in assigning faculty

load value (points) for planning and development of courses or materials. This should be done in light of the quality of the presentations required as well as the quantity of the work that is required. All of this has bearing on the economic feasibility of the approach in question. The following considerations should influence the assignment of value to planning and development time:

a. The existing development with regard to the course. Is it a new course as opposed to a course with a strong, well-defined foundation?

b. Is the course to be highly structured and use considerable produced material as opposed to a 'talk' type of lecture-presentation?

c. How many presentations have to be developed in order to support the whole course? Are any of these presentations available from existing sources?

d. Are workbooks or other materials required to support the instructional approach desired?

e. Will the materials be used for more than one semester?

f. Are the materials developed independently? Can they be used without additional presentation to supplement them when in use?

The higher the quality of the materials and courses that one wishes to develop, the greater the amount of time will have to be assigned for planning and development. From the standpoint of economics, this means that the greater the number of potential exposure to the course, the more practical it is to assign substantial time for planning and development. It could also be argued that the greater the number of students to be exposed to a course, the greater the effort that should be made to develop a superior course.

(4) Management

Points under the management category should be assigned in a subjective manner for the direction of the activities of other personnel and the direction of activities of a department, division, etc. In doing so, the following should be considered:

a. The number of personnel to be supervised.

b. The number of different courses or programs in the area of responsibility.

c. The complexity of the programs that are supervised.

d. Other factors such as physical area to be supervised; outside contacts for the institution that are required; advisory committees which are to be worked with, etc.

(5) Administration

Faculty time should be assigned for administration to compensate for time that is spent in tasks generated as a result of the instructional arrangement (beyond expectation in typical instructional arrangement). The following should be considered in assigning such time:

a. Grading or reading of voluminous papers.

b. Administrative paper work such as records, student assignments, etc.

c. Other considerations particular to a course plan.

V. Developing the Faculty Product for a Course

In previous sections, each element of assignment has been reviewed. In order to use the information, it is now necessary to combine all assignments to reach a total for a course. If the course is taught in only one mode, and that mode is a lecture-teaching arrangement, the computation will be uncomplicated. The greater the diversity in the instructional arrangements, the more factors have to be considered in arriving at a faculty

product. The form that is supplied is set up to account for each of the factors. In a simple course, the form may be filled out using only a few of the lines provided. In a complicated arrangement, the total spread that is provided may be needed. Instructions have been provided in the Academic Accounting planning form for completing information in each column. In using the form, the following should be kept in mind:

(1) If more than one instructional mode is to be used, a row (horizontal line) should be used for each mode so that time assigned for each of the five elements (columns 8 through 12) can be computed.

(2) If more than one instructional mode is involved in a course, an additional row should be used to summarize the course. In this row, you would record the total enrollment, the credits for the course, and any assignment of time that involves the whole course rather than a single mode. You would also record time assigned for planning, administration, and management for the whole course, if you cannot effectively divide this time among the various modes. This row is also used for the computation of the total faculty point requirement, the total faculty required, and the faculty product. The faculty product is recorded in this row, as all of the modes put together are required to complete the course and the objective is to understand the effect of the whole plan.

(3) In using the forms, you should not restrict each form to one course, but should continue to move through the form recording as many courses as will fit conveniently on each page. This will, of course, vary with the complexity of the instructional arrangements devised.

(4) Depending on the academic administration of the college, department and division summaries must be recorded on a separate row so that

management or other time assigned at the level of the administrative unit can be recorded. In the example, 24 points of management is recorded for the science department. This is time assigned to a department chairman for his activities.

(5) In addition to providing a line for department management or other assigned load, when all of the courses for an area are presented, a row should be provided to summarize the entire department. In this case, the summary would use column 15, 16, 17, and 18, carrying forward the total faculty points required by that department, the total faculty required by that department, the total student semester hours anticipated for that department, and then the summary of the faculty product for that department. In the example used, only one course has been presented and the summary is based on data for other courses not presented on this form.

ACADEMIC ACCOUNTING PLANNING FORM

Record Course title.	COURSE TITLE	1
List each of the separate elements of the instructional plan (example: large group, individual study). Course total should be listed as an element.	ELEMENTS	2
For each element, list meeting hours per week.	HRS. PER WK.	3
For each element, list the size of the grouping planned.	SIZE GROUPING	4
Record the total anticipated enrollment for the course.	ENROLLMENT	5
List the catalog credit value of the course.	CREDITS	6
Multiply column 5 by column 6. Do this once for the course on the last line for the course.	TOTAL STUDENT CREDITS	7
Record the total number of hours of faculty time required to cover all presentations (for each element).	PRESENTATION	8
Record the total number of hours of faculty time required to cover all supervision (for each element).	SUPERVISION	9
Record the number of points of faculty time assigned for planning or development (for element or course).	PLANNING DEVELOPMENT	10
Record the number of points assigned for administration (can be for element or cource).	ADMINISTRA-TION	11
Record the number of points assigned for management (can be for course or department).	MANAGEMENT	12
Multiply the figure in column 8 by 4 points	POINTS RE-QUIRED FOR PRESENTATION	13
Multiply the figure in column 9 by 3 points	POINTS RE-QUIRED FOR SUPERVISION	14
Add all figures in columns 10 through 14	TOTAL FACULTY POINTS	15
CONVERT figure in column 15 to whole faculty in decimal form. (Divide by 60)	FACULTY REQUIRED	16
Record figure appearing in column 7.	TOTAL STUDENT CREDITS	17
Divide column 17 by column 16.	FACULTY PRODUCT	18

COURSE INSTRUCTIONAL PLAN

SCI 104 - Environmental Science - A general education science offering

A. There will be one large group session each week in the large lecture hall to groups of 300 students. The major concepts of the program will be presented in a highly visual form.

B. There will be an individual study center set up and manned by two faculty members from 10 a.m. to 4 p.m. daily. Students will arrange their own time in the Center. It is estimated that it will require a maximum of three hours to complete the audio-tutorial work in the Center. The materials are available from XY-5 Consortium which has prepared them through a National Science Foundation Grant.

C. There will be one one-hour session each week in a learning team arrangement (10 students in each). The teams will meet in a room of four such groups supervised by an instructor. Projects will be developed and the teams will go into the community to put their projects into effect.

D. It has been determined that 15 semester hours of faculty time will be assigned for the development of large group presentations and that 8 semester hours of faculty time will be assigned for the planning and development of the course.

E. It has been decided that 6 semester hours of faculty time will be assigned for the administrative detail generated by this course.

ACADEMIC ACCOUNTING PLANNING FORM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
COURSE TITLE	ELEMENTS	HRS. PER WK.	SIZE GROUPING	ENROLLMENT	CREDITS	TOTAL STUDENT CREDITS	PRESENTATION	SUPERVISION	PLANNING DEVELOPMENT	ADMINISTRATION	MANAGEMENT	POINTS REQUIRED FOR PRESENTATION	POINTS REQUIRED FOR SUPERVISION	TOTAL FACULTY POINTS	FACULTY REQUIRED	TOTAL STUDENT CREDITS	FACULTY PRODUCT
SCI 104	Large group	1	300				7		60			2.8					
	Individual Study	3	1					60*					180				
	Learning Team	1	10					50**					150				
	Course			2,000	3	6,000			32	24				414	7.9	6,000	769
SCIENCE DEPARTMENT											24						
SCIENCE DEPARTMENT SUMMARY	All Courses													1308	22	13,200	600

*Individual Study Center is to be manned by two faculty members from 10 a.m. to 4 p.m. Monday through Friday.
**Four learning teams will meet in a room with one faculty member

Work the following problems. Answers are to be found in the answer section at the back of the workbook.

Problems

V(1) Course K is a 3 semester hour course, and has an anticipated enrollment of 1,300 students.

The anticipated instructional arrangement is as follows:

(1) 1 large group presentation per week - maximum size group of 250. 32 points are provided for planning and development of this section.

(2) 2 small group meetings per week with the average class of 20. No development time is assigned to this mode.

(3) There will be a standardized testing program with 12 points assigned for development and 24 points assigned for administration.

Using these facts, compute the faculty product for this course using the blank forms provided.

	COURSE TITLE	1
	ELEMENTS	2
	HRS. PER WK.	3
	SIZE GROUPING	4
	ENROLLMENT	5
	CREDITS	6
	TOTAL STUDENT CREDITS	7
	PRESENTATION	8
	SUPERVISION	9
	PLANNING DEVELOPMENT	10
	ADMINISTRATION	11
	MANAGEMENT	12
	POINTS REQUIRED FOR PRESENTATION	13
	POINTS REQUIRED FOR SUPERVISION	14
	TOTAL FACULTY POINTS	15
	FACULTY REQUIRED	16
	TOTAL STUDENT CREDITS	17
	FACULTY PRODUCT	18

ACADEMIC ACCOUNTING PLANNING FORM

PROBLEM V(1)

V(2) Course L is a 3 semester hour course and has an anticipated enrollment of 600 students.

The course is to be taught in groups averaging 30 students with 3 meetings per week.

Using this information, compute the faculty product for Course L.

V(3) Course M is a 4 semester hour course and has an anticipated enrollment of 1,100 students.

The course will be taught in two modes:

(1) One 1 hour television presentation per week, to be received by students at a variety of points on the campus, at their convenience. There are no assigned locations. There will be 60 points provided for planning and development.

(2) Approximately 2 hours per week in a learning team arrangement that is strictly a peer group. The assignments for the learning teams will be given in the television presentations. The learning teams will average 8 students each, and they will meet in a large hall where tables are provided that will each accommodate 8 students. The students may schedule their time to their own convenience. Two faculty members will be present for supervision in the large hall Monday through Friday from 8 a.m. to 5 p.m. No planning time is provided specifically for this mode.

(3) There will be 36 points of planning time and 36 points of administration provided for the course. Using these facts, compute the faculty product for Course M.

V(4) Continuing to use the same form on which Course M was computed, assume that all of the instruction in Department X is made up of Courses K, L, and M. Allow 24 points for department management and compute the summary including the faculty product for department.

VI Comparing Plans for Courses

In developing and accepting a course plan, it will frequently be necessary to compare that plan in productivity to other potential plans. In order to do this, it is suggested that a form be filled out for each of the potential plans, going through the entire process of determining faculty required and then the faculty product. It is strongly recommended that at this juncture, the objectives for a course be clearly spelled out along with some basis for determining success. It may be found that a more productive plan is more successful than a less productive plan. In this case, the institution has advantage, both in service to students and in economy. It may also be found that after operating a new, more productive plan that it is less successful than a previous plan, or that a new, less productive plan is more effective than a previous plan. In either of these cases, a determination must be made with regard to the value placed on the additional success and the capacity of the institution to pay for that additional success. It is strongly recommended that academic units in the college strive toward some product

objective and that they be allowed to vary the productivity of various courses in the unit in order to reach the objective for the whole department. This provides the department [illegible] the department faculty with the capacity to make adjustments, to use high productivity in a course where that seems to be effective while "buying" additional faculty time to be used in courses where less productive methods seem to be more effective.

A critical factor in the Academic Accounting System is the recognition of the importance of the scale of a course. When large enrollment is anticipated, considerable planning and development time can be used while it cannot be used in a small enrollment course. Of equal importance is the capacity to control the various groupings involved. When a large enrollment is anticipated in a course, it is possible to meet the objectives for mean grouping sizes if moderately effective management procedures are in effect at the institution. In small enrollment courses, particularly those with enrollments of less than 50, it is virtually impossible to control the size of groupings. In using the Academic Accounting forms, small enrollment courses should be grouped and handled as a single grouping of courses when the organizational pattern for instruction is the same.

For example, if there are eleven courses in Department Y, in which the anticipated enrollment is less than 50 and all are to be taught in teaching-lecture form, the total enrollment projection for all of the courses should be added as a single element and they should be computed on a single row. In order to get the anticipated mean grouping size, use historical data for single section courses and be conservative. In order to reach a good productivity level for a department, it is

almost always necessary for the large enrollment courses to provide a higher productivity which can be averaged against the low enrollment courses.

Work the following problems. The answers are to be found in the answer section at the back of the workbook.

Problems:

VI(1) Department N has 11 low enrollment courses with a total anticipated enrollment of 320.

The mean class size for the last three years for low enrollment courses in Department N has been 15. All courses are to be taught in lecture-teaching arrangements meeting three times per week and all have a catalog value of 3 semester hours.

What will be the total faculty points required to present these courses?

VI(2) In Department O, there are 22 low enrollment courses with a total anticipated enrollment of 510 students.

Each course is a 3 semester hour course to be taught in a lecture-teaching arrangement.

Based on historical data for Department O, the mean class size that is expected is 18.

How many faculty are required to present the small enrollment courses in Department O?

VI(3) What is the faculty product for the low enrollment courses in Department O? (Use statistics in previous example.)

VII Developing a Total Plan As a Base for The Budget

One of the important uses of the Academic Accounting

system is to serve as a basis for the development of the budget. This system should provide the faculty requirements for the coming budget year. The processes set down in this section will describe an approach to developing the faculty requirement for the whole institution.

The college should begin by setting an objective in productivity based on historical data and at a level where an effective program can be anticipated within the economic capacity of the institution. Once this productivity objective has been established, it is important to recognize that all departments cannot achieve the same level. Objectives should be supplied to major units of the college based on historical information and depending on the type of courses in the department. It is recommended that internal arrangements of productivity in a department be controlled by that academic unit within the framework of the objective established for the total unit. The unit then should prepare a total plan for that unit for staffing, presenting each large enrollment class separately and each course with an unusual instructional arrangement separately. Small enrollment courses using the same instructional arrangements should be presented as a group. Essentially, the process should work from the lowest administrative element upward with departments bringing their plans together with divisions and then up to the campus. At any level, adjustments in the plan can be made and plans should be defended by the proposers. All of this should happen within parameters set at the institutional level. It is most important that enrollment projections are the best quality that the institution can supply. The following process is used to set enrollment projections:

(1) Enrollment projections are established for every course at the institutional level. This should be done early in the

fall for the following year and should be a straight-line projection, using the present level of enrollment and the anticipated instructional enrollment for the following year as the two factors. In making these projections, it is important that the total projection for all courses, when added together, equal the total projection and enrollment for the institution.

(2) These projections should then be submitted to the campuses for review. The campuses should have an opportunity to provide some rationale for changes in the projections if they feel that straight-line is not adequate. Changes in projection should be accepted only with a rationale that is acceptable to the campus vice president. For example, it may be that a course that has been elective is going to be required, in which case, additional enrollment would be expected. It is most important to inform the unit in question that whatever adjustments are made in any course projection, the total for all courses must stay within the total enrollment projection for the campus. If a department wishes to anticipate more enrollment in one course, it must be reduced from another course since the total number of students in the institution is not going to increase. The importance of this consideration cannot be overstressed. The old process where departments ask for additional faculty simply because they were teaching additional courses cannot be justified. The question of where the additional enrollment for the courses is coming from must be considered. If the new courses are electives, it is probable that the greatest portion of enrollment will

come from the electives of that same department. Corresponding reductions in enrollment must therefore be recorded.

(3) The campus, using the reactions of the academic administrative units, should then adjust the enrollment projections by course (reaching the same total enrollment for the campus) and resubmit that to the various departments as the official enrollment projection upon which they may base their staffing plans. This step should be accomplished by Christmas of each year for the following year.

VIII Additional Considerations

There are several additional considerations that will not be dealt with in this workbook but which should be alluded to.

(1) Instructional Assistants

With the increasing complexity of instructional patterns, the use of instructional assistants will increase. As this happens, it is important that the Academic Accounting procedure take them into account. If it does not, various arrangements cannot be compared effectively. The simplest way to compute the cost of instructional assistants is to equate them with faculty on the basis of their average salary vs the average faculty salary. An additional column can be added to the Academic Accounting form for instructional assistants recorded on the basis of their relationship to faculty in salary. For example, if the average instructional assistant's salary were $6,000 and the average faculty salary were $10,000, each full-time instructional assistant would be added into the summary as .6 of a faculty member.

(2) Conversion to Dollars

At some point in developing an analysis of cost, it becomes desirable to convert the number of instructors required into

dollars. The most important consideration is one which is probably inconsistent with the desires of college business officials: Do not use actual salary when comparing costs of instruction from one area to another. Use the average faculty salary and multiply that by the number of positions in order to get a cost of a course or the cost of the operation of a department. The reason is that the distribution of faculty changes from year to year. If actual salaries are used, it is impossible to compare instructional arrangements for efficiency. Should a full professor at the top of a salary schedule retire and be replaced by a beginning instructor, the figures would show an increase in efficiency even if the same instructional arrangements were used. This kind of fluctuation would preclude the possibility of comparing the efficiency of the operation from one year to the next. Using the average salary allows comparisons from department to department and from year to year and gives the same total dollar output for the institution. There is no other way.

(3) Additional Services

As the use of technology in instruction increases, the percentage of the budget in instruction that is spent on technology also increases. As an institution becomes more sophisticated in the use of Academic Accounting, it will have the capacity to add the costs of audiovisual, production, computer services, and other services that are directly related to instruction and that vary from one instructional arrangement to

another. The addition of these factors is not recommended until an institution is completely confident and efficient in the use of the Academic Accounting procedure presented in this workbook. When the institution is ready and the use of technology dictates, the addition of costs for these other services can be added. This will not be an easy task since so much of the cost in these areas is in capital outlay, and any quality system must include the amortization of equipment costs.

ANSWERS

IV(1) The faculty product for Course A is 400

IV(2) The faculty product for Course B is 250

IV(3) The faculty Product for Course C is 320

IV(4) Course D requires 240 points of faculty time for presentation

IV(5) Course E requires 392 points of faculty time for presentation. Four hours of large group presentation are required to handle 900 students with a maximum of 250 to a section.

IV(6) Course F requires 24 points of faculty time for presentation. When a maximum group is to be 30, 2 sections of 3 meetings each are required for 50 students.

IV(7) Course G requires 135 points of faculty time for supervision. The regular class time is covered in presentation. There are 45 clock hours of coverage (Monday through Friday, 8 a.m. to 5 p.m.) and that equals 135 points.

IV(8) Course H requires 27 points of faculty time for supervision. The lecture is covered in presentation. It requires 3 laboratory sections of 3 contact hours each to accommodate 75 students in groups of 25. That is 9 contact hours which equals 27 points.

IV(9) Course I requires 24 points of faculty time for supervision. The only supervision is in the large group which is in groups of 200. There are 4 groups each supervised by 2 faculty members or 8 contact hours of supervision which equals 24 points. The development of the audiovisual presentations would be accounted for under Planning and Development.

ACADEMIC ACCOUNTING PLANNING FORM

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	COURSE TITLE	ELEMENTS	HRS. PER WK.	SIZE GROUPING	ENROLLMENT	CREDITS	TOTAL STUDENT CREDITS	PRESENTATION	SUPERVISION	PLANNING DEVELOPMENT	ADMINISTRATION	MANAGEMENT	POINTS REQUIRED FOR PRESENTATION	POINTS REQUIRED FOR SUPERVISION	TOTAL FACULTY POINTS	FACULTY REQUIRED	TOTAL STUDENT CREDITS	FACULTY PRODUCT
	Course K	Large Grp	1	250				6		32			24					
V(1)		Small Grp	2	20				130					5.0					
		Course			1,300	3	3,900			12	24				612	10.2	3,900	382
V(2)	Course L	Typical	3	30	600	3	1,800	60					240		240	4	1,800	450
	Course M	Television	1	1100						60								
V(3)		Learning Team	2	8					90					270				
		Course			1,100	4	4,400			36	36				402	6.7	4,400	657
	Dept.X											24			24	.4		
V(4)	Dept.X Summary														1278	22*	10,100	459

*Rounded to higher round number.

ANSWERS V(1), V(2), V(3), V(4)

VI(1) The total faculty points required to present the low enrollment courses in Department N is 264. This was determined by dividing the average class size of 15 into 320. This gave 21 and a fraction. To be conservative, 22 was used as the number of sections anticipated for the combinations of these courses. Since each was a 3 semester hour course (3 hours of presentation) 3 times 22 = 66 hours of presentation times 4 = 264 points.

VI(2) The total faculty required is 5.8 to present the low enrollment courses in Department O. This was determined by dividing the mean class size of 18 into 510, yielding 29 sections. Three hours of presentation times 29 is 87 hours of presentation times 4 = 348 points. Since the faculty load is 60 points, this was divided into 348, yielding a requirement of 5.8 faculty.

VI(3) The faculty product for the small enrollment course in Department O is 264. This figure was derived by dividing the student semester hours (510 enrollment times 3 semester hours) by the 5.8 faculty required.