DOCUMENT RESUME

ED 072 736 HE 003 784

AUTHOR	Cornish, D. J.; Batty, J. F.
TITLE	A Cost Analyses of the Five Public Colleges in Alberta 1970-71. Resource Allocations. Master Planning Monograph 8.
INSTITUTION	Alberta Colleges Commission, Edmonton.
PUB DATE	Jun 72
NOTE	148p.
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	*Cost Effectiveness; Educational Administration; *Educational Finance; Educational Planning; *Higher Education; *International Education; *Resource Allocations

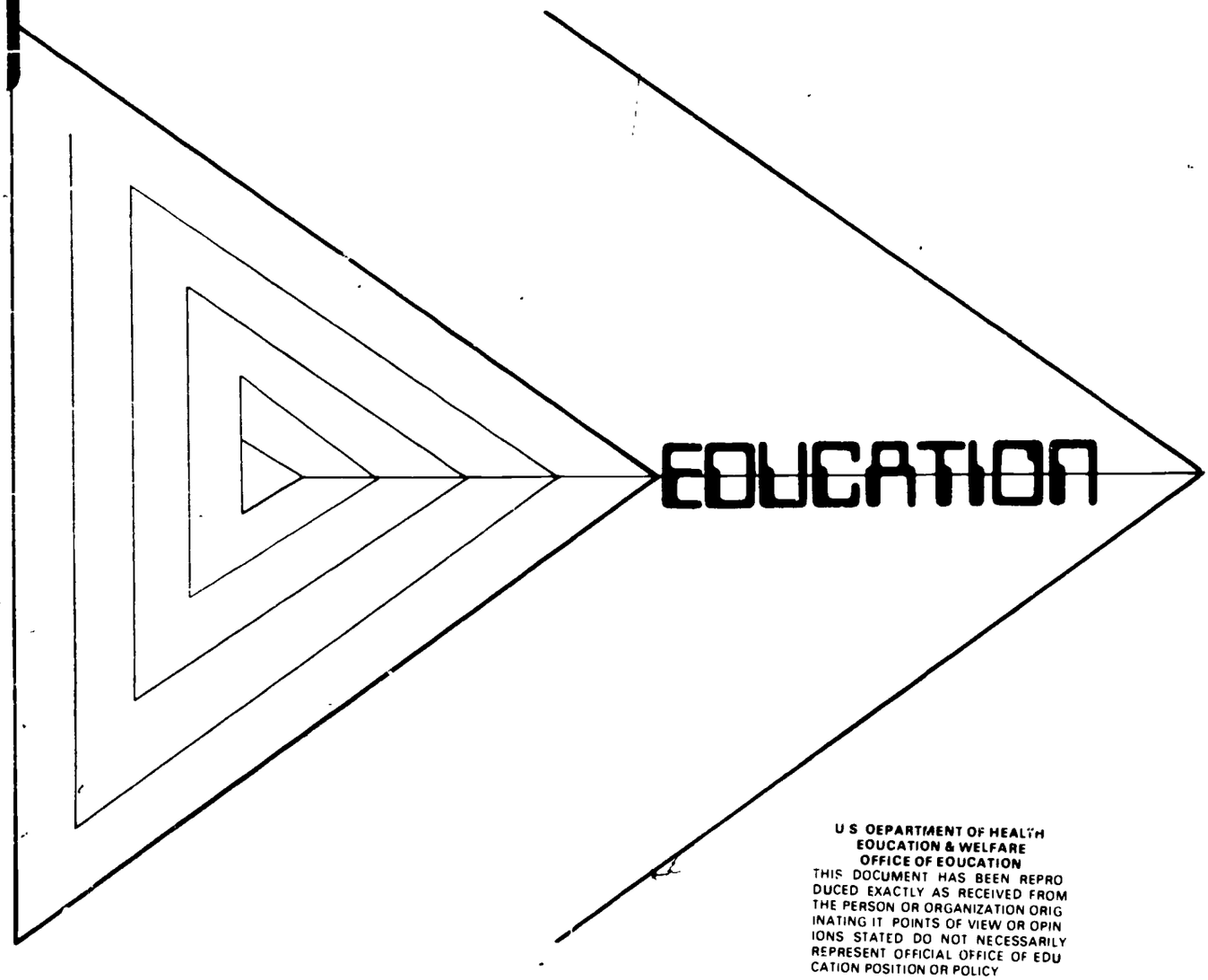
ABSTRACT

Educational planning, whether conducted on an institutional or systemwide basis, is synonymous with the future allocation of human and physical resources for the purpose of achieving a desired future state. In order that allocative decisions might be made on rational grounds, it is necessary to identify and assess the implications of current and alternative resource allocations. The findings reported in this monograph provide intra-institutionally comparable expenditure data for each of the 5 public colleges in Alberta, and by so doing, provide a quantitative analysis of current resource allocation. In addition, the study details the specific data elements required and the collection and analysis procedures to be followed in conducting an expenditure analysis on an annual basis. The findings reported in this study should prove useful to administrators, faculty, and students in each public college as information for reviewing resource allocations and for relating expenditures to output measures and indicators. The methodology used in conducting the analysis should prove useful to administrators throughout the system of postsecondary education in their efforts to make the best possible use of the human and physical resources that are allocated to the educational enterprise. (Author/HS)

MASTER PLANNING MONOGRAPH 8

Resource Allocations

A Cost Analysis of the Five Public Colleges in Alberta 1970-71



June 1972

Alberta Colleges Commission

MASTER PLANNING MONOGRAPH #8

COST ANALYSES

A COST ANALYSES OF THE FIVE PUBLIC COLLEGES IN ALBERTA 1970-71

Prepared By

D. J. CORNISH & J. F. BATTY

for the

ALBERTA COLLEGES COMMISSION

June, 1972

Any views expressed in this paper are those of the authors. They should not be interpreted as reflecting the views of the Commission or the official opinion of any of its governmental or research agencies.

FOREWORD

Educational planning, whether conducted on an institutional or system-wide basis, is synonymous with the future allocation of human and physical resources for the purpose of achieving a desired future state. In order that allocative decisions might be made on rational grounds, it is necessary to identify and assess the implications of current and alternative resource allocations.

The findings reported in this monograph provide intra-institutionally comparable expenditure data for each public college and by so doing provide a quantitative analysis of current resource allocations. The value of this analysis lies in its usefulness as a management information tool for reviewing, assessing, and improving resource utilization within each institution.

In addition, the study details the specific data elements required and the collection and analysis procedures to be followed in conducting an expenditure analysis on an annual basis. If followed, these procedures will develop an extensive data base for both institutional and system educational planning.

The findings reported in this study should prove useful to administrators, faculty, and students in each public college as information for reviewing resource allocations and for relating expenditures to output measures and indicators. The methodology used in conducting the analysis should prove useful to administrators throughout the system of post-secondary education in their efforts to make the best possible use of the human and physical resources which are allocated to the educational enterprise.

R. A. Bosetti,
Director of Planning and Research,
Alberta Colleges Commission.

ACKNOWLEDGEMENTS

The authors of this study wish to make specific acknowledgement of the contribution made by many people to the success of this study. Generally much thanks must be extended to the clerical staffs in the Finance Divisions and Registrar's Offices of each college who gave so willingly of their time and knowledge. More specifically a special thanks is extended to the Financial Officers and Vice-Presidents in each institution who were so helpful: Mr. N. Hastings, Mr. N. Romalo, Mr. W. G. Rae, Mr. W. Stewart, Mr. D. Cooper, and Mr. G. Dean. Also thanks is most surely extended to the Registrars of each college: Mr. D. Harper, Mr. J. Bolding, Mr. R. Cooke, Mr. B. Perrin and Mr. A. Blakie.

A special note of appreciation is due the fine cooperation received from Mr. J. Harvey's staff at the Northern Alberta Institute of Technology Data Centre. The special perseverance and understanding of Mrs. Faye MacDonald and Mr. D. Gordon were not only appreciated but also necessary.

Finally the authors would be terribly remiss if they did not acknowledge the significant contribution made by Mrs. J. Bykewich of the Alberta Colleges Commission. Her advice and good humor throughout the study were invaluable.

D. J. Cornish
J. F. Batty

TABLE OF CONTENTS

LIST OF TABLES

Chapter 1

INTRODUCTION

In the early part of 1971 the Finance Committee of the Alberta Colleges Commission decided to do a case study on course cost accounting in one of the public colleges. The Finance Committee made up of the Finance Officers from all of the colleges and chaired by the Director of Financial Services for the Alberta Colleges Commission hoped to assess the feasibility of such a study and then to consider its general application to the analysis of all the colleges for the 1970-71 year.

The case study was completed on May 7, 1971 and it identified a fairly clear-cut methodology for use in a system-wide analysis of course costing. The development of such a methodology and the interest of the various colleges was rather propitious at this particular time. The Master Planning Project being conducted by the Division of Planning and Research was well underway by the time the case study had been concluded. Part of the Master Plan required that a Cost Analysis be done for the system of colleges in Alberta.

As a consequence of this background, an Expenditure Analysis using individual courses as the lowest level of analysis was proposed and placed under the aegis of the Director of Financial Services. The actual study was jointly conducted by J. F. Batty, Director of Financial Services, and D. J. Cornish, Intern, of the Alberta Colleges Commission.

The report had a number of purposes:

1. To provide to each college a body of data based on course cost analysis in each of the five public colleges which were operating in Alberta in the 1970-71 academic year. These colleges were:

Grande Prairie Regional College;

Red Deer College;

Mount Royal College;

Medicine Hat College; and,

Lethbridge Community College.

2. To produce a body of data for the 1970-71 year and following years on the college system for use by the Master Planning Project in assessing current costs with a view to developing future costs.

3. To determine a technique, including data collection and analysis, which could be employed on a yearly basis in each of the colleges thus providing ongoing data for institutional planning and consistent input to the evolving aspects of the Master Plan.

EXAMINATION

[illegible] analysis and examination [illegible] post-secondary education has been [illegible] that the public worshipped at the shrine [illegible] every man's desire for social and mate- [illegible] and generously committed to "the cause." [illegible] public sources and a growing demand [illegible] eliminated, there would seem to be an increas- [illegible] patterns in post-secondary institu- [illegible]

[illegible] indicated that unit costs in higher [illegible] quantifiable value of the resources invested [illegible] identifiable measure of output such as a [illegible], course or student. The units [illegible] while the cost data flowed from the [illegible] of the institution. In quite [illegible] develop some type of unit cost faced [illegible] and define the unit; the second was to [illegible]. The answer then, as Witner [illegible], was the result of simple division. In the [illegible] smallest unit to which costs were [illegible] Aggregation of various course costs also made it

possible to determine program costs which were, in their own right, another type of unit cost.

Cost analyses found their clearest application in those areas of the business world where a product was clearly identifiable. The same ease of product identification was not so readily available in the educational process. Consequently, there was generally a need to establish some conceptual position on this problem when a cost analysis was carried out in a college. The following reasoning was used by Herschl (1965: iv) for a costing study in a university setting and the logic appeared to be applicable to the present study:

1. The nature of a (college) is an environment for learning.

2. The product in this environment is the intellectual growth of those participating in the environment, namely students and staff.

3. The process involved is essentially intellectual and it is therefore difficult to quantify.

4. As a result, instead of assigning costs to the product, the costs are assigned to a quantity that represents the product.

5. The quantity used in this analysis is the class as defined by a meeting of students and teachers.

6. Many types of students are served by the college thus the environment can be separated into many processes equal to the various programs offered. The total cost of each program is constructed by combining the costs of the smallest economic units--individual classes.

An additional though not insurmountable problem in doing cost analysis on educational institutions was the fact that very few, if any, of these operations maintained financial records which could be classified as cost account systems. The problem of placing labor charges (instructor salaries) against a particular unit of operation (class) was not difficult under the existing methods of keeping financial records in colleges. The most difficult problems arose in the apportioning of overhead and materials charges against the defined unit of production (the class). In a cost accounting system these expenditures would be charged against the particular aspect of production which required it. In such a system, cost accounting would be an obvious facilitator in the endeavor to do a cost analysis and thereby arrive at unit costs. Under present methods of financial record keeping in colleges, charges like overhead and materials were maintained under gross account items labeled as instructional supplies, plant maintenance, instructional support, etc. The problem in doing a unit cost analysis in a college then became one of taking gross data and on the basis of certain assumptions assigning portions of these costs to various units (classes). Proper cost accounting techniques in the colleges could make financial analysis much simpler and far more accurate by avoiding the need to make proration assumptions related to apportionment of these indirect costs (overhead and material).

Thus the three variables which affected the cost of units (classes) in an educational setting were: (1) salaries, (2) time required to teach a class, and (3) other variable supply or expense items. In terms of assigning labels to the various kinds of cost data required for an analysis, some variety exists. However, for the purpose of this study, the following two

basic terms were employed: (1) Direct Expenditures were the actual charges against a course created by instructional salaries and fringe benefits to these salaries; and, (2) Indirect Expenditures were the charges related to the usual business categories of overhead and material. Unit Costs were then determined by dividing student enrolment figures into the course cost figure derived by adding the Direct and Indirect Expenditures. The final product was a unit cost per student. In the present study, an additional division was also made to determine a unit cost per student contact hour.

Herschl (1965: 2) also indicated that determination of these costs required that data be supplied on three different categories: (1) Faculty information on salaries, term of employment, fringe benefits, and assignment to classes and other duties; (2) Student information by course and by program; and, (3) Fiscal information on income and expenditures.

Atherton (1970: 6) indicated that at least two methods existed for apportioning the direct costs to the various courses. The first was on a per student basis with resulting proportionate sharing of instructional salary or direct expenditure by all courses arising from enrolments in each course. A second method assumed that any given program had a set of basic courses. These courses were justifiable components of the program cost. Enrolment of students from other programs did occur and could continue to occur with no change in charging procedures until the cross use of courses resulted in the need to provide additional sections of a particular course. When this point was reached in the second method the additional charges of offering increased course sections would not be charged to the original program containing the course but would be charged to the other program generating the additional

course demand.

In this study the first method was used. However, a variation was effected in that assigned instructor hours were used to prorate the direct costs to individual courses and not student enrolment. The first method was chosen over method two since original interest was in providing course costs per student year rather than per program. As a result where the course costs were reaggregated into program costs, the cross-over demand of additional courses was not separated out as an additional charge to the program generating the demand since by methodology the course costs used were the average cost of offering all sections of any one course. The first method does, however, allow for the identification of high cost-low enrolment courses.

The basic difference that emerges between various types of expenditure analyses lies in the method used to apportion Indirect Expenditures to the chosen unit of analysis. Evans' (Atherton, 1970: 7) discussion of cost analyses indicated that differences usually occurred from the selection of:

> . . . a justifiable method of allocating the costs of general administration, student services, staff welfare and services, public service and information, general institutional expense, library expense, and physical plant expense to instructional programs without incurring burdensome and analytical procedures and expense.

Three general classification categories varying in depth of analytical computation were discussed by Atherton (1970: 8-12).

The straight-line method. This method used only one base in the allocation of Indirect Expenditures. The allocation occurred on a per pupil, per square foot of instructional area, per faculty member, or per hour of

instruction basis. The assumption was that a linear relationship existed between the quantities of indirect services consumed and the amount of indirect expense allocated to each course.

The Primary Use Plan. This plan attempted to introduce more equity into the allocation than did the straight line method. The Primary Use Plan employed many bases for allocation and the indirect expenses were allocated by the differing base used for each category of indirect expense.

Major problems existed in determining the bases to be used for different indirect expense categories: how many bases should be used (partially a function of data available), and how was the relative weight of each base to be established? An additional problem was the indirect expense related to Physical Plant expenditures. These problems were not dealt with under the Primary Use Plan.

A very simplified version of the Primary Use Plan was used in this study. In fact it could also be argued that the methodology was also a modification of the straight line method except that two bases were used. All indirect expenses other than plant maintenance were allocated to courses on a per pupil basis. Plant maintenance charges were allocated on the basis of hours of operation of a class since these indirect services were required if the class was small or large, although particularly large classes could easily require more plant maintenance than normal sized classes. In any event the per hour usuage was assumed to have a more direct relationship in this study.

The Progressive Primary Use Plan. In this plan, the approach was the same as the Primary Use Plan except that indirect expenses were not only allocated to instructional units but they were also allocated to other non-instructional areas which made use of certain indirectly charged services. This final method was felt to be most accurate. However, its use appeared to be most suited to large institutions where many categories of indirect expenditure occurred, and in particular where large departments charged with only indirect services existed but which in turn also required services.

In this study no highly complex allocation method was determined to be required. The number of departments requiring indirect expenditures was small; the per pupil and per hour bases used were felt to be reflective of the situation in each college; and since some comparisons were bound to occur either formally or informally, a common basis of allocation was desirable.

Witner (1967: 1) indicated that cost studies were useful when they provided: (1) information that could be related to the educational goals of the institution in major policy formation; (2) a basis for the evaluation of efficiency at different levels; (3) data useful to the study of alternatives; and (4) data useful in program planning and budget preparation.

More recently the Committee on Standards of the College Delegate from the Southern Association of Colleges and Schools were reported by Cage and Fowler (1971: 11-12) to have indicated that expenditure analysis was becoming a must in their organization. It was their belief that the financial resources of a college or a university determined, in part, the quality of its educational programs. The adequacy of the resources of an institution was to be judged in relation to the basic purposes of its students. The

financial resources could best be afforded to the institutions when they could show a detailed analysis of their expenditures to the legislature.

Expenditure analyses can obviously be of considerable benefit to the institution using them. However, cost data produced by them does not solve problems of allocation. Johnson (1970: 1-2) very aptly indicated that educational cost analysis does have a number of limitations: (1) Costs seldom occur in a linear fashion; (2) Cost records are generally insufficient, without adequate detail or not old enough; (3) Not all relevant costs appear in the accounts, i.e., the hidden costs of having some personnel administering and not teaching; and (4) Teacher load data is often not reliable. In actual fact the institutions doing cost or expenditure analysis must keep quite clearly in mind that decisions are seldom, if ever, based on cost alone. Expenditure data does not, nor ever will, make allocative or cost decisions. Cost-quality questions which attempt to determine what method, at what cost will produce the best results cannot, however, even be seriously posed until cost data is available.

Chapter 3

RESEARCH PROCEDURES

RANGE OF THE METHODOLOGY

Limitations

The limitations of the analysis referred to the restrictions placed on the study due to uncontrollable factors related to the circumstances in general and the data in particular.

1. The findings of the study could be slightly affected by the condition of various records in the colleges. In particular, records relating to faculty assignments were not as specific as one would have hoped they might be. This was likely due to the fact that the specificity of faculty assignments required to allocate course costs had not been necessary in the college up to that time. A higher degree of specificity could have been effected but only after large demands on time, money, and much inconvenience of college personnel. Such an additional effort was not considered necessary since the majority of data collected was adequate for the degree of precision inherent in the costing technique.

2. Also of a theoretically limiting nature was the accuracy of data on financial expenditures. In most instances this material came from audited statements and other financial records and, if any errors occurred, they were clerical in nature and generally insignificant.

Delimitations

The delimitations of the study related to conscious decisions on the part of the researchers to define the scope of the study.

1. The study was conducted on the year of operation from July 1, 1970 to June 30, 1971.

2. All courses were costed except those associated with Departments or Divisions of Continuing Education.

3. Acceptable enrolment figures used were those reported after 25 percent of the course had elapsed.

4. Capital costs were not included in the study for the following reasons noted by Cage and Fowler (1971: 5-8): (a) Colleges have not experienced the income tax and audit demands required to maintain depreciation records; (b) it was often difficult to determine who actually used some capital equipment; (c) some equipment like data processing hardware was used on a lease or rental basis; and (d) it was often difficult to get agreement on the "life" of equipment.

5. A number of limiting decisions were made in the methodology used to allocate expenditures to courses and these delimitations are indicated below in the explanation of the method.

6. An additional delimitation related to the decision to allocate all faculty salaries as instructional costs. Under the assumption that a large majority of faculty time was in instruction, it was considered justifiable to use total salary as a direct charge against the courses an instructor taught. Instructors clearly do spend time in non-instructional duties and to the extent that this factor was not removed, the cost estimates produced by

this report are overestimated.

7. A final delimitation related to #6 above was based on the assumption that time spent by instructors in different classes was directly related and in proportion to pre and post-instructional activities.

The following statement drawn from a Cost Study Manual produced by the Illinois State Board of Education does, however, place the general limiting and delimiting problems associated with unit cost studies in perspective:

> . . . unit costs may be derived in a variety of ways, some no doubt more valid than others. The host of arbitrary decisions which must be made in conducting such a study reflect the experiences and biases arising out of [Alberta] practice and [Alberta] needs. Consequently, other researchers may not endorse our "reasons" for particular decisions. Nevertheless if comparative . . . data are to be available, some common sets of assumptions and procedures must be adopted for conducting cost studies. (Illinois State Board of Education: 1966, Preface).

METHODOLOGY

Estimation of Course Costs

The method used to derive the individual course costs was essentially a two step process: (1) Direct Instructional Costs were determined for each course on the basis of a proration technique, and (2) Indirect Costs were established on two bases for each course. The products of these two steps were then added to give a Total Course Cost.

Direct Instructional Costs. These costs were determined by taking an instructor's salary and adding a specified percentage for fringe benefits. Additional pay for overload was also added to this figure to arrive at the instructor's total salary for the 1970-71 contract year. Extra pay for evening or summer courses was not added directly to the instructor's contract

salary but was charged directly to the course.

With a total salary for each instructor, the next step was to determine what the instructor's teaching assignments were for both terms. Having determined each instructor's assignment by course, it was possible to determine the total hours an instructor taught in each course (hours assigned per course x the length of the course in weeks) and also the total instructional hours assigned for all courses (sum of hours spent in each course).

The portion of the instructor's salary assigned as Direct Instructional Cost to each course was the percentage that the hours for each course represented of the total hours assigned to the instructor:

$$\frac{\text{Total Hours Assigned Per Course}}{\text{Total Hours Assigned to Instructor for the Year}} \times \text{Instructor's Total Salary} = \text{Direct Instructional Cost Per Course}$$

An important methodological decision was made at this point in the proration of direct instructional cost. If a college used contact hours to assign workloads, then these were used as the basis of proration. Contact hours were used in all colleges except Medicine Hat which had a contract formula for equating contact to credit hours. Credit hours were used as a basis for proration in Medicine Hat.

At the end of this proration process additional costs for markers, laboratory assistants, etc. were added to the Direct Instructional Cost per Cours
Course.

Indirect Costs. These costs were prorated to each course on the basis of enrolments and class hours (time):

(1) *Enrolments:* Proration by enrolments assumed that certain charges against revenue were directly related to the number of students being served by the college. The number of dollars prorated by enrolments included such items as: Administrative costs, Instructional support, Community Services, and Counselling. The difference between the Instruction Item in the college's financial statement and the total of all instructor salaries and additional costs assigned to individual courses was also prorated by enrolment.

(2) *Time:* Proration of certain dollars by class hours assumed that the number of hours of usuage was directly related to Plant Maintenance, the only item prorated by class hours.

Once these two base figures representing Indirect Costs to be apportioned by enrolment and hours were determined, the following technique was used:

By Student Enrolments as follows:

(a) Total dollars to be apportioned on student enrolment basis.

(b) Total students in total courses.

(c) Divide (a) by (b) = Indirect per pupil cost based on enrolment.

(d) Multiply the result of (c) by the enrolment in each course to yield the amount of indirect costs to be apportioned to each course on the basis of student enrolments.

On a Time Basis as follows:

(a) Total dollars to be apportioned on class hours basis.

(b) Determine the number of hours assigned to each course on a weekly basis x the length of that course in weeks.

(c) Total the results of (b) for all courses.

(d) Divide (a) by (c) to determine the indirect cost factor to be apportioned to each course on a time basis.

(e) Multiply the factor of (d) by the (b) result for each course to determine indirect costs to be apportioned for specific courses on a time basis.

Cost Indicators. The resulting information on course costs was then reworked into the following measurements of course cost:

(1) *Total Course Cost:* The total course cost was the result of adding three figures: (a) Direct Instructional Costs per Course,

(b) Indirect Costs by Enrolment, and

(c) Indirect Costs by Class Hour.

(2) *Costs per Student:* The cost per student was the result of dividing:

$$\frac{\text{Total Course Cost}}{\text{Number of Students Enrolled in the Course}}$$

(3) *Cost per Student Hour:* This cost was derived by dividing:

$$\frac{\text{Total Course Cost}}{\text{No. of Students Per Course} \times \text{No. of Hours Course Taught} \times \text{Length in Weeks}}$$

or, more simply:

Total Course Cost

Total Yearly Student Contact Hours per Course

[illegible] Program Cost

[illegible] were determined by using a sampling technique. The [illegible] actually used by various programs was nearly impossible [illegible] stored in calendars. As a result, a decision was made to sample the full-time students (four or more courses) who were enrolled in [illegible] programs. A ten percent sample of all the students in the program, if there were fewer than ten, was drawn using a table of random numbers. Actual records for each individual student were examined to determine what courses were in the person's program. These individual program costs were examined [illegible] low, high, and average program cost.

While this approach appeared straightforward, there were a number of problems that should be mentioned.

One of the basic problems was to determine what year a student was officially in. Information in this regard occurred in a number of formats: (1) the year a student was in the college, which did not necessarily coincide with the year of program, and (2) the year a student was in a program--the latter being that students often had a mixture of year one and year two courses in a combined program of high school equivalence and university transfer.

As a result, a decision was made to accept the colleges' year of classification and then to examine the programs of sample students to be sure that the year under examination was the year of program. This was possible

in all colleges except Calgary. In that college, where the volume of work made it possible, student programs were individually examined to take out first and second year costs. Additionally, the flexibility of Calgary's program offerings allowed students to start a year in a semester of one academic year and finish the year in another semester of a different academic year. This created some difficulty in finding students who had full years which coincided with the 1970-71 year of the Costing Study. As a result, a decision was made to determine program costs by semester in Calgary and to arrive at an average semester cost for a program. The assumption was then made that a normal program year was equal to twice the semester cost for any specific program.

Also the student lists by program used for sampling did not designate the year of program. Where it became evident by examination of individual programs what the year was, a program cost by year was produced. Where the sample did not yield clear demarcation between years of a program, a single program cost, representative of both first and second years, was developed. Often some program costs could not be produced simply because the high degree of program flexibility offered to students in Calgary meant that most or all of the sample was attending on a part-time basis. This was particularly so with many of the Certificate Programs.

Finally, one should be most aware that due to the sampling technique used, the figures produced represent what programs actually cost in the 1970-1971 year. The program costs do not represent the "normal" program as listed in respective college calendars. The actual program costs produced

by this study represent the inclusion of failure and repeat courses as well the "normal" program.

Chapter 4

COST ANALYSIS - FINDINGS

Actual details of course and program costs are included in Appendices A, B, C, D, and E. Course costs were reported with the following data and cost indicators: (a) full or one-half course was designated, (b) enrolment, (c) total cost per course, (d) cost per student, and (e) cost per student contact hour. Program costs were reported with a high, low and average cost for each college.

COURSE COSTS

As related earlier course costs were derived by prorating direct and indirect costs to each course using the faculty member's assigned class contact hours to prorate the direct cost and using enrolment and total student contact hours to prorate the indirect costs. Salary charges for markers and and instructional assistants were also assigned to the cirect cost.

The costing details for all of the courses are included in Table 2 of Appendix A, Table 2 of Appendix B, Table 2 of Appendix C, Table 2 of Appendix D, and Table 2 of Appendix E. Courses are listed alphabetically in these tables. In the following analyses full-time and one-half time courses were separated. Essentially a full-time course was one offered for both (two) semesters, while a one-half course was only offered for one. Also the following analyses were reported using the cost per student contact hour or unit since this was determined to be more comparable than just per student cost since the former measure included the time factor as well as the enrolment factor to give a more refined measure.

Range of Full-Time Course Cost Per Student Contact Hour

Generally speaking, there was a wide range in course costs though a relationship did exist between high cost and low enrolment, and low cost and high enrolment as indicated in Tables 1 and 2. Since only Grande Prairie and Red Deer offered any number of full courses it was difficult to determine if full courses were more or less expensive to offer than half courses. The most expensive full courses were lower than the most expensive half courses. However, this relationship was not at all clear upon comparision of the lowest cost full and half-time courses. Comment on Medicine Hat's full-half course arrangement was difficult since only four full courses were offered.

An enrolment-cost relationship did appear evident in both full and half-time courses. At least two problems arose, however, in that the lowest cost course did not always have the highest enrolment or other courses with similarly low costs had only half the enrolment of the lowest cost course. This might suggest that in any particular college there was a maximum class size beyond which cost reductions were affected very minimally.

A similar problem also occurred with the highest cost courses. Often other courses of equally low enrolment existed but the cost of these courses, while still high, was considerably lower than the highest cost course. Taken together the problems outlined above added considerable strength to the observation that the enrolment-cost relationship was not linear. The relationship would appear to be multi-variate in nature with other factors such as hours devoted to a course, cost of the instructor, and charging of additional costs (markers, assistants) having a mediating effect on the more obvious cost-enrolment relationsip.

Table 1

Range of Per Student Contact Hour Full-Time Course Costs with Enrolments

College	No. of Full Courses Taught	Lowest Cost		Highest Cost	
		Cost	Enrolment	Cost	Enrolment
Grande Prairie	60	0.59	97	10.04	4
Red Deer	55	0.24	289	10.50	4
Mount Royal	0				
Medicine Hat	4	2.51	17	2.93	15
Lethbridge	0				

Table 2

Range of Per Student Contact Hour Half-Time Course Costs with Enrolments

College	No. of Half Courses Taught	Lowest Cost		Highest Cost	
		Cost	Enrolment	Cost	Enrolment
Grande Prairie	37	0.59	53	11.95	4
Red Deer	106	0.34	482	13.16	3
Mount Royal	350	0.15	625	51.20	1
Medicine Hat	122	0.37	152	16.55	2
Lethbridge	248	0.28	123	8.14	4

It was very difficult to generalize to a category of courses as more expensive because of the mix of low and high cost courses. In Grande Prairie the low cost courses were in Business and Sociology, in Red Deer, Physical Education and English courses; in Mount Royal, an English course; in Medicine Hat an Adult Upgrading course and Math 99; and in Lethbridge a welding course.

High cost courses were equally mixed with a Business and Mechanical Engineering course in Grande Prairie; Secretarial Science and Physics in Red Deer; Math in Mount Royal; Secretarial Science and Biology in Medicine Hat; and an Outdoor Recreation and Conservation course in Lethbridge. The highest cost course in Calgary was clearly due to the one-to-one instructor-student ratio. The next highest Calgary course was in Secretarial Science.

It would appear that certain business courses and Math-Science oriented courses did tend to cost more, although exceptions occurred. The dominance of a particular low cost courses category was just not clear. The high and low cost of course categories became more clear in the Program Costs.

Enrolment Distributions

Full Year Courses. Table 3 shows the distribution by number and percentages of enrolment in full year courses. Mount Royal and Lethbridge had no full courses; Medicine Hat offered only four with three having less than ten students while the other had between 30 and 99. Grande Prairie's full courses comprised 62 percent of its total course offerings, while Red Deer's full courses constituted only 34 percent. Grande Prairie had a greater percentage (71.6) of its full-time classes below 30 pupils while Red Deer had a greater percentage (50.9) of its full-time courses with enrolments over 30.

Table 3

Distribution of Full Year Courses By Enrolment

College	Total College Enrol-ment	Total of Full & 1/2 Courses	Total No. of Full Courses		Enrolments									
			N	% of All Courses	1 - 9		10 - 19		20 - 29		30 - 99		100 +	
					N	%f	N	%f	N	%f	N	%f	N	%f
Grande Prairie	323	97	60	61.8	8	13.3	24	40.0	11	18.3	16	26.7	1	1.7
Red Deer	904	161	55	34.0	7	12.7	9	16.4	11	20.0	21	38.2	7	12.7
Mount Royal	2,306	350	0	0	-	-	-	-	-	-	-	-	-	-
Medicine Hat	477	126	4	3.2	3	75.0	-	-	-	-	1	25.0	-	-
Lethbridge	1,040	248	0	0	-	-	-	-	-	-	-	-	-	-

Half Year Courses. As Table 4 indicates, Grande Prairie had 38.1 percent of its course offerings made up of half courses. Red Deer had 65.8 percent, while Mount Royal, Medicine Hat and Lethbridge had 100 percent, 96.8 percent and 100 percent respectively. There would appear to be a strong trend toward the use of half courses.

Mount Royal had the greatest number of half-year courses with 30 or more students and also the smallest percentage of classes below 30 students and below 20 students. Mount Royal also had the smallest group of courses with nine or less students. When Atherton (1970: 22) found Mount Royal to have the highest number of students in this category, he suggested that the economies of scale resulting from large enrolments were likely offset by the need to offer a wider variety of courses. If Atherton was correct, it would appear that economies of scale occur in plateaus. In this study, the number of students appeared to come into line with course offerings so that the economies of scale were no longer offset by the need for a wider variety of courses. It could also be a clear indication that at a certain level of enrolment, sufficient courses exist to allow for quite efficient cross-usage of courses from department to department. This would tend to be supported by the fact that Grande Prairie, the smallest and newest college, had more students in smaller classes and less in the larger classes than did any of the other colleges.

In Red Deer and Medicine Hat, the break between the percentage of courses with 30 or more and less than 30 students was almost exactly the same. Both colleges had 41 percent of their courses with enrolments above 20. This was very interesting in view of the similarity of programs in both colleges

Table 4

Distribution of 1/2 Year Courses by Enrolment

College	Total College Enrol-ment	Total of Full & 1/2 Courses	Total No. of 1/2 Courses		Enrolments									
			N	% of All Courses	1 - 9		10 - 19		20 - 29		30 - 99		100 +	
					N	%f	N	%f	N	%f	N	%f	N	%f
Grande Prairie	323	97	37	38.1	9	24.4	8	21.6	8	21.6	12	32.4	0	0
Red Deer	904	161	106	65.8	14	13.2	23	21.7	25	23.6	37	34.9	7	6.6
Mount Royal	2,306	349	349	100.0	29	8.3	63	18.1	59	16.9	135	38.7	63	18.0
Medicine Hat	477	126	122	96.8	23	18.9	34	27.9	15	12.3	42	34.4	8	6.6
Lethbridge	1,040	248	248	100.0	37	15.0	85	34.3	45	18.1	63	25.4	17	6.9

and in view of the total enrolments, Red Deer's being almost double Medicine Hat's. These figures seemed to point to the existence of developmental levels and to suggest that levels of growth occur where economies of scale can be expected to emerge. It could also suggest a clear difference in economy of operation between the two colleges.

The issue was not quite that simple, however, because Lethbridge had 67.7 percent of its classes with fewer than 30 students. Since Lethbridge was similar in size to Red Deer, this could suggest that economies of scale begin to be negated by increased course offerings beyond the 1000 student level. It also suggested quite clearly that different program and course orientation can be important variables because Lethbridge was geared to more small-class, skill-oriented program than were Red Deer and Medicine Hat.

Regardless of the dissimilarities of enrolment distributions, college size does appear to be a factor in class size. Grande Prairie as the smallest college did not tend to the class sizes of Mount Royal. While Red Deer and Medicine Hat did not have similar distributions, the Red Deer trend to larger classes identified by Atherton (1970: 22) seemed to be slowing down, and the bimodal distribution found by Atherton (1970: 22) in Medicine Hat seemed to be smoothing out towards larger classes. Quite clearly, however, as the Lethbridge situation indicated the relationship did not turn on college size alone but was strongly influenced by course and program type.

Cost Distribution

Full Year Courses. The cost of full year courses as detailed in Table 5 was only open to examination in Grande Prairie and Red Deer. In this case,

Table 5

Distribution of Full Year Courses by Cost Per Student Contact Hour

College	Total College Enrol-ment	Total Full Courses	Course Costs Per Student Contact Hour													
			$0.49 or Less		0.50-0.99		1.00-1.99		2.00-2.99		3.00-3.99		4.00-4.99		5.00-9.99		10.00+	
			N	%f	N	%f	N	%f	N	%f	N	%f	N	%f	N	%f	N	%f
Grande Prairie	323	60	0	0	5	8.3	6	10.0	23	38.3	13	21.7	4	6.7	8	13.3	1	1.7
Red Deer	904	55	3	5.5	10	18.2	10	18.2	14	25.5	6	10.9	2	3.6	7	12.7	3	5.5
Mount Royal	2,306	0																
Medicine Hat	477	4	-	-	-	-	-	-	4	100.0	-	-	-	-	-	-	-	-
Lethbridge	1,040	0																

Red Deer had more low cost courses than did Grande Prairie, but Red Deer also had more high cost courses. In spite of this, Red Deer's distribution was slightly skewed in favor of low cost courses while Grande Prairie's tended to skew slightly in the opposite direction. However, in both colleges, the bulk of course costs ranged between $1.00 and $3.99 per student contact hour.

Half Year Courses. The most striking observation taken from Table 6 was that Mount Royal had 53.6 percent of its courses at a cost level below $1.99 per contact hour and only 14.9 percent over $4.00. Course costs tended to skew to high costs per student contact hour in Grande Prairie. This college had the fewest number of courses costing less than $1.99 per student contact hour. This trend was strengthened when all the full and half courses were equated. The cost trends for both the smallest and least varied and the largest and most diversified colleges were consistent with expectations related to economies of scale.

The majority of courses in Medicine Hat and Red Deer cost $2.99 per student contact hour or less, the percentages being 76.3 and 68.9 respectively. Medicine Hat tended to have somewhat lower course costs, a factor likely explained by differences in wages paid to faculty. The course cost distribution in Lethbridge was not too dissimilar from that of Medicine Hat. It was somewhat lower than Red Deer's distribution and slightly less than Medicine Hat's. However, Lethbridge was the only college that had no course costs in the $10.00 plus cost per student contact hour.

Many of these relationships became readily apparent when the average 1970-71 salaries of full-time faculty, excluding administrators, were examined. Grande Prairie had the highest average salary at $12,874 and it also had the

Table 6

Distribution of 1/2 Year Courses by Cost Per Student Contact Hour

College	Total College Enrolment	Total 1/2 Courses	Course Costs Per Student Contact Hour													
			$0.49 or Less		0.50–0.99		1.00–1.99		2.00–2.99		3.00–3.99		4.00–4.99		5.00–9.99		10.00+	
			N	%f	N	%f	N	%f	N	%f	N	%f	N	%f	N	%f	N	%f
Grande Prairie	323	37	0	0	3	8.1	2	5.4	7	18.9	10	27.1	5	13.5	8	21.6	2	5.4
Red Deer	904	106	2	1.9	7	6.6	24	22.6	18	17.0	22	20.8	15	14.2	16	15.1	2	1.9
Mount Royal	2,306	350	43	12.3	60	17.2	84	24.2	52	15.2	58	16.3	13	3.7	29	8.0	11	3.2
Medicine Hat	477	122	5	4.1	14	11.5	29	23.8	21	17.2	24	19.7	9	7.4	11	9.0	9	7.4
Lethbridge	1,040	248	8	3.2	35	14.1	54	21.8	56	22.6	45	18.1	28	11.3	22	8.9	0	0

[illegible] course cost per college distribution. Mount Royal and Red Deer had very similar average salaries with the figures at $11,959 and 11,994 respectively. Mount Royal, however, as had been indicated, had the lowest course cost distribution. While Red Deer ranked second below Grande Prairie in course cost distribution, Lethbridge had an average salary of $11,344 and Medicine Hat's average salary was the lowest at $10,948. In spite of this relationship, Lethbridge's course cost distribution was somewhat lower than Medicine Hat's.

Conclusion

The relationships between college size, average salary, and course cost distribution indicated a number of things. Size of the institution was definitely a factor which could work to favor the economical operation of the institution. This seemed clear in the case of Calgary with the second highest salary yet the lowest cost distribution. Salary rates paid faculty were also a key factor. From the size orientation alone one would expect Red Deer to have a lower average cost distribution than Medicine Hat had. This was not the case, and one reason became apparent when an examination of Red Deer's average salary revealed it to be 11 percent higher than Medicine Hat.

Generally the rank from highest to lowest for average salary was maintained when institutions were ranked by course cost distribution. The one exception was Mount Royal with the third highest average salary but the lowest course cost distribution. Size was the obvious economy factor in Calgary as was size to a lesser degree in Lethbridge. However, the size difference was not so great between Red Deer and Lethbridge thus lending more support to the consideration that faculty pay rates were also a definite factor in economy.

One final economy factor was the practice carried out by both Mount Royal and Lethbridge of hiring a large number of sessional instructors. The salaries of these people generally related to the offering of one specific course and the unit cost of these courses was quite naturally much lower than courses taught by full-time instructors. The widespread use of this practice was an obvious influence on the larger number of low cost courses which occurred in the distributions of Mount Royal and Lethbridge. The three most apparent variables affecting course cost distribution were size, faculty salaries, and staffing practices.

SUPPORTING SERVICES

Data for an examination of supporting services were drawn from the 1970-71 financial statements of the colleges. The specific services chosen for examination were Counselling, Library, and Health Services. The per student figures in Table 7 were derived by dividing the financial statement data by the enrolments provided earlier in Table 6.

Counselling

High counselling costs appeared initially to be related to high enrolment and to a certain extent this was borne out since Calgary had the highest per student cost. However, beyond that similarity the cost and enrolment rankings deviated. Grande Prairie, the smallest college, had the third highest counselling cost. An enrolment relationship might still exist only in an inverse way in that a smaller college, should it choose to give counselling a high priority by hiring full-time staff, will have to spread the cost out over a smaller population thus giving rise to a higher per student

Table 7

Actual Total and Per Student Expenditure on Supporting Services

College	Counselling		Library		Health		All Services	
	Total	Per Student	Total	Per Student	Total	Per Student	Total	Per Student
Grande Prairie	$ 14,041	$43	$ 29,087	$90	$ -	-	$ 43,128	$134
Red Deer	43,395	48	86,531	96	-	-	129,926	144
Mount Royal	200,445	87	150,646	65	18,057	$8	369,148	160
Medicine Hat	10,703	22	48,765	102	-	-	59,468	125
Lethbridge	30,709	30	25,067	24	-	-	55,776	54

expenditure. Also, if a college determined that its counselling service was to serve the community and the college student, costs could be considerably higher. This would appear to have been a factor in Calgary.

Library

Clear patterns of expenditure were much more difficult to determine in regard to library. The one key factor was the need for large initial and ongoing expenditures for any library regardless of college size. Five hundred students need an adequate basic library equally as much as do 2000 students. Furthermore, libraries can often be supported by the local community in ways which will increase library service and quality without increasing per student costs. The striking difference between Medicine Hat and Lethbridge was understandable in light of the establishment of Medicine Hat's new facilities and in view of past sharing arrangements Lethbridge has had with the University of Lethbridge. The fact that Lethbridge College was a considerably older institution would also be significant.

Conclusion

One final set of relationships were revealed in the data compiled in Table 8. The most interesting factor related to the percentage of total college budgets that was allocated to direct instructional expenditure. Since this direct expenditure was very carefully "cleared" of any non-instructional charges before prorating it to individual courses, the data in Table 8 gives an excellent picture of what portion of a college operation was devoted to actual instructional salary. The ranking order of college by percentage of budget on instructional salaries was consistent with the ranking of average

Table 8

Analysis of Total Expenditure by Types of Input

College	Direct Instructional[1]		Indirect[2]				Total
			Supporting Services[3]		Balance of Indirect[4]		
	Amount	%	Amount	%	Amount	%	
Grande Prairie	284,535	42.2	43,128	6.4	347,295	51.4	674,958
Red Deer	770,857	50.1	129,926	8.4	637,863	41.5	1,538,646
Mount Royal	1,635,523	44.9	369,148	10.1	1,638,980	45.0	3,643,651[5]
Medicine Hat	399,934	52.7	59,468	7.8	299,253	39.4	758,655[5]
Lethbridge	654,076	43.6	55,776	3.7	790,711	52.7	1,500,563

[1]Direct Instructional is comprised only of instruction salaries and benefits as used in the study.

[2]Indirect is the amount prorated to courses on the indirect basis outlined in the study.

[3]Supporting Services are from Table 6 and include Counselling, Library and Health Services charges as they appeared in the financial statements.

[4]Balance of Indirect was the remainder of the indirect charges after removing the specified supporting services.

[5]These two totals do not include rental facilities as part of plant maintenance and cafeterias and residences were "netted out."

salaries for Red Deer, Mount Royal and Lethbridge. For Grande Prairie and Medicine Hat, the situation was completely reversed. Medicine Hat devoted the largest portion of its budget to salary (52.7 percent) but had the lowest average instructional salary. Grande Prairie had the highest average salary but devoted the lowest portion of its budget to instructional salary.

PROGRAM COSTS

As indicated earlier, program costs were determined by using a sampling technique and then by assigning course costs to the programs of the individuals in each sample. This method produced an actual program cost representative of such factors as failures, repeat courses, and the wide variety of option choice available to students in the development of their individual programs. Thus the cost of an individual student's program was the combined cost of the various courses included in the program; the course cost information coming from the data in Appendices A, B, C, D, and E. The final output was an average program cost representative of the sample, a low program cost equal to the lowest program in the sample, and a high program cost equal to the highest program.

No attempt was made to cost only comparable programs. All programs were costed in an effort to provide as much information as possible to individual colleges. While comparison of programs in each college was inevitable, this was not the primary purpose in costing various programs.

Grande Prairie

The data on program costs for Grande Prairie are included in Table 9. The most striking feature of the program costs at this institution was the sharp distinction in cost between the relatively low Arts and Social Science programs and the high cost Math/Science and Vocational-skill programs. Aside from the high cost of instructional salaries, it was also evident that small enrolments figured significantly in the high cost of the Science-Vocational programs. In addition, the added time requirements of laboratories, skill-building and experimental, tended to compound the other factors. Unlike some other colleges where students appear to use low cost Social Science options in the first year of a Math/Science program, students in Grande Prairie had extremely high cost courses which serviced only the specific programs. However, the most obvious factors seemed to be related to high instructional salaries, low enrolments, and generally the small college problem of having to provide specific courses basic to programs without being able to use these courses for inclusion in other programs.

Red Deer

Program costs for Red Deer College are included in Table 10. The Social Science-Math/Science cost distinction was evident in Red Deer as well, though here the difference was not nearly so large. This was due in part to two factors: (1) A better mix of lower cost Social Science options for students taking Science oriented programs with higher cost laboratory courses to be taken after transferring to a university; and (2) the influence of larger enrolments on the cost of various courses.

Table 9

Range of Program Costs in Grande Prairie College

	Year	Low	Average	High
Transfer Programs:				
Arts BA General	1	1,837	1,842	1,847
Commerce	1	1,504	1,975	2,189
Education	1	1,770	2,160	2,839
Engineering	1	4,735	4,735	4,735
Forestry	1	2,573	2,573	2,573
Home Economics	1	2,105	2,105	2,105
Physical Education	1	1,083	2,124	2,855
Pre-Law	1	2,042	2,285	2,508
Pre-Medicine	1	3,267	3,267	3,267
Science BSc General	1	2,414	2,995	4,363
Diploma Programs:				
Business Administration	1	1,448	2,191	2,932
Business Administration	2	3,340	3,642	3,935
Secretarial Science	1	1,444	2,427	3,022
Secretarial Science	2	1,652	2,040	2,433
Combined University Transfer and Matriculation Program		1,723	2,501	4,111

Table 10

Range of Program Costs in Red Deer College

	Year	Low	Average	High
Transfer Programs:				
Agriculture	1	1,634	1,695	1,803
Agriculture	2	1,448	1,520	1,579
Architecture (one student)	1	1,236	1,236	1,236
Arts	1	945	1,227	1,536
Arts	2	970	1,249	1,656
Commerce	1	1,057	1,338	1,659
Education	1	1,127	1,405	2,449
Education	1	954	1,220	1,583
Engineering	1	1,874	1,874	1,874
Engineering (one student)	2	1,867	1,867	1,867
Household Economics		1,178	1,385	1,466
Law		1,261	1,431	1,922
Medicine	1	1,351	1,437	1,622
Medicine	2	1,805	1,842	1,880
Pharmacy		1,742	1,807	1,873
Physical Education	1	1,394	1,556	1,809
Physical Education	2	1,529	1,747	2,001
Recreational Administration		1,088	1,283	1,526
Science	1	1,093	1,501	1,852
Science	2	1,534	2,121	3,380

Table 10 Continued . . .

Table 10 (Concluded)

	Year	Low	Average	High
Diploma Programs:				
Arts and Science	1	1,681	2,213	2,853
Business Administration	1	1,811	2,300	2,495
Business Administration	2	1,819	2,148	2,532
Nursing	1	2,835	2,835	2,835
Nursing	2	3,588	3,721	3,736
Secretarial Science	1	1,698	2,429	2,874
Secretarial Science	2	2,424	3,225	4,314
Social Services	1	1,740	2,291	2,540
Social Services	2	1,884	1,900	1,968
Combined University and High School Equivalent Programs	1	1,103	1,546	1,844
	2	1,270	2,041	3,739

Diploma or career programs tended to be considerably more expensive than transfer courses. For example, the general diploma in Arts and Science was close to $1,000 higher than the first year in an Arts transfer program. This suggested that transfer courses which could have been used to service various diploma programs were not being used to accomplish this purpose. This situation also raised a question about the amount of similarity that should or could exist between transfer and diploma programs. In addition, it should be noted that in 1970-71 the diploma programs were relatively new and higher costs due to implementation could be expected. Some of the diploma programs also carried high cost laboratories necessary for skill development. Nursing was the most outstanding program for cost and the factors involved were low pupil-instructor ratios reflected in the tean approach for instruction and traditionally low ratios related to laboratory (hospital) instruction. In addition the need for an extra-cost summer program resulted in higher costs.

Mount Royal

The program costs for Calgary are shown in Table 11, though it should be noted that Calgary was in the process of clearing up ambiguities in program designation at the time program costs were generated. Programs for transfer to the University of Calgary were self-explanatory as was the meaning of Certificate Programs. However, a wide variety of diploma programs in Calgary carried transferability to universities in Eastern Canada and the United States. These programs were designated as Transfer to Other Universities in this study and included students enrolled in the old B program and the new T program. Programs designated as D by Mount Royal referred to students in a two year diploma program with no intent to transfer.

Table 11

Range of Program Costs in Mount Royal College

Year	Low	Average	High
Transfer Programs to the University of Calgary:			
Arts	1,194	1,478	1,878
Business Administration	1,004	1,247	1,574
Household Economics	1,241	1,241	1,241
Pharmacy	1,218	1,615	2,200
Physical Education	1,398	1,611	1,894
Pre-Dentistry	1,136	1,608	1,800
Pre-Veterinary	1,200	1,509	1,722
Science	1,014	1,579	1,866
Miscellaneous (no major specified)	1,238	1,238	1,238
Combined High School Equivalent and Transfer Programs to U of C:			
Agriculture	1,304	1,389	1,446
Arts	1,246	1,491	1,614
Business Administration	926	1,158	1,460
Education	1,134	1,355	1,690
Pharmacy	1,692	1,883	1,940
Physical Education	1,298	1,579	1,998
Pre-Dentistry	1,623	1,623	1,623
Pre-Medicine	1,364	1,764	2,482
Pre-Veterinary	1,690	1,690	1,690
Science	1,014	1,306	2,404

Table 11 Continued . . .

Table 11 (Continued)

	Year	Low	Average	High
Transfer Programs to Other Universities:				
Applied Social Sciences	1	798	1,436	1,884
Applied Social Sciences	2	1,348	1,651	2,318
Arts		1,072	1,820	3,318
Broadcasting		1,016	1,638	2,628
Business Administration		1,020	1,358	2,226
Computer Science		1,142	1,626	1,964
Correctional Careers		1,500	1,627	1,728
Engineering	1	1,272	2,056	3,758
Engineering	2	2,180	,697	3,022
Interior Design	1	976	1,529	2,306
Interior Design	2	1,202	1,566	1,852
Journalism	1	1,046	1,443	1,926
Journalism	2	1,272	1,824	2,312
Optometry		1,168	1,649	2,386
Petroleum Land Management		1,066	1,350	1,988
Physical Education	1	1,148	1,396	2,080
Physical Education	2	1,104	1,600	2,204
Police Science		1,618	2,103	2,090
Public Relations		1,186	1,495	1,884
Recreation and Outdoor Education	1	1,134	1,585	2,128
Recreation and Outdoor Education	2	1,196	1,517	1,758
Secretarial Science		1,066	1,365	1,830
Social Work		1,560	1,907	2,362
Miscellaneous (no majors specified)		794	1,400	2,072

Table 11 Concluded . . .

Table 11 (Concluded):

	Year	Low	Average	High
Diploma Programs-Two Year Terminal with NO Transfer:				
Broadcasting	1	1,216	1,650	2,112
Broadcasting	2	2,168	2,547	3,028
Business Administration		756	1,305	1,946
Correctional Careers	1	1,230	1,576	1,878
Correctional Careers	2	1,986	2,142	2,412
Day Care		1,176	1,331	1,570
Insurance		1,028	1,028	1,028
Interior Design	1	990	1,747	2,532
Interior Design	2	936	1,825	4,014
Journalism		970	1,711	2,380
Nursing	1	2,508	2,508	2,508
Nursing	2	2,342	3,395	5,548
Police Science		1,374	1,844	2,114
Public Relations	1	1,360	1,593	2,116
Public Relations	2	1,498	2,301	2,914
Real Estate & Property Management		1,250	1,250	1,250
Recreation & Outdoor Education		1,308	1,740	2,182
Secretarial Science		1,018	1,477	1,880
Social Work	1	1,444	1,980	2,332
Social Work	2	1,348	1,799	2,803
Urban Planning		1,584	1,823	2,188
One Year Certificate Programs:				
Architecture		1,266	1,728	2,164
Business Administration		1,022	1,282	1,510
Residential Child Care		1,804	1,890	2,030
Stenographer		1,048	1,454	1,778

Due to the wide variety of offerings at Mount Royal, comparison among [illegible] was immensely difficult. Within the "transfer to the University of [illegible]" programs, the distinction between the Social Science-Math/Science [illegible] was slightly evident. This was due to higher enrolment and the greater potential for cross-utilization of courses from different programs. [illegible] remaining University of Calgary transfer and high school equivalency [illegible] was mixed. Where programs were available for comparison, the [illegible] combined programs were slightly more expenseve than similar [illegible] programs to the University of Calgary. Social Science combined programs were slightly less costly than similar transfer programs.

Because of their different natures, comparison between "transfer to the University of Calgary" programs and "transfer to other universities" programs was not possible. However, it was interesting to note that the Arts program for transfer to the University of Calgary was considerably less costly than the Arts program for transfer to other universities. This would seem to suggest not only a lack of cross-utilization of courses but also the possibility that the two programs were quite dissimilar.

Where comparison was possible between "transfer to other universities" programs and diploma programs, the majority of the diploma programs tended to [illegible]. This was consistent with the reasoning that a terminal diploma program would probably have more high cost skill courses than would a program being transferred for an additional one or two years of training. Cross-utilization with other transfer programs at Mount Royal would also be more likely for the "transfer to other universities" than would be possible for diploma programs.

As usual, programs that required the additional time of laboratories in combination with low enrolments were somewhat more expensive in Calgary, although the difference was less marked than in other colleges. Nursing was the highest cost program in Mount Royal College and the factors were similar to those in Red Deer. However, costs were kept down somewhat by using lower cost sessional instructors in first year Nursing and with a time release arrangement in second year to handle the spring-summer session.

Medicine Hat

Program costs for Medicine Hat College as reported in Table 12 showed the same Social Science-Math/Science dichotomy. Education was the highest cost transfer program. In most cases, the differences were not extreme. This was partly due to the loading or credit system used to assign faculty loads. The formula tended to give less credit for salary purposes to time spent in laboratory oriented courses. It made possible a larger hour load per instructor thereby reducing commitment of dollars to generally high cost laboratory programs. Since salaries in Medicine Hat were the lowest in the province, this also contributed to the generally lower program costs. There also appeared to be a good mix of courses between programs.

Diploma programs were quite new in Medicine Hat for 1970-71 and, except for first year Business Administration and Nursing, the costs were quite similar to other programs. Nursing was susceptable to the same observation as in other colleges except that the pupil-instructor ratio was lower due to the basic staff requirements necessary to start the program and low initial enrolments. As the Nursing program matures, a considerable decline in costs can be expected.

Table 12

Range of Program Costs in Medicine Hat College

	Year	Low	Average	High
Transfer Programs:				
Agriculture (one student)		1,636	1,636	1,636
Arts		1,320*	1,653	2,226*
Commerce		1,411	1,580	1,896
Education		1,464	1,944	3,188
Engineering		1,591	1,855	2,290
Fine Arts (one student)		1,633	1,633	1,633
Home Economics		1,653	1,861	2,068
Physical Education		1,074	1,662	2,034
Pre-Dentistry and Pre-Medicine		1,680	1,806	1,974
Science		1,596	1,884	2,195
Diploma Programs:				
Business Administration	1	1,261	2,058	2,493
Business Administration	2	1,802	1,809	1,817
Nursing	1	5,799	5,964	6,030
Secretarial Science	1	1,011	1,812	3,563
Matriculation-High School Equivalent Program:		1,108	1,436	2,181
Adult Upgrading Program:		135 (1 course)	513	1,020 (6 courses)

*Based on 1/2 year or 1 semester.

Lethbridge

Program costs for Lethbridge are included in Table 13 and, unlike other colleges, Lethbridge had a very general emphasis on university transfer. Students in this program were classified as College and University Preparation and it was the least expensive program in the college. This was due to at least two factors: (1) a good availability of low cost, non-laboratory courses in the Social Science tradition, and (2) the fact that students in this program clearly took fewer courses in a year than did students in other programs.

The differences in the cost of other courses tended to be associated with the inclusion of higher cost, skill-oriented laboratory sections. Although the cost of specific courses in Lethbridge was not extreme, high cost programs tended to result from student programs which contained a large number of courses. This was particularly the case with Architecture and Drafting Technology and many of the other career programs.

Nursing was obvious by the fact that it was not the most expensive program in the college. This was likely due to larger workloads, the fact that no additional pay was made for summer courses, and reasonably high enrolments.

With one exception, and that being Vocational Agriculture, the second year of all two year programs was considerably more expensive than the first. This seemed to suggest that fewer, more theoretically oriented and thus lower cost courses were part of the first year. In the second year a larger number of courses was taken with emphasis on skill-building.

Table 13

Range of Program Costs in Lethbridge Community College

	Year	Low	Average	High
Accounting Secretarial		1,187	1,464	1,659
Automotives		2,065	2,171	2,399
Architecture & Drafting Tech.		2,610	3,851	4,196
Business Administration		1,423	1,483	1,576
College & University Prep.		640	1,051	1,496
Commercial Cooking		1,243	1,383	1,404
Data Processing		1,552	1,631	2,214
Data Processing Secretary		1,347	1,612	2,047
Electronic Technology		2,190	2,549	2,964
Journalism	1	1,252	1,585	2,429
Journalism	2	1,506	2,132	2,112
Law Enforcement	1	1,850	2,062	2,640
Law Enforcement	2	2,153	2,633	3,388
Marketing Administration		2,222	2,397	2,505
Meat Technology		1,752	1,752	1,752
Nursing	1	2,092	2,092	2,092
Nursing	2	2,216	2,317	2,340
Office Administration		1,570	1,759	2,150
Outdoor Recreation and Conservation	1	1,560	1,957	2,327
Outdoor Recreation and Conservation	2	1,385	1,864	2,352
Radio-TV Broadcasting	1	1,261	1,412	1,516
Radio-TV Broadcasting	2	2,006	2,090	2,133
Shorthand Secretarial		1,351	1,620	1,717
Six Week Welding		332	332	332
Vocational Agriculture	1	2,261	2,401	2,635
Vocational Agriculture	2	2,045	2,384	2,743

Conclusions

Generally speaking, the cost factors most closely related to programs were enrolments and hours. More specifically:

1. Low enrolments tended to produce high costs in specialized courses related to career programs, technologies, sciences and to some limited extent second year transfer courses. The inclusion of these high cost courses in a program had the obvious result of pushing up the program cost.

2. A high concentration of time occurred in one or both of two ways: (a) A type of science/technological/career course mentioned above that needed additional allocation of time and salary to ensure proper growth of concepts and skills tended to concentrate time and thus escalate costs, and (b) The allocation of time to programs resulting from the inclusion of a large number of courses. Basically, this meant that the more courses in a program, the higher would be the cost. Where a large number of courses in a program tended to combine with one or two high cost courses, the result was an obviously high cost program.

3. An additional factor in program cost was faculty salaries. High salaries without the offsetting benefits of larger enrolments produced very high cost programs.

4. The particular age of programs was another cost factor. Newer programs tended to be higher in cost than did other more established programs. The nature of the program was also a factor. If cross-utilization of courses from other areas was possible and was a reality, then costs appeared to be somewhat lower. The availability of this cross-utilization would seem to be an important factor related to controlling costs of new programs. On the

other hand, new programs may require high initial costs simply because cross-utilization is not possible and initial enrolments may be low.

SUBSIDY EFFECTS

The details of subsidy effects were not included in the body of the report. Estimates of cost revenue analysis are contained in the appropriate appendices. Essentially a subsidy effect took place when the cost of a program was less than the combined revenue resulting from fees plus grants from the Alberta Colleges Commission. In 1970-71, both the fee structure and the grant structure varied from college to college making inter-college comparisons difficult but obviously allowing for differences in college age, size, and program mix.

The value of the cost revenue analysis lies in the fact that it is possible for an individual college to assess which programs tend to support other programs in the college. While the interrelationship of factors involved in the creation of a subsidy or deficit effect was complex, the knowledge of where specific programs were should aid in the establishment of priorities related to program development. The establishment of a historical body of such data should also be of value on an institutional level as well as on a system level. Such information does not make institutional or system level allocation decisions but it does much to aid such decisions.

Chapter 5

RECOMMENDATIONS

One of the original purposes of this study was to present individual colleges with a body of costing or expenditure data. The main body of this purpose has been accomplised in the previous chapters. Little emphasis has been placed on specific comparison of colleges with each other. The authors have consistently felt that the most valuable kinds of comparison would and should occur within individual colleges. There is a real danger that in pursuing cross-college comparisons erroneous conclusions can arise. The most value in a cost analysis of this nature lies with each institution as the data in the study affords college personnel the opportunity to assess priorities and basic directions of college growth. It has been for these reasons that conclusions to this point have been very general in nature.

One obvious type of analysis open to colleges is to examine both programs and costs in terms of:

1. amounts of direct expenditure;
2. amounts of indirect expenditure;
3. the number of hours devoted to courses;
4. the number of students;
5. the cost for first and second years;
6. the cost of implementing new courses and programs; and
7. the cost of established programs.

Not all of the above information has been included in this report for lack of space and time. A yearly costing study would, however, produce a

report which includes many of the above variables. Others are readily available on college files.

Consideration of these issues in addition to other problems indicated in the report should enable individual colleges to establish guidelines related to course and program implementation. Such an analysis would go a considerable way to providing information necessary to decide what costs can be acceptable to start, and continue to operate new courses and programs.

An additional purpose of this study was to rationalize and improve upon the costing technique originated by the Finance Committee of the Alberta Colleges Commission. By doing this, the colleges would be provided with a reasonably straightforward technique for doing an annual cost analysis. It is in the yearly maintenance and operation of such a system that will allow colleges to build the cost data vital to making cost-quality and cost-benefit decisions. The consistent orientation of the authors has been that cost-quality and cost-benefit decisions are being made constantly in the colleges. The operation of a costing study does not, nor will it ever, make these kinds of decisions occur. Conducted on a yearly basis to provide longitudinal data on college expenditure patterns, the costing study can be an extremely valuable aid to the kinds of quality, benefit, and allocation decisions required within individual colleges. Such information would also be of obvious value to the Colleges Commission when it reaches the yearly point of making funding allocations to individual colleges. Properly operated and properly understood, a regular costing procedure would be very beneficial to orderly growth within colleges and within the system.

In this direction, the major recommendation of this chapter will relate directly to the procedures required to conduct, at minimum effort for all concerned, a yearly costing analysis.

The present study had developed the following items which are integral to a yearly cost analysis:

1. A data collection instrument accompanied with appropriate instructions. This instrument is included in Appendix F;

2. A master list of courses, including computer codes, that were offered in the college system in 1970-71. The data collection instrument makes provision for this list to be up-dated on a yearly basis;

3. A computer program has been developed by the Data Centre at the Northern Alberta Institute of Technology. This program is available for yearly use.

With the preceding information in mind, the following procedure is recommended for implementation of a yearly costing study:

1. The decision to implement the costing study should be made in each college but the actual analysis should be iniated and coordinated by the Alberta Colleges Commission with the necessary data collection being the responsibility of each college.

2. An individual should be assigned responsibility for the analysis at the Commission level. As well someone in each college should be designated the responsibility of receiving and handling the data collection instrument. This person in the college should have access to faculty loading data, faculty salaries, and enrolment data. Ideally, the individual should be acceptable to

the Finance, Registrar, and Instructional Divisions of the college. Data for the cost analysis tends to come from these three areas.

3. The data collection instrument and master course list from the 1970-71 cost analysis should be mailed to individual colleges in mid-August and it will apply to the preceding academic year from July 1 to June 30. The data should be returned to the Alberta Colleges Commission by September 30.

4. The fourth step relates to the duties of the secretarial staff of the Alberta Colleges Commission in preparation of the data for submission to the Data Centre. These duties are included in Appendix F and essentially relate to the preparation of course and faculty lists from each college. All data must be in from the colleges before this step can be completed.

5. Liaison should be established between the Data Centre and the Alberta Colleges Commission, and the information resulting from step four should be sent to the Northern Alberta Institute of Technology according to the instructions in Appendix F.

6. Individual data sheets should be delivered to NAIT as soon as the Data Centre indicates readiness to start punching data. It is essential that the individual data <u>follow</u> the delivery of course and faculty lists.

7. Punching of data and the actual analysis of the data at NAIT should take no more than a month. At the end of this time the final costing report would be available for distribution to each college.

8. Distribution of results and discussions relating to improvement of the analysis should take place on a yearly basis immediately following the output of the final report.

9. Once colleges are familiar with the information flow required by

the costing program it would likely be possible to have the data available in this format on an up-to-date basis. This would mean that the cost analysis could be ready one month from the end of the academic year and not in October as the present procedure indicates.

The above steps have been generalized somewhat and should make clear the following specific and concise procedure for conducting the 1971-72 cost analysis.

SPECIFIC PROCEDURE FOR THE 1971-72 COST ANALYSIS

1. Distribute the 1970-71 Costing Report.
2. Hold a conference of all concerned in July, 1972.
3. Gain college approval of the analysis on a yearly basis.
4. Appoint liaison people in each college during the conference.
5. Send out data collection forms and master course list by mid-August.
6. Preparation of an alphabetical list of all courses in each college from the college calendars by Alberta Colleges Commission secretarial staff.
7. Return the data sheets by September 30 at the latest.
8. Preparation of alphabetical faculty lists by Commission secretarial staff.
9. Minor financial calculations on data sheets by Commission secretarial staff. See Appendix F.
10. Submission of course and faculty lists to Data Centre at NAIT.
11. Submission of data sheets to NAIT with the waiting period after Step 10 mutually agreed upon.
12. Punching data and running of the costing programs.
13. Output of final costing report.
14. Conference of individuals in the colleges associated with the cost analysis.
15. Subsequent modification and yearly running of the cost analysis.

RECOMMENDATIONS RELATING TO EVENTUAL IMPLEMENTATION OF THE WICHE MODEL RRPM-1.3

In view of the fact that a costing and simulation model is being piloted in Lethbridge during the 1972-73 year, other colleges would be well advised of the information requirements of the Resource Requirement Prediction Model (RRPM). Some of the data necessary for the RRP Model is already being collected by the costing study. However, somewhat more data is required to allow the RRPM to simulate.

A primary recommendation which is consistent with cost analysis (PPBS, RRPM, or the analysis of this report), financial planning and academic planning relates to the development of an institutional MIS (Management Information System). Lack of such a system makes integration and implementation of these various areas extremely difficult. Hussain (1971: 20-22) indicated that most of the information necessary for an RRPM system is generally available in college files for operational, if not management decision-making purposes. In a typical operation, this information tends to be organized into five files:

1. Student File.
2. Courses Taught File.
3. Personnel File.
4. Space File.
5. Financial File.

While all files may exist, two problems can arise:

1. The data may not be machine readable. This problem will have to

be solved should a college decide to implement an RRPM system.

2. In addition, the existing files may not be integrated. Integration can be accomplished by use of the PCS (Program Classification Structure) developed by the NCHEMS (National Centre for Higher Education Management Systems). Such a PCS is already being used by a large number of post-secondary institutions reporting annually to the United States Federal Government. The advantage of such an integrated system for the Alberta Colleges should be obvious simply in relation to the requirements of the Department of Manpower and Immigration.

Thus, as a final recommendation flowing from the 1970-71 Cost Analysis, it is recommended that all colleges begin to examine the implications and requirements related to the development of a Management Information System with the linking of all pertinent files by a Program Classification System such as that developed by NCHEMS at WICHE (Western Interstate Commission on Higher Education).

Specifically, colleges should be aware of the following information about each of the five information files:

1. Student Files, generally speaking, already contain the necessary data.

2. The Courses Taught File enables the development of:

(a) Weekly Student Hours by Department, Course Level, and Instructional Type;

(b) Student Credit Hours by Department, Course Level, and Instructional Type; and,

(c) Average Section Size by Department, Course Level, and Instructional Type.

3. The Finance File should give information on the expenses of:

(a) Travel; and,

(b) Supplies and Equipment.

4. The Space File should have data relating to:

(a) Space Allocation Factors;

(b) Space Inventory; and,

(c) Space Occupied.

5. The Personnel File should have data to produce:

(a) Faculty Load Distribution;

(b) Faculty Load by Department, Instruction Type, Course Level, and Faculty Rank; and,

(c) Faculty Salary Schedule by Department and Faculty Rank.

All this information must be integrated on some basis, preferrably that designated by the PCS.

Obviously the demands of such an MIS are considerable. The return in information and more knowledgeable decisions between alternatives should justify the effort. Such an information system must ultimately produce more integrated financial and academic planning. The system is not and should never be viewed as a substitute for decision-making, nor should it be allowed to become an end in itself.

REFERENCES

REFERENCES

Atherton, P. J.
1970 *Alberta Junior College Cost Studies, Number III Financing Junior Colleges in Alberta.* Research Studies in Post-Secondary Education No. 6, Edmonton: Alberta Colleges Commission.

Cage, B. N. and H. R. Fowler.
1971 "Cost Analysis - The First Step to Differential Funding." *Education Resources Information Centre*, ED 048 863.

Herschel, H. H.
1965 "Some Economic Consideration and a Procedure for a University Costing Study." *Education Resources Information Centre*, ED 025 847.

Hussain, K. M.
1971 *A Resource Requirements Prediction Model (RRPM-1) - Guide for the Project Manager.* Boulder: National Centre for Higher Education Management Systems.

Illinois State Board of Higher Education.
1966 "Cost Study Manual." *Education Resources Information Centre*, ED 025 832.

Johnson, F. C.
1970 "Cost Analysis of Instructional Technology." *Education Resources Information Centre*, ED 039 730.

Witner, David.
1967 "Unit Cost Studies," Wisconsin Board of Regents of State Universities, *Education Resources Information Centre*, ED 013 492.

APPENDIX A

GRANDE PRAIRIE

Table A-1

Cost-Revenue Analysis for Grande Prairie College

	Year	Average Cost Per Student	Fees	Grant	Subsidy Effect
Transfer Programs:					
Arts BA General		1,842	200	2,363	+ 721
Commerce		1,975	200	2,363	+ 588
Education		2,160	200	2,363	+ 403
Engineering		4,735	200	2,363	-2,172
Forestry		2,573	200	2,363	- 10
Home Economics		2,105	200	2,363	+ 458
Physical Education		2,124	200	2,363	+ 439
Pre-Law		2,285	200	2,363	+ 278
Pre-Medicine		3,267	200	2,363	- 704
Science BSc General		2,995	200	2,363	- 432
Diploma Program:					
Business Administration	1	2,191	200	2,363	+ 372
Business Administration	2	3,642	200	2,363	-1,079
Secretarial Science	1	2,427	200	2,363	+ 136
Secretarial Science	2	2,040	200	2,363	+ 523
Combined University Transfer and Matriculation Program:		2,501	200	2,363	+ 62

Table A-2

Courses Offered by Grande Prairie College in 1970-71 with Enrolments, Total Cost, Cost Per Student and Cost Per Student Contact Hour

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Accounting 202	1/2	15	4,233.03	282.20	4.41
Biology 100	F	10	8,902.30	890.23	5.56
Biology 130	F	42	12,662.47	301.48	1.57
Biology 298	1/2	85	19,752.46	232.38	0.97
Biology 299	1/2	42	7,373.75	175.56	3.66
Business Admin. 104	1/2	30	5,433.83	181.12	3.77
Business Admin. 105	F	17	4,557.87	267.93	3.35
Business Admin. 111	1/2	56	10,880.81	194.30	0.81
Business Admin. 111/112	F	31	8,373.30	270.10	2.11
Business Admin. 112	1/2	14	2,832.39	202.31	3.16
Business Admin. 142	1/2	53	11,567.96	218.15	0.59
Business Admin. 152	1/2	20	4,080.50	204.02	4.25
Business Admin. 203	1/2	7	2,582.94	368.99	7.69
Business Admin. 205	1/2	5	3,381.70	676.34	10.57
Business Admin. 206	1/2	9	2,680.57	297.84	4.65
Business Admin. 208	1/2	13	3,235.40	248.87	5.18
Business Admin. 209	1/2	25	4,684.31	187.37	3.90
Business Admin. 210	1/2	20	4,080.50	204.02	4.25
Business Admin. 211/212	F	7	5,475.47	782.21	6.11
Business Admin. 222	1/2	4	2,294.71	573.67	11.95

Continued ...

Table A-2(Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Chemistry 130	F	15	4,809.63	320.64	3.34
Chemistry 200/202	F	18	17,001.61	944.53	2.68
Chemistry 250	F	18	11,593.23	644.06	2.88
Creative Writing	1/2	12	3,642.46	303.53	6.32
Drawing	F	23	4,434.67	192.81	2.01
Economics & Business 151	F	45	7,098.98	157.75	3.29
Economics & Business 200	F	45	7,098.98	157.75	3.29
Economics 200	F	19	6,730.39	354.23	2.77
English 101/103	F	32	6,250.35	195.32	2.03
English 102	1/2	6	1,870.59	311.76	3.90
English 103	1/2	30	4,809.83	160.32	3.34
English 104	1/2	30	4,809.83	160.32	3.34
English 110	F	12	3,649.05	304.08	3.80
English 110/120	F	22	4,856.68	220.75	2.76
English 110/120/135	F	23	4,977.32	216.40	2.71
English 120	F	17	4,252.87	250.16	3.13
English 130	F	40	7,475.40	186.88	1.95
English 200	F	48	14,596.93	304.10	1.58
English 210	F	87	25,313.25	290.95	0.61
English 383	F	35	8,626.58	246.47	2.57

English Continued ...

Table A-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
English (Concluded):					
English 90	F	13	3,769.99	289.99	3.62
English 90/110	F	22	4,856.68	220.75	2.76
French 100	F	18	7,350.04	408.33	2.55
French 200	F	31	10,996.09	354.71	1.58
German 100	F	12	3,991.58	332.63	2.08
History 200	F	30	12,012.96	400.43	2.50
History 201	F	15	6,839.63	455.97	4.75
History 370	F	45	10,461.91	232.48	2.42
Legal Secretary	1/2	20	3,681.84	184.09	2.88
Landscaping	F	21	4,193.08	199.67	2.08
Mathematics 100	F	9	3,617.82	401.98	5.02
Mathematics 110/120	F	17	6,753.40	397.25	2.48
Mathematics 120	F	9	3,436.82	381.86	4.77
Mathematics 130	F	24	8,073.75	336.40	1.91
Mathematics 180/100	F	6	6,281.53	1,046.92	8.18
Mathematics 201	F	25	8,848.44	353.93	2.21
Mathematics 205	1/2	6	2,808.00	468.00	9.75
Mathematics 240	1/2	14	4,468.39	319.17	4.99
Mathematics 274	F	5	4,771.29	954.25	9.94

Mathematics Continued ...

Table A-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Mathematics (Concluded):					
Mathematics 90	F	13	4,100.99	315.46	3.94
Mathematics 90/100	F	23	5,308.32	230.79	2.88
Mathematics 90/110	F	32	6,214.01	194.18	2.43
Mechanical Eng. 154	F	4	5,139.23	1,284.61	10.04
Music 205	F	13	3,588.93	276.07	2.16
Music 210	F	29	5,015.13	172.93	1.80
Physical Education 211	F	16	5,487.57	342.97	3.57
Physical Education 213	F	6	3,652.94	608.82	6.34
Physical Education 217	F	10	4,799.11	479.91	5.00
Physical Ed. 218/228	F	101	22,271.18	220.50	0.77
Physical Education 243	F	19	4,688.20	246.74	3.86
Physical Sciences	F	18	4,675.51	259.75	3.25
Physics 100	F	15	3,711.63	247.44	2.58
Physics 110/120	F	15	4,161.28	277.41	3.47
Physics 130	F	11	3,830.41	348.21	4.35
Physics 200	F	10	8,190.89	819.08	4.27
Physics 240	F	6	7,707.72	1,284.62	6.69
Psychology 101	1/2	61	10,872.00	178.22	1.86
Psychology 202	F	93	24,762.92	266.26	0.69
Psychology 211	1/2	8	2,660.59	332.57	6.93

Continued ...

Table A-3 (Concluded)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Reading	F	75	13,385.58	178.47	0.80
Secretarial Science 101	1/2	18	3,361.92	186.77	3.89
Sec. Sc. 101/102/101/201	F	21	3,724.14	177.34	3.69
Secretarial Science 102	1/2	28	5,758.48	205.66	2.14
Secretarial Sc. 111/211	1/2	27	11,136.57	412.46	1.98
Secretarial Sc. 113/212	1/2	23	10,653.70	463.20	2.23
Secretarial Sc. 122	1/2	33	5,796.06	175.63	3.66
Secretarial Sc. 129	1/2	37	6,205.23	167.70	3.49
Secretarial Sc. 130	1/2	37	7,943.17	214.68	2.24
Secretarial Sc. 131	1/2	31	5,205.37	167.91	2.10
Secretarial Sc. 141	1/2	15	3,336.63	222.44	2.32
Secretarial Sc. 201	1/2	26	5,516.90	212.18	2.21
Secretarial Sc. 202	1/2	13	2,758.40	212.18	4.42
Shorthand 111	1/2	6	1,991.34	331.89	5.19
Shorthand 112	1/2	5	1,870.70	374.14	5.85
Sociology 202	F	97	27,449.87	282.98	0.59
Social Science 110	F	20	7,491.63	374.58	2.34
Social Science 130	F	16	7,008.75	438.04	2.74

APPENDIX B

RED DEER

Table B-1

Cost-Revenue Analysis for Red Deer College

	Year	Average Cost Per Student	Fees	Grant	Subsidy Effect
Transfer Programs:					
Agriculture	1	1,695	200	1,464	- 31
Agriculture	2	1,520	200	1,464	+ 144
Architecture		1,236	200	1,464	+ 428
Arts	1	1,227	200	1,464	+ 437
Arts	2	1,249	200	1,464	+ 415
Commerce		1,338	200	1,464	+ 326
Education	1	1,405	200	1,464	+ 259
Education	2	1,220	200	1,464	+ 444
Engineering	1	1,874	200	1,464	- 210
Engineering	2	1,867	200	1,464	- 203
Household Economics		1,385	200	1,464	+ 279
Law		1,431	200	1,464	+ 233
Medicine	1	1,437	200	1,464	+ 227
Medicine	2	1,842	200	1,464	- 178
Pharmacy		1,807	200	1,464	- 143
Physical Education	1	1,556	200	1,464	+ 108
Physical Education	2	1,747	200	1,464	- 83
Recreation Administration		1,283	200	1,464	+ 381
Science	1	1,501	200	1,464	+ 163
Science	2	2,121	200	1,464	- 457

Table B-1 (Concluded)...

Table B-1 (Concluded)

	Year	Average Cost Per Student	Fees	Grant	Subsidy Effect
Diploma Programs:					
Arts & Science		2,213	200	1,464	- 549
Business Administration	1	2,300	200	1,464	- 636
Business Administration	2	2,148	200	1,464	- 484
Nursing	1	2,835	200	1,464	-1,171
Nursing	2	3,721	200	1,464	-2,057
Social Services	1	2,291	200	1,464	- 627
Social Services	2	1,900	200	1,464	- 236
Secretarial Science	1	2,429	200	1,464	- 765
Secretarial Science	2	3,225	200	1,464	-1,561
Combined University Transfer & High School Equivalent:	1	1,546	200	1,464	+ 118
	2	2,041	200	1,464	- 377

Table B-2

Courses Offered by Red Deer College in 1970-71 with Enrolments, Total Cost, Cost Per Student and Cost Per Student Contact Hour

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Accounting 102	1/2	77	11,788.90	153.10	1.02
Accounting 103	1/2	37	5,938.26	160.49	2.03
Accounting 202	1/2	21	3,910.79	186.22	3.10
Accounting 204	1/2	19	4,111.42	216.39	3.09
Accounting 205	1/2	15	3,784.51	252.30	3.60
Anthropology 202	F	154	20,957.59	136.08	0.81
Art 200	F	14	7,572.99	540.92	1.66
Art 231	F	46	13,061.17	283.93	1.69
Biochemistry 300	F	5	6,075.16	1,215.03	10.21
Biology 130	1/2	76	11,342.13	149.23	1.07
Biology 131	1/2	63	10,278.65	163.15	1.17
Biology 230	F	153	38,955.34	254.61	0.41
Business Admin. 110	1/2	35	6,099.21	174.26	1.94
Business Admin. 111	1/2	36	5,970.68	165.85	1.97
Business Admin. 130	1/2	39	8,561.71	219.53	2.44
Business Admin. 131	1/2	33	7,711.35	233.67	2.78
Business Admin. 140	1/2	87	11,290.97	129.78	1.44
Business Admin. 141	1/2	87	11,009.27	126.54	1.51

Business Admin. Continued ...

Table [illegible] Continued

Course	Full/Half	Enrollment	Total Cost	Cost per Student	Cost Per Student Contact Hour
Business Admin. (Concluded)					
Business Admin. 210	F	[illegible]	5,[illegible]40.71	258.31	[illegible]
Business Admin. 21[illegible]	1/2	[illegible]5	7,4[illegible]1.43	136.32	[illegible].31
Business Admin. 240	1/2	[illegible]	3,42[illegible].10	380.23	8.45
Business Admin. 241	1/2	14	3,644.25	260.30	6.20
Business Admin. 250	1/2	[illegible]25	4,12[illegible].33	165.05	3.67
Business Admin. 26[illegible]	1/2	17	3,[illegible]6.93	176.99	3.93
Business Admin. 261	1/2	16	2,816.[illegible]	176.00	4.19
Chemistry 130	1/2	26	5,17[illegible].23	199.16	2.21
Chemistry 131	1/2	26	5,178.23	199.16	2.21
Chemistry 200	F	57	23,444.66	411.30	1.13
Chemistry 202	F	76	30,263.63	398.20	0.84
Chemistry 250	F	29	12,465.74	429.85	2.05
Chemistry 312	F	8	7,718.56	964.82	6.89
Chemistry 350	F	27	10,936.66	405.06	2.23
Chemistry 370	F	6	7,858.40	1,309.73	9.36
Chemistry 75	1/2	23	7,985.33	347.18	1.93
Economics 100	1/2	41	6,379.75	155.60	1.85
Economics 101	1/2	35	5,935.51	169.58	2.02
Economics 200	F	103	17,816.92	172.97	0.69
Economics 301	F	15	4,358.37	290.55	3.46

Continued ...

Table B-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Educational Admin. 261	1/2	154	21,798.59	141.54	0.84
Educational Foundations 201	1/2	156	20,467.33	131.20	0.78
Educational Psychology 269	1/2	188	22,323.55	118.74	1.06
Educational Psychology 271	1/2	94	14,636.19	155.70	1.39
English 110	1/2	62	11,953.98	192.80	1.15
English 120	1/2	47	17,230.10	366.59	1.16
English 121	1/2	12	2,433.08	202.75	4.83
English 200	F	137	31,928.74	233.05	0.50
English 210	F	289	63,541.48	219.86	0.24
English 288	F	20	6,218.87	310.94	3.70
English 332	F	25	6,627.94	265.11	3.16
English 383	F	31	5,438.60	175.43	2.09
English 384	F	36	7,549.68	209.71	2.50
English 398	F	34	6,429.93	189.11	2.25
English 50	1/2	30	7,748.15	258.27	1.43
English 75	1/2	60	10,201.44	170.02	0.94
English 90	1/2	145	20,087.75	138.53	0.63
Engineering 152	1/2	30	6,933.12	231.10	2.06
French 100	F	30	9,156.22	305.20	2.10
French 200	F	30	8,921.03	297.36	2.12

French Continued ...

Table B-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
French (Concluded):					
French 201	F	5	6,876.24	1,375.24	9.82
French 330	F	20	8,102.88	405.14	2.89
Genetics 351	F	30	8,426.03	280.86	2.01
Geography 201	F	54	20,203.42	374.13	1.11
Geography 300	F	18	5,419.70	301.09	3.58
History 130	1/2	13	4,280.63	329.27	3.92
History 200	F	73	16,263.63	222.78	0.88
History 300	F	28	6,145.27	219.[illegible]	2.61
History 37[illegible]	F	44	6,242.08	141.86	1.69
Mathematics 120	1/2	15	3,167.76	211.18	4.69
Mathematics 121	1/2	15	3,045.41	203.02	4.83
Mathematics 130	1/2	36	8,222.81	228.41	1.27
Mathematics 131	1/2	29	3,891.89	134.20	3.20
Mathematics 180	F	10	5,659.40	565.94	5.05
Mathematics 201	F	67	13,540.48	202.09	0.90
Mathematics 214	F	37	11,461.19	309.76	1.38
Mathematics 240	1/2	22	4,056.70	184.39	3.29
Mathematics 274	F	49	10,078.59	205.68	1.47
Mathematics 304	F	18	6,549.71	363.87	2.60
Mathematics 374	F	4	3,368.64	842.16	10.03

Mathematics Continued ...

Table B-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Mathematics (Concluded):					
Mathematics 65	1/2	46	9,440.38	205.22	1.14
Mathematics 75	1/2	86	12,311.82	143.16	0.80
Mathematics 85	1/2	44	8,877.21	201.75	1.12
Mechanical Eng. 154	1/2	30	7,509.03	250.30	1.79
Microbiology 293	1/2	25	5,404.08	216.16	3.09
Nursing 190	1/2	41	28,124.44	685.96	1.63
Nursing 191	1/2	41	28,836.57	703.33	1.34
Nursing 192	F	41	18,429.66	449.50	0.74
Nursing 290	1/2	25	29,448.46	1,177.93	1.84
Nursing 291	1/2	25	33,260.60	1,330.40	2.09
Nursing 292	F	25	12,226.06	489.04	0.79
Physical Education 101	1/2	297	38,768.46	130.53	0.36
Physical Education 103	1/2	482	52,347.14	108.60	0.34
Physical Education 205	1/2	21	3,426.07	163.14	3.88
Physical Education 209	1/2	14	2,757.25	196.94	4.69
Physical Education 211	1/2	29	5,630.86	194.16	2.31
Physical Education 213	1/2	9	2,207.75	245.30	5.84
Physical Education 215	1/2	41	5,106.79	124.55	2.97
Physical Education 217	1/2	19	3,454.16	181.79	4.13

Physical Education Continued ...

Table B-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Physical Education (Concluded):					
Physical Education 243	1/2	37	4,313.44	116.57	4.16
Physical Education 305	1/2	28	4,221.31	150.76	3.59
Physical Education 307	1/2	24	3,527.24	146.96	3.34
Physical Education 345	1/2	16	3,096.00	193.50	4.61
Physical Education 362	1/2	46	7,569.25	164.54	1.96
Physical Education 381	1/2	19	3,642.16	191.69	4.36
Philosophy 240	F	80	12,979.95	162.24	0.97
Physiology 294	1/2	25	5,038.08	201.52	2.69
Physics 100	F	8	6,168.33	771.04	6.65
Physics 130	1/2	38	8,586.56	225.96	1.26
Physics 200	F	25	10,643.50	425.74	1.99
Physics 240	F	70	20,410.45	291.57	2.08
Physics 300	F	4	6,470.51	1,617.62	10.50
Physics 340	F	10	7,675.26	767.52	6.09
Physics 75	1/2	60	10,585.44	176.42	0.98
Political Science 200	F	65	13,505.30	207.77	1.24
Political Science 310	F	16	5,401.96	337.62	4.02
Political Science 320	F	11	4,992.88	453.89	5.40

Continued ...

Table B-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Psychology 130	1/2	28	8,421.66	300.77	6.68
Psychology 131	1/2	28	8,421.66	300.77	6.68
Psychology 193	1/2	43	6,308.31	146.70	3.26
Psychology 202	F	201	27,107.11	134.86	0.40
Psychology 210	1/2	23	5,224.59	227.15	5.05
Psychology 337	1/2	40	4,604.63	115.11	2.74
Psychology 341	1/2	19	4,149.32	218.38	5.20
Psychology 353	1/2	12	3,577.08	298.09	7.10
Psychology 383	1/2	39	4,523.04	115.97	2.76
Science 50	1/2	42	9,113.47	216.98	1.21
Secretarial Science 110	1/2	20	4,677.01	233.85	3.12
Secretarial Science 111	1/2	20	4,486.01	224.30	3.20
Secretarial Science 120	1/2	28	5,095.41	181.97	2.43
Secretarial Science 121	1/2	28	4,918.41	175.65	2.51
Secretarial Science 130	1/2	25	3,618.98	144.75	3.45
Secretarial Science 140	1/2	21	3,292.07	156.76	3.73
Secretarial Science 160	1/2	6	2,198.43	366.40	8.72
Secretarial Science 210	1/2	10	3,859.44	385.94	5.15
Secretarial Science 211	1/2	10	3,668.44	366.84	5.24
Secretarial Science 220	1/2	3	4,737.51	1,579.17	13.16
Secretarial Science 221	1/2	6	3,119.53	519.92	7.43

Secretarial Science Continued ...

Table B-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Secretarial Science (Concluded):					
Secretarial Science 230	1/2	10	2,645.69	264.56	5.88
Secretarial Science 231	1/2	10	2,525.34	252.53	6.01
Sociology 130	1/2	25	3,666.98	146.67	3.49
Sociology 202	F	143	26,450.28	184.96	0.55
Sociology 320	F	37	7,345.61	198.53	2.28
Sociology 370	F	40	6,912.94	172.82	1.99
Social Services 110	1/2	19	3,289.67	173.14	3.85
Social Services 111	1/2	19	3,176.32	167.17	3.98
Social Services 120	1/2	19	3,289.67	173.14	3.85
Social Services 121	1/2	19	3,176.32	167.17	3.98
Social Services 130	1/2	38	6,004.56	158.01	2.11
Social Services 131	1/2	38	5,808.56	152.85	2.18
Social Services 210	1/2	9	1,894.10	210.45	4.68
Social Services 211	1/2	9	1,812.75	201.41	4.80
Social Services 220	1/2	9	1,894.10	210.45	4.68
Social Services 221	1/2	9	1,812.75	201.41	4.80
Social Services 230	1/2	9	1,507.73	167.52	5.58
Social Services 231	1/2	9	1,451.69	161.32	5.76
Social Services 240	1/2	9	1 894.10	210.45	4.68
Social Services 241	1/2	9	1,812.75	201.41	4.80

Continued ...

Table B-2 (Concluded)

Courses	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Social Studies 130	1/2	109	12,102.37	119.05	2.54
Statistics 241	1/2	7	2,830.06	404.29	7.22
Statistics 255	F	26	8,921.45	343.13	2.04
Zoology 320	F	27	8,444.70	312.76	2.23
Zoology 350	F	18	8,198.71	455.48	3.25

APPENDIX C

MOUNT ROYAL

Table C-1

Cost Revenue Analysis for Mount Royal College

Year	Average Cost Per Student	Fees	Grant	Subsidy Effect
Transfer Programs to the University of Calgary:				
Arts	1,478	300	1,261	+ 83
Business Administration	1,247	300	1,261	+314
Household Economics	1,241	300	1,261	+320
Pharmacy	1,615	300	1,261	- 54
Physical Education	1,611	300	1,261	- 50
Pre-Dentistry	1,608	300	1,261	- 47
Pre-Veterinary	1,509	300	1,261	+ 52
Science	1,579	300	1,261	- 18
Miscellaneous (no major specified)	1,238	300	1,261	+323
Combined High School Equivalent & Transfer to U of Calgary:				
Agriculture	1,339	300	1,261	+172
Arts	1,491	300	1,261	+ 70
Business Administration	1,158	300	1,261	+403
Education	1,355	300	1,261	+206
Pharmacy	1,883	300	1,261	-322
Physical Education	1,579	300	1,261	- 18
Pre-Dentistry	1,623	300	1,261	- 62
Pre-Medicine	1,764	300	1,261	-203
Pre-Veterinary	1,690	300	1,261	-129

Table C-1 (Continued)...

Table C-1 (Continued)

	Year	Average Cost Per Student	Fees	Grant	Subsidy Effect
Transfer Programs to Other Universities:					
Applied Social Science	1	1,436	300	1,261	+125
Applied Social Science	2	1,651	300	1,261	- 90
Arts		1,820	300	1,261	-259
Broadcasting		1,638	300	1,261	-377
Business Administration		1,358	300	1,261	+203
Computer Science		1,626	300	1,261	- 65
Correctional Careers		1,627	300	1,261	- 66
Engineering	1	2,056	300	1,261	-495
Engineering	2	2,697	300	1,261	-1,136
Interior Design	1	1,529	300	1,261	+ 32
Interior Design	2	1,566	300	1,261	- 5
Journalism	1	1,443	300	1,261	+118
Journalism	2	1,824	300	1,261	-263
Optometry		1,649	300	1,261	- 88
Petroleum Land Mangement		1,350	300	1,261	+211
Physical Education	1	1,396	300	1,261	+165
Physical Education	2	1,600	300	1,261	- 39
Police Science		2,103	300	1,261	-542
Public Relations		1,495	300	1,261	+ 66
Recreation & Outdoor Ed.	1	1,585	300	1,261	- 24
Recreation & Outdoor Ed.	2	1,517	300	1,261	+ 44

Transfer to Other Universities Concluded ...

Table C-1 (Continued)

	Year	Average Cost Per Student	Fees	Grant	Subsidy Effect
Transfer to Other Universities Concluded:					
Secretarial Science		1,365	300	1,261	+196
Social Work		1,907	300	1,261	-346
Miscellaneous (no major specified)		1,400	300	1,261	+161
Diploma Programs - Two Year Terminal with NO Transfer:					
Broadcasting	1	1,650	300	1,261	- 89
Broadcasting	2	2,547	300	1,261	-986
Business Administration		1,305	300	1,261	+256
Correctional Careers	1	1,576	300	1,261	- 15
Correctional Careers	2	2,142	300	1,261	-581
Day Care		1,331	300	1,261	+230
Insurance		1,028	300	1,261	+533
Interior Design	1	1,747	300	1,261	-186
Interior Design	2	1,825	300	1,261	-264
Journalism		1,711	300	1,261	-150
Nursing	1	2,508	300	1,261	-947
Nursing	2	3,395	300	1,261	-1,834
Police Science		1,844	300	1,261	-283
Public Relations	1	1,593	300	1,261	- 32
Public Relations	2	2,301	300	1,261	-740

Diploma Programs Concluded . . .

Table C-1 (Concluded)

	Year	Average Cost Per Student	Fees	Grant	Subsidy Effect
Diploma Programs (No Transfer) Concluded:					
Real Estate & Property Management		1,250	300	1,261	+311
Recreation & Outdoor Education		1,740	300	1,261	-179
Secretarial Science		1,477	300	1,261	+ 84
Social Work	1	1,980	300	1,261	-419
Social Work	2	1,799	300	1,261	-238
Urban Planning		1,823	300	1,261	-262
One Year Certificate:					
Architecture		1,728	300	1,261	-167
Business Administration		1,282	300	1,261	+279
Residential Child Care		1,890	300	1,261	-329
Stenographer		1,454	300	1,261	+107

Table C-2

Courses Offered by Mount Royal College in 1970-71 with Enrolments, Total Cost, Cost Per Student and Cost Per Student Contact Hour

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Anthropology 110	1/2	96	12,076.85	125.80	0.66
Anthropology 201	1/2	242	22,636.62	93.53	0.49
Anthropology 212	1/2	22	3,245.91	147.54	3.07
Anthropology 213	1/2	38	4,401.67	115.83	2.41
Behavioral Science 150	1/2	120	29,459.30	245.49	0.43
Behavioral Science 250	1/2	30	6,819.90	227.33	1.58
Behavioral Science 251	1/2	112	21,510.47	192.05	0.57
Biology 110	1/2	483	80,406.90	166.47	2.14
Biology 130	1/2	13	2,095.61	161.20	3.22
Biology 201	1/2	183	34,557.07	188.83	0.18
Biology 210	1/2	36	5,658.70	157.18	0.82
Biology 212	1/2	59	12,694.97	215.16	0.64
Biology 213	1/2	15	1,779.21	118.61	7.41
Biology 214	1/2	116	24,296.85	209.45	0.30
Biology 215	1/2	60	7,199.58	119.99	1.25
Biology 216	1/2	118	23,375.89	198.10	0.32
Biology 241	1/2	38	7,312.16	192.42	1.09
Biology 273	1/2	65	11,727.68	180.42	0.59

Continued ...

Table C-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Business Admin. 110	1/2	260	29,856.42	114.83	0.30
Business Admin. 111	1/2	126	17,086.32	135.60	0.57
Business Admin. 150	1/2	104	13,839.78	133.07	0.59
Business Admin. 172	1/2	69	7,309.38	105.93	1.10
Business Admin. 220	1/2	18	2,357.29	130.96	2.73
Business Admin. 222	1/2	240	27,373.46	114.05	0.25
Business Admin. 223	1/2	84	11,713.77	139.44	0.54
Business Admin. 224	1/2	12	2,026.88	168.90	3.52
Business Admin. 230	1/2	43	5,028.52	116.94	2.44
Business Admin. 240	1/2	112	14,629.73	130.62	0.47
Business Admin. 250	1/2	52	6,735.70	129.53	1.35
Business Admin. 251	1/2	67	8,308.58	124.00	1.15
Business Admin. 254	1/2	11	1,954.64	177.69	3.70
Business Admin. 256	1/2	35	3,689.96	105.42	2.20
Business Admin. 257	1/2	21	2,678.67	127.55	2.66
Business Admin. 260	1/2	13	1,996.11	153.54	3.20
Business Admin. 275	1/2	59	7,539.40	127.78	0.89
Business Admin. 276	1/2	13	1,996.11	153.54	3.20
Business Admin. 278	1/2	30	4,385.85	146.19	1.52
Business Admin. 288	1/2	12	2,026.88	168.90	3.52
Business Admin. 295	1/2	29	4,313.61	148.74	1.55

Continued ...

Table C-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Child Care 112	1/2	52	5,753.64	110.64	2.31
Child Care 120	1/2	26	3,873.85	148.99	3.10
Child Care 121	1/2	23	3,657.14	159.00	3.31
Child Care 124	1/2	26	3,873.85	148.99	3.10
Child Care 231	1/2	37	4,994.49	134.98	1.41
Chemistry 100	1/2	52	12,788.26	245.92	0.85
Chemistry 101	1/2	18	2,236.92	124.27	6.21
Chemistry 110	1/2	141	39,739.19	281.83	0.26
Chemistry 130	1/2	20	3,642.56	182.12	1.82
Chemistry 201	1/2	115	21,012.42	182.71	0.34
Chemistry 203	1/2	26	6,660.99	256.19	1.52
Chemistry 210	1/2	20	2,870.60	143.53	2.66
Chemistry 211	1/2	12	2,369.81	197.48	3.04
Chemistry 212	1/2	11	4,519.38	410.85	3.67
Communications 110	1/2	93	15,241.14	163.88	0.85
Communications 111	1/2	76	14,011.47	184.36	0.96
Communications 120	1/2	67	9,944.96	148.43	1.03
Communications 121	1/2	49	8,643.05	176.38	1.22
Communications 151	1/2	45	8,218.11	182.62	1.27
Communications 210	1/2	24	16,842.44	701.76	1.83

Communications Continued ...

Table C-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Communications (Concluded):					
Communications 211	1/2	23	16,770.21	729.13	1.90
Communications 220	1/2	18	2,460.29	136.68	2.85
Communications 221	1/2	14	2,711.35	193.66	4.03
Communications 222	1/2	10	2,422.40	242.24	5.05
Communications 223	1/2	11	1,954.64	177.69	3.70
Communications 230	1/2	34	4,775.79	140.46	1.46
Communications 231	1/2	11	1,953.64	177.60	3.70
Communications 241	1/2	73	10,804.82	148.01	0.62
Communications 242	1/2	33	5,092.24	154.31	1.38
Communications 250	1/2	195	24,698.02	126.65	0.40
Communications 251	1/2	263	31,594.49	120.13	0.30
Computer Science 180	1/2	86	11,585.88	134.71	0.59
Computer Science 181	1/2	41	5,825.11	142.07	1.48
Computer Science 183	1/2	21	3,733.73	177.79	1.85
Computer Science 281	1/2	24	4,812.44	200.51	2.09
Computer Science 284	1/2	15	2,241.58	149.43	3.11
Drama 114	1/2	13	2,658.11	204.47	4.26
Drama 115	1/2	16	2,874.82	179.67	3.74
Drama 118	1/2	7	2,224.70	317.81	6.62
Drama 119	1/2	16	2,874.82	179.67	3.74

Drama Continued ...

Table C-2(Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Drama (Concluded):					
Drama 210	1/2	39	6,256.96	160.43	1.67
Drama 211	1/2	10	2,441.40	244.14	5.09
Drama 216	1/2	23	3,382.14	147.04	3.06
Drama 217	1/2	23	3,382.14	147.04	3.06
Economics 110	1/2	198	21,508.35	108.62	0.38
Economics 111	1/2	127	15,704.94	123.66	0.45
Economics 150	1/2	23	3,165.14	137.61	2.87
Economics 201	1/2	191	20,636.65	108.04	0.45
Economics 203	1/2	110	12,460.44	113.27	0.79
Economics 220	1/2	9	1,810.17	201.13	4.19
Economics 221	1/2	6	1,179.44	196.57	8.19
English 101	1/2	40	7,571.76	189.29	0.66
English 104	1/2	167	21,779.10	130.41	0.40
English 105	1/2	29	5,736.92	197.82	2.47
English 110	1/2	1,261	42,390.53	33.61	18.27
English 111	1/2	625	72,647.98	116.23	0.15
English 118	1/2	166	31,068.56	187.16	0.38
English 130	1/2	31	4,438.83	143.18	1.51
English 210	1/2	113	14,570.14	128.93	0.90
English 211	1/2	69	11,388.43	165.04	1.15

English Continued...

Table C-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
English (Concluded):					
English 212	1/2	68	8,744.14	128.59	1.34
English 213	1/2	50	7,442.23	148.84	1.55
English 214	1/2	24	3,729.38	155.39	3.24
English 215	1/2	20	3,438.76	171.93	3.58
English 218	1/2	33	4,311.49	130.65	2.72
English 219	1/2	19	3,298.52	173.60	3.62
English 231	1/2	25	2,967.61	118.70	2.47
English 241	1/2	527	64,221.15	121.86	0.16
English 243	1/2	244	32,048.65	131.34	0.34
Engineering 110	1/2	9	4,269.54	474.39	5.93
Engineering 114	1/2	25	3,507.61	140.30	2.92
Engineering 120	1/2	10	1,437.03	143.70	8.98
Engineering 152	1/2	34	3,677.04	108.14	3.38
Engineering 210	1/2	11	2,968.64	269.87	5.62
Engineering 214	1/2	24	3,711.22	154.63	2.86
Engineering 215	1/2	30	5,593.85	186.46	1.94
Engineering 252	1/2	11	2,013.95	183.08	5.72
French 101	1/2	5	1,171.77	234.35	18.03
French 103	1/2	21	4,662.79	189.51	3.
French 110	1/2	113	18 272.21	161.61	0.[illegible]

French Continued ...

Table C-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Studeht Contact Hour
French (Concluded):					
French 111	1/2	103	21,502.01	208.75	0.64
French 130	1/2	18	2,319.70	128.87	3.00
French 205	1/2	48	9,110.82	189.80	1.32
French 207	1/2	21	4,915.20	234.05	3.34
French 210	1/2	35	5,929.34	169.40	2.12
French 211	1/2	5	1,589.45	317.89	12.72
French 230	1/2	9	3,401.86	377.98	5.91
French 231	1/2	11	2,154.95	195.90	6.12
Geography 110	1/2	47	8,342.04	177.49	0.99
Geography 120	1/2	2	1,010.21	505.10	7.89
Geography 121	1/2	8	1,508.91	188.61	7.86
Geography 201	1/2	89	15,373.77	172.73	0.45
Geography 203	1/2	31	3,885.77	125.34	1.12
Geography 210	1/2	24	3,628.12	151.17	1.35
Geography 211	1/2	2	828.15	414.07	25.88
Geography 214	1/2	54	10,688.60	197.93	1.12
Geography 215	1/2	47	10,182.95	216.65	1.23
Geology 120	1/2	129	19,758.14	153.16	0.46
Geology 121	1/2	23	5,020.39	218.27	1.91
Geology 201	1/2	88	2,718.70	142.90	0.56

Geology Continued ...

Table C-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Geology (Concluded):					
Geology 205	1/2	16	3,284.60	205.28	2.74
Geology 206	1/2	8	1,157.56	144.69	9.04
Geology 210	1/2	4	3,767.00	941.75	9.81
Geology 211	1/2	4	835.62	208.90	13.06
German 101	1/2	11	2,531.82	230.16	3.71
German 103	1/2	8	1,451.25	181.40	5.67
German 110	1/2	30	4,794.09	159.80	1.72
German 111	1/2	22	5,368.34	244.01	1.91
German 201	1/2	7	3,257.39	465.34	7.27
German 203	1/2	6	1,793.78	298.96	9.34
History 116	1/2	16	3,167.56	197.97	4.21
History 117	1/2	21	3,331.67	158.65	3.31
History 201	1/2	153	20,216.57	132.13	0.61
History 203	1/2	99	13,002.17	131.33	0.91
History 212	1/2	144	21,465.61	149.06	0.55
History 213	1/2	184	15,292.40	147.04	0.84
History 220	1/2	40	7,191.20	179.78	1.87
History 221	1/2	32	4,463.26	139.47	2.91
Humanities 150	1/2	208	23,039.95	110.76	0.53
Humanities 250	1/2	40	8,770.26	219.25	1.52
Humanities 251	1/2	139	14,194.88	102.12	1.06

Continued ...

Table C-2(Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Images of Women 150	1/2	28	2,601.32	92.90	1.94
Insurance 110	1/2	36	4,148.88	115.24	1.80
Insurance 120	1/2	12	2,026.88	168.90	3.52
Insurance 121	1/2	6	1,490.46	248.41	5.18
Insurance 130	1/2	13	2,099.11	161.47	3.36
Insurance 203	1/2	23	2,402.46	104.45	3.26
Interior Design 110	1/2	126	13,789.56	109.44	0.68
Interior Design 111	1/2	83	11,474.17	138.24	0.61
Interior Design 112	1/2	59	8,480.40	143.73	1.00
Interior Design 113	1/2	58	8,708.17	150.14	1.04
Interior Design 114	1/2	98	18,043.02	184.11	0.51
Interior Design 115	1/2	57	9,252.25	162.32	1.27
Interior Design 116	1/2	103	11,098.10	107.74	0.84
Interior Design 117	1/2	55	6,477.40	117.77	1.23
Interior Design 118	1/2	197	21,668.37	109.99	0.49
Interior Design 119	1/2	38	6,376.73	167.80	1.75
Interior Design 210	1/2	48	5,788.76	120.59	1.26
Interior Design 211	1/2	42	7,171.41	170.74	1.19
Interior Design 212	1/2	48	6,196.76	129.09	1.34
Interior Design 213	1/2	40	5,617.20	140.43	1.46
Interior Design 218	1/2	52	6,282.70	120.82	1.26

Interior Design Continued ...

Table C-2(Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Interior Design (Concluded):					
Interior Design 219	1/2	45	5,777.05	128.37	1.34
Interior Design 220	1/2	80	10,505.02	131.31	0.91
Interior Design 221	1/2	66	8,252.73	125.04	0.87
Interior Design 223	1/2	41	5,501.74	134.18	2.10
Interior Design 224	1/2	108	21,843.35	202.25	0.44
Interior Design 225	1/2	88	19,774.28	224.70	0.50
Library Science 110	1/2	9	1,354.48	150.49	4.70
Mathematics 112	1/2	27	4,050.08	150.00	3.13
Mathematics 113	1/2	8	2,479.93	309.99	6.46
Mathematics 114	1/2	281	34,305.47	122.08	0.26
Mathematics 115	1/2	192	24,322.77	126.68	0.30
Mathematics 118	1/2	565	68,271.82	120.83	0.15
Mathematics 119	1/2	222	32,912.66	148.25	0.34
Mathematics 120	1/2	22	3,081.98	140.09	4.00
Mathematics 121	1/2	10	3,792.43	379.24	5.27
Mathematics 122	1/2	21	3,612.68	172.03	3.31
Mathematics 123	1/2	1	409.57	409.57	51.20
Mathematics 130	1/2	32	4,511.06	140.97	1.48
Mathematics 131	1/2	21	3,716.48	176.97	1.86
Mathematics 201	1/2	283	32,162.08	113.64	0.38

Mathematics Continued ...

Table C-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Mathematics (Concluded):					
Mathematics 203	1/2	95	14,435.62	151.95	0.79
Mathematics 220	1/2	21	4,927.04	234.62	2.93
Mathematics 221	1/2	11	4,203.01	382.09	4.78
Mathematics 224	1/2	92	15,530.28	168.80	0.75
Mathematics 240	1/2	30	4,210.79	140.35	2.92
Natural Science 150	1/2	80	13,210.66	165.13	0.86
Natural Science 250	1/2	40	9,976.33	249.40	1.20
Nursing 110	1/2	72	34,083.32	473.37	0.51
Nursing 111	1/2	67	83,650.65	1,248.51	0.49
Nursing 212	1/2	28	41,757.03	1,491.32	1.40
Nursing 213	1/2	39	36,372.09	932.61	0.90
Petroleum 110	1/2	40	6,399.26	159.98	1.11
Petroleum 210	1/2	48	2,942.00	163.44	3.41
Physical Education 170	1/2	108	13,284.24	123.00	0.75
Physical Education 171	1/2	96	11,252.53	117.21	0.92
Physical Education 174	1/2	72	9,969.53	138.46	0.72
Physical Education 175	1/2	58	9,274.56	159.90	0.83
Physical Education 177	1/2	43	5,178.15	120.42	1.49
Physical Education 178	1/2	47	5,632.43	119.83	1.35
Physical Education 203	1/2	32	3,610.44	112.82	1.82

Physical Education Concluded ...

Table C-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Physical Education (Concluded):					
Physical Education 204	1/2	93	12,559.21	135.04	0.75
Physical Education 205	1/2	30	3,335.80	111.19	2.14
Physical Education 207	1/2	22	2,090.47	95.02	2.88
Physical Education 209	1/2	34	3,199.67	94.10	1.45
Phsyical Education 210	1/2	43	6,272.58	145.87	1.52
Physical Education 239	1/2	60	6,775.64	112.92	0.78
Physical Education 242	1/2	26	3,517.85	135.30	2.82
Physical Education 243	1/2	26	3,676.85	141.41	2.95
Physical Education 246	1/2	24	2,792.38	116.34	2.42
Physical Education 247	1/2	32	3,963.26	123.85	2.58
Physical Education 254	1/2	74	6,748.92	91.20	0.74
Physical Education 255	1/2	48	5,455.73	113.66	1.58
Physical Education 262	1/2	15	2,721.58	181.43	3.78
Physical Education 270	1/2	36	3,529.80	98.05	1.61
Physical Education 271	1/2	62	8,909.73	143.70	1.50
Philosophy 110	1/2	144	18,853.86	130.92	0.63
Philosophy 111	1/2	23	4.574.83	198.90	3.11
Philosophy 121	1/2	25	3,905.30	156.21	2.44
Philosophy 201	1/2	212	26,498.41	124.99	0.35
Philosophy 203	1/2	95	13,537.64	142.50	0.66
Philosophy 201	1/2	36	4,710.88	130.85	2.04
Philosophy 211	1/2	15	4,122.95	274.86	3.44

Continued ...

Table C-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Physical Education (Concluded):					
Physical Education 204	1/2	93	12,559.21	135.04	0.75
Physical Education 205	1/2	30	3,335.80	111.19	2.14
Physical Education 207	1/2	22	2,090.47	95.02	2.88
Physical Education 209	1/2	34	3,199.67	94.10	1.45
Physical Education 210	1/2	43	6,272.58	145.87	1.52
Physical Education 239	1/2	60	6,775.64	112.92	0.78
Physical Education 242	1/2	26	3,517.85	135.30	2.82
Physical Education 243	1/2	26	3,676.85	141.41	2.95
Physical Education 246	1/2	24	2,792.38	116.34	2.42
Physical Education 247	1/2	32	3,963.26	123.85	2.58
Physical Education 254	1/2	74	6,748.92	91.20	0.74
Physical Education 255	1/2	48	5,455.73	113.66	1.58
Physical Education 262	1/2	15	2,721.58	181.43	3.78
Physical Education 270	1/2	36	3,529.80	98.05	1.61
Physical Education 271	1/2	62	8,909.73	143.70	1.50
Philosophy 110	1/2	144	18,853.86	130.92	0.63
Philosophy 111	1/2	23	4,574.83	198.90	3.11
Philosophy 121	1/2	25	3,905.30	156.21	2.44
Philosophy 201	1/2	212	26,498.41	124.99	0.35
Philosophy 203	1/2	95	13,537.64	142.50	0.66
Philosophy 201	1/2	36	4,710.88	130.85	2.04
Philosophy 211	1/2	15	4,122.95	274.86	3.44

Continued ...

Table [illegible]-2 (Continued)

Course	Full or 1/2	Enrollment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Physics 110	1/2	128	30,478.11	238.11	0.41
Physics 111	1/2	7	4,492.69	641.81	5.89
Physics 130	1/2	14	2,167.85	154.84	3.10
Physics 241	1/2	74	18,716.84	252.93	0.62
Physics 247	1/2	20	5,011.81	250.59	2.61
Physics 253	1/2	2	2,996.90	1,498.45	18.73
Planning 110	1/2	20	4,898.32	244.91	1.02
Planning 230	1/2	14	3,480.40	248.60	2.59
Planning 240	1/2	30	4,338.85	144.62	1.51
Police Science 110	1/2	104	17,616.47	169.38	0.71
Police Science 113	1/2	128	15,313.35	119.63	0.83
Police Science 150	1/2	5	2,380.23	476.04	9.92
Political Science 110	1/2	60	8,867.58	147.79	1.54
Political Science 111	1/2	39	7,348.96	188.43	1.96
Political Science 201	1/2	75	9,285.16	123.80	0.97
Political Science 203	1/2	47	4,676.15	99.49	1.55
Political Science 210	1/2	10	2,987.40	298.74	6.22
Political Science 211	1/2	12	3,131.88	260.99	5.44
Political Science 221	1/2	86	10,784.11	125.39	0.87
Property Management 202	1/2	47	5,718.52	121.67	1.27

Continued ...

Table C-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Ho
Project Go Ahead	1/2	28	45,654.95	1,630.53	0.96
Psychology 110	1/2	343	39,358.45	114.74	0.24
Psychology 111	1/2	199	28,532.78	143.38	0.32
Psychology 210	1/2	74	8,887.55	120.10	1.25
Psychology 211	1/2	134	14,769.76	110.22	0.77
Psychology 212	1/2	14	1,599.35	114.23	2.38
Psychology 213	1/2	6	1,976.46	329.41	6.86
Psychology 214	1/2	51	8,081.46	158.46	1.65
Psychology 215	1/2	59	8,659.35	146.76	1.53
Psychology 235	1/2	303	54,765.12	180.74	0.21
Recreation 110	1/2	85	13,140.29	154.59	0.72
Recreation 111	1/2	68	11,910.62	175.15	0.81
Recreation 130	1/2	101	16,952.82	167.84	0.58
Recreation 131	1/2	116	20,863.82	179.86	0.44
Recreation 210	1/2	21	3,910.70	186.22	2.59
Recreation 211	1/2	30	4,569.13	152.30	2.72
Recreation 240	1/2	24	3,965.72	165.23	2.95
Recreation 241	1/2	18	3,530.63	196.14	3.50
Religion 220	1/2	20	3,406.76	170.33	3.55
Religion 221	1/2	10	1,882.40	188.24	3.92
Religion 250	1/2	13	2,098.11	161.39	3.36
Religion 251	1/2	14	2,170.35	155.02	3.23

Continued ...

Table C-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Secretarial Science 112	1/2	73	10,325.24	141.44	0.81
Secretarial Science 113	1/2	3	717.90	239.30	10.80
Secretarial Science 114	1/2	54	6,224.17	115.26	1.20
Secretarial Science 122	1/2	32	5,269.69	164.67	1.29
Secretarial Science 136	1/2	66	11,351.42	171.99	1.07
Secretarial Science 148	1/2	16	2,565.50	160.34	2.51
Secretarial Science 160	1/2	36	4,140.20	115.00	2.40
Secretarial Science 212	1/2	164	19,653.30	119.83	0.47
Secretarial Science 222	1/2	6	758.75	126.45	15.81
Secretarial Science 224	1/2	64	7,812.20	122.06	1.27
Secretarial Science 236	1/2	42	5,341.63	127.18	2.27
Secretarial Science 238	1/2	8	1,030.97	128.87	11.72
Secretarial Science 240	1/2	3	409.71	136.57	34.14
Secretarial Science 250	1/2	32	3,851.26	120.35	2.51
Secretarial Science 251	1/2	16	1,765.20	110.32	5.81
Secretarial Science 272	1/2	49	8,039.74	164.07	1.03
Secretarial Science 280	1/2	11	1,567.95	142.54	4.45
Secretarial Science 284	1/2	8	1,282.25	160.28	5.01
Sociology 110	1/2	465	48,734.66	104.80	0.18
Sociology 201	1/2	404	48,264.34	119.46	0.19
Sociology 210	1/2	52	7,839.70	150.76	1.57

Sociology Continued ...

Table C-2(Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Sociology (Concluded):					
Sociology 211	1/2	158	18,620.53	117.85	0.49
Sociology 218	1/2	59	7,703.35	130.56	1.36
Sociology 219	1/2	57	7,558.87	132.61	1.38
Sociology 230	1/2	12	2,585.88	215.49	4.49
Social Work 100	1/2	33	6,883.55	208.59	2.17
Social Work 101	1/2	29	5,190.58	178.98	2.49
Social Work 102	1/2	31	4,430.02	142.90	1.98
Social Work 103	1/2	29	4,285.55	147.77	3.08
Social Work 104	1/2	32	5,240.94	163.77	2.56
Social Work 105	1/2	29	5,024.24	173.24	2.71
Social Work 106	1/2	21	3,112.67	148.22	3.09
Social Work 107	1/2	40	4,485.14	112.12	2.34
Social Work 108	1/2	21	3,123.67	148.74	3.10
Social Work 109	1/2	20	3,049.76	152.48	3.18
Social Work 110	1/2	119	27,111.81	227.83	0.36
Social Work 111	1/2	120	21,377.74	178.14	0.46
Social Work 112	1/2	18	3,436.97	190.94	2.98
Social Work 113	1/2	19	3,509.21	184.69	2.89
Social Work 114	1/2	30	5,098.16	169.93	2.12
Social Work 115	1/2	26	5,912.59	227.40	2.03

Social Work Continued ...

Table C-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Social Work (Concluded):					
Social Work 116	1/2	38	4,463.67	117.46	2.45
Social Work 117	1/2	30	3,885.79	129.52	2.70
Social Work 118	1/2	30	9,161.29	305.37	1.59
Social Work 119	1/2	27	8,944.59	331.28	1.73
Social Work 206	1/2	13	2,818.11	216.77	4.52
Social Work 207	1/2	13	2,818.11	216.77	4.52
Social Work 208	1/2	14	2,890.35	206.45	4.30
Social Work 209	1/2	14	2,890.35	206.45	4.30
Social Work 210	1/2	82	15,441.68	188.31	0.65
Social Work 211	1/2	73	14,789.88	202.60	0.70
Social Work 212	1/2	14	3,535.03	252.50	3.95
Social Work 213	1/2	14	3,535.03	252.50	3.95
Social Work 214	1/2	19	3,394.52	178.65	3.72
Social Work 215	1/2	20	3,466.76	173.33	3.61
Social Work 216	1/2	19	3,394.52	178.65	3.72
Social Work 217	1/2	21	3,540.67	168.60	3.51
Social Work 218	1/2	19	4,059.21	213.64	3.34
Social Work 219	1/2	19	4,059.21	213.64	3.34
Social Science 118	1/2	247	35,020.79	141.78	0.31
Social Science 130	1/2	14	2,167.85	154.84	3.10

Continued ...

Table C-2(Concluded)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Spanish 110	1/2	14	2,171.35	155.09	3.23
Spanish 111	1/2	9	1,894.86	210.54	3.29
Speech 110	1/2	74	10,885.61	147.10	1.02
Speech 111	1/2	37	8,209.55	221.87	1.54

APPENDIX D

MEDICINE HAT

Table D-1

Cost Revenue Analysis for Medicine Hat College

	Year	Average Cost Per Student	Fees	Grant	Subsidy Effect
Transfer Programs:					
Agriculture (1 student)		1,636	200	1,792	+ 356
Arts (based on 1 semester)		1,653	200	1,792	+ 339
Commerce		1,580	200	1,792	+ 412
Education		1,944	200	1,792	+ 48
Engineering		1,855	200	1,792	+ 137
Fine Arts (1 student)		1,633	200	1,792	+ 359
Home Economics		1,861	200	1,792	+ 131
Physical Education		1,662	200	1,792	+ 330
Pre-Dentistry & Pre-Medicine		1,806	200	1,792	+ 186
Science		1,884	200	1,792	+ 108
Diploma Programs:					
Business Administration	1	2,058	200	1,792	- 66
Business Administration	2	1,809	200	1,792	+ 175
Nursing		5,964	200	1,792	-3972
Secretarial Science		1,812	200	1,792	+ 180
Matriculation High School Equivalent Program:		1,436	200	1,792	+ 556
Adult Upgrading Program		513	200	1,792	+1479

Table D-2

Courses Offered by Medicine Hat College in 1970-71 with Enrolment, Total Cost, Cost Per Student, and Cost Per Student Contact Hour

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Accounting 101	1/2	54	7,713.01	142.83	0.81
Accounting 201	1/2	24	3,293.97	137.24	2.86
Accounting 203	1/2	17	2,779.73	163.51	3.41
Anthropology 201	1/2	17	2,129.76	125.28	4.64
Anthropology 202	F	37	4,447.92	120.21	2.86
Anthropology 203	1/2	16	2,056.16	128.51	4.76
Art 230	F	18	3,343.71	185.76	2.65
Astronomy 201	1/2	20	5,549.01	277.45	2.17
Academic Upgrading: English	1/2	130	25,014.28	192.41	0.40
Academic Upgrading: Math	1/2	152	20,372.71	134.03	0.37
Academic Upgrading: Science	1/2	152	20,290.71	133.49	0.37
Biology 100	F	15	3,077.23	205.14	2.93
Biology 101	1/2	82	10,613.17	129.42	0.82
Biology 103	1/2	36	6,180.40	171.67	1.37
Biology 201	1/2	97	17,957.15	185.12	0.58
Business Admin. 105	1/2	30	4,126.92	137.56	2.87
Business Admin. 107	1/2	45	4,783.31	106.29	2.21

Business Admin. Continued ...

Table D-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Business Admin. (Concluded):					
Business Admin. 111	1/2	5	875.82	175.16	3.65
Business Admin. 113	1/2	6	1,881.10	313.51	6.53
Business Admin. 121	1/2	30	4,126.92	137.56	2.87
Business Admin. 123	1/2	23	3,612.69	157.07	3.27
Business Admin. 161	1/2	17	3,171.73	186.57	3.89
Business Admin. 175	1/2	53	6,219.64	117.35	1.56
Business Admin. 205	1/2	9	2,191.58	243.50	5.07
Business Admin. 207	1/2	9	2,583.58	287.06	5 .98
Business Admin. 211	1/2	33	5,377.87	162.96	1.70
Business Admin. 219	1/2	11	1,746.78	158.79	3.31
Business Admin. 223	1/2	10	2,657.18	265.71	5.54
Business Admin. 231	1/2	21	5,387.96	256.56	2.67
Business Admin. 241	1/2	9	2,137.58	237.50	4.95
Business Admin. 261	1/2	18	3,245.01	180.27	3.76
Business Admin. 301	1/2	21	2,062.49	98.21	2.05
Chemistry 101	1/2	25	5,321.76	212.87	2.29
Chemistry 103	1/2	19	6,083.13	320.16	2.56
Chemistry 201	1/2	72	14,557.82	202.19	0.74
Chemistry 203	1/2	39	5,740.97	147.20	1.31
Chemistry 250	1/2	9	4,358.52	484.28	3.36
Chemistry 251	1/2	8	2,639.63	329.95	4.12

Continued ...

Table D-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Conservatory	1/2	3	10,855.04	3,618.34	18.85
Drama Production	1/2	10	2,808.40	280.84	3.90
Drama 221	1/2	11	2,188.78	198.98	4.15
Drama 223	1/2	22	2,997.09	136.23	2.84
Economics 101	1/2	40	4,415.95	110.39	2.30
Economics 103	1/2	28	3,534.04	126.21	2.63
Economics 201	1/2	74	12,374.43	167.22	0.76
Economics 203	1/2	45	5,822.81	129.39	1.73
Educational Admin. 261	1/2	60	9,520.64	158.67	1.10
Educational Foundations 201	1/2	66	12,670.58	191.97	0.80
Educational Psychology 211	1/2	67	9,084.93	135.59	1.10
Educational Psychology 213	1/2	47	7,615.19	162.02	1.32
English 101	1/2	64	11,204.74	175.07	0.87
English 103	1/2	60	10,910.98	181.84	0.90
English 211	1/2	21	2,051.49	97.69	2.04
English 231	1/2	17	2,129.76	125.28	4.64
English 233	1/2	140	18,702.62	133.59	0.61
English 243	1/2	110	15,617.64	141.97	0.74
English 251	1/2	16	2,976.24	186.01	3.10
English 99	1/2	10	4,722.84	472.28	7.16

Continued ...

Table D-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Engineering 152	1/2	13	3,204.98	246.53	3.08
Engineering 154	1/2	12	3,131.38	260.94	3.26
French 101	1/2	18	2,981.34	165.63	2.07
French 103	1/2	14	2,687.58	191.97	2.40
French 201	1/2	2	1,805.67	902.83	11.29
French 203	1/2	2	1,805.67	902.83	11.29
French 205	1/2	9	2,319.90	257.76	3.22
French 207	1/2	7	2,173.03	310.43	3.88
Geography 201	1/2	38	7,025.95	184.89	1.10
Geography 203	1/2	30	4,816.15	160.53	1.66
German 101	1/2	10	1,560.50	156.05	1.95
German 103	1/2	8	1,563.63	195.45	2.44
History 101	1/2	47	5,308.68	112.95	1.51
History 103	1/2	38	4,647.25	122.29	1.63
History 201	1/2	61	8,175.98	134.03	1.09
History 203	1/2	56	7,808.62	139.43	1.13
Linguistics 281	1/2	19	2,836.61	149.29	3.11
Linguistics 283	1/2	14	2,469.26	176.37	3.67

Continued ....

Table D-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Mathematics 101	1/2	104	14,045.21	135.05	0.62
Mathematics 103	1/2	16	1,653.16	103.32	3 .83
Mathematics 111	1/2	35	5,058.12	144.51	1.76
Mathematics 201	1/2	75	10,892.12	145.22	0 .82
Mathematics 203	1/2	63	9,337.71	148.21	0 .96
Mathematics 99	F	17	2,300.29	135.31	2.51
Music 201	1/2	8	3,239.30	404.91	8.44
Music 243	1/2	5	3,018.82	603.76	12.58
Natural Science 275	1/2	16	3,734.05	233.37	2.59
Natural Science 277	1/2	11	2,755.96	250.54	3.68
Physical Education 203	1/2	16	2,135.95	133.49	4.17
Physical Education 205	1/2	48	5,156.86	107.43	1.92
Physical Education 207	1/2	25	2,212.24	88.48	5.53
Physical Education 209	1/2	29	2,889.14	99.62	3.11
Physical Education 215	1/2	25	3,901.51	156.06	2 .26
Physical Education 217	1/2	99	10,643.20	107.50	0.96
Physical Education 218	1/2	11	1,006.62	91.51	13.07
Physical Education 219	1/2	46	6,748.53	146.70	1.31
Physical Education 222	1/2	11	1,006.62	91.51	13.07
Physical Education 228	1/2	50	5,956.14	119.12	1.24
Physical Education 229	1/2	45	5,205.64	115.68	1.45

Physical Education Continued ...

Table D-2(Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Phsyical Education (Concluded):					
Physical Education 243	1/2	29	3,073.14	105.97	3.31
Physical Education 245	1/2	92	8,810.54	95.76	1.41
Physical Education 311	1/2	64	6,403.60	100.05	1.56
Philosophy 201	1/2	45	5,855.78	130.12	1.36
Physics 100	1/2	8	2,560.00	320.00	4.57
Physics 101	1/2	17	3,499.06	205.82	2.57
Physics 103	1/2	6	2,690.42	448.40	5.61
Physics 221	1/2	11	3,366.10	306.00	3.83
Physics 223	1/2	7	2,901.03	414.43	5.18
Physics 241	1/2	56	7,499.24	133.91	1.20
Physics 247	1/2	48	6,797.41	141.61	1.26
Political Science 200	1/2	16	2,430.58	151.91	3.62
Political Science 203	1/2	33	5,315.87	161.08	1.68
Political Science 221	1/2	36	5,709.35	158.59	1.65
Psychology 235	1/2	112	18,770.02	167.58	0.53
Psychology 237	1/2	11	2,406.78	218.79	4.56
Secretarial Science 101	1/2	18	4,205.48	233.63	2.43
Secretarial Science 103	1/2	13	3,838.13	295.24	3.08
Secretarial Science 111	1/2	21	5,598.90	266.61	1.39

Secretarial Science Continued ...

Table D-2 (Concluded)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Secretarial Science (Concluded):					
Secretarial Science 113	1/2	14	3,056.73	218.33	2.27
Secretarial Science 131	1/2	17	2,690.73	158.27	3.30
Secretarial Science 133	1/2	14	2,470.26	176.44	3.68
Secretarial Science 201	1/2	7	1,955.70	279.38	5.82
Secretarial Science 203	1/2	7	1,955.70	279.38	5.82
Secretarial Science 213	1/2	2	2,174.82	1,087.41	11.33
Secretarial Science 231	1/2	3	1,661.62	553.87	11.54
Secretarial Science 233	1/2	2	1,588.34	794.17	16.55
Sociology 201	1/2	159	20,396.56	128.28	0.48
Zoology 273	1/2	53	9,255.99	174.64	1.11
Nursing 201	1/2	16	23,115.66	1,444.72	
Nursing 203	1/2	11	27,609.31	2,509.93	
Nursing 205	1/2	11	7,258.31	659.84	

Nursing costs included only an equal division of salaries amongst the courses. No hours were used to prorate since 1970-71 was the first year for Nursing and faculty loads were difficult to determine. As a result the costs for Nursing do not include any Indirect charges.

APPENDIX E

LETHBRIDGE COMMUNITY COLLEGE

Table E-1

Cost Revenue Analysis for Lethbridge Community College

	Year	Average Cost Per Student	Fees	Grants	Subsidy Effect
Accounting Secretarial		1,464	120	1,595	+ 251
Automotives		2,171	120	1,595	- 456
Architecture & Drafting Technology		3,851	120	1,595	-2136
Business Administration		1,483	120	1,595	+ 232
College & University Prep.		1,051	120	1,595	+ 664
Commercial Cooking		1,383	120	1,595	+ 332
Data Processing		1,631	120	1,595	+ 84
Data Processing Secretary		1,612	120	1,595	+ 103
Electronic Technology		2,549	120	1,595	- 834
Journalism	1	1,585	120	1,595	+ 130
Journalism	2	2,132	120	1,595	- 417
Law Enforcement	1	2,062	120	1,595	- 347
Law Enforcement	2	2,633	120	1,595	- 918
Marketing Administration		2,397	120	1,595	- 682
Meat Technology		1,752	120	1,595	+ 37
Nursing	1	2,092	120	1,595	- 377
Nursing	2	2,317	120	1,595	- 602
Office Administration		1,759	120	1,595	- 44
Outdoor Recreation & Conservation	1	1,951	120	1,595	- 242
Outdoor Recreation & Conservation	2	1,864	120	1,595	- 149

Table E-1 Continued ...

Table E-1 (Concluded)

	Year	Average Cost Per Student	Fees	Grant	Subsidy Effect
Radio-TV Broadcasting	1	1,412	120	1,595	+ 303
Radio-TV Broadcasting	2	2,090	120	1,595	+ 375
Shorthand Secretarial		1,620	120	1,595	+ 95
Six Week Welding		332	70	-	- 262
Vocational Agriculture	1	2,401	120	1,595	- 686
Vocational Agriculture	2	2,384	120	1,595	- 669

Table E-2

Courses Offered by Lethbridge Community College in 1970-71 with Enrolment, Total Cost, Cost Per Student and Cost Per Student Contact Hour

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Accounting 126/127	1/2	73	9,286.57	127.21	0.80
Accounting 128/129	1/2	39	6,395.14	163.97	1.02
Accounting 131/132	1/2	112	22,857.76	204.08	0.36
Accounting 133/134	1/2	82	11,915.01	145.31	0.61
Accounting 234/235	1/2	40	10,449.02	261.22	0.78
Accounting 236/237	1/2	33	4,837.00	146.57	1.31
Accounting 238/239	1/2	14	3,328.91	237.77	2.97
Automated Data Processing 149	1/2	82	10,824.94	132.01	0.83
Automated Data Processing 240	1/2	16	2,507.70	156.73	3.27
Automated Data Processing 240/245	1/2	22	3,783.25	171.96	2.15
Automated Data Processing 246/247	1/2	22	3,783.25	171.96	2.15
Advertising 283	1/2	10	2,205.45	220.54	4.59
Advertising 284	1/2	17	2,800.75	164.75	3.43
Agricultural Marketing 230	1/2	17	2,256.75	132.75	2.77
Animal Breeding 205/206	1/2	10	3,929.76	392.97	6.55

Continued ...

Table E-2(Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Animal Nutrition 201/202	1/2	12	4,099.84	341.65	5.69
Animal Science 100/101	1/2	12	4,099.84	341.65	5.69
Automotive Lab. 111/113/115	1/2	8	6,058.91	757.36	3.16
Automotive Lab. 112/114/116	1/2	13	6,484.12	498.77	2.08
Automotive Lab. 100/103	1/2	10	2,568.75	256.87	3.21
Automotive Lab. 101/104	1/2	13	2,823.87	217.22	2.72
Baking 105	1/2	16	2,572.00	160.75	2.01
Biology 120/121	1/2	56	9,597.85	171.39	1.07
Biology 130/131	1/2	183	23,254.36	127.07	0.66
Biological Science 160	1/2	98	15,016.09	153.22	0.68
Bookkeeping 120/121	1/2	52	5,547.51	106.68	1.33
Botany 100/101	1/2	9	1,777.72	197.52	3.29
Business Knowledge-Mechanics Apprentice 17	1/2	29	3,076.86	106.09	4.42
Business Knowledge-Mechanics Apprentice 27	1/2	19	2,022.65	106.45	6.65
Business Knowledge 100	1/2	23	2,431.41	105.71	3.30
Business Law 162	1/2	123	11,895.89	96.71	1.51
Business Law 166	1/2	86	9,467.52	110.08	1.15

Continued ...

Table E-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Business Admin. 165	1/2	202	21,654.27	107.19	0.74
Communication Arts 100/101	1/2	23	4,066.29	176.79	2.21
Communication Arts 102/103	1/2	10	2,928.75	292.87	3.66
Communication Arts 104/105	1/2	24	3,833.33	159.72	2.00
Communication Arts 106/107	1/2	25	3,918.38	156.73	1.96
Communication Arts 108/109	1/2	27	4,088.46	151.42	1.89
Communication Arts 110/111	1/2	18	3,323.08	184.61	2.31
Communication Arts 118	1/2	18	2,605.79	144.76	3.02
Communication Arts 127	1/2	21	2,860.91	136.23	2.84
Communication Arts 128	1/2	22	2,945.96	133.90	2.79
Communication Arts 150/151	1/2	12	3,112.83	259.40	3.24
Communication Arts 152/153	1/2	44	5,534.17	125.77	1.57
Communication Arts 200	1/2	6	1,588.49	264.74	6.62
Communication Arts 201	1/2	11	3,226.58	293.32	3.33
Communication Arts 202	1/2	13	3,594.46	276.49	2.88
Communication Arts 204/205	1/2	6	2,302.58	383.76	4.80
Communication Arts 206/207	1/2	4	2,132.50	533.12	6.66
Communication Arts 208/209	1/2	5	2,576.13	515.22	5.37
Chemistry 110/111	1/2	43	9,818.31	228.33	1.43
Chemistry 120/121	1/2	29	8,627.72	297.50	1.86
Chemistry 130/131	1/2	62	14,074.58	227.00	1.01

Continued ...

Table E-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Circuit Theory 129/130/131	1/2	7	4,360.98	622.99	3.24
Computer Mathematics 241/242	1/2	23	4,161.29	180.92	2.26
Computer Science 248/249	1/2	22	3,783.25	171.96	2.15
Cooking 101/103	1/2	16	4,996.24	312.26	1.30
Cooking 102/104	1/2	20	6,310.89	315.54	1.04
Data Processing 141	1/2	132	22,034.35	166.92	0.42
Data Processing 144/145	1/2	50	8,283.60	165.67	1.04
Design 131	1/2	7	1,402.74	200.39	6.26
Drafting 129	1/2	12	3,058.83	254.90	3.19
Drafting 130	1/2	7	2,633.62	376.23	4.70
Drawing 100	1/2	12	2,238.54	186.54	3.89
Economics 151/152	1/2	97	11,134.57	114.78	0.72
Economics 230	1/2	18	2,341.79	130.09	2.71
Electrical Apprentice 13	1/2	23	3,638.29	158.18	1.98
Electrical Apprentice 14	1/2	23	2,995.70	130.24	2.04
Electrical Apprentice 19	1/2	23	3,643.68	158.42	1.52
Electrical Apprentice 23	1/2	25	4,068.97	162.75	1.70
Electrical Apprentice 24	1/2	25	3,165.78	126.63	1.98
Electrical Apprentice 29	1/2	25	2,512.70	100.50	4.19

Continued ...

Table E-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Electronic Lab. 131	1/2	10	2,414.75	241.47	3.02
Electronic Lab. 132/133/134	1/2	7	4,360.98	622.99	3.24
Electronic Theory 129/130/131	1/2	10	4,616.11	461.61	2.40
Electricity 130	1/2	10	2,414.75	241.47	3.02
English 103	1/2	18	2,877.79	159.87	3.33
English 104	1/2	109	16,545.44	151.79	0.56
English 105	1/2	114	14,967.47	131.29	0.68
English 106	1/2	82	12,110.12	147.68	0.77
English 120/121	1/2	93	13,363.47	143.69	0.60
English 130/131	1/2	195	34,196.17	175.36	0.37
English 133/134	1/2	12	3,257.83	271.48	3.39
English 150/151	1/2	81	14,072.15	173.73	0.54
English 160	1/2	159	21,540.65	135.47	0.60
English 208	1/2	31	6,990.51	225.50	1.76
English 209	1/2	33	4,442.42	134.61	2.80
Egnlish 80/81	1/2	45	9,205.57	204.56	1.07
Electrician Apprentice 12	1/2	23	2,353.82	102.34	6.40
Field Crops 230/231	1/2	10	1,865.76	186.57	3.11

Continued ...

Table E-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Finance 271	1/2	3	1,119.16	373.05	7.77
Finance 272	1/2	5	1,289.24	257.84	5.37
Farm Structures 160/161	1/2	10	3,323.95	332.39	4.62
Food Theory 107	1/2	16	2,572.00	160.75	2.01
Food Theory 108	1/2	20	2,912.17	145.60	1.82
Forage Crops 231/232	1/2	20	2,713.18	135.65	2.26
French 110/111	1/2	16	3,447.00	215.43	2.69
French 130/131	1/2	26	6,384.60	245.56	1.53
Farm M hinery 130/131	1/2	19	3,667.14	193.00	3.22
Farm Management 100/101	1/2	17	2,458.05	144.59	2.41
Graphics 100	1/2	12	3,058.83	254.90	3.19
Graphics 107	1/2	7	2,633.62	376.23	4.70
Growth & Development 100	1/2	48	4,770.05	99.37	2.07
History 100/101	1/2	39	5,394.96	138.33	1.73
History 200/201	1/2	16	3,504.00	219.00	2.74
Human Relations 168	1/2	109	11,980.49	109.91	1.14
Industrial Organization & Management 291/292	1/2	14	3,253.91	232.42	2.91

Continued ...

Table E-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Law Enforcement 100	1/2	18	2,513.79	139.65	2.91
Law Enforcement 101	1/2	18	2,185.20	121.40	3.79
Law Enforcement 103	1/2	12	2,003.54	166.96	3.48
Law Enforcement 105	1/2	12	1,674.95	139.57	4.36
Law Enforcement 106	1/2	30	3,534.29	117.80	2.45
Law Enforcement 107	1/2	30	3,205.70	106.85	3.34
Law Enforcement 108	1/2	30	3,534.29	117.80	2.45
Law Enforcement 109	1/2	30	3,205.70	106.85	3.34
Law Enforcement 114	1/2	13	2,240.58	172.35	3.59
Law Enforcement 206	1/2	8	1,663.37	207.92	4.33
Law Enforcement 207	1/2	8	1,334.78	166.84	5.21
Law Enforcement 208	1/2	9	1,419.82	157.75	4.93
Law Enforcement 209	1/2	9	1,748.41	194.26	4.05
Law Enforcement 210	1/2	8	1,663.37	207.92	4.33
Law Enforcement 211	1/2	8	1,334.78	166.84	5.21
Law Enforcement 212	1/2	8	1,334.78	166.84	5.21
Law Enforcement 213	1/2	8	1,282.37	160.29	3.34
Law Enforcement 214	1/2	8	1,848.37	231.04	4.81
Law Enforcement 215	1/2	8	1,663.37	207.92	4.33
Machine Shop Theory 131	1/2	12	2,242.54	186.87	3.89
Machine Shop Theory 132	1/2	8	1,902.37	237.79	4.95

Continued ...

Table E-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Machine Shop 120	1/2	8	1,494.78	186.84	5.84
Machine Shop 121	1/2	13	1,919.99	147.69	4.62
Machine Shop 131	1/2	12	2,242.54	186.87	3.89
Machine Shop 132	1/2	8	1,902.37	237.79	4.95
Marketing 188/189	1/2	87	11,676.15	134.20	0.84
Marketing 282	1/2	14	2,545.62	181.83	3.79
Marketing 288/289	1/2	14	3,328.91	237.77	2.97
Mathematics-Electrician Apprentice 15	1/2	23	3,378.91	146.90	2.62
Mathematics-Electrician Apprentice 25	1/2	25	3,656.99	146.27	2.61
Mathematics-Mechanics Apprentice 15	1/2	29	4,136.66	142.64	4.46
Mathematics-Mechanics Apprentice 25	1/2	19	2,506.24	131.90	4.12
Mathematics 100	1/2	41	4,166.79	101.62	3.08
Mathematics 110/111	1/2	74	10,648.61	143.90	0.90
Mathematics 120/121	1/2	96	16,987.78	176.95	0.55
Mathematics 130	1/2	132	20,233.28	153.28	0.48
Mathematics 131A/131B	1/2	55	9,088.81	165.25	1.03
Mathematics 133/134	1/2	17	3,671.04	215.94	2.70
Mathematics 80/81	1/2	53	8,958.73	169.03	1.06

Continued ...

Table E-2(Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Materials 131	1/2	12	2,256.34	188.02	5.22
Materials 133	1/2	8	2,324.37	290.54	6.05
Merchandising Administration & Accounting 277	1/2	8	2,120.41	235.60	4.91
Merchandising Administration & Accounting 278	1/2	14	2,545.62	181.83	3.79
Meat Technology 100/102	1/2	13	4,183.59	321.81	1.06
Meat Technology 101	1/2	8	2,140.14	267.51	1.86
Meat Technology 103	1/2	13	2,723.05	209.46	1.31
Meat Technology 104	1/2	13	2,283.46	175.65	1.83
Meat Technology 105	1/2	13	2,283.46	175.65	1.83
Meat Technology 106	1/2	13	1,913.87	147.22	1.84
Meat Technology 107	1/2	13	1,913.87	147.22	1.84
Microbiology 260	1/2	24	3,216.74	134.03	2.09
Motor Mechanics Field Work	1/2	32	6,914.34	216.07	1.39
Motor Mechanics 13	1/2	29	9,104.79	313.95	1.31
Motor Mechanics 14	1/2	29	6,575.72	226.74	1.42
Motor Mechanics 23	1/2	19	5,412.37	284.80	1.19
Motor Mechanics 24	1/2	19	3,839.30	202.06	1.26
Note Taking 116/117	1/2	88	10,669.20	121.24	0.76

Continued ...

Table E-2(Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Nursing 110/111	1/2	52	18,805.33	361.64	0.60
Nursing 112/113	1/2	46	26,677.44	579.94	0.59
Nursing 114/115	1/2	40	18,706.16	467.65	0.66
Nursing 211/212	1/2	24	13,547.84	564.49	0.86
Nursing 213/214	1/2	24	15,956.99	664.87	0.91
Nursing 215	1/2	23	19,626.65	853.33	0.92
Office Procedure 102	1/2	108	11,168.33	103.41	0.72
Outdoor Recreation & Conservation Education 110	1/2	40	6,146.59	153.66	1.60
Outdoor Recreation & Conservation Education 111	1/2	86	13,131.11	152.68	0.95
Outdoor Recreation & Conservation Education 120	1/2	65	8,450.64	130.00	1.35
Outdoor Recreation & Conservation Education 122	1/2	63	9,975.15	158.33	0.99
Outdoor Recreation & Conservation Education 224	1/2	24	3,413.04	142.21	2.96
Outdoor Recreation & Conservation Education 228	1/2	28	4,689.50	167.48	2.09
Outdoor Recreation & Conservation Education 232	1/2	9	2,137.41	237.49	4.95
Outdoor Recreation & Conservation Education 233	1/2	22	2,993.96	136.08	2.84

ORCE Continued ...

Table 5.1 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Outdoor Recreation & Conservation Education 234	1/2	20	4,609.17	230.45	2.88
Outdoor Recreation & Conservation Education 236	1/2	10	1,973.45	197.34	4.11
Outdoor Recreation & Conservation Education 243	1/2	18	2,972.79	165.15	3.44
Outdoor Recreation & Conservation Education 246	1/2	24	3,263.04	135.96	2.83
Outdoor Recreation & Conservation Education 247	1/2	4	1,562.20	390.55	8.14
Outdoor Recreation & Conservation Education 268	1/2	20	3,739.17	186.95	2.34
Outdoor Recreation & Conservation Education 269	1/2	10	2,072.45	207.24	4.32
Outdoor Recreation & Conservation Education 270	1/2	14	3,563.91	255.99	3.20
Outdoor Recreation & Conservation Education 272	1/2	43	5,070.31	117.91	0.74
Outdoor Recreation & Conservation Education 276	1/2	32	5,629.67	175.92	2.20
Outdoor Recreation & Conservation Education 277	1/2	18	4,439.08	246.61	3.08
Outdoor Recreation & Conservation Education 279	1/2	18	4,439.08	246.61	3.08
Outdoor Recreation & Conservation Education 282	1/2	16	3,754.00	234.62	2.93

ORCE Continued ...

Table E-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
ORCE (Concluded):					
Outdoor Recreation & Conservation Education 283	1/2	15	2,624.96	174.99	2.19
Outdoor Recreation & Conservation Education 285	1/2	11	3,328.79	302.61	3.78
Outdoor Recreation & Conservation Education 292	1/2	7	3,356.21	479.45	4.99
Outdoor Recreation & Conservation Education 293	1/2	28	5,126.09	183.07	1.91
Organizational Behavior 268/269	1/2	54	8,429.77	156.10	0.98
Personnel Admin. 298/299	1/2	23	3,745.29	162.83	2.04
Physical Education 100	1/2	38	4,306.92	113.34	1.42
Physical Education 102	1/2	50	8,499.60	169.99	1.06
Physical Education 104	1/2	27	3,757.17	139.15	2.90
Physical Education 105	1/2	11	1,580.49	143.68	2.99
Physical Education 200	1/2	34	7,774.93	228.67	1.43
Physical Education 204	1/2	18	3,972.08	220.67	2.76
Physical Education 206	1/2	17	2,523.04	148.41	1.86
Physical Education 210	1/2	67	6,501.14	97.03	1.21
Physical Education 212	1/2	31	3,455.04	111.45	1.74
Physical Education 213	1/2	12	1,634.54	136.21	2.84

Physical Education Continued ...

Table E-2 (Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Physical Education (Concluded):					
Physical Education 215	1/2	17	1,927.75	113.39	2.36
Physical Education 216	1/2	32	5,162.67	161.33	2.02
Physical Education 218	1/2	11	2,058.49	187.13	3.90
Physics 110/111	1/2	60	9,554.02	159.23	1.00
Physics 120/121	1/2	44	8,223.35	186.89	1.17
Physics 130/131	1/2	76	14,058.42	184.97	0.68
Physics 132/133	1/2	11	3,160.79	287.34	3.59
Political Science 100/101	1/2	23	5,140.29	223.49	2.79
Power Units 120/121	1/2	17	3,919.24	230.54	3.20
Psychology 100/101	1/2	221	31,978.02	144.69	0.45
Public Speaking 160	1/2	12	2,447.34	203.94	5.67
Real Estate 275/276	1/2	6	2,648.58	441.43	5.52
Salesmanship 279/280	1/2	14	3,449.91	246.42	3.08
Sanitation 100	1/2	27	2,771.57	102.65	3.21
Sanitation 101	1/2	33	3,281.83	99.44	3.11
Science-Motor Mechanics 16	1/2	29	3,342.66	115.26	3.60
Science-Motor Mechanics 26	1/2	19	2,430.24	127.90	4.00

Continued ...

Table E-2(Continued)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Science 80/81	1/2	42	8,053.27	191.74	1.20
Shortorder Cook	1/2	12	2,380.88	198.40	2.20
Sketching 131	1/2	12	1,827.95	152.32	4.76
Sociology 100/101	1/2	160	19,880.28	124.25	0.52
Sociology 100BE	1/2	99	10,928.07	110.38	1.15
Soils 100/101	1/2	19	2,628.14	138.32	2.31
Soils 226/227	1/2	15	2,490.16	166.01	2.31
Social Studies 130/131	1/2	207	25,345.18	122.44	0.77
Shorthand 110/111	1/2	36	9,079.49	252.20	1.13
Shorthand 112/113	1/2	30	5,939.07	197.96	1.17
Shorthand 212/213	1/2	6	1,581.94	263.65	4.88
Statistics 250/251	1/2	54	8,429.77	156.10	0.98
Structures 133	1/2	12	2,256.34	188.02	5.22
Structures 134	1/2	8	2,324.37	290.54	6.05
Transportation & Management 281	1/2	9	2,120.41	235.60	4.91
Typing 100	1/2	138	20,670.78	149.78	0.31
Typing 101	1/2	89	15,783.55	177.34	0.44
Typing 106	1/2	83	11,353.99	136.79	0.85

Continued ...

Table E-2 (Concluded)

Course	Full or 1/2	Enrolment	Total Cost	Cost Per Student	Cost Per Student Contact Hour
Weeds 220/221	1/2	11	1,947.80	177.07	2.95
Welding 100/102	1/2	123	28,289.69	229.99	0.28
Welding 170/171	1/2	9	2,115.91	235.10	3.27
Welding Apprentice	1/2	73	17,009.40	233.00	0.49
Welding-Special	1/2	12	4,278.50	356.54	2.29

APPENDIX F

PROCEDURES AND INSTRUMENTS RELATED TO A YEARLY COST ANALYSIS.

INSTRUCTIONS

for Data Collection -- College Costing System

Attached is a Data Collection Instrument for use in the College Costing System. The sheet requires information on individual faculty assignments of an Instructional and Non-Instructional Nature. Please note the following items before completing the Data Sheet.

1. SALARY. The salary figure MUST NOT include fringe benefits and the salary should cover the contract year 197_ to 197_. DO NOT include payment for evening or summer courses, etc. if they received extra pay.

2. INSTRUCTOR NUMBER. DO NOT FILL IN THIS NUMBER. FOR COMPUTER USE ONLY.

6. COURSE NAME. List all course names and numbers using the enclosed code sheet and indicate if the assignment is a lecture, laboratory, or seminar by ticking the appropriate column. If a course name is new and does not appear on the code sheet write it out in full. Please indicate if the course is Full (F) or 1/2 Time.

7. HOURS OR UNITS. This item refers to hours or equated units assigned to various courses. Specify this figure in CLOCK HOURS if they were the basis of assignment or UNITS if they were the basis of assignment.

8. NUMBER OF WEEKS. Refers to the length of time the course was offered.

9. and 10. ENROLMENT AND T CODE. Enrolments are to be reported AFTER 25 percent of the course has elapsed. If a course has lectures and laboratories or seminars enter a T in the T Code Column. BE CERTAIN that the total of lecture enrolments is the same as laboratory or seminar enrolments. If a difference exists, please explain.

11. ADDITIONAL COSTS. Report this figure in a lump sum. If fringe benefits are paid, please include. Items included here include markers, laboratory assistants, etc.

12. to 13. EXTRA-PAY INSTRUCTION. This refers to evening or summer courses which received extra pay. All categories are filled the same as Regular Contract Assignments.

13. SALARY. Include salary paid for the Extra-Pay Instruction. DO NOT ADD FRINGE BENEFITS.

18. ADDITIONAL COSTS. Treat the same as #11 -- LUMP SUM.

PLEASE RETURN ONLY INDIVIDUAL DATA SHEETS.

DATA COLLECTION - COLLEGE COSTING SYSTEM, 197_ to 197_

1. _____ Instructor Name 2. _____ Instructor Number 3. _____ Contract Salary 4. _____ College 5. _____ Admin. Title (if any)

INSTRUCTIONAL ASSIGNMENT

REGULAR CONTRACT:

6. Course Name	No.	Lec.	Lab.	Sem.	F or 1/2	7. Hrs. or Units	8. No. of Weeks	9. En-rolment	10. T Code	11. Additional Costs

12. EXTRA-PAY INSTRUCTION (Summer, Evening Courses, Etc.) 13. Extra Pay Salary: _____ 14. 15. 16. 17. 18.

NON-INSTRUCTIONAL ASSIGNMENT

19. What percentage of total workload is spent in Non-Instructional Activities? ____ %

20. Please check the appropriate Non-Instructional Activity(ies) or add if not included:

Administration _____ Counselling _____ Release (Preparation) _____ Library _____

Coaching _____ Research & Development (Program) _____ Other (Specify) _____

21. What percentage is representative of fringe benefits paid in your college? ____ %

DUTIES OF ACC SECRETARIAL STAFF

RE: Preparation of Costing Data for NAIT

Prior to sending the individual data sheets from each college to NAIT, one of the secretarial staff should prepare:

1. An alphabetical list of instructors from each college with an I.D. number for each instructor. The I. D. number to be the first letter of the College's location and then a number resulting from a straightforward ranking of the alphabetical list.

2. The list of instructors to include instructor salaries and where an instructor receives a normal contract salary and payment for summer or evening courses both items should be listed separately. The salaries reported in the list will be processed according to #3 below before inclusion in the list.

3. The instructional salaries so that the amount of money representative of the percentage of time spent in non-instructional activity is removed. This would involve determining the percentage of time reported for non-instructional activity (question 18), calculating the amount this is of the reported salary, subtracting the amount, and finally listing the resulting instructional salary with the instructor's name as directed in #2 above.

4. An alphabetical list of all courses offered in each college from the college calendar for the particular year being analyzed. These lists should be prepared in the first week of September following the year being analyzed. The lists should then be sent to the Data Center at NAIT.

5. A list of courses and codes from each college for inclusion with the Data Collection Instrument to be sent to each college early in September.

MASTER LIST - COLLEGE COURSES

A	Academic Upgrading - English	- AUENGL
	Academic Upgrading - Mathematics	- AUMATH
	Academic Upgrading - Science	- AUSCI
	Accounting	- ACCT
	Advertising	- ADVT
	Agricultural Marketing	- AGMRKT
	Animal Breeding	- ANBRD
	Animal Nutrition	- ANNUT
	Animal Science	- ANSCI
	Anthropology	- ANTH
	Automated Data Processing	- ADATPRO
	Automotive Laboratory	- AUTOL
	Automotive Theory	- AUTOT
	Art	- ART
	Astronomy	- ASTROM
B	Baking	- BAKE
	Behavioral Science	- BEHAV
	Biochemistry	- BIOCH
	Biological Science	- BIOSCI
	Biology	- BIOL
	Bookkeeping	- BOOK
	Botany	- BOTA
	Business Administration	- BUSN
	Business Knowledge	- BUSK
	Business Knowledge - Mechanics Apprentice	- BUSK(MMP)
	Business Law	- BUSL

Master List Continued . . .

Master List - Continued:

C	Chemistry	- CHEM
	Child Care	- CHCA
	Circuit Theory	- CIRTH
	Communications	- COMM
	Communication Arts	- COMAT
	Computer Mathematics	- COMAT
	Computer Science	- COMP
	Creative Writing	- CRWRT
D	Data Processing	- DATPRO
	Design	- DESIGN
	Drafting	- DRAFT
	Drama	- DRMA
	Drawing	- DRAW
E	Economics	- ECON
	Economics & Business	- ECBS
	Educational Administration	- EDADMIN
	Educational Foundations	- EDFDN
	Educational Psychology	- EDPSY
	Electrical Apprentice	- ELECEP
	Electricity	- ELEC
	Electronic Laboratory	- ELECL
	Electronic Theory	- ELECT
	Engineering	- ENGR
	English	- ENGL

Master List Continued . . .

Master List - Continued:

F	Farm Machinery	- FRMMCH
	Farm Management	- FRMMNG
	Farm Structures	- FRMSTR
	Field Crops	- FIEL
	Finance	- FINAN
	Food Theory	- FOODT
	Forage Crops	- FORG
	French	- FREN
G	Geography	- GEOG
	Geology	- GEOL
	General, Education	- GNED
	Genetics	- GENE
	German	- GERM
	Graphics	- GRAPH
	Growth & Development	- GRDE
H	History	- HIST
	Human Relations	- HUMR
	Humanities	- HUMN
I	Images of Women	- IMWO
	Industrial Organization and Management	- IOMNG
	Insurance	- INSR
	Interior Design	- INDS

Master List Continued . . .

Master List - Continued:

L	Landscaping	- LNDSCP
	Law Enforcement	- LE
	Legal Secretary	- LEGSC
	Library Science	- LBSC
	Linguistics	- LING
M	Machine Shop	- MACH
	Machine Shop Theory	- MACHT
	Marketing	- MARKT
	Mathematics	- MATH
	Mathematics - Electrician Apprentice	- MATHEP
	Mathematics - Mechanics Apprentice	- MATHMMP
	Materials	- MATS
	Meat Technology	- MEAT
	Mechanical Engineering	- MECHE
	Merchandising Administration and Accounting	- MDSE
	Microbiology	- MICROB
	Motor Mechanics	- MMP
	Motor Mechanics Field Work	- MMPF
	Music	- MUSIC
N	Natural Science	- NTSC
	Nursing	- NURS
	Note Taking	- NOTF

Master List Continued . . .

Master List - Continued:

O	Office Procedure	- OFPRO
	Organizational Behavior	- ORGN
	Outdoor Recreation & Conservation Education	- ORCE
P	Petroleum Administration	- PERS
	Petroleum	- PETR
	Philosophy	- PHIL
	Physical Education	- PHED
	Physical Sciences	- PHYSCI
	Physics	- PHYS
	Physiology	- PSYSIO
	Planning	- PLAN
	Police Science	- PLES
	Political Science	- PLSC
	Power Units	- POWR
	Property Management	- PRMT
	Psychology	- PSYCH
	Public Speaking	- PUSP
R	Reading	- READ
	Real Estate	- REAL
	Recreation	- RECR
	Religion	- RLGN

Master List Concluded . . .

Master List Concluded:

Salesmanship	-	SALES
Sanitation	-	SAN
Science	-	SCI
Science - Motor Mechanics	-	SCIMMP
Secretarial Science	-	SESC
Shorthand	-	SRTHND
Shortorder Cook	-	SHRTOC
Sketching	-	SKETCH
Social Science	-	SOSC
Social Services	-	SOCSER
Social Studies	-	SOST
Social Work	-	SLWK
Sociology	-	SLGY
Soils	-	SOILS
Spanish	-	SPAN
Speech	-	SPCH
Statistics	-	STATS
Structures	-	STRU
Transportation & Management	-	TRANS
Typing	-	TYPE
Weeds	-	WEEDS
Welding	-	WELD
Welding Apprentice	-	WLDAPP
Welding - Special	-	WLDSP
Zoology	-	ZOO