

# **Program Costing Methodology for Manitoba's Public Post-Secondary Institutions**

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## **1.0 Introduction**

This paper presents a methodology developed jointly by the Council on Post Secondary Education and Manitoba's public colleges and universities. It will enable standardized program costs to be calculated by the institutions to respond to Council's needs and also for institutions' own internal purposes. This methodology will also be used to calculate apprenticeship costs for the Apprenticeship Branch of Education, Training and Youth.

It is anticipated that this methodology will be a 'living document,' with changes being made as new issues are identified and its limitations better understood.

## **2.0 Principles**

- Common definitions will be used by all institutions. These include definitions of programs, departments, census dates, and full load equivalent students.
- Costs must be associated as closely as possible with their source. Thus, allocatable costs will be allocated on the basis of direct charge by usage wherever possible first, and the remainder by other reasonable means for example square footage, standard student or percent of budget.
- Financial information will be reconciled to audited financial statements.
- Multi-year data will be developed to allow trend analyses.
- All facets of institutions' operations will be accounted for. Ancillary enterprises, stand-alone services and non-credit operations, are included in the reconciliation to the audited statements but are not allocated to academic programs.
- The adoption of common accounting policies by all institutions wherever possible, including Canadian Generally Accepted Accounting Practices (C-GAAP) will help to understand real differences in costs.
- Institutions will provide enough information about how they calculate program costs (for example, the particular allocation methodology that was used if the institution has not yet implemented all aspects of the methodology and information about the precise costs included) to allow for meaningful analysis. This information will be provided either in their financial reports (if appropriate) or will accompany their program costs. Any analysis of information will be performed jointly with the institution(s) and will include consideration of factors and cost drivers specific to each institution.

### **3.0 Instructions and Limitations**

This section is designed to assist institutions and COPSE with the analysis of the costing data.

#### **3.1 Instructions**

These instructions have been agreed to by universities and colleges. Instructions are presented in no particular order.

- Where appropriate, the census date for data collection is November 1<sup>st</sup> of each year for universities. Colleges will use their academic years as starting points. Both colleges and universities will submit data by the end of December each year. Annual data sets will include information from all terms and sessions.
- Information about the number of credit hours for programs must be included to allow a comparison of programs on a credit hour basis.
- Institutions will provide data on an annual basis. However, once there is sufficient data, both colleges and universities will provide, in addition to annual data, three-year rolling averages to help reduce anomalies caused by one-time expenses, programs newly implemented, enrolment fluctuations, etc.
- Annual institutional data submissions will include all relevant spreadsheets (see appendices), and any notes that help to explain the data.
- Institutions will include a reconciliation of the data to audited financial statements. The format for this reconciliation is not predefined, and can be determined by the individual institution as required.
- When undertaking analysis, COPSE will meet with institutions to ensure appropriate interpretation and understanding of the data, especially where that data will be used publicly.

#### **3.2 Limitations and Interpretation**

This section outlines concerns regarding the limitations of the methodology. This section will assist institutions and COPSE in analyzing and understanding the data. It will also provide guidance as to protocols for the use and analysis of the data.

It is anticipated that this section of the methodology will be dynamic and thus will continue to be revised as new limitations are identified and better understood.

These limitations suggest that institutions should be involved in interpretation and analysis of the data. This will help to ensure a more complete understanding of the data.

Limitations are presented in no particular order.

- Manitoba's public post-secondary system is characterized by one big university, one big college, three smaller universities and three smaller colleges. Differences in institutional size in each sector must be acknowledged when analyzing the data.
- Each institution in Manitoba has a different mandate, which in turn leads institutions to offer different kinds of programs. For example, the U of M provides a high number of professional programs that have a greater cost. KCC provides more academic upgrading programs and in-community programming which also impacts on costs. These mandate differences must be understood and accounted for when assessing the costing data. Different mandates have different implications for costs.
- This methodology identifies common definitions and terms for colleges and universities. However, due to the differences in mandates, structures and programs, costing comparisons between colleges and universities are not appropriate.
- The first year of data provided by the colleges is for 1999/00. KCC's first year of data was for 2000/01.
- The first year of data provided by the universities will be 1997/98, except CUSB who will provide data beginning in 1998/99 due to an accounting system change.
- Start-up costs of programs are high because typically the anticipated enrolment is not achieved until the program is fully implemented. New program costs should be understood in this light. Over time, these costs will decrease.
- For universities, the model is sensitive to the use of credit hours. There is an inverse proportional relationship between the change in the number of credit hours and the costs per credit hour and the program cost. For example, if the number of credit hours decreases by 5%, then both costs per credit hour and program costs increase by 5%.
- Both full load equivalent and credit hour cost analysis is heavily dependent on student enrolment. Thus, in a year where there is unusually low enrolment, the per FLE/credit hour costs will be higher than in years where there is higher enrolment. This should be considered in analysis of the data.
- Research grants flow unevenly to the various institutions in the province. Intensive research increases costs at some institutions.
- Some courses may be offered through distance and traditional methods at the same time. Where this is the case, institutions will attempt to blend in the costs of distance education within the appropriate program, and not show it as a separate cost centre. Some institutions incorporate distance education into the costs for programs (BU and UW), and others hold it as a separate cost centre (UM) and exclude it from the costing calculations. The UM policy on this may be changing in the near future. Institutions should continue to, or work towards incorporating distance education costs into the appropriate program cost centre and note whether those costs are included or not.

- In some cases, costs may reflect contract settlements where back pay is reflected in the year of settlement. This will artificially inflate the costs for that particular year as the costing data is not retroactively adjusted.
- At universities, tenure has an impact on costing as it represents a fixed cost to the institution. Such costs can remain with the institution even though a program may no longer be available. For example, the reduction in students taking the University of Winnipeg's French program did not result in the elimination of the costs associated with tenured faculty within that program.
- Universities and colleges may change a program's requirements and/or length. This will have a significant impact on trend analysis and on comparisons. For example, 1998/99 is the first year where the U of M offers Education degrees as a two-year after-degree program, and the first year that the U of W offers the full five-year Education program. Institutions must identify such changes in notes to their tables, and this must be accounted for in analysis.
- This methodology only costs one program at a time. Thus, the full cost of educating a graduate is the accumulation of the costs of all required programs for that graduate's career. For example, while specific costs are identified for completing a medical degree, to get a full appreciation of the costs of educating a doctor, one must also recognize that that doctor had to complete an undergraduate degree, as well as a medical degree.

## **4.0 Methodology**

**Total program costs = direct costs + indirect costs + overhead.**

Calculations are outlined in Section 4.6.

Programs are defined in Section 4.75.

### **4.1 Items or Units included in each Cost Category**

#### **4.11 Direct Costs**

Academic salaries and benefits (including payroll tax), teaching academic chairs salaries and benefits, supplies, travel, printing, professional development, staff development, telephone, photocopying, postage, minor (non-capitalized) equipment, subscriptions and memberships, special early retirement plans, course releases, sabbaticals, other such leaves and associated replacements and savings.

If these costs do not appear in the units' line expenditures, they will be allocated as if they were direct expenditures.

Direct costs are net expenditures; cost recoveries are deducted if applicable.

#### **4.12 Indirect Costs**

Dean's office salary(ies) and benefits, non-teaching academic chairs salaries and benefits, support staff salaries and benefits, and libraries.

Vice-President (Academic) and Vice-President (Research), Graduate Studies and Research Board.

Student Services including: admission, registration, counselling, health services, aboriginal services, international students, study skills and academic development (remedial), recreational services, curriculum development, program development, athletics and campus recreation costs.

Regular retirements *may* be allocated directly against departments where they occur and in the year that they occur. Special retirement plans should be charged directly to departments if the departments normally prepare a business case to access them. Regular retirements and special retirements, such as those not related to department business cases may also be spread across the institution in order to avoid large year over year changes. If regular retirements are not allocated directly against departments they may be allocated across departments based on a percentage of salaries, in the year that they occur.

### **4.13 Overhead Costs**

Overhead costs include staffing costs related to the activities below.

Facilities (fuel and utilities, care taking, square footage occupied), property taxes, and security)

Computer Services

Financial Services

Human Resources

Central Administration (President's Office), President/Board costs, VP Admin and Finance

Materials Management (Purchasing)

Fund raising and marketing (Public Relations)

Note that for universities, undirected research by professors is not disaggregated from his/her salary. Thus, such costs are included in direct costs.

Additionally, research grants from granting councils are not included in the methodology, except as required to reconcile the costing data to audited financial statements.

### **4.2 Order of Allocation of the Three Major Cost Types**

Overhead costs must be allocated first to calculate a total direct and indirect costs. This is necessary because the costs of running libraries, for example, cannot be accurately calculated without including their maintenance and utilities. Nor can direct costs be described without including computer costs, purchasing and human resource services in the costs.

(see next page)

## 4.3 Allocation of Overhead and Indirect Costs

### 4.31 Allocation of Overhead Costs

Cost	Order of Allocation	Allocation Method**
Amortization Facilities-including: Insurance and Security Cleaning and Maintenance Utilities and Taxes Accommodation Cost Recovery System (ACRS) Minor, Un-capitalized Repairs	1	Net assignable square footage by usage, as determined by timetables. Where possible, specific costs at colleges will be assigned to specific facilities (e.g. KCC allocates program costs to campus in Thompson, The Pas, etc)  The U of W uses the proportion of the budget to allocate this cost.
Computer Services	2	Direct charge based on usage wherever possible and remainder based on % of budget net of recoveries or credit hour/standard student
Financial Services, including legal  Bad debts	3	% of budget net of recoveries  Direct charge—if possible, otherwise include with financial services
President and Board of Governors	4	% of budget net of recoveries
Human Resources	5	Based on staff salaries and benefits. The U of W uses the proportion of the budget to allocate this cost.***
Marketing and Public Relations  Fundraising	6	Direct charge and remainder as a % of budget.  Fundraising is allocated and has costs allocated to it based on the % of operating budget expenditures <i>net of recoveries</i> *. This includes any costs of foundations.
Materials Management		Direct charge based on usage. The U of W uses the proportion of the budget to allocate this cost.
Staff Services (typing pool)		Direct charge based on usage The U of W uses the proportion of the budget to allocate this cost.

\* Fundraising costs should be calculated as the total costs of fundraising from the operating budget. If the revenues from fundraising exceed the costs, than fundraising costs for the purposes of program costing would be zero.

\*\* Allocation should be done on direct charge, or using an approximation.

\*\*\* The University of Winnipeg is examining this in the calculation of its costing.

#### 4.32 Indirect Costs

<b>Costs</b>	<b>Allocation Method</b>
Salaries and benefits of Deans, non-teaching Chairs, Admin Assistants, Secretaries	Credit Hour (U), Standard Student (CC - see Section 4.73)
Regular retirements (if not allocated directly to departments)	Percent of salaries
Other departmental costs; office supplies, telephone, staff development	Credit Hour (U), Standard Student (CC - see Section 4.73)
Student Services: Registration Counselling Academic Development Health Services Aboriginal Services Special Needs Scholarships, Bursaries and Awards	Credit Hour (U), Standard Student (CC - see Section 4.73)
Libraries	Direct charge based on usage and the acquisitions expenditures; the remainder based on standard students
Special services	Credit Hour (U), Standard Student (CC - see Section 4.73)

Scholarship monies must be expensed and allocated by credit hour/standard student. Specific scholarship funding and grants are to be treated as recoveries so that the net expense is the scholarships derived from the operating budget.

#### 4.4 Amortization

Institutions must record capital purchases as assets and amortize them over their deemed useful life. Capital asset purchases should be recorded at cost and donated assets recorded at fair market value on the date received. Capital assets that are disposed of are removed from the accounts at their net book value. The amortization of assets must be included in program costing and should be distributed in a way that reflects the principle (above) of associating costs as closely as possible with their source.

Donations of material and equipment must be reported at fair market value.

Leasehold improvements must be amortized over the life of the lease or the life of the lease and one renewal term.

Because of the different mandates of colleges and universities there are slight differences in the amortization rates for the two types of institutions for computer equipment and software and for furniture and equipment (see table below).

Works of art, rare books, gems and other collections are included in the capital assets of the institution, but are not amortized.

Due to concerns about the impact of capital building amortization, universities will prepare one set of program costs with major (building) capital amortization and one without. Because government owns college buildings, colleges will not be required to complete two sets of costs. Templates are provided in the Appendices.

#### 4.41 Amortization Rates for different Assets: Colleges and Universities

All institutions will use straight-line amortization.

Type of Asset	Colleges	Universities
Buildings & additions	40 Years	50 years. 60 years at the U of W
Leaseholds	Life of the lease and/or one renewal term, or if life of the lease is unknown, 20 years	
Computers & electronics <sup>1</sup>	5 years major systems, software and hardware 3 years other software and hardware	5 years
Library	Base stock method	10 years
Other furniture and equipment	5 years at RRC - 10 years at ACC, KCC and Princess	5 years
Parking lots	20 years	20 years
Vehicles	5 years	20 years

#### 4.5 Disposal of Capital Assets

Capital assets that are disposed of will be removed from the accounts at their net book value (as above). For program costing purposes, at the time of their disposal they are to be considered revenues.

<sup>1</sup> Note that KCC capitalizes assets valued over \$5,000, ACC over \$1,000 and RRC capitalizes assets over \$750. The U of M capitalizes assets over \$1,000, the U of W over \$500, and BU over \$1,000. This may lead to fluctuation in costing data. COPSE has agreed to collect data and see if there is a significant difference. This issue may need to be revisited in later years.

## **4.6 Cost Calculations**

### **4.61 General**

Total program costs = direct costs + indirect costs + overhead costs.

Direct, indirect, and overhead costs must be reported separately to Council.

### **4.62 University Cost per Departmental Credit Hour**

University cost per departmental credit hour = 
$$\frac{\text{Total departmental costs}}{\text{Total credit hours taught by department}}$$

### **4.63 College Cost per Student**

College program cost per student = 
$$\frac{\text{Total program costs}}{\text{Total full load equivalent students}}$$

"Full load equivalent students" defined below.

### **4.64 Calculation of Cost of Degree Sought - Universities**

Universities will provide simulations of the cost of programs at the faculty level based on the program requirements as described in their respective university calendars. This will allow for an understanding of the costs per degree sought.

### **4.65 Calculation of Undergraduate and Graduate Programs**

Universities may choose the way in which they separate and report their undergraduate and graduate program costs. Those with relatively few programs may choose to report on a percent of student basis or report graduate and undergraduate costs as the same. Those with a large number of graduate programs should use load units. This will provide more detail about variations between programs. In order to avoid large year-over-year fluctuations, universities may choose to average them over three years.

### **4.66 Calculation of Apprenticeship Costs**

Colleges will provide information regarding Apprenticeship costs based on training weeks.

### **4.67 Colleges Costs based on Program Capacity<sup>2</sup>**

Colleges will provide full costs based on the seat-capacity of programs in order to provide a standard cost in addition to the actual costs per FLE. This will allow for analysis of costs against expected/funded costs for the program.

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<sup>2</sup> As of Sept 2002, the colleges have not developed a methodology for calculating these costs, but is under development. Colleges believe that this is valuable information and want to develop it further.

## 4.7 Definitions

### 4.71 Load Units - Graduate Students

Load units should be used by institutions with a number of graduate programs in order to provide more detail about cost differences among programs. It makes it possible to assign costs between graduate and undergraduate programs.

"Load" is defined at the undergraduate level as the number of undergraduate credit hours taught by a faculty and at the graduate level by the number of full-time equivalent graduate students. For each faculty and school a "factor" is determined, which represents the load that one staff member can handle, shown as credit hours for undergraduate programs and FTE students for graduate programs. (Senate may determine these factors.) This converts undergraduate and graduate workload to a common basis. Summing the undergraduate and graduate load units will determine what proportion of the effort goes into each. Costs can then be assigned on this basis.

Example:

Undergraduate: 15000 credit hours/ 500 (load factor) = 30 load units

Graduate: 60 FTE / 6 (load factor) = 10 load units

Total: = 40 load units

Undergraduate workload:  $30/40 \times 100 = 75\%$

Graduate workload:  $10/40 \times 100 = 25\%$

### 4.72 Credit hours - University

The credit hours will be as at November 1<sup>st</sup> for the September to April session and as at the end of May for the spring session. Credit hours for the summer session will be calculated as at the end of July for the summer session. Students who have not paid fees by that date will be excluded from the credit hour count.

### 4.73 Standard Student - College

In the colleges, standard students will be used to allocate indirect overheads including administrative costs to the various programs within the college. The calculation of standard students will be based on the number of students registered within a given program. It will not include those who withdraw prior to a financial penalty.

Academic hours include lectures, labs, shops, and self-directed courses. One hour of scheduled delivery is one academic hour. Work practicums will be converted to academic equivalent hours using a formula of 3 practicum hours equals 1 academic equivalent hour.

**1 Standard Student = 900 academic equivalent hours per year that is,**

**Total Standard Students = Total academic hours + Total practicum hours**

**3**

**900**

#### 4.74 College Full Load Equivalent Students

Full load equivalent students will be used to calculate program costs per student per year. The program cost must include all sections of the program. Colleges may want to calculate separately programs that are offered through alternate methods, for example distance delivery, off campus delivery and so on. The calculation of full load equivalent students will be based on student registrations but will not include those who withdraw prior to a *financial* penalty.

The full load is the training hours required to receive the full load of credits in a given program in a year. For example, for a two-year diploma it would be the number of hours per year for graduation within two years. Full load equivalent students will be defined by program as:

$$\text{Full Load Equivalent Students} = \frac{\text{Total academic equivalent hours taken by all students by program}^*}{\text{Full annual load for normal graduation for that program.}}$$

\*per year or less

It is expected that there will be variation among programs due to varying program lengths and curriculum requirements.

Three different calculations for a cost per student by program have been discussed. They are (1) program costing based on the actual number of students in the program, (2) costing based on student capacity and (3) program costs per graduate.

Council requires calculations of costs based on actual number of students in the program on a per student basis for both colleges and universities. However, program costs per graduate may also be required in the future.

#### 4.75 Program

Programs are defined as in the Council on Post-Secondary Act 14(1) as “a group of credit courses that leads to the granting of a degree, diploma or certificate by a university or college.” For program costing this is at the faculty/program and department level as appropriate to the institution. For universities “program costs” should be broken down by department/major for example: History or Eng. (Civil). “Cost per student” would be by faculty/school. Examples for colleges includes both certificate and diploma programs such as Practical Nursing and Computer Analyst/Programmer. In addition to their degree programs, universities should also provide information about their diploma and certificate programs by major.

## **5.0 Conclusion**

Program costs must be reported to the Council on Post Secondary Education using this methodology and the program costing templates in the Appendices.

This Program Costing Methodology will be reviewed annually by officials of each institution, and staff of the Council on Post-Secondary Education.

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## Appendix 1

### University Program Costing Template Costs per Departmental Credit Hour (Excluding Amortization)

	Direct Costs			Indirect Costs	Overhead	Total Cost	Total Credit Hours	Cost per Credit Hour By Dept
	A. Total	B. Sals & Bens	C. Operating	D. Total	E. Total	A+D+E		
<b>Departmental Level</b>								
Undergraduate Programs:								
Graduate Programs:								

**Notes:**

1. Please provide enough information about allocation methods in your notes for various cost categories to enable discussion & analysis
2. These costs are not to be used for cost per student calculations. Such costs are attributed in the simulations.

## Appendix 2

### University Program Costing Template Cost per Departmental Credit Hour (Including Amortization)

	Direct Costs			Indirect Costs	Overhead	Total Cost	Total Credit Hours	Cost per Credit Hour By Dept
	A. Total	B. Sals & Bens	C. Operating	D. Total	E. Total	A+D+E		
<b>Departmental Level</b>								
Undergraduate Programs:								
Graduate Programs:								

**Notes:**

1. Please provide enough information about allocation methods in your notes for various cost categories to enable discussion & analysis
2. These costs are not to be used for cost per student calculations. Such costs are attributed in the simulations.

### Appendix 3

#### University Program Costing Template Costs per Full University Program (Including Amortization)

Program	Certificate	Diploma	General 3 year	Advanced 4 year	Honours	Master	Doctorate

Notes:

1. "Full program" is based on simulation using program requirements
2. Full program costs are calculated using current year costs
3. Single year costs are calculated by dividing total costs by the number of years in the program in question

## Appendix 4

### University Program Costing Template Costs per Full University Program (Excluding Amortization)

Program	Certificate	Diploma	General 3 year	Advanced 4 year	Honours	Master	Doctorate

Notes:

1. "Full program" is based on simulation using program requirements
2. Full program costs are calculated using current year costs
3. Single year costs are calculated by dividing total costs by the number of years in the program in question

## Appendix 5

### College Program Costing Template Program Costs per Full-Load Equivalent Student

	Direct Costs				Indirect Costs	Overhead			Total Cost	Full Load Equivalent	Cost per FLE Student	Program Capacity	Cost per Program Capacity	Number of Weeks (Appren)	Cost/Week (Appren)
	A. Total	B. Sals & Bens	C. Operating	D. Cap Amort**	D. Total	E. Total	F. Facilities Total	H. Other Total							
Program*															

Notes

\* Each apprenticeship trade to be considered separately.

\*\* Refers to amortization of program equipment

Appendix 6

**University and College Program Costing Template**

**Three-Year Rolling Average Costs per Program**

Program	Certificate	Diploma	General 3 year	Advanced 4 year	Honours	Master	Doctorate