

# COMMONWEALTH UNIVERSITIES YEARBOOK 1988

volume 2 C-H

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The Association of Commonwealth Universities

**COMMONWEALTH  
UNIVERSITIES YEARBOOK  
1988**

**Volume 2**

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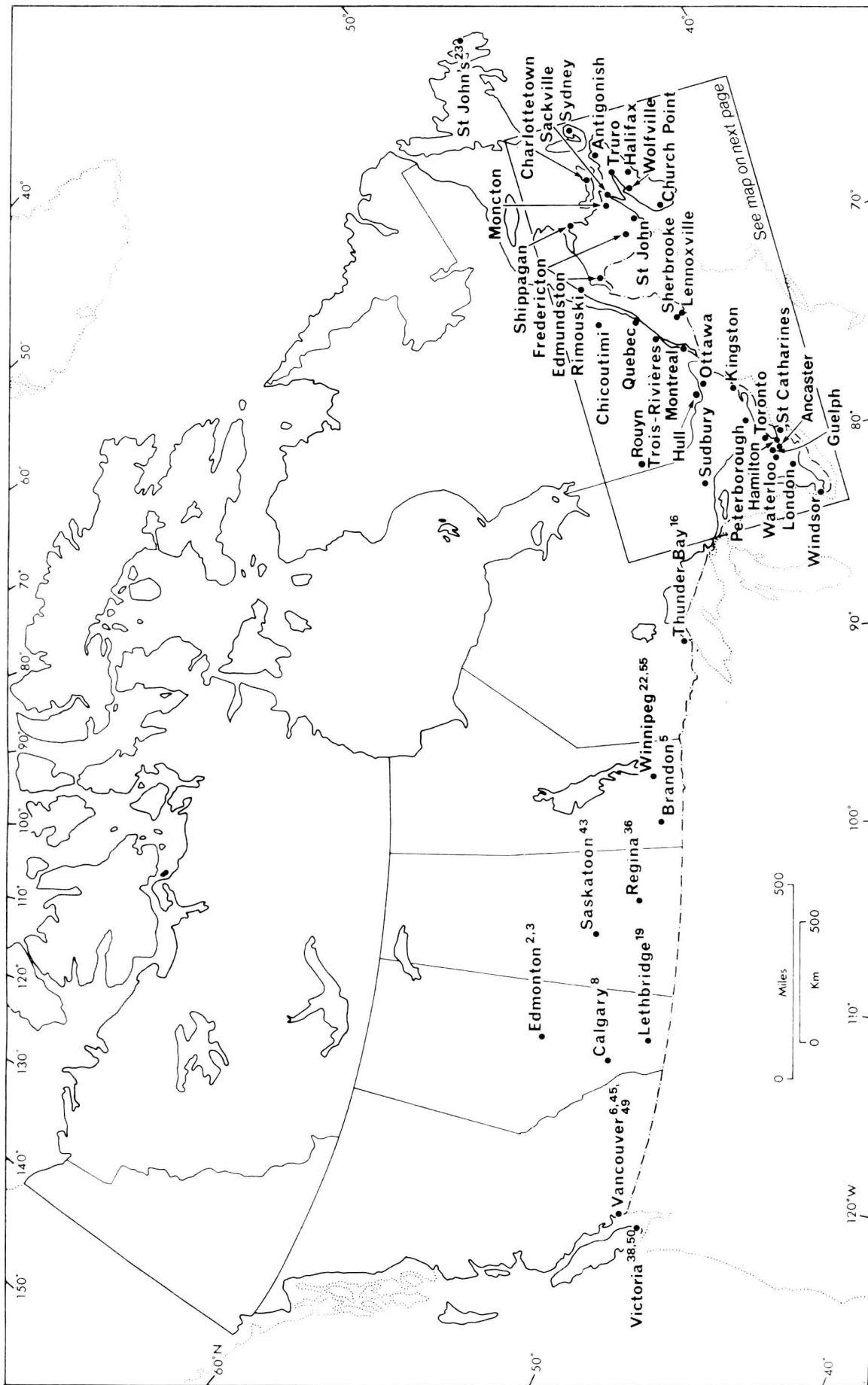
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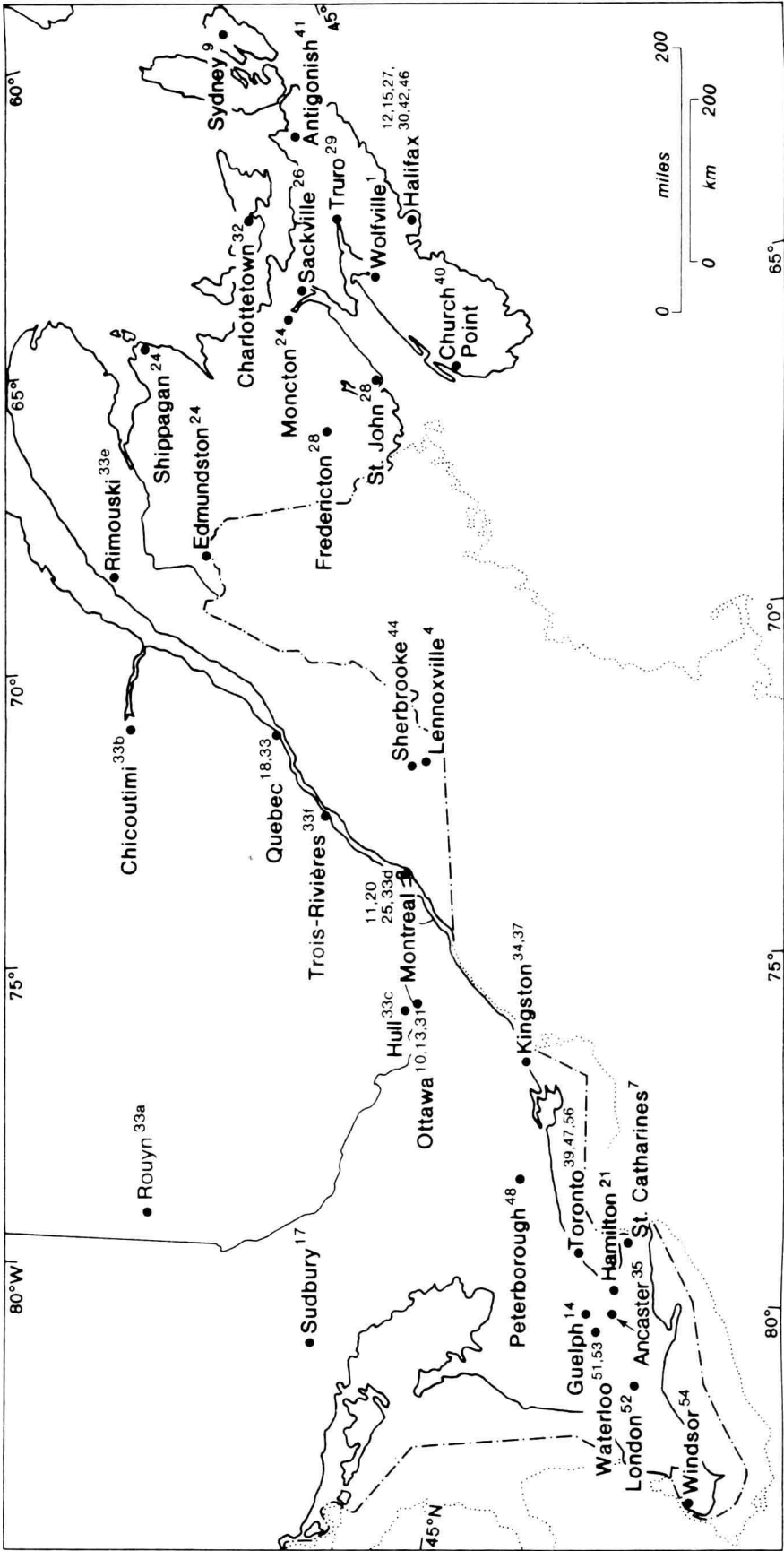
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The places named are the seats of the university institutions numbered opposite. For enlargement of area within box see next page. Université du Québec also has five other constituent institutions not listed opposite which are located in either Montreal or Quebec or in places not shown on this map (see Québec chapter).



A map of the whole of Canada appears on the previous page.

# THE UNIVERSITIES OF CANADA

[Contributed by Professor R. J. Baker, President Emeritus of the University of Prince Edward Island]

To someone from a society in which there is a *system* of post-secondary education, Canadian higher education appears chaotic. Canada is a federation of ten provinces and two (soon to be three) territories. Since education is the responsibility, indeed a jealously guarded prerogative, of the provinces, one can expect at least ten systems. In fact, however, it is only in the last twenty years or so that there has been much attempt to coordinate institutions of post-secondary education even within one jurisdiction. Traditionally, Canadian universities enjoyed a remarkable degree of autonomy, and although the non-degree granting institutions developed in the last twenty years or so have tended to be more regulated by provincial governments, the speed of their development has been such that they have often developed without much regard for an overall system, even within a province or region.

There are 83 members of the Association of Universities and Colleges of Canada (A.U.C.C.), the voluntary association of universities and university colleges in Canada. 64 grant their own degrees and another 6 grant degrees in limited fields only, usually theology or divinity, while holding the rest of their degree-granting powers in abeyance. A total of 13 either do not grant degrees or hold their degree-granting powers in abeyance. About 200 institutions, usually called colleges, grant certificates or diplomas. Many of these are multi-campus institutions, so that the availability of post-secondary education is greater than it appears. There are moreover numerous research or technical training institutions.

Of the universities and university colleges that are members of A.U.C.C., 61 are English-speaking, 17 are French-speaking and 5 are bilingual. Except for Brescia College, affiliated with the University of Western Ontario, all are coeducational, the Royal Military College having admitted women in 1980-81. But the variety is tremendous, ranging from large multiversities like, for example, the Universities of Montreal, Toronto, Alberta, and British Columbia to Université Sainte-Anne, set in rural Nova Scotia, with a total enrolment in 1985-86 of about 300. Variety is not confined to size and language, however. The Technical University of Nova Scotia is concerned only with engineering and architecture. The Saskatchewan Indian Federated College, one of the newest members of the A.U.C.C., is the only Indian-controlled post-secondary institution in Canada and offers such specialised degrees as a Bachelor of Indian Social Work.

Although most members of the A.U.C.C. have the power to grant their own degrees, a number hold the power in abeyance and have degrees granted by a federated or affiliated institution. In fact, when the A.U.C.C. a few years ago studied its own members, the committee concerned concluded that Canadian universities must use every form of association, affiliation, federation, and special relationship known to higher education.

The lack of a national system and the variety of Canada's universities and colleges may be best understood by looking at a globe. Stretch a string from Canada's most eastern university, Memorial, in St. John's, Newfoundland, to its most western, Victoria, in British Columbia. Then start the string in London. The other end reaches as far as Afghanistan in one direction, Southern Nigeria in another, to Montreal in another (Memorial being closer to London than to Victoria), far east of Moscow, and

considerably beyond the North Pole. Covering five time zones, Canada is second only to the U.S.S.R. in size.

And Canada's history and society is as varied as its geography. It contains some of the oldest settlements and institutions in North America. Université Laval traces its origins to the Séminaire de Québec (founded in 1663, second in age in North America only to the University of Mexico). And some of its settlements in the north and west are so new that the first non-native settlers are still alive, and young.

In addition to the native peoples, Indian and Inuit, there are the two founding peoples, the French and the British, with French and English being official languages, and approximately a third of the population that is neither French nor British in origin. Winding through that history and geography, and affecting education, are the various religions, and the ever-present influence of the United States and its enormous variety of educational institutions.

Visitors trying to discover national policies or plans for higher education cannot find even a federal ministry of education because education is a provincial responsibility.

## History

The history of Canadian universities is the gradual evolution to something like a common pattern of curricula, teaching methods, internal organisation, and probably standards, from an extremely diverse collection of institutions. The earliest institutions are

the Séminaire de Québec, 1663, and King's College, Nova Scotia, 1789, but most of the older Canadian institutions were founded in the nineteenth century or the early twentieth century.

In the nineteenth century most degree-granting institutions were controlled by churches, although Dalhousie University in Halifax and McGill in Montreal were independent of religious affiliation. All the major Christian denominations created institutions, increasing the variety available. Even within a denomination, there could be considerable variation. Within the Roman Catholic group, for example, some were French-speaking, some English, some with strong Scots links, others with Irish, some for the French-speakers of Quebec, others for the French-speakers (Acadians) of the Maritime provinces or for small pockets of French-speakers in other provinces. Even within Roman Catholic institutions in the same language, differences arose according to the nature of control, diocesan or one or another religious order. Although most of the French institutions were modelled on those of pre-revolutionary France, particularly the Jesuit colleges, there were considerable variations.

In addition to the variation induced by language and religion, there was variation induced by the major influences: pre-revolutionary France, Oxford, Cambridge, London, the Scottish universities, the American liberal arts college, and in the west in particular, the American land-grant college.

## Definitions

In Canada, when is a 'university' not a university? The answer to that question is no less difficult than the task of defining the university itself. In the field of higher education terms can often be confusing. For example, an institution that grants degrees is normally called a university, but in some cases may also be called a college, an institute or a school. The following definitions are meant as a guide to clarify some of the terms used.

- **College.** The word 'college' can be used to refer to a number of different institutions. A college may be the equivalent of a university, a full-fledged institution of higher learning with the power to grant degrees. It may, however, also be a small part of a larger university. Or, in fact, it may simply be a university residence building or a specialized teaching unit within a university. The term college is also used to refer to non-degree-granting institutions that offer technical or vocational post-secondary courses or courses for transfer to a university. Such institutions are often called community colleges or, in Québec, the General and vocational college/Collège d'enseignement général et professionnel (CEGEP).
- **Institute.** A degree-granting institution may occasionally call itself an institute. However, the term is more commonly used to designate research facilities, or multidisciplinary study groups, often within a university.
- **Faculty, school.** There is more room for confusion here. 'Faculty' can refer to members of the university teaching staff (i.e. faculty members). The term, however, can also mean an academic unit of a university (faculty of medicine, for example). The word 'school' can sometimes be used in the same way to refer to a segment of a university, such as school of law.

- **Federated, affiliated, constituent.** Universities and colleges can be associated with parent institutions in a number of ways. A federated college or university generally has a high degree of independence and is responsible for its own administration. Federated colleges can grant degrees but hold this power in abeyance (temporarily suspended) while the federation exists. Some federated colleges suspend only part of their degree-granting powers. They may, for example, retain the right to grant degrees in theology but not in arts and sciences.

Affiliated institutions, like federated colleges, are responsible for their own administration. However, affiliated colleges do not have the power to grant degrees. In both affiliated and federated institutions, the parent university is generally responsible for the teaching of all subjects covered by the federation or affiliation agreement and also grants degrees in these fields.

Constituent universities and colleges are fully incorporated into their parent institutions and are considered integral parts in both administrative and academic matters.

- **Degrees, programs.** There are generally three levels of degrees available at Canadian universities: bachelor's, master's and doctorate or PhD. A general (also called pass) bachelor's degree in arts and sciences usually takes three years of study. An honours degree requires an additional year. Programs leading to first professional degrees generally take even longer. The minimum time required for a master's degree after an honours bachelor is one year, while a PhD takes at least another two years after that. A program is a selected series of courses leading to a degree, diploma or certificate.

Source: *Directory of Canadian Universities* (A.U.C.C.)

In the twentieth century, and particularly since the fifties, the unquestioned influence that has led to the relatively common pattern now existing has been, and is, the United States. Many Canadian faculty have studied in the U.S.A., many are originally from the U.S.A., and many, regardless of background, belong to American learned and administrative societies. In some subjects, such as medicine, U.S. accrediting procedures are extremely influential because graduates may wish to practise in the U.S.A.

Professor Robin Harris, the undoubted authority on the history of Canadian universities, says that between 1917 and 1939 'not a great deal of significance in Canadian higher education happened. . .'. He goes on to point out that during the second world war, 'the nation recognised the importance of the universities as [its] source of the highly trained manpower required to prosecute a war effort which involved research, technological innovation, massive production and large-scale organisation as well as infantry battalions—scientists, engineers, doctors obviously, but also (for example) psychologists to develop testing programmes for the armed services and economists to man essential positions in the expanding bureaucracy in Ottawa'.

That recognition, plus the demand for higher education from the returning ex-servicemen, led to federal financial support of the universities and a major expansion of the universities after the war, an expansion that was badly needed to provide higher education for the so-called baby boom later.

The expansion continued with the founding of new universities in the sixties, seven in the four most western provinces alone, for example, making a total of eleven where there had been only four before, one for each province. In spite of well-publicised plans for innovation, etc., the new universities now look remarkably like the older ones.

Major changes, however, in higher education did take place in Quebec. Although only one new university, the University of Quebec, a multi-campus institution, was created, the whole structure of education at all levels was radically changed. As a result of the five-volume report (1963-66) of Mgr. Alphonse-Marie Paret, formerly Rector of Laval University, a new kind of institution was created, the CEGEP, Collège d'enseignement général et professionnel. Students entering Quebec universities from Quebec attend a CEGEP for two years (after eleven years of elementary and secondary schooling) before university. The CEGEPs offer a wide range of both pre-university and vocational programmes.

The CEGEP system is unique in Canada. Two and three year non-degree granting colleges elsewhere may offer programmes that allow students to transfer to universities (in British Columbia and Alberta, for example) or they may offer a variety of vocational programmes and allow no transfer to universities (as in Ontario and Prince Edward Island, for example), but most university students still enter university directly, and only in Quebec is it necessary to attend a college before university.

Another major change in Quebec was the disappearance of over a hundred teachers' colleges and the assumption of responsibility for teacher training by the universities. That development, however, was common throughout Canada, only Nova Scotia now maintaining a teachers' college independent of a university.

Readers interested in a brief but more detailed history of Canadian universities should consult earlier editions of this Yearbook. Recently, a number of excellent histories of individual Canadian universities have appeared. The standard history is Robin Harris, *A History of Higher Education in*

*Canada 1663-1960* (University of Toronto Press, 1976).

### Government and Administrative Structure

With some exceptions, notably the University of Toronto, Canadian universities have two governing bodies: an academic body, usually called the *senate*, and a body responsible for financial matters, usually called the *board of governors*, which is the ultimate authority though its authority in certain areas is limited. As a rule, for example, appointments, promotions, and dismissals are made by the board but only on the recommendation of the president. On some academic matters, the senate may be supreme. On some matters, the board can act only with the advice or the agreement of the senate.

Until the sixties, most boards of governors were made up of laymen appointed in a variety of ways, but usually by provincial governments. The president of the university was usually the only member of the university staff to be a member. Since then, a minority of students and faculty have joined boards, often as members elected by their constituencies. Senates invariably have a majority of elected faculty, some students, and sometimes representatives of government, teachers' organisations, etc. Vice-presidents, deans, the university librarian, and the registrar are usually members.

The *chancellor* of the university, the titular head, is often elected, sometimes by the graduates, and he or she is usually a member of the board. The post is honorary, the chief executive officer of the university being variously called the *president*, *rector*, or *principal*. Sometimes the chief executive officer is also designated *vice-chancellor*, but the term is not commonly used in Canada.

After a period in the sixties and seventies when the presidency was often nasty, brutish, and short, some stability appears to be returning. Presidents are usually appointed for terms of five or six years. Recently, a significant number have had their terms renewed two or three times.

Authority is widely diffused in Canadian universities, either by legislation or by custom, and a simple reading of university acts can be misleading. The president, in particular, rarely exercises the apparent powers of the office without an extensive system of 'advice' from various committees. Some observers believe that unionisation and union contracts spelling out the rights of 'management' and 'labour' may strengthen the position of the president. It is too early to tell.

Most Canadian universities are subdivided into *faculties*, for example the faculty of arts, the faculty of science, the faculty of medicine, etc. The chief academic and administrative officer of a faculty is a *dean*, appointed for a set term in a variety of ways—sometimes by election, but more usually on the advice of a search committee on which various segments of the university are represented.

Faculties, in turn, are usually divided into *departments*, and very large departments—chemistry or psychology, for instance, may well have sub-divisions within them. While a few institutions retain the title 'head' for the chief academic and administrative officer of a department, the majority have moved to 'chairman' (or indeed chairperson). As with deans, chairmen are usually appointed on the advice of a search committee of which the predominant membership is that of the teaching staff of the department. The department is the basic structure of the university. Proposals for changes in curriculum, etc., typically originate in the department, are approved by the faculty and then by the university senate.

### Relations with Governments

Given the variety of Canadian post-secondary education and the variation from province to province, it is impossible to generalise about the relationship between universities and governments. The chart opposite describes the main features of the framework of government-university relations, but it cannot describe the complexity of some of those relationships, the sub-division of ministries or departments, for example. Moreover organisations that look similar on the chart may be very different in practice. The Council of Ontario Universities, for example, a body made up of the chief executive officers—presidents, principals, and rectors—and of members of faculty, carries out a large amount of research on Ontario universities and represents the universities to the 'grant committee' (the Ontario Council on University Affairs) and, where appropriate, to the federal and provincial governments. The Council of Western Canadian University Presidents, apparently similar on the chart, on the other hand, cannot play the same role because each of the four western provinces has its own system of university-government relations. It, therefore, has no full-time or permanent staff. Its main role is to represent the western universities at the national level—if they have a common position. The Quebec equivalent, CREPUQ, like the Council of Ontario Universities, is a major source of research on, information about, and spokesman for, the Quebec universities. The Association of Atlantic Universities plays a part somewhere between the two extremes of university organisations. Similar comments could be made about other elements of the chart. Provided, however, that the inner complexity of the relationships is recognised, the chart does represent university-government relations at present.

### A.U.C.C.

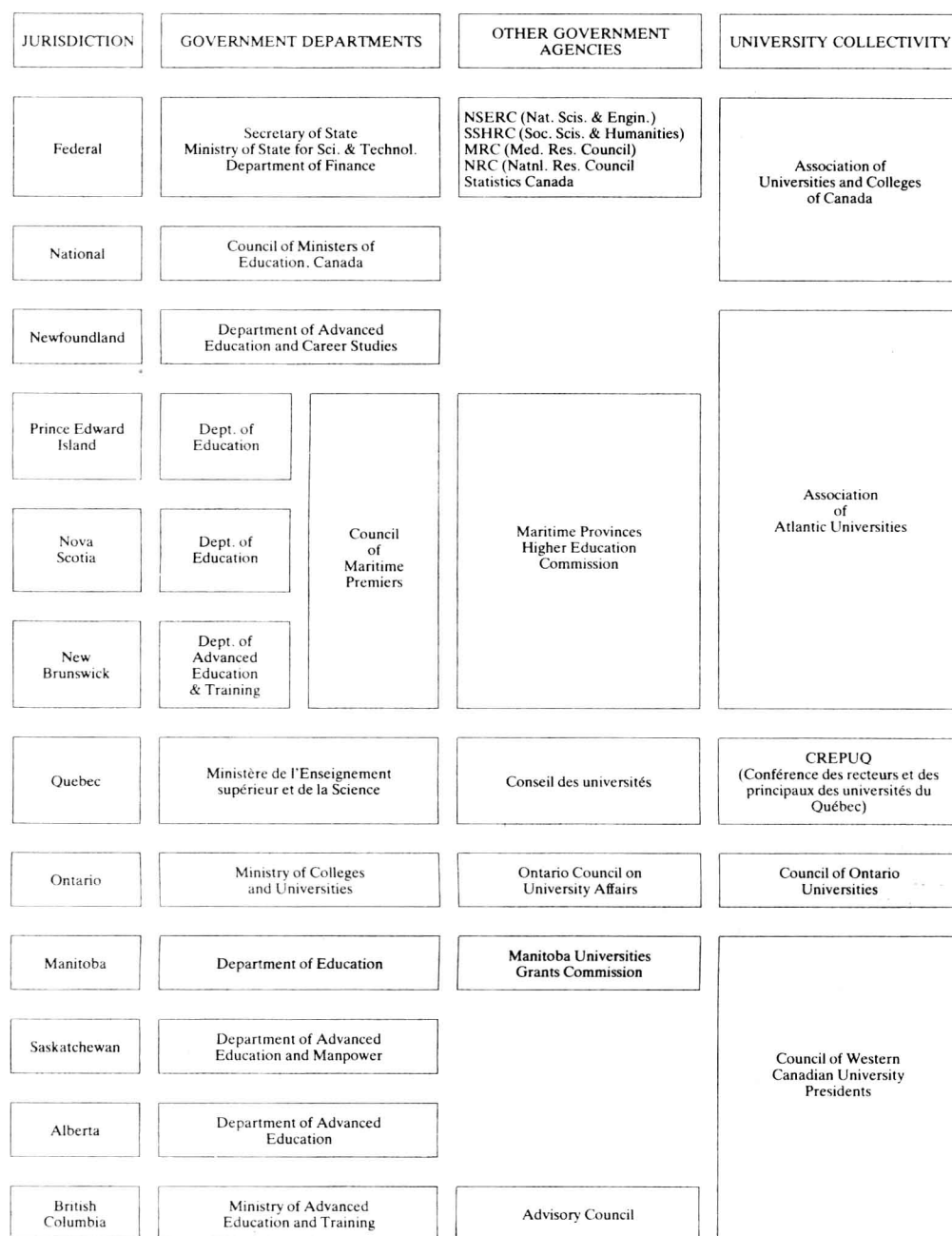
The A.U.C.C. differs from somewhat similar bodies in many Commonwealth countries because there is no national, federal department, that is ministry, responsible for education, although a number of ministries affect higher education, particularly in research.

The A.U.C.C. is a voluntary association of Canada's institutions with degree-granting powers. The institutions were originally represented by their presidents, principals, or rectors. As a result of the turmoil in universities in the sixties, faculty and students were added to the board of directors, but the resulting mix was not very successful, and in 1978, with the agreement of the associations representing faculty and students, representation once again became that of the chief executive officers.

The A.U.C.C. is the major source of information about Canadian universities. Its annual *Directory of Canadian Universities and Compendium of University Statistics*, two of its many publications, provide the most extensive and easily available current information. *University Affairs*, a magazine of news, information, and opinion about universities, is published monthly except for May and July. Like all A.U.C.C. publications, it uses both English and French.

The A.U.C.C. also provides the mechanism by which national associations of administrative officers provide information to, and cooperate with, the presidents, principals and rectors. As is said of the academic staff, the administrative staff of universities nearly all have a specialised national association. A few examples are the Canadian Council of Library Schools, the Canadian Inter-University Athletic Union, the Canadian Association of Graduate Schools, the Canadian Association of Deans of Education (in fact, the deans of virtually all professional

DIAGRAM: HIGHER EDUCATION FRAMEWORK



Sources: *Compendium of University Statistics* (Association of Universities and Colleges of Canada)

faculties have an association), and the Canadian Council of University Biology Chairmen. At present, there are over thirty such administrative associations which are associated members of the A.U.C.C. Some maintain national offices and staffs and provide an important source of information and advice on their respective specialisms. Given the diffusion of authority in Canadian higher education, individual faculties represented by their deans often play a significant part in advancing informed opinion to a variety of governments and bodies. The Association of Canadian Medical Colleges, to take only one example, can represent medical faculties nationally on

such matters as the funding of medical research, the supply of physicians, and the education of medical students.

The A.U.C.C. also provides advice on a wide range of matters to individual universities.

### The Academic Year

In most Canadian universities, the academic year runs from early September until about the end of April, with a short break at Christmas. A few universities divide the academic year into two *semesters*, each self-contained, and they add a full semester in the summer. Nearly all institutions also run a sum-

mer school in July and August, and some run an additional session in May and June. Typically the early and later summer sessions are taken by part-time students, students wanting to complete their degrees more rapidly than normal, and students who have failed a course in the regular year.

The number of academic years required for a first degree varies with the subject, the province, and the institution. In Quebec, for example, a typical first degree requires two years in a CEGEP, following eleven years of schooling, before admission to university; in Ontario, a first general degree usually requires three years of university following 13 years of schooling while an honours degree requires four years. In British Columbia, Prince Edward Island, and New Brunswick, a first degree requires four years of university following twelve years of schooling. Since even universities in the same province may have different requirements, and different subjects within a university may require different lengths of time, readers should consult individual calendars carefully.

### Programmes and Degrees

Instruction in Canadian universities is nearly always organised in *courses*. Although there is great variety, a typical course will be given in three lecture hours a week for an academic year, or as a combination of lectures and laboratories, or as a combination of lectures and seminars. Typically, again, especially in arts and science, a full-time undergraduate will take five such courses a year, for three or four years after leaving high school. Since it is common for students to take a number of years of arts or science (often a degree) before entering such professional first degree programmes as law, medicine, social work, librarianship, most students will have taken at least ten year-long courses in arts and science, and many will have taken twenty.

Professional programmes frequently specify which courses they require or recommend, but students usually have considerable choice. In arts and science especially, it is common for students to take courses from a number of subjects. It is not at all unusual, for example, for a student with a degree in English, say, to have taken some courses in science, mathematics, music, fine arts, the social sciences, and so on. In other words, the typical undergraduate degree in Canada and the typical prerequisite years for first professional degrees are broad rather than specialised, loosely rather than tightly structured, and very varied. In many programmes, in arts and science especially, students are required to take a variety of courses, especially in the first two years, but often in the final year or years as well. The typical, rather loosely structured degree usually requires a student to 'major' or concentrate in one subject, but such specialisation rarely specifies even half of the courses in a three- or four-year degree programme. Honours programmes, on the other hand, are much more structured, frequently require an additional year of study, and may require high standing for entry. Since the upheavals of the sixties, honours programmes have become less structured than they were, but they are still far more structured and demanding than 'majors' programmes, and some people detect a move back towards the highly structured honours programmes that were common in Canada before the sixties.

Students are evaluated in each course and the results are recorded in the student's *transcript*. Courses usually earn a certain number of *credits*, *units*, or *semester-hours*, and a degree will require a specified total of such measures. Students failing a particular course may pass a supplemental exami-

ation, repeat the course, or—provided that it is not a requirement for a particular degree—take another course instead.

Final examinations at the end of a first degree, as opposed to examinations in each course, are rare in Canada.

Given the fairly loose and varied structure of Canadian undergraduate degrees, it is not surprising that graduate degrees require specialisation, courses, and usually 'generals', that is examinations covering a wide range of topics in the subject. Most master's programmes require a dissertation as do virtually all doctoral programmes. Examinations, however, cover both the whole subject and the thesis, it being assumed that serious specialisation in a subject takes place at the graduate level.

Professional programmes, often following a first degree in arts or science, are typically far more structured than arts or science programmes, but they have come to allow more choice of courses than they did, and they frequently demand courses in subjects outside the professional field, courses in English for example.

There are countless variations in the structure of degrees in Canada, in particular of the combinations of courses and subjects that are allowed or required. Moreover, requirements tend to change frequently. Prospective students or teaching staff would be very wise to consult the most recent *Calendar* of particular universities.

Most large Canadian universities, and many small ones, offer degrees in a variety of subjects, some of which in other societies might be taken in specialised institutions or in colleges or polytechnics, for example, in another sector of post-secondary education. Since the development of non-degree granting colleges in Canada, there has been some move to differentiate the programmes offered by universities and the programmes offered by colleges. Nursing, for example, may be taught in a teaching hospital, a community college, or in a university. The different institutions offer different qualifications, however, and tend to lead to different levels of responsibility. A recent development in many professional areas is the growth of graduate degrees. Some university schools or departments of nursing, for example, are now offering doctoral work.

### Subjects

A full list of subjects taught and the institutions that teach them is found in the 'Directory of Subjects of Study', below. While subjects and departments continue to sub-divide, and new subjects continue to be added, three rapidly growing subjects can be mentioned: Canadian studies, native studies, and women's studies. Frequently programmes so labelled are made up of courses from a number of departments. In a Canadian studies programme, for example, a student might take courses in history, literature, sociology, geography, anthropology, and languages. Sometimes these groupings are not much different from the groupings a student might take with a more traditional major, but often they are organised into a more coherent pattern. Given the scale of relatively recent non-French, non-British immigration, some universities also offer programmes in ethno-cultural studies, programmes with an emphasis on a particular cultural group. Since Canada now has a Minister of Multi-culturalism, multi-cultural radio and television stations, and a number of government-financed programmes to encourage multi-culturalism, the demand for such programmes is likely to grow.

### Adult, Part-Time, and Distance Education

Adult, part-time and distance education are not

totally and inevitably linked, but they tend to be. Adult students (those who have not come to university straight from school, often defined as the 25 and over age group) are more likely to be part-time, and they are more likely to take part in distance education.

Most Canadian universities have long given some part-time education, particularly in and for faculties of education, and a number of universities have long had correspondence courses and some courses given by radio or television. Nearly all have had extensive summer schools.

But recent years have seen a dramatic and continuing increase in the provision of degree programmes for adult and part-time students, and in a variety of ways of making degree programmes available at a distance. Some universities—Quebec's *Télé-université* and Alberta's Athabasca University—are entirely devoted to distance education, and most universities have established or are experimenting with some forms of distance education.

Because of its vast size, Canada has been in the forefront of the development of the technology of communication. The use of satellites is common, for example, and universities have not been slow to make use of advanced communications systems. In British Columbia, to take only one example, the Knowledge Network links three universities, community colleges, some institutes, and teaching hospitals, to distribute by a combination of satellite, microwave, and cable television courses and continuing education at all levels. Its signals can be received now by more than 85 per cent. of the population, a percentage soon to be increased. A sister institution, the Open Learning Institute, works through 67 learning centres in the province.

Some observers believe that the number of part-time, adult, and distance programmes will continue to increase. Already some institutions have more part-time than full-time students, and the number of adult students is increasing rapidly.

### Students

In 1986–87, Canadian universities enrolled 476,306 full-time students and 290,415 part-time students taking courses leading to degrees. Since Canadian universities offer a very large number of courses, lectures, workshops, etc., that do not lead to degrees (non-credit courses), another substantial number could be added.

With minor exceptions Canadian undergraduates attend universities in their home provinces, no doubt because of the large distances involved and because of some patterns of student aid. So far, no province has instituted higher fees for Canadian out-of-province students than for provincial residents, but noises are heard of such policies from time to time.

Foreign students, however, have to pay extra fees in some provinces and, in general, are not allowed to work in Canada. As a result, visa student enrolment dropped from 32,625 in 1984–85 to 29,496 in 1985–86. However, it should be noted that the number of foreign students in 1974–75 was just under 20,000. Currently, about 4 per cent. of university students are from outside Canada, but they are not distributed equally, just over 50 per cent. being in one province alone—Ontario. Approximately 68 per cent. of the foreign students are enrolled as undergraduates.

Undergraduate fees vary considerably both by subject and institution. In 1987–88, for example, fees for undergraduate arts and science students in Quebec were lowest, \$450 to \$570, while those in Nova Scotia were highest ranging from \$1450 to \$1750.

The fees for foreign students vary considerably, by province, by programme, by institution, and by level. In 1986–87 some of the highest undergraduate fees were in Ontario where they range from about \$4500 in arts and science to sometimes nearly \$8000 in engineering and medicine.

### Student Aid

Although fees make up a relatively small part of the income of Canadian universities, the average fee of approximately \$1100 a year presents a problem for many students. Most students work during the summer, but in recent years work has not always been easy to find, or well-paid when it is found.

Many universities have a variety of scholarships, bursaries, and loan funds available, but the mainstay of student finance is a federal-provincial bursary-loan scheme. Once a student has demonstrated financial need, he or she may get a loan, interest-free until after graduation, and then a non-repayable bursary. The student qualifies for the non-repayable bursary only after his or her need is great enough to lead him or her to borrow.

Unfortunately, ground rules for qualification and the amounts vary from province to province, leading to what Symons and Page have called '... a crazy quilt pattern of student aid across the country'. Although student organisations call for the abolition of fees from time to time and some educators worry about the inequity of the variations in support, the principles of fees and combinations of loans and grants have not been challenged very frequently or very loudly. Fortunate students pay off one year's loan from summer earnings, sometimes from government subsidised student employment programmes, and start another at the beginning of the next year. A number of studies indicate that fees—or the difficulty of paying them—are not in themselves a major factor in the failure of the universities to enrol a proportionate number of students from lower socio-economic groups or from minorities. Fear of beginning a working life with a large outstanding debt, however, may well be a factor for groups unused to credit.

Student aid for graduate studies is very uneven. For master's degrees there is very little aid other than the loan and bursary programmes, and those have been extended to part-time students only recently. For doctoral studies, there are fellowships awarded by the research councils, and a small number of relatively specialised scholarships given by various government departments for research of interest to them. Most universities offering doctorates also have teaching assistantships, jobs usually involving teaching at the junior levels, helping in laboratories, etc.

### Academic Staff

Virtually all Canadian universities use a system of four academic ranks: *lecturer* (or rank below assistant professor in some reports because of the variety of titles), *assistant professor*, *associate professor*, (*full*) *professor*. The senior rank, full professor, is not in any way tied to an administrative position in a department. Because promotion is usually based on research, teaching, and service to the university community, most teaching staff expect to 'go through the ranks'. With the ageing of faculty and lack of recruiting, departments increasingly have more and more full professors. Some small departments may be made up entirely of full professors.

Since Canadian universities are not only completely autonomous as far as promotions are concerned, having no external or conventional controls on the proportion or number in each rank, but also vary enormously in size, perceived purposes, and salary

structures, the effective criteria for the senior ranks vary a great deal. There is, moreover, some variation in required qualifications. It is usual to require a doctorate of new appointments at the level of assistant professor in many subjects, particularly in arts and science, but in many professional areas, law, for example, doctorates are rarer. The tendency, however, even in professional areas, is to move towards requiring doctorates. Small universities in rural settings are unlikely to insist on doctorates in subjects like business or nursing, and many of them will have a number of senior people, in the humanities especially, who were appointed without doctorates in the past.

Teaching staff are called *faculty* in Canadian universities, and regardless of rank, they are frequently called *professor*, although a wag has suggested that North American dictionaries should define a professor as someone teaching in a university ... without a doctorate!

An unusual characteristic of the faculty of Canadian universities is the high proportion who are not native born and the continued recruitment of non-Canadian faculty. In the seventies, in both the media and the universities, there was considerable argument about the desirability of such a high proportion of non-Canadians. University spokesmen tended to argue that the rapid expansion of post-secondary education in the sixties and seventies, and the earlier failure of Canadian universities to develop (or get funds for) graduate education gave them no choice but to go outside the country for faculty.

The third and final volume, by T. H. B. Symons and James E. Page, of the massive report on Canadian studies in particular and Canadian universities in general, *Some Questions of Balance* (A.U.C.C., Ottawa, 1984), notes that the proportion of non-natives appointed is still enormously greater than in any other Western country, in spite of new legislation requiring universities to advertise first for Canadians and demonstrate the lack of suitable Canadians before appointing a non-Canadian. For the period 1977-78 to 1980-81, it notes that almost four of every ten new appointments of full professors went to non-Canadians; at the associate professor level, 33.6 per cent. were non-Canadians, and at the assistant professor level more than a third of the appointments were non-Canadian.

As usual in Canada whenever statistics about universities are used, they are disputed. In particular, Symons and his co-author were accused of ignoring the distinction between people who are Canadian residents, though not citizens, and Canadian citizens. Symons replied that the only available statistics do not make that distinction. The government and Symons himself have agreed that Canadian residents and landed immigrants should be treated in the same way as Canadian citizens.

With the current lack of opportunities for new Canadian PhD's, the issue of citizenship may become important again, as it was in the seventies. Symons and most university people agree that non-native born faculty have made major contributions to Canadian universities and that the vast majority of those appointed in the past have become Canadian citizens. However, there is some disquiet about new appointments.

Canadian faculty, of all ranks, play a significant part in the administration of universities through an extensive system of committees. Normally, elected faculty have a majority on the academic governing body, usually called the senate, and often have membership on the non-academic governing body, usually called the board of governors.

Academic administrative officers, deans, heads,

chairmen, etc., are appointed on the recommendation of the president of the university, but in most institutions faculty play a major role in giving advice on such appointments and, in some, the appropriate department or faculty may elect officers.

Canadians, perhaps because of the enormous size of the country and the distances between institutions, have a great propensity for founding associations and societies. Virtually every subject and many sub-divisions of subjects have national associations, publish journals, and hold annual meetings. In fact, many of the learned societies in the arts and social sciences schedule the annual meetings each year at a particular university, each society meeting for two or three days and overlapping with societies with adjacent interests. Such annual meetings are subsidised through the federal research councils and in part by the universities. Subjects with many faculty will often hold meetings at the local, provincial, and regional level as well as nationally.

Until the seventies, the non-academic interests of faculty—salaries, fringe benefits, terms of employment, etc.—were usually dealt with at each university by a faculty association, usually a voluntary body. In the seventies and eighties, however, mainly as a result of cut-backs in universities, the faculty in many universities organised themselves into unions under provincial labour legislation. As a result, union-university contracts have become subject to labour legislation, and there have been considerable changes in the administration of universities. The Canadian Association of University Teachers, the C.A.U.T., is the national federation of both unions and the remaining non-union faculty associations. Even where a university faculty has not unionised or in those provinces where it is not allowed to unionise under provincial labour legislation, the effect of unionisation elsewhere is felt. Negotiations over salaries become union-like even where there is no union. Tenure, promotion, grievance procedures, for example, sometimes look much the same whether the faculty is unionised or not. As yet, however, contracts and agreements are still between individual universities and their individual unions or associations. Even within a province with only a few universities (4 in British Columbia and Alberta, 2 in Saskatchewan, 3 in Manitoba), contracts are negotiated and specific to each university. Salaries, for example, may differ between two universities in the same city.

Since unionisation tends to take place where there is some discontent, and since there is frequently a struggle between those faculty who want to unionise and those who do not, and between those who want one union for all and those who want, say, one for the engineering faculty, one for the medical faculty, etc., the immediate results of unionisation tend to be rather unhappy, especially when the first contract is being negotiated. On the whole, though, there seems to be agreement that once the first few years of unionisation are past, collegiality can be restored, that grievances are handled in a more satisfactory way, that procedures are clearer, and that the rights and responsibilities of both 'management' and 'labour' are better understood. However, a number of faculty, albeit a minority, continue to believe that collegiality and unionisation are incompatible. It may be a matter of age.

### Finance

The operating expenses in Canadian universities for 1985-86 were estimated to be \$6.5 billion. In 1984-85 expenditures were \$5.8 billion.

Canadian universities receive funds from a number of sources, but government operating grants are the

most important. In some small universities, direct government funding can account for as much as 90 per cent. of the operating budget. Overall, 71.1 per cent. of total university income came from government in 1984-85. Donations, the sale of services or products, and investment income accounted for about 17.9 per cent. Student fees cover about 11 per cent. of a university's income. A complete cost accounting that took account of tax remission on fees and donations, non-repayable government bursaries, various summer employment schemes for students, etc., would increase the percentage of income coming from government. Corporate and private donations have been significant in helping to fund buildings, but most capital funding has also come from government. The small amount coming from fees, relative to some American institutions, is partly the result of provincial government policies that have either directly or indirectly kept fees from rising in proportion to increases in costs.

To talk of funding from government, without specifying which level of government, federal or provincial, however, is to conceal one of the most serious problems facing the universities today.

From 1945 to 1967, the federal government gave direct operating support to universities. From 1967 to 1977, the provinces and the federal government supported universities by a cost-sharing arrangement. In 1977, however, new legislation, the *Federal-Provincial Fiscal Arrangements and Established Programs Financing Act*, 1977, now called EPF, changed the principle of federal financial support for post-secondary education. The provinces now receive block funding to help finance hospital insurance, medical care, and post-secondary education.

The legislation does not bind the provinces to spend any particular amounts on post-secondary education, and since 1977, the proportion of university funds derived from the provinces has declined compared with that derived from the federal government. The provinces and the federal government disagree on the intention of the legislation, and the universities have been in some danger of being caught between the two levels of government. An excellent brief account of the current situation can be found in A. W. Johnson, *Giving Greater Point and Purpose to the Federal Financing of Post-Secondary Education and Research in Canada*, A Report prepared for the Secretary of State of Canada (Ottawa, 1985), though perhaps readers should note that this report by a respected public figure was commissioned by the federal government. Some provincial governments dispute some of the figures. All dispute the implication that they have not been passing on to post-secondary education the funds 'intended' for it. The 1977 legislation did not tie specific amounts to specific purposes, and intentions are difficult, if not useless, in argument.

According to Johnson, the increase in federal transfer 'share' or, to put it another way, the decrease in 'purely provincial share' of the financing of post-secondary education between 1977-78 and 1984-85 was 10.7 per cent. For individual provinces, the increase in federal 'share' ranged from 3.5 per cent. for Quebec to 15, 22.5, 23.6, and 25.4 per cent. for Ontario, Manitoba, Newfoundland and British Columbia respectively. Although Johnson insists that his figures should be treated with caution and recognises that the 1977 Act did not bind the provinces to passing on increases in transfers, few would dispute the central point, that the provincial 'share' of funding for universities has declined.

Similarly, to turn from the intricacies of federal-provincial arrangements to actual amounts per student, few would dispute that the financial situation

of Canadian universities has worsened considerably in recent years. The proportion of the G.N.P. made available to post-secondary education declined from 1.35 per cent. in 1977-78 to 1.24 in 1984-85. In the same period, enrolment in universities increased by 27 per cent. and in non-degree institutions by 36 per cent., but government support for the basic operations increased by only 2.5 per cent. in real terms. Real expenditures per university student have been dropping since 1977-78.

At the time of writing, the universities await changes in federal-provincial relations and funding arrangements, together with the next budget of the Progressive Conservative federal government that defeated the Liberals in 1984.

The Johnson Report referred to above was commissioned by a Liberal government and submitted to a Conservative government. It is hard, therefore, to predict whether or not Johnson's recommendations for changes in government funding of post-secondary education will be accepted. It is clear that provincial governments are much concerned with the Canadian economy and accumulated deficits and have not been making many promises to education.

Inevitably, given the variety of Canadian post-secondary education, some universities have more serious financial problems than others. Most have received increases in funds smaller than the increase in costs. For example, in 1987-88, the universities in Saskatchewan will not receive any increases in their base operating grants and the total operating grants of the Alberta universities will drop by about 2 per cent.

Some very recent developments (summer, 1987) include special and substantial grants from the Ontario government to fund seven centres of excellence in specific subjects. This may be typical of government's more directive policies.

It is likely that there will be major changes in the financing and planning of Canadian universities in the near future. In addition to the federally commissioned study by A. W. Johnson, referred to earlier, Ontario, for instance, has had a *Commission on the Future Development of the Universities of Ontario*, the Bovey Commission; Quebec has had a public hearing into the financing of Quebec universities; British Columbia universities have been asked to draw up a five-year academic plan aimed at a 'modest reduction' in the overall size of the province's university system; and Nova Scotia has set up a commission to study higher education in the province.

### Current Problems

As the section on finance indicates, most people would say that the current problems of Canadian universities are overwhelmingly financial. Indeed, two institutions, the Atlantic Institute of Education, Nova Scotia, and the David Thomson Centre, British Columbia, were closed after their funds were cut off by their respective provincial governments. Elsewhere, provincial governments have been exerting pressure on universities to close departments.

The failure of funding to keep pace with increased costs and increased enrolments undoubtedly exacerbates all problems. And the possibility that the reduced funding of the universities may continue even if the economy improves, something implied by some governments, does little to encourage cheerfulness.

Concentration on financial problems, however, should not overshadow other problems. They need to be tackled even if funding improves.

Universities have never been short of problems. The few noted here, therefore, are only those the author considers important in Canada and less com-

mon in other Commonwealth countries. Other problems—a possible decline in enrolment, graduate unemployment, the failure to reach an appropriate enrolment of minorities, native peoples, students from lower socio-economic backgrounds, the increasing tendency of governments to want to direct universities—all these are problems in Canada as well. Those that are more specific to Canada, however, may be of more interest.

*The effect of new legislation.* Traditionally, Canadian courts have been very reluctant to consider or rule on university affairs, and few students or faculty turned to the courts for the redress of alleged wrongs. In recent years, however, there is a rapidly increasing tendency to use the courts, so much so that the Association of Universities and Colleges of Canada created a new post, subordinate only to the Executive Director, the post of Associate Director and Legal Counsel. Individual universities have always retained law firms for advice, but more and more are appointing an in-house lawyer.

Universities are now subject to laws that were never applied in the past—rent control acts, labour legislation, human rights legislation, and above all the concepts of administrative law, natural justice, and due process, terms that most faculty had never heard of ten years ago. A failure to award someone tenure or a promotion, or the dismissal of someone, may lead to expensive court cases, or at least to expensive consultations with lawyers on all sides.

Freedom of information legislation, coupled with the requirement for natural justice, make people worried about their liability for references, assessments of applications, examination results, etc. Two examples of the effect of new legislation will have to suffice. The Ontario Divisional Court held in 1984 that even where a professor is not entitled to be considered for an appointment, if the university commences a process of committee assessment, procedural fairness arises, including the obligation to disclose negative elements known to the dean but never disclosed to the applicant. Secondly, in Manitoba, Quebec, and New Brunswick, human rights legislation prohibits discrimination on the grounds of age (as well as sex, race, religion, etc.). This has been interpreted as meaning that mandatory retirement is illegal. There is a good possibility that the new Canadian Constitution and Charter of Rights will lead to mandatory retirement being illegal everywhere.

If it is, the effect on universities may be considerable. There is some reason to believe that faculties contain fewer people who want to retire than other occupational groups. A number of senior, highly paid faculty staying beyond the normal retirement age will exacerbate the problems of an already ageing faculty, keeping out needed young teachers and researchers, and taking an increasing share of already short funds. Such a situation may lead to demands for much more vigorous evaluation of the performance of faculty, something that has not been greeted with much enthusiasm in the past. Since evaluation could not start at 65, the normal age of retirement, because fair practice requires that the university give the person the resources and the chance to overcome any deficiencies, regular evaluation would have to begin earlier . . . at 60? . . . 55? . . . 50?

That is a problem that might be alleviated with substantial funding. Buy-out schemes, early retirements, handsome pensions, etc., would obviously help, but the more fundamental problem of faculty who are past their prime but simply do not want to retire would remain. Money is not the answer to everything.

*Planning.* A similar problem arises over the diffi-

culty of mounting new programmes, above all of deciding which to put on and where. Governments, or their agencies, have taken a much greater part in such decisions recently. Ten years of wrangling among the provinces of New Brunswick, Nova Scotia, and Prince Edward Island, with the federal government and a number of universities joining in the arguments where they could, preceded the eventual decision on the location of a third English-speaking veterinary college. That may have been understandable because of the very large cost involved. But the problem of location, in such a decentralised 'system' of authority as Canada has had traditionally, will grow for academic decisions involving far smaller amounts. Most universities have not yet got used to thinking of themselves as part of a system, and the diffusion of authority within universities can make planning for development almost as difficult as planning for reductions, and universities have not been notably successful at that.

*Bilingualism.* A minor but growing problem that may be unique to Canada is the growing demand for courses in a variety of different subjects to be given in French for native speakers of English in English-speaking universities. Canada is one of the few, if not the only, country where a significant number of schoolchildren from the majority language group may take up to three years of their schooling almost entirely in the language of the minority, French. Schools are unable to keep up with the demand, and enrolments are frequently limited. As the students come to university, they frequently want courses in French so that they can maintain or improve their competency in the language, but they do not necessarily want courses in French literature, etc. They want courses in the subjects they are interested in.

Canadian universities have been criticised by the Commissioner for Official Languages for their failure to encourage bilingualism. Few now require the courses in a second language that were once almost universal. A move to provide courses in both official languages might modify the criticism and satisfy the students.

In October 1987, a National Forum on Post-Secondary Education will take place in Saskatchewan. 600 participants from business, industry, federal and provincial governments, and post-secondary education (not more than 150 of the latter) will meet to consider Canada's post-secondary education. This forum could be very important—as the first joint venture on post-secondary education of the federal and provincial governments. In spite of the jealously guarded provincial control of education, it could lead to national policies.

## ADDITIONAL INFORMATION

### Organizations

Association of Universities and Colleges of Canada (A.U.C.C.), 151 Slater Street, Ottawa, Ontario, Canada K1P 5N1. Offers an information service based on an extensive library of materials on the field, some of which are studies which it has itself commissioned.

Canadian Association of University Teachers (C.A.U.T.), 75 Albert Street, Suite 1001, Ottawa, Ontario, Canada K1P 5E7.

Canadian Society for the Study of Higher Education, 4th Floor, 151 Slater Street, Ottawa, Ontario, Canada K1P 5N1.

Canadian Federation of Students, 126 York Street, Ottawa, Ontario, Canada K1N 5T5.

Association of Canadian Community Colleges, 110 Eglinton Avenue West, 2nd Floor, Toronto, Ontario, Canada M4R 1A3.

Statistics Canada, Ottawa, Ontario, Canada K1A 0T6. The Education, Culture and Tourism Division of this agency provides a wide variety of reports incorporating statistical data reflecting education in Canada, a selection of which is noted in the selected readings below.

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[Compiled by Mrs. Hazel J. Roberts, Manager, Documentation Centre, Association of Universities and Colleges of Canada]

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## DIRECTORY TO SUBJECTS OF STUDY

[Derived from material supplied by the Association of Universities and Colleges of Canada; the arrangement and translations are those of the *Yearbook* editors]

*Note.*—At some universities the language of instruction is French; see *individual university chapters*.

This directory provides information about degree, diploma and certificate courses offered at Canadian universities. The different levels to which each subject may be studied at those universities that offer courses in it are indicated by numbers as follows:—

- 1 = doctorate
- 2 = master of philosophy
- 3 = master's
- 4 = licence
- 5 = graduate diploma
- 6 = bachelor's or first professional degree (e.g. BA, BSc, MD, DVM, DMD, LLB), major specialisation or concentration
- 7 = undergraduate diploma or certificate
- 8 = special certificate
- 9 = major or diploma
- 10 = minor or certificate

No attempt is made to show which subjects are available for combined courses.

The second degree, requiring at least one year's study beyond the first degree, is normally the master's (or licence), and the third is the doctorate requiring at least three additional years. It is not possible to incorporate in this directory all the relevant information and the reader should refer to the 'General Information' section of the appropriate university chapter for further particulars as to title of qualification, length of course, etc. For full details the universities' own calendars or handbooks must be consulted.

*Note.*—The editors have used the following special abbreviations in this list:—

Université du Québec

Queb. (A.-T.) = Abitibi-Témiscamingue campus

Queb. (C.) = Chicoutimi campus

Queb. (H.) = Hull campus

Queb. (M.) = Montreal campus

Queb. (R.) = Rimouski campus

Queb. (T.-R.) = Trois-Rivières campus

Queb. (E.T.S.) = École de technologie supérieure

Queb. (E.N.A.P.) = École nationale d'administration publique

Queb. (I.A.F.) = Institut Armand-Frappier

Queb. (I.N.R.S.) = Institut national de la recherche scientifique

Queb. (T.-U.) = Télé-université

O.I.S.E. = Ontario Institute for Studies in Education

Sask. I.F.C. = Saskatchewan Indian Federated College

Certain of the institutions named in the list are associated with, or affiliated to, others for the award of some of the qualifications to which their courses lead. In general no attempt is made to show which subjects are available in affiliated or federated colleges, except where the subject in question is offered only in such a college or is available at levels additional to those at which it is available in the university; in these cases the college name is given after the university name, e.g. Regina (Campion). Such courses lead in some cases to a qualification awarded by the university named, and in others to one awarded by the affiliated/federated college itself.

**Agriculture** Alta., 1, 3, 6; Br. Col., 1, 3, 6; Guelph, 1, 3, 6; Laval, 1, 3, 6, 9; McG., 1, 3, 6, first professional degree, major specialisation or concentration 10 = minor or certificate

1 = doctorate 2 = master of philosophy 3 = master's 4 = licence 5 = graduate diploma 6 = bachelor's or first professional degree, major specialisation or concentration 7 = undergraduate diploma or certificate 8 = special certificate 9 = major diploma 10 = minor or certificate

7; Manit., 1, 3, 6, 7; N.S. Agric., 7; Sask., 1, 3, 5, 6, 8. *Agricultural biology* Guelph, 1, 3; McG., 6; N.S. Agric., 7; Sask., 6. *Agricultural business* Guelph, 6. *Agricultural chemistry* McG., 1, 3, 6; N.S. Agric., 7; Sask., 6. *Agricultural economics* Br. Col., 1, 3, 6; Guelph, 1, 3, 6; Laval, 6; Leth., 6; McG., 6; Manit., 1, 3, 6; M'ton., 7; N.S. Agric., 6, 7; Sask., 3, 5, 6. *Agricultural engineering* Alta., 3, 6; Guelph, 1, 3, 6; Laval, 3, 6; McG., 1, 3, 6; Manit., 3, 6; N.S. Agric., 7; Sask., 1, 3, 5, 6; Tech. U.N.S., 1, 3, 6. *Agricultural extension* Br. Col., 3; Guelph, 3; Sask., 6. *Agricultural land planning & development* Guelph, 3, 6. *Agricultural mechanics* Guelph, 6, 8; Sask. (mechanised a.), 6. *Agricultural microbiology* Guelph, 1, 3, 6; Laval, 1, 3; McG., 1, 3. *Agricultural sciences (general)* McG., 6; Manit., 6. *Agronomy* Alta., 6; Br. Col., 6; Laval, 1, 3, 6; Sask., 6. *Animal science* Alta., 1, 3, 6; Br. Col., 1, 3, 6; Guelph, 1, 3, 6; McG., 1, 3, 6; Manit., 1, 3, 6; N.S. Agric., 6, 7; Sask., 1, 3, 5, 6. *Apiculture* Guelph, 1, 3, 6. *Applied microbiology* Guelph, 6; Sask., 1, 3, 5, 6. *Bioagronomy* Laval, 6; M'ton., 7. *Biotechnology* Guelph, 6. *Botanical science* McG., 6. *Community resource development* McG., 1, 3, 6. *Crop science* Alta., 6; Br. Col., 6; Guelph, 1, 3, 6; Sask., 1, 3, 5, 6. *Dairy science* Br. Col., 1, 3, 6; Guelph, 6; Manit., 7. *Engineering agronomy* Alta., 6. *Entomology* Alta., 1, 3, 6; Br. Col., 3, 6; Guelph, 1, 3, 6; McG., 1, 3; Manit., 1, 3, 6. *Environmental horticulture* Guelph, 1, 3, 6; N.S. Agric., 7. *Field crops & plant breeding* Guelph, 1, 3. *Grazing management* Alta., 6. *Horticulture* Br. Col., 6; Guelph, 1, 3, 6; N.S. Agric., 7; Sask., 3, 5, 6. *Land development* Guelph, 3. *Land planning* McG., 1, 3, 6. *Plant biology* Laval, 1, 3. *Plant ecology* Sask., 1, 3, 5, 6. *Plant genetics* Br. Col., 1, 3, 6; Guelph, 1, 3. *Plant pathology* Alta., 1, 3, 6; Br. Col., 1, 3; Guelph, 1, 3; McG., 1, 3. *Plant physiology* Alta., 1, 3, 6; Br. Col., 1, 3; Car., 1, 3, 6; Guelph, 1, 3; New Br., 1, 3, 6. *Plant protection* Alta., 6; Guelph, 1, 3, 6; N.S. Agric., 6. *Plant science* Alta., 1, 3, 6; Br. Col., 1, 3, 6; Guelph, 1, 3, 6; McG., 1, 3, 6; Manit., 1, 3, 6; New Br., 1, 3, 6; N.S. Agric., 6, 7. *Poultry genetics* Br. Col., 1, 3, 6; Guelph, 1, 3. *Poultry science* Alta., 6; Br. Col., 1, 3, 6; Guelph, 1, 3, 6; Sask., 1, 3, 5, 6. *Renewable resources* McG., 1, 3, 6. *Resource conservation* McG., 6. *Resource economics & rural development* Guelph, 1, 3, 6; New Br., 3. *Resources management* Br. Col., 1, 3; Guelph, 6. *Rural economy* Alta., 1, 3, 6; Laval, 3, 9. *Soil science, soils* Alta., 1, 3, 6; Br. Col., 1, 3, 6; Guelph, 1, 3, 6; Laval, 1, 3; McG., 6; Manit., 1, 3, 6; N.S. Agric., 6; Sask., 1, 3, 5, 6. *Zootechnics* Laval, 1, 3.

**Anthropology and Archaeology** *Anthropology* Alta., 1, 3, 6; Athab., 6; Bran., 6; Br. Col., 1, 3, 6; Calg., 3, 6; Car., 3, 6; C'dia., 6, 10; Guelph, 6 (anthropol. & sociol.); Lake., 6; Laur., 6; Laval, 1, 3, 6, 9, 10; Leth., 6; McG., 1, 3, 6; McM., 1, 3, 6; Manit., 1, 3, 6; Nfld., 3, 6; Montr., 1, 3, 6, 9, 10; Mt. All., 6; Mt. St. Vin., 6; New Br., 3, 6; P.E.I., 6; Regina, 6; St. F.X., 6; St. M., 6; Sask., 3, 5, 6; S. Fraser, 1, 3, 6; Tor. (also linguistics specialisation), 1, 2, 3, 6; Trent, 3, 6; Vic. B.C., 3, 6; Wat., 6, 10; W. Ont., 3, 6 (also linguistics specialisation, 6); W. Laur., 6; Windsor, 6; Winn., 6; York, 6. *Anthropology & boreal studies* Lake., 6. *Archaeology* Alta., 3, 6; Brock, 6; Calg., 1, 3, 6; C'dia., 10; Nfld., 3, 6; Queb. (M.), 8; Sask., 6; S. Fraser, 1, 3, 6; Tor., 1, 2, 3, 6; W. Laur., 6. *Classical archaeology* Alta., 1, 3, 6; Brock, 6; C'dia., 10; Laval, 1, 3, 6, 10; Ott., 6; W. Laur., 6. *Classical history & archaeology* Calg., 6; Leth., 6. *Cross-cultural studies & linguistics* Trin. W., 6. *Folklore* Laur. (Sudbury), 10; Nfld., 1, 3, 6. *Museology* Cape Breton, 6; Montr.,

3; New Br., 3. *Museum studies* Br. Col., 1, 3, 6; Tor., 3; Vic. B.C., 7. *Physical anthropology* Tor., 1, 2, 3. *Sociological anthropology* Dal., 3, 6; Tor., 1, 2, 3; York, 1, 3. *Syro-Palestinian archaeology, West Asian archaeology* Tor., 1, 2, 3.

**Architecture** (see also 'Regional Studies') Br. Col., 3, 6; Calg., 3; Car., 6; Laval, 3, 6; McG., 3, 6; Manit., 3; Montr., 6; Tech. U.N.S., 3, 6; Tor., 3, 6; Wat., 6. *Architectural conservation* Vic. B.C., 7. *Architectural science* Ryerson, 6. *City planning* Manit., 3. *Housing & design* McG., 3. *Industrial design* Alta., 6; Calg., 3; Car., 6; Montr., 6. *Interior design* Manit., 6; Ryerson, 6. *Landscape architectural technology* Ryerson, 7. *Landscape a.* Br. Col., 6; Guelph, 3, 6; Manit., 3; Montr., 6; Tor., 6. *Planning* Tor., 3; Wat., 1, 3, 6.

**Area Studies** *African studies* Car., 6; Dal., 6; K.C.N.S., 6; Laval, 10; McG., 6; Montr., 5; S. Fraser, 10; Tor., 6; York, 6. *American studies* Car., 6; Mt. All., 6; New Br., 3; Queb. (M.), 5 (contemp. American studies); Tor., 6. *Arabic studies* Montr., 10. *Asian studies* Alta., 6; Br. Col., 1, 3, 6; Brock, 6; Car., 6; McG., 6; McM., 6; St. M., 6; Windsor, 6. *Assyriology* Tor., 6. *Atlantic Canada studies* New Br., 7, 9, 10; St. M., 6. *Canadian & European community studies* Brock, 6. *Canadian northern studies* McG., 5. *Canadian plains area studies* Regina, 3, 6. *Canadian studies* Acad., 6; Alta., 6; Athab., 6; Bishop's, 6; Bran., 6; Brock, 6; Calg., 6; Cape Breton, 6; Car., 3, 6; C'dia., 6, 10; Dal., 6; Guelph, 6; K.C.N.S., 6; Lake., 9; Laur., 6; McG., 6; McM., 6; Manit., 6; Nfld., 6; Mt. All., 6; Mt. St. Vin., 6; Ott., 6; P.E.I., 6; Qu., 6; Ste.-Anne, 6; St. F.X., 6; St. M., 3, 6; S. Fraser, 6; Tor., 6; Trent, 6; Wat., 10; W. Laur., 6; Windsor, 6; Winn., 6; York, 6. *Caribbean studies* York, 6. *Celtic studies* St. F.X., 3, 6; Tor., 6. *Chinese studies* Regina, 6; Tor., 1, 2, 3, 6; Vic. B.C., 6. *Commonwealth studies* Qu., 6. *Community studies* Cape Breton, 6. *Czech & Slovak studies* Tor., 6. *East Asian studies* Alta., 6; McG., 6; Montr., 9, 10; Tor., 1, 2, 3, 6; York, 6. *East European studies* Alta., 1, 3, 6; Car., 3, 6; Manit., 6; Qu., 6; Tor., 1, 2, 3, 5, 6. *Egyptology* Tor., 6. *French & Quebec studies* Bishop's, 6. *French Canadian studies* Car., 3; Laur. (Sudbury), 10; McG., 6; Regina, 6; S. Fraser, 10; York, 6. *General studies* Calg., 6; Trin. W., 6. *German a. studies* Br. Col., 1, 3, 6; Brock, 6; Nfld., 6; Regina, 6; Tor., 6. *Greek studies* Regina, 6; Tor., 6. *Hispanic studies* Br. Col., 1, 3; McG., 3, 6; Montr., 3, 6, 9, 10; Tor., 6; Trent, 6. *Humanities studies* McM., 6; Trin. W., 6; W. Laur., 6. *Hungarian studies* Tor., 6. *Iberoamerican studies* Wat., 10. *Indian studies* Regina, 6. *International studies* (all = 6) Car., Guelph, Mt. All., St. M., Sask., Tor. *Islamic studies* McG., 1, 3. *Italian studies* Laur., 6; Montr., 9, 10; W. Ont., 6. *Japanese studies* Br. Col., 1, 3, 6; Tor., 1, 2, 3, 6. *Jewish studies* McG., 3, 6; Manit., 6; Montr., 10; Tor., 6. *Korean studies* Tor., 6. *Latin-American & Caribbean studies* McG., 6. *Latin-American studies* (all = 6) McG., Qu., Regina, S. Fraser, Tor., Windsor, York. *Middle East studies* McG., 6; S. Fraser, 10; Wat., 10. *Middle East & Islamic studies* Tor., 1, 2, 3. *Modern European studies* Car., 6. *Native studies* Bran., 6; Car., 3; Laur., 6; Leth., 6; Manit., 6; New Br. (St. Thomas), 6; Regina, 6; Sask., 6; Tor., 6; Trent, 6, 7. *Near Eastern studies* Manit., 6; Sask., 6; Tor., 1, 2, 3, 6 (also Hellenistic, 6); W. Laur., 6. *Neo-Hellenic studies* Montr., 9, 10. *North American studies* McG., 6; New Br., 3. *Pacific studies* Vic. B.C., 6. *Quebec studies* Montr., 10; Queb. (T.-R.), 3. *Russian & slavic studies* McG., 1, 3, 6. *Russian studies* Brock, 6; C'dia., 6; Laur., 6; McM., 6; Nfld., 6; Montr., 3, 6, 9, 10; Regina, 6; Tor., 6; W. Ont., 6. *Scottish*

*studies* Guelph, 1, 3. *Self-elected specialisation* Car., 6; Regina (Sask. I.F.C.), 6. *Slavic a. studies* Br. Col., 3, 6; Tor., 6; Wat., 6. *South Asian studies* Tor., 1, 3. *Soviet/Russian & East European studies* Car., 3, 6; Manit., 6; Tor., 3, 5, 6. *Spanish-American studies* Laur., 6. *Third world studies* Car., 3, 6; New Br., 9. *Ukrainian Canadian studies* Manit., 6. *Ukrainian studies* Manit., 3, 6; Regina, 6. *Western literature & civilisation* W. Ont., 6. *Western society & culture* C'dia., 6.

**Art A./fine arts** Acad., 6; Alta., 3, 6; Bishop's, 6; Brock, 6; Calg., 3, 6; Guelph, 6; Lake., 6; Leth., 6; McM., 6; Manit., 6, 7; Mt. All., 6; N.S.C.A.D., 3, 6; Ott., 6; Regina, 3, 6; Regina (Luther), 7; St. F.X., 6; Sask., 3, 6; Tor., 6; Trin. W., 6, 10; Vic. B.C., 3, 6; Wat., 6, 10; W. Ont., 6; W. Laur., 6; Windsor, 3, 6; York, 3, 6. *A. & craftsmen* Queb. (C.), 8. *A. & popular traditions* Laur. (Sudbury), 10; Laval, 1, 3, 9, 10. *A. as applied to medicine* Tor., 6. *A. conservation* Qu., 3. *A. history* Acad., 6; Alta., 3, 6; Br. Col., 1, 3, 5, 6; Calg., 6; Car., 3, 6; C'dia., 3, 6, 10; Guelph, 6; Laval, 3, 6, 9, 10; Leth., 6; McG., 1, 3, 6; McM., 6; Manit., 6; Montr., 3, 6, 9, 10; Mt. All., 6; Ott., 6; Queb. (C.), 8; Queb. (M.), 6; Qu., 3, 6; Regina, 6; Regina (Luther), 7; Sask., 6; Tor., 1, 2, 3, 6; Vic. B.C., 3, 6; Wat., 6, 10; W. Ont., 6; Windsor, 6; Winn., 6; York, 3, 6. *A. history & studio a.* Bishop's 6; C'dia., 6, 10; Guelph, 6; McM., 6; Tor., 6; Wat., 6, 10. *Artistic expression* Sher., 10. *Art & sciences* Montr., 10. *Arts of East Asia* Tor., 6. *A. studies* Queb. (M.), 3. *A. therapy* C'dia., 5. *Ceramics* Leth., 6; Manit., 6, 7; N.S.C.A.D., 3, 6, 7; Regina 3; Regina (Sask. I.F.C.), 6. *Classical a.* Ott., 6. *Creativity: foundations & techniques* Montr., 10. *Cultural conservation* Vic. B.C., 7. *Cultural studies* Trent, 6. *Culture & civilization* Montr., 10. *Design* Alta., 3, 6; C'dia., 6; N.S.C.A.D., 6, 7; York, 3. *Drawing* Guelph, 6; Manit., 6, 7; Mt. All., 6; N.S.C.A.D., 3, 6, 7; Regina, 3; Regina (Sask. I.F.C.), 6; Sask., 3, 6; Windsor, 6; York, 3. *Fashion* Ryerson, 7. *Graphic communication* Laval, 6. *Graphic design* C'dia., 6; N.S.C.A.D., 6, 7; Queb. (M.), 6. *Graphics* N.S.C.A.D., 6, 7; Regina, 3; Regina (Sask. I.F.C.), 6. *History in a.* Vic. B.C., 3, 6. *Indian & Inuit a.* Car., 3, 6. *Indian a.* Regina, 6. *Interrelated arts* Brock, 6; C'dia., 6. *Painting* Alta., 3, 6; Guelph, 6; Manit., 6, 7; Mt. All., 6; N.S.C.A.D., 3, 6, 7; Queb. (M.), 8; Regina, 3; Regina (Sask. I.F.C.), 6; Sask., 3, 6; Vic. B.C., 3, 6; Windsor, 3, 6; York, 3. *Photography* C'dia., 6, 10; Mt. All., 6; N.S.C.A.D., 3, 6, 7; Ott., 6; Ryerson, 6; Sask., 3, 6; York, 3. *Plastic arts* Laval, 6, 9, 10; Montr., 10; Ott., 6; Queb. (A.-T.), 8; Queb. (C.), 3, 6; Queb. (H., T.-R.), 6, 8; Queb. (M.), 3, 6, 8. *Printmaking* Alta., 3; C'dia., 6; Guelph, 6; Manit., 6, 7; Mt. All., 6; N.S.C.A.D., 3, 6, 7; Queb. (M.), 8; Regina, 6; Sask., 3, 6; Vic. B.C., 3, 6; Windsor, 3, 6; York, 3. *Sculpture* Alta., 3, 6; Guelph, 6; Leth., 6; Mt. All., 6; N.S.C.A.D., 3, 6, 7; Queb. (M.), 8; Regina, 3; Regina (Sask. I.F.C.), 6; Sask., 3, 6; Vic. B.C., 3, 6; Windsor, 3, 6; York, 3. *Studio a.* Acad., 6; Br. Col., 3, 6; C'dia., 3, 6; Guelph, 6; Leth., 6; McM., 6; N.S.C.A.D., 3, 6, 7; Ott., 6; Regina, 6; Sask., 3, 6; S. Fraser, 6, 10; Tor., 6; Wat., 6, 10; W. Ont., 6; Windsor, 3, 6; York, 3, 6. *Visual arts* Alta., 3; Brock, 6; Lake., 6; Laval, 6, 10; M'ton., 6; N.S.C.A.D., 3, 6, 7; Ott., 6; Regina, 3, 6, 8; S. Fraser, 10; Vic. B.C., 3, 6; W. Ont., 6; Windsor, 3, 6; York, 3, 6. *Visual arts & communication studies* Brock, 6; Windsor, 6. *Visual communication design* Alta., 3, 6.

**Arts and/or Letters** (see also named arts sub-  
first professional degree, major specialisation or concentration  
CANADA

1 = doctorate 2 = master of philosophy 3 = master's 4 = licence 5 = graduate diploma 6 = bachelor's or first professional degree, major specialisation or concentration 7 = undergraduate diploma or certificate 8 = special certificate 9 = major diploma 10 = minor or certificate

jects). Almost all universities offer general or pass degree courses in arts.

**Biological Sciences** *Anatomy* Alta., 1, 3; Br. Col., 1, 3; Dal., 1, 3; Guelph, 6; Laval, 1, 3, 5; McG., 1, 3, 6; Ott., 1, 3; Qu., 1, 3; Sask., 1, 3, 5, 6; Tor., 1, 3, 6; W. Ont., 1, 3. *Animal behaviour* Car., 1, 3, 6; New Br., 1, 3; Tor., 6. *Animal biology* Car., 1, 3, 6; New Br., 1, 3. *Biology Acad.*, 3, 6; Alta., 1, 3, 6; Bishop's, 3, 6; Br. Col., 1, 3, 6; Brock, 3, 6; Calg., 1, 3, 6; Cape Breton, 6; Car., 1, 3, 6; C'dia., 3, 6, 10; Dal., 1, 3, 6; Guelph, 6; K.C.N.S., 6; Lake, 3, 6; Laur., 1, 3, 6; Laval, 1, 3, 6; Leth., 6; McG., 1, 3, 6; McM., 1, 3, 6; Nfld., 1, 3, 6, 8; M'ton., 3, 6; Montr., 1, 3, 6, 9, 10; Mt. All., 3, 6; Mt. St. Vin., 6; New Br., 1, 3, 6; Ott., 1, 3, 6; P.E.I., 3, 6; Queb. (C., R., T.-R.), 6; Queb. (M.), 3, 6; Qu., 1, 3, 6; Redeemer R.C.C., 6; Regina, 1, 3, 6; St. F.X., 3, 6; St. M., 6; Sask., 1, 3, 5, 6; Sher., 1, 3, 6, 9, 10; S. Fraser, 1, 3, 6; Tor., 6; Trent, 6; Trin. W., 6; Vic. B.C., 1, 3, 6; Wat., 1, 3, 6; W. Ont., 6; W. Laur., 6; Windsor, 1, 3, 6; Winn., 6; York, 1, 3, 6. *Biotechnology* Guelph, 6; Windsor, 6. *Biotechnology & genetic engineering* McM., 6. *Botany Acad.*, 3, 6; Alta., 1, 3, 6; Bran., 6; Br. Col., 1, 3, 6; Calg., 6; Guelph, 1, 3, 6; Manit., 1, 3, 6; New Br., 1, 3; Regina, 1, 3; Tor., 1, 3, 6; Vic. B.C., 6; Windsor, 10. *Cell & developmental biology* Car., 1, 3, 6; New Br., 1, 3; Vic. B.C., 1, 3, 6. *Cell & molecular biology* Brock, 3; Car., 1, 3, 6; New Br., 1, 3, 6; Ott., 6. *Cell biology* Alta., 6 (c.b. & physiol.); Br. Col., 1, 3, 6; Car., 1, 3, 6; Dal., 1, 3, 6; K.C.N.S., 6; McM., 6; W. Ont., 6. *Cellular & microbial biology* Calg., 6; Car., 1, 3, 6. *Developmental biology* Car., 1, 3, 6; Dal., 1, 3, 6; K.C.N.S., 6; New Br., 1, 3. *Entomology* Alta., 1, 3, 6. *Environmental biology* Brock, 3; Car., 1, 3, 6; Dal., 1, 3, 6; Guelph, 1, 3, 6; K.C.N.S., 6; New Br., 1, 3; Ott., 6. *Fisheries biology* Guelph, 6; New Br., 1, 3. *Functional biology* Vic. B.C., 6. *Genetic counselling* McG., 5. *Genetics* Alta., 1, 3, 6; Br. Col., 1, 3, 6; Car., 1, 3, 6; Dal., 1, 3, 6; Guelph, 1, 3, 6; K.C.N.S., 6; New Br., 1, 3, 6; Regina, 1, 3; W. Ont., 6. *Histology* Car., 1, 3; Dal., 1, 3, 6. *Human biology* Guelph, 6; Tor., 6. *Human genetics* Car., 6. *Immunology* Alta., 1, 3; Guelph, 1, 3; Ott., 1, 3; Tor., 1, 3. *Laboratory science* Ryerson, 6. *Laboratory science technology* Regina, 6, 8. *Life sciences* Car., 1, 3, 6; McM., 6; Ott., 6; Qu., 6. *Marine biology* Br. Col., 6; Dal., 1, 3, 6; Guelph, 1, 3, 6; Nfld., 1, 3, 6; New Br., 1, 3, 6; Vic. B.C., 1, 3, 6. *Medical biology* Queb. (T.-R.), 6, 8. *Microbial biology* Car., 1, 3, 6; Dal., 1, 3, 6. *Microbiology Acad.*, 3; Alta., 1, 3, 6; Br. Col., 1, 3, 6; Car., 6; Dal., 1, 3, 6; Guelph, 1, 3, 6; K.C.N.S., 6; Laval, 1, 3, 6; Manit., 1, 3, 6; New Br., 1, 3; Ott., 1, 3; Qu., 1, 3, 6; Regina, 1, 3, 6; Sask., 1, 3, 6; Tor., 1, 3, 6; Vic. B.C., 1, 3, 6; W. Ont., 1, 3, 6; Windsor, 10. *Microbiology & immunology* McG., 1, 3, 6. *Molecular biology* Car., 1, 3, 6; Dal., 1, 3, 6; Guelph, 1, 3; K.C.N.S., 6; McM., 6 (m.b. & biotechnol.); Montr., 1, 3; New Br., 1, 3, 6; Winn., 6. *Molecular genetics & molecular biology* Guelph, 1, 3, 6; Tor., 6. *Neurobiology & comparative physiology* Car., 1, 3, 6; New Br., 1, 3. *Neuroscience* Tor., 6. *Paleobiology* McG., 6. *Parasitology* Guelph, 1, 3; McG., 1, 3; New Br., 1, 3, 6; Tor., 6. *Physiology* Alta., 1, 3, 6; Br. Col., 1, 3, 6; Car., 1, 3, 6; Dal., 1, 3; Guelph, 1, 3; Laval, 1, 3; McG., 1, 3, 6; Manit., 1, 3; New Br., 3; Ott., 1, 3; Qu., 1, 3, 6; Sask., 1, 3, 5, 6; Tor., 1, 3, 6; W. Ont., 1, 3, 6. *Plant & animal morphology* Car., 6; New Br., 1, 3, 6; Vic. B.C., 1, 3, 6. *Plant & animal physiology* Car., 1, 3, 6; New Br., 1, 3, 6; Vic. B.C., 1, 3, 6. *Plant sciences* Alta., 1, 3, 6; McG., 1, 3, 6; W. Ont., 1, 3, 6. *Psychobiology* Leth., 6. *Scientific*

*measurement (biology)* C'dia., 10. *Systematic biology* Car., 1, 3, 6; Ott., 6; Vic. B.C., 1, 3, 6. *Terrestrial & freshwater ecology* Car., 1, 3, 6; New Br., 1, 3, 6; Vic. B.C., 1, 3, 6. *Virology* Car., 3, 6; McM., 1, 3. *Watershed ecology* Trent, 3. *Wildlife biology* Acad., 3, 6; Br. Col., 1; Car., 3, 6; Guelph, 1, 3, 6. *Wildlife resources* McG., 1, 3, 6; New Br., 3, 6. *Zoology Acad.*, 3, 6; Alta., 1, 3, 6; Bran., 6; Br. Col., 1, 3, 6; Calg., 6; Car., 1, 3, 6; Guelph, 1, 3, 6; McG. (zool. scis.), 6; Manit., 1, 3, 6; New Br., 1, 3, 6; Regina, 1, 3; Tor., 1, 3, 6; Vic. B.C., 6; Wat., 1, 3, 6; W. Ont., 1, 3, 6; Windsor, 10; Winn., 6.

**Business/Public Administration and Commerce** *Accounting, accountancy* Acad., 6; Athab., 6; Bishop's, 6; Br. Col., 1, 3, 6; Brock, 6 (also chartered acctg.); Calg., 6; Cape Breton, 6; Car., 6; C'dia., 5, 6, 10; Dal., 6; Lake, 6; Laval, 4, 10; McG., 5 (chartered acctg.); 6; McM., 6; Manit., 3, 6; Nfld., 3, 6; M'ton., 6, 8; Montr., 10; Mt. All., 6; Mt. St. Vin., 6; New Br., 6; Ott., 6; Queb. (C., R.), 8; Queb. (A.-T., H., M.), 6, 8; Queb. (T.-R.), 5, 6, 8; Regina, 6, 7, 8; Regina (Sask. I.F.C.), 10; St. F.X., 6; St. M., 6; Sask., 3, 6; Wat. (also chartered acctg.), 3, 6; W. Laur., 6, 7; Windsor, 3, 6; York, 1, 3, 6. *Accounting technology* Cape Breton, 7. *Actuarial science* Tor., 6. *Administration Acad.*, 6; Alta., 3, 6; Athab., 6; Brock, 6; Car., 3, 6; C'dia., 1, 3, 6; Dal., 3; Laval, 1, 3, 5, 6, 10; McG., 1; M'ton., 6; Montr., 1; New Br., 3, 5, 6, 8; Ott., 3, 5, 6; Queb. (A.-T., C., H., T.-R.), 6, 8; Queb. (M.), 1, 6, 8; Queb. (R.), 5, 6, 8; Regina, 3, 6, 7; Ste.-Anne, 6, 7; Sher., 3, 5, 10; Tor., 6; Trent, 6; Wat., 6; W. Ont. (Brescia, Huron, King's), 6; W. Laur., 3, 6, 7; Windsor, 3, 6, 8; Winn., 6; York, 1, 3, 6. *A. of homes for the aged* McM., 8. *Administrative & commercial studies* W. Ont., 6. *Administrative management* C'dia., 6, 10; McM., 8; Queb. (M.), 8. *Administrative office management studies* W. Ont., 6. *Administrative sciences* Montr., 5. *Arts management & a. Tor.*, 6; Wat., 7; York, 3. *Banking studies* McG., 7; McM., 8; Regina, 8. *Business* (incl. gen. b., b. studies) C'dia., 10; Manit., 3, 6; Redeemer R.C.C., 6; Sask., 6; Tor., 10. *B. administration/management Acad.*, 6; Alta., 1, 3, 6; Athab., 6; Bishop's, 6; Bran., 10; Br. Col., 1, 3, 6; Brock, 6; Calg., 3; Cape Breton, 6; Car., 3, 6; C'dia., 3; Dal., 3, 6; Guelph, 6; Lake., 5, 6; Laur., 3, 5; Laval, 6; McG., 3; McM., 1, 3, 6, 8; Manit., 3, 6; Nfld., 3; M'ton., 3, 6; Montr., 3, 6, 10; Mt. St. Vin., 6, 7, 8; New Br., 3, 5, 6, 8; Ott., 3, 6, 8; P.E.I., 6; Queb. (M.), 3; Qu., 1, 3, 5, 6; Regina, 6; Regina (Sask. I.F.C.), 10; Ryerson, 6, 7; Ste.-Anne, 6, 7; St. F.X., 6; St. M., 3, 6; Sask., 3, 8; Sher., 3, 6; S. Fraser, 1, 3, 6; Tor., 1, 3; Trin. W., 6; Wat., 6; W. Ont., 1, 3, 5, 6; W. Laur., 3, 6, 7; Windsor, 3, 6, 8; York, 1, 3, 6. *B. administration technology* Cape Breton, 7. *B. education-trust* McM., 8. *B. organization & management technology* Cape Breton, 7. *Commerce* Alta., 6; Br. Col., 6; Calg., 6; Car., 6; C'dia., 6; Dal., 6; Lake., 6; Laur., 6; McG., 3, 6; McM., 6; Manit., 6; Nfld., 3, 6; M'ton., 6; Mt. All., 6; Ott., 6; Qu., 6; R.M.C., 6; St. M., 6; Sask., 6; Tor., 6; Windsor, 3, 6, 8. *Community health management* Tor., 3. *Computerised management* Queb. (M., R.), 8. *Construction management* Queb. (E.T.S.), 8. *Co-operatives management* Laur., 6; Montr., 10. *Co-operative studies* Laur., 8; M'ton., 8. *Correctional a. Ott.*, 3. *Credit union studies* McM., 8. *Development studies* Tor., 5; Trent, 6. *Economics & management of small and medium systems* Queb. (T.-R.), 3. *Educational policy a. Queb. (M.)*, 8. *Entrepreneurial studies* McG., 6; York, 1, 3. *Finance Acad.*, 6; Alta., 3; Bishop's, 6; Br. Col., 1, 3, 6; Brock, 6; Calg., 6;

Car., 3, 6; C'dia., 6, 10; Dal., 6; McG., 6; Manit., 3, 6; Nfld., 3, 6; M'ton., 6, 8; Montr., 3; New Br., 6; Ott., 6; Regina, 6; St. M., 6; Sask., 6; Tor., 1, 3, 6; W. Laur., 6; Windsor, 3, 6; York, 1, 3, 6. *Financial accounting* Mt. All., 6; Sher., 10; York, 3, 6. *Financial analysis* Queb. (M.), 8. *Financial information systems* Regina, 6. *Financial management* Montr., 10. *Fisheries management* M'ton., 6. *Food services* Alta., 6; McG., 6; Nfld., 6. *Foremanship* McM., 8. *Graphic communications management* Ryerson, 6. *Health a. Montr.*, 1. *Health & social services management* McG., 7. *Health services a. Alta.*, 3, 5; Br. Col., 3; Dal., 3; Montr., 3; Ott., 3; Sask., 6, 8; Tor., 1, 3. *Hospital a. Ott.*, 3. *Hospitality a. technology* Cape Breton, 7. *Hospitality & tourism management* Mt. St. Vin., 6; Ryerson, 6, 7. *Hotel & food a. Guelph*, 6; Mt. St. Vin., 6. *Human resources development* McM., 8. *Human resources management* Bishop's, 6; C'dia., 6; Montr., 3, 10; Ott., 6; Queb. (C., R., T.-R.), 8; Sher., 10. *Indian b. administration* Sask., 7. *Indian management & a. Regina*, 6; Regina (Sask. I.F.C.), 10. *Industrial a. Br. Col.*, 6. *Industrial management* McM., 8. *Industrial relations* Alta., 6; Br. Col., 1, 3, 6; Car., 3, 6; C'dia., 6; Lake., 9; Laval, 1, 3, 6, 9, 10; McG., 6; McM., 8; Manit., 3, 6; Nfld., 3, 6; Montr., 1, 3, 6, 10; New Br., 6; Ott., 8; Queb. (H.), 8; Qu., 3; Sask., 6; Tor., 3; York, 3, 6. *Industrial safety & hygiene* Queb. (T.-R.), 3. *Information & management systems* Car., 3, 6; Tor., 3. *Information systems* Montr., 3, 10. *Institutional a. C'dia.*, 5. *Institutional food service management* Guelph, 6; Mt. St. Vin., 6. *Insurance studies* McM., 8. *International b. Br. Col.*, 3, 6; Car., 3, 6; C'dia., 10; Dal., 3; McG., 6; Ott., 3, 6; York, 3, 6. *Interpersonal relations* Montr., 10. *Labour management* Laval, 10; Queb. (M.), 8. *Labour relations* Car., 3, 6; McG. (labour-management r.), 6; McM., 8; Manit., 6; Ott., 8; Queb. (A.-T.), 8; Regina, 6; Windsor, 8. *Maintenance management* Queb. (C.), 8. *Management Acad.*, 6; Br. Col., 1, 3; Brock, 6; Calg., 6; Car., 3, 6; C'dia., 6, 10; Dal., 3, 6; Lake., 6; Leth., 6; McG., 5, 7; Manit., 8; Nfld., 3, 6; M'ton., 6, 8; Montr., 3; Mt. All., 6; Mt. St. Vin., 6; New Br., 6; Ott., 3, 6; Regina, 3; St. F.X., 6; St. M., 6; Sask., 3, 6; Tor., 1, 3; Wat., 1, 3, 6, 10; Windsor, 3, 6; York, 3, 6. *Management accounting* Dal., 3, 6; McG., 7; Queb. (M.), 6; Sher., 10; Wat., 3, 6; York, 3, 6. *Management & a. McM.*, 8. *Management economics* Alta., 6; Guelph, 6. *Management information systems* (see also "Computer Science") Br. Col., 1, 3, 6; Calg., 6; Car., 3, 6; Lake., 6; McG., 6, 7; Manit., 6; M'ton., 6; Ott., 6; St. F.X., 6; York, 3, 6. *Management of organizations & human resources* Calg., 6; Car., 3, 6. *Management of small & medium-sized businesses/organizations* Montr., 10; Queb. (A.-T., C.), 3. *Management policy* McG., 6; York, 1. *Management science & systems* Alta., 6; Bishop's, 6; McG., 6; McM., 1, 3; S. Fraser, 6. *Management technology* Cape Breton, 7. *Marketing Acad.*, 6; Alta., 6; Bishop's, 6; Br. Col., 1, 3, 6; Brock, 6; Calg., 6; Car., 3, 6; C'dia., 6, 10; Dal., 6; Lake., 6; McG., 6, 7; McM., 6; Manit., 3, 6; Nfld., 6; M'ton., 6; Montr., 3; New Br., 6; Ott., 3, 6; Queb. (M.), 8; St. M., 6; Sask., 6; W. Laur., 6; Windsor, 3, 6; York, 1, 3, 6. *Marketing management* Montr., 6; Sher., 10. *Marketing research* C'dia., 10. *Marketing technology* Cape Breton, 7. *Municipal a. McM.*, 8. *Municipal services management* Queb. (M.), 8. *Natural resources management* Tor., 3. *Occupational health & safety* Montr., 10; Quebec. (A.-T., C., H., M., R., T.-R.), 8; Sher., 10. *Operations management* M'ton., 8; Regina, 6. *Operations/operational research* Car., 3, 6; C'dia., 10; Dal., 3; Manit., 3, 6; Montr., 6; Queb. (T.-R.), 6; Wat., 6. *Organiza-*

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*tional & career development* Windsor, 8. *Organizational behaviour & personnel* McG., 6. *Organizational behaviour/industrial relations* Alta., 6; Manit., 6; York, 1, 3, 6. *Organizational theory & behaviour* Alta., 6; Br. Col., 1, 3, 6; Brock, 6; Dal., 6; New Br., 6; Regina, 6; York, 1, 3, 6. *Personnel a.* Brock, 6; Lake., 6; Wat., 10. *Personnel & industrial relations* McM., 6; Tor., 10. *Personnel management* C'dia., 10; McG., 7; McM., 8; M'ton., 8; Wat., 6. *Personnel management & labour relations* Queb. (M.), 8. *Police a./management* McM., 8; Queb. (T.-R.), 8. *Production* Nfld., 6; Montr., 3. *Production/operations management* Manit., 6; Montr., 10. *Production systems* C'dia., 10. *Project management* Montr., 3; Queb. (A.-T., C., H., M., T.-R.), 3. *Public a.* Alta., 3; Athab., 6; Brock, 6; Car., 3, 5, 6, 8; Dal., 3, 5, 7, 8; Laur., 7; McG., 6; M'ton., 3; New Br., 3, 5, 6, 8; Ott., 3, 6, 8; P.E.I., 7, 8; Queb. (E.N.A.P.), 3; Qu., 3; Regina, 3, 8; Ryerson, 6, 7; Sask., 6; Tor., 10; Trent, 6; Vic. B.C., 3; Wat., 7; W. Ont., 7; Windsor, 6, 8; York, 3. *Public affairs* Manit., 3; Winn., 3. *Public policy & a./public management* C'dia., 3; Ott., 6. *Public relations* McG., 7; Montr., 10; Mt. St. Vin., 6; Regina, 8. *Public sector management* Car., 3, 5, 6; Dal., 6; McG., 6; Regina, 3; Vic. B.C., 7. *Public services a.* Queb. (M.), 8. *Quantitative methods* Acad., 6; Br. Col., 1, 3, 6; Brock, 6; Car., 3, 6; C'dia., 6, 10; Dal., 6; McG., 6; Manit., 3, 6; Nfld., 3, 6; M'ton., 6; New Br., 6; Regina, 6; Sask., 6. *Real estate* McG. (appl.), 7; Queb. (M.), 8. *Regional public services management* Queb. (H.), 5. *Retail a.* McM., 8. *Services a.* Queb. (M.), 8. *Sports a.* C'dia., 5; Laur., 6; Ott., 3, 6; York, 8. *Taxation* Sher., 3. *Tourism management, hospitality & tourism management* McG., 5; Queb. (M.), 6. *Transportation & utilities* Br. Col., 6. *Transportation management* McG., 7; New Br., 9; Tor., 3. *Urban analysis & management* Queb. (M., E.N.A.P., I.N.R.S.), 3. *Urban land economics* Br. Col., 6. *Work management (development of)* Queb. (T.-U.), 8.

**Chemistry** Acad., 3, 6; Alta., 1, 3, 6; Bishop's, 3, 6; Bran., 6; Br. Col., 1, 3, 6; Brock, 3, 6; Calg., 1, 3, 6; Car., 1, 3, 6; C'dia., 1, 3, 6, 10; Dal., 1, 3, 6; Guelph, 1, 3, 6; K.C.N.S., 6; Lake., 3, 6; Laur., 3, 6; Laval, 1, 3, 6, 9; Leth., 6; McG., 1, 3, 6; McM., 1, 3, 6; Manit., 6; Nfld., 1, 3, 6; M'ton., 3, 6; Montr., 1, 3, 6, 9, 10; Mt. All., 3, 6; Mt. St. Vin., 6; New Br., 1, 3, 6; Ott., 1, 3, 6; P.E.I., 6; Queb. (C., R.), 6; Queb. (M.), 3, 6; Queb. (T.-R.), 3, 6, 8; Qu., 1, 3, 6; Regina, 1, 3, 6; R.M.C., 3; St. F.X., 3, 6; St. M., 6; Sask., 1, 3, 5, 6; Sher., 1, 3, 6, 9, 10; S. Fraser, 1, 3, 6; Tor., 1, 3, 6; Trent, 3, 6; Trin. W., 6; Vic. B.C., 1, 3, 6; Wat., 1, 3, 6; W. Ont., 1, 3, 6; W. Laur., 6; Windsor, 1, 3, 5, 6; Winn., 6; York, 1, 3, 6. *Analytical c.* Car., 1, 3; C'dia., 6; New Br., 3; York, 1, 3. *Applied biochemistry* Guelph, 6. *Applied c.* Calg., 6; Car., 1, 3; Guelph, 6; McM., 6; New Br., 6; Tor., 1, 3, 6; Wat., 6. *Applied electrochemistry* Montr., 5; Queb. (M.), 5. *Biochemistry* Acad., 3, 6; Alta., 1, 3, 6; Bishop's, 3, 6; Br. Col., 1, 3, 6; Brock, 3, 6; Calg., 1, 3, 6; Car., 1, 3, 6; C'dia., 6; Dal., 1, 3, 6; Guelph, 6; K.C.N.S., 6; Laur., 6; Laval, 1, 3, 6; Manit., 6; McG., 1, 3, 6; McM., 1, 3, 6; Nfld., 1, 3, 6; M'ton., 6; Mt. All., 6; New Br., 1, 3; Ott., 1, 3, 6; Queb. (M., T.-R.), 6; Qu., 1, 3, 6; Regina, 1, 3, 6; S. Fraser, 1, 3, 6; Sask., 1, 3, 5, 6; Sher., 6; Tor., 1, 3, 6; Vic. B.C., 1, 3, 6; Wat., 6; W. Ont., 1, 3, 6; Windsor, 6; York, 1, 3. *Chemical analysis* Queb. (M.), 8. *Geochemistry* Car., 6; McM., 1. *Inorganic/analytical c.* McG., 6; Tor., 1, 3. *Instrumental chemical analysis* Queb. (T.-R.), 8. *Organic c.* Tor., 1, 3. *Physical & theoretical c.* Tor., 1, 3. *Radioanalytical c.* McG., 6. *Scientific measurement* C'dia., 10.

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**Cinema:** see 'Theatre, Cinema and Dance'.

**Computer Science** Acad., 3, 6; Alta., 1, 3, 6; Bishop's, 6, 7; Bran., 6; Br. Col., 1, 3, 6; Brock, 6; Calg., 1, 3, 6; Car., 3, 6; C'dia., 1, 3, 5, 6, 10; Dal., 6; Guelph, 6, 8; Lake., 6; Laur., 6; Laval, 3, 6, 10; Leth., 6; McG., 1, 3, 6; McM., 6; Manit., 1, 3, 6; Nfld., 3, 6; Montr., 1, 3, 6, 9, 10; Mt. All., 6; Mt. St. Vin., 6; New Br., 3, 6; Ott., 3, 6; Queb. (H.), 6; Queb. (M., R.), 8; Queb. (T.-R.), 3, 6, 8; Qu., 3, 6; Regina, 6, 8, 9; Regina (Sask. I.F.C.), 7; R.M.C., 3, 6; R.R.M.C., 6; St. F.X., 6; Sask., 1, 3, 5, 6; Sher., 6; S. Fraser, 1, 3, 6; Tech. U.N.S., 3, 6; Tor., 1, 3, 6; Trin. W., 10; Vic. B.C., 3, 6; Wat., 1, 2, 3, 6; W. Ont., 3, 6; Windsor, 6; Winn., 6; York, 6. *Applied c. science* Car., 6; M'ton., 6; Montr., 10; Queb. (C.), 8; Ryerson, 6. *Computation* Car., 3, 6; McM., 3; S. Fraser, 6. *C.-based information systems* McG., 7. *C. communications* Ott., 1, 3; S. Fraser, 6. *C. mathematics* Car., 3, 6; S. Fraser, 6; Tor., 6. *C. programming* Car., 3, 6; S. Fraser, 6. *C. science & engineering* Ott., 1, 3; S. Fraser, 6. *C. science applied to education* Queb. (T.-U.), 8. *Computing & c. electronics* S. Fraser, 6; W. Laur., 6. *Computing & data processing* Ott., 3, 6; Regina, 8; Tor., 1, 3. *Computing & information science* Guelph, 6; Qu., 3, 6; S. Fraser, 6. *Data analysis* New Br., 6. *Data processing* C'dia., 6. *Data processing technology* Cape Breton, 7. *Engineering c. science* Laval, 6. *Health information science* Vic. B.C., 6. *Information & management systems* Ott., 6; St. F.X., 6; S. Fraser, 6. *Management information systems* Laval, 6; Queb. (A.-T.), 6, 8; Queb. (C., H.), 8; Queb. (M.), 3, 6; Sher., 6. *Microcomputer series* McM., 8. *Microcomputing* Queb. (H.), 8; Queb. (E.T.S.), 8 (appl. m.). *Microsystems* Queb. (H.), 8.

**Criminology** Alta., 6; Manit., 6; Nfld., 7; Montr., 1, 3, 6, 10; Ott., 3, 6, 8; St. M., 6, 8; S. Fraser, 3, 6, 8; Tor., 3, 6, 8. *Corrections* McM., 8. *Crime & deviance* Tor., 6. *C. & criminal justice* Car., 6; Windsor, 8. *Law enforcement & administration* Tor., 8. *Law enforcement studies* Car., 8. *Police studies* Nfld., 6.

**Dance:** see 'Theatre, Cinema and Dance'.

**Dentistry** Alta., 1, 3, 5, 6; Br. Col., 3, 6; Dal., 6; Manit., 1, 3, 5, 6; McG., 6; Sask., 6; Tor., 1, 3, 5, 6; W. Ont., 6. *Community d.* Alta., 1, 3. *Dental biology* Montr., 3. *Dental hygiene* Alta., 7; Dal., 7; Manit., 7; Montr., 10. *Dental medicine* Laval, 6; Montr., 6. *Dental public health* Tor., 5. *Dental surgery* Alta., 6; Laval, 8; Manit., 5; McG., 6; Tor., 6; W. Ont., 6. *Diagnosis & oral radiology* Alta., 3; Tor., 5. *Oral biology* Alta., 1, 3; Br. Col., 1; Dal., 6; Manit., 1, 3. *Oral pathology* Tor., 5. *Oral surgery* Alta., 3; Dal., 3; Laval, 8; Manit., 6; Tor., 5. *Orthodontics* Alta., 3; Dal., 8; Manit., 3; Montr., 3, 5; Tor., 5; W. Ont., 3. *Pædodontics* Alta., 3; Dal., 6; Montr., 5; Tor., 5. *Periodontics* Alta., 3; Br. Col., 5; Dal., 5; Tor., 5. *Prosthodontics* McG., 3; Tor., 5. *Restorative d.* Alta., 3; Dal., 6.

**Earth Sciences** Car., 3, 6; Dal., 1, 3, 6; Guelph, 6; K.C.N.S., 6; Laur., 6; Leth., 6; Manit., 1, 3, 6; Nfld., 1, 3, 6; Ott., 6; Queb. (C., M.), 3; Wat., 1, 3, 6; York, 6. *Agrometeorology* Guelph, 1, 3. *Applied e. science* Car., 3, 6; Wat., 6. *Applied geology* Queb. (M.), 8. *Crystallography* McG., 3, 6; McM., 1, 3. *E. & planetary science, e. resources* Tor., 6. *Geodesy* Laval, 1, 3, 6; New Br., 1, 3; Ryerson, 6, 7. *Geology* Acad., 3, 6; Alta., 1, 3, 5, 6; Bran., 6; Br. Col., 1, 3, 6; Brock, 3, 6; Calg., 1, 3, 6; Car., 1, 3, 6; C'dia., 6 (also ecol. option), 10; Dal., 1, 3, 6; K.C.N.S., 6; Lake., 3, 6; Laur., 3, 6; Laval,

1, 3, 6; Leth., 6; McG., 1, 3, 5, 6; McM., 1, 3, 6; Manit., 1, 3, 6; Nfld., 1, 3, 6; Montr., 1, 3, 6, 9, 10; Mt. All., 6; New Br., 1, 3, 6; Ott., 1, 3, 6; Queb. (C., M.), 6; Qu., 1, 3, 6; Regina, 3, 6; St. F.X., 3, 6; St. M., 6; Sask., 1, 3, 5, 6; Tor., 1, 3, 6; Wat., 6; W. Ont., 1, 3, 6; Windsor, 3, 6. *Hydrology* Br. Col., 1, 3; Guelph, 1, 3. *Metallurgy* Br. Col., 1, 3, 6; Laval, 1, 3; McM., 1, 3, 6; Tor., 1, 3, 6. *Metallurgy & materials science* McM., 1, 3, 6. *Meteorology* Alta., 1, 3, 6; Dal., 5; McG., 1, 3, 6, 7; Queb. (M.), 5; Tor., 3. *Mineral technology* Cape Breton, 7. *Mining geology* Laur., 6; Montr., 3. *Petrology* Ott., 6. *Photogrammetry* Laval (& teledetection), 1, 3; New Br., 1, 3. *Precambrian geology* Car., 1, 3. *Quaternary studies* Car., 3; Tor., 6. *Resources analysis & land use* C'dia., 6. *Resource geology* Car., 1, 3. *Solid e. geophysics* McG., 6. *Structure & geodynamics* Car., 1, 3. *Terrain & environmental e. sciences* Tor., 6.

**Economics** Acad., 3, 6; Alta., 1, 3, 6; Bishop's, 3, 6; Bran., 6; Br. Col., 1, 3, 6; Brock, 6; Calg., 1, 3, 6; Cape Breton, 6; Car., 1, 3, 6; C'dia., 1, 3, 6, 10; Dal., 1, 3, 6; Guelph, 3, 6; K.C.N.S., 6; Lake, 3, 6; Laur., 6; Laval, 1, 3, 6, 9, 10; Leth., 6; McG., 1, 3, 6; McM., 1, 3, 6; Manit., 1, 3, 6; Nfld., 2, 3, 6; M'ton., 3, 6; Montr., 1, 3, 6, 9, 10; Mt. All., 6; Mt. St. Vin., 6; New Br., 3, 6; Ott., 1, 3, 6; P.E.I., 6; Queb. (H.), 8; Queb. (M.), 3, 6, 8; Queb. (R.), 6; Queb. (T.-R.), 6, 8; Qu., 1, 3, 6; Regina, 3, 6; R.M.C., 3, 6; St. F.X., 6; St. M., 6; Sask., 3, 5, 6; Sher., 3, 6, 9, 10; S. Fraser, 1, 3, 6; Tor., 1, 2, 3, 6; Trent, 6; Trin. W., 10; Vic. B.C., 3, 6; Wat., 3, 6, 10; W. Ont., 1, 3, 6; W. Laur., 6; Windsor, 3, 6; Winn., 6; York, 1, 3, 6. *Applied e.* Manit., 6; Montr., 3. *Business e.* Alta., 6; Br. Col., 6; Brock, 6; C'dia., 6; Guelph, 6; Regina, 6; St. F.X., 6; York, 6. *Canadian e.* Car., 1, 3, 6. *Development studies* Calg., 6; Car., 3, 6; Dal., 1, 3. *Economic development* Car., 1, 3, 6; Dal., 1, 3. *Economic history* Br. Col., 6; Tor., 1, 3, 6. *E. & quantitative methods* Tor., 6. *Economic theory* Car., 1, 3, 6; Dal., 1, 3. *Industrial organization* Dal., 1, 3. *International e.* McM., 1. *Labour e.* Dal., 1, 3. *Monetary e.* Dal., 1, 3; McM., 1. *Natural resources management* Guelph, 6; Manit., 3; S. Fraser, 3. *Political economy* Bishop's, 6; Car., 3; R.M.C., 6. *Public finance* Car., 3; Dal., 1, 3; McM., 1. *Quantitative e.* McM., 1. *Regional development* M'ton., 8. *Regional studies* Dal., 1, 3. *Social, political & economic theory* York, 6. *Urban land e.* Br. Col., 3, 6.

**Education and Educational Technology** *Adult e., andragogy* Br. Col., 1, 3, 5; C'dia., 5, 6, 10; Dal., 1, 3; Guelph, 3; Laval, 10; McM., 8; Nfld., 8; Montr., 1, 3, 10; Ott., 3, 8; Queb. (C., R.), 8; Queb. (H.), 5; Regina, 8; St. F.X., 3, 7; Sask., 3, 5; Sher., 5; Tor., 1, 3; Tor. (O.I.S.E.), 1, 3, 8. *Adult literacy* Queb. (M.), 8. *Art therapy* C'dia., 5. *Associate teacher* Ott., 8. *Audio-visual e.* Alta., 1, 3; Queb. (M.), 8. *Business e.* Alta., 6; Br. Col., 3, 6; New Br., 3, 6, 7. *Child assessment & counselling* Tor., 5. *Child studies* C'dia., 6; Mt. St. Vin., 6. *College teaching* Laval, 10; McG., 5; Sher., 10; Tor. (O.I.S.E.), 1, 3, 8. *Comparative & international e.* Montr., 5. *Comparative e.* Br. Col., 3; McG., 3; Montr., 1, 3; Tor. (O.I.S.E.), 1, 3. *Computer applications* Tor., 1, 3. *Computer assisted instruction/learning* C'dia., 5; Tor. (O.I.S.E.), 1, 3. *Computers in e./teaching* Brock, 6; Montr., 10; Ott., 1, 3, 8; Queb. (A.-T., H., M., R., T.-R.), 8; Windsor, 6; York, 6. *Continuing e.* Sask., 3, 5. *Co-operative e.* Mt. St. Vin., 6; Ott., 8. *Counselling psychology* Br. Col., 1, 3, 5. *Curriculum & instruction* Alta., 1, 3, 6; Br. Col., 1, 3, 6; Brock, 3, 6; Calg., 1, 3, 5; Dal., 1, 3; Lake., 3; Leth., 6; Manit., 3, 6; Nfld., 3; New Br., 3, 4, 6; Ott., 1, 3; Qu., 3; Regina, 3, 5; St.

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