

**REPORT OF THE
BOARD SENATE COMMITTEE ON ACADEMIC POLICY
SUB-COMMITTEE ON DEVELOPING A SPACE MANAGEMENT POLICY**

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TERMS OF REFERENCE

The ad hoc sub-committee is charged with the task of developing and recommending a University Policy on building space management. Without limiting the scope of the task, the sub-committee should:

- (1) develop and recommend policies and procedures for the control and management of academic space, both existing and planned; these policies and procedures should:
 - (a) define the relevant roles and responsibilities of department chairmen, Faculty Deans, and other University officers;
 - (b) assign the responsibility for maintaining inventories of building space and its use; and
 - (c) assign the responsibility for conducting periodic reviews of space assignments.
- (2) review the applicability of COU standards for the assignment of academic space at McMaster and recommend procedures whereby such standards are modified (when appropriate), and applied.

This document was approved by Senate May 11, 1987. The Office of Analysis and Budgeting updated Table 1 on April 7, 1993 to reflect the reporting structure at that time.

I) Introduction and Background

McMaster University in the past decade has learned to live within tighter space constraints. There has been no major increase in space, yet considerable change and adjustment have taken place. Recent exercises in space planning have led to the realization that formal procedures are required both for the planning and management of space. This report recommends such procedures.

In our deliberations we have met with the Vice-President (Health Sciences), the Dean of Science and the Dean of Engineering and have sought advice from the other Deans. In our many discussions, a number of problems became clear that are dealt with in this report. First, the control of space and the responsibility for its use are often not clear. Second, academic plans and proposals are often put forward without evaluating the requirements for space to implement them. Third, there are no standards or procedures in place to follow when

reallotment of space is called for.

We propose that the university should respond to these problems in the following way. First, a clear statement of ownership and responsibility for management of space should be put in place. Second, a set of standards (hereafter the McMaster Space Standards) based on standards approved by the Council of Ontario Universities (COU standards) should be adopted as a guide for all proposals dealing with space within the university. Third, a set of procedures should be adopted for space management and space planning. In particular, all plans and proposals coming to the Board Senate Committee on Academic Planning that cannot be accommodated within existing space should include an estimate of the space requirements based on the standards mentioned above together with recommendations that additional space be provided for these purposes. It will be assumed that any space requirements not made explicit in such separate recommendations can be accommodated within current space.

We have taken the view in this report that space is a scarce university resource like any other and requires planning for its effective use. We have concerned ourselves mostly with the physical dimensions of space though we recognize that the quality dimensions are important as well and have made recommendations in the case of classroom space in that regard. Other quality considerations, for example the desirability of housing departments together, we take to be apparent and do not comment on here.

We also note here that our recommendations must be tempered by the realization that assignment and re-assignment of space is costly and must be carried out in a manner that recognizes the costs of renovation. Moreover, where major capital expenditures are necessary to make space usable, there must be assurance that the space will be available for a period long enough to justify the expenditure.

Our recommendations are meant to apply to the whole of the university with the exception of the Faculty of Health Sciences which already has administrative procedures in place to deal with the allocation of space.

II) Control, Management, and Planning

II.1) All space is ultimately the property of McMaster University. We identify three levels of responsibility and control within the university (See Table 1 attached). At the top level (Level 1), space is under the control and responsibility of the President or of a Vice-President. Space that is assigned to academic departments is allocated by the Vice-President Academic to a Faculty Dean (Level 2) who in turn entrusts it to a department or other administrative unit (Level 3). Departments assign space to faculty members, staff, graduate students, etc., and may re-assign it as the need arises, though the department retains responsibility for its use.

Space assigned to academic or administrative units that do not report through Faculty Deans (such as in the case of the Arts and Science Program) will be assigned and re-assigned by the administrative officer (Level 2 in Table 1) to whom the unit reports.

Control by a department or similar administrative unit within the university may be subject to change as academic priorities change. For example, space may be re-assigned among departments and other units by a Dean but remain with the Faculty. We consider that **II.2) it is the responsibility of the Faculty Dean to re-allocate space within the Faculty as demonstrated needs of departments and other units change.**

Control by a Faculty is likely to be longer term than by a department. **II.3) Re-assignment of space or assignment of new space to a Faculty is the responsibility of the Vice-President Academic.** If major changes seem necessary the Vice-President may wish to

establish committees to advise as was done with the Task Forces last summer. We think that such Task Forces would benefit from the set of the space standards recommended here and by the inclusion of one or more faculty members.

II.4) All space used by a department, institute, or administrative unit should be reviewed on a regular basis. We propose that reviews be carried out in the case of departments and other academic users when the unit is externally reviewed. The Office of Analysis and Budgeting (see section IV) should prepare tables in a standard format showing space that is currently assigned to the department and space that is justified according to McMaster Space Standards. The department should justify existing space and/or make the case for additional space at the time the review comes forward to BSCAP. **II.5) The Dean should make recommendations about the provision of space both for present and future needs of the department or unit as part of his recommendations to the BSCAP at the time the external review comes forward.**

II.6) Faculty space, that is to say, the total space assigned to the Faculty Dean should also be reviewed on a regular basis. The most reasonable approach would be to carry this out at the same time that Faculty five-year plans are prepared. Again, Analysis and Budgeting should prepare tables that relate the space allocated to a Faculty to space justified by the McMaster Space Standards. The Dean's report should justify the existing space, and make appropriate recommendations on space issues. If no additional space is requested, a recommendation that the existing allocation be continued or that reductions should take place should take place should form part of the package of recommendations.

II.7) The Vice-President should make recommendations about the provision of space both for present and future needs for the Faculty as part of his recommendations to the BSCAP at the time of the five-year review.

II.8) For non-academic units, both those reporting through the Academic and Administrative Vice-Presidents, similar timetables and procedures for space reviews (both at Level 2 and Level 3) should be established and followed.

University support staff should provide departments (or other units) and administrators with inventories of space and space justified by McMaster standards at the time of any space review. Providing these in a standard format will facilitate comparisons across units. This will require more co-ordination in the internal research effort than has been the case in the past and to this end.

II.9 We recommend that the service of providing space inventories and estimates of space justified by McMaster Space Standards should be provided by a single support unit rather than having it divided between the offices of Risk and Facilities Administration and Analysis and Budgeting as it is now.

III) COU and McMaster Space Standards

As noted above, adoption of a set of space standards seems to be an essential part of sound management and space planning. There are only a few sets of space standards available, and of these, the COU standards have several advantages. They are comprehensive, they are designed for the Ontario system, and they are used and understood by the Office of Analysis and Budgeting at McMaster. They are also used the Province as the basis for construction, maintenance and renovation funds. While we acknowledge some deficiencies in these standards which we discuss below, **III.1) we recommend using the Council of Ontario Universities (COU) standards with some modifications as an integral part of space management and space planning at McMaster.** In what follows, we discuss the problems with the standards and make recommendations on their use.

Recently, the COU standards have become more relevant in planning exercises to Ontario Universities because the Ministry of Colleges and Universities is using them as a guide in awarding grants to the universities for maintenance and renovations, and in awarding major capital funds for new construction. To the extent that McMaster allocates more space to certain activities than these standards permit, our ability to attract funds for construction or to provide space for other purposes is limited. Moreover, when McMaster builds in excess of these standards, funds will have to be found from non-ministry sources for renovations.

Space standards of any sort including those of COU are at best a guide to the allocation of space within a university. The COU standards in many ways reflect past history and are a better measure of what actually happened than a guide to what should occur. For example, the allowance for office size for a faculty member in the COU standards is an average of space now assigned to this purpose at Ontario Universities. That is, the standard is an average of the size of recent office additions (about 11 square meters or just under 120 square feet), and the larger size of offices that were built in earlier years (up to 15 square meters or about 160 or more square feet). While the smaller figure is appropriate for planning for new space, it is apparent that existing office sizes cannot be changed without great expense. A similar situation pertains in the case of laboratories and classrooms and it is clear that one must use COU or other standards with discretion in evaluation existing space though they may apply to a greater degree when construction or renovation is considered.

Because COU standards reflect average practice in Ontario Universities they are not entirely appropriate for a research intensive university like McMaster. If a standard is established that allots a certain amount of research space to an average Science or Engineering faculty member in the Ontario system, it is unlikely to be adequate for researchers who are more active than average. Moreover, space requirements are a function of the research undertaken and McMaster has some major installations that are space intensive (such as the Reactor). In such cases COU standards or other standards designed for the average university will be inadequate. These differences between McMaster and the average must be taken into account in modifying the COU standards for internal use.

Just as it is clear that standards or formulae cannot be used arbitrarily, it is also clear that a reasonable set of standards can serve as an excellent guide for the evaluation of space. It is this role that we see for the McMaster space standards discussed below.

Modifying the COU Standards.

COU standards, like most other standards for space allocation, are based on the notion of "inputs". Inputs are variables that justify the allocation of space. For example, in the case of classroom space, it is the number of full-time equivalent (FTE) students that justify space. FTEs are multiplied by a space factor to come up with an amount of space a university should need to handle that number of FTEs. The New COU standards (approved 1986) measure space in Net Assignable Square Meters (NASMs). Thus, to calculate the total space justified for classrooms at McMaster the input (FTEs) is multiplied by the space factor (in NASMs). The other space categories involve similar calculations.

We summarize the COU factors for the various categories of space in Tables A through D and show some alternative standards as well as our proposed McMaster Space Standards. ECS refers to the standards suggested by Environmental Consulting Services Ltd., the columns under the heading "Task Force" refer to the standards both implicit and explicit in the recommendations made by the "Arts Precinct Task Force" and the "Task Force Engineering Space" both of which reported in May, 1986, and the University of Saskatchewan column refers to standards adopted there. We have provided the latter for a perspective on practice at another institution rather than as a serious alternative to the other standards. The University of Saskatchewan is one of the few Canadian Institutions that has adopted and published standards that are used for internal allocation of space.

In Tables A through D, the first column refers to the "inputs" and the succeeding

columns list the various space factors. Footnotes appended to each table provide additional information to aid interpretation. Each table is discussed in turn below.

Office Standards
Table A

The COU standards for office space provide for 12 Net Assignable Square Meters (NASMs) per Full Time Equivalent (FTE) Faculty Member and for FTE non-academic staff requiring an office, and 5.0 NASM per FTE graduate student. The standard of 12 square meters is intermediate to the size of large offices built a few decades ago and the size of the more modest offices built in the last two decades. The major interest of COU in recent times has been to account for existing space and consequently the standards reflect the existing size of offices. Any internal standards for space allocation must also reflect such existing structures and at the same time provide a guide for construction and renovation. We propose that the office size approved by the Board of Governors be used as a base for McMaster standards. **III.2) We propose that McMaster use 11.1 NASMs as the factor to be applied in the case of Faculty and Professional-Managerial and Scientific Staff offices and make appropriate adjustments for existing structures. We propose that 9.3 NASMs (100 square feet) be applied in the case of Clerical/Secretarial staff.**

In the case of Graduate student offices, the standard need not reflect existing office sizes since more students can be accommodated in larger offices currently available. For graduate students, McMaster has taken the view in the past that shared office space (possibly in a lab) should be made available where possible for full time graduate students except those in the MBA program. In the case of MBA students, where the research component of the degree is smaller, McMaster has taken the view that only those students with regular teaching assistantships (10 hours per week) should have office accommodation. We note that this policy of providing limited office space to MBA students is not uncommon in the Ontario System and the universities with which we checked (York, Western, Queen's and Toronto) provide equally limited, or more limited space. The Dean of Business has presented to us the view that if all MBAs are not to be provided with shared offices, students in other course-work only graduate programs should be treated similarly (only teaching assistants require offices) and we concur with this view.

We do note, however, that the standard used by COU seems to be on the high side when compared with a faculty office. Three, or possibly four graduate students per standard (11.1 NASM) office seems more appropriate to us. ECS allowed for three PhD students (3.7 NASMs per student) or four MA students (2.8 NASMs per student) in such an office. We think that the larger of these figures is appropriate. **III.3) We recommend that with the exception of course-work only graduate students who do hold a regular Teaching Assistantship, McMaster space standards for full-time graduate students should be calculated on the basis of 3.7 NASMs.**

Office space also needs to be provided for sabbatical visitors, post-doctoral fellows and Professors Emeriti (the latter as outlined in the McMaster "Policy on Relations of Retired Faculty Members with the University"). University practice seems to be shared office space with two persons per office. Accordingly, **III.4) we recommend the McMaster Space Standard include 5.55 NASMs for sabbatical visitors, post-doctoral fellows and Professors Emeriti who remain academically active.**

The COU standards add 30% of all space generated by their space standard to account for other departmental and faculty space needs and we think that this is a reasonable starting point. However, the 30% should be calculated before any allowance is made for existing

faculty offices which are larger than the 11.1 NASM standard. **III.5) We propose that 24% of department office space (before allowance for existing structures) be allowed for overhead space in the department and 6% of the department office space be allowed for Level 2 and Level 1 overhead space needs.**

Research Space Standards Table B

Finding useful standards for research space was the most difficult of the tasks we faced. The task is complicated primarily because of the differences among the disciplines and even among the sub-disciplines. The COU standards deal with this by establishing space factors that vary across disciplines from a high of 45 net assignable square meters per FTE faculty member (in the case of Physics) to a low of 1 net assignable square meter in the case of Humanities departments. There are a number of important points to note about these standards. First, like other COU standards, they are based on average space allocations across the Ontario Universities and are likely to be too low for McMaster. It is worth noting, however, that COU does allot more space for more active researchers who support large research groups. Two graduate students or two other researchers are allotted (by COU standards) space equivalent to that of the faculty member and we think that this is appropriate for graduate students writing theses or carrying out similar research. In addition, graduate students and research staff (with the exception of technicians) are allocated office space as well in the COU standards. It is in those cases where space is needed for unusually large equipment that the standards are likely to be inadequate.

The second point to note is that COU applies the standards at the university level rather than at the level of the department or other sub-unit. If, on average, each university has some departments that have research activities that are more space intensive than average (for the same departments in other Ontario institutions) and some that have less space intensive research, such differences will cancel out. As a consequence, while the COU standards might work quite well at the university level, they may be quite inadequate at the departmental level.

Third, no allowance is made in the COU standards for major installations such as the Reactor nor is there any recognition of special needs such as for high ceilings, ventilation, and the like. Clearly, special treatment is needed in the case of such facilities.

Fourth, as noted in the latest revision by COU, standards have yet to be developed for some areas:

"Another outstanding problem is the application of the standards to performance-oriented disciplines, where creative activity is the equivalent of faculty research in the sciences. Faculty in music and visual arts need space apart from the studios which are inventoried and generated as class labs... a detailed study of music, drama, dance, fine art and related programmes is needed to define space requirements in a manner similar to that done for the sciences." (Building Blocks, Volume 6 (2nd edition) COU, 1986).

These qualifications have led us to the view that no matter what space standards are applied, they must be applied with discretion and judgment. While the COU standards with respect to the differences between the disciplines are somewhat arbitrary, they do reflect the current allocations within Ontario Universities. Any alternative that we suggest would suffer from the same arbitrariness and would not reflect the funding considerations in the way that the COU standards do. Accordingly **III.6 we recommend that the COU standards serve as the initial guide for the allocation of research space at McMaster except in the case of graduate students in course-work only programs who would not generate research space at McMaster.**

We view these standards only as a starting point and **III.7) we recommend that research space needs in excess of the COU standards be justified by the Level 2 and Level**

3 administrative officers at the time Department (or other unit) reviews and Faculty Plans are presented to the BSCAP. Such justifications should indicate why the type of research, or the amount of research undertaken at McMaster in the unit in question requires space in excess of the COU guidelines.

As indicated in Section II of this report, The Office of Analysis and Budgeting would provide tables in a standard format showing allocations and COU standards to serve as the starting point in such exercises.

There are two other considerations about research space that we should note here. First, major research proposals often have space implications associated with them. Senior university officers are typically required to sign such proposals and ensure that the university provide certain resources. We think that the existing procedures should not be supplanted but simply wish to note here that such proposals should be evaluated in line with the McMaster Space Standards discussed herein.

A second issue we wish to comment on is the issue of contract research and the provision of space. Both the Dean of Science and the Dean of Engineering indicated in response to our questioning that except in cases that have unusual academic merit, pure academic research should have priority for space over contract or mission oriented research. At the same time, both Deans indicated to us the importance to their Faculties of such research. We recognize the importance that contract work can play in the research program of academics but would note that the justification of space for contract research should be based on the academic merit of such endeavors.

Because of the complexities of evaluating research space in particular, we considered whether we could recommend a sub-committee of BSCAP to serve as an informed independent body that could make recommendations on space allocation. We have been led to the view that we would be better served if the committee as a whole considered space matters. However, for that to be done effectively, a more structured and formal approach to the evaluation of research space is needed. By adopting standards to serve as a starting point, and by requiring a formal justification of space needs by the Deans, we believe that the BSCAP will be able to do the job effectively.

Classroom Space Standards Table C

The COU standards specify 1.2 NASM per FTE student. Some other standards (e.g. those used by ECS) are expressed in terms of the area per station that should be provided. These two methods of expressing standards may be reconciled as follows:

$$SS = (HW \times RR \times SR \times FS) / HC$$

where,

SS = per station standard

HW = hours per week classes are scheduled (currently 45 at McMaster)

RR = standard for room occupancy (currently 66.0% at McMaster), and

SR = standard for seat occupancy (currently 60.0% at McMaster).

FS = per FTE student standard

HC = hours per week of typical student (currently 15 at McMaster).

In its report ECS used a standard of 1.4 NASM per student station which is, in fact, quite close to the COU standard based on this formula. Using the McMaster room and seat occupancy rates cited above, the COU standard of 1.2 NASM yields a per student station size

of 1.44 NASM which is little different from that used by ECS. Given that there seems to be general agreement on the appropriate allowance, however expressed. **III.8) We recommend the use of the COU standard of 1.2 NASM per FTE student for classrooms.** The usage of centrally controlled classrooms is reported annually in the Registrar's Report. **III.9) We recommend that the practice of reporting classroom use continue and that there be an effort to improve the reporting of usage of other teaching rooms.**

From time to time, the quality of classrooms has been an issue and it continues to be so. Some valuable classrooms have been lost to other purposes. We believe that teaching should take place in attractive and pleasant classrooms and **III.10 we recommend that an attempt should be made to monitor and report on the quality of available classrooms.** We suggest that a three-point scale might be used to rate the quality of classrooms, viz:

- A an excellent and well-equipped classroom
- B an adequate classroom with no major deficiencies
- C a poor classroom with deficiencies (e.g. inadequate acoustic, ventilation, heating or sight lines)

III.11) We recommend that generally classrooms in category A should not be converted to other uses, and classrooms in category B should be converted only if equal or better accommodation can be provided. In the event that it is apparent that there will be a continuing surplus of classrooms, then classroom space might be converted to other uses starting first with category C. **III.12) We recommend that a quality index be assigned to classrooms by the Office of the Registrar in consultation with Deans.**

Another concern that should be considered in the planning of new space or renovations is the location of the space in relation to the students in the course and the professor teaching the course. While it is not always possible, it is desirable that teaching take place close to the usual location of faculty and students. **III.13) We recommend that as part of the annual reporting on classroom utilization, data be included concerning the location and quality of classrooms in relation to the Faculty affiliation of professors and students.**

Each academic department has need for access to seminar/meeting room space for graduate classes, departmental meetings, etc. Some small departments (or Areas in the case of the Faculty of Business) could share such a room if it is conveniently located though for some departments with graduate classes scheduled in such rooms by the department that is unlikely to be satisfactory. **III.14) We recommend that each department that schedules its own graduate classes be allocated one seminar/meeting room which should normally be large enough to accommodate its graduate classes.** In some cases where a large number of graduate classes need to be accommodated a second room may be justified. We believe the onus is on the appropriate department to justify this need for additional space. **III.15) We recommend that departments be allocated additional seminar space if they are able to demonstrate the need. All other classroom space should be under the control of the registrar.**

Class Laboratory Space Standards Table D

Two forms for standards are commonly used and these are explained in the footnotes to Table D. For simplicity we have expressed both in the same way that the COU standards are described; the assumptions made also appear in the footnotes. The standards of the COU formula vary according to the form of the laboratory activity, and such variation is common

in other sets of standards. In the case of laboratories more flexibility in the application of standards is needed than is the case for regular classrooms, because of the specialized nature of the facilities, the preparation time for labs, and other factors which were examined by the Task Force on Engineering Space. It is recognized that in most cases it would not be economically feasible to reconfigure existing facilities. Nevertheless, we believe that a set of standards is desirable to guide planning and space allocation. While the standards used by ECS and the "micro" standards of the University of Saskatchewan were expressed as station sizes whereas those of COU and the "macro" standards of Saskatchewan used weekly student lab contact hours (WSLCH), we were able to reconcile the various sets of standards. Furthermore we established that the standards of COU are comparable to the standards used by the University of Saskatchewan. **III.16) While recognizing the constraints imposed by existing structures we recommend the use of the COU standards for class laboratory space.**

Other Space Standards Table E

The Arts Precinct Task Force received submissions from the Library for the extension of the Mills Memorial Library which used a standard which was more stringent than the new COU standards. **III.17) We recommend that the standards used by the Arts Precinct Task Force in 1986 be the standards for libraries.**

The classification scheme used by COU for space covers other categories than those listed above (e.g. food services, audiovisual facilities, lounge space, etc.) **III.18 We recommend that initially the COU space standards be used as the guide for planning of space not specifically covered in other recommendations.**

IV) Other Recommendations

At present, the monitoring of space use by the university is carried out by two different offices of the administration. On the one hand, the INSITE space inventory system is maintained by the Office of Risk Facilities Administration, while on the other hand, the calculations of the space generated by using the COU standards are done by the Office of Analysis and Budgeting. The separation appears to be a result of past history and evolution rather than a deliberate plan. To have effective space planning on this campus requires the integration of these activities into a single unit. Because that unit must have a research staff and a capability of providing information for planning on a continuing basis, the logical home seems to be the Office of Analysis and Budgeting. Accordingly we have referred to it as being the unit responsible for the provision of information on space use in this report. Therefore, **IV.1) we recommend that the evaluation of space using McMaster (and COU) Space Standards, be centralized in the Office of Analysis and Budgeting and that office should be involved in the design of the space inventory system at McMaster University.**

We have listed in Table 1 the current users of space in the university (excluding Health Sciences) together with the university officers responsible for its control. In order to resolve any ambiguities that may exist in the current situation, assuming that our other recommendations are accepted, **IV.2) we recommend that the Office of Analysis and Budgeting prepare an inventory of space assigned to each of the Level three units in conjunction with the administrative officers involved. Any conflicts should be resolved according to the principles of responsibility outlined in Part II above.** An exhaustive inventory of space will then be available for use in the departmental and other reviews that are

anticipated in the earlier recommendations.

V) Summary of Recommendations

- II.1 **All space is ultimately the property of McMaster University**
- II.2 **It is the responsibility of the Faculty Dean to re-allocate space within the Faculty as demonstrated needs of departments and other units change.**
- II.3 **Re-assignment of space or assignment of new space to a Faculty is the responsibility of the Vice-President Academic.**
- II.4 **All space used by a department, institute, or administrative unit should be reviewed on a regular basis.**
- II.5 **The Dean should make recommendations about the provision of space both for present and future needs of the department or unit as part of his recommendations to the BSCAP at the time the external review comes forward.**
- II.6 **Faculty space, that is to say, the total space assigned to the Faculty Dean should also be reviewed on a regular basis.**
- II.7 **The Vice-President should make recommendations about the provision of space both for present and future needs for the Faculty as part of his recommendations to the BSCAP at the time of the five-year review.**
- II.8 **For non-academic units, both those reporting through the Academic and Administrative Vice-Presidents, similar timetables and procedures for space reviews (both at Level 2 and Level 3) should be established and followed.**
- II.9 **We recommend that the service of providing space inventories and estimates of space justified by McMaster Space Standards should be provided by a single support unit rather than having it divided between the offices of Risk and Facilities Administration and Analysis and Budgeting as it is now.**
- III.1 **We recommend using the Council of Ontario Universities (COU) standards with some modifications as an integral part of space management and space planning at McMaster.**
- III.2 **We propose that McMaster use 11.1 NASMs as the factor to be applied in the case of Faculty and Professional-Managerial and Scientific Staff offices and make appropriate adjustments for existing structures. We propose that 9.3 NASMs (100 square feet) be applied in the case of Clerical/Secretarial staff.**
- III.3 **We recommend that with the exception of course-work only graduate students who do not hold a regular Teaching Assistantship, McMaster space standards for full-time graduate students should be calculated on the basis of 3.7 NASMs.**
- III.4 **We recommend the McMaster Space Standard include 5.55 NASMs for sabbatical visitors, post-doctoral fellows and Professors Emeriti who remain academically active.**
- III.5 **We propose that 24% of department office space (before allowance for existing structures) be allowed for overhead space in the department and 6% of the department office space be allowed for Level 2 and Level 1 overhead space needs.**

- III.6 We recommend that the COU standards serve as the initial guide for the allocation of research space at McMaster except in the case of graduate students in course work only programs who would not generate research space at McMaster.
- III.7 We recommend that research space needs in excess of the COU standards be justified by the Level 2 and Level 3 administrative officers at the time Department (or other unit) reviews and Faculty Plans are presented to the BSCAP.
- III.8 We recommend the use of the COU standard of 1.2 NASM per FTE student for classrooms.
- III.9 We recommend that the practice of reporting classroom use continue and that there be an effort to improve the reporting of usage of other teaching rooms.
- III.10 We recommend that an attempt should be made to monitor and report on the quality of available classrooms.
- III.11 We recommend that generally classrooms in category A should not be converted to other uses, and classrooms in category B should be converted only if equal or better accommodation can be provided.
- III.12 We recommend that a quality index be assigned to classrooms by the Office of the Registrar in consultation with Deans.
- III.13 We recommend that as part of the annual reporting on classroom utilization, data be included concerning the location and quality of classrooms in relation to the Faculty affiliation of professors and students.
- III.14 We recommend that each department that schedules its own graduate classes be allocated one seminar/meeting room which should normally be large enough to accommodate its graduate classes.
- III.15 We recommend that departments be allocated additional seminar space if they are able to demonstrate the need. All other classroom space should be under the control of the registrar.
- III.16 While recognizing the constraints imposed by existing structures we recommend the use of the COU standards for class laboratory space.
- III.17 We recommend that the standards used by the Arts Precinct Task Force in 1986 be the standards for libraries.
- III.18 We recommend that initially the COU space standards be used as the guide for planning of space not specifically covered in other recommendations.
- IV.1 We recommend that the evaluation of space using McMaster (and COU) Space Standards, be centralized in the Office of Analysis and Budgeting and that office should be involved in the design of the space inventory system at McMaster University.
- IV.2 We recommend that the Office of Analysis and Budgeting prepare an inventory of space assigned to each of the Level three units in conjunction with the administrative officers involved. Any conflicts should be resolved according to

the principles of responsibility outlined in Part II above.

TABLE C: Classroom Space Standards

Old COU Formula: 1.208 NASM x Total FTE students, both undergraduate and graduate.

New COU Formula: 1.2 NASM x Total FTE students, both undergraduate and graduate.

University of Sask:

The standard for room and seat utilization rates are 66.7% and 60% respectively. The area per station permitted varies with room size. For example, 1.4m²/station is allowed for a 100 seat room, whereas 2.5m² is allowed in a room that seats 10. The 100 seat room can be converted to a COU-type standard as follows. The room and seat standards above mean that a station will be occupied 40% of a 45-hour week, i.e., for 18 hours. If a full student load is 15 hours, each station will provide space for 1.2 students. A station size of 1.4m² converts, therefore, to a per student allowance of 1.17m².

Recommended: 1.2 NASM x Total FTE students, both undergraduate and graduate.

TABLE E: Other Space Standards

1.	<u>Athletics</u>	0.9 NASM per FTE student
2.	<u>Maintenance Shops</u>	0.015 x (total NASM inventory)
3.	<u>Student and Central Services</u> (benchmark space factors ranges)	2.0 NASM per FTE student
	Food Service	0.5 - 0.7 NASM per FTE student
	Merchandising and Bookstore	0.1 - 0.2 NASM per FTE student
	Audio Visual	0.05 - 0.1 NASM per FTE student
	Computer, Shops and Stores	0.1 - 0.3 NASM per FTE student
	Health Service	0.03 - 0.05 NASM per FTE student
	Common Use and Student Activity	0.5 - 0.7 NASM per FTE student
	Assembly and Exhibition	0.15 - 0.40 NASM per FTE student

4. Library
(extracted from Arts Precinct Task Force, 1986)

(i) COLLECTIONS: These statistics assume that all of Research Collections are housed in compact shelving throughout the period. Additionally, 20% of the general collections are housed in compact shelving until the year 2000, and beyond that date, 30%. The resulting figures are calculated at a 5% reduction from the following COU collection space formulae.

0.007 NASM for 0-300,000 v.e.

0.006 NASM for 300,000-600,000 v.e.

0.004 NASM for 10% of collection (com.stor.fact.)

0.005 NASM for all other volumes.

(ii) SEATING STUDY:

0.45 NASM per FTE undergraduate

0.63 NASM per FTE graduate student

(iii) SERVICE:

Service space is calculated by COU formula to 1990 and then kept stable.

1986 COU SERVICE STANDARDS:

25% of total stack and study space generated by COU formulae.

Service space consists of service counters, catalogue areas, facilities e.g. photocopying, meeting rooms, library equipment space and staff work areas.

Table A: Academic Office Space Standards

(The Figures below represent Net Assignable Square Meters (NASM) per input measure, unless stated otherwise.)

	Old COU	New COU	ECS	Task Force			Board Plans	Univ. of Sask.	Recommended
				Business	Hum; S.S.	Sci. Eng.			
Faculty Offices									
Dean	Considered as administrative staff 19.5 per FTE faculty This measure includes provision for support space.	12.0 ^a	27.9 ^a	26.8	11.3	n.a.	c	19.51	11.1
Associate Dean		12.0 ^a	22.3 ^a	26.8		16.7	c	14.86	11.1
Chairman		12.0 ^a	22.3 ^a	-		n.a.	c	14.86	11.1
Full-time Faculty		12.0	11.1	13.4		11.1	11.1	11.15	11.1
Part-time Faculty		12.0/FTE	5.6	6.7		5.6	c	11.15/	11.1/FTE
Sabbatical Visitors		faculty	5.6	13.4		n.a.	c	FTE	5.55
Other Visitors		12.0	4.2	6.7		n.a.	c	faculty	5.55
PDFs		12.0	4.2	-		5.6	c		5.55
Prof. Emeriti			5.6	n.a.		n.a.	c		5.55 ^d
							11.5		
Non-Academic Staff									
Student Advisor	See above.	12.0	11.1	13.4		n.a.	c		n.a.
Prog. Assistant		12.0	11.1	8.9		n.a.	c		n.a.
Instruction Asst.		12.0	11.1	-		n.a.	c		n.a.
Adm. Coord. - Dean		12.0	11.1	8.9		11.1	c		n.a.
- Dept		12.0	11.1	8.9		11.1	c		n.a.
Secretary - Dean		12.0	11.1	8.9		11.1	c		n.a.
- Chair		12.0	9.3	-		11.1	c		n.a.
- Dept.		12.0	4.6	8.9		11.1	c		n.a.
Research Asst.		12.0	11.1	7.4		5.6	c		n.a.
Prof/Management		n.a.	n.a.	n.a.		n.a.	n.a.		11.1
Clerical/Sec.		n.a.	n.a.	n.a.		n.a.	n.a.		9.3
Office Support									
Conference - Faculty - Dept. Wrd. Proc./Comp. - Faculty - Dept.	See Above.	Part of the 30% in the next category	46.5 per Dept. ^b 46.5 per Fac. ^b 22.3 per Dept. ^b				-	2.32 per FTE faculty	Part of the 30% in the next category.

/continued

Table A Continued

Table A: Academic Office Space Standards

(The Figures below represent Net Assignable Square Meters (NASM) per input measure, unless stated otherwise.)

	Old COU	New COU	ECS	Task Force			Univ. of Sask.	Recommended
				Business	Hum.;S.S	Sci.;Eng		
Add'l Support Space								
Deans Departments	See Above	30% of the total of all dept. space generated	20% of the Fac. Office total above. 10% of the Dept. total above.	30% as per COU			11.6 NASM minimum	30% ^e
Graduate Student/TAs								
FTE Masters FTE Doctorate	3.7 3.7	5.0 5.0	2.8 3.7	2.7(TAs) 4.5	2.8 2.8	4.6 4.6	4.65 4.65	3.7 ^f 3.7

^a The extra space for Deans, Associate Deans, and Chairman is provided under the COU formula by the 30% overhead allowance, whereas ECS allocated it directly.

^b These unit measures are typical of those which appear in the ECS report for all Faculties or departments.

^c The only place where the Board's plans represented a change from the Task Forces, specifically on standards, was the use of 11.1 for faculty offices.

^d See "Policy on Relations of Retired Faculty Members with the University" page 2 regarding space assignments.

^e The 30% of the total space generated by an academic department is to be allocated as follows: 80% retained by department, 20% for support space for the Faculty...

^f See recommendation III.3.

Table B: Research Space Standards

1. The office space generated by research staff appears in Table A.
2. A description of the input measures is listed at the end of this table.
3. The Figures below represent Net Assignable Square Meters (NASM) per input measure, unless stated otherwise.
4. No standards were defined by ECS and the Task Forces, and so none is given.

	Old COU	New COU	Univ. of Sask.	Recommended
Business	0	1.0	0	1.0
Engineering				
Chemical	32.5	30.0	19.51	30.0
Civil	32.5	30.0	19.51	30.0
Elec. & Comp.	32.5	30.0	19.51	30.0
Eng. Physics	32.5	30.0	19.51	30.0
Mechanical	32.5	30.0	19.51	30.0
Met. & Mat. Sci.	32.5	30.0	19.51	30.0
Humanities				
Art & Art History	0	1.0	19.51	1.0
Classics	0	1.0	0	1.0
Dramatic Arts	0	1.0	0	1.0
English	0	1.0	0	1.0
German	0	1.0	0	1.0
History	0	1.0	0	1.0
Music	0	1.0	19.51	1.0
Philosophy	0	1.0	0	1.0
Romance Languages	0	1.0	0	1.0
Slavic Studies	0	1.0	0	1.0
Science				
Biology	46.5	45.0	19.51	45.0
Chemistry	46.8	45.0	19.51	45.0
Computer Science	0	10.0	19.51	10.0
Geography	7.0	10.0	19.51	10.0
Geology	46.8	45.0	19.51	45.0
Mathematics	0	1.0	0	1.0
Physics	46.8	45.0	19.51	45.0
Psychology	18.6	20.0	19.51	20.0

/Continued

Table B continued

Table B: Research Space Standards

1. The office space generated by research staff appears in Table A.
2. A description of the input measures is listed at the end of this table.
3. The Figures below represent Net Assignable Square Meters (NASM) per input measure, unless stated otherwise.
4. No standards were defined by ECS and the Task Forces, and so none is given.

	Old COU	New COU	Univ. of Sask	Reocmmended
Social Sciences				
Anthropology	7.0	10.0	19.51	10.0
Economics	0	1.0	0	1.0
Physical Education	7.0	10.0	19.51	10.0
Political Science	0	1.0	0	1.0
Religious Studies	0	1.0	0	1.0
Social Work	0	1.0	0	1.0
Sociology	0	1.0	0	1.0
Labour Studies Programme	0	1.0	0	1.0
Arts & Science Programme	0	1.0	n.a.	1.0

DESCRIPTION OF INPUT MEASURES:

- Old COU: ___ NASM are allocated per FTE faculty or every 2 FTE graduate students.
- New COU: ___ NASM are allocated per FTE faculty, every 2 PDFs with salary above floor of Assitance Professor range, or every 2 FTE graduate students.
- Univ of Sask.: ___ NASM are allocated per FTE faculty.

Recommended: The New COU method is to be used as described in the recommendations and supporting text.

Table D: Class Laboratories Space Standards

(The Figures below represent Net Assignable Square Meters (NASM) per weekly student lab contact hour).
A description of the input measures is listed at the end of this table.

	Old COU	New COU	ECS	Univ. of Sask	Recommended
Business	0.28	0.3		.483	0.3
Engineering					
Chemical	0.79	0.8	.39 - .44	.483	0.8
Civil	0.79	0.8	.39 - .44	.483	0.8
Elec. & Comp.	0.79	0.6	.39 - .77	.483	0.6
Eng. Physics	0.79	0.6	.48	.483	0.6
Mechanical	0.79	0.8	.39 - .80	.483	0.8
Met. & Mat. Sci.	0.60	0.8	.48	.483	0.8
Humanities					
Art & Art History	0.60	0.6	.48 - .93	.483	0.6
Classics	0.28	0.3		.483	0.3
Dramatic Arts	0.60	0.6		.483	0.6
English	0.28	0.3		.483	0.3
German	0.28	0.3		.483	0.3
History	0.28	0.3		.483	0.3
Music	0.60	0.6		.483	0.6
Philosophy	0.28	0.3		.483	0.3
Romance Languages	0.28	0.3		.483	0.3
Slavic Studies	0.28	0.3		.483	0.3
Science					
Biology	0.46	0.6	.31 - .39	.483	0.6
Chemistry	0.60	0.6	.31 - .39	.483	0.6
Computer Science	0.28	0.3	.30 - .34	.483	0.3
Geography	0.46	0.5	.19 - .31	.483	0.5
Geology	0.60	0.6	.22 - .39	.483	0.6
Mathematics	0.28	0.3		.483	0.3
Physics	0.60	0.6	.31 - .46	.483	0.6
Psychology	0.46	0.5		.483	0.5

/ Continued

Table D Continued

Table D: Class Laboratories Space Standards

(The Figures below represent Net Assignable Square Meters (NASM) per weekly student lab contact hour).
A description of the input measures is listed at the end of this table.

	Old COU	New COU	ECS	Univ. of Sask	Recommended
Social Sciences					
Anthropology	0.46	0.5		.483	0.5
Economics	0.28	0.3		.483	0.3
Physical Education	0.28	0.5		.483	0.5
Political Science	0.28	0.3		.483	0.3
Religious Studies	0.28	0.3		.483	0.3
Social Work	0.28	0.3		.483	0.3
Sociology	0.28	0.3		.483	0.3
Labour Studies Prog.	0.28	0.3		.483	0.3
Arts & Science Programme	0.28	0.3		.483	0.3

DESCRIPTION OF INPUT MEASURES

Old COU and New COU: ___NASM are allocated per Weekly Student Laboratory Contact Hour (WSLCH).

ECS: ECS expressed their standards as an allocation per student station. These have been converted to be comparable with those of COU as follows:
(i) Engineering and Humanities - the labs will be used 12 hours per week at 80% capacity (ii) Science - the labs will be used 15 hours per week at 80% capacity.

Univ. of Sask.: A "macro" standard of .483 NASM per WSLCH is used. In addition "micro" standards giving station sizes by discipline are specified; these assume usage rates of 44% and 72% for rooms and stations respectively. The two standards may be related using the equation $45 \times RR \times SR \times LH = SS$ (where RR = standards for room occupancy; SR = standards for station occupancy; LH = per weekly student lab contact hour standard; SS = per station standard; and a 45-hour teaching week is used.)

Table A: Academic Office Space Standards

(The Figures below represent Net Assignable Square Meters (NASM) per input measure, unless stated otherwise.)

	Old COU	New COU	ECS	Task Force			Board Plans	Univ. of Sask.	Recommended
				Business	Hum; S.S.	Sci. Eng.			
Faculty Offices									
Dean	Considered as administrative staff 19.5 per FTE faculty This measure includes provision for support space.	12.0 ^a	27.9 ^a	26.8	11.3	n.a.	c	19.51	11.1
Associate Dean		12.0 ^a	22.3 ^a	26.8		16.7	c	14.86	11.1
Chairman		12.0 ^a	22.3 ^a	-		n.a.	c	14.86	11.1
Full-time Faculty		12.0	11.1	13.4		11.1	11.1	11.15	11.1
Part-time Faculty		12.0/FTE	5.6	6.7		5.6	c	11.15/	11.1/FTE
Sabbatical Visitors		faculty	5.6	13.4		n.a.	c	FTE	5.55
Other Visitors		12.0	4.2	6.7		n.a.	c	faculty	5.55
PDFs		12.0	4.2	-		5.6	c		5.55
Prof. Emeriti			5.6	n.a.		n.a.	c		5.55 ^d
							11.5		
Non-Academic Staff									
Student Advisor	See above.	12.0	11.1	13.4		n.a.	c		n.a.
Prog. Assistant		12.0	11.1	8.9		n.a.	c		n.a.
Instruction Asst.		12.0	11.1	-		n.a.	c		n.a.
Adm. Coord. - Dean		12.0	11.1	8.9		11.1	c		n.a.
- Dept		12.0	11.1	8.9		11.1	c		n.a.
Secretary - Dean		12.0	11.1	8.9		11.1	c		n.a.
- Chair		12.0	9.3	-		11.1	c		n.a.
- Dept.		12.0	4.6	8.9		11.1	c		n.a.
Research Asst.		12.0	11.1	7.4		5.6	c		n.a.
Prof/Management		n.a.	n.a.	n.a.		n.a.	n.a.		11.1
Clerical/Sec.		n.a.	n.a.	n.a.		n.a.	n.a.		9.3
Office Support									
Conference - Faculty - Dept. Wrd. Proc./Comp. - Faculty - Dept.	See Above.	Part of the 30% in the next category	46.5 per Dept. ^b 46.5 per Fac. ^b 22.3 per Dept. ^b				-	2.32 per FTE faculty	Part of the 30% in the next category.

/Continued

Table A: Academic Office Space Standards

(The Figures below represent Net Assignable Square Meters (NASM) per input measure, unless stated otherwise.)

	Old COU	New COU	ECS	Task Force			Univ. of Sask.	Recommended
				Business	Hum.;S.S	Sci.;Eng		
Add'l Support Space								
Deans Departments	See Above	30% of the total of all dept. space generated	20% of the Fac. Office total above. 10% of the Dept. total above.	30% as per COU			11.6 NASM minimum	30% ^e
Graduate Student/TAs								
FTE Masters FTE Doctorate	3.7 3.7	5.0 5.0	2.8 3.7	2.7(TAs) 4.5	2.8 2.8	4.6 4.6	4.65 4.65	3.7 ^f 3.7

- ^a The extra space for Deans, Associate Deans, and Chairman is provided under the COU formula by the 30% overhead allowance, whereas ECS allocated it directly.
- ^b These unit measures are typical of those which appear in the ECS report for all Faculties or departments.
- ^c The only place where the Board's plans represented a change from the Task Forces, specifically on standards, was the use of 11.1 for faculty offices.
- ^d See "Policy on Relations of Retired Faculty Members with the University" page 2 regarding space assignments.
- ^e The 30% of the total space generated by an academic department is to be allocated as follows: 80% retained by department, 20% for support space for the Faculty...
- ^f See recommendation III.3.

Table B: Research Space Standards

1. The office space generated by research staff appears in Table A.
2. A description of the input measures is listed at the end of this table.
3. The Figures below represent Net Assignable Square Meters (NASM) per input measure, unless stated otherwise.
4. No standards were defined by ECS and the Task Forces, and so none is given.

	Old COU	New COU	Univ. of Sask.	Recommended
Business	0	1.0	0	1.0
Engineering				
Chemical	32.5	30.0	19.51	30.0
Civil	32.5	30.0	19.51	30.0
Elec. & Comp.	32.5	30.0	19.51	30.0
Eng. Physics	32.5	30.0	19.51	30.0
Mechanical	32.5	30.0	19.51	30.0
Met. & Mat. Sci.	32.5	30.0	19.51	30.0
Humanities				
Art & Art History	0	1.0	19.51	1.0
Classics	0	1.0	0	1.0
Dramatic Arts	0	1.0	0	1.0
English	0	1.0	0	1.0
German	0	1.0	0	1.0
History	0	1.0	0	1.0
Music	0	1.0	19.51	1.0
Philosophy	0	1.0	0	1.0
Romance Languages	0	1.0	0	1.0
Slavic Studies	0	1.0	0	1.0
Science				
Biology	46.5	45.0	19.51	45.0
Chemistry	46.8	45.0	19.51	45.0
Computer Science	0	10.0	19.51	10.0
Geography	7.0	10.0	19.51	10.0
Geology	46.8	45.0	19.51	45.0
Mathematics	0	1.0	0	1.0
Physics	46.8	45.0	19.51	45.0
Psychology	18.6	20.0	19.51	20.0

/Continued

Table B: Research Space Standards

1. The office space generated by research staff appears in Table A.
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4. No standards were defined by ECS and the Task Forces, and so none is given.

	Old COU	New COU	Univ. of Sask	Reocmmended
Social Sciences				
Anthropology	7.0	10.0	19.51	10.0
Economics	0	1.0	0	1.0
Physical Education	7.0	10.0	19.51	10.0
Political Science	0	1.0	0	1.0
Religious Studies	0	1.0	0	1.0
Social Work	0	1.0	0	1.0
Sociology	0	1.0	0	1.0
Labour Studies Programme	0	1.0	0	1.0
Arts & Science Programme	0	1.0	n.a.	1.0

DESCRIPTION OF INPUT MEASURES:

- Old COU: ___ NASM are allocated per FTE faculty or every 2 FTE graduate students.
- New COU: ___ NASM are allocated per FTE faculty, every 2 PDFs with salary above floor of Assitance Professor range, or every 2 FTE graduate students.
- Univ of Sask.: ___ NASM are allocated per FTE faculty.

Recommended: The New COU method is to be used as described in the recommendations and supporting text.

Table D: Class Laboratories Space Standards

(The Figures below represent Net Assignable Square Meters (NASM) per weekly student lab contact hour).
A description of the input measures is listed at the end of this table.

	Old COU	New COU	ECS	Univ. of Sask	Recommended
Business	0.28	0.3		.483	0.3
Engineering					
Chemical	0.79	0.8	.39 - .44	.483	0.8
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Mechanical	0.79	0.8	.39 - .80	.483	0.8
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Humanities					
Art & Art History	0.60	0.6	.48 - .93	.483	0.6
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Slavic Studies	0.28	0.3		.483	0.3
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Biology	0.46	0.6	.31 - .39	.483	0.6
Chemistry	0.60	0.6	.31 - .39	.483	0.6
Computer Science	0.28	0.3	.30 - .34	.483	0.3
Geography	0.46	0.5	.19 - .31	.483	0.5
Geology	0.60	0.6	.22 - .39	.483	0.6
Mathematics	0.28	0.3		.483	0.3
Physics	0.60	0.6	.31 - .46	.483	0.6
Psychology	0.46	0.5		.483	0.5

/ Continued

Table D: Class Laboratories Space Standards

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Political Science	0.28	0.3		.483	0.3
Religious Studies	0.28	0.3		.483	0.3
Social Work	0.28	0.3		.483	0.3
Sociology	0.28	0.3		.483	0.3
Labour Studies Prog.	0.28	0.3		.483	0.3
Arts & Science Programme	0.28	0.3		.483	0.3

DESCRIPTION OF INPUT MEASURES

Old COU and New COU: ___NASM are allocated per Weekly Student Laboratory Contact Hour (WSLCH).

ECS: ECS expressed their standards as an allocation per student station. These have been converted to be comparable with those of COU as follows:
(i) Engineering and Humanities - the labs will be used 12 hours per week at 80% capacity (ii) Science - the labs will be used 15 hours per week at 80% capacity.

Univ. of Sask.: A "macro" standard of .483 NASM per WSLCH is used. In addition "micro" standards giving station sizes by discipline are specified; these assume usage rates of 44% and 72% for rooms and stations respectively. The two standards may be related using the equation $45 \times RR \times SR \times LH = SS$ (where RR = standards for room occupancy; SR = standards for station occupancy; LH = per weekly student lab contact hour standard; SS = per station standard; and a 45-hour teaching week is used.)

Table A: Academic Office Space Standards

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				Business	Hum; S.S.	Sci. Eng.				
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Associate Dean		12.0 ^a	22.3 ^a	26.8		16.7	c	14.86	11.1	
Chairman		12.0 ^a	22.3 ^a	-		n.a.	c	14.86	11.1	
Full-time Faculty		12.0	11.1	13.4		11.1	11.1	11.15	11.1	
Part-time Faculty		12.0/FTE	12.0/FTE	5.6		6.7	5.6	11.15/	11.1/FTE	
Sabbatical Visitors		faculty	faculty	5.6		13.4	n.a.	c	FTE	5.55
Other Visitors		12.0	4.2	4.2		6.7	n.a.	c	faculty	5.55
PDFs		12.0	4.2	4.2		-	5.6	c		5.55
Prof. Emeriti				5.6		n.a.	n.a.	c	11.5	5.55 ^d
Non-Academic Staff										
Student Advisor	See above.	12.0	11.1	13.4		n.a.	c		n.a.	
Prog. Assistant		12.0	11.1	8.9		n.a.	c		n.a.	
Instruction Asst.		12.0	11.1	-		n.a.	c		n.a.	
Adm. Coord. - Dean		12.0	11.1	8.9		11.1	c		n.a.	
- Dept		12.0	11.1	8.9		11.1	c		n.a.	
Secretary - Dean		12.0	11.1	8.9		11.1	c		n.a.	
- Chair		12.0	9.3	-		11.1	c		n.a.	
- Dept.		12.0	4.6	8.9		11.1	c		n.a.	
Research Asst.		12.0	11.1	7.4		5.6	c		n.a.	
Prof/Management		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		11.1
Clerical/Sec.		n.a.	n.a.	n.a.		n.a.	n.a.	n.a.		9.3
Office Support										
Conference - Faculty - Dept. Wrd. Proc./Comp. - Faculty - Dept.	See Above.	Part of the 30% in the next category	46.5 per Dept. ^b 46.5 per Fac. ^b 22.3 per Dept. ^b				-	2.32 per FTE faculty	Part of the 30% in the next category.	

/Continued

Table A: Academic Office Space Standards

(The Figures below represent Net Assignable Square Meters (NASM) per input measure, unless stated otherwise.)

	Old COU	New COU	ECS	Task Force			Univ. of Sask.	Recommended
				Business	Hum.;S.S	Sci.;Eng		
Add'l Support Space								
Deans Departments	See Above	30% of the total of all dept. space generated	20% of the Fac. Office total above. 10% of the Dept. total above.	30% as per COU			11.6 NASM minimum	30% ^e
Graduate Student/TAs								
FTE Masters FTE Doctorate	3.7 3.7	5.0 5.0	2.8 3.7	2.7(TAs) 4.5	2.8 2.8	4.6 4.6	4.65 4.65	3.7 ^f 3.7

- ^a The extra space for Deans, Associate Deans, and Chairman is provided under the COU formula by the 30% overhead allowance, whereas ECS allocated it directly.
- ^b These unit measures are typical of those which appear in the ECS report for all Faculties or departments.
- ^c The only place where the Board's plans represented a change from the Task Forces, specifically on standards, was the use of 11.1 for faculty offices.
- ^d See "Policy on Relations of Retired Faculty Members with the University" page 2 regarding space assignments.
- ^e The 30% of the total space generated by an academic department is to be allocated as follows: 80% retained by department, 20% for support space for the Faculty...
- ^f See recommendation III.3.

Table B: Research Space Standards

1. The office space generated by research staff appears in Table A.
2. A description of the input measures is listed at the end of this table.
3. The Figures below represent Net Assignable Square Meters (NASM) per input measure, unless stated otherwise.
4. No standards were defined by ECS and the Task Forces, and so none is given.

	Old COU	New COU	Univ. of Sask.	Recommended
Business	0	1.0	0	1.0
Engineering				
Chemical	32.5	30.0	19.51	30.0
Civil	32.5	30.0	19.51	30.0
Elec. & Comp.	32.5	30.0	19.51	30.0
Eng. Physics	32.5	30.0	19.51	30.0
Mechanical	32.5	30.0	19.51	30.0
Met. & Mat. Sci.	32.5	30.0	19.51	30.0
Humanities				
Art & Art History	0	1.0	19.51	1.0
Classics	0	1.0	0	1.0
Dramatic Arts	0	1.0	0	1.0
English	0	1.0	0	1.0
German	0	1.0	0	1.0
History	0	1.0	0	1.0
Music	0	1.0	19.51	1.0
Philosophy	0	1.0	0	1.0
Romance Languages	0	1.0	0	1.0
Slavic Studies	0	1.0	0	1.0
Science				
Biology	46.5	45.0	19.51	45.0
Chemistry	46.8	45.0	19.51	45.0
Computer Science	0	10.0	19.51	10.0
Geography	7.0	10.0	19.51	10.0
Geology	46.8	45.0	19.51	45.0
Mathematics	0	1.0	0	1.0
Physics	46.8	45.0	19.51	45.0
Psychology	18.6	20.0	19.51	20.0

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Table B: Research Space Standards

1. The office space generated by research staff appears in Table A.
2. A description of the input measures is listed at the end of this table.
3. The Figures below represent Net Assignable Square Meters (NASM) per input measure, unless stated otherwise.
4. No standards were defined by ECS and the Task Forces, and so none is given.

	Old COU	New COU	Univ. of Sask	Reocmmended
Social Sciences				
Anthropology	7.0	10.0	19.51	10.0
Economics	0	1.0	0	1.0
Physical Education	7.0	10.0	19.51	10.0
Political Science	0	1.0	0	1.0
Religious Studies	0	1.0	0	1.0
Social Work	0	1.0	0	1.0
Sociology	0	1.0	0	1.0
Labour Studies Programme	0	1.0	0	1.0
Arts & Science Programme	0	1.0	n.a.	1.0

DESCRIPTION OF INPUT MEASURES:

- Old COU: ___ NASM are allocated per FTE faculty or every 2 FTE graduate students.
- New COU: ___ NASM are allocated per FTE faculty, every 2 PDFs with salary above floor of Assitance Professor range, or every 2 FTE graduate students.
- Univ of Sask.: ___ NASM are allocated per FTE faculty.

Recommended: The New COU method is to be used as described in the recommendations and supporting text.

Table D: Class Laboratories Space Standards

(The Figures below represent Net Assignable Square Meters (NASM) per weekly student lab contact hour).
A description of the input measures is listed at the end of this table.

	Old COU	New COU	ECS	Univ. of Sask	Recommended
Business	0.28	0.3		.483	0.3
Engineering					
Chemical	0.79	0.8	.39 - .44	.483	0.8
Civil	0.79	0.8	.39 - .44	.483	0.8
Elec. & Comp.	0.79	0.6	.39 - .77	.483	0.6
Eng. Physics	0.79	0.6	.48	.483	0.6
Mechanical	0.79	0.8	.39 - .80	.483	0.8
Met. & Mat. Sci.	0.60	0.8	.48	.483	0.8
Humanities					
Art & Art History	0.60	0.6	.48 - .93	.483	0.6
Classics	0.28	0.3		.483	0.3
Dramatic Arts	0.60	0.6		.483	0.6
English	0.28	0.3		.483	0.3
German	0.28	0.3		.483	0.3
History	0.28	0.3		.483	0.3
Music	0.60	0.6		.483	0.6
Philosophy	0.28	0.3		.483	0.3
Romance Languages	0.28	0.3		.483	0.3
Slavic Studies	0.28	0.3		.483	0.3
Science					
Biology	0.46	0.6	.31 - .39	.483	0.6
Chemistry	0.60	0.6	.31 - .39	.483	0.6
Computer Science	0.28	0.3	.30 - .34	.483	0.3
Geography	0.46	0.5	.19 - .31	.483	0.5
Geology	0.60	0.6	.22 - .39	.483	0.6
Mathematics	0.28	0.3		.483	0.3
Physics	0.60	0.6	.31 - .46	.483	0.6
Psychology	0.46	0.5		.483	0.5

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Table D: Class Laboratories Space Standards

(The Figures below represent Net Assignable Square Meters (NASM) per weekly student lab contact hour).
A description of the input measures is listed at the end of this table.

	Old COU	New COU	ECS	Univ. of Sask	Recommended
Social Sciences					
Anthropology	0.46	0.5		.483	0.5
Economics	0.28	0.3		.483	0.3
Physical Education	0.28	0.5		.483	0.5
Political Science	0.28	0.3		.483	0.3
Religious Studies	0.28	0.3		.483	0.3
Social Work	0.28	0.3		.483	0.3
Sociology	0.28	0.3		.483	0.3
Labour Studies Prog.	0.28	0.3		.483	0.3
Arts & Science Programme	0.28	0.3		.483	0.3

DESCRIPTION OF INPUT MEASURES

Old COU and New COU: ___NASM are allocated per Weekly Student Laboratory Contact Hour (WSLCH).

ECS: ECS expressed their standards as an allocation per student station. These have been converted to be comparable with those of COU as follows:
(i) Engineering and Humanities - the labs will be used 12 hours per week at 80% capacity (ii) Science - the labs will be used 15 hours per week at 80% capacity.

Univ. of Sask.: A "macro" standard of .483 NASM per WSLCH is used. In addition "micro" standards giving station sizes by discipline are specified; these assume usage rates of 44% and 72% for rooms and stations respectively. The two standards may be related using the equation $45 \times RR \times SR \times LH = SS$ (where RR = standards for room occupancy; SR = standards for station occupancy; LH = per weekly student lab contact hour standard; SS = per station standard; and a 45-hour teaching week is used.)

