

# 2016-17 Inventory of Physical Facilities of Ontario Universities

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Committee on Space Standards & Reporting

June 2018





# Council of Ontario Universities’ Triennial Inventory of Physical Facilities of Ontario Universities: 2016-17

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## 1. Introduction & Context

Ontario's universities continue to expand and transform space through capital investments, in order to respond to changing needs of students, institutions and the economy.

Institutions are building and/or renovating spaces that enhance the student experience. These include new and different types of study space and classrooms, innovative learning environments, and improvements to research labs and facilities.

Recent institutional and governmental investments in capital renewal, modernization and expansion have supported transformation of the learning and research environments.

For example, in 2016, the federal government announced the Post-Secondary Institutions Strategic Investment Fund (SIF). The purpose of SIF was to enhance and modernize research facilities on Canadian campuses and to improve their environmental sustainability. Both governments provided more than \$950M to college and university campuses, in addition to funds provided by institutions and private donors.

The Ministry of Advanced Education and Skills Development (MAESD) has committed \$315M from 2016-17 to 2020-21 for Major Capacity Expansion to support new enrolment in high-growth regions. \$127.5M will support a new York-Seneca campus in Markham to accommodate 4,000 students in the initial phase. \$180M will support new capital investments in Brampton (Ryerson-Sheridan), for up to 1,000 students, and Milton (Wilfrid Laurier-Conestoga), for more than 2,000 students.

However, there continue to be pressures to modernize existing spaces and transform them into flexible, technologically equipped learning environments, address deferred maintenance and building repair issues and ensure safe learning and research space.

Universities will also be challenged to reduce greenhouse gas (GHG) emissions to meet Ontario's targets under the Climate Change Action Plan. Reductions are primarily through the renovation of aging and energy-inefficient buildings and by building new and more costly "green" buildings that are low-carbon emitters. MAESD provided \$300M in a combination of grants and loans to universities in 2017-18 to undertake capital retrofit projects to reduce emissions. Funding will need to be sustained in future years to meet GHG reduction targets.

Ontario's universities are committed to improving accessibility for students with disabilities. Under the Accessibility for Ontarians with Disabilities Act (AODA), the Built Environment standard sets out requirements for new construction and planned renovations to improve the accessibility of buildings and public spaces. Building code amendments were changed January 1, 2015.

In the coming years, additional funding will be essential to meet these increasing needs and demands.

## 1.1. Executive Summary

Space standards help institutions to use existing space more efficiently to accommodate trends and changing needs, and to better plan. The COU space standards are a systematic, analytical approach to evaluate the use of existing physical space and to forecast future needs and requirements. Originally developed in the 1970s, space standards have evolved over time along with the changing needs of students, research and administration.

This report captures new types of space that are currently used by students and institutions (see [Section 2.1: Changes made to the report](#)).

Highlights from the 2016-17 report include:

- Overall, Ontario universities occupied approximately 8.2 million Net Assignable Square Metres (NASMs<sup>1</sup>) in 2016-17. Total space has increased 5.7% between 2013-14 and 2016-17, and 48% since 2001-02.
  - In that same period, student enrolment (FTEs) increased 3.7% between 2013-14 and 2016-7 and 64.7% since 2001-01.
  - Since 2000-01, there has been a 49% increase in the number of full-time faculty (FTEs).
- Universities are operating with 77.7% of the space they should have according to the current formula and standards. In the rest of this report, this is called “generated space”— space generated by the standards. This ratio of actual Inventoried space (“I”) to Generated space (“G”) is down slightly from 78.8% in 2013-14. With the exception of office space, all major function areas in universities are operating with less space than is generated by the standards.
- Teaching, research and academic support space has remained relatively stable, operating at 81.6% of generated space, whereas generated space for student experience has decreased to 65.3% from 69.2% in 2013-14.
- For the first time, non-library study space has been captured in the Inventory. The university sector has approximately 70% of the informal study space and **only half** of the formal study space required by students, as generated by the standards.
- Actual space per full-time equivalent student<sup>2</sup> has declined 15% from 2001-02 from 9.74 NASM per FTE to 8.3 NASM per FTE in 2016-17.
- 62.3% of university buildings are 30 years or older; 48.8% of total university space is considered in “poor” condition.<sup>3</sup>

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<sup>1</sup> Net assignable square metres (NASM) is the amount of area that can be used by the occupants of the building.

<sup>2</sup> Space includes Category 1-15; see [Appendix C](#) for a brief overview of the 15 categories; [Appendix A](#) includes a detailed overview of the categories, formulae and definitions.

<sup>3</sup> See [Facilities Condition Assessment Program](#) section for further details.



Overall, the report demonstrates that universities are using space more efficiently, with the growth of students outpacing the growth in physical space: space per student has declined over the past 15 years. They are achieving some of these efficiencies by increasing collaborative, multi-purpose and short-term spaces, both when new space is built and when existing buildings undergo major renovations.

Universities will continue to develop strategies and seek opportunities to grow these types of flexible spaces in the future.

## 2. Overview of the 2016-17 Inventory of Physical Facilities of Ontario Universities report

This section discusses changes made to this year's report, provides a sector summary, identifies factors affecting space, and summarizes trends over time for those factors.

### 2.1. Changes made to the report

Several changes have been made in in the 2016-17 report.

To more accurately classify programs, this year's report transitions to the use of the [Classification of Instructional Programs \(CIP\)](#), which is a numeric taxonomy of programs used to classify fields of study. It started in the United States in 1980 and was adopted by Statistics Canada in 2000. It is updated every few years to account for new programs.

In previous *Inventory* reports, programs have used SPEMAJ (Specialization or Major Field of Study) numeric codes, a made-in-Ontario classification scheme that predates CIP. SPEMAJ provided for broader, higher-level categories than CIP. In this 2016-17 report, SPEMAJ codes were mapped to CIP codes. As CIP provides a greater level of detail in classifying specific programs, minor adjustments were made to reassign program to a more accurate CIP code.

The move to CIP will help provide consistency across Ontario institutions and harmonization with other jurisdictions that use the Ontario space standards. It will also help ensure that new and emerging programs are identified and have accurate space factors applied to them, since CIP provides more granularity in classifying programs than SPEMAJ. (See [Appendix E for the classification scheme](#).)

It is important to note that space factors were not adjusted for any category, so the application of CIP does not have an impact on the final inventory of space or the generated space calculations. It only serves to more accurately classify and group programs according to their physical space needs.

To better capture evolving student needs and the construction of space to accommodate teaching and learning methods, two new categories have been added:

- Category 1.3 was created to capture Active Learning Classroom (ALC) space. ALCs are pedagogical spaces primarily moderated for group interaction and group learning. The room may or may not utilize technology.
- Category 11 (Non-Library Study Space) captures non-traditional space located outside the library where students meet and study (either in groups or individually). Space includes formal study space (rooms available for students for study) and informal study

space (lounge and study space). This change will better to reflect how today's students are using space to study differently. Thus, there is a need for universities to plan for these changing types of space.

- 11.1 Formal study space (formerly 5.5 - Formal study space outside the library). This space includes rooms available for students for study. Also included are reading rooms, study carrels, open computing space, open-stack reading rooms, group rooms and study areas located in academic departments or other non-library departments. A space factor of 0.5 has been applied.
- 11.2 Informal study space (formerly 14.3 - Lounge and study space). This space includes all general student lounge space and lounges in residences if available to non-residents, including related service space. Also includes space in corridors/hallways used as lounge space. A space factor of 0.4 has been applied.

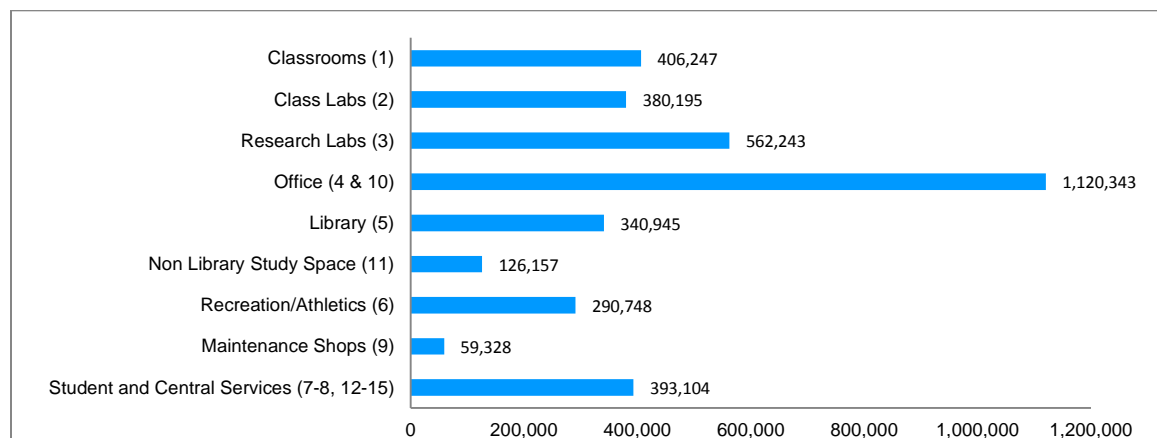
Category 5 has been renamed “Library Facilities & Library Study Space” (where “Library” has replaced “Campus”) to reflect the new Category 11 definitions. In order to reflect these changes, the space factor for Category 5 has been changed to 0.5 from 0.6.

To see major changes that have been made since 1999, please see [Appendix F](#), Historical Changes to the Inventory.

## 2.2. Space Inventory: sector summary

Below, several graphs show the **actual inventory** of physical space by major functional areas.

**Figure 1: Actual inventory of space by functional area, 2016-17 (NASMs)<sup>4</sup>**



Office Space comprises the largest amount of space, followed by Research Labs and Classrooms. Non-library study space (Category 11 informal study space) has been added this year; previously, this was included in Library (Category 5).

**Figure 2: Actual inventory as a percentage of generated space by functional area, 2016-17 (“% I / G”)**

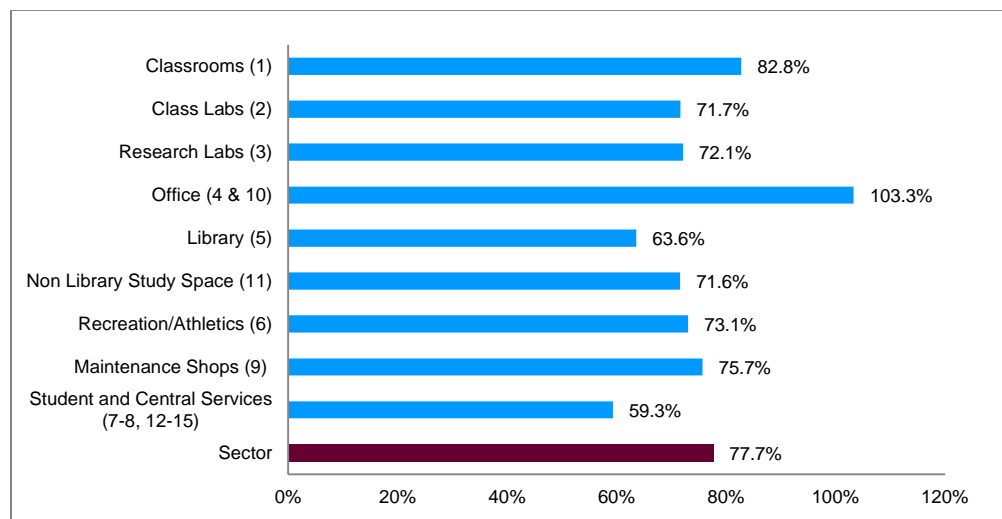
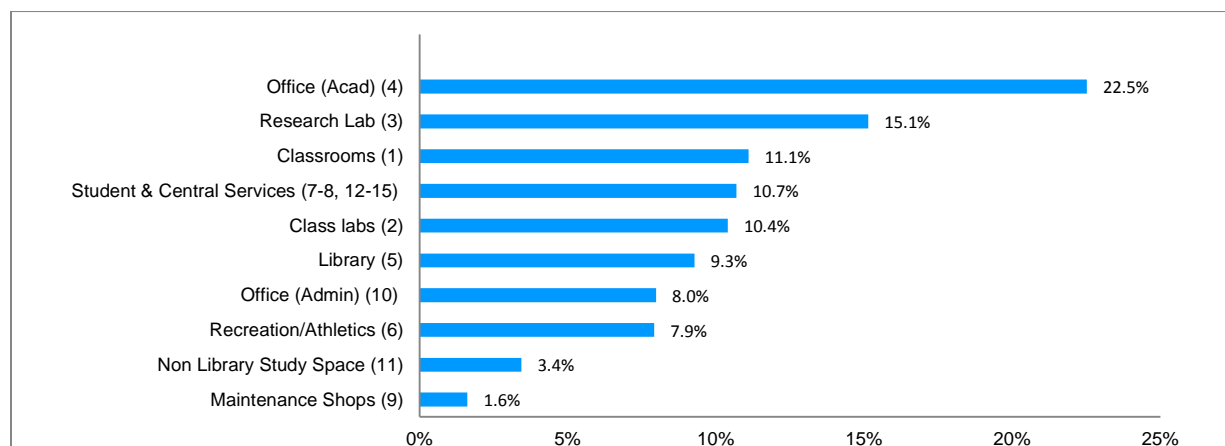


Figure 2 shows that with the exception of office space, universities are functioning with less space than they should, according to the standards. Of note, Library and Student and Central Services are below 70%. There is a drop in Student and Central Services between 2013-14 and 2016-17 as it now excludes former Category 14.3 (Lounge and study space).

<sup>4</sup> The graphs in the 2013-14 report included Maintenance Shops as part of Student and Central Services; in this 2016-17 report Maintenance Shops are presented as a separate category for greater clarity. As such, caution needs to be taken while comparing this category to previous years.

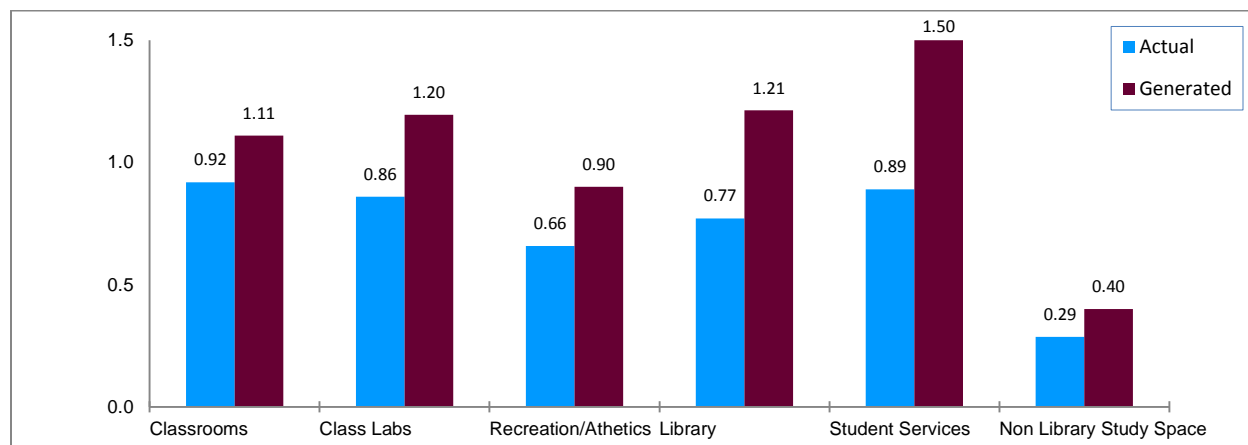
**Figure 3: Distribution of actual space by major “formula categories,” 2016-17**



“Formula space” is usable space where space factors can normally be developed, like classrooms, research labs and office space (See [Appendix D: Definitions](#) for further detail). The formula categories provide for the full range of functions and services of institutions.

The above chart shows the percentage distribution of COU formula space. The primary academic facilities (academic offices, research labs, classrooms, class labs and library) account for 68.4% of total space.

**Figure 4: Space per student Full-time Equivalent (FTE) by category, 2016-17 (NASMs)**



The table above shows that universities’ inventory of space is below the generated space per FTE student in all categories. While Classrooms constitute the most actual space per FTE, this still falls short of the space needed per FTE. Student Services has the largest difference between actual and generated space per FTE.

**Table 1: SYSTEM SUMMARY – Actual Inventory of Space and Generated (Required) Space as Measured by COU Space Standards, 2016-17**

|   | Input Measure | Space Factor | Generated Space     | Inventory           | % I / G     | 2013-14 % I / G |
|---|---------------|--------------|---------------------|---------------------|-------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>               |               |              |                     |                     |             |                 |
| CLASSROOMS (1)  | 442,037.5     | 1.11         | 490,661.61          | 406,246.9           | 82.8        | 82.7            |
| <b>CLASS LABS (2)</b>                                   |               |              |                     |                     |             |                 |
| Lab Contact Hours W                                     | 142,760.2     | 0.8          | 114,208.1           | 62,028.0            |             |                 |
| Lab Contact Hours X                                     | 519,084.2     | 0.6          | 311,450.5           | 233,942.7           |             |                 |
| Lab Contact Hours Y                                     | 103,104.9     | 0.5          | 51,552.4            | 35,873.1            |             |                 |
| Lab Contact Hours Z                                     | 176,409.6     | 0.3          | 52,922.9            | 45,650.0            |             |                 |
| Unclassified  | 302.0         |              |                     | 2,700.9             |             |                 |
| Total Class Lab   | 941,660.8     |              | 530,133.9           | 380,194.6           | 71.7        | 69.1            |
| <b>RESEARCH LABS (3)</b>                                |               |              |                     |                     |             |                 |
| Research Disciplines A                                  | 8,918.5       | 45.0         | 401,331.8           | 303,540.1           |             |                 |
| Research Disciplines B                                  | 7,657.0       | 30.0         | 229,709.8           | 131,470.1           |             |                 |
| Research Disciplines C                                  | 3,302.7       | 20.0         | 66,053.1            | 39,562.2            |             |                 |
| Research Disciplines D                                  | 5,499.4       | 10.0         | 54,993.8            | 45,146.3            |             |                 |
| Research Disciplines E                                  | 27,598.1      | 1.0          | 27,598.1            | 24,108.7            |             |                 |
| Unclassified  | 611.8         |              |                     | 18,415.7            |             |                 |
| Total Research  | 53,587.4      |              | 779,686.6           | 562,243.0           | 72.1        | 73.3            |
| <b>OFFICE - ACADEMIC (4)</b>                            |               |              |                     |                     |             |                 |
| Total FTE Faculty                                       | 19,961.8      | 12.0         | 239,541.7           | 302,257.0           | 126.2       | 123.9           |
| Research Appointments                                   | 7,058.3       | 12.0         | 84,699.9            | 48,633.7            | 57.4        | 54.1            |
| Total FTE Grads   | 63,185.5      | 3.0          | 189,556.5           | 133,801.1           | 70.6        | 75.2            |
| Total FTE Non-Acad Staff                                | 12,600.7      | 12.0         | 151,208.9           | 152,799.4           | 101.1       | 104.3           |
| Office Service  | 665,007.1     | 0.25         | 166,251.8           | 190,021.4           | 114.3       | 109.5           |
| Total Academic Office                                   |               |              | 831,258.9           | 827,512.5           | 99.5        | 99.6            |
| <b>OFFICE - ADMINISTRATIVE (10)</b>                     |               |              |                     |                     |             |                 |
| Total FTE Non-Acad Staff                                | 14,058.6      | 12.0         | 168,703.3           | 186,526.8           | 110.6       | 104.3           |
| Office Service  | 168,703.3     | 0.5          | 84,351.7            | 106,304.2           | 126.0       | 118.3           |
| Total Admin. Office                                     |               |              | 253,055.0           | 292,831.0           | 115.7       | 109.0           |
| Total Office - Academic & Administrative                |               |              | 1,084,313.9         | 1,120,343.5         | 103.3       | 101.8           |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE (5)</b> |               |              |                     |                     |             |                 |
| Study (Total FTE Students)                              | 442,037.5     | 0.50         | 221,018.7           | 112,743.3           | 51.0        | 61.1            |
| Traditional Static Shelving Space                       | 31,235,221.2  | 0.005        | 156,176.1           | n/a                 |             |                 |
| Mobile Compact Shelving                                 | 3,638,606.8   | 0.004        | 14,554.4            | n/a                 |             |                 |
| Super High Density                                      | 10,585,229.9  | 0.0035       | 37,048.3            | n/a                 |             |                 |
| Total Stack   | 45,459,057.9  |              | 207,778.8           | 154,260.9           | 74.2        | 78.3            |
| Library Support   | 428,797.6     | 0.25         | 107,199.4           | 73,940.9            | 69.0        | 63.0            |
| Total Library Facilities & Library Study Space          |               |              | 535,997.0           | 340,945.1           | 63.6        | 67.7            |
| NON-LIBRARY STUDY SPACE (11)                            | 442,037.5     | 0.4          | 176,815.0           | 126,610.7           | 71.6        | n/a             |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>        |               |              | <b>3,597,608.03</b> | <b>2,936,583.83</b> | <b>81.6</b> | <b>81.9</b>     |
| <b>OTHER SPACE</b>                                      |               |              |                     |                     |             |                 |
| <b>RECREATION / ATHLETICS (6)</b>                       |               |              |                     |                     |             |                 |
| Total FTE Students                                      | 442,037.5     | 0.9          | 397,833.7           | 290,747.6           | 73.1        | 71.0            |
| <b>MAINTENANCE SHOPS (9)</b>                            |               |              |                     |                     |             |                 |
| Total NASM Inv. (exc. 16.0)                             | 5,222,109.0   | 0.015        | 78,331.6            | 59,327.8            | 75.7        | 75.4            |
| <b>STUDENT AND CENTRAL SERVICES (7, 8, 12-15)</b>       |               |              |                     |                     |             |                 |
| Total FTE Students                                      | 442,037.5     | 1.5          | 663,056.2           | 393,424.7           | 59.3        | 67.3            |
| <b>SUB-TOTAL: OTHER SPACE</b>                           |               |              | <b>1,139,221.61</b> | <b>743,500.07</b>   | <b>65.3</b> | <b>69.2</b>     |
| <b>TOTAL FORMULA AREAS</b>                              |               |              | <b>4,736,829.64</b> | <b>3,680,083.90</b> | <b>77.7</b> | <b>78.8</b>     |

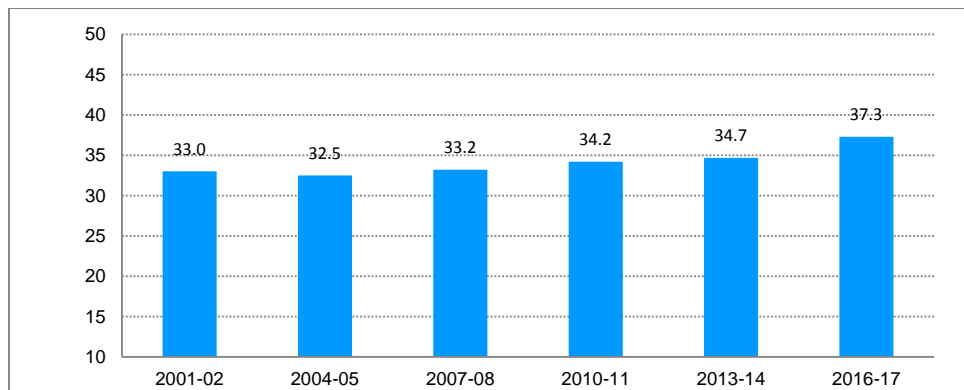
The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data.

Numbers in brackets refer to COU Space Classification Scheme (See Appendix A)

### 2.3. Age of building space

As show in Figure 5 below, the weighted average age of buildings in the university sector is 37.3 years – up from 34.7 years in 2013-14.

**Figure 5: Average age of building space, 2001-02 to 2016-17**



Over 62% of buildings are over 30 years old, as per Figure 6. This is generally recognized as the age when major building components should be renewed.

**Figure 6: Percentage of inventory by age grouping, 2016-17**

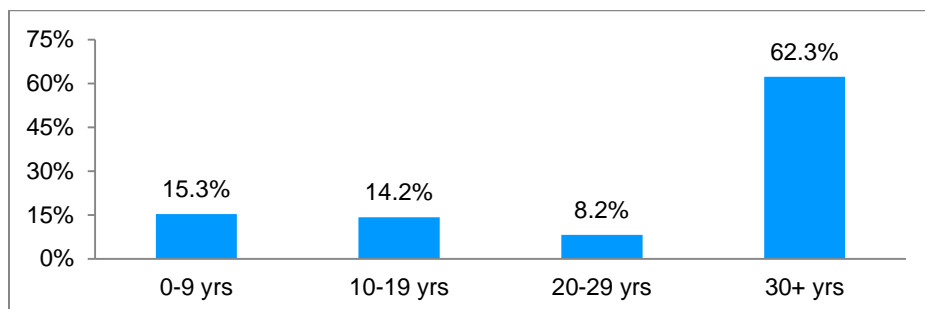
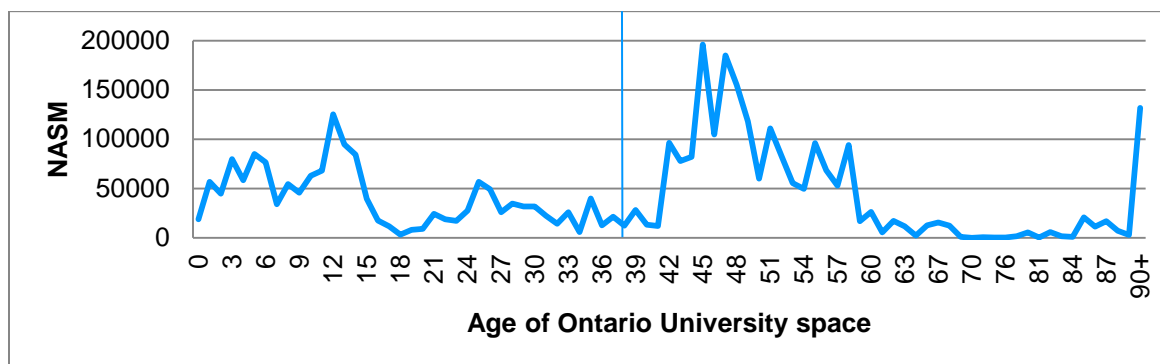


Figure 7 below shows the distribution of NASMs by the age of space. The peaks represent historical infusions of capital funding (for example, SuperBuild announced in 1999) and the creation of a number of new universities in the 1950s and 60s.

**Figure 7: Age of building space, 2016-17**



**Table 2: Age Profile of Ontario University Space (as of November 1, 2016)**

| Institution             | 0-9<br>Years<br>(NASM) | 10-19<br>Years<br>(NASM) | 20-29<br>Years<br>(NASM) | 30-39<br>Years<br>(NASM) | 40-49<br>Years<br>(NASM) | 50+<br>Years<br>(NASM) | Total<br>(NASM)  | Weighted<br>Average<br>Age |
|-------------------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------|------------------|----------------------------|
| Algoma                  | 1,659                  | 2,862                    | 6,429                    | 0                        | 514                      | 1,912                  | 13,375           | 29.7                       |
| Brock                   | 15,125                 | 19,453                   | 8,407                    | 6,316                    | 47,192                   | 6,828                  | 103,321          | 36.9                       |
| Carleton                | 22,950                 | 36,133                   | 27,041                   | 9,369                    | 43,828                   | 41,028                 | 180,349          | 25.7                       |
| Guelph                  | 14,664                 | 28,441                   | 26,701                   | 3,836                    | 94,925                   | 85,678                 | 254,245          | 48.1                       |
| Lakehead                | 5,762                  | 10,044                   | 9,381                    | 0                        | 23,936                   | 32,967                 | 82,091           | 44.9                       |
| Laurentian              | 13,536                 | 506                      | 9,171                    | 43                       | 19,896                   | 28,561                 | 71,713           | 39.0                       |
| Laurentian<br>(Hearst)  | 935                    | 0                        | 0                        | 0                        | 0                        | 3,385                  | 4,320            | 39.1                       |
| McMaster                | 56,061                 | 48,135                   | 11,726                   | 4,211                    | 73,835                   | 54,229                 | 248,196          | 31.2                       |
| Nipissing               | 4,622                  | 0                        | 0                        | 0                        | 20,516                   | 0                      | 25,138           | 37.0                       |
| NOSM                    | 0                      | 6,447                    | 1,914                    | 0                        | 0                        | 0                      | 8,361            | 14.2                       |
| OCAD                    | 4,899                  | 12,895                   | 0                        | 2,635                    | 204                      | 4,471                  | 25,105           | 22.9                       |
| UOIT                    | 9,413                  | 22,118                   | 143                      | 0                        | 670                      | 2,149                  | 34,493           | 15.7                       |
| Ottawa                  | 42,504                 | 29,306                   | 16,729                   | 35,515                   | 62,481                   | 62,403                 | 248,939          | 39.3                       |
| Queen's                 | 47,572                 | 28,234                   | 34,233                   | 20,297                   | 60,141                   | 56,613                 | 247,090          | 34.4                       |
| Ryerson                 | 25,137                 | 30,196                   | 14,789                   | 6,514                    | 37,821                   | 60,857                 | 175,313          | 35.2                       |
| Toronto (St.<br>George) | 32,961                 | 66,763                   | 23,532                   | 62,335                   | 155,338                  | 216,671                | 557,600          | 48.9                       |
| Toronto (Miss)          | 21,673                 | 20,203                   | 1,788                    | 0                        | 25,232                   | 460                    | 69,356           | 22.2                       |
| Toronto (Scar)          | 29,163                 | 13,457                   | 103                      | 32                       | 23,894                   | 774                    | 67,423           | 20.7                       |
| Trent                   | 5,214                  | 8,305                    | 4,494                    | 4,564                    | 26,805                   | 4,507                  | 53,888           | 27.6                       |
| Waterloo                | 59,494                 | 32,095                   | 21,621                   | 18,439                   | 103,048                  | 82,187                 | 316,884          | 36.3                       |
| Western                 | 60,870                 | 23,725                   | 19,738                   | 20,622                   | 83,487                   | 135,923                | 344,365          | 39.7                       |
| WLU                     | 30,715                 | 14,483                   | 17,129                   | 1,744                    | 9,650                    | 25,000                 | 98,721           | 26.4                       |
| Windsor                 | 24,829                 | 6,984                    | 12,265                   | 12,608                   | 40,462                   | 32,826                 | 129,972          | 36.3                       |
| York (Keele)            | 25,918                 | 55,452                   | 29,785                   | 7,058                    | 87,511                   | 46,670                 | 252,394          | 33.2                       |
| York (Glen)             | 0                      | 0                        | 0                        | 0                        | 0                        | 18,095                 | 18,095           | 58.8                       |
| <b>TOTAL</b>            | <b>555,676</b>         | <b>516,236</b>           | <b>297,118</b>           | <b>216,138</b>           | <b>1,041,385</b>         | <b>1,004,193</b>       | <b>3,630,747</b> | <b>37.3</b>                |
| % Distribution          | 15.3%                  | 14.2%                    | 8.2%                     | 6.0%                     | 28.7%                    | 27.7%                  | 100.0%           |                            |

- Categories 1-15 only, excluding Rentals.
- The above table shows that the average age of Ontario university buildings is over 30 years, the age when it is generally recognized that major building components need to be renewed. The guidelines for reporting of building age in the COU space survey specify that major renovations that substantially renew a building should be reflected in the age reported, but there are some concerns that adjustments are not always done consistently.

**Table 3: Percent Distribution Age Profile of Ontario University Space (as of November 1, 2016)**

| Institution           | 0-9<br>Years<br>(NASM) | 10-19<br>Years<br>(NASM) | 20-29<br>Years<br>(NASM) | 30-39<br>Years<br>(NASM) | 40-49<br>Years<br>(NASM) | 50+<br>Years<br>(NASM) |
|-----------------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------|
| Algoma                | 12.4%                  | -                        | 48.1%                    | -                        | 3.8%                     | 14.3%                  |
| Brock                 | 14.6%                  | 18.8%                    | 8.1%                     | 6.1%                     | 45.7%                    | 6.6%                   |
| Carleton              | 12.7%                  | 20.0%                    | 15.0%                    | 5.2%                     | 24.3%                    | 22.7%                  |
| Guelph                | 5.8%                   | 11.2%                    | 10.5%                    | 1.5%                     | 37.3%                    | 33.7%                  |
| Lakehead              | 7.0%                   | 12.2%                    | 11.4%                    | 0.0%                     | 29.2%                    | 40.2%                  |
| Laurentian            | 18.9%                  | 0.7%                     | 12.8%                    | 0.1%                     | 27.7%                    | 39.8%                  |
| Laurentian<br>(Hear)  | 21.6%                  | -                        | -                        | -                        | -                        | 78.4%                  |
| McMaster              | 22.6%                  | 19.4%                    | 4.7%                     | 1.7%                     | 29.7%                    | 21.8%                  |
| Nipissing             | 18.4%                  | 0.0%                     | -                        | -                        | 81.6%                    | -                      |
| NOSM                  | 0.0%                   | 77.1%                    | 22.9%                    | -                        | -                        | -                      |
| OCAD                  | 19.5%                  | 51.4%                    | 0.0%                     | 10.5%                    | -                        | 17.8%                  |
| UOIT                  | 27.3%                  | 64.1%                    | -                        | -                        | 1.9%                     | 6.2%                   |
| Ottawa                | 17.1%                  | 11.8%                    | 6.7%                     | 14.3%                    | 25.1%                    | 25.1%                  |
| Queen's               | 19.3%                  | 11.4%                    | 13.9%                    | 8.2%                     | 24.3%                    | 22.9%                  |
| Ryerson               | 14.3%                  | 17.2%                    | 8.4%                     | 3.7%                     | 21.6%                    | 34.7%                  |
| Toronto (St.<br>Grge) | 5.9%                   | 12.0%                    | 4.2%                     | 11.2%                    | 27.9%                    | 38.9%                  |
| Toronto (Miss)        | 31.2%                  | 29.1%                    | 2.6%                     | -                        | 36.4%                    | 0.7%                   |
| Toronto (Scar)        | 43.3%                  | -                        | 0.2%                     | 0.0%                     | 35.4%                    | -                      |
| Trent                 | 9.7%                   | 15.4%                    | 8.3%                     | 8.5%                     | 49.7%                    | 8.4%                   |
| Waterloo              | 18.8%                  | 10.1%                    | 6.8%                     | 5.8%                     | 32.5%                    | 25.9%                  |
| Western               | 17.7%                  | 6.9%                     | 5.7%                     | 6.0%                     | 24.2%                    | 39.5%                  |
| WLU                   | 31.1%                  | 14.7%                    | 17.4%                    | 1.8%                     | 9.8%                     | 25.3%                  |
| Windsor               | 19.1%                  | 5.4%                     | 9.4%                     | 9.7%                     | 31.1%                    | 25.3%                  |
| York (Keele)          | 10.3%                  | 22.0%                    | 11.8%                    | 2.8%                     | 34.7%                    | -                      |
| York (Glen)           | -                      | -                        | 0.0%                     | -                        | 0.0%                     | 100.0%                 |
| <b>TOTAL</b>          | <b>15.3%</b>           | <b>14.2%</b>             | <b>8.2%</b>              | <b>6.0%</b>              | <b>28.7%</b>             | <b>27.7%</b>           |

Includes Categories 1-15 only, excluding Rentals.

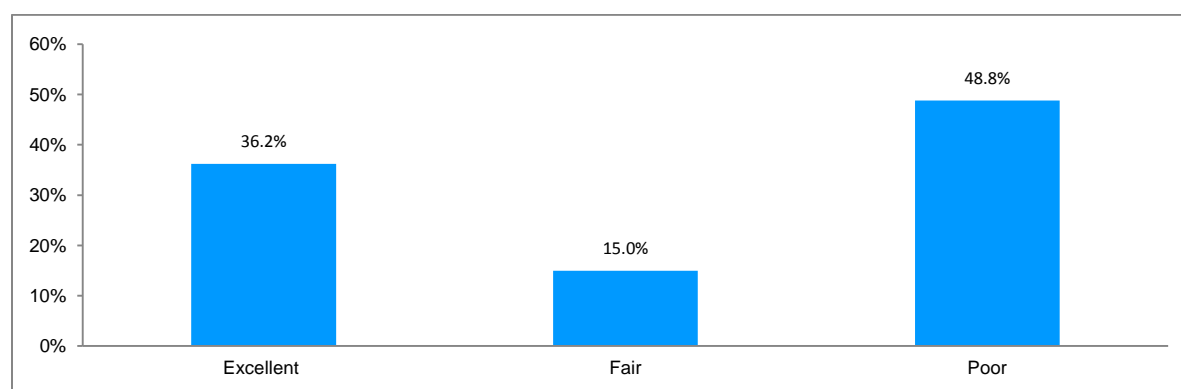


## 2.4. Facilities Condition Assessment Program (FCAP)

The [Universities' Facilities Condition Assessment Program \(FCAP\) report](#) details the condition of buildings, including the deferred maintenance needs and Current Replacement Value.

As further context to the age of buildings, over 48% of universities' space (gross square metres) is considered in "poor" condition, according to the Facilities Condition Index (FCI).

**Figure 8: Percentage of space by condition, 2015**



**Table 4: Percentage distribution of building space by condition of building, by university, 2015**

|            | Percentage of Building Space In Excellent Condition | Percentage of Building Space In Fair Condition | Percentage of Building Space In Poor Condition |
|------------|---|--|--|
| Algoma     | 32.5%   | 0.0%   | 67.5%  |
| Brock      | 40.7%   | 4.5%   | 54.7%  |
| Carleton   | 19.8%   | 19.4%  | 60.8%  |
| Guelph     | 28.5%   | 11.8%  | 59.6%  |
| Lakehead   | 16.3%   | 2.3%   | 81.4%  |
| Laurentian | 42.0%   | 18.0%  | 39.9%  |
| McMaster   | 19.7%   | 2.7%   | 77.6%  |
| Nipissing  | 64.0%   | 23.4%  | 12.5%  |
| OCAD       | 91.4%   | 0.0%   | 8.6%   |
| UOIT       | 96.6%   | 0.0%   | 3.4%   |
| Ottawa     | 42.9%   | 5.1%   | 52.0%  |
| Queen's    | 27.6%   | 15.4%  | 56.9%  |
| Ryerson    | 41.9%   | 32.3%  | 25.8%  |
| Toronto    | 23.6%   | 17.5%  | 59.0%  |
| Trent      | 38.9%   | 17.6%  | 43.4%  |
| Waterloo   | 41.8%   | 39.1%  | 19.1%  |

|              | Percentage of Building Space In Excellent Condition | Percentage of Building Space In Fair Condition | Percentage of Building Space In Poor Condition |
|--------------|---|--|--|
| Western      | 48.0%   | 12.1%  | 39.9%  |
| WLU          | 31.4%   | 21.5%  | 47.1%  |
| Windsor      | 30.3%   | 11.2%  | 58.5%  |
| York         | 57.4%   | 11.9%  | 30.7%  |
| <b>Total</b> | <b>36.2%</b>  | <b>15.0%</b>                                   | <b>48.8%</b>                                   |

\* Figures were interpolated by applying the percentage of space reported to the total space at the university.

University of Toronto includes Toronto-St. George plus Scarborough campus, Mississauga campus, Victoria College, Trinity and St. Michael's College

University of Waterloo includes their affiliates.

Western University includes their affiliates.

York University includes York-Keele campus and York-Glendon campus

Based on deferred maintenance and adaptation/renewal renovations deficiencies. Excludes residences and infrastructure.

### 3. Historical trends in the space inventory

As summarized in Table 5 below, total inventory increased by 3.9% between 2013-14 and 2016-17. Administrative Offices saw the largest increase in inventory at 7.7%, followed by Recreation/Athletic Space at 6.7%. The addition of a standalone Non-library Study Space category accounts for the drop in Student and Central Services category.

**Table 5: Change in space, total and by function – trend (2007-08 to 2016-17)**

|  | 2007-08          | 2010-11          | 2013-14          | 2016-17          | % Change 2013-14 to 2016-17 |
|--|------------------|------------------|------------------|------------------|-----------------------------|
| FTE Enrolment                            | 363,872          | 399,124          | 426,392          | 442,037          | 3.7%                        |
| FTE Faculty                              | 18,774           | 19,813           | 20,338           | 19,962           | -1.8%                       |
| <b>Inventory (Formula Space)</b>         | <b>3,119,793</b> | <b>3,299,896</b> | <b>3,538,292</b> | <b>3,674,894</b> | <b>3.9%</b>                 |
| Classroom Facilities                     | 342,013          | 362,011          | 391,395          | 406,247          | 3.8%                        |
| Class Labs                               | 350,201          | 350,482          | 368,105          | 381,246          | 3.6%                        |
| Research Labs                            | 461,727          | 488,284          | 541,952          | 556,469          | 2.7%                        |
| Academic Office                          | 676,235          | 747,041          | 807,733          | 827,512          | 2.4%                        |
| Administrative Office                    | 230,935          | 250,843          | 272,100          | 293,139          | 7.7%                        |
| Library Study Space & Library Facilities | 374,720          | 384,044          | 396,144          | 340,945          | -13.9%                      |
| Non Library study space                  |                  |                  |                  | 126,157          |                             |
| Recreation/Athletic Space                | 231,927          | 251,246          | 272,410          | 290,748          | 6.7%                        |
| Maintenance Shops                        | 53,684           | 55,335           | 57,807           | 59,328           | 2.6%                        |
| Student and Central Services             | 398,351          | 410,609          | 430,647          | 393,104          | -8.7%                       |

\*\*From 2016-17, former category 5.5 and category 14.3 are now part of the new category 11 of non-library study space. As a result, caution needs to be taken when comparing the results of library study space and student and central services to previous years.

**Figure 9: Sector inventory as a percentage of generated space (%I/G), 2001-02 to 2016-17**

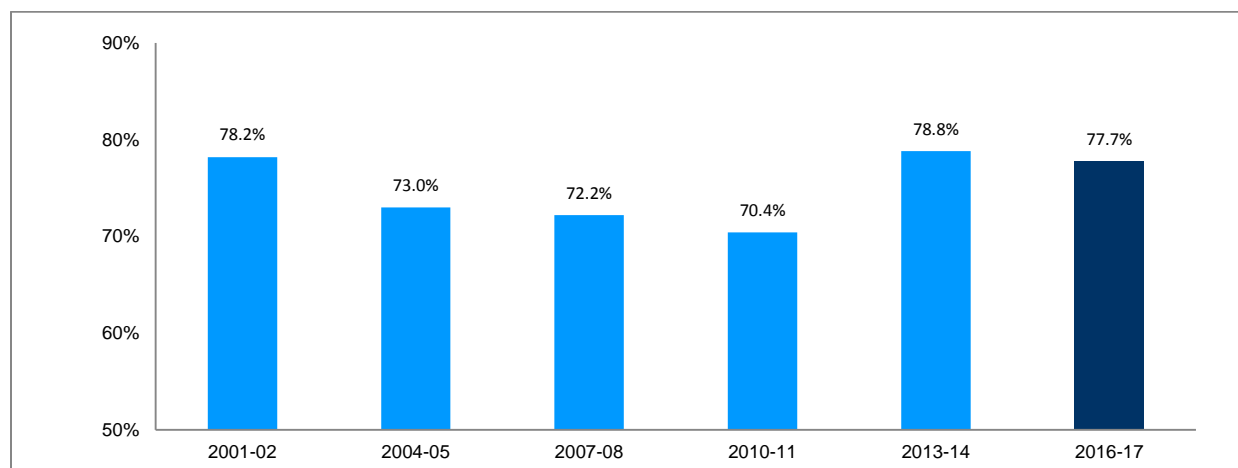


Figure 9 shows the trend over time in the percentage of inventory over generated space (%I/G). Universities are operating with 77.7% of the space they should have, down slightly from 78.8% in 2013-14.

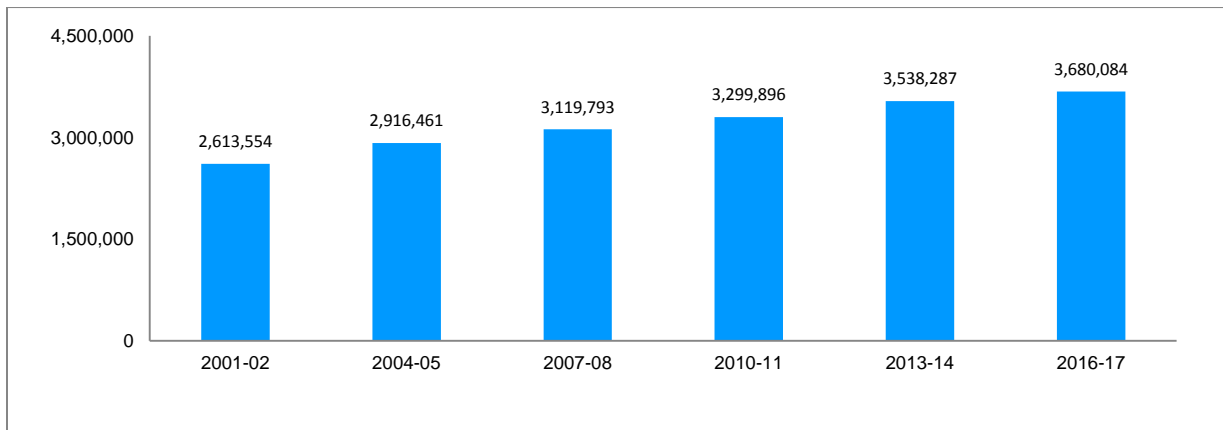
**Table 6: Actual inventory vs. generated space (% I/G), trend over time, by category**

|  | 2007-08      | 2010-11      | 2013-14      | 2016-17      |
|--|--------------|--------------|--------------|--------------|
| Classroom Facilities                     | 76.4%        | 73.7%        | 82.7%        | 82.8%        |
| Class Labs                               | 64.7%        | 66.5%        | 69.1%        | 71.9%        |
| Research Labs                            | 74.7%        | 68.8%        | 73.3%        | 72.1%        |
| Academic Office                          | 83.3%        | 81.5%        | 99.6%        | 99.5%        |
| Administrative Office                    | 98.4%        | 100.2%       | 109.0%       | 103.3%       |
| Library Study Space & Library Facilities | 70.6%        | 68.4%        | 67.7%        | 63.6%        |
| Non Library study space                  |              |              |              | 71.6%        |
| Recreation/Athletic Space                | 68.1%        | 69.9%        | 71.0%        | 73.1%        |
| Maintenance Shops                        | 77.0%        | 76.1%        | 75.4%        | 75.7%        |
| Student and Central Services             | 56.7%        | 53.5%        | 68.2%        | 59.3%        |
| <b>Total</b>                             | <b>72.2%</b> | <b>70.4%</b> | <b>78.8%</b> | <b>77.7%</b> |

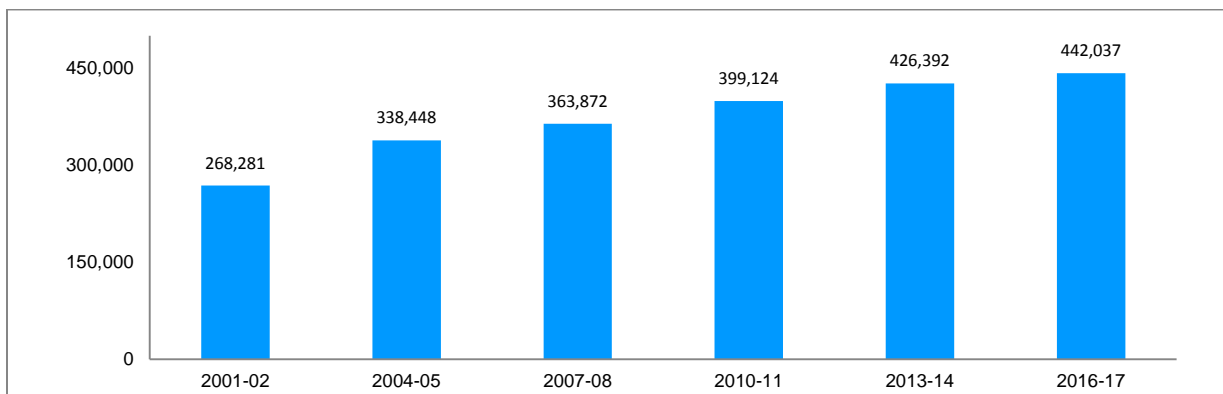
In 2013-14, changes were made to the space factors in some areas, making comparisons with previous years not advisable.

Table 6 above shows the trend in formula categories. There has been an increase in generated space for Classrooms and Offices. Again, the addition of the new category 11, Non-Library Study Space, should be noted since it includes space that was formerly included in Library Study Space and Student and Central Services.

**Figure 10: Total Formula Area, 2001-02 to 2016-17**

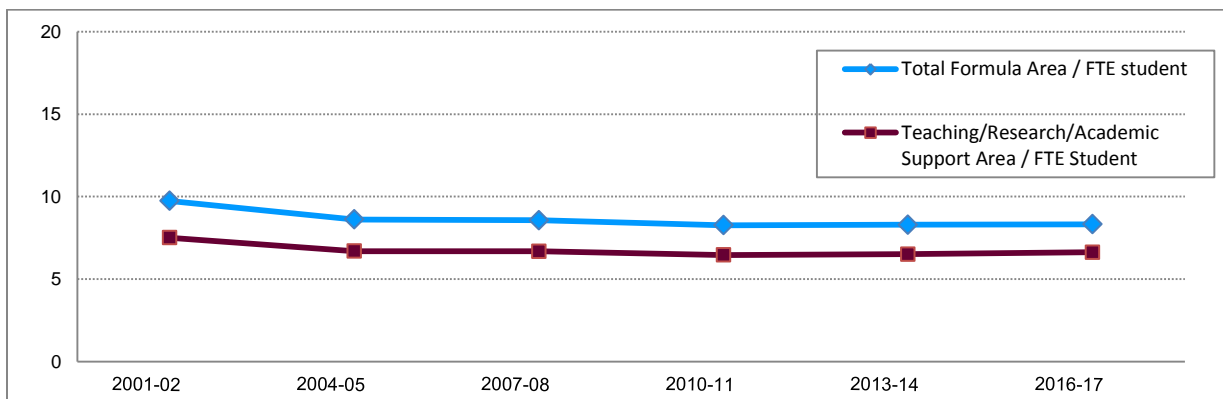


**Figure 11: Total FTE Enrolment, 2001-01 to 2016-17**



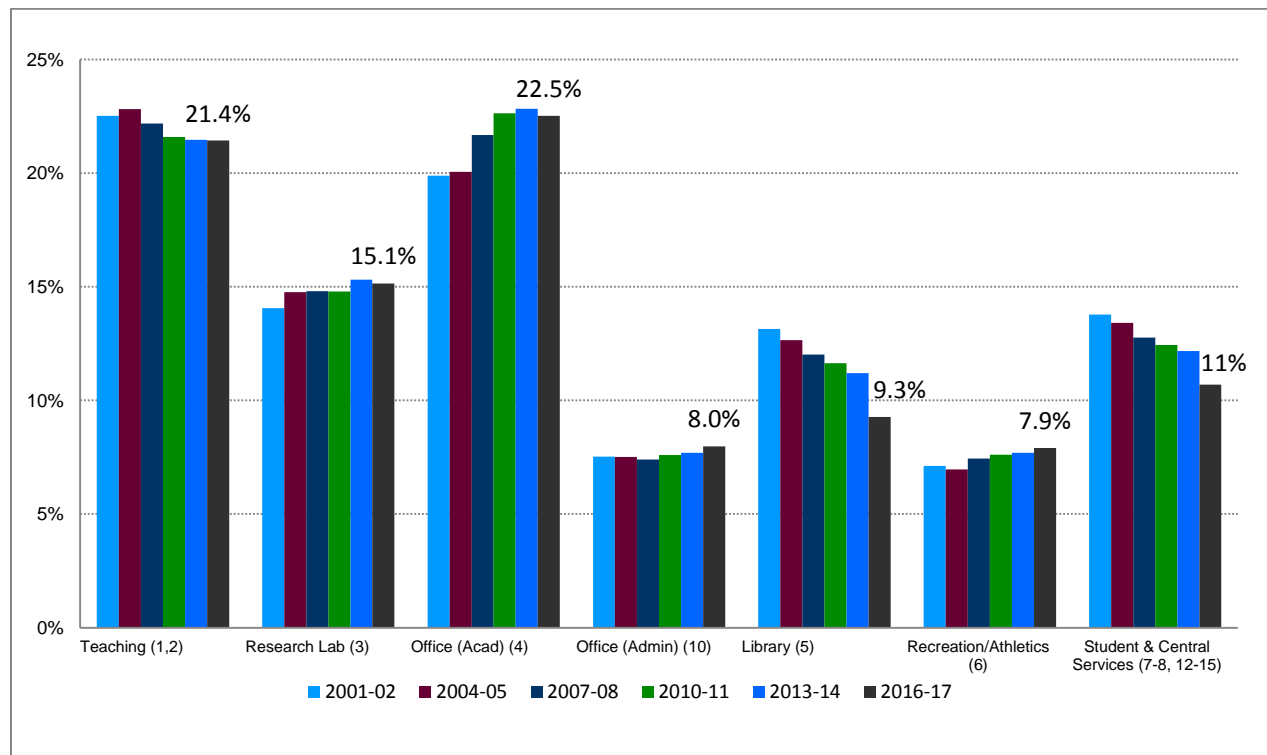
Overall, both total formula area and total FTE enrolment has grown year-over-year, as indicated in Figures 10 and 11.

**Figure 12: Total Formula Area / FTE Student, 2001-02 to 2016-17**



As per Figure 12, total formula area per student is 8.3 and has been constant since 2004-05. Teaching/Research/Academic Support Area per FTE Student also has remained constant at 6.6.

**Figure 13: Distribution of Space Inventory by Aggregated Functional Groups, 2001-02 to 2016-2017**



As noted throughout this report, the drop between 2013-14 and 2016-17 in Library and Student & Central Service space are partially accounted for by the creation of a new Category 11, Non-Library Study Space. Notwithstanding the new category, there is a historically downward trend in the amount of inventory for both library and student and central service spaces.

Generally, there are upward trends in office space, research labs and recreation/athletics.

Actual Space Summary Trend Tables<sup>5</sup>

Table 7: Total Actual Space Inventory by COU Space Categories, 2001-02 to 2016-17

| Category                                      | Space Category                           | 2001-02   | 2004-05   | 2007-08   | 2010-11   | 2013-14   | 2016-17   | % Change<br>2013-14 to<br>2016-17 |
|---|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------------------------------|
| <b>FORMULA AREAS (NASM)</b>                   |  |           |           |           |           |           |           |                                   |
| <b>(A) Teaching/Research/Academic Support</b> |  |           |           |           |           |           |           |                                   |
| 1.  | Classroom Facilities                     | 265,015   | 324,465   | 342,013   | 362,011   | 391,395   | 406,247   | 3.8                               |
| 2.  | Class Labs                               | 323,384   | 340,900   | 350,201   | 350,482   | 368,105   | 381,246   | 3.6                               |
| 3.  | Research Labs                            | 367,422   | 430,612   | 461,727   | 488,284   | 541,952   | 556,469   | 2.7                               |
| 4.  | Acad. Office & Related                   | 519,890   | 585,085   | 676,235   | 747,041   | 807,733   | 827,512   | 2.4                               |
| 5.  | Library Study Space & Library Facilities | 343,363   | 368,804   | 374,720   | 384,044   | 396,144   | 340,945   | (13.9)                            |
| 10.   | Admin. Office & Related                  | 196,723   | 219,055   | 230,935   | 250,843   | 272,100   | 293,139   | 7.7                               |
| 11  | Non Library Study Space                  |           |           |           |           |           | 126,157   |                                   |
| <b>(B) Other Space</b>                        |  |           |           |           |           |           |           |                                   |
| 6.  | Recreation/Athletic Space                | 186,153   | 202,931   | 231,927   | 251,246   | 272,410   | 290,748   | 6.7                               |
| 9   | Plant maintenance                        | 51,640    | 53,462    | 53,684    | 55,335    | 57,807    | 59,328    | 2.6                               |
| 7-8, 12-15                                    | Student and Central Services             | 359,964   | 391,147   | 398,351   | 410,609   | 430,647   | 393,104   | (8.7)                             |
| <b>Subtotal - Formula Areas</b>               |  | 2,613,554 | 2,916,461 | 3,119,793 | 3,299,896 | 3,538,292 | 3,674,894 | 3.9                               |
| 16.   | <b>Non-Assignable (SM)</b>               | 1,714,576 | 2,099,122 | 2,372,324 | 2,533,549 | 2,669,094 | 2,975,156 | 11.5                              |
| <b>NON-FORMULA AREAS (NASM)</b>               |  |           |           |           |           |           |           |                                   |
| 17.   | Residential Space                        | 964,840   | 1,154,665 | 1,243,783 | 1,288,264 | 1,284,890 | 1,301,861 | 1.3                               |
| 18.   | Animal Space                             | 10,324    | 9,366     | 12,395    | 21,340    | 22,956    | 22,828    | (0.6)                             |
| 19.   | Other                                    | 157,215   | 101,526   | 196,593   | 161,010   | 188,961   | 173,525   | (8.2)                             |
| 20.   | Health Sci. Clinical Facilities          | 80,440    | 79,549    | 77,863    | 79,632    | 75,209    | 72,861    | (3.1)                             |
| <b>Subtotal - Non-Formula Areas</b>           |  | 1,212,818 | 1,345,105 | 1,530,635 | 1,550,246 | 1,572,016 | 1,571,076 | (0.1)                             |
| <b>Total</b>                                  |  | 5,540,949 | 6,360,688 | 7,022,751 | 7,383,690 | 7,779,403 | 8,221,126 | 5.7                               |

Overall, Ontario universities occupied approximately 8.2 million NASMs in 2016-17. Total space has increased 5.7% between 2013-14 and 2016-17, and 48% since 2001-02.

Teaching/Research/Academic support space accounts for 76% of the formula space and Other space accounts for the remaining 24% of the formula space. Laboratory (undergraduate, graduate and faculty) space accounts for 33% of total teaching/research/academic space.

<sup>5</sup> For all tables in this section, the following notes and caveats apply:

- Student and Central Services space includes Food Service, Bookstore & Merch. Facilities, Audio-Visual Television Facilities, Central Services, Health Service Facilities, Student Activity Space, and Assembly/Exhibition Facilities.
- As of 2016-17, former category 5.5 and category 14.3 are now part of the new category of non-library study space (11). As a result a caution needs to be taken when comparing the results of library study space and student and central services to previous years. Please refer to [Appendix E](#) for changes made over time. Caution should be taken when making comparisons over time.

**Table 8: Percentage Distribution of Total Actual Space Inventory by all COU Space Categories, 2001-02 to 2016-17**

| Category                                      | Space Category                          | 2001-02 | 2004-05 | 2007-08 | 2010-11 | 2013-14 | 2016-17 |
|---|---|---------|---------|---------|---------|---------|---------|
| <b>FORMULA AREAS (NASM)</b>                   |   |         |         |         |         |         |         |
| <b>(A) Teaching/Research/Academic Support</b> |   |         |         |         |         |         |         |
| 1.  | Classroom Facilities                    | 4.8%    | 5.1%    | 4.9%    | 4.9%    | 5.0%    | 4.9%    |
| 2.  | Class Labs                              | 5.8%    | 5.4%    | 5.0%    | 4.7%    | 4.7%    | 4.6%    |
| 3.  | Research Labs                           | 6.6%    | 6.8%    | 6.6%    | 6.6%    | 7.0%    | 6.8%    |
| 4.  | Acad. Office & Related                  | 9.4%    | 9.2%    | 9.6%    | 10.1%   | 10.4%   | 10.1%   |
| 5.  | Campus Study Space & Library Facilities | 6.2%    | 5.8%    | 5.3%    | 5.2%    | 5.1%    | 4.1%    |
| 10.   | Admin. Office & Related                 | 3.6%    | 3.4%    | 3.3%    | 3.4%    | 3.5%    | 3.6%    |
| 11  | Non Library Study Space                 |         |         |         |         |         | 1.5%    |
| <b>(B) Other Space</b>                        |   |         |         |         |         |         |         |
| 6.  | Recreation/Athletic Space               | 3.4%    | 3.2%    | 3.3%    | 3.4%    | 3.5%    | 3.5%    |
| 9.  | Plant maintenance                       | 0.9%    | 0.8%    | 0.8%    | 0.7%    | 0.7%    | 0.7%    |
| 7-8, 12-15                                    | Student and Central Services            | 6.5%    | 6.1%    | 5.7%    | 5.6%    | 5.5%    | 4.8%    |
| <b>Subtotal - Formula Areas</b>               |   | 47.2%   | 45.9%   | 44.4%   | 44.7%   | 45.5%   | 44.7%   |
| 16.   | <b>Non-Assignable (SM)</b>              | 30.9%   | 33.0%   | 33.8%   | 34.3%   | 34.3%   | 36.2%   |
| <b>NON-FORMULA AREAS (NASM)</b>               |   |         |         |         |         |         |         |
| 17.   | Residential Space                       | 17.4%   | 18.2%   | 17.7%   | 17.4%   | 16.5%   | 15.8%   |
| 18.   | Animal Space                            | 0.2%    | 0.1%    | 0.2%    | 0.3%    | 0.3%    | 0.3%    |
| 19.   | Other                                   | 2.8%    | 1.6%    | 2.8%    | 2.2%    | 2.4%    | 2.1%    |
| 20.   | Health Sci. Clinical Facilities         | 1.5%    | 1.3%    | 1.1%    | 1.1%    | 1.0%    | 0.9%    |
| <b>Subtotal - Non-Formula Areas</b>           |   | 21.9%   | 21.1%   | 21.8%   | 21.0%   | 20.2%   | 19.1%   |
| <b>Total</b>                                  |   | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  | 100.0%  |

- Formula space (space funded by MAESD) accounts for nearly 45% (3.7 million NASM) of the total space.
- Non-formula space (space not funded by MAESD) accounts for 19% (1.57 million NASM) of the total space.
- Non-assignable space (space that is necessary for the support of buildings), (see Category 16 in Appendix A) accounts for 36% (3.0 million NASM) of the total space.
- The percentage of space allocated to non-assignable space has increased from 31% to 36% between 2001-02 and 2016-17.

**Table 9: Percentage Distribution of Total Actual Space Inventory by COU Formula Space Categories, 2001-02 to 2016-17**

| Category  | Space Category                           | 2001-02      | 2004-05      | 2007-08      | 2010-11      | 2013-14      | 2016-17      |
|---|--|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>FORMULA AREAS (NASM)</b>                         |  |              |              |              |              |              |              |
| <b>(A) Teaching/Research/Academic Support</b>       |  |              |              |              |              |              |              |
| 1.  | Classroom Facilities                     | 10.1%        | 11.1%        | 11.0%        | 11.0%        | 11.1%        | 11.1%        |
| 2.  | Class Labs                               | 12.4%        | 11.7%        | 11.2%        | 10.6%        | 10.4%        | 10.4%        |
| 3.  | Research Labs                            | 14.1%        | 14.8%        | 14.8%        | 14.8%        | 15.3%        | 15.1%        |
| 4.  | Acad. Office & Related                   | 19.9%        | 20.1%        | 21.7%        | 22.6%        | 22.8%        | 22.5%        |
| 5.  | Library Study Space & Library Facilities | 13.1%        | 12.6%        | 12.0%        | 11.6%        | 11.2%        | 9.3%         |
| 10.   | Admin. Office & Related                  | 7.5%         | 7.5%         | 7.4%         | 7.6%         | 7.7%         | 8.0%         |
| 11  | Non Library Study Space                  |              |              |              |              |              | 3.4%         |
| <b>Total - Teaching/ Research/ Academic Support</b> |  | <b>77.1%</b> | <b>77.8%</b> | <b>78.1%</b> | <b>78.3%</b> | <b>78.5%</b> | <b>79.8%</b> |
| <b>(B) Other Space</b>                              |  |              |              |              |              |              |              |
| 6.  | Recreation/Athletic Space                | 7.1%         | 7.0%         | 7.4%         | 7.6%         | 7.7%         | 7.9%         |
| 9   | Plant maintenance                        | 2.0%         | 1.8%         | 1.7%         | 1.7%         | 1.6%         | 1.6%         |
| 7-8, 12-15  | Student and Central Services             | 13.8%        | 13.4%        | 12.8%        | 12.4%        | 12.2%        | 10.7%        |
| <b>Total - Other Space</b>                          |  | <b>22.9%</b> | <b>22.2%</b> | <b>21.9%</b> | <b>21.7%</b> | <b>21.5%</b> | <b>20.2%</b> |

- Classroom facilities occupy approximately 11% of the total formula area space, and have remained almost unchanged since 2004-05.
- Student and Other Central Services space had been steadily losing space in favour of other space categories. The drop in 2016-17 is more pronounced due to shifting of former 14.3 to category 11.
- Library Study Space & Library Facilities has been steadily losing space. This also is a result of major restructuring of library space over the past few years with more library materials stored in compact storage areas rather than traditional shelving units. 2016-17 shows a more pronounced drop due to shifting of space from former category 5.5 to category 11.



**Table 10: Percentage Distribution of Generated Space (NASM) by COU Formula Space Classification, 2001-02 to 2016-17**

| Category                                      | Space Classification                    | 2001-02      | 2004-05      | 2007-08      | 2010-11      | 2013-14 | 2016-17 |
|---|---|--------------|--------------|--------------|--------------|---------|---------|
| <b>FORMULA AREAS (NASM)</b>                   |   |              |              |              |              |         |         |
| <b>(A) Teaching/Research/Academic Support</b> |   |              |              |              |              |         |         |
| 1.  | Classroom Facilities                    | 9.9%         | 10.4%        | 10.4%        | 10.5%        | 10.5%   | 10.4%   |
| 2.  | Class Labs                              | 12.2%        | 12.5%        | 12.5%        | 11.2%        | 11.9%   | 11.2%   |
| 3.  | Research Labs                           | 13.6%        | 13.9%        | 14.3%        | 15.1%        | 16.5%   | 16.5%   |
| 4.  | Academic Office & Related               | 18.1%        | 17.4%        | 18.8%        | 19.6%        | 18.1%   | 17.5%   |
| 5.  | Campus Study Space & Library Facilities | 16.0%        | 13.7%        | 12.3%        | 12.0%        | 13.0%   | 11.3%   |
| 10.   | Administrative Office & Related         | 4.8%         | 5.3%         | 5.4%         | 5.3%         | 5.6%    | 5.3%    |
| 11  | Non Library Study Space                 |              |              |              |              |         | 3.7%    |
| <b>Total - Teaching/Research/Academic</b>     |   | <b>74.5%</b> | <b>73.4%</b> | <b>73.7%</b> | <b>73.8%</b> | 75.5%   | 76.0%   |
| <b>(B) Other Space</b>                        |   |              |              |              |              |         |         |
| 6.  | Recreation/Athletics                    | 7.7%         | 8.0%         | 7.9%         | 7.7%         | 8.5%    | 8.4%    |
| 9   | Plant maintenance                       | 1.7%         | 1.6%         | 1.6%         | 1.6%         | 1.7%    | 1.7%    |
| 7-8, 12-15                                    | Student and Central Services            | 16.1%        | 16.9%        | 16.9%        | 17.0%        | 14.3%   | 14.0%   |
| <b>Total - Other Space</b>                    |   | <b>25.5%</b> | <b>26.6%</b> | <b>26.3%</b> | <b>26.2%</b> | 24.5%   | 24.0%   |

NOTE: The vertical line notes that starting in 2013-14 changes were made to the space factors in some areas, making comparisons with previous years not advisable.

Student and Other Central Services space includes Food Service, Bookstore & Merch. Facilities, Audio-Visual Television Facilities, Central Services, Health Service Facilities, Student Activity Space, and Assembly/Exhibition Facilities  
From 2016-17 former category 5.5 and category 14.3 are now part of the new category of non library study space (11). As a result a caution needs to be taken while comparing the results of library study space and student and central services to previous years.

Please refer to Appendix F for changes made over time. Caution should be taken when making comparison over time.

**Table 11: ACTUAL Inventory / GENERATED Space (NASM) by COU Formula Space Classification, 2001-02 to 2016-17**

| Category  | Space Classification                     | 2001-02      | 2004-05      | 2007-08      | 2010-11      | 2013-14      | 2016-17      |
|---|--|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>FORMULA AREAS (NASM)</b>                       |  |              |              |              |              |              |              |
| <b>(A) Teaching/Research/Academic Support</b>     |  |              |              |              |              |              |              |
| 1   | Classroom Facilities                     | 80.3%        | 77.9%        | 76.4%        | 73.7%        | 82.7%        | 82.8%        |
| 2   | Class Labs                               | 79.2%        | 68.0%        | 64.7%        | 66.5%        | 69.1%        | 71.7%        |
| 3   | Research Labs                            | 80.8%        | 77.3%        | 74.7%        | 68.8%        | 73.3%        | 72.1%        |
| 4   | Academic Office & Related                | 86.1%        | 84.0%        | 83.3%        | 81.5%        | 99.6%        | 99.5%        |
| 5   | Library Study Space & Library Facilities | 64.2%        | 67.2%        | 70.6%        | 68.4%        | 67.7%        | 63.6%        |
| 10  | Administrative Office & Related          | 123.9%       | 103.1%       | 98.4%        | 100.2%       | 109.0%       | 103.3%       |
| 11  | Non Library Study Space                  |              |              |              |              |              | 71.6%        |
| <b>Total - Teaching/Research/Academic Support</b> |  | <b>80.9%</b> | <b>77.4%</b> | <b>76.5%</b> | <b>74.7%</b> | <b>81.9%</b> | <b>81.6%</b> |
| <b>(B) Other Space</b>                            |  |              |              |              |              |              |              |
| 6   | Recreation/Athletics                     | 72.6%        | 63.1%        | 68.1%        | 69.9%        | 71.0%        | 73.1%        |
| 9   | Plant maintenance                        | 90.0%        | 83.0%        | 77.0%        | 76.1%        | 75.4%        | 75.7%        |
| 7-8, 12-15  | Student and Central Services             | 69.3%        | 60.0%        | 56.7%        | 53.5%        | 68.2%        | 59.3%        |
| <b>Total - Other Space</b>                        |  | <b>70.3%</b> | <b>60.9%</b> | <b>60.1%</b> | <b>58.3%</b> | <b>69.2%</b> | <b>65.3%</b> |
| <b>Total - Formula Areas</b>                      |  | <b>78.2%</b> | <b>73.0%</b> | <b>72.2%</b> | <b>70.4%</b> | <b>78.8%</b> | <b>77.7%</b> |

NOTE: The vertical line notes that starting in 2013-14 changes were made to the space factors in some areas, making comparisons with previous years not advisable.

Student and Other Central Services space includes Food Service, Bookstore & Merch. Facilities, Audio-Visual Television Facilities, Central Services, Health Service Facilities, Student Activity Space, Assembly/Exhibition Facilities and Plant Maintenance. 2016-17 numbers also include non library study space

From 2016-17 former category 5.5 and category 14.3 are now part of the new category of non library study space (11). As a result a caution needs to be taken while comparing the results of library study space and student and central services to previous years.

Please refer to Appendix F for changes made over time. Caution should be taken when making comparison over time.

**Table 12: Historical Summary of Statistics, 2001-02 to 2016-17**

|   | 2001-02 | 2004-05 | 2007-08 | 2010-11 | 2013-14 | 2016-17 |
|---|---------|---------|---------|---------|---------|---------|
| % Undergraduate FTE Enrolment per Total FTE Enrolment           | 88.58   | 89.05   | 87.48   | 86.87   | 86.41   | 85.71   |
| % Graduate FTE Enrolment per Total FTE Enrolment                | 11.42   | 10.95   | 12.52   | 13.13   | 13.59   | 14.29   |
| WSCH <sup>1</sup> per Undergraduate FTE Enrolment               | 3.09    | 2.95    | 3.11    | 2.79    | 2.60    | 2.48    |
| Classroom NASM <sup>2</sup> per FTE Student                     | 0.99    | 0.96    | 0.94    | 0.91    | 0.92    | 0.92    |
| Graduate Office NASM per FTE Graduate Student                   | 2.39    | 2.22    | 2.12    | 2.16    | 2.26    | 2.12    |
| Administrative Office NASM per FTE Non-Academic Office Staff    | 20.93   | 20.11   | 19.19   | 19.54   | 19.62   | 20.83   |
| Library Study Space and Library Facilities NASM per FTE Student | 1.28    | 1.09    | 1.03    | 0.96    | 0.93    | 0.77    |
| Non Library study space per FTE student                         |         |         |         |         |         | 0.29    |
| Recreation/Athletics NASM per FTE Student                       | 0.69    | 0.60    | 0.64    | 0.63    | 0.64    | 0.66    |
| Student & Central Services NASM per FTE Student                 | 1.34    | 1.16    | 1.09    | 1.03    | 1.01    | 0.89    |
| Total NASM per FTE Student (categories 1-15)                    | 9.74    | 8.62    | 8.57    | 8.27    | 8.30    | 8.32    |

<sup>1</sup> WSCH = Weekly Student Contact Hours

<sup>2</sup> NASM = Net Assignable Square Metres

### Highlights:

- Total enrolment in graduate programs as a percent of total enrolment has increased from 11.4% in 2001-02 to 14.3% in 2016-17. See Table 13 (page 26) for total numbers of graduate students and the increase over the last 15 years.
- Student contact hours per undergraduate FTE student have declined from 3.1 in 2001-02 to 2.5 in 2016-17.
- Library study space and library facilities NASM per FTE student declined from 1.3 in 2001-02 to 0.77 in 2016-17. The decline is more pronounced in 2016-17 than in previous years because 2016-17 numbers do not include former category 5.5.

## Graduate Enrolment Expansion

As noted in Table 12, graduate students as a percentage of total FTE students increased from 11.4% in 2001-02 to 14.3% in 2016-17, largely due to the Ontario government's commitment to increase the number of graduate students (in response to demand and to enhance the social and economic impact of universities). Table 13 below shows that FTE graduate enrolment increased 9% between 2013-14 and 2016-17, and **more than doubled since 2001-01**.

Overall, graduate students require more space per student than undergraduate students: graduate classes are typically held in smaller classrooms and/or seminar rooms, not lecture theatres. Also, the student-faculty ratio is lower for graduate students than undergraduates.

In 2017, the Ontario government announced that it would increase the number of students graduating in the STEM (Science, Technology, Engineering and Math) disciplines by 25% over the next five years: from 40,000 to 50,000 graduates per year (from a combination of graduate and undergraduate programs). The 2018 provincial budget provided funding to institutions for technology and equipment to support the STEM enrolment expansion; however, no additional funds have been allocated to increase physical space.

With trends in graduate enrolment generally, and a specific focus on space-intensive STEM programs, additional pressure will be placed on existing space to accommodate the increase in students.

**Table 13: FTE Graduate Enrolment Trend**

|                        | 2001-02 | 2004-05 | 2007-08 | 2010-11 | 2013-14 | 2016-17 | % change from 2013 | % change from 2000 |
|------------------------|---------|---------|---------|---------|---------|---------|--------------------|--------------------|
| FTE Graduate Enrolment | 30,627  | 37,071  | 45,569  | 52,387  | 57,937  | 63,185  | 9.1%               | 106.31%            |

The table below shows the Graduate FTE enrolment over time, by program grouping. Groups A and B comprise the majority of programs in physical sciences, health professions, and engineering. Enrolment in Group B programs has increased 123% since 2004-05, the most significant percentage increase of any of the program groupings. Groups A and B require the most space per student.

**Table 14: Graduate FTE enrolment, by program grouping**

| By Program Group | 2004-05 Graduate FTEs | 2013-14 Graduate FTEs | 2016-17 Graduate FTEs | % change since 2004-05 | % change since 2013-14 |
|------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|
| Group A          | 7,187                 | 8,864                 | 9,264                 | 29%                    | 5%                     |
| Group B          | 4,487                 | 7,719                 | 9,993                 | 123%                   | 29%                    |
| Group C          | 3,137                 | 5,120                 | 4,461                 | 42%                    | -13%                   |
| Group D          | 4,280                 | 6,544                 | 6,721                 | 57%                    | 3%                     |
| Group E          | 17,634                | 27,640                | 31,730                | 80%                    | 15%                    |
| Total**          | 37,071                | 57,937                | 63,185                | 70%                    | 9%                     |

\*\*Includes enrolment for which no group is assigned

Program Groups attempt to organize programs that have similar space requirements. However, “like” programs can fall in different Groups: for example, animal sciences require more space than plant sciences; nuclear engineering requires more space than electronic engineering. Therefore, like programs can be assigned to different Program Groups. Please see [Appendix E, Program Classification Scheme](#), for the detailed breakdown.

Below are examples of programs by Group:

- Group A: health programs, majority of physical sciences, some engineering programs (computer, nuclear, mining)
- Group B: majority of engineering programs, some health sciences
- Group C: nutrition/food science, small number of engineering programs (biomedical, manufacturing)
- Group D: systems and computer engineering, sustainability and natural sciences
- Group E: math and business, social sciences, arts and humanities

## 4. Institutional Tables: 2016-17

### CAVEAT

The tables that follow are the result of the 2016-17 space survey issued to universities.

In interpreting the data from smaller and specialized institutions, it should be noted that the Building Blocks formula<sup>6</sup> was developed for institutions having a full range of university programs and functions.

**The application of all 15 categories to a very small or special purpose institution may not be appropriate, so results must be interpreted carefully.**

The same considerations apply in the formula for analysis at the departmental level within an institution.

Université de Hearst and NOSM are reported as separate institutions, but due to the size and specialty of those institutions they are not included in the total counts.

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<sup>6</sup> "Building Blocks" is a series of seven COU publications that were published between 1972 and 1988. These publications led to the development of the current COU space standards.

**Table 15: Inventory of University Space, November 1, 2016**

| Institution          | Categories 1-15 (NASM) | Category 16 (SM)    | Categories 17-20 (NASM) | Scheduled for Demolition | Rentals          | Gross Square Metres | Gross Square Metres/ NASM (1-15, 17-20) |
|----------------------|------------------------|---------------------|-------------------------|--------------------------|------------------|---------------------|---|
| Algoma               | 13,488.90              | 5,337.80            | 6,931.48                | 0.00                     | 128.75           | 25,417.00           | 1.24                                    |
| Brock                | 103,613.02             | 68,270.42           | 51,314.42               | 0.00                     | 12,948.83        | 255,110.06          | 1.65                                    |
| Carleton             | 180,349.33             | 156,438.17          | 67,118.81               | 0.00                     | 0.00             | 467,439.70          | 1.89                                    |
| Guelph               | 254,244.62             | 161,019.94          | 138,493.90              | 0.00                     | 0.00             | 635,934.25          | 1.62                                    |
| Lakehead             | 82,091.37              | 51,605.81           | 44,151.24               | 0.00                     | 0.00             | 213,893.80          | 1.69                                    |
| Laurentian           | 74,408.64              | 59,483.92           | 42,431.82               | 0.00                     | 2,695.49         | 188,810.26          | 1.62                                    |
| Laurentian (Hearst)  | 5,116.23               | 2,129.88            | 2,178.37                | 0.00                     | 0.00             | NR                  | NA                                      |
| McMaster             | 253,126.22             | 152,956.15          | 123,755.33              | 0.00                     | 4,930.54         | 637,452.60          | 1.69                                    |
| Nipissing            | 25,137.61              | 14,475.09           | 3,356.17                | 0.00                     | 0.00             | 32,243.35           | 1.13                                    |
| NOSM                 | 8,360.80               | 4,346.80            | 0.00                    | 0.00                     | 0.00             | 15,248.30           | 1.82                                    |
| OCADU                | 25,104.53              | 12,134.64           | 3,745.67                | 0.00                     | 22.96            | 43,672.32           | 1.51                                    |
| UOIT                 | 48,371.37              | 41,247.70           | 9,729.63                | 189.14                   | 13,878.28        | 119,812.55          | 2.06                                    |
| Ottawa               | 255,848.93             | 223,595.39          | 105,199.79              | 853.86                   | 6,909.99         | 678,964.66          | 1.88                                    |
| Queen's              | 247,090.21             | 249,857.34          | 103,376.23              | 0.00                     | 0.00             | 706,572.85          | 2.02                                    |
| Ryerson              | 175,313.30             | 117,267.63          | 20,035.28               | 2,016.00                 | 4,688.73         | 377,791.78          | 1.93                                    |
| Toronto (St. George) | 567,149.72             | 456,502.67          | 178,235.15              | 679.13                   | 9,549.99         | 1,395,750.52        | 1.87                                    |
| Toronto (Miss)       | 69,355.82              | 70,787.11           | 33,070.31               | 0.00                     | 0.00             | 197,176.86          | 1.93                                    |
| Toronto (Scar)       | 67,423.47              | 54,004.06           | 28,987.04               | 0.00                     | 0.00             | 172,275.04          | 1.79                                    |
| Trent                | 53,888.41              | 38,621.66           | 20,528.87               | 0.00                     | 0.00             | 130,248.26          | 1.75                                    |
| Waterloo             | 316,884.07             | 238,304.09          | 150,215.23              | 0.00                     | 6,717.91         | 840,723.96          | 1.80                                    |
| Western              | 344,365.12             | 251,792.60          | 201,288.56              | 0.00                     | 0.00             | 900,854.33          | 1.65                                    |
| WLU                  | 107,238.70             | 105,975.86          | 97,149.37               | 59.48                    | 9,599.77         | 372,772.13          | 1.82                                    |
| Windsor              | 130,667.74             | 109,218.97          | 22,097.85               | 0.00                     | 695.86           | 285,385.57          | 1.87                                    |
| York (Keele)         | 252,393.65             | 316,556.62          | 107,695.31              | 0.00                     | 0.00             | 765,349.70          | 2.13                                    |
| York (Glendon)       | 18,095.29              | 15,018.02           | 7,690.32                | 0.00                     | 0.00             | 46,866.05           | 1.82                                    |
| <b>TOTAL</b>         | <b>3,679,127.07</b>    | <b>2,976,948.34</b> | <b>1,568,776.16</b>     | <b>3,797.61</b>          | <b>72,767.10</b> | <b>9,505,765.90</b> | <b>1.83</b>                             |

The inventory NASM figures for categories 1-20 may not necessarily agree at some institutions with the inventory figures reported on Table 16.

**Table 16: Distribution of Actual Inventory by Major Space Category and Institution, 2016-17 (PART ONE)**

|                      | Classroom<br>Facilities<br>(Cat 1) | Lab<br>Undergrad<br>(Cat 2) | Lab Grad &<br>Faculty<br>(Cat 3) | Acad Office<br>& Related<br>(Cat 4) | Lib Facilities<br>& Library<br>Study Space<br>(Cat 5) | Recreation/<br>Athletic<br>Space<br>(Cat 6) | Food<br>Service<br>(Cat 7) | Bookstore &<br>Merch<br>Facilities<br>(Cat 8) | Plant<br>Maintenance<br>(Cat 9) | Admin<br>Office<br>& Related<br>(Cat 10) | Non-Library<br>Study<br>Space<br>(Cat 11) | Central<br>Services<br>(Cat 12) |
|----------------------|------------------------------------|-----------------------------|----------------------------------|-------------------------------------|---|---|----------------------------|---|---------------------------------|--|---|---------------------------------|
| Algoma               | 1,537                              | 1,035                       | 296                              | 907                                 | 1,200   | 4,239                                       | 442                        | 269   | 278                             | 1,575                                    | 322                                       | 475                             |
| Brock                | 13,098                             | 10,370                      | 12,866                           | 19,636                              | 6,584   | 9,164                                       | 5,206                      | 1,436   | 2,538                           | 9,729                                    | 4,446                                     | 3,571                           |
| Carleton             | 17,832                             | 18,372                      | 18,478                           | 35,933                              | 21,049  | 24,250                                      | 7,253                      | 1,663   | 1,846                           | 14,144                                   | 4,709                                     | 4,044                           |
| Guelph               | 16,604                             | 28,725                      | 60,720                           | 47,838                              | 17,070  | 33,778                                      | 8,898                      | 1,662   | 6,962                           | 16,181                                   | 3,572                                     | 5,453                           |
| Lakehead             | 9,591                              | 13,427                      | 8,057                            | 10,346                              | 7,722   | 9,226                                       | 4,409                      | 232   | 1,013                           | 6,603                                    | 2,046                                     | 3,116                           |
| Laurentian           | 8,318                              | 9,301                       | 7,177                            | 14,210                              | 7,840   | 9,719                                       | 3,280                      | 524   | 1,317                           | 6,676                                    | 1,568                                     | 1,614                           |
| Laurentian (Hearst)  | 1,063                              | 201                         | 0                                | 788                                 | 887   | 490   | 475                        | 17  | 102                             | 249                                      | 177                                       | 284                             |
| McMaster             | 26,420                             | 18,072                      | 57,666                           | 59,914                              | 20,782  | 17,243                                      | 7,792                      | 2,779   | 3,402                           | 18,129                                   | 7,553                                     | 3,694                           |
| Nipissing            | 5,709                              | 3,761                       | 1,481                            | 3,766                               | 393   | 2,955                                       | 1,952                      | 51  | 103                             | 3,501                                    | 511                                       | 743                             |
| NOSM                 | 988                                | 849                         | 1,538                            | 1,597                               | 604   | 0   | 0                          | 0   | 0                               | 2,306                                    | 368                                       | 75                              |
| OCAD U               | 2,454                              | 9,648                       | 1,627                            | 3,843                               | 1,503   | 0   | 48                         | 89  | 0                               | 791                                      | 22  | 113                             |
| UOIT                 | 7,486                              | 6,392                       | 7,241                            | 6,593                               | 3,707   | 5,674                                       | 1,114                      | 31  | 546                             | 5,201                                    | 967                                       | 2,448                           |
| Ottawa               | 26,280                             | 19,025                      | 38,062                           | 63,822                              | 26,198  | 24,005                                      | 5,489                      | 2,794   | 4,094                           | 20,440                                   | 10,044                                    | 3,277                           |
| Queen's              | 22,680                             | 23,785                      | 40,270                           | 62,002                              | 24,005  | 17,474                                      | 11,296                     | 2,783   | 2,351                           | 18,424                                   | 8,248                                     | 961                             |
| Ryerson              | 19,528                             | 33,941                      | 15,658                           | 30,515                              | 9,592   | 14,274                                      | 3,802                      | 1,052   | 2,590                           | 17,814                                   | 12,652                                    | 2,317                           |
| Toronto (St. George) | 58,318                             | 41,456                      | 100,184                          | 155,676                             | 79,441  | 30,368                                      | 14,365                     | 3,411   | 9,251                           | 27,328                                   | 18,657                                    | 3,721                           |
| Toronto (Miss)       | 12,502                             | 8,316                       | 7,479                            | 10,846                              | 5,708   | 6,894                                       | 4,397                      | 457   | 1,476                           | 5,432                                    | 2,371                                     | 821                             |
| Toronto (Scar)       | 6,725                              | 6,078                       | 8,789                            | 10,268                              | 3,804   | 9,534                                       | 3,195                      | 719   | 3,386                           | 6,470                                    | 3,543                                     | 1,241                           |
| Trent                | 8,026                              | 4,582                       | 7,879                            | 10,341                              | 5,385   | 3,966                                       | 3,299                      | 487   | 380                             | 5,904                                    | 1,987                                     | 620                             |
| Waterloo             | 31,608                             | 34,526                      | 57,640                           | 77,120                              | 16,563  | 12,935                                      | 10,819                     | 2,932   | 6,999                           | 31,843                                   | 16,082                                    | 5,337                           |
| Western              | 40,091                             | 29,172                      | 57,950                           | 84,103                              | 32,140  | 19,513                                      | 15,455                     | 4,330   | 2,799                           | 26,153                                   | 7,826                                     | 4,496                           |
| WLU                  | 13,998                             | 9,882                       | 5,677                            | 21,400                              | 8,885   | 11,025                                      | 3,582                      | 2,005   | 1,360                           | 13,500                                   | 5,007                                     | 2,776                           |
| Windsor              | 16,628                             | 19,207                      | 15,762                           | 25,976                              | 14,488  | 10,716                                      | 5,307                      | 961   | 1,368                           | 10,955                                   | 4,458                                     | 2,340                           |
| York (Keele)         | 35,286                             | 30,343                      | 23,819                           | 66,327                              | 23,561  | 10,387                                      | 8,680                      | 2,948   | 4,826                           | 22,344                                   | 8,720                                     | 3,629                           |
| York (Glen)          | 3,478                              | 783                         | 153                              | 3,744                               | 1,833   | 2,919                                       | 890                        | 357   | 340                             | 1,448                                    | 300                                       | 199                             |
| <b>TOTAL</b>         | <b>406,247</b>                     | <b>381,246</b>              | <b>556,469</b>                   | <b>827,512</b>                      | <b>340,945</b>  | <b>290,748</b>                              | <b>131,446</b>             | <b>33,988</b>                                 | <b>59,328</b>                   | <b>293,139</b>                           | <b>126,157</b>                            | <b>57,364</b>                   |



**Table 17: Distribution of Actual Inventory by Major Space Category and Institution, 2016-17 (PART TWO)**

|                     | Health Service Facilities (Cat 13) | Student Activity Space (Cat 14) | Assembly, Exhibition Facilities (Cat 15) | Subtotal Formula Areas (Cat 1-15) | Residential Space (Cat 17) | Animal Space (Cat 18) | Other (Cat 19) | Health Sci Clinical Facilities (Cat 20) | Subtotal Non-Formula (Cat 17-20) | Non-Assignable (Cat 16) | Total (Cat 1-20) |
|---------------------|------------------------------------|---------------------------------|--|-----------------------------------|----------------------------|-----------------------|----------------|---|----------------------------------|-------------------------|------------------|
| Algoma              | 33                                 | 330                             | 309                                      | 13,246                            | 5,602                      | 114                   | 1,215          | 0                                       | 6,931                            | 5,322                   | 25,500           |
| Brock               | 902                                | 1,494                           | 2,573                                    | 103,613                           | 48,239                     | 169                   | 2,219          | 687                                     | 51,314                           | 68,270                  | 223,198          |
| Carleton            | 1,341                              | 2,678                           | 6,757                                    | 180,348                           | 61,376                     | 387                   | 5,356          | 0                                       | 67,119                           | 156,438                 | 403,905          |
| Guelph              | 1,277                              | 2,183                           | 3,323                                    | 254,245                           | 110,387                    | 7,267                 | 13,131         | 7,709                                   | 138,494                          | 161,020                 | 553,758          |
| Lakehead            | 1,304                              | 2,587                           | 2,413                                    | 82,091                            | 40,210                     | 0                     | 3,941          | 0                                       | 44,151                           | 51,606                  | 177,848          |
| Laurentian          | 403                                | 1,391                           | 1,419                                    | 74,757                            | 33,074                     | 356                   | 8,988          | 0                                       | 42,418                           | 59,061                  | 176,236          |
| Laurentian (Hearst) | 0                                  | 15                              | 369                                      | 5,116                             | 499                        | 0                     | 1,679          | 0                                       | 2,178                            | 2,130                   | 9,424            |
| McMaster            | 508                                | 5,285                           | 3,904                                    | 253,144                           | 60,020                     | 1,654                 | 4,853          | 57,228                                  | 123,755                          | 152,956                 | 529,855          |
| Nipissing           | 111                                | 93                              | 0  | 25,128                            | 3,356                      | 0                     | 0              | 0                                       | 3,356                            | 14,475                  | 42,959           |
| NOSM                | 0                                  | 37                              | 0  | 8,361                             | 0                          | 0                     | 0              | 0                                       | 0                                | 4,347                   | 12,708           |
| OCAD U              | 0                                  | 21                              | 383                                      | 20,543                            | 3,151                      | 167                   | 0              | 0                                       | 3,319                            | 3,151                   | 27,013           |
| UOIT                | 0                                  | 377                             | 524                                      | 48,300                            | 0                          | 0                     | 9,730          | 0                                       | 9,730                            | 41,248                  | 99,277           |
| Ottawa              | 1,422                              | 4,759                           | 6,138                                    | 255,849                           | 93,864                     | 1,953                 | 9,383          | 0                                       | 105,200                          | 223,595                 | 584,644          |
| Queen's             | 1,240                              | 5,751                           | 7,185                                    | 248,455                           | 95,242                     | 2,376                 | 3,313          | 2,588                                   | 103,520                          | 257,265                 | 609,240          |
| Ryerson             | 133                                | 6,168                           | 5,276                                    | 175,313                           | 16,659                     | 0                     | 3,376          | 0                                       | 20,035                           | 117,268                 | 312,616          |
| Toronto (St.George) | 1,973                              | 10,454                          | 12,545                                   | 567,150                           | 124,458                    | 3,511                 | 50,266         | 0                                       | 178,235                          | 456,503                 | 1,201,888        |
| Toronto (Miss)      | 358                                | 1,217                           | 1,082                                    | 69,356                            | 30,467                     | 0                     | 2,603          | 0                                       | 33,070                           | 70,787                  | 173,213          |
| Toronto (Scar)      | 267                                | 1,708                           | 1,696                                    | 67,423                            | 15,116                     | 0                     | 13,871         | 0                                       | 28,987                           | 54,004                  | 150,415          |
| Trent               | 155                                | 879                             | 0  | 53,888                            | 16,764                     | 958                   | 2,807          | 0                                       | 20,529                           | 38,622                  | 113,039          |
| Waterloo            | 2,001                              | 3,943                           | 4,148                                    | 314,496                           | 136,350                    | 0                     | 14,884         | 1,369                                   | 152,603                          | 238,304                 | 705,403          |
| Western             | 1,096                              | 4,324                           | 14,916                                   | 344,365                           | 187,446                    | 3,688                 | 7,349          | 2,806                                   | 201,289                          | 251,793                 | 797,446          |
| WLU                 | 186                                | 2,522                           | 5,434                                    | 107,239                           | 96,276                     | 227                   | 646            | 0                                       | 97,149                           | 105,976                 | 310,364          |
| Windsor             | 400                                | 1,560                           | 1,853                                    | 131,980                           | 18,126                     | 0                     | 3,707          | 474                                     | 22,307                           | 109,440                 | 263,727          |
| York (Keele)        | 364                                | 6,425                           | 4,735                                    | 252,394                           | 97,569                     | 0                     | 10,126         | 0                                       | 107,695                          | 316,557                 | 676,646          |
| York (Glen)         | 0                                  | 682                             | 969                                      | 18,095                            | 7,609                      | 0                     | 81             | 0                                       | 7,690                            | 15,018                  | 40,804           |
| <b>TOTAL</b>        | <b>15,474</b>                      | <b>66,882</b>                   | <b>87,950</b>                            | <b>3,674,894</b>                  | <b>1,301,861</b>           | <b>22,828</b>         | <b>173,525</b> | <b>72,861</b>                           | <b>1,571,076</b>                 | <b>2,975,156</b>        | <b>8,221,126</b> |

**Table 18: Percent Distribution of Actual Inventory by Major Formula Space Category and Institution, 2016-17**

|                   | Classroom Facilities (Cat 1) | Lab Undergrd (Cat 2) | Lab Grad & Faculty (Cat 3) | Acad Office & Related (Cat 4) | Library Facilities & Library Study (Cat 5) | Recreatn/ Athletic Space (Cat 6) | Food Service (Cat 7) | Bookstore & Merch Facilities (Cat 8) | Plant Mtce (Cat 9) | Admin Office & Related (Cat 10) | Non-Library Study Space (Cat 11) | Central Services (Cat 12) | Health Service Facilities (Cat 13) | Student Activity & Space (Cat 14) | Assembly & Exhibition Facilities (Cat 15) | Formula Areas (Cat 1-15) |
|-------------------|------------------------------|----------------------|----------------------------|-------------------------------|--|----------------------------------|----------------------|--------------------------------------|--------------------|---------------------------------|----------------------------------|---------------------------|------------------------------------|-----------------------------------|---|--------------------------|
| Algoma            | 11.6%                        | 7.8%                 | -                          | 6.8%                          | 9.1%                                       | 32.0%                            | 3.3%                 | 2.0%                                 | 2.1%               | 11.9%                           | 2.4%                             | 3.6%                      | 0.2%                               | 2.5%                              | 2.3%                                      | 100.0%                   |
| Brock             | 12.6%                        | 10.0%                | 12.4%                      | 19.0%                         | 6.4%                                       | 8.8%                             | 5.0%                 | 1.4%                                 | 2.4%               | 9.4%                            | 4.3%                             | 3.4%                      | 0.9%                               | 1.4%                              | 2.5%                                      | 100.0%                   |
| Carleton          | 9.9%                         | 10.2%                | 10.2%                      | 19.9%                         | 11.7%                                      | 13.4%                            | 4.0%                 | 0.9%                                 | 1.0%               | 7.8%                            | 2.6%                             | 2.2%                      | 0.7%                               | 1.5%                              | 3.7%                                      | 100.0%                   |
| Guelph            | 6.5%                         | 11.3%                | 23.9%                      | 18.8%                         | 6.7%                                       | 13.3%                            | 3.5%                 | 0.7%                                 | 2.7%               | 6.4%                            | 1.4%                             | 2.1%                      | 0.5%                               | 0.9%                              | 1.3%                                      | 100.0%                   |
| Lakehead          | 11.7%                        | 16.4%                | 9.8%                       | 12.6%                         | 9.4%                                       | 11.2%                            | 5.4%                 | 0.3%                                 | 1.2%               | 8.0%                            | 2.5%                             | 3.8%                      | 1.6%                               | 3.2%                              | 2.9%                                      | 100.0%                   |
| Laurentian        | 11.1%                        | 12.4%                | 9.6%                       | 19.0%                         | 10.5%                                      | 13.0%                            | 4.4%                 | 0.7%                                 | 1.8%               | 8.9%                            | 2.1%                             | 2.2%                      | 0.5%                               | 1.9%                              | 1.9%                                      | 100.0%                   |
| Laurentian (Hear) | 20.8%                        | 3.9%                 | -                          | 15.4%                         | 17.3%                                      | 9.6%                             | 9.3%                 | 0.3%                                 | 2.0%               | 4.9%                            | 3.5%                             | 5.5%                      | -                                  | 0.3%                              | 7.2%                                      | 100.0%                   |
| McMaster          | 10.4%                        | 7.1%                 | 22.8%                      | 23.7%                         | 8.2%                                       | 6.8%                             | 3.1%                 | 1.1%                                 | 1.3%               | 7.2%                            | 3.0%                             | 1.5%                      | 0.2%                               | 2.1%                              | 1.5%                                      | 100.0%                   |
| Nipissing         | 22.7%                        | 15.0%                | 5.9%                       | 15.0%                         | 1.6%                                       | 11.8%                            | 7.8%                 | 0.2%                                 | -                  | 13.9%                           | 2.0%                             | 3.0%                      | -                                  | 0.4%                              | -   | 100.0%                   |
| NOSM              | 11.8%                        | 10.2%                | 18.4%                      | 19.1%                         | 7.2%                                       | -                                | -                    | -                                    | -                  | 27.6%                           | 4.4%                             | 0.9%                      | -                                  | 0.4%                              | -   | 100.0%                   |
| OCAD U            | 11.9%                        | 47.0%                | 7.9%                       | 18.7%                         | 7.3%                                       | -                                | 0.2%                 | 0.4%                                 | 0.0%               | 3.9%                            | 0.1%                             | 0.6%                      | 0.0%                               | 0.1%                              | 1.9%                                      | 100.0%                   |
| UOIT              | 15.5%                        | 13.2%                | 15.0%                      | 13.6%                         | 7.7%                                       | 11.7%                            | 2.3%                 | 0.1%                                 | -                  | 10.8%                           | 2.0%                             | 5.1%                      | 0.0%                               | 0.8%                              | 1.1%                                      | 100.0%                   |
| Ottawa            | 10.3%                        | 7.4%                 | 14.9%                      | 24.9%                         | 10.2%                                      | 9.4%                             | 2.1%                 | 1.1%                                 | 1.6%               | 8.0%                            | 3.9%                             | 1.3%                      | 0.6%                               | 1.9%                              | 2.4%                                      | 100.0%                   |
| Queen's           | 9.1%                         | 9.6%                 | 16.2%                      | 25.0%                         | 9.7%                                       | 7.0%                             | 4.5%                 | 1.1%                                 | 0.9%               | 7.4%                            | 3.3%                             | 0.4%                      | 0.5%                               | 2.3%                              | 2.9%                                      | 100.0%                   |
| Ryerson           | 11.1%                        | 19.4%                | 8.9%                       | 17.4%                         | 5.5%                                       | 8.1%                             | 2.2%                 | 0.6%                                 | 1.5%               | 10.2%                           | 7.2%                             | 1.3%                      | 0.1%                               | 3.5%                              | 3.0%                                      | 100.0%                   |
| Toronto (St.Grge) | 10.3%                        | 7.3%                 | 17.7%                      | 27.4%                         | 14.0%                                      | 5.4%                             | 2.5%                 | 0.6%                                 | 1.6%               | 4.8%                            | 3.3%                             | 0.7%                      | 0.3%                               | 1.8%                              | 2.2%                                      | 100.0%                   |
| Toronto (Miss)    | 18.0%                        | 12.0%                | 10.8%                      | 15.6%                         | 8.2%                                       | 9.9%                             | 6.3%                 | 0.7%                                 | 2.1%               | 7.8%                            | 3.4%                             | 1.2%                      | 0.5%                               | 1.8%                              | 1.6%                                      | 100.0%                   |
| Toronto (Scar)    | 10.0%                        | 9.0%                 | 13.0%                      | 15.2%                         | 5.6%                                       | 14.1%                            | 4.7%                 | 1.1%                                 | 5.0%               | 9.6%                            | 5.3%                             | 1.8%                      | 0.4%                               | 2.5%                              | 2.5%                                      | 100.0%                   |
| Trent             | 14.9%                        | 8.5%                 | 14.6%                      | 19.2%                         | 10.0%                                      | 7.4%                             | 6.1%                 | 0.9%                                 | 0.7%               | 11.0%                           | 3.7%                             | 1.2%                      | 0.3%                               | 1.6%                              | -   | 100.0%                   |
| Waterloo          | 10.1%                        | 11.0%                | 18.3%                      | 24.5%                         | 5.3%                                       | 4.1%                             | 3.4%                 | 0.9%                                 | 2.2%               | 10.1%                           | 5.1%                             | 1.7%                      | 0.6%                               | 1.3%                              | 1.3%                                      | 100.0%                   |
| Western           | 11.6%                        | 8.5%                 | 16.8%                      | 24.4%                         | 9.3%                                       | 5.7%                             | 4.5%                 | 1.3%                                 | 0.8%               | 7.6%                            | 2.3%                             | 1.3%                      | 0.3%                               | 1.3%                              | 4.3%                                      | 100.0%                   |
| WLU               | 13.1%                        | 9.2%                 | 5.3%                       | 20.0%                         | 8.3%                                       | 10.3%                            | 3.3%                 | 1.9%                                 | 1.3%               | 12.6%                           | 4.7%                             | 2.6%                      | 0.2%                               | 2.4%                              | 5.1%                                      | 100.0%                   |
| Windsor           | 12.6%                        | 14.6%                | 11.9%                      | 19.7%                         | 11.0%                                      | 8.1%                             | 4.0%                 | 0.7%                                 | 1.0%               | 8.3%                            | 3.4%                             | 1.8%                      | 0.3%                               | 1.2%                              | 1.4%                                      | 100.0%                   |
| York (Keele)      | 14.0%                        | 12.0%                | 9.4%                       | 26.3%                         | 9.3%                                       | 4.1%                             | 3.4%                 | 1.2%                                 | 1.9%               | 8.9%                            | 3.5%                             | 1.4%                      | 0.1%                               | 2.5%                              | 1.9%                                      | 100.0%                   |
| York (Glen)       | 19.2%                        | 4.3%                 | 0.8%                       | 20.7%                         | 10.1%                                      | 16.1%                            | 4.9%                 | 2.0%                                 | 1.9%               | 8.0%                            | 1.7%                             | 1.1%                      | -                                  | 3.8%                              | 5.4%                                      | 100.0%                   |
| <b>TOTAL</b>      | <b>11.1%</b>                 | <b>10.4%</b>         | <b>15.1%</b>               | <b>22.5%</b>                  | <b>9.3%</b>                                | <b>7.9%</b>                      | <b>3.6%</b>          | <b>0.9%</b>                          | <b>1.6%</b>        | <b>8.0%</b>                     | <b>3.4%</b>                      | <b>1.6%</b>               | <b>0.4%</b>                        | <b>1.8%</b>                       | <b>2.4%</b>                               | <b>100.0%</b>            |
| <b>AVERAGE</b>    | <b>12.8%</b>                 | <b>11.9%</b>         | <b>12.8%</b>               | <b>19.3%</b>                  | <b>8.8%</b>                                | <b>10.5%</b>                     | <b>4.2%</b>          | <b>0.9%</b>                          | <b>1.7%</b>        | <b>9.4%</b>                     | <b>3.2%</b>                      | <b>2.1%</b>               | <b>0.4%</b>                        | <b>1.7%</b>                       | <b>2.7%</b>                               |                          |

**Table 19: Percent Distribution of Actual Inventory by Major Space Category and Institution, 2016-17**

|                         | <b>Formula<br/>space</b><br>(Cat 1-15) | Non-<br>Formula:<br>Residential<br>space<br>(Cat 17) | Non-<br>Formula:<br>Other<br>Space<br>(Cat 18-20) | <b>Non-<br/>Formula<br/>space</b><br>(Cat 17-20) | <b>Non-<br/>Assignable<br/>space</b><br>(Cat 16) | <b>Total<br/>Space</b><br>(Cat 1-20) |
|-------------------------|--|--|---|--|--|--------------------------------------|
| Algoma                  | 51.9%                                  | 22.0%  | 5.2%  | 27.2%  | 20.9%  | 100%                                 |
| Brock                   | 46.4%                                  | 21.6%  | 1.4%  | 23.0%  | 30.6%  | 100%                                 |
| Carleton                | 44.7%                                  | 15.2%  | 1.4%  | 16.6%  | 38.7%  | 100%                                 |
| Guelph                  | 45.9%                                  | 19.9%  | 5.1%  | 25.0%  | 29.1%  | 100%                                 |
| Lakehead                | 46.2%                                  | 22.6%  | 2.2%  | 24.8%  | 29.0%  | 100%                                 |
| Laurentian              | 42.4%                                  | 18.8%  | 5.3%  | 24.1%  | 33.5%  | 100%                                 |
| Laurentian<br>(Hearst)  | 54.3%                                  | 5.3%   | 17.8%   | 23.1%  | 22.6%  | 100%                                 |
| McMaster                | 47.8%                                  | 11.3%  | 12.0%   | 23.4%  | 28.9%  | 100%                                 |
| Nipissing               | 58.5%                                  | 7.8%   | 0.0%  | 7.8%   | 33.7%  | 100%                                 |
| NOSM                    | 65.8%                                  | -  | 0.0%  | -  | 34.2%  | 100%                                 |
| OCAD U                  | 76.0%                                  | -  | 0.6%  | 12.3%  | 11.7%  | 100%                                 |
| UOIT                    | 48.7%                                  | -  | 9.8%  | 9.8%   | 41.5%  | 100%                                 |
| Ottawa                  | 43.8%                                  | 16.1%  | 1.9%  | 18.0%  | 38.2%  | 100%                                 |
| Queen's                 | 40.8%                                  | 15.6%  | 1.4%  | 17.0%  | 42.2%  | 100%                                 |
| Ryerson                 | 56.1%                                  | 5.3%   | 1.1%  | 6.4%   | 37.5%  | 100%                                 |
| Toronto (St.<br>George) | 47.2%                                  | 10.4%  | 4.5%  | 14.8%  | 38.0%  | 100%                                 |
| Toronto (Miss)          | 40.0%                                  | 17.6%  | 1.5%  | 19.1%  | 40.9%  | 100%                                 |
| Toronto (Scar)          | 44.8%                                  | 10.0%  | 9.2%  | 19.3%  | 35.9%  | 100%                                 |
| Trent                   | 47.7%                                  | 14.8%  | 3.3%  | 18.2%  | 34.2%  | 100%                                 |
| Waterloo                | 44.6%                                  | 19.3%  | 2.3%  | 21.6%  | 33.8%  | 100%                                 |
| Western                 | 43.2%                                  | 23.5%  | 1.7%  | 25.2%  | 31.6%  | 100%                                 |
| WLU                     | 34.6%                                  | 31.0%  | 0.3%  | 31.3%  | 34.1%  | 100%                                 |
| Windsor                 | 50.0%                                  | 6.9%   | 1.6%  | 8.5%   | 41.5%  | 100%                                 |
| York (Keele)            | 37.3%                                  | 14.4%  | 1.5%  | 15.9%  | 46.8%  | 100%                                 |
| York (Glen)             | 44.3%                                  | 18.6%  | 0.2%  | 18.8%  | 36.8%  | 100%                                 |
| TOTAL                   | 44.7%                                  | 15.8%  | 3.3%  | 19.1%  | 36.2%  | 100%                                 |
| AVERAGE                 | 48.1%                                  | 15.8%  | 3.7%  | 18.8%  | 33.8%  |                                      |

## 5. Institutional Space Requirements as Measured by COU Space Standards: Tables by University

**Table 20: ALGOMA: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|   | Input Measure | Space Factor | Generated Space | Inventory        | % I / G      | System Average | 2013-14 % I / G |
|---|---------------|--------------|-----------------|------------------|--------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>           |               |              |                 |                  |              |                |                 |
| <b>CLASSROOMS</b>                                   |               |              |                 |                  |              |                |                 |
| Total FTE Students                                  | 1,077.60      | 1.11         | 1,196.14        | 1,536.90         | 128.5        | 82.8           | 125.0           |
| <b>CLASS LABS</b>                                   |               |              |                 |                  |              |                |                 |
| Lab Contact Hours W                                 | 0.00          | 0.8          | 0.00            | 0.00             |              |                |                 |
| Lab Contact Hours X                                 | 0.00          | 0.6          | 0.00            | 0.00             |              |                |                 |
| Lab Contact Hours Y                                 | 0.00          | 0.5          | 0.00            | 0.00             |              |                |                 |
| Lab Contact Hours Z                                 | 0.00          | 0.3          | 0.00            | 0.00             |              |                |                 |
| Unclassified  | 0.00          |              |                 | 0.00             |              |                |                 |
| Total Class Lab                                     | 0.00          |              | 0.00            | 0.00             |              | 71.7           | 125.6           |
| <b>RESEARCH LABS</b>                                |               |              |                 |                  |              |                |                 |
| Research Disciplines A                              | 4.80          | 45.0         | 216.00          | 0.00             |              |                |                 |
| Research Disciplines B                              | 5.80          | 30.0         | 174.00          | 0.00             |              |                |                 |
| Research Disciplines C                              | 0.00          | 20.0         | 0.00            | 0.00             |              |                |                 |
| Research Disciplines D                              | 14.80         | 10.0         | 148.00          | 0.00             |              |                |                 |
| Research Disciplines E                              | 67.00         | 1.0          | 67.00           | 0.00             |              |                |                 |
| Unclassified  | 0.00          |              |                 | 0.00             |              |                |                 |
| Total Research                                      | 92.40         |              | 605.00          | 0.00             | 0.0          | 72.1           | 36.2            |
| <b>OFFICE - ACADEMIC</b>                            |               |              |                 |                  |              |                |                 |
| Total FTE Faculty                                   | 92.40         | 12.0         | 1,108.80        | 678.40           | 61.2         | 126.2          | 54.1            |
| Research Appointments                               | 0.00          | 12.0         | 0.00            | 108.90           |              |                | 269.7           |
| Total FTE Grads                                     | 0.00          | 3.0          | 0.00            | 0.00             | n/a          | 70.6           | na              |
| Total FTE Non-Acd Staff                             | 13.00         | 12.0         | 156.00          | 0.00             | 0.0          | 101.1          | 0.0             |
| Office Service                                      | 1,264.80      | 0.25         | 316.20          | 120.00           | 38.0         | 114.3          | 53.4            |
| Total Academic Office                               |               |              | 1,581.00        | 907.30           | 57.4         | 99.5           | 57.3            |
| <b>OFFICE - ADMINISTRATIVE</b>                      |               |              |                 |                  |              |                |                 |
| Total FTE Non-Acd Staff                             | 88.00         | 12.0         | 1,056.00        | 1,109.27         | 105.0        | 110.6          | 142.3           |
| Office Service                                      | 1,056.00      | 0.5          | 528.00          | 465.37           | 88.1         | 126.0          | 135.1           |
| Total Admin. Office                                 |               |              | 1,584.00        | 1,574.64         | 99.4         | 115.7          | 139.9           |
| Total Office - Academic & Administrative            |               |              | 3,165.00        | 2,481.94         | 78.4         | 103.3          | 89.9            |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b> |               |              |                 |                  |              |                |                 |
| Study (Total FTE Students)                          | 1,077.60      | 0.5          | 538.80          | 600.70           | 111.5        | 51.0           | 78.5            |
| Traditional Static Shelving Space                   | 137,693.97    | 0.005        | 688.47          |                  |              |                |                 |
| Mobile Compact Shelving                             | 0.00          | 0.004        | 0.00            |                  |              |                |                 |
| Super High Density                                  | 0.00          | 0.0035       | 0.00            |                  |              |                |                 |
| Total Stack   | 137,693.97    |              | 688.47          | 428.80           | 62.3         | 74.2           | 63.9            |
| Library Support                                     | 1,227.27      | 0.25         | 306.82          | 170.40           | 55.5         | 69.0           | 47.5            |
| Total Library Facilities & Library Study Space      |               |              | 1,534.09        | 1,199.90         | 78.2         | 63.6           | 66.9            |
| NON-LIBRARY STUDY SPACE                             | 1,077.60      | 0.4          | 431.04          | 322.25           | 74.8         | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>    |               |              | <b>6,931.26</b> | <b>5,540.99</b>  | <b>79.9</b>  | <b>81.6</b>    | <b>90.5</b>     |
| <b>OTHER SPACE</b>                                  |               |              |                 |                  |              |                |                 |
| <b>RECREATION / ATHLETICS</b>                       |               |              |                 |                  |              |                |                 |
| Total FTE Students                                  | 1,077.60      | 0.9          | 969.84          | 4,238.58         | 437.0        | 73.1           | 297.1           |
| <b>MAINTENANCE SHOPS</b>                            |               |              |                 |                  |              |                |                 |
| Total NASM Inv. (exc. 16.0)                         | 20,177.45     | 0.015        | 302.66          | 277.70           | 91.8         | 75.7           | 74.0            |
| <b>STUDENT AND CENTRAL SERVICES</b>                 |               |              |                 |                  |              |                |                 |
| Total FTE Students                                  | 1,077.60      | 1.5          | 1,616.40        | 1,857.50         | 114.9        | 59.3           | 107.6           |
| <b>SUB-TOTAL: OTHER SPACE</b>                       |               |              | <b>2,888.90</b> | <b>6,373.78</b>  | <b>220.6</b> | <b>65.3</b>    | <b>167.2</b>    |
| <b>TOTAL FORMULA AREAS</b>                          |               |              | <b>9,820.17</b> | <b>11,914.77</b> | <b>121.3</b> | <b>77.7</b>    | <b>113.5</b>    |

The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data.

Complete data not available for this institution.

**Table 21: BROCK: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                   |                   |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 15,685.76     | 1.11         | 17,411.19         | 13,097.72         | 75.2        | 82.8           | 59.4            |
| <b>CLASS LABS</b>  |               |              |                   |                   |             |                |                 |
| Lab Contact Hours W  | 0.00          | 0.8          | 0.00              | 0.00              |             |                |                 |
| Lab Contact Hours X  | 19,541.50     | 0.6          | 11,724.90         | 6,632.03          |             |                |                 |
| Lab Contact Hours Y  | 10,617.50     | 0.5          | 5,308.75          | 2,833.61          |             |                |                 |
| Lab Contact Hours Z  | 11,846.00     | 0.3          | 3,553.80          | 904.05            |             |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Class Lab  | 42,005.00     |              | 20,587.45         | 10,369.69         | 50.4        | 71.7           | 39.4            |
| <b>RESEARCH LABS</b>   |               |              |                   |                   |             |                |                 |
| Research Disciplines A   | 114.53        | 45.0         | 5,153.63          | 5,934.53          |             |                |                 |
| Research Disciplines B   | 50.62         | 30.0         | 1,518.60          | 1,038.09          |             |                |                 |
| Research Disciplines C   | 10.59         | 20.0         | 211.80            | 1,372.26          |             |                |                 |
| Research Disciplines D   | 192.81        | 10.0         | 1,928.05          | 2,450.67          |             |                |                 |
| Research Disciplines E   | 1,013.70      | 1.0          | 1,013.70          | 2,070.31          |             |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Research   | 1,382.24      |              | 9,825.78          | 12,865.86         | 130.9       | 72.1           | 68.1            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Faculty  | 674.70        | 12.0         | 8,096.40          | 8,594.13          | 106.1       | 126.2          | 82.0            |
| Research Appointments  | 54.59         | 12.0         | 655.08            | 472.42            | 72.1        |                | 64.6            |
| Total FTE Grads  | 1,388.20      | 3.0          | 4,164.60          | 3,151.38          | 75.7        | 70.6           | 73.3            |
| Total FTE Non-Acd Staff  | 280.97        | 12.0         | 3,371.64          | 2,749.61          | 81.6        | 101.1          | 82.2            |
| Office Service   | 16,287.72     | 0.25         | 4,071.93          | 4,668.26          | 114.6       | 114.3          | 84.0            |
| Total Academic Office  |               |              | 20,359.65         | 19,635.80         | 96.4        | 99.5           | 80.1            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Non-Acd Staff  | 494.73        | 12.0         | 5,936.76          | 6,273.78          | 105.7       | 110.6          | 100.6           |
| Office Service   | 5,936.76      | 0.5          | 2,968.38          | 3,455.03          | 116.4       | 126.0          | 111.2           |
| Total Admin. Office  |               |              | 8,905.14          | 9,728.81          | 109.2       | 115.7          | 104.1           |
| Total Office - Academic & Administrative   |               |              | 29,264.79         | 29,364.61         | 100.3       | 103.3          | 87.1            |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                   |                   |             |                |                 |
| Study (Total FTE Students)   | 15,685.76     | 0.5          | 7,842.88          | 2,706.40          | 34.5        | 51.0           | 47.8            |
| Traditional Static Shelving Space  | 815,192.89    | 0.005        | 4,075.96          |                   |             |                |                 |
| Mobile Compact Shelving  | 0.00          | 0.004        | 0.00              |                   |             |                |                 |
| Super High Density   | 0.00          | 0.0035       | 0.00              |                   |             |                |                 |
| Total Stack  | 815,192.89    |              | 4,075.96          | 2,144.47          | 52.6        | 74.2           | 76.2            |
| Library Support  | 11,918.84     | 0.25         | 2,979.71          | 1,733.34          | 58.2        | 69.0           | 70.2            |
| Total Library Facilities & Library Study Space   |               |              | 14,898.56         | 6,584.21          | 44.2        | 63.6           | 59.3            |
| NON-LIBRARY STUDY SPACE  | 15,685.76     | 0.4          | 6,274.30          | 4,446.43          | 70.9        | 71.6           | n/a             |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>98,262.07</b>  | <b>76,728.52</b>  | <b>78.1</b> | <b>81.6</b>    | <b>64.8</b>     |
| <b>OTHER SPACE</b>   |               |              |                   |                   |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 15,685.76     | 0.9          | 14,117.18         | 9,163.98          | 64.9        | 73.1           | 76.5            |
| <b>MAINTENANCE SHOPS</b>   |               |              |                   |                   |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 154,927.44    | 0.015        | 2,323.91          | 2,538.04          | 109.2       | 75.7           | 99.6            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 15,685.76     | 1.5          | 23,528.64         | 15,182.48         | 64.5        | 59.3           | 66.1            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>39,969.74</b>  | <b>26,884.50</b>  | <b>67.3</b> | <b>65.3</b>    | <b>71.6</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>138,231.80</b> | <b>103,613.02</b> | <b>75.0</b> | <b>77.7</b>    | <b>66.7</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                   |                   |             |                |                 |

**Table 22: CARLETON: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                   |                   |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 25,271.00     | 1.11         | 28,050.81         | 17,831.83         | 63.6        | 82.8           | 66.7            |
| <b>CLASS LABS</b>  |               |              |                   |                   |             |                |                 |
| Lab Contact Hours W  | 12,134.00     | 0.8          | 9,707.20          | 5,417.95          |             |                |                 |
| Lab Contact Hours X  | 29,830.00     | 0.6          | 17,898.00         | 10,481.43         |             |                |                 |
| Lab Contact Hours Y  | 3,056.00      | 0.5          | 1,528.00          | 544.56            |             |                |                 |
| Lab Contact Hours Z  | 26,077.00     | 0.3          | 7,823.10          | 1,927.69          |             |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Class Lab  | 71,097.00     |              | 36,956.30         | 18,371.63         | 49.7        | 71.7           | 58.3            |
| <b>RESEARCH LABS</b>   |               |              |                   |                   |             |                |                 |
| Research Disciplines A   | 320.78        | 45.0         | 14,435.10         | 7,795.65          |             |                |                 |
| Research Disciplines B   | 356.79        | 30.0         | 10,703.70         | 6,728.55          |             |                |                 |
| Research Disciplines C   | 145.60        | 20.0         | 2,912.00          | 1,124.75          |             |                |                 |
| Research Disciplines D   | 384.43        | 10.0         | 3,844.30          | 1,970.10          |             |                |                 |
| Research Disciplines E   | 1,591.98      | 1.0          | 1,591.98          | 858.87            |             |                |                 |
| Unclassified   | 0.50          |              |                   | 0.00              |             |                |                 |
| Total Research   | 2,800.08      |              | 33,487.08         | 18,477.92         | 55.2        | 72.1           | 60.6            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Faculty  | 933.63        | 12.0         | 11,203.56         | 15,304.60         | 136.6       | 126.2          | 140.5           |
| Research Appointments  | 79.00         | 12.0         | 948.00            | 1,387.59          | 146.4       |                | 288.4           |
| Total FTE Grads  | 3,677.00      | 3.0          | 11,031.00         | 5,455.74          | 49.5        | 70.6           | 63.5            |
| Total FTE Non-Acd Staff  | 236.43        | 12.0         | 2,837.16          | 3,937.65          | 138.8       | 101.1          | 117.7           |
| Office Service   | 26,019.72     | 0.25         | 6,504.93          | 9,847.76          | 151.4       | 114.3          | 154.0           |
| Total Academic Office  |               |              | 32,524.65         | 35,933.34         | 110.5       | 99.5           | 118.5           |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Non-Acd Staff  | 681.64        | 12.0         | 8,179.68          | 6,467.59          | 79.1        | 110.6          | 69.0            |
| Office Service   | 8,179.68      | 0.5          | 4,089.84          | 7,676.09          | 187.7       | 126.0          | 166.4           |
| Total Admin. Office  |               |              | 12,269.52         | 14,143.68         | 115.3       | 115.7          | 101.5           |
| Total Office - Academic & Administrative   |               |              | 44,794.17         | 50,077.02         | 111.8       | 103.3          | 113.2           |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                   |                   |             |                |                 |
| Study (Total FTE Students)   | 25,271.00     | 0.5          | 12,635.50         | 8,180.67          | 64.7        | 51.0           | 75.7            |
| Traditional Static Shelving Space  | 1,167,907.35  | 0.005        | 5,839.54          |                   |             |                |                 |
| Mobile Compact Shelving  | 260,039.64    | 0.004        | 1,040.16          |                   |             |                |                 |
| Super High Density   | 523,031.58    | 0.0035       | 1,830.61          |                   |             |                |                 |
| Total Stack  | 1,950,978.56  |              | 8,710.31          | 8,673.47          | 99.6        | 74.2           | 106.9           |
| Library Support  | 21,345.81     | 0.25         | 5,336.45          | 4,195.33          | 78.6        | 69.0           | 76.3            |
| Total Library Facilities & Library Study Space   |               |              | 26,682.26         | 21,049.47         | 78.9        | 63.6           | 84.8            |
| NON-LIBRARY STUDY SPACE  | 25,271.00     | 0.4          | 10,108.40         | 4,709.05          | 46.6        | 71.6           | n/a             |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>180,079.02</b> | <b>130,516.92</b> | <b>72.5</b> | <b>81.6</b>    | <b>79.4</b>     |
| <b>OTHER SPACE</b>   |               |              |                   |                   |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 25,271.00     | 0.9          | 22,743.90         | 24,249.62         | 106.6       | 73.1           | 117.3           |
| <b>MAINTENANCE SHOPS</b>   |               |              |                   |                   |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 247,467.14    | 0.015        | 3,712.01          | 1,845.90          | 49.7        | 75.7           | 55.6            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 25,271.00     | 1.5          | 37,906.50         | 23,735.89         | 62.6        | 59.3           | 68.5            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>64,362.41</b>  | <b>49,831.41</b>  | <b>77.4</b> | <b>65.3</b>    | <b>84.9</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>244,441.42</b> | <b>180,348.33</b> | <b>73.8</b> | <b>77.7</b>    | <b>80.9</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                   |                   |             |                |                 |

**Table 23: GUELPH: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G      | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|--------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                   |                   |              |                |                 |
| <b>CLASSROOMS</b>  |               |              |                   |                   |              |                |                 |
| Total FTE Students   | 21,842.52     | 1.11         | 24,245.20         | 16,604.09         | 68.5         | 82.8           | 70.9            |
| <b>CLASS LABS</b>  |               |              |                   |                   |              |                |                 |
| Lab Contact Hours W  | 30,040.85     | 0.8          | 24,032.68         | 10,165.89         |              |                |                 |
| Lab Contact Hours X  | 36,845.48     | 0.6          | 22,107.29         | 13,355.81         |              |                |                 |
| Lab Contact Hours Y  | 5,711.10      | 0.5          | 2,855.55          | 1,761.48          |              |                |                 |
| Lab Contact Hours Z  | 14,241.50     | 0.3          | 4,272.45          | 3,441.38          |              |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |              |                |                 |
| Total Class Lab  | 86,838.93     |              | 53,267.97         | 28,724.56         | 53.9         | 71.7           | 54.1            |
| <b>RESEARCH LABS</b>   |               |              |                   |                   |              |                |                 |
| Research Disciplines A   | 1,054.11      | 45.0         | 47,434.95         | 50,441.09         |              |                |                 |
| Research Disciplines B   | 246.79        | 30.0         | 7,403.70          | 4,799.53          |              |                |                 |
| Research Disciplines C   | 73.53         | 20.0         | 1,470.60          | 3,513.52          |              |                |                 |
| Research Disciplines D   | 158.09        | 10.0         | 1,580.90          | 706.51            |              |                |                 |
| Research Disciplines E   | 771.64        | 1.0          | 771.64            | 1,258.89          |              |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |              |                |                 |
| Total Research   | 2,304.16      |              | 58,661.79         | 60,719.54         | 103.5        | 72.1           | 107.0           |
| <b>OFFICE - ACADEMIC</b>   |               |              |                   |                   |              |                |                 |
| Total FTE Faculty  | 899.56        | 12.0         | 10,794.72         | 14,377.08         | 133.2        | 126.2          | 130.5           |
| Research Appointments  | 425.00        | 12.0         | 5,100.00          | 3,104.57          | 60.9         |                | 54.4            |
| Total FTE Grads  | 2,549.40      | 3.0          | 7,648.20          | 8,035.48          | 105.1        | 70.6           | 122.1           |
| Total FTE Non-Acd Staff  | 619.30        | 12.0         | 7,431.60          | 9,732.41          | 131.0        | 101.1          | 120.0           |
| Office Service   | 30,974.52     | 0.25         | 7,743.63          | 12,588.46         | 162.6        | 114.3          | 158.6           |
| Total Academic Office  |               |              | 38,718.15         | 47,838.00         | 123.6        | 99.5           | 121.6           |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                   |                   |              |                |                 |
| Total FTE Non-Acd Staff  | 709.50        | 12.0         | 8,514.00          | 10,085.57         | 118.5        | 110.6          | 119.1           |
| Office Service   | 8,514.00      | 0.5          | 4,257.00          | 6,095.48          | 143.2        | 126.0          | 140.2           |
| Total Admin. Office  |               |              | 12,771.00         | 16,181.05         | 126.7        | 115.7          | 126.1           |
| Total Office - Academic & Administrative   |               |              | 51,489.15         | 64,019.05         | 124.3        | 103.3          | 122.7           |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                   |                   |              |                |                 |
| Study (Total FTE Students)   | 21,842.52     | 0.5          | 10,921.26         | 5,345.72          | 48.9         | 51.0           | 44.2            |
| Traditional Static Shelving Space  | 921,285.42    | 0.005        | 4,606.43          |                   |              |                |                 |
| Mobile Compact Shelving  | 258,860.52    | 0.004        | 1,035.44          |                   |              |                |                 |
| Super High Density   | 517,983.67    | 0.0035       | 1,812.94          |                   |              |                |                 |
| Total Stack  | 1,698,129.61  |              | 7,454.81          | 8,399.01          | 112.7        | 74.2           | 82.3            |
| Library Support  | 18,376.07     | 0.25         | 4,594.02          | 3,325.14          | 72.4         | 69.0           | 49.5            |
| Total Library Facilities & Library Study Space   |               |              | 22,970.09         | 17,069.87         | 74.3         | 63.6           | 57.7            |
| NON-LIBRARY STUDY SPACE  | 21,842.52     | 0.4          | 8,737.01          | 3,571.77          | 40.9         | 71.6           | n/a             |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>219,371.20</b> | <b>190,708.88</b> | <b>86.9</b>  | <b>81.6</b>    | <b>87.1</b>     |
| <b>OTHER SPACE</b>   |               |              |                   |                   |              |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                   |                   |              |                |                 |
| Total FTE Students   | 21,842.52     | 0.9          | 19,658.27         | 33,777.64         | 171.8        | 73.1           | 106.8           |
| <b>MAINTENANCE SHOPS</b>   |               |              |                   |                   |              |                |                 |
| Total NASM Inv. (exc. 16.0)  | 392,738.52    | 0.015        | 5,891.08          | 6,961.57          | 118.2        | 75.7           | 123.9           |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                   |                   |              |                |                 |
| Total FTE Students   | 21,842.52     | 1.5          | 32,763.78         | 22,796.53         | 69.6         | 59.3           | 79.2            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>58,313.13</b>  | <b>63,535.74</b>  | <b>109.0</b> | <b>65.3</b>    | <b>93.0</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>277,684.33</b> | <b>254,244.62</b> | <b>91.6</b>  | <b>77.7</b>    | <b>88.4</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                   |                   |              |                |                 |

**Table 24: LAKEHEAD: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space  | Inventory        | % I / G      | System Average | 2013-14 % I / G |
|--|---------------|--------------|------------------|------------------|--------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                  |                  |              |                |                 |
| <b>CLASSROOMS</b>  |               |              |                  |                  |              |                |                 |
| Total FTE Students   | 7,362.11      | 1.11         | 8,171.95         | 9,590.96         | 117.4        | 82.8           | 116.0           |
| <b>CLASS LABS</b>  |               |              |                  |                  |              |                |                 |
| Lab Contact Hours W  | 8,712.75      | 0.8          | 6,970.20         | 2,763.61         |              |                |                 |
| Lab Contact Hours X  | 9,778.04      | 0.6          | 5,866.82         | 6,224.96         |              |                |                 |
| Lab Contact Hours Y  | 3,966.97      | 0.5          | 1,983.49         | 3,495.88         |              |                |                 |
| Lab Contact Hours Z  | 7,454.05      | 0.3          | 2,236.22         | 942.26           |              |                |                 |
| Unclassified   | 0.00          |              |                  | 0.00             |              |                |                 |
| Total Class Lab  | 29,911.81     |              | 17,056.72        | 13,426.71        | 78.7         | 71.7           | 68.2            |
| <b>RESEARCH LABS</b>   |               |              |                  |                  |              |                |                 |
| Research Disciplines A   | 102.91        | 45.0         | 4,630.95         | 2,339.53         |              |                |                 |
| Research Disciplines B   | 262.32        | 30.0         | 7,869.60         | 2,405.97         |              |                |                 |
| Research Disciplines C   | 55.93         | 20.0         | 1,118.60         | 834.16           |              |                |                 |
| Research Disciplines D   | 93.27         | 10.0         | 932.70           | 419.47           |              |                |                 |
| Research Disciplines E   | 438.23        | 1.0          | 438.23           | 716.33           |              |                |                 |
| Unclassified   | 0.00          |              |                  | 1,341.75         |              |                |                 |
| Total Research   | 952.66        |              | 14,990.08        | 8,057.21         | 53.8         | 72.1           | 66.2            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                  |                  |              |                |                 |
| Total FTE Faculty  | 417.56        | 12.0         | 5,010.72         | 5,695.11         | 113.7        | 126.2          | 110.3           |
| Research Appointments  | 116.44        | 12.0         | 1,397.28         | 833.47           | 59.6         |                | 76.3            |
| Total FTE Grads  | 1,033.20      | 3.0          | 3,099.60         | 1,159.38         | 37.4         | 70.6           | 55.4            |
| Total FTE Non-Acd Staff  | 130.50        | 12.0         | 1,566.00         | 1,369.65         | 87.5         | 101.1          | 82.6            |
| Office Service   | 11,073.60     | 0.25         | 2,768.40         | 1,288.10         | 46.5         | 114.3          | 49.3            |
| Total Academic Office  |               |              | 13,842.00        | 10,345.71        | 74.7         | 99.5           | 80.8            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                  |                  |              |                |                 |
| Total FTE Non-Acd Staff  | 390.73        | 12.0         | 4,688.76         | 4,260.84         | 90.9         | 110.6          | 87.8            |
| Office Service   | 4,688.76      | 0.5          | 2,344.38         | 2,342.20         | 99.9         | 126.0          | 101.2           |
| Total Admin. Office  |               |              | 7,033.14         | 6,603.04         | 93.9         | 115.7          | 92.2            |
| Total Office - Academic & Administrative   |               |              | 20,875.14        | 16,948.75        | 81.2         | 103.3          | 84.6            |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                  |                  |              |                |                 |
| Study (Total FTE Students)   | 7,362.11      | 0.5          | 3,681.06         | 3,364.01         | 91.4         | 51.0           | 65.0            |
| Traditional Static Shelving Space  | 667,318.95    | 0.005        | 3,336.59         |                  |              |                |                 |
| Mobile Compact Shelving  | 0.00          | 0.004        | 0.00             |                  |              |                |                 |
| Super High Density   | 0.00          | 0.0035       | 0.00             |                  |              |                |                 |
| Total Stack  | 667,318.95    |              | 3,336.59         | 2,738.48         | 82.1         | 74.2           | 91.8            |
| Library Support  | 7,017.65      | 0.25         | 1,754.41         | 1,619.16         | 92.3         | 69.0           | 112.1           |
| Total Library Facilities & Library Study Space   |               |              | 8,772.06         | 7,721.65         | 88.0         | 63.6           | 84.2            |
| NON-LIBRARY STUDY SPACE  | 7,362.11      | 0.4          | 2,944.85         | 2,046.33         | 69.5         | 71.6           | n/a             |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>72,810.80</b> | <b>57,791.61</b> | <b>79.4</b>  | <b>81.6</b>    | <b>81.1</b>     |
| <b>OTHER SPACE</b>   |               |              |                  |                  |              |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                  |                  |              |                |                 |
| Total FTE Students   | 7,362.11      | 0.9          | 6,625.90         | 9,225.67         | 139.2        | 73.1           | 155.3           |
| <b>MAINTENANCE SHOPS</b>   |               |              |                  |                  |              |                |                 |
| Total NASM Inv. (exc. 16.0)  | 126,242.61    | 0.015        | 1,893.64         | 1,013.33         | 53.5         | 75.7           | 63.4            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                  |                  |              |                |                 |
| Total FTE Students   | 7,362.11      | 1.5          | 11,043.17        | 14,060.76        | 127.3        | 59.3           | 121.4           |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>19,562.71</b> | <b>24,299.76</b> | <b>124.2</b> | <b>65.3</b>    | <b>127.8</b>    |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>92,373.51</b> | <b>82,091.37</b> | <b>88.9</b>  | <b>77.7</b>    | <b>91.7</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                  |                  |              |                |                 |



**Table 25: LAURENTIAN: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space  | Inventory        | % I / G      | System Average | 2013-14 % I / G |
|--|---------------|--------------|------------------|------------------|--------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                  |                  |              |                |                 |
| <b>CLASSROOMS</b>  |               |              |                  |                  |              |                |                 |
| Total FTE Students   | 7,334.00      | 1.11         | 8,140.74         | 8,317.91         | 102.2        | 82.8           | 121.1           |
| <b>CLASS LABS</b>  |               |              |                  |                  |              |                |                 |
| Lab Contact Hours W  | 2,322.00      | 0.8          | 1,857.60         | 1,421.28         |              |                |                 |
| Lab Contact Hours X  | 4,018.00      | 0.6          | 2,410.80         | 6,059.92         |              |                |                 |
| Lab Contact Hours Y  | 1,318.00      | 0.5          | 659.00           | 1,057.09         |              |                |                 |
| Lab Contact Hours Z  | 2,051.00      | 0.3          | 615.30           | 762.63           |              |                |                 |
| Unclassified   | 161.00        |              |                  | 0.00             |              |                |                 |
| Total Class Lab  | 9,870.00      |              | 5,542.70         | 9,300.92         | 167.8        | 71.7           | 129.9           |
| <b>RESEARCH LABS</b>   |               |              |                  |                  |              |                |                 |
| Research Disciplines A   | 144.77        | 45.0         | 6,514.65         | 4,826.66         |              |                |                 |
| Research Disciplines B   | 94.32         | 30.0         | 2,829.60         | 1,270.37         |              |                |                 |
| Research Disciplines C   | 2.11          | 20.0         | 42.20            | 187.23           |              |                |                 |
| Research Disciplines D   | 60.76         | 10.0         | 607.60           | 650.58           |              |                |                 |
| Research Disciplines E   | 344.23        | 1.0          | 344.23           | 242.07           |              |                |                 |
| Unclassified   | 1.30          |              |                  | 0.00             |              |                |                 |
| Total Research   | 647.49        |              | 10,338.28        | 7,176.91         | 69.4         | 72.1           | 58.2            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                  |                  |              |                |                 |
| Total FTE Faculty  | 345.89        | 12.0         | 4,150.68         | 6,928.76         | 166.9        | 126.2          | 104.4           |
| Research Appointments  | 65.00         | 12.0         | 780.00           | 935.28           | 119.9        |                | 120.7           |
| Total FTE Grads  | 622.40        | 3.0          | 1,867.20         | 842.40           | 45.1         | 70.6           | 61.1            |
| Total FTE Non-Acd Staff  | 109.50        | 12.0         | 1,314.00         | 2,614.32         | 199.0        | 101.1          | 132.1           |
| Office Service   | 8,111.88      | 0.25         | 2,027.97         | 2,889.15         | 142.5        | 114.3          | 85.0            |
| Total Academic Office  |               |              | 10,139.85        | 14,209.91        | 140.1        | 99.5           | 99.0            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                  |                  |              |                |                 |
| Total FTE Non-Acd Staff  | 300.00        | 12.0         | 3,600.00         | 3,792.71         | 105.4        | 110.6          | 140.4           |
| Office Service   | 3,600.00      | 0.5          | 1,800.00         | 2,883.05         | 160.2        | 126.0          | 122.8           |
| Total Admin. Office  |               |              | 5,400.00         | 6,675.76         | 123.6        | 115.7          | 134.5           |
| Total Office - Academic & Administrative   |               |              | 15,539.85        | 20,885.67        | 134.4        | 103.3          | 106.9           |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                  |                  |              |                |                 |
| Study (Total FTE Students)   | 7,334.00      | 0.5          | 3,667.00         | 2,860.29         | 78.0         | 51.0           | 62.3            |
| Traditional Static Shelving Space  | 728,049.95    | 0.005        | 3,640.25         |                  |              |                |                 |
| Mobile Compact Shelving  | 71,717.89     | 0.004        | 286.87           |                  |              |                |                 |
| Super High Density   | 104.57        | 0.0035       | 0.37             |                  |              |                |                 |
| Total Stack  | 799,872.41    |              | 3,927.49         | 3,752.98         | 95.6         | 74.2           | 105.7           |
| Library Support  | 7,594.49      | 0.25         | 1,898.62         | 1,227.02         | 64.6         | 69.0           | 61.4            |
| Total Library Facilities & Library Study Space   |               |              | 9,493.11         | 7,840.29         | 82.6         | 63.6           | 78.7            |
| NON-LIBRARY STUDY SPACE  | 7,334.00      | 0.4          | 2,933.60         | 1,568.44         | 53.5         | 71.6           | n/a             |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>51,988.28</b> | <b>55,090.14</b> | <b>106.0</b> | <b>81.6</b>    | <b>94.6</b>     |
| <b>OTHER SPACE</b>   |               |              |                  |                  |              |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                  |                  |              |                |                 |
| Total FTE Students   | 7,334.00      | 0.9          | 6,600.60         | 9,718.93         | 147.2        | 73.1           | 151.9           |
| <b>MAINTENANCE SHOPS</b>   |               |              |                  |                  |              |                |                 |
| Total NASM Inv. (exc. 16.0)  | 117,174.42    | 0.015        | 1,757.62         | 1,316.52         | 74.9         | 75.7           | 111.8           |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                  |                  |              |                |                 |
| Total FTE Students   | 7,334.00      | 1.5          | 11,001.00        | 8,631.06         | 78.5         | 59.3           | 88.9            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>19,359.22</b> | <b>19,666.51</b> | <b>101.6</b> | <b>65.3</b>    | <b>112.5</b>    |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>71,347.50</b> | <b>74,756.65</b> | <b>104.8</b> | <b>77.7</b>    | <b>99.3</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                  |                  |              |                |                 |

**Table 26: HEARST: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space | Inventory       | % I / G      | System Average | 2013-14 % I / G |
|--|---------------|--------------|-----------------|-----------------|--------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                 |                 |              |                |                 |
| <b>CLASSROOMS</b>  |               |              |                 |                 |              |                |                 |
| Total FTE Students   | 114.80        | 1.11         | 127.43          | 1,063.00        | 834.2        | 82.8           | 1006.1          |
| <b>CLASS LABS</b>  |               |              |                 |                 |              |                |                 |
| Lab Contact Hours W  | 0.00          | 0.8          | 0.00            | 0.00            |              |                |                 |
| Lab Contact Hours X  | 0.00          | 0.6          | 0.00            | 0.00            |              |                |                 |
| Lab Contact Hours Y  | 0.00          | 0.5          | 0.00            | 0.00            |              |                |                 |
| Lab Contact Hours Z  | 12.00         | 0.3          | 3.60            | 50.26           |              |                |                 |
| Unclassified   | 0.00          |              |                 | 150.78          |              |                |                 |
| Total Class Lab  | 12.00         |              | 3.60            | 201.04          | 5584.4       | 71.7           | 2792.2          |
| <b>RESEARCH LABS</b>   |               |              |                 |                 |              |                |                 |
| Research Disciplines A   | 0.00          | 45.0         | 0.00            | 0.00            |              |                |                 |
| Research Disciplines B   | 0.00          | 30.0         | 0.00            | 0.00            |              |                |                 |
| Research Disciplines C   | 0.00          | 20.0         | 0.00            | 0.00            |              |                |                 |
| Research Disciplines D   | 1.00          | 10.0         | 10.00           | 0.00            |              |                |                 |
| Research Disciplines E   | 0.00          | 1.0          | 0.00            | 0.00            |              |                |                 |
| Unclassified   | 0.00          |              |                 | 0.00            |              |                |                 |
| Total Research   | 1.00          |              | 10.00           | 0.00            | n/a          | 72.1           | na              |
| <b>OFFICE - ACADEMIC</b>   |               |              |                 |                 |              |                |                 |
| Total FTE Faculty  | 1.00          | 12.0         | 12.00           | 456.34          | 3802.8       | 126.2          | 4058.3          |
| Research Appointments  | 0.00          | 12.0         | 0.00            | 102.92          |              |                |                 |
| Total FTE Grads  | 0.00          | 3.0          | 0.00            | 0.00            | n/a          | 70.6           | na              |
| Total FTE Non-Acd Staff  | 5.00          | 12.0         | 60.00           | 90.49           | 150.8        | 101.1          | 165.4           |
| Office Service   | 72.00         | 0.25         | 18.00           | 138.72          | 770.7        | 114.3          | 1293.7          |
| Total Academic Office  |               |              | 90.00           | 788.47          | 876.1        | 99.5           | 1219.3          |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                 |                 |              |                |                 |
| Total FTE Non-Acd Staff  | 10.00         | 12.0         | 120.00          | 213.88          | 178.2        | 110.6          | 127.3           |
| Office Service   | 120.00        | 0.5          | 60.00           | 35.17           | 58.6         | 126.0          | 180.7           |
| Total Admin. Office  |               |              | 180.00          | 249.05          | 138.4        | 115.7          | 145.1           |
| Total Office - Academic & Administrative   |               |              | 270.00          | 1,037.52        | 384.3        | 103.3          | 349.3           |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                 |                 |              |                |                 |
| Study (Total FTE Students)   | 114.80        | 0.5          | 57.40           | 127.74          | 222.5        | 51.0           | 258.4           |
| Traditional Static Shelving Space  | 82,550.06     | 0.005        | 412.75          |                 |              |                |                 |
| Mobile Compact Shelving  | 9,350.00      | 0.004        | 37.40           |                 |              |                |                 |
| Super High Density   | 0.00          | 0.0035       | 0.00            |                 |              |                |                 |
| Total Stack  | 91,900.06     |              | 450.15          | 690.45          | 153.4        | 74.2           | 196.5           |
| Library Support  | 507.55        | 0.25         | 126.89          | 68.47           | 54.0         | 69.0           | 68.3            |
| Total Library Facilities & Library Study Space   |               |              | 634.44          | 886.66          | 139.8        | 63.6           | 177.0           |
| NON-LIBRARY STUDY SPACE  | 114.80        | 0.4          | 45.92           | 176.61          | 384.6        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>1,091.39</b> | <b>3,364.83</b> | <b>308.3</b> | <b>81.6</b>    | <b>339.8</b>    |
| <b>OTHER SPACE</b>   |               |              |                 |                 |              |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                 |                 |              |                |                 |
| Total FTE Students   | 114.80        | 0.9          | 103.32          | 490.34          | 474.6        | 73.1           | 0.0             |
| <b>MAINTENANCE SHOPS</b>   |               |              |                 |                 |              |                |                 |
| Total NASM Inv. (exc. 16.0)  | 7,294.61      | 0.015        | 109.42          | 102.47          | 93.6         | 75.7           | 96.9            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                 |                 |              |                |                 |
| Total FTE Students   | 114.80        | 1.5          | 172.20          | 1,158.60        | 672.8        | 59.3           | 1489.4          |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>384.94</b>   | <b>1,751.41</b> | <b>455.0</b> | <b>65.3</b>    | <b>640.0</b>    |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>1,476.33</b> | <b>5,116.24</b> | <b>346.6</b> | <b>77.7</b>    | <b>414.5</b>    |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                 |                 |              |                |                 |

**Table 27: MCMASTER: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                   |                   |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 27,917.06     | 1.11         | 30,987.94         | 26,419.80         | 85.3        | 82.8           | 84.3            |
| <b>CLASS LABS</b>  |               |              |                   |                   |             |                |                 |
| Lab Contact Hours W  | 13,176.00     | 0.8          | 10,540.80         | 3,313.49          |             |                |                 |
| Lab Contact Hours X  | 32,245.17     | 0.6          | 19,347.10         | 12,115.57         |             |                |                 |
| Lab Contact Hours Y  | 3,386.17      | 0.5          | 1,693.08          | 800.97            |             |                |                 |
| Lab Contact Hours Z  | 6,486.23      | 0.3          | 1,945.87          | 1,431.17          |             |                |                 |
| Unclassified   | 0.00          |              |                   | 412.00            |             |                |                 |
| Total Class Lab  | 55,293.57     |              | 33,526.85         | 18,073.20         | 53.9        | 71.7           | 53.8            |
| <b>RESEARCH LABS</b>   |               |              |                   |                   |             |                |                 |
| Research Disciplines A   | 901.00        | 45.0         | 40,545.00         | 28,869.03         |             |                |                 |
| Research Disciplines B   | 675.50        | 30.0         | 20,265.00         | 10,722.65         |             |                |                 |
| Research Disciplines C   | 182.40        | 20.0         | 3,648.00          | 520.63            |             |                |                 |
| Research Disciplines D   | 324.60        | 10.0         | 3,246.00          | 5,750.48          |             |                |                 |
| Research Disciplines E   | 1,313.55      | 1.0          | 1,313.55          | 1,921.13          |             |                |                 |
| Unclassified   | 1.00          |              |                   | 16,728.43         |             |                |                 |
| Total Research   | 3,398.05      |              | 69,017.55         | 64,512.35         | 93.5        | 72.1           | 80.6            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Faculty  | 1,146.20      | 12.0         | 13,754.40         | 17,023.97         | 123.8       | 126.2          | 119.2           |
| Research Appointments  | 1,246.91      | 12.0         | 14,962.98         | 7,537.46          | 50.4        |                | 51.6            |
| Total FTE Grads  | 3,943.90      | 3.0          | 11,831.70         | 9,846.65          | 83.2        | 70.6           | 84.8            |
| Total FTE Non-Acd Staff  | 1,104.39      | 12.0         | 13,252.69         | 13,037.77         | 98.4        | 101.1          | 136.0           |
| Office Service   | 53,801.77     | 0.25         | 13,450.44         | 12,468.10         | 92.7        | 114.3          | 98.9            |
| Total Academic Office  |               |              | 67,252.21         | 59,913.95         | 89.1        | 99.5           | 95.7            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Non-Acd Staff  | 391.93        | 12.0         | 4,703.19          | 13,310.74         | 283.0       | 110.6          | 134.9           |
| Office Service   | 4,703.19      | 0.5          | 2,351.59          | 4,818.39          | 204.9       | 126.0          | 108.1           |
| Total Admin. Office  |               |              | 7,054.78          | 18,129.13         | 257.0       | 115.7          | 126.0           |
| Total Office - Academic & Administrative   |               |              | 74,306.99         | 78,043.08         | 105.0       | 103.3          | 101.2           |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                   |                   |             |                |                 |
| Study (Total FTE Students)   | 27,917.06     | 0.5          | 13,958.53         | 6,902.77          | 49.5        | 51.0           | 64.2            |
| Traditional Static Shelving Space  | 1,121,225.77  | 0.005        | 5,606.13          |                   |             |                |                 |
| Mobile Compact Shelving  | 558,581.29    | 0.004        | 2,234.33          |                   |             |                |                 |
| Super High Density   | 216,047.22    | 0.0035       | 756.17            |                   |             |                |                 |
| Total Stack  | 1,895,854.28  |              | 8,596.62          | 9,748.59          | 113.4       | 74.2           | 155.3           |
| Library Support  | 22,555.15     | 0.25         | 5,638.79          | 4,130.43          | 73.3        | 69.0           | 62.2            |
| Total Library Facilities & Library Study Space   |               |              | 28,193.94         | 20,781.79         | 73.7        | 63.6           | 89.1            |
| NON-LIBRARY STUDY SPACE  | 27,917.06     | 0.4          | 11,166.82         | 7,553.47          | 67.6        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>247,200.09</b> | <b>215,383.69</b> | <b>87.1</b> | <b>81.6</b>    | <b>84.7</b>     |
| <b>OTHER SPACE</b>   |               |              |                   |                   |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 27,917.06     | 0.9          | 25,125.35         | 17,242.86         | 68.6        | 73.1           | 70.3            |
| <b>MAINTENANCE SHOPS</b>   |               |              |                   |                   |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 376,899.03    | 0.015        | 5,653.49          | 3,402.13          | 60.2        | 75.7           | 59.4            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 27,917.06     | 1.5          | 41,875.59         | 23,962.62         | 57.2        | 59.3           | 57.7            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>72,654.43</b>  | <b>44,607.61</b>  | <b>61.4</b> | <b>65.3</b>    | <b>62.2</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>319,854.52</b> | <b>259,991.30</b> | <b>81.3</b> | <b>77.7</b>    | <b>79.7</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                   |                   |             |                |                 |

**Table 28: NIPISSING: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space  | Inventory        | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|------------------|------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                  |                  |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 3,919.50      | 1.11         | 4,350.65         | 5,708.51         | 131.2       | 82.8           | 117.8           |
| <b>CLASS LABS</b>  |               |              |                  |                  |             |                |                 |
| Lab Contact Hours W  | 0.00          | 0.8          | 0.00             | 0.00             |             |                |                 |
| Lab Contact Hours X  | 2,438.00      | 0.6          | 1,462.80         | 937.19           |             |                |                 |
| Lab Contact Hours Y  | 7,039.50      | 0.5          | 3,519.75         | 2,534.15         |             |                |                 |
| Lab Contact Hours Z  | 2,015.00      | 0.3          | 604.50           | 290.00           |             |                |                 |
| Unclassified   | 0.00          |              |                  | 0.00             |             |                |                 |
| Total Class Lab  | 11,492.50     |              | 5,587.05         | 3,761.34         | 67.3        | 71.7           | 35.7            |
| <b>RESEARCH LABS</b>   |               |              |                  |                  |             |                |                 |
| Research Disciplines A   | 37.90         | 45.0         | 1,705.50         | 757.05           |             |                |                 |
| Research Disciplines B   | 16.70         | 30.0         | 501.00           | 397.92           |             |                |                 |
| Research Disciplines C   | 1.40          | 20.0         | 28.00            | 0.00             |             |                |                 |
| Research Disciplines D   | 46.00         | 10.0         | 460.00           | 310.19           |             |                |                 |
| Research Disciplines E   | 314.45        | 1.0          | 314.45           | 15.39            |             |                |                 |
| Unclassified   | 0.00          |              |                  | 0.00             |             |                |                 |
| Total Research   | 416.45        |              | 3,008.95         | 1,480.55         | 49.2        | 72.1           | 65.1            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                  |                  |             |                |                 |
| Total FTE Faculty  | 336.70        | 12.0         | 4,040.40         | 2,950.79         | 73.0        | 126.2          | 93.0            |
| Research Appointments  | 7.00          | 12.0         | 84.00            | 170.29           | 202.7       |                | 158.3           |
| Total FTE Grads  | 157.50        | 3.0          | 472.50           | 123.34           | 26.1        | 70.6           | 26.0            |
| Total FTE Non-Acd Staff  | 258.00        | 12.0         | 3,096.00         | 509.94           | 16.5        | 101.1          | 8.2             |
| Office Service   | 7,692.90      | 0.25         | 1,923.23         | 11.39            | 0.6         | 114.3          | 0.6             |
| Total Academic Office  |               |              | 9,616.13         | 3,765.75         | 39.2        | 99.5           | 40.4            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                  |                  |             |                |                 |
| Total FTE Non-Acd Staff  | 18.00         | 12.0         | 216.00           | 2,133.24         | 987.6       | 110.6          | 62.0            |
| Office Service   | 216.00        | 0.5          | 108.00           | 1,367.61         | 1266.3      | 126.0          | 40.4            |
| Total Admin. Office  |               |              | 324.00           | 3,500.85         | 1080.5      | 115.7          | 54.8            |
| Total Office - Academic & Administrative   |               |              | 9,940.13         | 7,266.60         | 73.1        | 103.3          | 45.7            |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                  |                  |             |                |                 |
| Study (Total FTE Students)   | 3,919.50      | 0.5          | 1,959.75         | 0.00             | 0.0         | 51.0           | 49.2            |
| Traditional Static Shelving Space  | 218,384.61    | 0.005        | 1,091.92         |                  |             |                |                 |
| Mobile Compact Shelving  | 15,551.13     | 0.004        | 62.20            |                  |             |                |                 |
| Super High Density   | 0.00          | 0.0035       | 0.00             |                  |             |                |                 |
| Total Stack  | 233,935.74    |              | 1,154.13         | 6.79             | 0.6         | 74.2           | 162.1           |
| Library Support  | 3,113.88      | 0.25         | 778.47           | 386.30           | 49.6        | 69.0           | 46.2            |
| Total Library Facilities & Library Study Space   |               |              | 3,892.35         | 393.09           | 10.1        | 63.6           | 72.5            |
| NON-LIBRARY STUDY SPACE  | 3,919.50      | 0.4          | 1,567.80         | 510.72           | 32.6        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>28,346.92</b> | <b>19,120.81</b> | <b>67.5</b> | <b>81.6</b>    | <b>56.4</b>     |
| <b>OTHER SPACE</b>   |               |              |                  |                  |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 3,919.50      | 0.9          | 3,527.55         | 2,954.50         | 83.8        | 73.1           | 125.8           |
| <b>MAINTENANCE SHOPS</b>   |               |              |                  |                  |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 28,484.06     | 0.015        | 427.26           | 102.73           | 24.0        | 75.7           | 0.0             |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 3,919.50      | 1.5          | 5,879.25         | 2,949.85         | 50.2        | 59.3           | 40.2            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>9,834.06</b>  | <b>6,007.08</b>  | <b>61.1</b> | <b>65.3</b>    | <b>66.5</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>38,180.98</b> | <b>25,127.89</b> | <b>65.8</b> | <b>77.7</b>    | <b>58.8</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                  |                  |             |                |                 |

**Table 29: Northern Ontario School of Medicine (NOSM): Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space | Inventory       | % I / G      | System Average | 2013-14 % I / G |
|--|---------------|--------------|-----------------|-----------------|--------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                 |                 |              |                |                 |
| <b>CLASSROOMS</b>  |               |              |                 |                 |              |                |                 |
| Total FTE Students   | 512.00        | 1.11         | 568.32          | 987.90          | 173.8        | 82.8           | 695.3           |
| <b>CLASS LABS</b>  |               |              |                 |                 |              |                |                 |
| Lab Contact Hours W  | 0.00          | 0.8          | 0.00            | 0.00            |              |                |                 |
| Lab Contact Hours X  | 384.00        | 0.6          | 230.40          | 848.70          |              |                |                 |
| Lab Contact Hours Y  | 0.00          | 0.5          | 0.00            | 0.00            |              |                |                 |
| Lab Contact Hours Z  | 0.00          | 0.3          | 0.00            | 0.00            |              |                |                 |
| Unclassified   | 0.00          |              |                 | 0.00            |              |                |                 |
| Total Class Lab  | 384.00        |              | 230.40          | 848.70          | 368.4        | 71.7           | 368.4           |
| <b>RESEARCH LABS</b>   |               |              |                 |                 |              |                |                 |
| Research Disciplines A   | 53.50         | 45.0         | 2,407.50        | 1,538.20        |              |                |                 |
| Research Disciplines B   | 0.00          | 30.0         | 0.00            | 0.00            |              |                |                 |
| Research Disciplines C   | 0.00          | 20.0         | 0.00            | 0.00            |              |                |                 |
| Research Disciplines D   | 0.00          | 10.0         | 0.00            | 0.00            |              |                |                 |
| Research Disciplines E   | 0.00          | 1.0          | 0.00            | 0.00            |              |                |                 |
| Unclassified   | 0.00          |              |                 | 0.00            |              |                |                 |
| Total Research   | 53.50         |              | 2,407.50        | 1,538.20        | 63.9         | 72.1           | 122.1           |
| <b>OFFICE - ACADEMIC</b>   |               |              |                 |                 |              |                |                 |
| Total FTE Faculty  | 26.00         | 12.0         | 312.00          | 694.60          | 222.6        | 126.2          | 222.6           |
| Research Appointments  | 4.00          | 12.0         | 48.00           | 0.00            | 0.0          |                | 0.0             |
| Total FTE Grads  | 0.00          | 3.0          | 0.00            | 0.00            |              | 70.6           |                 |
| Total FTE Non-Acd Staff  | 203.00        | 12.0         | 2,436.00        | 815.10          | 33.5         | 101.1          | 33.5            |
| Office Service   | 2,796.00      | 0.25         | 699.00          | 87.30           | 12.5         | 114.3          | 12.5            |
| Total Academic Office  |               |              | 3,495.00        | 1,597.00        | 45.7         | 99.5           | 45.7            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                 |                 |              |                |                 |
| Total FTE Non-Acd Staff  | 37.00         | 12.0         | 444.00          | 1,418.20        | 319.4        | 110.6          | 319.2           |
| Office Service   | 444.00        | 0.5          | 222.00          | 887.40          | 399.7        | 126.0          | 399.7           |
| Total Admin. Office  |               |              | 666.00          | 2,305.60        | 346.2        | 115.7          | 346.2           |
| Total Office - Academic & Administrative   |               |              | 4,161.00        | 3,902.60        | 93.8         | 103.3          | 93.8            |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                 |                 |              |                |                 |
| Study (Total FTE Students)   | 512.00        | 0.5          | 256.00          | 0.00            | 0.0          | 51.0           | 156.4           |
| Traditional Static Shelving Space  | 7,869.41      | 0.005        | 39.35           |                 |              |                |                 |
| Mobile Compact Shelving  | 0.00          | 0.004        | 0.00            |                 |              |                |                 |
| Super High Density   | 0.00          | 0.0035       | 0.00            |                 |              |                |                 |
| Total Stack  | 7,869.41      |              | 39.35           | 449.30          | 1141.9       | 74.2           | 1141.9          |
| Library Support  | 295.35        | 0.25         | 73.84           | 155.00          | 209.9        | 69.0           | 533.8           |
| Total Library Facilities & Library Study Space   |               |              | 369.18          | 604.30          | 163.7        | 63.6           | 499.0           |
| NON-LIBRARY STUDY SPACE  | 512.00        | 0.4          | 204.80          | 367.50          | 179.4        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>7,941.20</b> | <b>8,249.20</b> | <b>103.9</b> | <b>81.6</b>    | <b>134.7</b>    |
| <b>OTHER SPACE</b>   |               |              |                 |                 |              |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                 |                 |              |                |                 |
| Total FTE Students   | 512.00        | 0.9          | 460.80          | 0.00            | 0.0          | 73.1           | 0.0             |
| <b>MAINTENANCE SHOPS</b>   |               |              |                 |                 |              |                |                 |
| Total NASM Inv. (exc. 16.0)  | 8,360.80      | 0.015        | 125.41          | 0.00            | 0.0          | 75.7           | 0.0             |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                 |                 |              |                |                 |
| Total FTE Students   | 512.00        | 1.5          | 768.00          | 111.60          | 14.5         | 59.3           | 187.0           |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>1,354.21</b> | <b>111.60</b>   | <b>8.2</b>   | <b>65.3</b>    | <b>83.0</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>9,295.42</b> | <b>8,360.80</b> | <b>89.9</b>  | <b>77.7</b>    | <b>131.2</b>    |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                 |                 |              |                |                 |

**Table 30: OCADU: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space  | Inventory        | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|------------------|------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                  |                  |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 3,696.10      | 1.11         | 4,102.67         | 2,453.70         | 59.8        | 82.8           | 51.5            |
| <b>CLASS LABS</b>  |               |              |                  |                  |             |                |                 |
| Lab Contact Hours W  | 0.00          | 0.8          | 0.00             | 0.00             |             |                |                 |
| Lab Contact Hours X  | 36,845.00     | 0.6          | 22,107.00        | 9,647.40         |             |                |                 |
| Lab Contact Hours Y  | 0.00          | 0.5          | 0.00             | 0.00             |             |                |                 |
| Lab Contact Hours Z  | 1,237.00      | 0.3          | 371.10           | 0.00             |             |                |                 |
| Unclassified   | 0.00          |              |                  | 0.00             |             |                |                 |
| Total Class Lab  | 38,082.00     |              | 22,478.10        | 9,647.40         | 42.9        | 71.7           | 37.4            |
| <b>RESEARCH LABS</b>   |               |              |                  |                  |             |                |                 |
| Research Disciplines A   | 0.00          | 45.0         | 0.00             | 0.00             |             |                |                 |
| Research Disciplines B   | 0.00          | 30.0         | 0.00             | 0.00             |             |                |                 |
| Research Disciplines C   | 0.00          | 20.0         | 0.00             | 0.00             |             |                |                 |
| Research Disciplines D   | 164.15        | 10.0         | 1,641.50         | 435.37           |             |                |                 |
| Research Disciplines E   | 127.80        | 1.0          | 127.80           | 1,191.45         |             |                |                 |
| Unclassified   | 0.00          |              |                  | 0.00             |             |                |                 |
| Total Research   | 291.95        |              | 1,769.30         | 1,626.82         | 91.9        | 72.1           | 86.5            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                  |                  |             |                |                 |
| Total FTE Faculty  | 190.95        | 12.0         | 2,291.40         | 1,429.02         | 62.4        | 126.2          | 43.0            |
| Research Appointments  | 24.00         | 12.0         | 288.00           | 651.32           | 226.2       |                | 903.5           |
| Total FTE Grads  | 197.90        | 3.0          | 593.70           | 697.67           | 117.5       | 70.6           | 131.5           |
| Total FTE Non-Acd Staff  | 29.46         | 12.0         | 353.52           | 698.61           | 197.6       | 101.1          | 206.9           |
| Office Service   | 3,526.62      | 0.25         | 881.66           | 366.60           | 41.6        | 114.3          | 56.2            |
| Total Academic Office  |               |              | 4,408.28         | 3,843.22         | 87.2        | 99.5           | 76.5            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                  |                  |             |                |                 |
| Total FTE Non-Acd Staff  | 248.38        | 12.0         | 2,980.56         | 0.00             | 0.0         | 110.6          | 75.9            |
| Office Service   | 2,980.56      | 0.5          | 1,490.28         | 483.57           | 32.4        | 126.0          | 46.0            |
| Total Admin. Office  |               |              | 4,470.84         | 483.57           | 10.8        | 115.7          | 65.9            |
| Total Office - Academic & Administrative   |               |              | 8,879.12         | 4,326.79         | 48.7        | 103.3          | 71.9            |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                  |                  |             |                |                 |
| Study (Total FTE Students)   | 3,696.10      | 0.5          | 1,848.05         | 307.30           | 16.6        | 51.0           | 28.2            |
| Traditional Static Shelving Space  | 254,732.07    | 0.005        | 1,273.66         |                  |             |                |                 |
| Mobile Compact Shelving  | 6,735.94      | 0.004        | 26.94            |                  |             |                |                 |
| Super High Density   | 0.00          | 0.0035       | 0.00             |                  |             |                |                 |
| Total Stack  | 261,468.01    |              | 1,300.60         | 697.88           | 53.7        | 74.2           | 56.9            |
| Library Support  | 3,148.65      | 0.25         | 787.16           | 498.22           | 63.3        | 69.0           | 55.8            |
| Total Library Facilities & Library Study Space   |               |              | 3,935.82         | 1,503.40         | 38.2        | 63.6           | 39.5            |
| NON-LIBRARY STUDY SPACE  | 3,696.10      | 0.4          | 1,478.44         | 475.81           | 32.2        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>42,643.44</b> | <b>20,033.92</b> | <b>47.0</b> | <b>81.6</b>    | <b>47.6</b>     |
| <b>OTHER SPACE</b>   |               |              |                  |                  |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 3,696.10      | 0.9          | 3,326.49         | 0.00             | 0.0         | 73.1           | 0.0             |
| <b>MAINTENANCE SHOPS</b>   |               |              |                  |                  |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 0.00          | 0.015        | 0.00             | 0.00             | #DIV/0!     | 75.7           | 44.0            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 3,696.10      | 1.5          | 5,544.15         | 975.30           | 17.6        | 59.3           | 44.8            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>8,870.64</b>  | <b>975.30</b>    | <b>11.0</b> | <b>65.3</b>    | <b>28.9</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>51,514.08</b> | <b>21,009.22</b> | <b>40.8</b> | <b>77.7</b>    | <b>44.3</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                  |                  |             |                |                 |

**Table 31: UOIT: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space  | Inventory        | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|------------------|------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                  |                  |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 8,385.68      | 1.11         | 9,308.10         | 7,486.23         | 80.4        | 82.8           | 83.8            |
| <b>CLASS LABS</b>  |               |              |                  |                  |             |                |                 |
| Lab Contact Hours W  | 5,569.50      | 0.8          | 4,455.60         | 2,453.39         |             |                |                 |
| Lab Contact Hours X  | 9,106.00      | 0.6          | 5,463.60         | 2,905.10         |             |                |                 |
| Lab Contact Hours Y  | 1,012.00      | 0.5          | 506.00           | 358.37           |             |                |                 |
| Lab Contact Hours Z  | 1,438.00      | 0.3          | 431.40           | 674.79           |             |                |                 |
| Unclassified   | 0.00          |              |                  | 0.00             |             |                |                 |
| Total Class Lab  | 17,125.50     |              | 10,856.60        | 6,391.65         | 58.9        | 71.7           | 58.5            |
| <b>RESEARCH LABS</b>   |               |              |                  |                  |             |                |                 |
| Research Disciplines A   | 94.95         | 45.0         | 4,272.75         | 1,491.51         |             |                |                 |
| Research Disciplines B   | 76.85         | 30.0         | 2,305.50         | 1,834.63         |             |                |                 |
| Research Disciplines C   | 104.25        | 20.0         | 2,085.00         | 2,157.78         |             |                |                 |
| Research Disciplines D   | 40.60         | 10.0         | 406.00           | 691.72           |             |                |                 |
| Research Disciplines E   | 208.65        | 1.0          | 208.65           | 1,065.29         |             |                |                 |
| Unclassified   | 0.50          |              |                  | 0.00             |             |                |                 |
| Total Research   | 525.80        |              | 9,277.90         | 7,240.93         | 78.0        | 72.1           | 83.2            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                  |                  |             |                |                 |
| Total FTE Faculty  | 269.25        | 12.0         | 3,231.00         | 4,095.26         | 126.7       | 126.2          | 138.0           |
| Research Appointments  | 19.75         | 12.0         | 237.00           | 82.11            | 34.6        |                | 26.3            |
| Total FTE Grads  | 495.60        | 3.0          | 1,486.80         | 672.24           | 45.2        | 70.6           | 91.3            |
| Total FTE Non-Acd Staff  | 114.61        | 12.0         | 1,375.32         | 982.32           | 71.4        | 101.1          | 67.0            |
| Office Service   | 6,330.12      | 0.25         | 1,582.53         | 760.80           | 48.1        | 114.3          | 57.2            |
| Total Academic Office  |               |              | 7,912.65         | 6,592.73         | 83.3        | 99.5           | 96.4            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                  |                  |             |                |                 |
| Total FTE Non-Acd Staff  | 346.89        | 12.0         | 4,162.68         | 3,595.51         | 86.4        | 110.6          | 85.3            |
| Office Service   | 4,162.68      | 0.5          | 2,081.34         | 1,605.52         | 77.1        | 126.0          | 88.4            |
| Total Admin. Office  |               |              | 6,244.02         | 5,201.03         | 83.3        | 115.7          | 86.3            |
| Total Office - Academic & Administrative   |               |              | 14,156.67        | 11,793.76        | 83.3        | 103.3          | 91.9            |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                  |                  |             |                |                 |
| Study (Total FTE Students)   | 8,385.68      | 0.5          | 4,192.84         | 1,718.82         | 41.0        | 51.0           | 36.1            |
| Traditional Static Shelving Space  | 80,025.85     | 0.005        | 400.13           |                  |             |                |                 |
| Mobile Compact Shelving  | 0.00          | 0.004        | 0.00             |                  |             |                |                 |
| Super High Density   | 0.00          | 0.0035       | 0.00             |                  |             |                |                 |
| Total Stack  | 80,025.85     |              | 400.13           | 812.35           | 203.0       | 74.2           | 188.3           |
| Library Support  | 4,592.97      | 0.25         | 1,148.24         | 1,176.31         | 102.4       | 69.0           | 94.8            |
| Total Library Facilities & Library Study Space   |               |              | 5,741.21         | 3,707.48         | 64.6        | 63.6           | 56.6            |
| NON-LIBRARY STUDY SPACE  | 8,385.68      | 0.4          | 3,354.27         | 966.89           | 28.8        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>52,694.76</b> | <b>37,586.94</b> | <b>71.3</b> | <b>81.6</b>    | <b>76.9</b>     |
| <b>OTHER SPACE</b>   |               |              |                  |                  |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 8,385.68      | 0.9          | 7,547.11         | 5,674.13         | 75.2        | 73.1           | 112.8           |
| <b>MAINTENANCE SHOPS</b>   |               |              |                  |                  |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 58,029.66     | 0.015        | 870.44           | 545.87           | 62.7        | 75.7           | 16.2            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 8,385.68      | 1.5          | 12,578.52        | 4,493.09         | 35.7        | 59.3           | 36.9            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>20,996.08</b> | <b>10,713.09</b> | <b>51.0</b> | <b>65.3</b>    | <b>64.5</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>73,690.84</b> | <b>48,300.03</b> | <b>65.5</b> | <b>77.7</b>    | <b>73.3</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                  |                  |             |                |                 |

**Table 32: OTTAWA: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                   |                   |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 36,825.04     | 1.11         | 40,875.79         | 26,279.77         | 64.3        | 82.8           | 65.9            |
| <b>CLASS LABS</b>  |               |              |                   |                   |             |                |                 |
| Lab Contact Hours W  | 6,491.00      | 0.8          | 5,192.80          | 3,165.52          |             |                |                 |
| Lab Contact Hours X  | 34,352.50     | 0.6          | 20,611.50         | 10,468.91         |             |                |                 |
| Lab Contact Hours Y  | 4,628.50      | 0.5          | 2,314.25          | 1,380.84          |             |                |                 |
| Lab Contact Hours Z  | 8,780.00      | 0.3          | 2,634.00          | 2,721.44          |             |                |                 |
| Unclassified   | 0.00          |              |                   | 1,287.81          |             |                |                 |
| Total Class Lab  | 54,252.00     |              | 30,752.55         | 19,024.52         | 61.9        | 71.7           | 64.0            |
| <b>RESEARCH LABS</b>   |               |              |                   |                   |             |                |                 |
| Research Disciplines A   | 679.38        | 45.0         | 30,572.10         | 24,101.41         |             |                |                 |
| Research Disciplines B   | 710.25        | 30.0         | 21,307.50         | 6,078.72          |             |                |                 |
| Research Disciplines C   | 423.41        | 20.0         | 8,468.20          | 3,648.08          |             |                |                 |
| Research Disciplines D   | 215.94        | 10.0         | 2,159.40          | 2,104.34          |             |                |                 |
| Research Disciplines E   | 2,563.25      | 1.0          | 2,563.25          | 1,857.19          |             |                |                 |
| Unclassified   | 339.84        |              |                   | 272.13            |             |                |                 |
| Total Research   | 4,932.07      |              | 65,070.45         | 38,061.87         | 58.5        | 72.1           | 56.4            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Faculty  | 1,845.02      | 12.0         | 22,140.24         | 22,985.70         | 103.8       | 126.2          | 109.5           |
| Research Appointments  | 245.90        | 12.0         | 2,950.80          | 3,922.06          | 132.9       |                | 133.8           |
| Total FTE Grads  | 5,928.20      | 3.0          | 17,784.60         | 11,316.10         | 63.6        | 70.6           | 61.2            |
| Total FTE Non-Acd Staff  | 1,187.12      | 12.0         | 14,245.44         | 13,023.16         | 91.4        | 101.1          | 104.4           |
| Office Service   | 57,121.08     | 0.25         | 14,280.27         | 12,575.26         | 88.1        | 114.3          | 86.5            |
| Total Academic Office  |               |              | 71,401.35         | 63,822.28         | 89.4        | 99.5           | 92.1            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Non-Acd Staff  | 1,178.68      | 12.0         | 14,144.16         | 13,988.92         | 98.9        | 110.6          | 102.1           |
| Office Service   | 14,144.16     | 0.5          | 7,072.08          | 6,450.89          | 91.2        | 126.0          | 92.7            |
| Total Admin. Office  |               |              | 21,216.24         | 20,439.81         | 96.3        | 115.7          | 99.0            |
| Total Office - Academic & Administrative   |               |              | 92,617.59         | 84,262.09         | 91.0        | 103.3          | 93.7            |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                   |                   |             |                |                 |
| Study (Total FTE Students)   | 36,825.04     | 0.5          | 18,412.52         | 9,846.72          | 53.5        | 51.0           | 70.8            |
| Traditional Static Shelving Space  | 1,520,324.11  | 0.005        | 7,601.62          |                   |             |                |                 |
| Mobile Compact Shelving  | 0.00          | 0.004        | 0.00              |                   |             |                |                 |
| Super High Density   | 1,340,704.42  | 0.0035       | 4,692.47          |                   |             |                |                 |
| Total Stack  | 2,861,028.53  |              | 12,294.09         | 11,338.99         | 92.2        | 74.2           | 69.3            |
| Library Support  | 30,706.61     | 0.25         | 7,676.65          | 5,012.59          | 65.3        | 69.0           | 48.7            |
| Total Library Facilities & Library Study Space   |               |              | 38,383.26         | 26,198.30         | 68.3        | 63.6           | 65.8            |
| NON-LIBRARY STUDY SPACE  | 36,825.04     | 0.4          | 14,730.02         | 10,044.42         | 68.2        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>282,429.66</b> | <b>203,870.97</b> | <b>72.2</b> | <b>81.6</b>    | <b>72.5</b>     |
| <b>OTHER SPACE</b>   |               |              |                   |                   |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 36,825.04     | 0.9          | 33,142.54         | 24,005.29         | 72.4        | 73.1           | 47.4            |
| <b>MAINTENANCE SHOPS</b>   |               |              |                   |                   |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 361,048.72    | 0.015        | 5,415.73          | 4,093.89          | 75.6        | 75.7           | 81.9            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 36,825.04     | 1.5          | 55,237.56         | 23,878.78         | 43.2        | 59.3           | 46.7            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>93,795.83</b>  | <b>51,977.96</b>  | <b>55.4</b> | <b>65.3</b>    | <b>48.8</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>376,225.48</b> | <b>255,848.93</b> | <b>68.0</b> | <b>77.7</b>    | <b>66.5</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                   |                   |             |                |                 |



**Table 33: QUEEN'S: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                   |                   |             |                |                 |
| CLASSROOMS   |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 24,269.28     | 1.11         | 26,938.90         | 22,680.48         | 84.2        | 82.8           | 84.3            |
| CLASS LABS   |               |              |                   |                   |             |                |                 |
| Lab Contact Hours W  | 13,696.00     | 0.8          | 10,956.80         | 5,064.51          |             |                |                 |
| Lab Contact Hours X  | 20,779.50     | 0.6          | 12,467.70         | 15,149.85         |             |                |                 |
| Lab Contact Hours Y  | 1,200.50      | 0.5          | 600.25            | 2,990.31          |             |                |                 |
| Lab Contact Hours Z  | 5,215.50      | 0.3          | 1,564.65          | 580.24            |             |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Class Lab  | 40,891.50     |              | 25,589.40         | 23,784.91         | 92.9        | 71.7           | 55.1            |
| RESEARCH LABS  |               |              |                   |                   |             |                |                 |
| Research Disciplines A   | 594.57        | 45.0         | 26,755.70         | 22,776.18         |             |                |                 |
| Research Disciplines B   | 529.54        | 30.0         | 15,886.29         | 11,219.25         |             |                |                 |
| Research Disciplines C   | 88.29         | 20.0         | 1,765.85          | 2,229.03          |             |                |                 |
| Research Disciplines D   | 476.15        | 10.0         | 4,761.53          | 3,925.62          |             |                |                 |
| Research Disciplines E   | 1,666.18      | 1.0          | 1,666.18          | 120.16            |             |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Research   | 3,354.74      |              | 50,835.54         | 40,270.24         | 79.2        | 72.1           | 81.4            |
| OFFICE - ACADEMIC  |               |              |                   |                   |             |                |                 |
| Total FTE Faculty  | 1,012.05      | 12.0         | 12,144.55         | 19,206.75         | 158.2       | 126.2          | 160.1           |
| Research Appointments  | 472.78        | 12.0         | 5,673.41          | 4,317.67          | 76.1        |                | 66.8            |
| Total FTE Grads  | 4,256.10      | 3.0          | 12,768.30         | 10,771.65         | 84.4        | 70.6           | 87.5            |
| Total FTE Non-Acd Staff  | 763.73        | 12.0         | 9,164.76          | 13,729.12         | 149.8       | 101.1          | 182.7           |
| Office Service   | 39,751.02     | 0.25         | 9,937.76          | 13,976.97         | 140.6       | 114.3          | 154.9           |
| Total Academic Office  |               |              | 49,688.78         | 62,002.16         | 124.8       | 99.5           | 130.7           |
| OFFICE - ADMINISTRATIVE  |               |              |                   |                   |             |                |                 |
| Total FTE Non-Acd Staff  | 635.68        | 12.0         | 7,628.16          | 11,690.03         | 153.2       | 110.6          | 98.3            |
| Office Service   | 7,628.16      | 0.5          | 3,814.08          | 6,734.40          | 176.6       | 126.0          | 124.6           |
| Total Admin. Office  |               |              | 11,442.24         | 18,424.43         | 161.0       | 115.7          | 107.1           |
| Total Office - Academic & Administrative   |               |              | 61,131.02         | 80,426.59         | 131.6       | 103.3          | 125.0           |
| LIBRARY FACILITIES & LIBRARY STUDY SPACE   |               |              |                   |                   |             |                |                 |
| Study (Total FTE Students)   | 24,269.28     | 0.5          | 12,134.64         | 8,872.81          | 73.1        | 51.0           | 77.3            |
| Traditional Static Shelving Space  | 4,203,065.40  | 0.005        | 21,015.33         |                   |             |                |                 |
| Mobile Compact Shelving  | 204,005.09    | 0.004        | 816.02            |                   |             |                |                 |
| Super High Density   | 0.00          | 0.0035       | 0.00              |                   |             |                |                 |
| Total Stack  | 4,407,070.49  |              | 21,831.35         | 10,749.95         | 49.2        | 74.2           | 68.7            |
| Library Support  | 33,965.99     | 0.25         | 8,491.50          | 4,381.77          | 51.6        | 69.0           | 55.5            |
| Total Library Facilities & Library Study Space   |               |              | 42,457.49         | 24,004.53         | 56.5        | 63.6           | 68.8            |
| NON-LIBRARY STUDY SPACE  | 24,269.28     | 0.4          | 9,707.71          | 8,248.34          | 85.0        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>216,660.06</b> | <b>199,415.09</b> | <b>92.0</b> | <b>81.6</b>    | <b>86.9</b>     |
| <b>OTHER SPACE</b>   |               |              |                   |                   |             |                |                 |
| RECREATION / ATHLETICS   |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 24,269.28     | 0.9          | 21,842.35         | 17,473.73         | 80.0        | 73.1           | 102.2           |
| MAINTENANCE SHOPS  |               |              |                   |                   |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 351,974.80    | 0.015        | 5,279.62          | 2,350.99          | 44.5        | 75.7           | 45.1            |
| STUDENT AND CENTRAL SERVICES   |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 24,269.28     | 1.5          | 36,403.92         | 29,215.17         | 80.3        | 59.3           | 97.5            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>63,525.90</b>  | <b>49,039.89</b>  | <b>77.2</b> | <b>65.3</b>    | <b>94.4</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>280,185.96</b> | <b>248,454.98</b> | <b>88.7</b> | <b>77.7</b>    | <b>88.4</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                   |                   |             |                |                 |

**Table 34: RYERSON: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                   |                   |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 34,952.00     | 1.11         | 38,796.72         | 19,528.30         | 50.3        | 82.8           | 57.0            |
| <b>CLASS LABS</b>  |               |              |                   |                   |             |                |                 |
| Lab Contact Hours W  | 16,499.00     | 0.8          | 13,199.20         | 6,803.54          |             |                |                 |
| Lab Contact Hours X  | 48,556.00     | 0.6          | 29,133.60         | 18,566.98         |             |                |                 |
| Lab Contact Hours Y  | 6,670.00      | 0.5          | 3,335.00          | 2,225.87          |             |                |                 |
| Lab Contact Hours Z  | 34,040.00     | 0.3          | 10,212.00         | 5,704.64          |             |                |                 |
| Unclassified   | 0.00          |              |                   | 638.61            |             |                |                 |
| Total Class Lab  | 105,765.00    |              | 55,879.80         | 33,939.64         | 60.7        | 71.7           | 68.0            |
| <b>RESEARCH LABS</b>   |               |              |                   |                   |             |                |                 |
| Research Disciplines A   | 133.31        | 45.0         | 5,998.95          | 3,315.40          |             |                |                 |
| Research Disciplines B   | 391.77        | 30.0         | 11,753.10         | 6,593.77          |             |                |                 |
| Research Disciplines C   | 246.32        | 20.0         | 4,926.40          | 2,153.38          |             |                |                 |
| Research Disciplines D   | 356.56        | 10.0         | 3,565.60          | 694.33            |             |                |                 |
| Research Disciplines E   | 1,388.36      | 1.0          | 1,388.36          | 2,055.85          |             |                |                 |
| Unclassified   | 5.30          |              |                   | 54.15             |             |                |                 |
| Total Research   | 2,521.62      |              | 27,632.41         | 14,866.88         | 53.8        | 72.1           | 53.3            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Faculty  | 1,294.05      | 12.0         | 15,528.60         | 15,123.48         | 97.4        | 126.2          | 112.5           |
| Research Appointments  | 308.35        | 12.0         | 3,700.20          | 732.60            | 19.8        |                | 21.4            |
| Total FTE Grads  | 2,378.00      | 3.0          | 7,134.00          | 1,238.68          | 17.4        | 70.6           | 29.8            |
| Total FTE Non-Acd Staff  | 648.23        | 12.0         | 7,778.76          | 4,788.99          | 61.6        | 101.1          | 58.4            |
| Office Service   | 34,141.56     | 0.25         | 8,535.39          | 8,631.34          | 101.1       | 114.3          | 102.8           |
| Total Academic Office  |               |              | 42,676.95         | 30,515.09         | 71.5        | 99.5           | 79.8            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Non-Acd Staff  | 1,110.70      | 12.0         | 13,328.40         | 11,805.10         | 88.6        | 110.6          | 85.8            |
| Office Service   | 13,328.40     | 0.5          | 6,664.20          | 6,009.28          | 90.2        | 126.0          | 90.5            |
| Total Admin. Office  |               |              | 19,992.60         | 17,814.38         | 89.1        | 115.7          | 87.3            |
| Total Office - Academic & Administrative   |               |              | 62,669.55         | 48,329.47         | 77.1        | 103.3          | 82.3            |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                   |                   |             |                |                 |
| Study (Total FTE Students)   | 34,952.00     | 0.5          | 17,476.00         | 3,864.03          | 22.1        | 51.0           | 40.6            |
| Traditional Static Shelving Space  | 690,055.64    | 0.005        | 3,450.28          |                   |             |                |                 |
| Mobile Compact Shelving  | 0.00          | 0.004        | 0.00              |                   |             |                |                 |
| Super High Density   | 0.00          | 0.0035       | 0.00              |                   |             |                |                 |
| Total Stack  | 690,055.64    |              | 3,450.28          | 3,671.91          | 106.4       | 74.2           | 177.3           |
| Library Support  | 20,926.28     | 0.25         | 5,231.57          | 2,055.88          | 39.3        | 69.0           | 46.9            |
| Total Library Facilities & Library Study Space   |               |              | 26,157.85         | 9,591.82          | 36.7        | 63.6           | 51.5            |
| NON-LIBRARY STUDY SPACE  | 34,952.00     | 0.4          | 13,980.80         | 12,651.58         | 90.5        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>225,117.13</b> | <b>138,907.69</b> | <b>61.7</b> | <b>81.6</b>    | <b>66.1</b>     |
| <b>OTHER SPACE</b>   |               |              |                   |                   |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 34,952.00     | 0.9          | 31,456.80         | 14,274.00         | 45.4        | 73.1           | 52.9            |
| <b>MAINTENANCE SHOPS</b>   |               |              |                   |                   |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 195,348.58    | 0.015        | 2,930.23          | 2,590.32          | 88.4        | 75.7           | 93.8            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 34,952.00     | 1.5          | 52,428.00         | 18,749.14         | 35.8        | 59.3           | 44.5            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>86,815.03</b>  | <b>35,613.46</b>  | <b>41.0</b> | <b>65.3</b>    | <b>49.3</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>311,932.16</b> | <b>174,521.15</b> | <b>55.9</b> | <b>77.7</b>    | <b>61.2</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                   |                   |             |                |                 |

**Table 35: TORONTO-ST. GEORGE: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                   |                   |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 53,398.10     | 1.11         | 59,271.89         | 58,317.78         | 98.4        | 82.8           | 102.0           |
| <b>CLASS LABS</b>  |               |              |                   |                   |             |                |                 |
| Lab Contact Hours W  | 10,455.35     | 0.8          | 8,364.28          | 5,749.65          |             |                |                 |
| Lab Contact Hours X  | 45,592.91     | 0.6          | 27,355.75         | 30,376.49         |             |                |                 |
| Lab Contact Hours Y  | 2,079.50      | 0.5          | 1,039.75          | 1,437.17          |             |                |                 |
| Lab Contact Hours Z  | 3,194.90      | 0.3          | 958.47            | 3,893.01          |             |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Class Lab  | 61,322.66     |              | 37,718.25         | 41,456.32         | 109.9       | 71.7           | 129.7           |
| <b>RESEARCH LABS</b>   |               |              |                   |                   |             |                |                 |
| Research Disciplines A   | 1,686.97      | 45.0         | 75,913.43         | 53,852.23         |             |                |                 |
| Research Disciplines B   | 1,662.15      | 30.0         | 49,864.50         | 26,369.71         |             |                |                 |
| Research Disciplines C   | 733.22        | 20.0         | 14,664.30         | 10,566.10         |             |                |                 |
| Research Disciplines D   | 790.33        | 10.0         | 7,903.30          | 4,397.98          |             |                |                 |
| Research Disciplines E   | 6,147.41      | 1.0          | 6,147.41          | 4,998.30          |             |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Research   | 11,020.07     |              | 154,492.94        | 100,184.32        | 64.8        | 72.1           | 70.5            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Faculty  | 2,447.60      | 12.0         | 29,371.20         | 49,415.11         | 168.2       | 126.2          | 170.9           |
| Research Appointments  | 1,548.93      | 12.0         | 18,587.16         | 10,526.44         | 56.6        |                | 50.9            |
| Total FTE Grads  | 16,108.50     | 3.0          | 48,325.50         | 25,278.96         | 52.3        | 70.6           | 56.4            |
| Total FTE Non-Acd Staff  | 2,738.14      | 12.0         | 32,857.68         | 32,625.26         | 99.3        | 101.1          | 99.0            |
| Office Service   | 129,141.54    | 0.25         | 32,285.39         | 37,830.54         | 117.2       | 114.3          | 117.0           |
| Total Academic Office  |               |              | 161,426.93        | 155,676.31        | 96.4        | 99.5           | 97.9            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Non-Acd Staff  | 1,507.71      | 12.0         | 18,092.52         | 19,012.17         | 105.1       | 110.6          | 126.3           |
| Office Service   | 18,092.52     | 0.5          | 9,046.26          | 8,315.95          | 91.9        | 126.0          | 125.6           |
| Total Admin. Office  |               |              | 27,138.78         | 27,328.12         | 100.7       | 115.7          | 126.1           |
| Total Office - Academic & Administrative   |               |              | 188,565.71        | 183,004.43        | 97.1        | 103.3          | 101.1           |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                   |                   |             |                |                 |
| Study (Total FTE Students)   | 53,398.10     | 0.5          | 26,699.05         | 25,327.39         | 94.9        | 51.0           | 105.2           |
| Traditional Static Shelving Space  | 9,748,781.42  | 0.005        | 48,743.91         |                   |             |                |                 |
| Mobile Compact Shelving  | 817,894.00    | 0.004        | 3,271.58          |                   |             |                |                 |
| Super High Density   | 2,540,791.45  | 0.0035       | 8,892.77          |                   |             |                |                 |
| Total Stack  | 13,107,466.88 |              | 60,908.25         | 37,116.64         | 60.9        | 74.2           | 61.3            |
| Library Support  | 87,607.30     | 0.25         | 21,901.83         | 16,997.06         | 77.6        | 69.0           | 75.4            |
| Total Library Facilities & Library Study Space   |               |              | 109,509.13        | 79,441.09         | 72.5        | 63.6           | 75.9            |
| NON-LIBRARY STUDY SPACE  | 53,398.10     | 0.4          | 21,359.24         | 18,657.39         | 87.4        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>570,917.15</b> | <b>481,061.33</b> | <b>84.3</b> | <b>81.6</b>    | <b>89.1</b>     |
| <b>OTHER SPACE</b>   |               |              |                   |                   |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 53,398.10     | 0.9          | 48,058.29         | 30,368.49         | 63.2        | 73.1           | 56.9            |
| <b>MAINTENANCE SHOPS</b>   |               |              |                   |                   |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 745,384.87    | 0.015        | 11,180.77         | 9,250.96          | 82.7        | 75.7           | 81.2            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 53,398.10     | 1.5          | 80,097.15         | 46,468.94         | 58.0        | 59.3           | 74.9            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>139,336.21</b> | <b>86,088.39</b>  | <b>61.8</b> | <b>65.3</b>    | <b>69.2</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>710,253.36</b> | <b>567,149.72</b> | <b>79.9</b> | <b>77.7</b>    | <b>85.1</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                   |                   |             |                |                 |

**Table 36: TORONTO-MISSISSAUGA: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space  | Inventory        | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|------------------|------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                  |                  |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 12,440.50     | 1.11         | 13,808.96        | 12,501.62        | 90.5        | 82.8           | 90.5            |
| <b>CLASS LABS</b>  |               |              |                  |                  |             |                |                 |
| Lab Contact Hours W  | 0.00          | 0.8          | 0.00             | 0.00             |             |                |                 |
| Lab Contact Hours X  | 9,230.86      | 0.6          | 5,538.52         | 6,064.16         |             |                |                 |
| Lab Contact Hours Y  | 4,629.51      | 0.5          | 2,314.76         | 1,262.36         |             |                |                 |
| Lab Contact Hours Z  | 5,558.00      | 0.3          | 1,667.40         | 989.67           |             |                |                 |
| Unclassified   | 0.00          |              |                  | 0.00             |             |                |                 |
| Total Class Lab  | 19,418.37     |              | 9,520.67         | 8,316.19         | 87.3        | 71.7           | 93.9            |
| <b>RESEARCH LABS</b>   |               |              |                  |                  |             |                |                 |
| Research Disciplines A   | 182.43        | 45.0         | 8,209.17         | 5,237.79         |             |                |                 |
| Research Disciplines B   | 42.10         | 30.0         | 1,263.00         | 990.73           |             |                |                 |
| Research Disciplines C   | 45.05         | 20.0         | 901.00           | 563.65           |             |                |                 |
| Research Disciplines D   | 36.42         | 10.0         | 364.20           | 494.44           |             |                |                 |
| Research Disciplines E   | 446.25        | 1.0          | 446.25           | 192.08           |             |                |                 |
| Unclassified   | 0.00          |              |                  | 0.00             |             |                |                 |
| Total Research   | 752.25        |              | 11,183.62        | 7,478.69         | 66.9        | 72.1           | 77.1            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                  |                  |             |                |                 |
| Total FTE Faculty  | 385.35        | 12.0         | 4,624.15         | 5,282.57         | 114.2       | 126.2          | 116.2           |
| Research Appointments  | 79.30         | 12.0         | 951.60           | 552.09           | 58.0        |                | 35.4            |
| Total FTE Grads  | 657.50        | 3.0          | 1,972.50         | 1,561.62         | 79.2        | 70.6           | 110.4           |
| Total FTE Non-Acd Staff  | 120.97        | 12.0         | 1,451.64         | 1,718.18         | 118.4       | 101.1          | 107.9           |
| Office Service   | 8,999.89      | 0.25         | 2,249.97         | 1,731.67         | 77.0        | 114.3          | 54.5            |
| Total Academic Office  |               |              | 11,249.87        | 10,846.13        | 96.4        | 99.5           | 95.0            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                  |                  |             |                |                 |
| Total FTE Non-Acd Staff  | 293.70        | 12.0         | 3,524.40         | 3,667.00         | 104.0       | 110.6          | 109.2           |
| Office Service   | 3,524.40      | 0.5          | 1,762.20         | 1,764.79         | 100.1       | 126.0          | 110.4           |
| Total Admin. Office  |               |              | 5,286.60         | 5,431.79         | 102.7       | 115.7          | 109.6           |
| Total Office - Academic & Administrative   |               |              | 16,536.47        | 16,277.92        | 98.4        | 103.3          | 99.5            |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                  |                  |             |                |                 |
| Study (Total FTE Students)   | 12,440.50     | 0.5          | 6,220.25         | 3,214.42         | 51.7        | 51.0           | 52.2            |
| Traditional Static Shelving Space  | 12,031.55     | 0.005        | 60.16            |                  |             |                |                 |
| Mobile Compact Shelving  | 494,055.00    | 0.004        | 1,976.22         |                  |             |                |                 |
| Super High Density   | 14,095.00     | 0.0035       | 49.33            |                  |             |                |                 |
| Total Stack  | 520,181.55    |              | 2,085.71         | 1,509.87         | 72.4        | 74.2           | 89.1            |
| Library Support  | 8,305.96      | 0.25         | 2,076.49         | 983.91           | 47.4        | 69.0           | 44.1            |
| Total Library Facilities & Library Study Space   |               |              | 10,382.45        | 5,708.20         | 55.0        | 63.6           | 57.4            |
| NON-LIBRARY STUDY SPACE  | 12,440.50     | 0.4          | 4,976.20         | 2,370.79         | 47.6        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>66,408.36</b> | <b>52,653.41</b> | <b>79.3</b> | <b>81.6</b>    | <b>84.4</b>     |
| <b>OTHER SPACE</b>   |               |              |                  |                  |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 12,440.50     | 0.9          | 11,196.45        | 6,894.36         | 61.6        | 73.1           | 69.9            |
| <b>MAINTENANCE SHOPS</b>   |               |              |                  |                  |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 102,426.13    | 0.015        | 1,536.39         | 1,475.96         | 96.1        | 75.7           | 44.7            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 12,440.50     | 1.5          | 18,660.75        | 8,332.09         | 44.7        | 59.3           | 53.8            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>31,393.59</b> | <b>16,702.41</b> | <b>53.2</b> | <b>65.3</b>    | <b>59.1</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>97,801.95</b> | <b>69,355.82</b> | <b>70.9</b> | <b>77.7</b>    | <b>75.8</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                  |                  |             |                |                 |

**Table 37: TORONTO-SCARBOROUGH: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space  | Inventory        | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|------------------|------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                  |                  |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 11,033.60     | 1.11         | 12,247.30        | 6,724.99         | 54.9        | 82.8           | 60.9            |
| <b>CLASS LABS</b>  |               |              |                  |                  |             |                |                 |
| Lab Contact Hours W  | 0.00          | 0.8          | 0.00             | 0.00             |             |                |                 |
| Lab Contact Hours X  | 10,782.00     | 0.6          | 6,469.20         | 4,986.02         |             |                |                 |
| Lab Contact Hours Y  | 105.00        | 0.5          | 52.50            | 342.29           |             |                |                 |
| Lab Contact Hours Z  | 38.00         | 0.3          | 11.40            | 749.51           |             |                |                 |
| Unclassified   | 0.00          |              |                  | 0.00             |             |                |                 |
| Total Class Lab  | 10,925.00     |              | 6,533.10         | 6,077.82         | 93.0        | 71.7           | 89.5            |
| <b>RESEARCH LABS</b>   |               |              |                  |                  |             |                |                 |
| Research Disciplines A   | 241.02        | 45.0         | 10,845.90        | 6,813.39         |             |                |                 |
| Research Disciplines B   | 61.90         | 30.0         | 1,857.00         | 1,167.01         |             |                |                 |
| Research Disciplines C   | 28.24         | 20.0         | 564.80           | 396.01           |             |                |                 |
| Research Disciplines D   | 20.14         | 10.0         | 201.40           | 0.00             |             |                |                 |
| Research Disciplines E   | 188.28        | 1.0          | 188.28           | 412.91           |             |                |                 |
| Unclassified   | 0.34          |              |                  | 0.00             |             |                |                 |
| Total Research   | 539.92        |              | 13,657.38        | 8,789.32         | 64.4        | 72.1           | 70.2            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                  |                  |             |                |                 |
| Total FTE Faculty  | 362.78        | 12.0         | 4,353.36         | 5,006.31         | 115.0       | 126.2          | 118.7           |
| Research Appointments  | 69.02         | 12.0         | 828.24           | 449.42           | 54.3        |                | 37.9            |
| Total FTE Grads  | 286.80        | 3.0          | 860.40           | 1,616.86         | 187.9       | 70.6           | 220.7           |
| Total FTE Non-Acd Staff  | 80.81         | 12.0         | 969.72           | 959.96           | 99.0        | 101.1          | 114.8           |
| Office Service   | 7,011.72      | 0.25         | 1,752.93         | 2,235.38         | 127.5       | 114.3          | 99.8            |
| Total Academic Office  |               |              | 8,764.65         | 10,267.93        | 117.2       | 99.5           | 116.5           |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                  |                  |             |                |                 |
| Total FTE Non-Acd Staff  | 346.18        | 12.0         | 4,154.16         | 4,312.57         | 103.8       | 110.6          | 98.0            |
| Office Service   | 4,154.16      | 0.5          | 2,077.08         | 2,157.03         | 103.8       | 126.0          | 100.0           |
| Total Admin. Office  |               |              | 6,231.24         | 6,469.60         | 103.8       | 115.7          | 98.7            |
| Total Office - Academic & Administrative   |               |              | 14,995.89        | 16,737.53        | 111.6       | 103.3          | 109.1           |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                  |                  |             |                |                 |
| Study (Total FTE Students)   | 11,033.60     | 0.5          | 5,516.80         | 1,646.96         | 29.9        | 51.0           | 64.9            |
| Traditional Static Shelving Space  | 253,660.29    | 0.005        | 1,268.30         |                  |             |                |                 |
| Mobile Compact Shelving  | 36,040.00     | 0.004        | 144.16           |                  |             |                |                 |
| Super High Density   | 58,648.00     | 0.0035       | 205.27           |                  |             |                |                 |
| Total Stack  | 348,348.29    |              | 1,617.73         | 1,271.49         | 78.6        | 74.2           | 98.9            |
| Library Support  | 7,134.53      | 0.25         | 1,783.63         | 885.89           | 49.7        | 69.0           | 36.9            |
| Total Library Facilities & Library Study Space   |               |              | 8,918.16         | 3,804.34         | 42.7        | 63.6           | 65.3            |
| NON-LIBRARY STUDY SPACE  | 11,033.60     | 0.4          | 4,413.44         | 3,543.24         | 80.3        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>60,765.27</b> | <b>45,677.24</b> | <b>75.2</b> | <b>81.6</b>    | <b>80.0</b>     |
| <b>OTHER SPACE</b>   |               |              |                  |                  |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 11,033.60     | 0.9          | 9,930.24         | 9,533.99         | 96.0        | 73.1           | 49.4            |
| <b>MAINTENANCE SHOPS</b>   |               |              |                  |                  |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 96,410.51     | 0.015        | 1,446.16         | 3,386.34         | 234.2       | 75.7           | 225.2           |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 11,033.60     | 1.5          | 16,550.40        | 8,825.90         | 53.3        | 59.3           | 59.0            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>27,926.80</b> | <b>21,746.23</b> | <b>77.9</b> | <b>65.3</b>    | <b>62.8</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>88,692.07</b> | <b>67,423.47</b> | <b>76.0</b> | <b>77.7</b>    | <b>74.3</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                  |                  |             |                |                 |

**Table 38: TRENT: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space  | Inventory        | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|------------------|------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                  |                  |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 7,842.72      | 1.11         | 8,705.42         | 8,025.58         | 92.2        | 82.8           | 102.2           |
| <b>CLASS LABS</b>  |               |              |                  |                  |             |                |                 |
| Lab Contact Hours W  | 0.00          | 0.8          | 0.00             | 0.00             |             |                |                 |
| Lab Contact Hours X  | 10,797.00     | 0.6          | 6,478.20         | 2,558.53         |             |                |                 |
| Lab Contact Hours Y  | 1,799.00      | 0.5          | 899.50           | 1,336.36         |             |                |                 |
| Lab Contact Hours Z  | 2,497.00      | 0.3          | 749.10           | 677.78           |             |                |                 |
| Unclassified   | 0.00          |              |                  | 9.29             |             |                |                 |
| Total Class Lab  | 15,093.00     |              | 8,126.80         | 4,581.96         | 56.4        | 71.7           | 79.5            |
| <b>RESEARCH LABS</b>   |               |              |                  |                  |             |                |                 |
| Research Disciplines A   | 48.04         | 45.0         | 2,161.80         | 3,867.88         |             |                |                 |
| Research Disciplines B   | 40.73         | 30.0         | 1,221.90         | 689.62           |             |                |                 |
| Research Disciplines C   | 27.40         | 20.0         | 548.00           | 569.46           |             |                |                 |
| Research Disciplines D   | 105.28        | 10.0         | 1,052.80         | 2,001.51         |             |                |                 |
| Research Disciplines E   | 234.05        | 1.0          | 234.05           | 750.03           |             |                |                 |
| Unclassified   | 5.65          |              |                  | 0.00             |             |                |                 |
| Total Research   | 461.15        |              | 5,218.55         | 7,878.50         | 151.0       | 72.1           | 150.1           |
| <b>OFFICE - ACADEMIC</b>   |               |              |                  |                  |             |                |                 |
| Total FTE Faculty  | 245.75        | 12.0         | 2,949.00         | 5,001.22         | 169.6       | 126.2          | 124.3           |
| Research Appointments  | 31.95         | 12.0         | 383.40           | 518.17           | 135.2       |                | 92.9            |
| Total FTE Grads  | 399.80        | 3.0          | 1,199.40         | 1,608.19         | 134.1       | 70.6           | 150.8           |
| Total FTE Non-Acd Staff  | 129.20        | 12.0         | 1,550.40         | 1,504.27         | 97.0        | 101.1          | 296.1           |
| Office Service   | 6,082.20      | 0.25         | 1,520.55         | 1,709.37         | 112.4       | 114.3          | 97.0            |
| Total Academic Office  |               |              | 7,602.75         | 10,341.22        | 136.0       | 99.5           | 132.2           |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                  |                  |             |                |                 |
| Total FTE Non-Acd Staff  | 279.71        | 12.0         | 3,356.52         | 4,199.51         | 125.1       | 110.6          | 113.0           |
| Office Service   | 3,356.52      | 0.5          | 1,678.26         | 1,704.44         | 101.6       | 126.0          | 80.2            |
| Total Admin. Office  |               |              | 5,034.78         | 5,903.95         | 117.3       | 115.7          | 102.1           |
| Total Office - Academic & Administrative   |               |              | 12,637.53        | 16,245.17        | 128.5       | 103.3          | 119.9           |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                  |                  |             |                |                 |
| Study (Total FTE Students)   | 7,842.72      | 0.5          | 3,921.36         | 1,737.14         | 44.3        | 51.0           | 17.8            |
| Traditional Static Shelving Space  | 711,063.80    | 0.005        | 3,555.32         |                  |             |                |                 |
| Mobile Compact Shelving  | 0.00          | 0.004        | 0.00             |                  |             |                |                 |
| Super High Density   | 0.00          | 0.0035       | 0.00             |                  |             |                |                 |
| Total Stack  | 711,063.80    |              | 3,555.32         | 2,584.95         | 72.7        | 74.2           | 147.8           |
| Library Support  | 7,476.68      | 0.25         | 1,869.17         | 1,063.05         | 56.9        | 69.0           | 55.7            |
| Total Library Facilities & Library Study Space   |               |              | 9,345.85         | 5,385.14         | 57.6        | 63.6           | 72.8            |
| NON-LIBRARY STUDY SPACE  | 7,842.72      | 0.4          | 3,137.09         | 1,986.79         | 63.3        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>47,171.24</b> | <b>44,103.14</b> | <b>93.5</b> | <b>81.6</b>    | <b>103.8</b>    |
| <b>OTHER SPACE</b>   |               |              |                  |                  |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 7,842.72      | 0.9          | 7,058.45         | 3,965.70         | 56.2        | 73.1           | 61.5            |
| <b>MAINTENANCE SHOPS</b>   |               |              |                  |                  |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 74,417.27     | 0.015        | 1,116.26         | 380.42           | 34.1        | 75.7           | 33.7            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                  |                  |             |                |                 |
| Total FTE Students   | 7,842.72      | 1.5          | 11,764.09        | 5,439.15         | 46.2        | 59.3           | 65.8            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>19,938.80</b> | <b>9,785.27</b>  | <b>49.1</b> | <b>65.3</b>    | <b>62.3</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>67,110.04</b> | <b>53,888.41</b> | <b>80.3</b> | <b>77.7</b>    | <b>91.4</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                  |                  |             |                |                 |

**Table 39: WATERLOO: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>        |               |              |                   |                   |             |                |                 |
| CLASSROOMS                                       |               |              |                   |                   |             |                |                 |
| Total FTE Students                               | 31,211.78     | 1.11         | 34,645.08         | 31,608.24         | 91.2        | 82.8           | 85.5            |
| CLASS LABS                                       |               |              |                   |                   |             |                |                 |
| Lab Contact Hours W                              | 11,278.00     | 0.8          | 9,022.40          | 5,759.17          |             |                |                 |
| Lab Contact Hours X                              | 36,450.21     | 0.6          | 21,870.13         | 19,532.24         |             |                |                 |
| Lab Contact Hours Y                              | 2,762.66      | 0.5          | 1,381.33          | 2,942.17          |             |                |                 |
| Lab Contact Hours Z                              | 4,288.96      | 0.3          | 1,286.69          | 6,292.36          |             |                |                 |
| Unclassified                                     | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Class Lab                                  | 54,779.83     |              | 33,560.54         | 34,525.94         | 102.9       | 71.7           | 88.8            |
| RESEARCH LABS                                    |               |              |                   |                   |             |                |                 |
| Research Disciplines A                           | 681.26        | 45.0         | 30,656.70         | 25,494.37         |             |                |                 |
| Research Disciplines B                           | 933.58        | 30.0         | 28,007.25         | 19,603.73         |             |                |                 |
| Research Disciplines C                           | 395.18        | 20.0         | 7,903.60          | 4,814.12          |             |                |                 |
| Research Disciplines D                           | 693.30        | 10.0         | 6,932.95          | 6,758.39          |             |                |                 |
| Research Disciplines E                           | 1,254.62      | 1.0          | 1,254.62          | 969.81            |             |                |                 |
| Unclassified                                     | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Research                                   | 3,957.93      |              | 74,755.12         | 57,640.42         | 77.1        | 72.1           | 79.5            |
| OFFICE - ACADEMIC                                |               |              |                   |                   |             |                |                 |
| Total FTE Faculty                                | 1,472.46      | 12.0         | 17,669.52         | 23,982.81         | 135.7       | 126.2          | 138.1           |
| Research Appointments                            | 475.30        | 12.0         | 5,703.60          | 3,919.33          | 68.7        |                | 92.4            |
| Total FTE Grads                                  | 4,586.00      | 3.0          | 13,758.00         | 20,097.15         | 146.1       | 70.6           | 128.5           |
| Total FTE Non-Acd Staff                          | 951.38        | 12.0         | 11,416.56         | 12,768.00         | 111.8       | 101.1          | 112.4           |
| Office Service                                   | 48,547.68     | 0.25         | 12,136.92         | 16,352.56         | 134.7       | 114.3          | 125.6           |
| Total Academic Office                            |               |              | 60,684.60         | 77,119.85         | 127.1       | 99.5           | 124.5           |
| OFFICE - ADMINISTRATIVE                          |               |              |                   |                   |             |                |                 |
| Total FTE Non-Acd Staff                          | 1,437.85      | 12.0         | 17,254.20         | 20,450.16         | 118.5       | 110.6          | 85.7            |
| Office Service                                   | 17,254.20     | 0.5          | 8,627.10          | 11,393.16         | 132.1       | 126.0          | 91.5            |
| Total Admin. Office                              |               |              | 25,881.30         | 31,843.32         | 123.0       | 115.7          | 87.6            |
| Total Office - Academic & Administrative         |               |              | 86,565.90         | 108,963.17        | 125.9       | 103.3          | 114.3           |
| LIBRARY FACILITIES & LIBRARY STUDY SPACE         |               |              |                   |                   |             |                |                 |
| Study (Total FTE Students)                       | 31,211.78     | 0.5          | 15,605.89         | 4,133.12          | 26.5        | 51.0           | 42.0            |
| Traditional Static Shelving Space                | 1,381,643.06  | 0.005        | 6,908.22          |                   |             |                |                 |
| Mobile Compact Shelving                          | 157,489.88    | 0.004        | 629.96            |                   |             |                |                 |
| Super High Density                               | 660,189.45    | 0.0035       | 2,310.66          |                   |             |                |                 |
| Total Stack                                      | 2,199,322.38  |              | 9,848.84          | 8,626.02          | 87.6        | 74.2           | 75.1            |
| Library Support                                  | 25,454.73     | 0.25         | 6,363.68          | 3,803.43          | 59.8        | 69.0           | 52.4            |
| Total Library Facilities & Library Study Space   |               |              | 31,818.41         | 16,562.57         | 52.1        | 63.6           | 54.0            |
| NON-LIBRARY STUDY SPACE                          | 31,211.78     | 0.4          | 12,484.71         | 16,081.99         | 128.8       | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b> |               |              | <b>273,829.76</b> | <b>265,382.33</b> | <b>96.9</b> | <b>81.6</b>    | <b>89.2</b>     |
| <b>OTHER SPACE</b>                               |               |              |                   |                   |             |                |                 |
| RECREATION / ATHLETICS                           |               |              |                   |                   |             |                |                 |
| Total FTE Students                               | 31,211.78     | 0.9          | 28,090.60         | 12,934.89         | 46.0        | 73.1           | 48.2            |
| MAINTENANCE SHOPS                                |               |              |                   |                   |             |                |                 |
| Total NASM Inv. (exc. 16.0)                      | 467,099.22    | 0.015        | 7,006.49          | 6,998.81          | 99.9        | 75.7           | 114.7           |
| STUDENT AND CENTRAL SERVICES                     |               |              |                   |                   |             |                |                 |
| Total FTE Students                               | 31,211.78     | 1.5          | 46,817.67         | 29,179.95         | 62.3        | 59.3           | 73.4            |
| <b>SUB-TOTAL: OTHER SPACE</b>                    |               |              | <b>81,914.76</b>  | <b>49,113.65</b>  | <b>60.0</b> | <b>65.3</b>    | <b>68.1</b>     |
| <b>TOTAL FORMULA AREAS</b>                       |               |              | <b>355,744.52</b> | <b>314,495.98</b> | <b>88.4</b> | <b>77.7</b>    | <b>84.1</b>     |

The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data.

**Table 40: WESTERN: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                   |                   |             |                |                 |
| CLASSROOMS   |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 35,318.70     | 1.11         | 39,203.76         | 40,091.45         | 102.3       | 82.8           | 100.0           |
| CLASS LABS   |               |              |                   |                   |             |                |                 |
| Lab Contact Hours W  | 7,024.00      | 0.8          | 5,619.20          | 2,402.47          |             |                |                 |
| Lab Contact Hours X  | 60,915.00     | 0.6          | 36,549.00         | 22,041.47         |             |                |                 |
| Lab Contact Hours Y  | 19,899.00     | 0.5          | 9,949.50          | 2,574.85          |             |                |                 |
| Lab Contact Hours Z  | 9,747.00      | 0.3          | 2,924.10          | 2,153.64          |             |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Class Lab  | 97,585.00     |              | 55,041.80         | 29,172.43         | 53.0        | 71.7           | 61.6            |
| RESEARCH LABS  |               |              |                   |                   |             |                |                 |
| Research Disciplines A   | 1,308.80      | 45.0         | 58,896.00         | 33,362.07         |             |                |                 |
| Research Disciplines B   | 559.52        | 30.0         | 16,785.60         | 17,903.90         |             |                |                 |
| Research Disciplines C   | 337.42        | 20.0         | 6,748.40          | 2,357.34          |             |                |                 |
| Research Disciplines D   | 526.40        | 10.0         | 5,263.95          | 3,490.09          |             |                |                 |
| Research Disciplines E   | 2,305.26      | 1.0          | 2,305.26          | 836.46            |             |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Research   | 5,037.40      |              | 89,999.21         | 57,949.86         | 64.4        | 72.1           | 68.4            |
| OFFICE - ACADEMIC  |               |              |                   |                   |             |                |                 |
| Total FTE Faculty  | 1,920.02      | 12.0         | 23,040.24         | 27,850.53         | 120.9       | 126.2          | 120.3           |
| Research Appointments  | 1,422.65      | 12.0         | 17,071.80         | 2,835.86          | 16.6        |                | 9.9             |
| Total FTE Grads  | 5,716.70      | 3.0          | 17,150.10         | 15,921.20         | 92.8        | 70.6           | 99.1            |
| Total FTE Non-Acd Staff  | 1,298.10      | 12.0         | 15,577.20         | 15,298.57         | 98.2        | 101.1          | 94.4            |
| Office Service   | 72,839.34     | 0.25         | 18,209.84         | 22,197.01         | 121.9       | 114.3          | 109.7           |
| Total Academic Office  |               |              | 91,049.18         | 84,103.17         | 92.4        | 99.5           | 88.8            |
| OFFICE - ADMINISTRATIVE  |               |              |                   |                   |             |                |                 |
| Total FTE Non-Acd Staff  | 1,359.30      | 12.0         | 16,311.60         | 14,277.98         | 87.5        | 110.6          | 97.4            |
| Office Service   | 16,311.60     | 0.5          | 8,155.80          | 11,875.31         | 145.6       | 126.0          | 166.0           |
| Total Admin. Office  |               |              | 24,467.40         | 26,153.29         | 106.9       | 115.7          | 120.3           |
| Total Office - Academic & Administrative   |               |              | 115,516.58        | 110,256.46        | 95.4        | 103.3          | 95.0            |
| LIBRARY FACILITIES & LIBRARY STUDY SPACE   |               |              |                   |                   |             |                |                 |
| Study (Total FTE Students)   | 35,318.70     | 0.5          | 17,659.35         | 9,162.68          | 51.9        | 51.0           | 54.0            |
| Traditional Static Shelving Space  | 1,730,008.15  | 0.005        | 8,650.04          |                   |             |                |                 |
| Mobile Compact Shelving  | 21,748.50     | 0.004        | 86.99             |                   |             |                |                 |
| Super High Density   | 2,129,418.03  | 0.0035       | 7,452.96          |                   |             |                |                 |
| Total Stack  | 3,881,174.69  |              | 16,190.00         | 13,905.65         | 85.9        | 74.2           | 81.6            |
| Library Support  | 33,849.35     | 0.25         | 8,462.34          | 9,071.96          | 107.2       | 69.0           | 92.6            |
| Total Library Facilities & Library Study Space   |               |              | 42,311.68         | 32,140.29         | 76.0        | 63.6           | 71.6            |
| NON-LIBRARY STUDY SPACE  | 35,318.70     | 0.4          | 14,127.48         | 7,826.10          | 55.4        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>356,200.51</b> | <b>277,436.59</b> | <b>77.9</b> | <b>81.6</b>    | <b>80.4</b>     |
| <b>OTHER SPACE</b>   |               |              |                   |                   |             |                |                 |
| RECREATION / ATHLETICS   |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 35,318.70     | 0.9          | 31,786.83         | 19,513.06         | 61.4        | 73.1           | 61.9            |
| MAINTENANCE SHOPS  |               |              |                   |                   |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 545,653.68    | 0.015        | 8,184.81          | 2,798.57          | 34.2        | 75.7           | 41.2            |
| STUDENT AND CENTRAL SERVICES   |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 35,318.70     | 1.5          | 52,978.05         | 44,617.23         | 84.2        | 59.3           | 86.9            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>92,949.69</b>  | <b>66,928.85</b>  | <b>72.0</b> | <b>65.3</b>    | <b>74.4</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>449,150.19</b> | <b>344,365.44</b> | <b>76.7</b> | <b>77.7</b>    | <b>79.1</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                   |                   |             |                |                 |



**Table 41: WILFRID LAURIER: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                   |                   |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 16,448.30     | 1.11         | 18,257.61         | 13,997.76         | 76.7        | 82.8           | 71.3            |
| <b>CLASS LABS*</b>   |               |              |                   |                   |             |                |                 |
| Lab Contact Hours W  | 0.00          | 0.8          | 0.00              | 0.00              |             |                |                 |
| Lab Contact Hours X  | 10,003.00     | 0.6          | 6,001.80          | 2,427.11          |             |                |                 |
| Lab Contact Hours Y  | 4,403.50      | 0.5          | 2,201.75          | 1,515.99          |             |                |                 |
| Lab Contact Hours Z  | 15,259.00     | 0.3          | 4,577.70          | 5,859.16          |             |                |                 |
| Unclassified   | 141.00        |              |                   | 79.38             |             |                |                 |
| Total Class Lab  | 29,806.50     |              | 12,781.25         | 9,881.64          | 77.3        | 71.7           | 65.4            |
| <b>RESEARCH LABS</b>   |               |              |                   |                   |             |                |                 |
| Research Disciplines A   | 71.15         | 45.0         | 3,201.75          | 2,222.50          |             |                |                 |
| Research Disciplines B   | 80.80         | 30.0         | 2,424.00          | 914.71            |             |                |                 |
| Research Disciplines C   | 2.00          | 20.0         | 40.00             | 0.00              |             |                |                 |
| Research Disciplines D   | 100.40        | 10.0         | 1,004.00          | 2,101.53          |             |                |                 |
| Research Disciplines E   | 886.85        | 1.0          | 886.85            | 438.41            |             |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Research   | 1,141.20      |              | 7,556.60          | 5,677.15          | 75.1        | 72.1           | 61.0            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Faculty  | 556.00        | 12.0         | 6,672.00          | 9,673.83          | 145.0       | 126.2          | 139.1           |
| Research Appointments  | 32.00         | 12.0         | 384.00            | 814.05            | 212.0       |                | 40.8            |
| Total FTE Grads  | 1,131.70      | 3.0          | 3,395.10          | 1,891.91          | 55.7        | 70.6           | 35.8            |
| Total FTE Non-Acd Staff  | 299.00        | 12.0         | 3,588.00          | 4,067.24          | 113.4       | 101.1          | 78.7            |
| Office Service   | 14,039.10     | 0.25         | 3,509.78          | 4,952.98          | 141.1       | 114.3          | 103.7           |
| Total Academic Office  |               |              | 17,548.88         | 21,400.01         | 121.9       | 99.5           | 96.3            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Non-Acd Staff  | 682.00        | 12.0         | 8,184.00          | 8,863.83          | 108.3       | 110.6          | 118.6           |
| Office Service   | 8,184.00      | 0.5          | 4,092.00          | 4,635.78          | 113.3       | 126.0          | 151.6           |
| Total Admin. Office  |               |              | 12,276.00         | 13,499.61         | 110.0       | 115.7          | 129.6           |
| Total Office - Academic & Administrative   |               |              | 29,824.88         | 34,899.62         | 117.0       | 103.3          | 107.4           |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                   |                   |             |                |                 |
| Study (Total FTE Students)   | 16,448.30     | 0.5          | 8,224.15          | 2,094.79          | 25.5        | 51.0           | 45.7            |
| Traditional Static Shelving Space  | 656,908.33    | 0.005        | 3,284.54          |                   |             |                |                 |
| Mobile Compact Shelving  | 0.00          | 0.004        | 0.00              |                   |             |                |                 |
| Super High Density   | 201,366.48    | 0.0035       | 704.78            |                   |             |                |                 |
| Total Stack  | 858,274.80    |              | 3,989.32          | 4,496.76          | 112.7       | 74.2           | 116.0           |
| Library Support  | 12,213.47     | 0.25         | 3,053.37          | 2,293.60          | 75.1        | 69.0           | 60.0            |
| Total Library Facilities & Library Study Space   |               |              | 15,266.84         | 8,885.15          | 58.2        | 63.6           | 65.8            |
| NON-LIBRARY STUDY SPACE  | 16,448.30     | 0.4          | 6,579.32          | 5,006.99          | 76.1        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>90,266.50</b>  | <b>78,348.31</b>  | <b>86.8</b> | <b>81.6</b>    | <b>80.6</b>     |
| <b>OTHER SPACE</b>   |               |              |                   |                   |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 16,448.30     | 0.9          | 14,803.47         | 11,025.36         | 74.5        | 73.1           | 79.8            |
| <b>MAINTENANCE SHOPS</b>   |               |              |                   |                   |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 204,388.11    | 0.015        | 3,065.82          | 1,360.38          | 44.4        | 75.7           | 52.5            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 16,448.30     | 1.5          | 24,672.45         | 16,504.65         | 66.9        | 59.3           | 65.8            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>42,541.74</b>  | <b>28,890.39</b>  | <b>67.9</b> | <b>65.3</b>    | <b>69.7</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>132,808.24</b> | <b>107,238.70</b> | <b>80.7</b> | <b>77.7</b>    | <b>77.0</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                   |                   |             |                |                 |

**Table 42: WINDSOR: Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                   |                   |             |                |                 |
| CLASSROOMS   |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 13,809.27     | 1.11         | 15,328.29         | 16,628.01         | 108.5       | 82.8           | 95.4            |
| CLASS LABS   |               |              |                   |                   |             |                |                 |
| Lab Contact Hours W  | 3,272.70      | 0.8          | 2,618.16          | 4,954.01          |             |                |                 |
| Lab Contact Hours X  | 11,064.00     | 0.6          | 6,638.40          | 10,642.80         |             |                |                 |
| Lab Contact Hours Y  | 5,509.96      | 0.5          | 2,754.98          | 1,273.94          |             |                |                 |
| Lab Contact Hours Z  | 3,929.00      | 0.3          | 1,178.70          | 2,195.97          |             |                |                 |
| Unclassified   | 0.00          |              |                   | 123.00            |             |                |                 |
| Total Class Lab  | 23,775.66     |              | 13,190.24         | 19,189.72         | 145.5       | 71.7           | 132.6           |
| RESEARCH LABS  |               |              |                   |                   |             |                |                 |
| Research Disciplines A   | 215.22        | 45.0         | 9,684.75          | 7,551.35          |             |                |                 |
| Research Disciplines B   | 494.32        | 30.0         | 14,829.50         | 4,348.48          |             |                |                 |
| Research Disciplines C   | 195.92        | 20.0         | 3,918.33          | 1,028.89          |             |                |                 |
| Research Disciplines D   | 187.87        | 10.0         | 1,878.67          | 2,195.93          |             |                |                 |
| Research Disciplines E   | 1,058.26      | 1.0          | 1,058.26          | 637.42            |             |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Research   | 2,151.58      |              | 31,369.51         | 15,762.07         | 50.2        | 72.1           | 64.4            |
| OFFICE - ACADEMIC  |               |              |                   |                   |             |                |                 |
| Total FTE Faculty  | 581.70        | 12.0         | 6,980.40          | 12,185.57         | 174.6       | 126.2          | 157.6           |
| Research Appointments  | 257.75        | 12.0         | 3,093.00          | 847.29            | 27.4        |                | 25.1            |
| Total FTE Grads  | 3,050.80      | 3.0          | 9,152.40          | 4,553.05          | 49.7        | 70.6           | 71.4            |
| Total FTE Non-Acd Staff  | 335.00        | 12.0         | 4,020.00          | 3,592.31          | 89.4        | 101.1          | 78.4            |
| Office Service   | 23,245.80     | 0.25         | 5,811.45          | 4,798.22          | 82.6        | 114.3          | 72.7            |
| Total Academic Office  |               |              | 29,057.25         | 25,976.44         | 89.4        | 99.5           | 94.5            |
| OFFICE - ADMINISTRATIVE  |               |              |                   |                   |             |                |                 |
| Total FTE Non-Acd Staff  | 387.00        | 12.0         | 4,644.00          | 7,411.89          | 159.6       | 110.6          | 128.8           |
| Office Service   | 4,644.00      | 0.5          | 2,322.00          | 3,543.02          | 152.6       | 126.0          | 110.6           |
| Total Admin. Office  |               |              | 6,966.00          | 10,954.91         | 157.3       | 115.7          | 122.7           |
| Total Office - Academic & Administrative   |               |              | 36,023.25         | 36,931.35         | 102.5       | 103.3          | 101.1           |
| LIBRARY FACILITIES & LIBRARY STUDY SPACE   |               |              |                   |                   |             |                |                 |
| Study (Total FTE Students)   | 13,809.27     | 0.5          | 6,904.64          | 2,972.84          | 43.1        | 51.0           | 80.0            |
| Traditional Static Shelving Space  | 1,363,784.56  | 0.005        | 6,818.92          |                   |             |                |                 |
| Mobile Compact Shelving  | 160,887.46    | 0.004        | 643.55            |                   |             |                |                 |
| Super High Density   | 0.00          | 0.0035       | 0.00              |                   |             |                |                 |
| Total Stack  | 1,524,672.02  |              | 7,462.47          | 8,453.10          | 113.3       | 74.2           | 96.0            |
| Library Support  | 14,367.11     | 0.25         | 3,591.78          | 3,062.41          | 85.3        | 69.0           | 66.9            |
| Total Library Facilities & Library Study Space   |               |              | 17,958.88         | 14,488.35         | 80.7        | 63.6           | 83.4            |
| NON-LIBRARY STUDY SPACE  | 13,809.27     | 0.4          | 5,523.71          | 4,457.83          | 80.7        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>119,393.88</b> | <b>107,457.33</b> | <b>90.0</b> | <b>81.6</b>    | <b>92.8</b>     |
| <b>OTHER SPACE</b>   |               |              |                   |                   |             |                |                 |
| RECREATION / ATHLETICS   |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 13,809.27     | 0.9          | 12,428.34         | 10,716.15         | 86.2        | 73.1           | 84.4            |
| MAINTENANCE SHOPS  |               |              |                   |                   |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 154,286.81    | 0.015        | 2,314.30          | 1,368.39          | 59.1        | 75.7           | 62.6            |
| STUDENT AND CENTRAL SERVICES   |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 13,809.27     | 1.5          | 20,713.91         | 12,420.13         | 60.0        | 59.3           | 66.6            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>35,456.55</b>  | <b>24,504.67</b>  | <b>69.1</b> | <b>65.3</b>    | <b>72.6</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>154,850.43</b> | <b>131,962.00</b> | <b>85.2</b> | <b>77.7</b>    | <b>87.7</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                   |                   |             |                |                 |

**Table 43: YORK (KEELE): Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space   | Inventory         | % I / G     | System Average | 2013-14 % I / G |
|--|---------------|--------------|-------------------|-------------------|-------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                   |                   |             |                |                 |
| <b>CLASSROOMS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 39,145.74     | 1.11         | 43,451.77         | 35,286.25         | 81.2        | 82.8           | 75.8            |
| <b>CLASS LABS</b>  |               |              |                   |                   |             |                |                 |
| Lab Contact Hours W  | 2,089.00      | 0.8          | 1,671.20          | 2,593.50          |             |                |                 |
| Lab Contact Hours X  | 39,530.00     | 0.6          | 23,718.00         | 21,920.00         |             |                |                 |
| Lab Contact Hours Y  | 13,310.50     | 0.5          | 6,655.25          | 3,204.80          |             |                |                 |
| Lab Contact Hours Z  | 9,748.50      | 0.3          | 2,924.55          | 2,625.20          |             |                |                 |
| Unclassified   | 0.00          |              |                   | 0.00              |             |                |                 |
| Total Class Lab  | 64,678.00     |              | 34,969.00         | 30,343.50         | 86.8        | 71.7           | 87.8            |
| <b>RESEARCH LABS</b>   |               |              |                   |                   |             |                |                 |
| Research Disciplines A   | 247.10        | 45.0         | 11,119.50         | 10,952.30         |             |                |                 |
| Research Disciplines B   | 353.45        | 30.0         | 10,603.50         | 6,333.50          |             |                |                 |
| Research Disciplines C   | 204.40        | 20.0         | 4,088.00          | 1,525.80          |             |                |                 |
| Research Disciplines D   | 510.10        | 10.0         | 5,101.00          | 3,597.00          |             |                |                 |
| Research Disciplines E   | 3,037.55      | 1.0          | 3,037.55          | 1,406.90          |             |                |                 |
| Unclassified   | 257.35        |              |                   | 19.20             |             |                |                 |
| Total Research   | 4,609.95      |              | 33,949.55         | 23,834.70         | 70.2        | 72.1           | 67.6            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Faculty  | 2,319.80      | 12.0         | 27,837.60         | 25,976.08         | 93.3        | 126.2          | 89.5            |
| Research Appointments  | 72.70         | 12.0         | 872.40            | 3,660.67          | 419.6       |                | 280.5           |
| Total FTE Grads  | 4,507.60      | 3.0          | 13,522.80         | 7,961.43          | 58.9        | 70.6           | 58.9            |
| Total FTE Non-Acd Staff  | 889.50        | 12.0         | 10,674.00         | 11,606.13         | 108.7       | 101.1          | 123.3           |
| Office Service   | 52,906.80     | 0.25         | 13,226.70         | 17,122.21         | 129.5       | 114.3          | 121.8           |
| Total Academic Office  |               |              | 66,133.50         | 66,326.52         | 100.3       | 99.5           | 98.4            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                   |                   |             |                |                 |
| Total FTE Non-Acd Staff  | 1,045.40      | 12.0         | 12,544.80         | 13,082.81         | 104.3       | 110.6          | 122.5           |
| Office Service   | 12,544.80     | 0.5          | 6,272.40          | 9,261.14          | 147.6       | 126.0          | 142.9           |
| Total Admin. Office  |               |              | 18,817.20         | 22,343.95         | 118.7       | 115.7          | 129.3           |
| Total Office - Academic & Administrative   |               |              | 84,950.70         | 88,670.47         | 104.4       | 103.3          | 105.2           |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                   |                   |             |                |                 |
| Study (Total FTE Students)   | 39,145.74     | 0.5          | 19,572.87         | 7,303.73          | 37.3        | 51.0           | 45.1            |
| Traditional Static Shelving Space  | 2,448,834.75  | 0.005        | 12,244.17         |                   |             |                |                 |
| Mobile Compact Shelving  | 565,650.45    | 0.004        | 2,262.60          |                   |             |                |                 |
| Super High Density   | 2,382,850.00  | 0.0035       | 8,339.98          |                   |             |                |                 |
| Total Stack  | 5,397,335.20  |              | 22,846.75         | 10,896.91         | 47.7        | 74.2           | 49.6            |
| Library Support  | 42,419.62     | 0.25         | 10,604.91         | 5,360.06          | 50.5        | 69.0           | 43.7            |
| Total Library Facilities & Library Study Space   |               |              | 53,024.53         | 23,560.70         | 44.4        | 63.6           | 46.5            |
| NON-LIBRARY STUDY SPACE  | 39,145.74     | 0.4          | 15,658.30         | 8,719.67          | 55.7        | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>266,003.84</b> | <b>210,415.29</b> | <b>79.1</b> | <b>81.6</b>    | <b>79.1</b>     |
| <b>OTHER SPACE</b>   |               |              |                   |                   |             |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 39,145.74     | 0.9          | 35,231.17         | 10,387.07         | 29.5        | 73.1           | 34.1            |
| <b>MAINTENANCE SHOPS</b>   |               |              |                   |                   |             |                |                 |
| Total NASM Inv. (exc. 16.0)  | 360,088.96    | 0.015        | 5,401.33          | 4,826.08          | 89.3        | 75.7           | 75.4            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                   |                   |             |                |                 |
| Total FTE Students   | 39,145.74     | 1.5          | 58,718.61         | 26,781.33         | 45.6        | 59.3           | 53.8            |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>99,351.11</b>  | <b>41,994.48</b>  | <b>42.3</b> | <b>65.3</b>    | <b>47.9</b>     |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>365,354.95</b> | <b>252,409.77</b> | <b>69.1</b> | <b>77.7</b>    | <b>70.1</b>     |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                   |                   |             |                |                 |

**Table 44: YORK (GLENDON): Institutional Space Requirements as Measured by COU Space Standards, 2016-17**

|  | Input Measure | Space Factor | Generated Space  | Inventory        | % I / G      | System Average | 2013-14 % I / G |
|--|---------------|--------------|------------------|------------------|--------------|----------------|-----------------|
| <b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>  |               |              |                  |                  |              |                |                 |
| <b>CLASSROOMS</b>  |               |              |                  |                  |              |                |                 |
| Total FTE Students   | 2,224.32      | 1.11         | 2,469.00         | 3,478.15         | 140.9        | 82.8           | 153.0           |
| <b>CLASS LABS</b>  |               |              |                  |                  |              |                |                 |
| Lab Contact Hours W  | 0.00          | 0.8          | 0.00             | 0.00             |              |                |                 |
| Lab Contact Hours X  | 0.00          | 0.6          | 0.00             | 0.00             |              |                |                 |
| Lab Contact Hours Y  | 0.00          | 0.5          | 0.00             | 0.00             |              |                |                 |
| Lab Contact Hours Z  | 1,256.00      | 0.3          | 376.80           | 783.20           |              |                |                 |
| Unclassified   | 0.00          |              |                  | 0.00             |              |                |                 |
| Total Class Lab  | 1,256.00      |              | 376.80           | 783.20           | 207.9        | 71.7           | 211.5           |
| <b>RESEARCH LABS</b>   |               |              |                  |                  |              |                |                 |
| Research Disciplines A   | 0.00          | 45.0         | 0.00             | 0.00             |              |                |                 |
| Research Disciplines B   | 11.20         | 30.0         | 336.00           | 59.30            |              |                |                 |
| Research Disciplines C   | 0.00          | 20.0         | 0.00             | 0.00             |              |                |                 |
| Research Disciplines D   | 0.00          | 10.0         | 0.00             | 0.00             |              |                |                 |
| Research Disciplines E   | 230.55        | 1.0          | 230.55           | 93.40            |              |                |                 |
| Unclassified   | 0.00          |              |                  | 0.00             |              |                |                 |
| Total Research   | 241.75        |              | 566.55           | 152.70           | 27.0         | 72.1           | 25.1            |
| <b>OFFICE - ACADEMIC</b>   |               |              |                  |                  |              |                |                 |
| Total FTE Faculty  | 185.40        | 12.0         | 2,224.80         | 2,338.98         | 105.1        | 126.2          | 99.7            |
| Research Appointments  | 0.00          | 12.0         | 0.00             | 151.67           | na           | na             | na              |
| Total FTE Grads  | 112.70        | 3.0          | 338.10           | 0.00             | 0.0          | 70.6           | 0.0             |
| Total FTE Non-Acd Staff  | 55.40         | 12.0         | 664.80           | 580.34           | 87.3         | 101.1          | 112.1           |
| Office Service   | 3,227.70      | 0.25         | 806.93           | 673.20           | 83.4         | 114.3          | 42.9            |
| Total Academic Office  |               |              | 4,034.63         | 3,744.19         | 92.8         | 99.5           | 83.9            |
| <b>OFFICE - ADMINISTRATIVE</b>   |               |              |                  |                  |              |                |                 |
| Total FTE Non-Acd Staff  | 77.90         | 12.0         | 934.80           | 1,103.46         | 118.0        | 110.6          | 265.4           |
| Office Service   | 934.80        | 0.5          | 467.40           | 344.15           | 73.6         | 126.0          | 205.9           |
| Total Admin. Office  |               |              | 1,402.20         | 1,447.61         | 103.2        | 115.7          | 245.6           |
| Total Office - Academic & Administrative   |               |              | 5,436.83         | 5,191.80         | 95.5         | 103.3          | 97.3            |
| <b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>  |               |              |                  |                  |              |                |                 |
| Study (Total FTE Students)   | 2,224.32      | 0.5          | 1,112.16         | 452.23           | 40.7         | 51.0           | 48.8            |
| Traditional Static Shelving Space  | 312,823.88    | 0.005        | 1,564.12         |                  |              |                |                 |
| Mobile Compact Shelving  | 0.00          | 0.004        | 0.00             |                  |              |                |                 |
| Super High Density   | 0.00          | 0.0035       | 0.00             |                  |              |                |                 |
| Total Stack  | 312,823.88    |              | 1,564.12         | 1,096.12         | 70.1         | 74.2           | 67.9            |
| Library Support  | 2,676.28      | 0.25         | 669.07           | 284.17           | 42.5         | 69.0           | 41.1            |
| Total Library Facilities & Library Study Space   |               |              | 3,345.35         | 1,832.52         | 54.8         | 63.6           | 55.5            |
| NON-LIBRARY STUDY SPACE  | 2,224.32      | 0.4          | 889.73           | 300.30           | 33.8         | 71.6           | na              |
| <b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>   |               |              | <b>13,084.25</b> | <b>11,738.67</b> | <b>89.7</b>  | <b>81.6</b>    | <b>96.6</b>     |
| <b>OTHER SPACE</b>   |               |              |                  |                  |              |                |                 |
| <b>RECREATION / ATHLETICS</b>  |               |              |                  |                  |              |                |                 |
| Total FTE Students   | 2,224.32      | 0.9          | 2,001.89         | 2,919.25         | 145.8        | 73.1           | 147.9           |
| <b>MAINTENANCE SHOPS</b>   |               |              |                  |                  |              |                |                 |
| Total NASM Inv. (exc. 16.0)  | 25,785.61     | 0.015        | 386.78           | 340.41           | 88.0         | 75.7           | 86.9            |
| <b>STUDENT AND CENTRAL SERVICES</b>  |               |              |                  |                  |              |                |                 |
| Total FTE Students   | 2,224.32      | 1.5          | 3,336.48         | 3,096.96         | 92.8         | 59.3           | 103.8           |
| <b>SUB-TOTAL: OTHER SPACE</b>  |               |              | <b>5,725.15</b>  | <b>6,356.62</b>  | <b>111.0</b> | <b>65.3</b>    | <b>118.0</b>    |
| <b>TOTAL FORMULA AREAS</b>   |               |              | <b>18,809.40</b> | <b>18,095.29</b> | <b>96.2</b>  | <b>77.7</b>    | <b>103.3</b>    |
| The cells shaded in blue reflect the changes made to the category definition and space factors in the various categories. Caution should be taken when making comparisons with 2013-14 data. |               |              |                  |                  |              |                |                 |

## 6. Summary Tables by Category of Space

**Table 45: Teaching/Research/Academic Support Space (1,2,3,4,5,10,11): Generated Space and Inventory, 2016-17**

|                      | <b>Generated Space</b> | <b>Inventory NASM</b> | <b>2016-17 % I/G</b> | <b>2013-14 % I/G</b> |
|----------------------|------------------------|-----------------------|----------------------|----------------------|
| Algoma               | 6,931.3                | 5,541.0               | 79.9                 | 90.5                 |
| Brock                | 98,262.1               | 76,728.5              | 78.1                 | 64.8                 |
| Carleton             | 180,079.0              | 130,516.9             | 72.5                 | 79.4                 |
| Guelph               | 219,371.2              | 190,708.9             | 86.9                 | 87.1                 |
| Lakehead             | 72,810.8               | 57,791.6              | 79.4                 | 81.1                 |
| Laurentian           | 51,988.3               | 55,090.1              | 106.0                | 94.6                 |
| McMaster             | 247,200.1              | 215,383.7             | 87.1                 | 84.7                 |
| Nipissing            | 28,346.9               | 19,120.8              | 67.5                 | 56.4                 |
| OCAD U               | 42,643.4               | 20,033.9              | 47.0                 | 47.6                 |
| UOIT                 | 52,694.8               | 37,586.9              | 71.3                 | 76.9                 |
| Ottawa               | 282,429.7              | 203,871.0             | 72.2                 | 72.5                 |
| Queen's              | 216,660.1              | 199,415.1             | 92.0                 | 86.9                 |
| Ryerson              | 225,117.1              | 138,907.7             | 61.7                 | 66.1                 |
| Toronto (St. George) | 570,917.1              | 481,061.3             | 84.3                 | 89.1                 |
| Toronto (Miss.)      | 66,408.4               | 52,653.4              | 79.3                 | 84.4                 |
| Toronto (Scar.)      | 60,765.3               | 45,677.2              | 75.2                 | 80.0                 |
| Trent                | 47,171.2               | 44,103.1              | 93.5                 | 103.8                |
| Waterloo             | 273,829.8              | 265,382.3             | 96.9                 | 89.2                 |
| Western              | 356,200.5              | 277,436.6             | 77.9                 | 80.4                 |
| Wilfrid Laurier      | 90,504.9               | 78,348.3              | 86.6                 | 80.6                 |
| Windsor              | 119,393.9              | 107,457.3             | 90.0                 | 92.8                 |
| York (Keele)         | 266,003.8              | 210,415.3             | 79.1                 | 79.1                 |
| York (Glendon)       | 13,084.2               | 11,738.7              | 89.7                 | 96.6                 |
| <b>Subtotal</b>      | <b>3,588,813.8</b>     | <b>2,924,969.8</b>    | <b>81.5</b>          | <b>81.8</b>          |
| Hearst               | 1,091.4                | 3,364.8               | 308.3                | 339.8                |
| NOSM                 | 7,941.2                | 8,249.2               | 103.9                | 134.7                |
| <b>Total</b>         | <b>3,597,846.4</b>     | <b>2,936,583.8</b>    | <b>81.6</b>          | <b>81.9</b>          |

Changes made to the category definitions and space factors in various categories affect the total teaching/research/acad support row. Caution should be taken when making comparisons with 2013-14 data.

A comparison of the Total Generated Space and existing Inventory in Research/Teaching and Academic support categories.

**Table 46: Student Experience / Other Space (6,7,8,9,12,13,14,15): Generated Space and Inventory, 2016-17**

|                      | <b>Generated Space</b> | <b>Inventory NASM</b> | <b>2016-17 % I/G</b> | <b>2013-14 %I/G</b> |
|----------------------|------------------------|-----------------------|----------------------|---------------------|
| Algoma               | 2,888.9                | 6,373.8               | 220.6                | 167.2               |
| Brock                | 39,969.7               | 26,884.5              | 67.3                 | 71.6                |
| Carleton             | 64,362.4               | 49,831.4              | 77.4                 | 84.9                |
| Guelph               | 58,313.1               | 63,535.7              | 109.0                | 93.0                |
| Lakehead             | 19,562.7               | 24,299.8              | 124.2                | 127.8               |
| Laurentian           | 19,359.2               | 19,666.5              | 101.6                | 112.5               |
| McMaster             | 72,654.4               | 44,607.6              | 61.4                 | 62.2                |
| Nipissing            | 9,834.1                | 6,007.1               | 61.1                 | 66.5                |
| OCAD U               | 8,870.6                | 975.3                 | 11.0                 | 28.9                |
| UOIT                 | 20,996.1               | 10,713.1              | 51.0                 | 64.5                |
| Ottawa               | 93,795.8               | 51,978.0              | 55.4                 | 48.8                |
| Queen's              | 63,525.9               | 49,039.9              | 77.2                 | 94.4                |
| Ryerson              | 86,815.0               | 35,613.5              | 41.0                 | 49.3                |
| Toronto (St. George) | 139,336.2              | 86,088.4              | 61.8                 | 69.2                |
| Toronto (Miss)       | 31,393.6               | 16,702.4              | 53.2                 | 59.1                |
| Toronto (Scar)       | 27,926.8               | 21,746.2              | 77.9                 | 62.8                |
| Trent                | 19,938.8               | 9,785.3               | 49.1                 | 62.3                |
| Waterloo             | 81,914.8               | 49,113.7              | 60.0                 | 68.1                |
| Western              | 92,949.7               | 66,928.9              | 72.0                 | 74.4                |
| Wilfrid Laurier      | 42,541.7               | 28,890.4              | 67.9                 | 69.7                |
| Windsor              | 35,456.6               | 24,504.7              | 69.1                 | 72.6                |
| York (Keele)         | 99,351.1               | 41,994.5              | 42.3                 | 47.9                |
| York (Glendon)       | 5,725.2                | 6,356.6               | 111.0                | 118.0               |
| Subtotal             | 1,137,482.5            | 741,637.1             | 65.2                 | 69.0                |
| Hearst               | 384.9                  | 1,751.4               | 455.0                | 640.0               |
| NOSM                 | 1,354.2                | 111.6                 | 8.2                  | 83.0                |
| Total                | 1,139,221.6            | 743,500.1             | 65.3                 | 69.2                |

Changes made to the category definitions and space factors in various categories affect the total student experience/other space row. Caution should be taken when making comparisons with 2013-14 data.

A comparison of the Total Generated Space and existing Inventory in Research/Teaching and Academic support categories.

**Table 47: Classroom Facilities (1): Generated Space and Inventory, 2016-17**

|                    | <b>FTE<br/>Students</b>                                     | <b>Generated<br/>Space</b> | <b>Inventory<br/>NASM</b> | <b>Inventory/<br/>FTE Student</b> | <b>2016-17 % I/G</b> | <b>2013-14<br/>% I/G</b> |
|--------------------|---|----------------------------|---------------------------|-----------------------------------|----------------------|--------------------------|
| Algoma             | 1,077.6   | 1,196                      | 1,537                     | 1.43                              | 128.5                | 125.0                    |
| Brock              | 15,685.8  | 17,411                     | 13,098                    | 0.84                              | 75.2                 | 59.4                     |
| Carleton           | 25,271.0  | 28,051                     | 17,832                    | 0.71                              | 63.6                 | 66.7                     |
| Guelph             | 21,842.5  | 24,245                     | 16,604                    | 0.76                              | 68.5                 | 70.9                     |
| Lakehead           | 7,362.1   | 8,172                      | 9,591                     | 1.30                              | 117.4                | 116.0                    |
| Laurentian         | 7,334.0   | 8,141                      | 8,318                     | 1.13                              | 102.2                | 121.1                    |
| McMaster           | 27,917.1  | 30,988                     | 26,420                    | 0.95                              | 85.3                 | 84.3                     |
| Nipissing          | 3,919.5   | 4,351                      | 5,709                     | 1.46                              | 131.2                | 117.8                    |
| OCAD U             | 3,696.1   | 4,103                      | 2,454                     | 0.66                              | 59.8                 | 51.5                     |
| UOIT               | 8,385.7   | 9,308                      | 7,486                     | 0.89                              | 80.4                 | 83.8                     |
| Ottawa             | 36,825.0  | 40,876                     | 26,280                    | 0.71                              | 64.3                 | 65.9                     |
| Queen's            | 24,269.3  | 26,939                     | 22,680                    | 0.93                              | 84.2                 | 84.3                     |
| Ryerson            | 34,952.0  | 38,797                     | 19,528                    | 0.56                              | 50.3                 | 57.0                     |
| Toronto (St. Grge) | 53,398.1  | 59,272                     | 58,318                    | 1.09                              | 98.4                 | 102.0                    |
| Toronto (Miss)     | 12,440.5  | 13,809                     | 12,502                    | 1.00                              | 90.5                 | 90.5                     |
| Toronto (Scar)     | 11,033.6  | 12,247                     | 6,725                     | 0.61                              | 54.9                 | 60.9                     |
| Trent              | 7,842.7   | 8,705                      | 8,026                     | 1.02                              | 92.2                 | 102.2                    |
| Waterloo           | 31,211.8  | 34,645                     | 31,608                    | 1.01                              | 91.2                 | 85.5                     |
| Western            | 35,318.7  | 39,204                     | 40,091                    | 1.14                              | 102.3                | 100.0                    |
| Wilfrid Laurier    | 16,448.3  | 18,258                     | 13,998                    | 0.85                              | 76.7                 | 71.3                     |
| Windsor            | 13,809.3  | 15,328                     | 16,628                    | 1.20                              | 108.5                | 95.4                     |
| York (Keele)       | 39,145.7  | 43,452                     | 35,286                    | 0.90                              | 81.2                 | 75.8                     |
| York (Glen)        | 2,224.3   | 2,469                      | 3,478                     | 1.56                              | 140.9                | 153.0                    |
| SUBTOTAL           | 441,410.7   | 489,966                    | 404,196                   | 0.92                              | 82.5                 | 82.3                     |
| Hearst             | 114.8   | 127                        | 1,063                     | 9.26                              | 834.2                | 1006.1                   |
| NOSM               | 512.0   | 568                        | 988                       | 1.93                              | 173.8                | 695.3                    |
| TOTAL              | 442,037.5   | 490,662                    | 406,247                   | 0.92                              | 82.8                 | 82.7                     |
| Input Measure:     | Total FTE Students (as defined in Appendix D).              |                            |                           |                                   |                      |                          |
| Space Factor:      | 1.11 NASM   |                            |                           |                                   |                      |                          |
| System Average:    | 0.92  |                            |                           |                                   |                      |                          |
|                    | (Actual Classroom inventory divided by Total FTE Students.) |                            |                           |                                   |                      |                          |

**Table 48: Class Lab Space (2): Generated Space and Inventory, 2016-17**

|                      | <b>Class Lab Hours</b> | <b>Generated Space</b> | <b>Inventory NASM</b> | <b>2016-17 % I/G</b> | <b>2013-14 % I/G</b> |
|----------------------|------------------------|------------------------|-----------------------|----------------------|----------------------|
| Algoma               | 0.0                    | 0                      | 0                     | 0.0                  | 125.6                |
| Brock                | 42,005.0               | 20,587                 | 10,370                | 50.4                 | 39.4                 |
| Carleton             | 71,097.0               | 36,956                 | 18,372                | 49.7                 | 58.3                 |
| Guelph               | 86,838.9               | 53,268                 | 28,725                | 53.9                 | 54.1                 |
| Lakehead             | 29,911.8               | 17,057                 | 13,427                | 78.7                 | 68.2                 |
| Laurentian           | 9,870.0                | 5,543                  | 9,301                 | 167.8                | 129.9                |
| McMaster             | 55,293.6               | 33,527                 | 18,073                | 53.9                 | 53.8                 |
| Nipissing            | 11,492.5               | 5,587                  | 3,761                 | 67.3                 | 35.7                 |
| OCAD U               | 38,082.0               | 22,478                 | 9,647                 | 42.9                 | 37.4                 |
| UOIT                 | 17,125.5               | 10,857                 | 6,392                 | 58.9                 | 58.5                 |
| Ottawa               | 54,252.0               | 30,753                 | 19,025                | 61.9                 | 64.0                 |
| Queen's              | 40,891.5               | 25,589                 | 23,785                | 92.9                 | 55.1                 |
| Ryerson              | 105,765.0              | 55,880                 | 33,940                | 60.7                 | 68.0                 |
| Toronto (St. George) | 61,322.7               | 37,718                 | 41,456                | 109.9                | 129.7                |
| Toronto (Miss.)      | 19,418.4               | 9,521                  | 8,316                 | 87.3                 | 93.9                 |
| Toronto (Scar.)      | 10,925.0               | 6,533                  | 6,078                 | 93.0                 | 89.5                 |
| Trent                | 15,093.0               | 8,127                  | 4,582                 | 56.4                 | 79.5                 |
| Waterloo             | 54,779.8               | 33,561                 | 34,526                | 102.9                | 88.8                 |
| Western              | 97,585.0               | 55,042                 | 29,172                | 53.0                 | 61.6                 |
| Wilfrid Laurier      | 30,978.5               | 13,020                 | 9,882                 | 75.9                 | 65.4                 |
| Windsor              | 23,775.7               | 13,190                 | 19,190                | 145.5                | 132.6                |
| York (Keele)         | 64,678.0               | 34,969                 | 30,344                | 86.8                 | 87.8                 |
| York (Glendon)       | 1,256.0                | 377                    | 783                   | 207.9                | 211.5                |
| <b>SUBTOTAL</b>      | <b>942,436.8</b>       | <b>530,138</b>         | <b>379,145</b>        | <b>71.5</b>          | <b>68.9</b>          |
| Hearst               | 12.0                   | 4                      | 201                   | 5584.4               | 2792.2               |
| NOSM                 | 384.0                  | 230                    | 849                   | 368.4                | 368.4                |
| <b>TOTAL</b>         | <b>942,832.8</b>       | <b>530,372</b>         | <b>380,195</b>        | <b>71.7</b>          | <b>69.1</b>          |

Note that the space factors for class labs have been updated starting with the 2016-17 report. Caution should be taken when making comparisons with 2013-14 data.

Note: The Inventory NASM figures do not necessarily agree with the Lab-Undergraduate figures on Table 2, at some institutions. Only Class Labs that are associated with Groups W to Z are included in this table.

Input Measure: Total Laboratory Weekly Student Contact Hours (as defined in Appendix D) for programs in Groups W, X, Y, and Z (as defined in Appendix E)

|          | <b>System Average</b> | <b>Space Factor</b> |
|----------|-----------------------|---------------------|
| Group W: | 0.43                  | 0.80                |
| Group X: | 0.45                  | 0.60                |
| Group Y: | 0.35                  | 0.50                |
| Group Z: | 0.26                  | 0.30                |

Actual Class Lab inventory divided by Class Lab Hours (weighted average as defined in Input Measure).

|         |            |            |      |
|---------|------------|------------|------|
| Group W | 142,760.15 | 62,027.98  | 0.43 |
| Group X | 518,853.67 | 233,942.67 | 0.45 |
| Group Y | 102,884.37 | 35,873.06  | 0.35 |
| Group Z | 178,032.64 | 45,650.05  | 0.26 |



**Table 49: Lab - Research Facilities (3): Generated Space and Inventory, 2016-17**

|                      | Research Staff | Generated Space | Inventory NASM | Inventory/ Research Staff | 2016-17 % I/G | 2013-14 % I/G |
|----------------------|----------------|-----------------|----------------|---------------------------|---------------|---------------|
| Algoma               | 92.4           | 605             | 0              | 0.0                       | 0.0           | 36.2          |
| Brock                | 1,382.2        | 9,826           | 12,866         | 9.3                       | 130.9         | 68.1          |
| Carleton             | 2,800.1        | 33,487          | 18,478         | 6.6                       | 55.2          | 60.6          |
| Guelph               | 2,304.2        | 58,662          | 60,720         | 26.4                      | 103.5         | 107.0         |
| Lakehead             | 952.7          | 14,990          | 8,057          | 8.5                       | 53.8          | 66.2          |
| Laurentian           | 647.5          | 10,338          | 7,177          | 11.1                      | 69.4          | 58.2          |
| McMaster             | 3,398.1        | 69,018          | 64,512         | 19.0                      | 93.5          | 80.6          |
| Nipissing            | 416.5          | 3,009           | 1,481          | 3.6                       | 49.2          | 65.1          |
| OCAD U               | 292.0          | 1,769           | 1,627          | 5.6                       | 91.9          | 86.5          |
| UOIT                 | 525.8          | 9,278           | 7,241          | 13.8                      | 78.0          | 83.2          |
| Ottawa               | 4,932.1        | 65,070          | 38,062         | 7.7                       | 58.5          | 56.4          |
| Queen's              | 3,354.7        | 50,836          | 40,270         | 12.0                      | 79.2          | 81.4          |
| Ryerson              | 2,521.6        | 27,632          | 14,867         | 5.9                       | 53.8          | 53.3          |
| Toronto (St. George) | 11,020.1       | 154,493         | 100,184        | 9.1                       | 64.8          | 70.5          |
| Toronto (Miss)       | 752.2          | 11,184          | 7,479          | 9.9                       | 66.9          | 77.1          |
| Toronto (Scar)       | 539.9          | 13,657          | 8,789          | 16.3                      | 64.4          | 70.2          |
| Trent                | 461.2          | 5,219           | 7,879          | 17.1                      | 151.0         | 150.1         |
| Waterloo             | 3,957.9        | 74,755          | 57,640         | 14.6                      | 77.1          | 79.5          |
| Western              | 5,037.4        | 89,999          | 57,950         | 11.5                      | 64.4          | 68.4          |
| Wilfrid Laurier      | 1,141.2        | 7,557           | 5,677          | 5.0                       | 75.1          | 61.0          |
| Windsor              | 2,151.6        | 31,370          | 15,762         | 7.3                       | 50.2          | 64.4          |
| York (Keele)         | 4,610.0        | 33,950          | 23,835         | 5.2                       | 70.2          | 67.6          |
| York (Glendon)       | 241.8          | 567             | 153            | 0.6                       | 27.0          | 25.1          |
| SUBTOTAL             | 53,532.9       | 777,269         | 560,705        | 10.5                      | 72.1          | 73.3          |
| Hearst               | 1.0            | 10              | 0              | 0.0                       | n/a           | n/a           |
| NOSM                 | 53.5           | 2,408           | 1,538          | 28.8                      | 63.9          | 122.1         |
| TOTAL                | 53,587.4       | 779,687         | 562,243        | 10.5                      | 72.1          | 73.3          |

Note that the space factors for research labs have been updated starting with the 2016-17 report. Caution should be taken when making comparisons with 2013-14 data.

Note: The Inventory NASM figures do not necessarily agree with the Lab-Grad & Faculty figures on Table 2, at some institutions. Only Research Labs that are associated with Groups A to E are included in this table.

Input Measure: Research Staff is calculated by summing the total of FTE Faculty plus one-half Graduate Students plus one-half Other Research Appointments in Research Disciplines (as defined in Appendix B).

|          | System Average | Space Factor |
|----------|----------------|--------------|
| Group A: | 34.0           | 45           |
| Group B: | 17.2           | 30           |
| Group C: | 12.0           | 20           |
| Group D: | 8.2            | 10           |
| Group E: | 0.9            | 1            |

**Table 50: Academic Departmental Office Space and Related Space (4): Generated Space and Inventory, 2016-17**

|                      | <b>FTE Faculty</b> | <b>Generated Space</b> | <b>Inventory NASM</b> | <b>2016-17 % I/G</b> | <b>2013-14 % I/G</b> |
|----------------------|--------------------|------------------------|-----------------------|----------------------|----------------------|
| Algoma               | 92.4               | 1,581                  | 907                   | 57.4                 | 57.3                 |
| Brock                | 674.7              | 20,360                 | 19,636                | 96.4                 | 80.1                 |
| Carleton             | 933.6              | 32,525                 | 35,933                | 110.5                | 118.5                |
| Guelph               | 899.6              | 38,718                 | 47,838                | 123.6                | 121.6                |
| Lakehead             | 417.6              | 13,842                 | 10,346                | 74.7                 | 80.8                 |
| Laurentian           | 345.9              | 10,140                 | 14,210                | 140.1                | 99.0                 |
| McMaster             | 1,146.2            | 67,252                 | 59,914                | 89.1                 | 95.7                 |
| Nipissing            | 336.7              | 9,616                  | 3,766                 | 39.2                 | 40.4                 |
| OCAD U               | 191.0              | 4,408                  | 3,843                 | 87.2                 | 76.5                 |
| UOIT                 | 269.3              | 7,913                  | 6,593                 | 83.3                 | 96.4                 |
| Ottawa               | 1,845.0            | 71,401                 | 63,822                | 89.4                 | 92.1                 |
| Queen's              | 1,012.0            | 49,689                 | 62,002                | 124.8                | 130.7                |
| Ryerson              | 1,294.1            | 42,677                 | 30,515                | 71.5                 | 79.8                 |
| Toronto (St. George) | 2,447.6            | 161,427                | 155,676               | 96.4                 | 97.9                 |
| Toronto (Miss)       | 385.3              | 11,250                 | 10,846                | 96.4                 | 95.0                 |
| Toronto (Scar)       | 362.8              | 8,765                  | 10,268                | 117.2                | 116.5                |
| Trent                | 245.8              | 7,603                  | 10,341                | 136.0                | 132.2                |
| Waterloo             | 1,472.5            | 60,685                 | 77,120                | 127.1                | 124.5                |
| Western              | 1,920.0            | 91,049                 | 84,103                | 92.4                 | 88.8                 |
| Wilfrid Laurier      | 556.0              | 17,549                 | 21,400                | 121.9                | 96.3                 |
| Windsor              | 581.7              | 29,057                 | 25,976                | 89.4                 | 94.5                 |
| York (Keele)         | 2,319.8            | 66,134                 | 66,327                | 100.3                | 98.4                 |
| York (Glendon)       | 185.4              | 4,035                  | 3,744                 | 92.8                 | 83.9                 |
| <b>SUBTOTAL</b>      | <b>19,934.8</b>    | <b>827,674</b>         | <b>825,127</b>        | <b>99.7</b>          | <b>99.8</b>          |
| Hearst               | 1.0                | 90                     | 788                   | 876.1                | 1219.3               |
| NOSM                 | 26.0               | 3,495                  | 1,597                 | 45.7                 | 45.7                 |
| <b>TOTAL</b>         | <b>19,961.8</b>    | <b>831,259</b>         | <b>827,512</b>        | <b>99.5</b>          | <b>99.6</b>          |

Input Measure: Total FTE Faculty (as defined in Appendix D), total Other Research Appointments, total FTE Non-Academic Staff requiring offices, and total FTE Graduate Students.

Space Factor: 12 NASM per FTE Faculty, Other Research Appointments and FTE Non-Academic Staff, 3 NASM per FTE Graduate Student, plus 25% allowance for office support space.

**Table 51: Graduate Student Office Space (4.3): Generated Space and Inventory, 2016-17**

|                      | <b>Graduate Students</b> | <b>Generated Space</b> | <b>Inventory NASM</b> | <b>Inventory/<br/>FTE<br/>Graduate Student</b> | <b>2016-17<br/>% I/G</b> | <b>2013-14<br/>% I/G</b> |
|----------------------|--------------------------|------------------------|-----------------------|--|--------------------------|--------------------------|
| Algoma               | not applicable           |                        |                       |  |                          |                          |
| Brock                | 1,388.2                  | 4,165                  | 3,151                 | 2.3  | 75.7                     | 73.3                     |
| Carleton             | 3,677.0                  | 11,031                 | 5,456                 | 1.5  | 49.5                     | 63.5                     |
| Guelph               | 2,549.4                  | 7,648                  | 8,035                 | 3.2  | 105.1                    | 122.1                    |
| Lakehead             | 1,033.2                  | 3,100                  | 1,159                 | 1.1  | 37.4                     | 55.4                     |
| Laurentian           | 622.4                    | 1,867                  | 842                   | 1.4  | 45.1                     | 61.1                     |
| McMaster             | 3,943.9                  | 11,832                 | 9,847                 | 2.5  | 83.2                     | 84.8                     |
| Nipissing            | 157.5                    | 473                    | 123                   | 0.8  | 26.1                     | 26.0                     |
| OCAD U               | 197.9                    | 594                    | 698                   | 3.5  | 117.5                    | 131.5                    |
| UOIT                 | 495.6                    | 1,487                  | 672                   | 1.4  | 45.2                     | 91.3                     |
| Ottawa               | 5,928.2                  | 17,785                 | 11,316                | 1.9  | 63.6                     | 61.2                     |
| Queen's              | 4,256.1                  | 12,768                 | 10,772                | 2.5  | 84.4                     | 87.5                     |
| Ryerson              | 2,378.0                  | 7,134                  | 1,239                 | 0.5  | 17.4                     | 29.8                     |
| Toronto (St. George) | 16,108.5                 | 48,326                 | 25,279                | 1.6  | 52.3                     | 56.4                     |
| Toronto (Miss)       | 657.5                    | 1,973                  | 1,562                 | 2.4  | 79.2                     | 110.4                    |
| Toronto (Scar)       | 286.8                    | 860                    | 1,617                 | 5.6  | 187.9                    | 220.7                    |
| Trent                | 399.8                    | 1,199                  | 1,608                 | 4.0  | 134.1                    | 150.8                    |
| Waterloo             | 4,586.0                  | 13,758                 | 20,097                | 4.4  | 146.1                    | 128.5                    |
| Western              | 5,716.7                  | 17,150                 | 15,921                | 2.8  | 92.8                     | 99.1                     |
| Wilfrid Laurier      | 1,131.7                  | 3,395                  | 1,892                 | 1.7  | 55.7                     | 35.8                     |
| Windsor              | 3,050.8                  | 9,152                  | 4,553                 | 1.5  | 49.7                     | 71.4                     |
| York (Keele)         | 4,507.6                  | 13,523                 | 7,961                 | 1.8  | 58.9                     | 58.9                     |
| York (Glendon)       | 112.7                    | 338                    | 0                     | 0.0  | n/a                      | n/a                      |
| <b>SUBTOTAL</b>      | <b>63,185.5</b>          | <b>189,557</b>         | <b>133,801</b>        | <b>2.1</b>                                     | <b>70.6</b>              | <b>75.2</b>              |
| Hearst               | not applicable           |                        |                       |  |                          |                          |
| NOSM                 | not applicable           |                        |                       |  |                          |                          |
| <b>TOTAL</b>         | <b>63,185.5</b>          | <b>189,557</b>         | <b>133,801</b>        | <b>2.1</b>                                     | <b>70.6</b>              | <b>75.2</b>              |

Input Measure: Total FTE Graduate Students.

Space Factor: 3 NASM

System Average: 2.12 NASM per Graduate Student.  
(Actual Space for Graduate Students (including service space) divided by Total Graduate Students.)

**Table 52: Administrative Office Space (10): Generated Space and Inventory, 2016-17**

|                      | <b>FTE Non-Academic Office Staff</b> | <b>Space Generated</b> | <b>Inventory NASM</b> | <b>Inventory/Office Staff</b> | <b>2016-17 % I/G</b> | <b>2013-14 % I/G</b> |
|----------------------|--------------------------------------|------------------------|-----------------------|-------------------------------|----------------------|----------------------|
| Algoma               | 88.0                                 | 1,584                  | 1,575                 | 17.9                          | 99.4                 | 139.9                |
| Brock                | 494.7                                | 8,905                  | 9,729                 | 19.7                          | 109.2                | 104.1                |
| Carleton             | 681.6                                | 12,270                 | 14,144                | 20.7                          | 115.3                | 101.5                |
| Guelph               | 709.5                                | 12,771                 | 16,181                | 22.8                          | 126.7                | 126.1                |
| Lakehead             | 390.7                                | 7,033                  | 6,603                 | 16.9                          | 93.9                 | 92.2                 |
| Laurentian           | 300.0                                | 5,400                  | 6,676                 | 22.3                          | 123.6                | 134.5                |
| McMaster             | 391.9                                | 7,055                  | 18,129                | 46.3                          | 257.0                | 126.0                |
| Nipissing            | 18.0                                 | 324                    | 3,501                 | 194.5                         | 1080.5               | 54.8                 |
| OCAD U               | 248.4                                | 4,471                  | 484                   | 1.9                           | 10.8                 | 65.9                 |
| UOIT                 | 346.9                                | 6,244                  | 5,201                 | 15.0                          | 83.3                 | 86.3                 |
| Ottawa               | 1,178.7                              | 21,216                 | 20,440                | 17.3                          | 96.3                 | 99.0                 |
| Queen's              | 635.7                                | 11,442                 | 18,424                | 29.0                          | 161.0                | 107.1                |
| Ryerson              | 1,110.7                              | 19,993                 | 17,814                | 16.0                          | 89.1                 | 87.3                 |
| Toronto (St. George) | 1,507.7                              | 27,139                 | 27,328                | 18.1                          | 100.7                | 126.1                |
| Toronto (Miss)       | 293.7                                | 5,287                  | 5,432                 | 18.5                          | 102.7                | 109.6                |
| Toronto (Scar)       | 346.2                                | 6,231                  | 6,470                 | 18.7                          | 103.8                | 98.7                 |
| Trent                | 279.7                                | 5,035                  | 5,904                 | 21.1                          | 117.3                | 102.1                |
| Waterloo             | 1,437.9                              | 25,881                 | 31,843                | 22.1                          | 123.0                | 87.6                 |
| Western              | 1,359.3                              | 24,467                 | 26,153                | 19.2                          | 106.9                | 120.3                |
| Wilfrid Laurier      | 682.0                                | 12,276                 | 13,500                | 19.8                          | 110.0                | 129.6                |
| Windsor              | 387.0                                | 6,966                  | 10,955                | 28.3                          | 157.3                | 122.7                |
| York (Keele)         | 1,045.4                              | 18,817                 | 22,344                | 21.4                          | 118.7                | 129.3                |
| York (Glendon)       | 77.9                                 | 1,402                  | 1,448                 | 18.6                          | 103.2                | 245.6                |
| <b>SUBTOTAL</b>      | <b>14,011.6</b>                      | <b>252,209</b>         | <b>290,276</b>        | <b>20.7</b>                   | <b>115.1</b>         | <b>108.3</b>         |
| Hearst               | 10.0                                 | 180                    | 249                   | 24.9                          | 138.4                | 145.1                |
| NOSM                 | 37.0                                 | 666                    | 2,306                 | 62.3                          | 346.2                | 346.2                |
| <b>TOTAL</b>         | <b>14,058.6</b>                      | <b>253,055</b>         | <b>292,831</b>        | <b>20.8</b>                   | <b>115.7</b>         | <b>109.0</b>         |

Input Measure: Total FTE Non-Academic Office Staff requiring offices.

Space Factor: 12 NASM for FTE Non-Academic Office Staff, plus 50% allowance for office support space.

System Average: 20.8 NASM per Non-Academic Office Staff.  
(Total Actual Non-Academic Office Staff Space (including service space) divided by Non-Academic Staff.)

**Table 53: Library Facilities & Library Study Space (5.1 to 5.4): Generated Space and Inventory, 2016-17**

|                      | FTE Students | Generated Space | Inventory NASM | Inventory/FTE Student | 2016-17 % I/G | 2013-14 % I/G |
|----------------------|--------------|-----------------|----------------|-----------------------|---------------|---------------|
| Algoma               | 1,077.6      | 1,534           | 1,200          | 1.1                   | 78.2          | 66.9          |
| Brock                | 15,685.8     | 14,899          | 6,584          | 0.4                   | 44.2          | 59.3          |
| Carleton             | 25,271.0     | 26,682          | 21,049         | 0.8                   | 78.9          | 84.8          |
| Guelph               | 21,842.5     | 22,970          | 17,070         | 0.8                   | 74.3          | 57.7          |
| Lakehead             | 7,362.1      | 8,772           | 7,722          | 1.0                   | 88.0          | 84.2          |
| Laurentian           | 7,334.0      | 9,493           | 7,840          | 1.1                   | 82.6          | 78.7          |
| McMaster             | 27,917.1     | 28,194          | 20,782         | 0.7                   | 73.7          | 89.1          |
| Nipissing            | 3,919.5      | 3,892           | 393            | 0.1                   | 10.1          | 72.5          |
| OCAD U               | 3,696.1      | 3,936           | 1,503          | 0.4                   | 38.2          | 39.5          |
| UOIT                 | 8,385.7      | 5,741           | 3,707          | 0.4                   | 64.6          | 56.6          |
| Ottawa               | 36,825.0     | 38,383          | 26,198         | 0.7                   | 68.3          | 65.8          |
| Queen's              | 24,269.3     | 42,457          | 24,005         | 1.0                   | 56.5          | 68.8          |
| Ryerson              | 34,952.0     | 26,158          | 9,592          | 0.3                   | 36.7          | 51.5          |
| Toronto (St. George) | 53,398.1     | 109,509         | 79,441         | 1.5                   | 72.5          | 75.9          |
| Toronto (Miss)       | 12,440.5     | 10,382          | 5,708          | 0.5                   | 55.0          | 57.4          |
| Toronto (Scar)       | 11,033.6     | 8,918           | 3,804          | 0.3                   | 42.7          | 65.3          |
| Trent                | 7,842.7      | 9,346           | 5,385          | 0.7                   | 57.6          | 72.8          |
| Waterloo             | 31,211.8     | 31,818          | 16,563         | 0.5                   | 52.1          | 54.0          |
| Western              | 35,318.7     | 42,312          | 32,140         | 0.9                   | 76.0          | 71.6          |
| Wilfrid Laurier      | 16,448.3     | 15,267          | 8,885          | 0.5                   | 58.2          | 65.8          |
| Windsor              | 13,809.3     | 17,959          | 14,488         | 1.0                   | 80.7          | 83.4          |
| York (Keele)         | 39,145.7     | 53,025          | 23,561         | 0.6                   | 44.4          | 46.5          |
| York (Glendon)       | 2,224.3      | 3,345           | 1,833          | 0.8                   | 54.8          | 55.5          |
| SUBTOTAL             | 441,410.7    | 534,993         | 339,454        | 0.8                   | 63.5          | 67.5          |
| Hearst               | 114.8        | 634             | 887            | 7.7                   | 139.8         | 177.0         |
| NOSM                 | 512.0        | 369             | 604            | 1.2                   | 163.7         | 499.0         |
| TOTAL                | 442,037.5    | 535,997         | 340,945        | 0.8                   | 63.6          | 67.7          |

The input measure for Library Facilities & Library Study Space has changed for the year 2016-17. Former item 5.5 (study space not under the jurisdiction of library system) is now part of Category 11. Caution should be taken while comparing the data to 2013-14. The space factor for library study space also changed to 0.5 from 0.6. For more details see Appendix A.

Input Measure: Total FTE Students and Total Equivalent Volumes.

Space Factor: 0.6 NASM for FTE Students, from 0.0035 NASM to 0.005 NASM for Equivalent Volumes, plus 25% allowance for service space.

System Average: 0.77 NASM per FTE Student.

(Stack space for total volumes, study space for FTE students, and service space for the number of volumes and students) divided by Total FTE Students.

**Table 54: Campus Study Space (5.4 and 11): Generated Space and Inventory, 2016-17**

|                      | FTE Students | Generated Space | Inventory NASM | Inventory/<br>FTE Students | 2016-17 % I/G | 2013-14 % I/G |
|----------------------|--------------|-----------------|----------------|----------------------------|---------------|---------------|
| Algoma               | 1,077.6      | 970             | 923            | 0.86                       | 95.2          | na            |
| Brock                | 15,685.8     | 14,117          | 7,153          | 0.46                       | 50.7          | na            |
| Carleton             | 25,271.0     | 22,744          | 12,890         | 0.51                       | 56.7          | na            |
| Guelph               | 21,842.5     | 19,658          | 8,917          | 0.41                       | 45.4          | na            |
| Lakehead             | 7,362.1      | 6,626           | 5,410          | 0.73                       | 81.7          | na            |
| Laurentian           | 7,334.0      | 6,601           | 4,429          | 0.60                       | 67.1          | na            |
| McMaster             | 27,917.1     | 25,125          | 14,456         | 0.52                       | 57.5          | na            |
| Nipissing            | 3,919.5      | 3,528           | 511            | 0.13                       | 14.5          | na            |
| OCAD U               | 3,696.1      | 3,326           | 783            | 0.21                       | 23.5          | na            |
| UOIT                 | 8,385.7      | 7,547           | 2,686          | 0.32                       | 35.6          | na            |
| Ottawa               | 36,825.0     | 33,143          | 19,891         | 0.54                       | 60.0          | na            |
| Queen's              | 24,269.3     | 21,842          | 17,121         | 0.71                       | 78.4          | na            |
| Ryerson              | 34,952.0     | 31,457          | 16,516         | 0.47                       | 52.5          | na            |
| Toronto (St. George) | 53,398.1     | 48,058          | 43,985         | 0.82                       | 91.5          | na            |
| Toronto (Miss)       | 12,440.5     | 11,196          | 5,585          | 0.45                       | 49.9          | na            |
| Toronto (Scar)       | 11,033.6     | 9,930           | 5,190          | 0.47                       | 52.3          | na            |
| Trent                | 7,842.7      | 7,058           | 3,724          | 0.47                       | 52.8          | na            |
| Waterloo             | 31,211.8     | 28,091          | 20,215         | 0.65                       | 72.0          | na            |
| Western              | 35,318.7     | 31,787          | 16,989         | 0.48                       | 53.4          | na            |
| Wilfrid Laurier      | 16,448.3     | 14,803          | 7,102          | 0.43                       | 48.0          | na            |
| Windsor              | 13,809.3     | 12,428          | 7,431          | 0.54                       | 59.8          | na            |
| York (Keele)         | 39,145.7     | 35,231          | 16,023         | 0.41                       | 45.5          | na            |
| York (Glendon)       | 2,224.3      | 2,002           | 753            | 0.34                       | 37.6          | na            |
| SUBTOTAL             | 441,410.7    | 397,270         | 238,682        | 0.54                       | 60.1          | na            |
| Hearst               | 114.8        | 103             | 304            | 2.65                       | 294.6         | na            |
| NOSM                 | 512.0        | 461             | 368            | 0.72                       | 79.8          | na            |
| TOTAL                | 442,037.5    | 397,834         | 239,354        | 0.54                       | 60.2          | na            |

Former Category 5.5 (study space not under the jurisdiction of library system) is now part of Category 11. For more details see Appendix A.

Input Measure: Total FTE Students and Total Equivalent Volumes.

Space Factor: 0.5 NASM per FTE student for category 5.4 and 0.4 NASM per FTE Students for category 11

System Average: 0.54 NASM per FTE Student.  
(study space for FTE students, computing space, and service space for the number of students) divided by Total FTE Students.)

**Table 55: Campus Study Space (5.4 and 11), totals and sub-types of study space as a percentage of the total study space, 2016-17**

|                      | <b>Study Space within the Library (Cat 5.4)</b> | <b>Non Formula Study Space (Cat 11)</b> | <b>Total Study Space</b> | <b>% of Study Space (Cat 5.4)</b> | <b>% of Study Space (Cat 11)</b> |
|----------------------|---|---|--------------------------|-----------------------------------|----------------------------------|
| Algoma               | 600.7   | 322.3                                   | 923.0                    | 65.1%                             | 34.9%                            |
| Brock                | 2,706.4   | 4,446.4                                 | 7,152.8                  | 37.8%                             | 62.2%                            |
| Carleton             | 8,180.7   | 4,709.1                                 | 12,889.7                 | 63.5%                             | 36.5%                            |
| Guelph               | 5,345.7   | 3,571.8                                 | 8,917.5                  | 59.9%                             | 40.1%                            |
| Lakehead             | 3,364.0   | 2,046.3                                 | 5,410.3                  | 62.2%                             | 37.8%                            |
| Laurentian           | 2,860.3   | 1,568.4                                 | 4,428.7                  | 64.6%                             | 35.4%                            |
| McMaster             | 6,902.8   | 7,553.5                                 | 14,456.2                 | 47.7%                             | 52.3%                            |
| Nipissing            | 0.0   | 510.7                                   | 510.7                    | 0.0%                              | 100.0%                           |
| OCAD U               | 307.3   | 475.8                                   | 783.1                    | 39.2%                             | 60.8%                            |
| UOIT                 | 1,718.8   | 966.9                                   | 2,685.7                  | 64.0%                             | 36.0%                            |
| Ottawa               | 9,846.7   | 10,044.4                                | 19,891.1                 | 49.5%                             | 50.5%                            |
| Queen's              | 8,872.8   | 8,248.3                                 | 17,121.2                 | 51.8%                             | 48.2%                            |
| Ryerson              | 3,864.0   | 12,651.6                                | 16,515.6                 | 23.4%                             | 76.6%                            |
| Toronto (St. George) | 25,327.4  | 18,657.4                                | 43,984.8                 | 57.6%                             | 42.4%                            |
| Toronto (Miss)       | 3,214.4   | 2,370.8                                 | 5,585.2                  | 57.6%                             | 42.4%                            |
| Toronto (Scar)       | 1,647.0   | 3,543.2                                 | 5,190.2                  | 31.7%                             | 68.3%                            |
| Trent                | 1,737.1   | 1,986.8                                 | 3,723.9                  | 46.6%                             | 53.4%                            |
| Waterloo             | 4,133.1   | 16,082.0                                | 20,215.1                 | 20.4%                             | 79.6%                            |
| Western              | 9,162.7   | 7,826.1                                 | 16,988.8                 | 53.9%                             | 46.1%                            |
| Wilfrid Laurier      | 2,094.8   | 5,007.0                                 | 7,101.8                  | 29.5%                             | 70.5%                            |
| Windsor              | 2,972.8   | 4,457.8                                 | 7,430.7                  | 40.0%                             | 60.0%                            |
| York (Keele)         | 7,303.7   | 8,719.7                                 | 16,023.4                 | 45.6%                             | 54.4%                            |
| York (Glendon)       | 452.2   | 300.3                                   | 752.5                    | 60.1%                             | 39.9%                            |
| <b>SUBTOTAL</b>      | <b>112,615.5</b>                                | <b>126,066.6</b>                        | <b>238,682.1</b>         | <b>47.2%</b>                      | <b>52.8%</b>                     |
| Hearst               | 127.7   | 176.6                                   | 304.4                    | 42.0%                             | 58.0%                            |
| NOSM                 | 0.0   | 367.5                                   | 367.5                    | 0.0%                              | 100.0%                           |
| <b>TOTAL</b>         | <b>112,743.3</b>                                | <b>126,610.7</b>                        | <b>239,354.0</b>         | <b>47.1%</b>                      | <b>52.9%</b>                     |

**Table 56: Recreation / Athletics Space (6): Generated Space and Inventory, 2016-17**

|                      | <b>FTE<br/>Students</b> | <b>Generated<br/>Space</b> | <b>Inventory<br/>NASM</b> | <b>Inventory/<br/>FTE<br/>Students</b> | <b>2016-17<br/>% I/G</b> | <b>2013-14<br/>% I/G</b> |
|----------------------|-------------------------|----------------------------|---------------------------|--|--------------------------|--------------------------|
| Algoma               | 1,077.6                 | 970                        | 4,239                     | 3.9                                    | 437.0                    | 297.1                    |
| Brock                | 15,685.8                | 14,117                     | 9,164                     | 0.6                                    | 64.9                     | 76.5                     |
| Carleton             | 25,271.0                | 22,744                     | 24,250                    | 1.0                                    | 106.6                    | 117.3                    |
| Guelph               | 21,842.5                | 19,658                     | 33,778                    | 1.5                                    | 171.8                    | 106.8                    |
| Lakehead             | 7,362.1                 | 6,626                      | 9,226                     | 1.3                                    | 139.2                    | 155.3                    |
| Laurentian           | 7,334.0                 | 6,601                      | 9,719                     | 1.3                                    | 147.2                    | 151.9                    |
| McMaster             | 27,917.1                | 25,125                     | 17,243                    | 0.6                                    | 68.6                     | 70.3                     |
| Nipissing            | 3,919.5                 | 3,528                      | 2,955                     | 0.8                                    | 83.8                     | 125.8                    |
| OCAD U               | 3,696.1                 | 3,326                      | not applicable            |  |                          |                          |
| UOIT                 | 8,385.7                 | 7,547                      | 5,674                     | 0.7                                    | 75.2                     | 112.8                    |
| Ottawa               | 36,825.0                | 33,143                     | 24,005                    | 0.7                                    | 72.4                     | 47.4                     |
| Queen's              | 24,269.3                | 21,842                     | 17,474                    | 0.7                                    | 80.0                     | 102.2                    |
| Ryerson              | 34,952.0                | 31,457                     | 14,274                    | 0.4                                    | 45.4                     | 52.9                     |
| Toronto (St. George) | 53,398.1                | 48,058                     | 30,368                    | 0.6                                    | 63.2                     | 56.9                     |
| Toronto (Miss)       | 12,440.5                | 11,196                     | 6,894                     | 0.6                                    | 61.6                     | 69.9                     |
| Toronto (Scar)       | 11,033.6                | 9,930                      | 9,534                     | 0.9                                    | 96.0                     | 49.4                     |
| Trent                | 7,842.7                 | 7,058                      | 3,966                     | 0.5                                    | 56.2                     | 61.5                     |
| Waterloo             | 31,211.8                | 28,091                     | 12,935                    | 0.4                                    | 46.0                     | 48.2                     |
| Western              | 35,318.7                | 31,787                     | 19,513                    | 0.6                                    | 61.4                     | 61.9                     |
| Wilfrid Laurier      | 16,448.3                | 14,803                     | 11,025                    | 0.7                                    | 74.5                     | 79.8                     |
| Windsor              | 13,809.3                | 12,428                     | 10,716                    | 0.8                                    | 86.2                     | 84.4                     |
| York (Keele)         | 39,145.7                | 35,231                     | 10,387                    | 0.3                                    | 29.5                     | 34.1                     |
| York (Glendon)       | 2,224.3                 | 2,002                      | 2,919                     | 1.3                                    | 145.8                    | 147.9                    |
| <b>SUBTOTAL</b>      | <b>441,410.7</b>        | <b>397,270</b>             | <b>290,257</b>            | <b>0.7</b>                             | <b>73.1</b>              | <b>71.0</b>              |
| Hearst               | 114.8                   | 103                        | 490                       | 4.3                                    | 474.6                    | 0.0                      |
| NOSM                 | 512.0                   | 461                        | not applicable            |  |                          | n/a                      |
| <b>TOTAL</b>         | <b>442,037.5</b>        | <b>397,834</b>             | <b>290,257</b>            | <b>0.7</b>                             | <b>73.0</b>              | <b>71.0</b>              |

Input Measure: Total FTE Students (as defined in Appendix D).

Space Factor: 0.9 NASM

System Average: 0.66 NASM per FTE Student.  
(Total Actual Physical Education/Athletics space divided by Total FTE students.).



**Table 57: Maintenance Space (9): Generated Space and Inventory, 2016-17**

|                      | <b>NASM<br/>Inventory</b> | <b>Generated<br/>Space</b> | <b>Inventory<br/>NASM</b> | <b>2016-17<br/>% I/G</b> | <b>2013-14<br/>% I/G</b> |
|----------------------|---------------------------|----------------------------|---------------------------|--------------------------|--------------------------|
| Algoma               | 20,177.5                  | 303                        | 278                       | 91.8                     | 74.0                     |
| Brock                | 154,927.4                 | 2,324                      | 2,538                     | 109.2                    | 99.6                     |
| Carleton             | 247,467.1                 | 3,712                      | 1,846                     | 49.7                     | 55.6                     |
| Guelph               | 392,738.5                 | 5,891                      | 6,962                     | 118.2                    | 123.9                    |
| Lakehead             | 126,242.6                 | 1,894                      | 1,013                     | 53.5                     | 63.4                     |
| Laurentian           | 117,174.4                 | 1,758                      | 1,317                     | 74.9                     | 111.8                    |
| McMaster             | 376,899.0                 | 5,653                      | 3,402                     | 60.2                     | 59.4                     |
| Nipissing            | 28,484.1                  | 427                        | not applicable            |                          |                          |
| OCAD U               | 0.0                       | 0                          | 0                         | 0.0                      | 44.0                     |
| UOIT                 | 58,029.7                  | 870                        | 546                       | 62.7                     | 16.2                     |
| Ottawa               | 361,048.7                 | 5,416                      | 4,094                     | 75.6                     | 81.9                     |
| Queen's              | 351,974.8                 | 5,280                      | 2,351                     | 44.5                     | 45.1                     |
| Ryerson              | 195,348.6                 | 2,930                      | 2,590                     | 88.4                     | 93.8                     |
| Toronto (St. George) | 745,384.9                 | 11,181                     | 9,251                     | 82.7                     | 81.2                     |
| Toronto (Miss)       | 102,426.1                 | 1,536                      | 1,476                     | 96.1                     | 44.7                     |
| Toronto (Scar)       | 96,410.5                  | 1,446                      | 3,386                     | 234.2                    | 225.2                    |
| Trent                | 74,417.3                  | 1,116                      | 380                       | 34.1                     | 33.7                     |
| Waterloo             | 467,099.2                 | 7,006                      | 6,999                     | 99.9                     | 114.7                    |
| Western              | 545,653.7                 | 8,185                      | 2,799                     | 34.2                     | 41.2                     |
| Wilfrid Laurier      | 204,388.1                 | 3,066                      | 1,360                     | 44.4                     | 52.5                     |
| Windsor              | 154,286.8                 | 2,314                      | 1,368                     | 59.1                     | 62.6                     |
| York (Keele)         | 360,089.0                 | 5,401                      | 4,826                     | 89.3                     | 75.4                     |
| York (Glendon)       | 25,785.6                  | 387                        | 340                       | 88.0                     | 86.9                     |
| <b>SUBTOTAL</b>      | <b>5,206,453.6</b>        | <b>78,097</b>              | <b>59,123</b>             | <b>75.7</b>              | <b>75.5</b>              |
| Hearst               | 7,294.6                   | 109                        | 102                       | 93.6                     | 96.9                     |
| NOSM                 | 8,360.8                   | 125                        | not applicable            |                          | n/a                      |
| <b>TOTAL</b>         | <b>5,222,109.0</b>        | <b>78,332</b>              | <b>59,225</b>             | <b>75.6</b>              | <b>75.4</b>              |

Input Measure: Total NASM Inventory (excluding 16.0 Non-Assignable).

Space Factor: 0.015 NASM

System Average: 0.011 NASM  
(Total Actual Maintenance space divided by Total NASM Inventory.)

**Table 58: Student and Central Services Space (7-8, 12-15): Generated Space and Inventory, 2016-17**

|                      | <b>FTE Students</b> | <b>Generated Space</b> | <b>Inventory NASM</b> | <b>Inventory/ FTE Students</b> | <b>2016-17 % I/G</b> | <b>2013-14 % I/G</b> |
|----------------------|---------------------|------------------------|-----------------------|--------------------------------|----------------------|----------------------|
| Algoma               | 1,077.6             | 1,616                  | 1,858                 | 1.7                            | 114.9                | 107.6                |
| Brock                | 15,685.8            | 23,529                 | 15,182                | 1.0                            | 64.5                 | 66.1                 |
| Carleton             | 25,271.0            | 37,907                 | 23,736                | 0.9                            | 62.6                 | 68.5                 |
| Guelph               | 21,842.5            | 32,764                 | 22,797                | 1.0                            | 69.6                 | 79.2                 |
| Lakehead             | 7,362.1             | 11,043                 | 14,061                | 1.9                            | 127.3                | 121.4                |
| Laurentian           | 7,334.0             | 11,001                 | 8,631                 | 1.2                            | 78.5                 | 88.9                 |
| McMaster             | 27,917.1            | 41,876                 | 23,963                | 0.9                            | 57.2                 | 57.7                 |
| Nipissing            | 3,919.5             | 5,879                  | 2,950                 | 0.8                            | 50.2                 | 40.2                 |
| OCAD U               | 3,696.1             | 5,544                  | 975                   | 0.3                            | 17.6                 | 44.8                 |
| UOIT                 | 8,385.7             | 12,579                 | 4,493                 | 0.5                            | 35.7                 | 38.9                 |
| Ottawa               | 36,825.0            | 55,238                 | 23,879                | 0.6                            | 43.2                 | 46.7                 |
| Queen's              | 24,269.3            | 36,404                 | 29,215                | 1.2                            | 80.3                 | 97.5                 |
| Ryerson              | 34,952.0            | 52,428                 | 18,749                | 0.5                            | 35.8                 | 44.5                 |
| Toronto (St. George) | 53,398.1            | 80,097                 | 46,469                | 0.9                            | 58.0                 | 74.9                 |
| Toronto (Miss)       | 12,440.5            | 18,661                 | 8,332                 | 0.7                            | 44.7                 | 53.8                 |
| Toronto (Scar)       | 11,033.6            | 16,550                 | 8,826                 | 0.8                            | 53.3                 | 59.0                 |
| Trent                | 7,842.7             | 11,764                 | 5,439                 | 0.7                            | 46.2                 | 65.8                 |
| Waterloo             | 31,211.8            | 46,818                 | 29,180                | 0.9                            | 62.3                 | 73.4                 |
| Western              | 35,318.7            | 52,978                 | 44,617                | 1.3                            | 84.2                 | 86.9                 |
| Wilfrid Laurier      | 16,448.3            | 24,672                 | 16,505                | 1.0                            | 66.9                 | 65.8                 |
| Windsor              | 13,809.3            | 20,714                 | 12,420                | 0.9                            | 60.0                 | 66.6                 |
| York (Keele)         | 39,145.7            | 58,719                 | 26,781                | 0.7                            | 45.6                 | 53.8                 |
| York (Glendon)       | 2,224.3             | 3,336                  | 3,097                 | 1.4                            | 92.8                 | 103.8                |
| <b>SUBTOTAL</b>      | <b>441,410.7</b>    | <b>662,116</b>         | <b>392,155</b>        | <b>0.9</b>                     | <b>59.2</b>          | <b>67.0</b>          |
| Hearst               | 114.8               | 172                    | 1,159                 | 10.1                           | 672.8                | 1489.4               |
| NOSM                 | 512.0               | 768                    | 112                   | 0.2                            | 14.5                 | 187.0                |
| <b>TOTAL</b>         | <b>442,037.5</b>    | <b>663,056</b>         | <b>393,425</b>        | <b>0.9</b>                     | <b>59.3</b>          | <b>67.3</b>          |

The input measure for Student and Central Services Space has changed for the year 2016-17. Former item 14.3 is now part of Category 11. Caution should be taken while comparing the data to 2013-14. For more details see Appendix A.

Input Measure: Total FTE Students (as defined in Appendix D).

Space Factor: 1.5 NASM

System Average: 0.89 NASM per FTE Student.  
(A rounded total of recommended space factor ranges for the actual individual student central services categories divided by Total FTE Students.)

**Table 59: Total Space (1-15): Generated Space and Inventory, 2016-17**

|                      | <b>FTE Students</b> | <b>Generated Space</b> | <b>Generated per FTE</b> | <b>Inventory NASM</b> | <b>Inventory per FTE</b> | <b>2016-17 % I/G</b> | <b>2013-14 % I/G</b> |
|----------------------|---------------------|------------------------|--------------------------|-----------------------|--------------------------|----------------------|----------------------|
| Algoma               | 1,077.6             | 9,820.2                | 9.1                      | 11,915                | 11.1                     | 121.3                | 113.5                |
| Brock                | 15,685.8            | 138,231.8              | 8.8                      | 103,613               | 6.6                      | 75.0                 | 66.7                 |
| Carleton             | 25,271.0            | 244,441.4              | 9.7                      | 180,348               | 7.1                      | 73.8                 | 80.9                 |
| Guelph               | 21,842.5            | 277,684.3              | 12.7                     | 254,245               | 11.6                     | 91.6                 | 88.4                 |
| Lakehead             | 7,362.1             | 92,373.5               | 12.5                     | 82,091                | 11.2                     | 88.9                 | 91.7                 |
| Laurentian           | 7,334.0             | 71,347.5               | 9.7                      | 74,757                | 10.2                     | 104.8                | 99.3                 |
| McMaster             | 27,917.1            | 319,854.5              | 11.5                     | 259,991               | 9.3                      | 81.3                 | 79.7                 |
| Nipissing            | 3,919.5             | 38,181.0               | 9.7                      | 25,128                | 6.4                      | 65.8                 | 58.8                 |
| OCAD U               | 3,696.1             | 51,514.1               | 13.9                     | 21,009                | 5.7                      | 40.8                 | 44.3                 |
| UOIT                 | 8,385.7             | 73,690.8               | 8.8                      | 48,300                | 5.8                      | 65.5                 | 73.3                 |
| Ottawa               | 36,825.0            | 376,225.5              | 10.2                     | 255,849               | 6.9                      | 68.0                 | 66.5                 |
| Queen's              | 24,269.3            | 280,186.0              | 11.5                     | 248,455               | 10.2                     | 88.7                 | 88.4                 |
| Ryerson              | 34,952.0            | 311,932.2              | 8.9                      | 174,521               | 5.0                      | 55.9                 | 61.2                 |
| Toronto (St. George) | 53,398.1            | 710,253.4              | 13.3                     | 567,150               | 10.6                     | 79.9                 | 85.1                 |
| Toronto (Miss)       | 12,440.5            | 97,802.0               | 7.9                      | 69,356                | 5.6                      | 70.9                 | 75.8                 |
| Toronto (Scar)       | 11,033.6            | 88,692.1               | 8.0                      | 67,423                | 6.1                      | 76.0                 | 74.3                 |
| Trent                | 7,842.7             | 67,110.0               | 8.6                      | 53,888                | 6.9                      | 80.3                 | 91.4                 |
| Waterloo             | 31,211.8            | 355,744.5              | 11.4                     | 314,496               | 10.1                     | 88.4                 | 84.1                 |
| Western              | 35,318.7            | 449,150.2              | 12.7                     | 344,365               | 9.8                      | 76.7                 | 79.1                 |
| Wilfrid Laurier      | 16,448.3            | 131,123.9              | 8.0                      | 107,239               | 6.5                      | 81.8                 | 77.0                 |
| Windsor              | 13,809.3            | 154,850.4              | 11.2                     | 131,962               | 9.6                      | 85.2                 | 87.7                 |
| York (Keele)         | 39,145.7            | 365,355.0              | 9.3                      | 252,410               | 6.4                      | 69.1                 | 70.1                 |
| York (Glendon)       | 2,224.3             | 18,809.4               | 8.5                      | 18,095                | 8.1                      | 96.2                 | 103.3                |
| <b>SUBTOTAL</b>      | <b>441,410.7</b>    | <b>4,724,373.6</b>     | <b>10.7</b>              | <b>3,666,607</b>      | <b>8.3</b>               | <b>77.6</b>          | <b>78.6</b>          |
| Hearst               | 114.8               | 1,476.3                | 12.9                     | 5,116                 | 44.6                     | 346.6                | 414.6                |
| NOSM                 | 512.0               | 9,295.4                | 18.2                     | 8,361                 | 16.3                     | 89.9                 | 131.2                |
| <b>TOTAL</b>         | <b>442,037.5</b>    | <b>4,735,145.3</b>     | <b>10.7</b>              | <b>3,680,084</b>      | <b>8.3</b>               | <b>77.7</b>          | <b>78.8</b>          |

The space factor for research and class lab space categories have been changed and therefore caution should be taken when making comparisons with the 2013-14 data, especially the generated space and %I/G figures (highlighted).

A comparison of the Total Generated Space and existing Inventory in categories 1 through 15 per FTE Student.

## 7. Appendices

### Appendix A: Space Classification Scheme, Formula and Measures

Below is an overview of the four sub-categories of space, their definitions, formula and measures. Changes from the 2013-14 report are noted in red.

#### **Formula Space**

##### **Category 1: Classroom Facilities**

###### **Definition**

A room primarily used for scheduled teaching purposes, which does not require special equipment of a kind that makes the room unsuitable for classroom instruction (i.e. laboratory benches), and rooms directly serving such facilities.

###### **Subcategories**

1.1 Tiered classrooms: Tiered or sloped floored lecture theatres, lecture rooms, lecture demonstration rooms, and classrooms.

1.2 Non tiered classrooms: Flat floored lecture rooms, classrooms, seminar rooms, and tutorial rooms.

1.3 Active learning classrooms: Pedagogical space primarily moderated for group interaction. The room may or may not utilize technology. The focus is on group learning. Universities are asked to report tiered and non-tiered space separately, if applicable.

- Tiered classroom
- Non-Tiered classroom.

1.4 Classroom service space: Examination rooms, projection rooms, preparation rooms, closets, storage rooms and other related areas.

###### **Formula**

The formula for generating classroom facilities including service space is as follows:

- # of FTE Students x 1.11 sq. m.

###### **Formula Assumptions**

The amount of classroom space required by an institution is roughly proportional to the number of students it has. Hence the input measure for this category is the number of full-time equivalent students.

To be more specific, the demand for space is proportional to the number of courses those students enrol in, multiplied by the number of hours per week of scheduled instruction that each course requires for academic credit. The unit of measurement is usually referred to as a weekly student classroom contact hour (WSCH), i.e., contact with an instructor in a classroom

environment. The amount of space required to accommodate one classroom WSCH is derived from three separate variables. These are:

**A (area) = 1.7 sq. m.**

Average university classroom station size.

The area (A) required for a single seat or desk, expressed in square metres. This value varies according to the type of furniture used. An average value was chosen to represent a mix of classroom types and a provision for classroom service space.

**H = 30 to 34 hours per week**

Room utilization standard for a room Monday - Friday, during a 57 hour week.

The number of hours per week (H) that a classroom is expected to be used for scheduled instruction. This range represents a minimum utilization standard which will vary by room type, use and program.

The number of hours is 45 to 57 hours per week to include 4 three-hour evening sessions per week.

**S = 0.70\* (i.e., 70% seats occupied when the room is used)**

Station utilization standard when the room is used.

The percentage of seats that are occupied (S) when the room is in use.

The product of the room utilization standard (H) and station weight (S) should produce a combined utilization co-efficient of 22.1. Therefore, H could be 30 and S could be 74%, or H could be 34 and S could be 65%. The classroom space formula is:

- $NASM / WSCH \text{ (weekly student contact hour)} = A / (H \times S)$

Assuming that the average weekly student contact hours is 16 hours (non-laboratory), that the A (area) value is 1.7, and that the H and S values are 34 and 0.70\* respectively, the space formula is 1.23 sq. m..

$$\frac{NASM / FTE \text{ Student}}{Student} = \frac{1.7}{34 \times .70^*} \times 16 \text{ hours} = 1.11^* NASM$$

\*In 2010-11 it was assumed that 65% of the seats would be occupied when the room is used. This changed the space factor from 1.23 to 1.11 NASM.

### Comments

While the total amount of classroom space generated using the COU space factor is considered adequate, mismatches between class section size and the size of available classrooms are problems on many campuses.

## Category 2: Laboratory – Undergraduate

### Definition

A room used for instruction of undergraduate students that requires special purpose equipment or is so arranged that use is restricted to a particular field of study; and rooms directly serving these facilities. Activities in these facilities would include student participation, experimentation, observation or practice in a field of study.

### Subcategories

2.1 Scheduled class laboratory space: Teaching laboratories, special subject rooms, computer labs, instructional shops, drafting, art, dance and music studios, music practice rooms, language laboratories, and athletic facilities primarily used for instruction, and other specially designed rooms largely used for scheduled instruction, such as dental, rehabilitation, and psychology clinics.

2.2 Unscheduled class laboratory space: This subcategory may be optionally used to classify general workrooms, studios, and other special-purpose facilities generally used for informal or irregularly scheduled instruction, or for practice.

2.3 Laboratory (instructional) support: Preparation rooms, balance rooms, laboratory storage rooms, demonstration rooms, animal areas, greenhouses, dark rooms, etc. directly serving the laboratory facilities.

### Formula

The formula for generating undergraduate teaching facilities (including service space) is a four-part formula with a different space factor for each of four academic program groupings:

|  |   |                   |   |   |
|--|---|-------------------|---|---|
| Laboratory space for specific group (W, X, Y, Z) | = | WSLabCH for group | X | Space factor for group (0.8, 0.6, 0.5, 0.3) |
|--|---|-------------------|---|---|

**WSLabCH** (i.e. Weekly Student Laboratory Contact Hours) is the input measure for this category. They are computed as the product of the course enrolment and the hours of scheduled instruction in a laboratory (lab or practical hour) received by each student enrolled during a typical academic week.

### Formula Assumptions

The instructional laboratory formula is based on the following assumptions:

- It is recognized that there are differences in space requirements between disciplines; consequently four space standards, dependent upon discipline groups (denoted W, X, Y, Z) are used.
- Examples of disciplines:
  - Group W: Agriculture, Engineering, Veterinary Medicine
  - Group X: Chemistry, Fine Arts, Geology

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- Group Y: Anthropology, Geography, Psychology
- Group Z: Commerce, Mathematics, Sociology
- Station areas associated with the groups W, X, Y and Z (see table below) were derived over time from data reported by the universities in the Ontario system together with standards used in other jurisdictions. The space factors are based on bench areas and facility needs for the different disciplines. They include an allowance for preparation and storage space requirements.
- Space guidelines for teaching laboratories include a room utilization of 18 hours per week and 75% seat occupancy when in use. The relationship between the variables is described in the following table:

| <b>Group</b> | <b>Station Area (NASM), including Service Space outside the lab</b> | <b>Utilization Rate<br/>Hours x Seat Utilization</b> | <b>Space Factor<br/>NASM/WSLabCH</b> |
|--------------|---|--|--------------------------------------|
| W            | 10.80   | 18 X 0.75 = 13.5                                     | 0.8                                  |
| X            | 8.10  | 18 X 0.75 = 13.5                                     | 0.6                                  |
| Y            | 6.75  | 18 X 0.75 = 13.5                                     | 0.5                                  |
| Z            | 4.05  | 18 X 0.75 = 13.5                                     | 0.3                                  |

|                  |   |  |
|------------------|---|--|
| NASM per WSLabCH | = | $\frac{\text{Area per Station}}{\text{Scheduled Hours per week x Seat Utilization}}$ |
|------------------|---|--|

### Comments

The university timetable should be the primary source for deriving WSLabCH, augmented if needed by information in the university calendar.

There is unscheduled activity by groups or individuals for study or experimentation related to course work and assignments used for scheduled teaching and in other specially designed labs. However, this unscheduled use of labs is to be excluded from the contact hour count when determining laboratory facilities entitlement. It is assumed that the use of scheduled contact hours combined with an 18-hour room utilization rate will generate enough space to adequately accommodate these activities in the unscheduled hours.

For class labs that meet in multiple-use facilities, for example, in theatres used for both drama instruction and general university assembly, it may be necessary to prorate.

### Category 3: Research Laboratory Space (Graduate & Faculty)

Definition: A room used for laboratory applications, research or training in research methodology which **requires special-purpose equipment** for staff or graduate student experimentation or observation and preparation, service and other rooms directly serving these facilities.

#### Subcategories

3.1 Research Laboratory space: Faculty, graduate, and general research facilities.

3.2 Laboratory (graduate and faculty) support space: Rooms directly serving one or more research facilities that directly provide the necessary support to the research functions such as balance rooms, coat rooms, storage areas, dark rooms, workshops, animal areas, and greenhouses.

#### Formula

The formula for generating research laboratory facilities (including service space) is a five-part formula with a different space factor for each of five academic program groupings:

|   |           |  |
|---|-----------|--|
| Research space for specific group (A, B, C, D, E) | = Count x | Space Factor for group (45, 30, 20, 10, 1) |
|---|-----------|--|

Where Count = # FTE Faculty + (50% # post-doctoral fellows) + (50% # FTE research associates) + 50% #FTE graduate students)

#### Formula Assumptions

The research laboratory formula is based on the following assumptions:

- It is recognized that there are differences in space requirements between disciplines; consequently, five space standards (denoted A, B, C, D, and E) are used.
- Examples of disciplines:
  - Group A: Health Professions, Physical Sciences, Agriculture & Biological Sciences
  - Group B: Engineering
  - Group C: Visual Arts, Anthropology, Household Science
  - Group D: Physical Education, Computer Science
  - Group E: Social Sciences, Humanities, Education, Applied Arts
- Station areas (i.e. space factors) associated with the groups A, B, C, D, and E were derived over time from data reported by the universities in the Ontario system together with standards from other jurisdictions.
- The formula assumes a direct relationship, which is consistent throughout all disciplines within an academic grouping, between the numbers of faculty, other researchers and



graduate students associated with a department and the amount of research being done by that department.

### Comments

Some universities have large research facilities that are used by other universities or non-university researchers. In the reporting of the inventory, this space is pro-rated, with the portion used for non-institutional purposes classified in Category 19.

### Category 4: Academic Departmental Offices and Related Space

Definition: A room usually assigned to one or more individuals on a permanent basis, containing office-type equipment and used by faculty, departmental administrative and support staff, and students, or a room directly serving these facilities. Also included are general purpose offices and project rooms used for the conducting of research may have previously been reported in category 3.

### Subcategories

4.1 Academic offices: Single or multiple-occupancy offices for all academic appointments and academics with administrative appointments within a department or faculty, with rank up to and including department chairs, deans, vice deans and associate deans. Also includes offices for visiting professors, lecturers, emeriti professors, sessional staff, etc...

4.2 Research office/project space: Space allocated by the department to principal investigators to accommodate their research support staff (includes post-doctoral fellows, research associates, non-academic staff, professional academic staff and technicians requiring offices who support the research of a faculty member as principal investigator). Includes offices and office support space for research activities paid from restricted funds. Excludes offices allocated to graduate students and to upper year undergraduate students who perform the work of graduate students that are included in Category 4.3.

4.3 Graduate student offices: Single or multiple-occupancy rooms allocated by the department to graduate students for study and research, and to graduate and undergraduate students in their capacity as tutors, teaching or research assistants.

4.4 Departmental administrative and support staff offices: Office space used by non-research administrative and support staff, including demonstrators, technicians, office administrative staff, other professional staff, and clerical support staff to academic departments. Includes offices for departmental administrative and support staff paid from operating funds.

4.5 Office support space: Rooms directly serving office space in this category (both research and academic support space) such as conference rooms, computer rooms not for student study, special reference libraries, file rooms, vaults, photocopy rooms, waiting and reception areas, interview rooms, storage areas, private toilets, lunchrooms, and private departmental lounges.

### Formula

The formula for generating academic departmental office facilities has five components:

1. Faculty: # FTE Faculty x 12\* sq m.

2. Research Appointments: (# PDFs + FTE Research Associates + FTE Research Funded Support Staff) x 12\* sq. m.
3. Non-Academic Departmental Support Staff: # FTE Non-Academic Staff, paid from operating funds, requiring offices x 12\* sq. m.
4. Graduate Students: # FTE Graduate Students x 3\*\* sq. m.
5. Office Support Space: 25% of the total space generated for faculty, administrative staff and graduate students

*\*In 2010-11 the space factor for faculty, research appointments and non-academic departmental support staff was 13 sq. m.*

*\*\*In 2010-11 the space factor for graduate students was 4 sq. m.*

### **Formula Assumptions**

The office facilities formula is based on the following assumptions:

- In recognition of the disparity between the FTE faculty count of an institution and the requirement to provide some office accommodation to other academics who would not be fully represented by the FTE count (cross-appointments, part-time appointments, professors emeriti, status only appointments, visiting scholars, stipend staff, faculty on sabbaticals who remain on campus, etc.), the FTE faculty input measure is supplemented by 15%.
- Commencing with the 2007 report, the counts for FTE Research Associates, Post-Doctoral Fellows and FTE Research Funded Support Staff requiring office type work space have been included as a separate Input Measure for Category 4.2.
- Although 10-11 NASM is the accepted planning standard for a typical single office, a space factor of 12 NASM is used in the formula. This is to recognize existing office configurations, especially in older university buildings, where the average office size is larger. Further, it is recognized that deans and chairs are usually allocated larger offices than the average. The COU standard of 12 NASMs is not necessarily the institutional standard.
- The standard for non-academic staff offices is based on the same average office size used for academic staff. Although the layout of the spaces may be different, it is assumed that the requirement for space is the same. Library staff and staff of ancillary units are excluded from the FTE count as their office/work space is inventoried in other categories.
- The graduate student office standard is based on the assumption that all graduate students generate office type space. This is in addition to the space they generate in the research laboratory category and the library facilities & campus study space category.
- The requirement for office support space is directly related to the number of faculty, staff and graduate students in an institution.

- That 25% of the total entitlement for office facilities represents an average across all departments.
- The space generated under the formula is to accommodate a wide range of activities from photocopiers and file storage to conference rooms, departmental lounges, and resource rooms.

### Comments

Many older buildings in the Ontario system have been built with larger offices than the standard. For these institutions, the total amount of space inventoried, when measured against the space generated by the formula, may appear adequate but there will be too few office units.

Library office space is not included in this category. It is often difficult to distinguish what area is strictly office space and what area is library service for referencing, cataloguing and distributing books. The library service space formula covers this requirement.

Non-academic office space is calculated based on the FTE of non-academic staff as the institutional ratios of non-academic staff to faculty (and students) are quite variable.

FTE faculty and student data are readily collectible and verifiable but there is no equivalent data base for non-academic staff.

Due to a lack of office space at individual institutions, the ability to provide offices for graduate students is a matter of institutional policy; in some cases only doctoral students or teaching assistants are assigned office space.

Further economies of scale can be achieved in open concept offices.

### Category 5: Library Facilities and Library Study Space

Definition: A room or group of rooms used for the acquisition, processing, storage, circulation, administration and management of books, periodicals, manuscripts and other media of published information under the administration of the university library system and rooms directly serving these facilities.

Also included are rooms or group of rooms used for study only under the administration of the university library system.

### Subcategories

5.1 Library Collection space under the Jurisdiction of the University Library System: Stack and storage areas for books, archives, maps, documents, records, tapes, slides, micromaterials, periodicals, electronic volumes, and music scores.

5.2 Library / Office space under the Jurisdiction of the University Library System: Office and related areas for library administration, library support staff (including those who provide reference services) and systems technical support space.

5.3 Library Support space under the Jurisdiction of the University Library System: Catalogue area, circulation desk, processing areas, bookbinding and repair areas, acquisition, cataloguing work areas and service space.

5.4 Study Space Under the Jurisdiction of the University Library System: Reading rooms, study carrels, open-stack reading rooms and study areas available to the general university population and located within the university's library system.

*Note that "5.5 Study Space Not Under the Jurisdiction of the University Library System" has been moved to the new Category 11.*

### Equivalent Volumes

An equivalent volume represents one bound volume. Other library materials are converted into bound volumes. Materials are given in terms of 160 bound volumes, since 160 bound volumes represents a standard stack – a single faced section with dimensions approximately 7.5 feet high, with six (6) or seven (7) shelves, 3 feet wide.

| Material                                | Items  | Units         | Equivalency |
|---|--------|---------------|-------------|
| Monograph Volumes – excluding Reference | 160    | # volumes     | 160         |
| Reference                               | 90     | # volumes     | 160         |
| Documents and Technical Reports         | 830    | # reports     | 160         |
| Archival Materials                      | 6.4    | linear metres | 160         |
| Serial Volumes - bound                  | 100    | paper copy    | 160         |
| Serial Volumes – unbound                | 120    | paper copy    | 160         |
| OR Serial Volumes – bound and unbound   | 110    | paper copy    | 160         |
| Maps                                    | 500    | # sheets      | 160         |
| Microfilm                               | 320    | # reels       | 160         |
| Microfiche                              | 70,000 | # items       | 160         |
| Audio-Visual Holdings                   | 400    | # titles      | 160         |
| Slides                                  | 6,450  | # slides      | 160         |
| Printed Music                           | 350    | # scores      | 160         |

The volume equivalencies and categories of library material were reviewed and updated by the Ontario Council of University Libraries (OCUL) in September 2007. The categories are similar to that reported to OCUL.

The formula for Category 5 calculates space entitlement for three major functional areas in library and study facilities; (1) collection space, (2) study space within the library system, and (3) library support areas.

### **Formula: Library Collection Space (Category 5.1)**

The formula for generating space for library collections is as follows:

- 0.005 NASM per equivalent volume for traditional static shelving
- 0.004 NASM per equivalent volume for mobile compact storage
- 0.0035 NASM per equivalent volume for offsite/onsite high density storage (if applicable)

### **Formula Assumptions**

The collection space formula is based on the following assumption:

- The formula assumes that 160 bound volumes can be shelved on a standard stack unit, leaving **15%** of the shelf space for sorting books when they are returned to the shelves. A standard stack is 2.28 m. high, 0.91 m. wide, 0.25 m. deep, and has 6 or 7 shelves. In Volume 6 of *Building Blocks*, it was determined that a standard stack unit occupied approximately 0.75 NASM, allowing approximately 1.1 m. for an aisle space. Therefore, one (1) volume would require 0.0047 NASM or 0.005 NASM.

### **Formula: Library Support Areas (Categories 5.2 and 5.3)**

The formula for generating space for library support office and work space is as follows:

- Area generated for Stack and Study space x 25%

### **Formula Assumption**

The library support formula is based on the following assumption:

- The size of the collection and number of users are the two most significant factors affecting the area required for support space. The standard for support space has been based, therefore, on a fixed percentage of collection size and user population.

### **Comments**

- The volume equivalencies were revised in 2007 by the Ontario Council of University Libraries (OCUL) and the COU Committee on Space Standards & Reporting.
- It is recognized that some efficiencies can be achieved through the use of compact storage, but this is not a universal solution for design, structural or functional reasons.
- Stack space may appear to exceed the standards if service space and non-assignable space such as phantom fire corridors are not reported as defined.
- Graduate students also generate space in the office and research laboratory categories.
- The increasing demand and provision of computer space and rooms as well as decentralized study space must be recognized within the need for overall library study space at institutions.

- Space allocation decisions vary among universities. Trade-offs between stack and study space are an increasingly large part of library space management decision-making as services and resources are adjusted to meet the changing needs and demands of library customers.

#### **Formula: Study Space (Category 5.4)**

The formula for generating (formal) study space is:

- 0.5 NASM / FTE student

#### **Formula Assumptions** (applicable to study space in the library (5.4) and other areas (11.0))

The formula is based on the following assumptions:

- The formula assumes a study space size of 2 NASM or 2.4 NASM and enough space to accommodate 25% to 30% of the population ( $2 \times .3 = 0.5$  NASM/FTE student or  $2.4 \times .25 = 0.5$  NASM/FTE student).
- Formula assumption is based on 2 NASM or 2.4 NASM per station regardless of the type of space. It is assumed that 0.5 NASM per FTE student will allow approximately 1/3 of the student population to be housed at any one time.
- Study space includes space physically located within the library system and space that is located elsewhere on the university campus (excluding residences).
- The assumption of accommodating 25% to 30% of the student population is an average figure. It is expected that commuter universities will need to accommodate a higher percentage of the student population in study space at any one time, compared to a residential university.
- Please note that this is only a benchmark; the percentage of students accommodated and the study space size will vary by university.

Starting with the 2016-17 report, the study space outside the library, including lounges previously reported under 14.3, are reported in Category 11.

### **Category 6: Recreation / Athletic Space**

#### **Definition**

All indoor areas used by students, staff, or the public for athletic activities, either for recreational or competitive purposes, and rooms directly serving these facilities.

#### **Subcategories**

6.1 Athletic activity areas: Gymnasia, dance studios, swimming pools, basketball, handball and squash courts, combative rooms, ice rinks, indoor tracks, indoor rifle and archery ranges, and activity areas including those within field houses.

6.2 Athletic seating areas: All permanent seating and observation areas in gymnasia, swimming pools, field houses, ice rinks, and other indoor activity areas.

6.3 Athletic service space: All ancillary areas directly serving the above such as locker rooms, shower rooms, washrooms, coaches' rooms, equipment supply rooms, and rooms serving athletic facilities.

### Formula

0.9 NASM / FTE student

### Formula Assumptions

- The recreation/athletic space formula is based on the following assumptions:
- The space factor for recreation and athletic facilities assumes that the FTE student population is the primary user.

The actual factor is derived from institutional averages.

### Comments

Assessing the adequacy of athletics and recreation space is a complex matter. Institutions are quite diverse in the match between generated space and inventories. Requirements for athletic and recreation space vary according to an institution's commitment to inter-university athletics, the recreational interests of its students, the proportion of students in residence, the availability of other facilities in the community, and the mix of extracurricular activities with academic programs in Physical Education and related disciplines.

There may be errors in the reporting of athletics inventory that is primarily for community or academic program use. The definitions are clarified so that any specialized space used exclusively or almost exclusively for academic programs is reported in the class lab category.

## Category 9: Plant Maintenance

### Definition

Space associated with the operation and maintenance of university buildings, grounds, vehicles and other elements of the physical plant.

### Subcategory

9.1 Plant maintenance: Shops and storage areas for carpentry, plumbing, painting, electrical and other trades, lunch, locker and change rooms for maintenance and custodial staff, garages for maintenance vehicles and all grounds equipment, greenhouses and related areas and garages for storage and repair of vehicles and boats. **Includes janitorial storage and supply spaces.**

### Formula

- $1.5\% \times \text{Physical Plant Net Assignable Area}^*$

*\*which is the sum of NASM categories 1-15 and 17-20*

## Category 10: Central Administrative Office and Related Space

### Definition

A room usually assigned to one or more individuals on a permanent basis containing office-type equipment and used by central administrative and support staff in non-academic departments/faculties/divisions, or a room directly serving these facilities.

### Subcategories

10.1 Office areas: Single or multiple-occupancy rooms for executives and administrative staff.

10.2 Office support space: Rooms directly serving office space in this category such as conference rooms, special reference libraries, file rooms, vaults, photocopy rooms, computer rooms for administrative use, waiting and reception areas, interview rooms, storage areas, private toilets, lunch rooms, private departmental lounges, **and accessible testing and exam rooms (if there is no teaching activity; otherwise report in category 1.4).**

### Formula

The formula for generating central administrative office facilities has two components:

- Offices: # FTE Non-Academic Staff requiring offices x 12\* sq. m.
- Office Support Space: 50% of the total space generated for the Non-Academic Staff

*\*In 2010-11 the space factor for administrative offices was 13 sq. m.*

### Formula Assumptions

- The requirement for office support space is directly related to the number of non-academic staff requiring offices.
- 50% of the total entitlement for office facilities represents an average across all departments.
- The space generated under the formula is to accommodate a wide range of activities from photocopiers and file storage to conference rooms, departmental lounges and resource rooms.

## Category 11: Non-Library Study Space

### Definition

Non-traditional space located outside the library where students meet and study (either in groups or individually). Space includes formal study space (rooms available for students for study) and informal study space (lounge and study space).

### Subcategories

11.1 Formal study space (formerly 5.5): Formal study space outside the library. This space includes rooms available for students for study. Also included are reading rooms, study carrels,



open computing space, open-stack reading rooms, group rooms and study areas located in academic departments or other non-library departments.

11.2 Informal study space (formerly 14.3): Lounge and study space. This space includes all general lounge space and lounges in residences if available to non-residents, including related service space. Also includes space in corridors / hallways used as lounge space.

### Formula

The formula for generating study space is:

0.4 NASM/FTE student

### **Student and Central Services (Categories 7, 8, 12, 13, 14, 15)**

Food services, bookstore and other merchandising facilities, audiovisual / television facilities, central services, health service facilities, common use and study activity space, and assembly & exhibition facilities have been combined into **Student and Central Services** for the purpose of calculating space entitlement. This allows an institution to trade off a need for facilities in one area with those in a related category.

### Formula

- FTE students x 1.5\* NASM

*\*In 2010-11, the space factor for student and central services was 2.0 NASM per FTE student.*

The following range of values is suggested for each category, which reflects the use of space in the Ontario universities:

| Category Number | Category Name  | NASM / FTE student |
|-----------------|--|--------------------|
| 7               | Food Service   | 0.50 to 0.70       |
| 8               | Bookstore and Other Merchandising Facilities                                   | 0.10 to 0.20       |
| 12              | Central Services (includes AV TV facilities that were reported in Category 11) | 0.15 to 0.40       |
| 13              | Health Service Facilities  | 0.03 to 0.05       |
| 14              | Student Activity Space   | 0.50 to 0.70       |
| 15              | Assembly and Exhibition Facilities   | 0.15 to 0.40       |

## Category 7: Food Services

### Definition

A room or group of rooms used for preparing or eating food or which directly serve these facilities including central facilities located in residences and faculty clubs, whether operated by the university or an external company. **Includes coffee shops.**

### Subcategories

7.1 Food facilities: Dining rooms, cafeterias, snack bars, coffee shops, restaurants, vending machine and other refreshment areas primarily used for food service.

7.2 Food facilities service: Kitchen, servery all food preparation areas, dishwashing areas, refrigeration and freezer rooms, kitchen storage rooms, receiving areas, refuse areas and staff lunch, locker and private washrooms

## Category 8: Bookstore and Other Merchandising Facilities

### Definition

A room or group of rooms used to sell products or services, **exclusively or primarily for the university population**, and rooms directly serving these facilities.

### Subcategory

8.1 Bookstore/Merchandising: For example: bookstores, Canada Post office, banks, travel agencies, other stores and associated service space operated by the university or commercial enterprise renting space from the university. Includes staff offices in support of these functions.

## Category 12: Central Services

### Definition

A room or group of rooms used to provide campus-wide services (including the production, distribution and storage of non-print instructional media) for both academic and non-academic sections of the university, and rooms directly serving these facilities. **Includes server rooms and closets.**

### Subcategories

12.1 Computing facilities: Central data processing facilities, computer rooms, technical service and repair areas and their support spaces.

12.2 Other central services: Central and regional printing and duplicating shops, central receiving areas, central stores, university mail rooms, laundry and drying rooms located in a central laundry, and technical service and repair areas. Radio, TV, sound, photography, and graphic studios, film and tape libraries, control rooms, storage rooms, recording rooms, repair and servicing work rooms, dark rooms, preparation rooms, and similar related areas.

### Category 13: Health Service Facilities

#### Definition

A room or group of rooms intended to supply health services primarily to the general university population, and rooms directly serving these physical and wellness services facilities.

#### Subcategory

13.1 Health service facilities: Infirmaries, first aid rooms, physiotherapy rooms, doctors' offices/examining rooms, **wellness centres**, their support areas, offices and related areas within health service facilities, and first-aid rooms located elsewhere and used for the general university.

### Category 14: Common Use and Student Activity Space

#### Definition

A room or group of rooms accessible to the general university population intended for recreation, rest, or relaxation, or rooms directly serving these facilities.

#### Subcategories

14.1 Student offices and support space: Offices and support space for student government, publications, and clubs.

14.2 Recreational facilities and services: Bowling alleys, pool and billiard rooms, cinemas, television rooms, chess rooms, video games rooms, card playing areas, music listening areas, hobby rooms, **faculty clubs**, storage and equipment issue rooms, **prayer rooms**, **quiet rooms**, and pubs.

*Note: 14.3 Lounge and Service Space has been deleted and re-categorized to Category 11.*

### Category 15: Assembly and Exhibition Facilities

#### Definition

A room or group of rooms intended to serve the general university population and to be used for dramatic, musical, or devotional activities or for exhibition purposes, and rooms directly serving these facilities.

#### Subcategories

15.1 Assembly facilities: Theatres, auditoria, concert halls, chapels, and convocation halls and ancillary areas such as checkrooms, coat rooms, ticket booths, concession booths, dressing rooms, projection rooms, storage and control rooms.

15.2 Exhibition facilities: Museums, art galleries, other exhibition areas, greenhouses used for

## **Non-Assignable Space**

### **Category 16: Non-Assignable Space**

#### **Definition**

A room or area that is not available for assignment to the occupants of a building but which is necessary for the general occupation or mechanical support of one or a number of buildings.

#### **Subcategories**

16.1 Central utility plant: All boiler rooms, refrigeration plant, electrical transformer stations, cooling towers, compressing stations, water treatment facilities, recycling facilities, hazardous waste storage, incinerator, distribution systems, service tunnels and their support areas serving more than one building or the entire campus.

16.2 Other non-assignable areas: Areas used or occupied by janitorial staff (janitors' closets), mechanical and electrical spaces, and incinerator serving one building, and public washrooms.

Circulation spaces required to provide general access within a building (i.e. corridors, stairwells, elevators) to a single room or work area (including their integral support areas) e.g. circulation space is required to provide general access such as fire corridors in office landscaped areas, escape routes in warehousing areas or large congested machine shops, or routes necessary to provide physical access to some subdivision or block of space. Loading docks and service tunnels not assigned to a specific department.

**Also includes stairwells. Any other space in parking structures not counted in 16.4 (for example, stairs, electrical/mechanical and elevators) are also included.**

16.3 Inactive unassignable: Spaces which would require long lead time and extensive work to make them available for occupancy such as those left unfinished at the time of construction or those undergoing major repairs or renovations, i.e. large areas of the building being out of service for many months.

Includes space that is being renovated and not available for occupancy for the long term.

16.4 Parking Structures: This space includes underground parking areas and parking structures that have a roof. **If a parking structure does not have a roof, the top floor is not counted.**

## **Non-Formula Space**

### **Category 17: Residential Space**

#### **Definition**

A room or rooms used to accommodate one or more individuals and the ancillary areas in direct support of such rooms.

#### **Subcategories**

17.1 Residence living space: Single or multiple-occupancy bedrooms, apartments or other residential units (corridor). **Includes all space within the suite, including washrooms (if applicable).**

17.2 Residence service space: Laundry rooms, recreational areas, music rooms, games rooms, locker rooms, lounges only available to occupants of that residence, tuck shops, washrooms in residential suites, and administrative offices in direct support of residential facilities.

### **Category 18: Animal Space**

#### **Definition**

Centralized animal facilities (including long term holdings) in overall support of teaching or research and not normally integrated with or under the control of academic departments.

#### **Subcategories**

18.1 Specialized central areas: Rearing, conditioning, and holding facilities before animals are ready or required for teaching and research purposes as well as facilities for long-term holding and care of animals following surgical or other investigative treatment, located either on or off campus.

18.2 Farm-type areas: Barn structures, feed storage, and field service areas.

### **Category 19: Other University Facilities**

#### **Definition**

Any room or area not included in Categories 1 through 18.

#### **Subcategories**

19.1 Day care facilities

19.2 Rifle ranges and other space in support of military training

19.3 Merchandising facilities excluding bookstore (8.1)

19.4 Demonstration schools, and other instructional institutions for non-university students

19.5 Inactive assignable space: Spaces which are deemed to be available for immediate occupancy but which have not yet been assigned to individuals or groups, **and are therefore empty.**

19.6 Non-institutional agencies or other institutions occupying university space: **Does not include commercial space, and other institutions that are using space.**

19.7 Instructional service activities to the external community. Includes schools of continuing studies for non-academic credit.

## **Category 20: Health Science Clinical Facilities**

### **Definition**

Space owned or operated by the university that is used in direct support of teaching and research related to clinical instruction, i.e. the clinical disciplines of Medicine and Veterinary Medicine.

To be included:

1. Health care areas, such as patient bedrooms and bathrooms, nurses' stations, surgery, treatment rooms, waiting rooms and service and supply areas;
2. All space in support of clinical instruction, research and service;
3. Space where the corresponding input measures are not included in Categories 1-15 of the space formula and for which capital funding responsibility is assumed to be that of the Ministry of Health.

## Appendix B: COU Space Formula

| Category Number | Category Name                            | Group (if applicable) | Space Factor   | Input Measure   |
|-----------------|--|-----------------------|--|---|
| 1               | Classroom Facilities                     |                       | 1.11* NASM   | FTE Students  |
| 2               | Laboratory – Instructional               | W<br>X<br>Y<br>Z      | 0.8 NASM<br>0.6 NASM<br>0.5 NASM<br>0.3 NASM   | Weekly Student Laboratory Contact Hours   |
| 3               | Laboratory - Graduate & Faculty          | A<br>B<br>C<br>D<br>E | 45 NASM<br>30 NASM<br>20 NASM<br>10 NASM<br>1 NASM                                     | FTE Faculty + 0.5 FTE Other Research Appointments (Post-Doctoral Fellows and FTE Research Associates) + 0.5 FTE Graduates |
| 4               | Office – Academic                        |                       | 12* NASM   | FTE Faculty   |
|                 |  |                       | 12* NASM   | PDFs + FTE Research Associates + FTE Research Funded Support Staff (requiring office type work space)                     |
|                 |  |                       | 12* NASM   | FTE Departmental Non-Academic Staff, paid from operating fund (requiring offices)   |
|                 |  |                       | 3* NASM  | FTE Graduate Students   |
|                 |  | Office Service        | 25% of the total space generated for faculty, non-academic staff and graduate students |   |
| 5               | Library Facilities & Library Study Space | Stack                 | 0.005 NASM<br>0.004 NASM<br>0.0035 NASM  | Traditional static shelving<br>Mobile compact storage<br>Offsite/onsite high density storage                              |
|                 |  | Study                 | 0.5 NASM   | FTE students  |
|                 |  | Support               | 25% of stack and study   |   |
| 6               | Recreation /                             |                       | 0.9 NASM   | FTE students  |

| Category Number | Category Name                  | Group (if applicable) | Space Factor   | Input Measure                              |
|-----------------|--------------------------------|-----------------------|--|--|
|                 | Athletic Space                 |                       |  |  |
| 9               | Plant Maintenance              |                       | 0.015 x Total NASM Inventory   |  |
| 10              | Central Administrative Offices |                       | 12* NASM   | FTE Non-Academic Staff (requiring offices) |
|                 |                                | Office Service        | 50% x total generated for FTE non-academic staff (for admin offices) |  |
| 11              | Non-Library Study Space        |                       | 0.4 NASM   | FTE student                                |

### ***COU Space Formula: Student & Central Services Categories***

The space factor for these aggregated categories is 1.5 NASM per FTE student. In 2013-14, the space factor was changed from 2 NASM/FTE student to 1.5 to better align the standard with current space use at universities.

| Category Number | Category Name                                | Space Factor      | Input Measure |
|-----------------|--|-------------------|---------------|
| 7               | Food Service                                 | 0.5 to 0.7 NASM   | FTE student   |
| 8               | Bookstore and Other Merchandising Facilities | 0.1 to 0.2 NASM   | FTE student   |
| 12              | Central Services                             | 0.15 to 0.40 NASM | FTE student   |
| 13              | Health Service Facilities                    | 0.03 to 0.05 NASM | FTE student   |
| 14              | Common Use and Student Activity Space        | 0.5 to 0.7 NASM   | FTE student   |
| 15              | Assembly and Exhibition                      | 0.15 to 0.4 NASM  | FTE student   |



**Appendix C: List of Input Measures**

| <b>Space Category Number &amp; Name</b>      | <b>Input Measure(s)</b>   |
|--|---|
| 1 Classroom Facilities                       | FTE Students  |
| 2 Laboratory - Instructional                 | Scheduled Laboratory Weekly Student Contact Hours   |
| 3 Laboratory - Graduate and Faculty          | FTE Faculty<br>Other Research Appointments(Post-Doctoral Fellows and FTE Research Associates)<br>FTE Graduate Students  |
| 4 Academic Departmental Offices              | FTE Faculty<br>FTE Graduate Students<br>FTE Non-Academic Office Staff requiring offices, paid from Operating funds<br>FTE Research Support Staff requiring offices, paid from Research funds<br>Other Research Appointments (Post-Doctoral Fellows and FTE Research Associates) |
| 5 Library Facilities & Library Study Space   | Library Collections (Equivalent Volumes)<br>FTE Students  |
| 6 Recreation / Athletic Space                | FTE Students  |
| 7 Food Service                               | FTE Students  |
| 8 Bookstore & Other Merchandising Facilities | FTE Students  |
| 9 Plant Maintenance                          | Total Net Assignable Inventory (Categories 1-15 and 17-20)  |
| 10 Administrative Offices                    | FTE Non-Academic Office Staff   |
| 11 Non-Library Study Space                   | FTE Students  |
| 12 Central Services                          | FTE Students  |
| 13 Health Service Facilities                 | FTE Students  |
| 14 Common Use & Student Activity Space       | FTE Students  |
| 15 Assembly and Exhibition Facilities        | FTE Students  |

## Appendix D: Definitions

### Building Blocks

Series of seven COU publications that were published between 1972 and 1988. These publications led to the development of the current COU space standards. See [Appendix F](#) for a list of the publications.

### Circulation Area

Circulation area is that which is required for physical access to some subdivision of space – whether or not enclosed partitions.

Single rooms or work areas, plus integral support areas which serve a single purpose, (for example, a block of book stacks) should not include any spaces within them as Circulation Area.

### Clinical Facilities (reported in Category 20)

The inventory of universities with programs in health sciences may include spaces which are used as hospitals or may house clinical staff usually located in hospitals.

Category 20 is space that is used in direct support of instruction, research and service for clinical health science disciplines that is, related to clinical instruction in the clinical disciplines of Medicine and Veterinary Medicine. This will include all areas used for patient care, such as patient bedrooms and bathrooms, nurses; stations, surgery, treatment rooms, waiting rooms, and service and supply areas.

The space inventory should relate only to clinical space owned and operated by the university.

### Double Cohort

In the academic year 1998-99 the provincial government announced the elimination of Grade 13, resulting in two cohorts (double cohort) of secondary school students (graduates of the old five-year and new four-year curriculum) both seeking university admission at the same time, with a peak effect on university enrolments between 2001-02 and 2004-05.

### Faculty (FTE)

The university's faculty count is to include all persons, up to and including department heads or chairs, holding an academic appointment and involved in teaching, who receive remuneration via the university from all salary funding sources.

The university designates each member of the faculty as full-time or part-time based on appointment.

### Formula Space

Usable or assignable space for which space standards could normally be developed. The formula categories provide for the full range of functions and services needed in a contemporary university. There are 15 categories of formula space: classroom, undergraduate laboratory, research laboratory, academic offices, library, athletic, food services, bookstore, plant

maintenance, administrative offices, AV/TV, central services, health services, student activity space and assembly space.

### **Generated Space**

Generated space is the space the institution should have, based on the product of the input measure and the COU space factor for each space category.

### **Gross Area**

Gross area is defined as the sum of the floor areas included within the outside faces of exterior walls for all stories, or areas, which have floor surfaces.

### **Input Measure**

Input Measures are used in the calculation of space requirements for the first 15 of the categories, for which quantitative space factors have been determined.

Input Measures include: student enrolment, faculty, research appointments, and non-academic staff full-time equivalent positions, laboratory contact hours, and equivalent volumes in the library calculations.

### **Inventory / Generated (I/G)**

The ratio of actual Inventory (I) and the inventory Generated (G) by COU space factors.

### **Laboratory Weekly Student Contact Hour (LWSCH)**

The total weekly student contact hours of laboratory instruction offered by a university as part of a program of studies leading to a degree or diploma. The contact hours are computed as the product of the course enrolment and the hours of **scheduled instruction** received by each enrolled student during a typical academic week in a 'laboratory' setting.

Laboratory instruction pertains to activity facilitated by demonstration or experimentation requiring additional equipment not ordinarily available in classrooms.

A contact hour is the time that the instructor of the course is supervising a formal laboratory session in a specialized teaching facility. Make up hours, or project time over and above formal instruction time are not counted (for example, studio or musical practice where no instruction is given).

### **Library Collections (Equivalent Volumes)**

The library materials identified in the university library catalogue and contained in the table in Appendix A: Category 5 are to be included at the stated volume equivalency rate.

- **Equivalent volumes:** An equivalent volume represents one bound volume. Other library materials are converted into bound volumes. Materials are given in terms of 160 bound volumes since 160 bound volumes represents a standard stack – a single faced section with dimensions approximately 7.5 feet high, with six or seven shelves, 3 feet wide.

- See [Appendix A \(Category 5: Library Facilities & Library Study Space\)](#) for details of volume equivalencies.

### **Net Assignable Square Metres (NASM)**

The amount of area or net assignable square metres (NASM) is the amount of area, which can be used by the occupants of the building.

NASM is the sum of all areas on all floors of a building assigned to, or available for assignment to, an occupant, including every type of space functionally usable by an occupant (except Custodial, Circulation and Mechanical area).

Net assignable space is counted for Categories 1-20, excluding Category 16

### **Non-Academic Office Staff (FTE) and Research Funded Support Staff (FTE)**

The full-time equivalent of all filled established positions for **administrative, professional and management staff** with appointments of at least three months' duration as of 1 October. This will include staff working in offices in the following areas: research funded support staff (category 4.2), operating funded non-academic staff (category 4.4), library staff (category 5) and central administrative staff (category 10.1). Staff of ancillary operations, are excluded. Technicians requiring offices are included in category 4.2 if paid from research funding and in category 4.4 if paid from operating funds. If technicians are lab based and do not require office space they should be excluded.

### **Non-Assignable Space**

A room or area that is not available for assignment to the occupants of a building, but that is necessary for the general occupation or mechanical support of one or a number of buildings. Non-assignable space includes central utility plant, circulation space, janitorial, mechanical and electrical spaces, public washrooms, parking structures and inactive unassignable space. This space is counted on Category 16.

See [Appendix A: 16.0 Non-Assignable Space](#) for a more detailed definition.

### **Non-Formula Space**

These are highly specialized facilities generally of a unique nature. There are four (4) categories of non-formula space, which are reported under categories 17 through 20. They are: residence, animal space, other facilities and health science clinical facilities.

### **Ontario Ministry**

Ontario Ministry refers to the Ontario Ministry responsible for postsecondary education. Until February 1993, it was called Ministry of Colleges and Universities; from February 1993 until July 1999 it was called Ministry of Education and Training; from July 1999 to July 2016 it was called Ministry of Training, Colleges and Universities; from July 2016 to present it is called the Ministry of Advanced Education and Skills Development.

### **Other Research Appointments (FTE)**

Generators of research who are not regular faculty as defined in FTE Faculty, but who have similar research space requirements. This category includes post-doctoral fellows at any salary, and research associates who have equivalent-to-faculty research appointments. The annualized salary paid to a research associate via the university (irrespective of funding source) is normally equal to or higher than an academic appointment. The count date should be 1 October, or another date that accurately reflects demand during the Fall session. Since researchers who are at the university for a short time will normally not require separate space, the count should be limited to appointments of at least three months' duration.

This input measure is for staff appointed who “generate” research, who are originating and directing their own research, or are co-investigators. The staff who are hired to assist in their research are then accommodated with the space generated and are also counted separately under Research Funded Staff.

### **Phantom Space**

Phantom space is defined as the division of space within an open area where means of egress must be clearly established as corridor space rather than net assignable (NASM). Such space is usually generated due to code requirements to provide an unobstructed passage through an open area.

Examples of phantom space are:

1. **Library stack area:** The space occupied by book stacks and the aisles serving the stacks. However, if an aisle exists, whose purpose is to provide a path through the room rather than access to the stacks, then this aisle is to be considered a corridor (Category 16) even though there are no actual walls bounding this corridor.
2. **Open concept office:** A large open office suite is divided by system furniture into individual work cubicles. To accurately describe the use of the large office suite it is necessary to recognize the office cubicles (Category 10 or 4) and the circulation space which permits movement through the suite but is not part of any specific function in the suite (Category 16).

### **Space (Actual)**

This refers to the inventory of space reported by each institution.

### **Space Factor**

A space factor is a multiplier resulting from the interaction of standards used for a particular type of space.

### **Space Formula / Standards**

A space standard is a common measurement that may be used to establish a goal for utilization, or allocation of space.

### **Students (FTE)**

1. FTE Undergraduate Students: The definitions for student enrolment currently contained in the MTCU Operating Formula Manual will govern the input measures as they pertain to students. Thus, the FTE student count will be consistent with the numbers reported to the Ministry as of November 1.
2. FTE Graduate Students: See definition for FTE Undergraduate Students.

Federated and affiliated institutions (both Arts & Science and Theological) are included as of November 1, 1992.

The number of FTE students reported will be the sum of:

1. eligible plus ineligible fall term FFTE undergraduate students x 2; and
2. eligible plus ineligible GFTE graduate full-time equivalent) graduate students.

### **SuperBuild**

In the 1999 provincial budget, the government announced the creation of SuperBuild, the largest capital investment in Ontario's postsecondary sector in more than 30 years, to help colleges and universities construct new academic buildings and upgrade existing teaching facilities to accommodate the growing number of students.

## Appendix E: Program Classification Scheme

### ***Class Lab Program Classification***

This list is sorted numerically by CIP code number for class lab groups. It includes only CIP programs to the second decimal. The [full listing of CIP programs](#) includes a further division of programs.

| <b>CIP Code</b> | <b>CIP Name</b>   | <b>Category 2 Class Labs: Group</b> | <b>Assigned Space Factor</b> |
|-----------------|---|-------------------------------------|------------------------------|
| 1.01            | Agricultural business and management  | W                                   | 0.8                          |
| 1.09            | Animal sciences   | W                                   | 0.8                          |
| 1.10            | Food science and technology   | Y                                   | 0.5                          |
| 1.11            | Plant sciences  | Y                                   | 0.5                          |
| 3.01            | Natural resources conservation and research                                 | Y                                   | 0.5                          |
| 3.05            | Forestry  | X                                   | 0.6                          |
| 4.02            | Architecture  | X                                   | 0.6                          |
| 4.03            | City/urban, community and regional planning                                 | Y                                   | 0.5                          |
| 4.04            | Environmental design/architecture   | X                                   | 0.6                          |
| 4.06            | Landscape architecture  | X                                   | 0.6                          |
| 5.01            | Area studies  | Z                                   | 0.3                          |
| 5.02            | Ethnic, cultural minority, gender and group studies                         | Z                                   | 0.3                          |
| 5.99            | Area, ethnic, cultural, gender, and group studies, other                    | Z                                   | 0.3                          |
| 9.01            | Communication and media studies   | Z                                   | 0.3                          |
| 9.04            | Journalism  | Z                                   | 0.3                          |
| 9.07            | Radio, television and digital communication                                 | X                                   | 0.6                          |
| 9.99            | Communication, journalism and related programs, other                       | Z                                   | 0.3                          |
| 10.03           | Graphic communications  | X                                   | 0.6                          |
| 11.01           | Computer and information sciences, general                                  | Z                                   | 0.3                          |
| 11.07           | Computer science  | Z                                   | 0.3                          |
| 11.10           | Computer/information technology administration and management               | X                                   | 0.6                          |
| 13.01           | Education, general  | Y                                   | 0.5                          |
| 13.04           | Educational administration and supervision                                  | Y                                   | 0.5                          |
| 13.12           | Teacher education and professional development, specific levels and methods | Y                                   | 0.5                          |
| 13.13           | Teacher education and professional development, specific subject areas      | Y                                   | 0.5                          |
| 13.14           | Teaching English or French as a second or foreign language                  | Y                                   | 0.5                          |
| 13.99           | Education, other  | Y                                   | 0.5                          |
| 14.01           | Engineering, general  | W                                   | 0.8                          |
| 14.02           | Aerospace, aeronautical and astronautical/space engineering                 | W                                   | 0.8                          |

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| <b>CIP Code</b> | <b>CIP Name</b>  | <b>Category 2 Class Labs: Group</b> | <b>Assigned Space Factor</b> |
|-----------------|--|-------------------------------------|------------------------------|
| 14.05           | Bioengineering and biomedical engineering                              | W                                   | 0.8                          |
| 14.07           | Chemical engineering   | W                                   | 0.8                          |
| 14.08           | Civil engineering  | W                                   | 0.8                          |
| 14.09           | Computer engineering   | X                                   | 0.6                          |
| 14.10           | Electrical, electronics and communications engineering                 | X                                   | 0.6                          |
| 14.12           | Engineering physics/applied physics                                    | X                                   | 0.6                          |
| 14.13           | Engineering science  | X                                   | 0.6                          |
| 14.14           | Environmental/environmental health engineering                         | W                                   | 0.8                          |
| 14.18           | Materials engineering  | W                                   | 0.8                          |
| 14.19           | Mechanical engineering   | W                                   | 0.8                          |
| 14.21           | Mining and mineral engineering   | W                                   | 0.8                          |
| 14.23           | Nuclear engineering  | W                                   | 0.8                          |
| 14.27           | Systems engineering  | X                                   | 0.6                          |
| 14.35           | Industrial engineering   | W                                   | 0.8                          |
| 14.36           | Manufacturing engineering  | W                                   | 0.8                          |
| 14.99           | Engineering, other   | W                                   | 0.8                          |
| 15.03           | Electrical and electronic engineering technologies/technicians         | X                                   | 0.6                          |
| 15.05           | Environmental control technologies/technicians                         | X                                   | 0.6                          |
| 15.12           | Computer engineering technologies/technicians                          | W                                   | 0.8                          |
| 15.15           | Engineering-related fields   | W                                   | 0.8                          |
| 16.01           | Linguistic, comparative and related language studies and services      | Z                                   | 0.3                          |
| 16.05           | Germanic languages, literatures and linguistics                        | Z                                   | 0.3                          |
| 16.09           | Romance languages, literatures and linguistics                         | Z                                   | 0.3                          |
| 16.12           | Classics and classical languages, literatures and linguistics, general | Z                                   | 0.3                          |
| 16.99           | Aboriginal and foreign languages, literatures and linguistics, other   | Z                                   | 0.3                          |
| 19.05           | Foods, nutrition and related services                                  | Y                                   | 0.5                          |
| 19.07           | Human development, family studies and related services                 | Z                                   | 0.3                          |
| 19.09           | Apparel and textiles   | X                                   | 0.6                          |
| 22.00           | Non-professional general legal studies (undergraduate)                 | Z                                   | 0.3                          |
| 22.01           | Law (LLB, JD, BCL)   | Z                                   | 0.3                          |
| 23.01           | English language and literature, general                               | Z                                   | 0.3                          |
| 24.01           | Liberal arts and sciences, general studies and humanities              | Z                                   | 0.3                          |
| 25.01           | Library science and administration                                     | Z                                   | 0.3                          |
| 26.01           | Biology, general   | X                                   | 0.6                          |
| 26.02           | Biochemistry/biophysics and molecular biology                          | X                                   | 0.6                          |
| 26.03           | Botany/plant biology   | X                                   | 0.6                          |



| <b>CIP Code</b> | <b>CIP Name</b>  | <b>Category 2 Class Labs: Group</b> | <b>Assigned Space Factor</b> |
|-----------------|--|-------------------------------------|------------------------------|
| 26.04           | Cell/cellular biology and anatomical sciences          | X                                   | 0.6                          |
| 26.07           | Zoology/animal biology                                 | X                                   | 0.6                          |
| 26.08           | Genetics   | X                                   | 0.6                          |
| 26.09           | Physiology, pathology and related sciences             | X                                   | 0.6                          |
| 26.10           | Pharmacology and toxicology                            | X                                   | 0.6                          |
| 26.12           | Biotechnology  | W                                   | 0.8                          |
| 26.13           | Ecology, evolution, systematics and population biology | X                                   | 0.6                          |
| 26.15           | Neurobiology and neurosciences                         | X                                   | 0.6                          |
| 27.01           | Mathematics  | Z                                   | 0.3                          |
| 27.03           | Applied mathematics                                    | Z                                   | 0.3                          |
| 27.05           | Statistics   | Z                                   | 0.3                          |
| 27.99           | Mathematics and Statistics, Other                      | Z                                   | 0.3                          |
| 30.01           | Biological and physical sciences                       | X                                   | 0.6                          |
| 30.06           | Systems science and theory                             | X                                   | 0.6                          |
| 30.08           | Mathematics and computer science                       | Z                                   | 0.3                          |
| 30.18           | Natural sciences                                       | X                                   | 0.6                          |
| 30.19           | Nutrition sciences                                     | Y                                   | 0.5                          |
| 30.20           | Global/international studies                           | Z                                   | 0.3                          |
| 30.22           | Classical and ancient studies                          | Z                                   | 0.3                          |
| 30.23           | Intercultural/multicultural and diversity studies      | Z                                   | 0.3                          |
| 30.25           | Cognitive science                                      | X                                   | 0.6                          |
| 30.33           | Sustainability studies                                 | X                                   | 0.6                          |
| 30.99           | Multidisciplinary/interdisciplinary studies, other     | X                                   | 0.6                          |
| 31.01           | Parks, recreation and leisure studies                  | Y                                   | 0.5                          |
| 31.05           | Health and physical education/fitness                  | Y                                   | 0.5                          |
| 38.01           | Philosophy, logic and ethics                           | Z                                   | 0.3                          |
| 38.02           | Religion/religious studies                             | Z                                   | 0.3                          |
| 39.04           | Religious education                                    | Z                                   | 0.3                          |
| 40.01           | Physical sciences, general                             | X                                   | 0.6                          |
| 40.02           | Astronomy and astrophysics                             | X                                   | 0.6                          |
| 40.05           | Chemistry  | X                                   | 0.6                          |
| 40.06           | Geological and Earth sciences/geosciences              | X                                   | 0.6                          |
| 40.08           | Physics  | X                                   | 0.6                          |
| 41.00           | Science technologies/technicians, general              | X                                   | 0.6                          |
| 42.01           | Psychology, general                                    | Y                                   | 0.5                          |
| 43.01           | Criminal justice and corrections                       | Z                                   | 0.3                          |
| 44.00           | Human services, general                                | Z                                   | 0.3                          |
| 44.04           | Public administration                                  | Z                                   | 0.3                          |

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| <b>CIP Code</b> | <b>CIP Name</b>   | <b>Category 2 Class Labs: Group</b> | <b>Assigned Space Factor</b> |
|-----------------|---|-------------------------------------|------------------------------|
| 44.07           | Social work   | Z                                   | 0.3                          |
| 45.01           | Social sciences, general  | Z                                   | 0.3                          |
| 45.02           | Anthropology  | Y                                   | 0.5                          |
| 45.03           | Archaeology   | Y                                   | 0.5                          |
| 45.04           | Criminology   | Z                                   | 0.3                          |
| 45.05           | Demography and population studies   | Y                                   | 0.5                          |
| 45.06           | Economics   | Z                                   | 0.3                          |
| 45.07           | Geography and cartography   | Y                                   | 0.5                          |
| 45.09           | International relations and national security studies                             | Z                                   | 0.3                          |
| 45.10           | Political science and government  | Z                                   | 0.3                          |
| 45.11           | Sociology   | Z                                   | 0.3                          |
| 45.99           | Social sciences, other  | Z                                   | 0.3                          |
| 50.01           | Visual, digital and performing arts, general                                      | X                                   | 0.6                          |
| 50.03           | Dance   | X                                   | 0.6                          |
| 50.04           | Design and applied arts   | X                                   | 0.6                          |
| 50.05           | Drama/theatre arts and stagecraft   | X                                   | 0.6                          |
| 50.06           | Film/video and photographic arts  | X                                   | 0.6                          |
| 50.07           | Fine arts and art studies   | X                                   | 0.6                          |
| 50.09           | Music   | X                                   | 0.6                          |
| 50.99           | Visual and performing arts, other   | X                                   | 0.6                          |
| 51.00           | Health services/allied health/health sciences, general                            | X                                   | 0.6                          |
| 51.02           | Communication disorders sciences and services                                     | X                                   | 0.6                          |
| 51.04           | Dentistry   | X                                   | 0.6                          |
| 51.07           | Health and medical administrative services  | Z                                   | 0.3                          |
| 51.09           | Allied health diagnostic, intervention and treatment professions                  | X                                   | 0.6                          |
| 51.12           | Medicine (MD)   | X                                   | 0.6                          |
| 51.17           | Optometry (OD)  | X                                   | 0.6                          |
| 51.20           | Pharmacy, pharmaceutical sciences and administration                              | X                                   | 0.6                          |
| 51.22           | Public health   | X                                   | 0.6                          |
| 51.23           | Rehabilitation and therapeutic professions  | X                                   | 0.6                          |
| 51.24           | Veterinary medicine (DVM)   | W                                   | 0.8                          |
| 51.25           | Veterinary biomedical and clinical sciences                                       | W                                   | 0.8                          |
| 51.34           | Alternative and complementary medicine and medical systems                        | X                                   | 0.6                          |
| 51.38           | Registered nursing, nursing administration, nursing research and clinical nursing | Z                                   | 0.3                          |
| 51.99           | Health professions and related clinical sciences, other                           | X                                   | 0.6                          |
| 52.01           | Business/commerce, general  | Z                                   | 0.3                          |

| <b>CIP Code</b> | <b>CIP Name</b>                                    | <b>Category 2 Class Labs: Group</b> | <b>Assigned Space Factor</b> |
|-----------------|--|-------------------------------------|------------------------------|
| 52.02           | Business administration, management and operations | Z                                   | 0.3                          |
| 52.03           | Accounting and related services                    | Z                                   | 0.3                          |
| 52.04           | Business operations support and assistant services | Z                                   | 0.3                          |
| 52.07           | Entrepreneurial and small business operations      | Z                                   | 0.3                          |
| 52.08           | Finance and financial management services          | Z                                   | 0.3                          |
| 52.09           | Hospitality administration/management              | Z                                   | 0.3                          |
| 52.10           | Human resources management and services            | Z                                   | 0.3                          |
| 52.11           | International business/trade/commerce              | Z                                   | 0.3                          |
| 52.12           | Management information systems and services        | Z                                   | 0.3                          |
| 52.14           | Marketing  | Z                                   | 0.3                          |
| 54.01           | History  | Z                                   | 0.3                          |
| 55.01           | French language and literature, general            | Z                                   | 0.3                          |

### ***Research Lab Program Classification***

This list is sorted numerically by CIP code number for research lab groups.

| <b>CIP Code</b> | <b>CIP Name</b>  | <b>Category 3 Research Labs: Group</b> | <b>Assigned Space Factor</b> |
|-----------------|--|--|------------------------------|
| 1.01            | Agricultural business and management                     | A                                      | 45                           |
| 1.09            | Animal sciences  | A                                      | 45                           |
| 1.10            | Food science and technology                              | C                                      | 20                           |
| 1.11            | Plant sciences   | A                                      | 45                           |
| 3.01            | Natural resources conservation and research              | D                                      | 10                           |
| 3.05            | Forestry   | B                                      | 30                           |
| 4.02            | Architecture   | E                                      | 1                            |
| 4.03            | City/urban, community and regional planning              | D                                      | 10                           |
| 4.04            | Environmental design/architecture                        | E                                      | 1                            |
| 4.06            | Landscape architecture                                   | E                                      | 1                            |
| 5.01            | Area studies   | E                                      | 1                            |
| 5.02            | Ethnic, cultural minority, gender, and group studies     | E                                      | 1                            |
| 5.99            | Area, ethnic, cultural, gender, and group studies, other | E                                      | 1                            |
| 9.01            | Communication and media studies                          | E                                      | 1                            |
| 9.04            | Journalism   | E                                      | 1                            |
| 9.07            | Radio, television and digital communication              | E                                      | 1                            |
| 9.09            | Public relations, advertising and applied communication  | E                                      | 1                            |
| 9.10            | Publishing   | E                                      | 1                            |
| 9.99            | Communication, journalism and related programs, other    | E                                      | 1                            |

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| <b>CIP Code</b> | <b>CIP Name</b>   | <b>Category 3 Research Labs: Group</b> | <b>Assigned Space Factor</b> |
|-----------------|---|--|------------------------------|
| 10.03           | Graphic communications  | E                                      | 1                            |
| 11.01           | Computer and information sciences, general                                  | D                                      | 10                           |
| 11.04           | Information science/studies   | E                                      | 1                            |
| 11.07           | Computer science  | D                                      | 10                           |
| 11.10           | Computer/information technology administration and management               | E                                      | 1                            |
| 13.01           | Education, general  | E                                      | 1                            |
| 13.03           | Curriculum and instruction  | E                                      | 1                            |
| 13.04           | Educational administration and supervision                                  | E                                      | 1                            |
| 13.12           | Teacher education and professional development, specific levels and methods | E                                      | 1                            |
| 13.14           | Teaching English or French as a second or foreign language                  | E                                      | 1                            |
| 13.99           | Education, other  | E                                      | 1                            |
| 14.01           | Engineering, general  | B                                      | 30                           |
| 14.02           | Aerospace, aeronautical and astronautical/space engineering                 | B                                      | 30                           |
| 14.05           | Bioengineering and biomedical engineering                                   | C                                      | 20                           |
| 14.07           | Chemical engineering  | B                                      | 30                           |
| 14.08           | Civil engineering   | B                                      | 30                           |
| 14.09           | Computer engineering  | D                                      | 10                           |
| 14.10           | Electrical, electronics and communications engineering                      | C                                      | 20                           |
| 14.12           | Engineering physics/applied physics   | A                                      | 45                           |
| 14.14           | Environmental/environmental health engineering                              | B                                      | 30                           |
| 14.18           | Materials engineering   | B                                      | 30                           |
| 14.19           | Mechanical engineering  | B                                      | 30                           |
| 14.21           | Mining and mineral engineering  | A                                      | 45                           |
| 14.23           | Nuclear engineering   | A                                      | 45                           |
| 14.27           | Systems engineering   | D                                      | 10                           |
| 14.35           | Industrial engineering  | B                                      | 30                           |
| 14.36           | Manufacturing engineering   | C                                      | 20                           |
| 14.99           | Engineering, other  | B                                      | 30                           |
| 15.00           | Engineering technology, general   | B                                      | 30                           |
| 15.12           | Computer engineering technologies/technicians                               | A                                      | 45                           |
| 15.15           | Engineering-related fields  | B                                      | 30                           |
| 15.16           | Nanotechnology  | A                                      | 45                           |
| 16.01           | Linguistic, comparative and related language studies and services           | E                                      | 1                            |
| 16.05           | Germanic languages, literatures and linguistics                             | E                                      | 1                            |
| 16.09           | Romance languages, literatures and linguistics                              | E                                      | 1                            |
| 16.12           | Classics and classical languages, literatures and linguistics, general      | E                                      | 1                            |

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| <b>CIP Code</b> | <b>CIP Name</b>  | <b>Category 3 Research Labs: Group</b> | <b>Assigned Space Factor</b> |
|-----------------|--|--|------------------------------|
| 16.99           | Aboriginal and foreign languages, literatures and linguistics, other | E                                      | 1                            |
| 19.05           | Foods, nutrition and related services                                | C                                      | 20                           |
| 19.07           | Human development, family studies and related services               | E                                      | 1                            |
| 19.09           | Apparel and textiles   | E                                      | 1                            |
| 22.00           | Non-professional general legal studies (undergraduate)               | E                                      | 1                            |
| 22.01           | Law (LLB, JD, BCL)   | E                                      | 1                            |
| 23.01           | English language and literature, general                             | E                                      | 1                            |
| 24.01           | Liberal arts and sciences, general studies and humanities            | E                                      | 1                            |
| 25.01           | Library science and administration                                   | E                                      | 1                            |
| 26.01           | Biology, general   | A                                      | 45                           |
| 26.02           | Biochemistry/biophysics and molecular biology                        | A                                      | 45                           |
| 26.03           | Botany/plant biology, general  | A                                      | 45                           |
| 26.04           | Cell/cellular biology and anatomical sciences                        | A                                      | 45                           |
| 26.05           | Microbiological sciences and immunology                              | A                                      | 45                           |
| 26.07           | Zoology/animal biology   | A                                      | 45                           |
| 26.08           | Genetics   | A                                      | 45                           |
| 26.09           | Physiology, pathology and related sciences                           | A                                      | 45                           |
| 26.10           | Pharmacology and toxicology  | A                                      | 45                           |
| 26.12           | Biotechnology  | A                                      | 45                           |
| 26.13           | Ecology, evolution, systematics and population biology               | A                                      | 45                           |
| 26.14           | Molecular medicine   | A                                      | 45                           |
| 26.15           | Neurobiology and neurosciences                                       | A                                      | 45                           |
| 27.01           | Mathematics  | E                                      | 1                            |
| 27.03           | Applied mathematics  | E                                      | 1                            |
| 27.05           | Statistics   | E                                      | 1                            |
| 27.99           | Mathematical Sciences  | E                                      | 1                            |
| 30.01           | Biological and Physical Sciences                                     | A                                      | 45                           |
| 30.05           | Peace studies and conflict resolution                                | E                                      | 1                            |
| 30.08           | Mathematics and computer science                                     | A                                      | 45                           |
| 30.13           | Medieval and renaissance studies                                     | E                                      | 1                            |
| 30.18           | Natural sciences   | D                                      | 10                           |
| 30.19           | Nutrition science  | C                                      | 20                           |
| 30.20           | International/global studies   | E                                      | 1                            |
| 30.22           | Classical and ancient studies  | E                                      | 1                            |
| 30.23           | Intercultural/multicultural and diversity studies                    | E                                      | 1                            |
| 30.25           | Cognitive science  | A                                      | 45                           |
| 30.33           | Sustainability studies   | D                                      | 10                           |
| 30.99           | Multidisciplinary/interdisciplinary studies, other                   | E                                      | 1                            |

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| <b>CIP Code</b> | <b>CIP Name</b>  | <b>Category 3 Research Labs: Group</b> | <b>Assigned Space Factor</b> |
|-----------------|--|--|------------------------------|
| 31.01           | Parks, recreation and leisure studies                  | E                                      | 1                            |
| 31.05           | Health and physical education/fitness                  | D                                      | 10                           |
| 38.01           | Philosophy, logic and ethics                           | E                                      | 1                            |
| 38.02           | Religion/religious studies                             | E                                      | 1                            |
| 39.04           | Religious education                                    | E                                      | 1                            |
| 39.06           | Theological and ministerial studies                    | E                                      | 1                            |
| 40.01           | Physical sciences, general                             | A                                      | 45                           |
| 40.02           | Astronomy and astrophysics                             | A                                      | 45                           |
| 40.05           | Chemistry  | A                                      | 45                           |
| 40.06           | Geological and Earth sciences/geosciences              | A                                      | 45                           |
| 40.08           | Physics  | A                                      | 45                           |
| 40.10           | Materials sciences                                     | B                                      | 30                           |
| 42.01           | Psychology, general                                    | B                                      | 30                           |
| 42.28           | Clinical, counselling and applied psychology           | B                                      | 30                           |
| 43.01           | Forensics  | A                                      | 45                           |
| 44.00           | Human services, general                                | E                                      | 1                            |
| 44.05           | Public policy analysis                                 | E                                      | 1                            |
| 44.07           | Social work  | E                                      | 1                            |
| 45.01           | Social sciences, general                               | E                                      | 1                            |
| 45.02           | Anthropology   | C                                      | 20                           |
| 45.03           | Archaeology  | D                                      | 10                           |
| 45.04           | Criminology  | E                                      | 1                            |
| 45.05           | Demography and population studies                      | D                                      | 10                           |
| 45.06           | Economics  | E                                      | 1                            |
| 45.07           | Geography and cartography                              | D                                      | 10                           |
| 45.09           | International relations and national security studies  | E                                      | 1                            |
| 45.10           | Political science and government                       | E                                      | 1                            |
| 45.11           | Sociology  | E                                      | 1                            |
| 45.12           | Urban studies/affairs                                  | E                                      | 1                            |
| 45.99           | Social sciences, other                                 | E                                      | 1                            |
| 50.01           | Visual, digital and performing arts, general           | C                                      | 20                           |
| 50.03           | Dance  | E                                      | 1                            |
| 50.04           | Design and applied arts                                | E                                      | 1                            |
| 50.05           | Drama/theatre arts and stagecraft                      | E                                      | 1                            |
| 50.06           | Film/video and photographic arts                       | E                                      | 1                            |
| 50.07           | Fine arts and art studies                              | D                                      | 10                           |
| 50.09           | Music  | E                                      | 1                            |
| 50.99           | Visual and performing arts, others                     | E                                      | 1                            |
| 51.00           | Health services/allied health/health sciences, general | A                                      | 45                           |

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| <b>CIP Code</b> | <b>CIP Name</b>  | <b>Category 3 Research Labs: Group</b> | <b>Assigned Space Factor</b> |
|-----------------|--|--|------------------------------|
| 51.01           | Chiropractic (DC)  | B                                      | 30                           |
| 51.02           | Communication disorders sciences and services  | B                                      | 30                           |
| 51.04           | Dentistry (DDS, DMD)   | A                                      | 45                           |
| 51.07           | Health and medical administrative services   | E                                      | 1                            |
| 51.10           | Clinical/medical laboratory science/research and allied professions                                | A                                      | 45                           |
| 51.12           | Medicine (MD)  | A                                      | 45                           |
| 51.14           | Medical scientist (MS, MSc, PhD)   | A                                      | 45                           |
| 51.15           | Mental and social health services and allied professions   | A                                      | 45                           |
| 51.17           | Optometry (OD)   | A                                      | 45                           |
| 51.20           | Pharmacy, pharmaceutical sciences and administration   | B                                      | 30                           |
| 51.22           | Public health  | D                                      | 10                           |
| 51.23           | Rehabilitation and therapeutic professions   | B                                      | 30                           |
| 51.24           | Veterinary medicine (DVM)  | A                                      | 45                           |
| 51.25           | Veterinary biomedical and clinical sciences  | A                                      | 45                           |
| 51.34           | Alternative and complementary medical support services - includes direct entry midwifery (LM, CPM) | E                                      | 1                            |
| 51.38           | Registered nursing, nursing administration, nursing research and clinical nursing                  | E                                      | 1                            |
| 51.99           | Health Professions and other related clinical sciences, other                                      | A                                      | 45                           |
| 52.01           | Business/commerce, general   | E                                      | 1                            |
| 52.02           | Business administration, management and operations   | E                                      | 1                            |
| 52.03           | Accounting and related services  | E                                      | 1                            |
| 52.04           | Business operations support and assistant services   | E                                      | 1                            |
| 52.07           | Entrepreneurial and small business operations  | E                                      | 1                            |
| 52.08           | Finance and financial management services  | E                                      | 1                            |
| 52.09           | Hospitality administration/management  | E                                      | 1                            |
| 52.10           | Human resources management and services  | E                                      | 1                            |
| 52.11           | International business/trade/commerce  | E                                      | 1                            |
| 52.12           | Management information systems and services  | E                                      | 1                            |
| 52.14           | Marketing  | E                                      | 1                            |
| 52.99           | Business, management, marketing and related support services, other                                | E                                      | 1                            |
| 54.01           | History  | E                                      | 1                            |
| 55.01           | French language and literature, general  | E                                      | 1                            |
| 60.03           | Veterinary residency programs  | A                                      | 45                           |
| 60.04           | Medical residency programs - general certificates  | A                                      | 45                           |
| 60.05           | Medical residency programs - subspecialty certificates   | A                                      | 45                           |

## Appendix F: Background & History: the Development of Space Standards in Ontario

### ***The Development and Use of Space Standards: “Building Blocks”***

The COU space formula and inventory classification system were developed in the 1970s by the COU Committee on Space Standards and Reporting. They developed guidelines in 1971 as a systematic, analytical approach to evaluate the utilization of existing physical resources and to forecast future requirements. This initial work culminated in the first report, *Building Blocks: Background Studies on the Development of a Capital Formula for Ontario*. The report, produced every three years since that time, provides a detailed examination of each space category in terms of the data collected, the input measures used and the rationale for the space factors that have been adopted.

The standards, which are based on a number of variables that go beyond space metrics to include issues such as enrolment, are respected benchmarks in Ontario’s university and government sectors. For example, the formula for calculating classroom space includes the average university classroom station size, the room utilization standard and station utilization standard. Each of these components are reviewed on a regular basis to take into account changes in teaching pedagogies.

The COU Survey of Physical Facilities takes place during the winter of each third academic year. Data as of November 1 are requested, to coincide with the date for reporting of student enrolment to the Ontario government for the purposes of operating grants.

Major changes were made prior to the 1986-87 survey. In each subsequent survey, updates were made to the survey instrument and definitions to reflect changing space needs.

In the survey, each institution is asked to report current inventory in 20 space categories, and related input measures, such as student enrolment, faculty and staff full-time equivalent positions, laboratory contact hours, and equivalent volumes in the library collection. These input measures are used in the calculation of space requirements for the first 15 of the categories, for which quantitative space factors have been determined. The resulting calculations of space entitlement are used, with the data on existing inventory, in various ways. For example, COU uses the survey data to monitor changing space needs and as part of the case made to government about capital funding requirements for the university system as a whole.

Individual institutions may compare their existing inventory with space entitlement under the COU formula in proposals for capital funding for new buildings, and the COU formula (sometimes with modifications) is used in institutional planning, such as estimating the needs of a division for different types of space.

Outside agencies and institutions, including universities (for example, UBC, Dalhousie) and government ministries in British Columbia and Saskatchewan, are also users of Building Blocks. Consultants planning university facilities in Canada and in other countries frequently request COU space publications. The Canadian University Reciprocal Insurance Exchange (CURIE) uses the COU space categories as a basis for determining the value of university facilities for insurance purposes. And, since 1986-87, the Ontario Ministry has allocated funds for repair and renovation known as the Facilities Renewal Program (FRP) according to each institution's entitlement for space in the 15 formula categories.



### **COU Committee on Space Standards and Reporting**

In the late 1980's, the Committee began to coordinate the triennial survey, conduct periodic reviews of the space standards and special studies on the availability and utilization of university space. The Committee uses the detailed data collected in the survey to monitor changes in space needs, such as the changing needs of today's students. These include increasing demands for technology and non-traditional study space, as well as how changes to teaching and learning methods impact the use and design of classrooms.

Institutions refer to the "COU Building Blocks Users' Guide" as a reference to complete the survey. The Users' Guide details the space classification scheme, provides definitions and clarification on how specific space should be classified, as well as the space standards and their calculations.

A list of publications since 1991 is included below.

### **Historical Changes to the Inventory**

The following list includes major changes made to the space inventory definitions and space factors since 1991. For a list of major changes made prior to 1991, please refer to the *Inventory of Physical Facilities of Ontario Universities 2010-11* report.

| <b>Time/Period</b> | <b>Major Change or Publication</b>  |
|--------------------|---|
| January 1991       | Published: Inventory of Physical Facilities of Ontario Universities, 1989-90 (#91-1)  |
| 1992               | Published: COU Building Blocks-Users Guide (first edition)  |
| 1992-93            | Changes made starting with the 1992-93 report: <ul style="list-style-type: none"><li>• Federated and affiliated colleges are included, in response to the Ontario Ministry's funding requirements. Data on space and activities at all of these institutions are now fully integrated into the reports of their constituent universities.</li><li>• Nipissing University appears as a separate university. In previous years, Nipissing was reported as an affiliated college of Laurentian University.</li></ul> |
| December 1993      | Published: Inventory of Physical Facilities of Ontario Universities, 1992-93 (#93-5)  |
| 1995-96            | Change made starting with the 1995-96 report: <ul style="list-style-type: none"><li>• The library volume equivalencies used in the generation of stack space entitlement was reviewed in order to bring them up-to-date with changes in library materials, such as the use of CD-ROMS and on-line databases. The Committee adopted the methodology used by CARL (Canadian Association of Research Libraries).</li></ul>   |

| <b>Time/Period</b> | <b>Major Change or Publication</b>   |
|--------------------|--|
| July 1997          | Published: Inventory of Physical Facilities of Ontario Universities, 1995-96 (#330)  |
| 1998-99            | Change made starting with the 1998-99 report: <ul style="list-style-type: none"><li>• OISE is included with University of Toronto (St. George campus) data. Prior to 1998-99, OISE was included as a separate institution.</li></ul>   |
| April 2000         | Published: Inventory of Physical Facilities of Ontario Universities, 1998-99 (#670)  |
| 2001-02            | Changes made starting with the 2001-02 report: <ul style="list-style-type: none"><li>• The inventory for Dean's office (which was previously reported under Category 10 (administrative office space)), is now reported under Category 4 (academic office space).</li><li>• The assumptions used in the classroom input measure were updated to reflect the way students are being taught today. As a result, (1) the station size increased from 1.4 NASM to 1.7 NASM, (2) the utilization rate increased from 62% to 65%, and (3) the number of hours per week that a classroom is expected to be used, increased from 30 to 34 (to account for evening classes and the lengthening of the teaching day). As a result, the space factor for classrooms changed from 1.2 NASM to 1.23 NASM.</li><li>• Category 5 (Library and Study Space) has been renamed Campus Study Space &amp; Library Facilities) to reflect more accurately how this space is being utilized.</li><li>• Subcategory 12.3 (Student Computer Rooms) is now reported in Category 5 under Subcategory 5.4 (Computer-Equipped Study Space). This type of space is defined as campus-wide electronically equipped computer rooms available for students for study.</li><li>• Other Research Appointments are included in the faculty supplement calculation, Category 4.2. Also, technicians, if they occupy offices, are counted in Category 4.4</li></ul> |
| January 2003       | Published: Inventory of Physical Facilities of Ontario Universities, 2001-02 (#734)  |
| 2004-05            | Changes made starting with the 2004-05 report: <ul style="list-style-type: none"><li>• UOIT is included.</li><li>• The provision for academic support staff and service changed from 30% to 25% of the total generated for faculty and graduate students.</li></ul>  |

| <b>Time/Period</b> | <b>Major Change or Publication</b>  |
|--------------------|---|
|                    | <ul style="list-style-type: none"><li>• The provision for administrative support staff and service changed from 30% to 50% of the total generated for non-academic staff.</li><li>• Study space is reported in Category 5. Previously, it was reported in Category 12.</li><li>• Parking structures are now reported in Category 16. Previously, it was reported in Category 19.</li><li>• A number of changes to the Library/Learning Commons space were made.</li></ul>   |
| December 2005      | Published: Inventory of Physical Facilities of Ontario Universities, 2004-05 (#779)   |
| 2007-08            | Changes made starting with the 2007-08 report: <ul style="list-style-type: none"><li>• There were a number of changes made to Category 5 (Library Facilities and Campus Study Space). With the assistance of OCUL, the following changes were made:<ul style="list-style-type: none"><li>○ Changes were made to equivalent volume calculations for various types of library material.</li><li>○ The space factor for stack space changed. Traditional static shelving changed from a sliding scale depending on the number of volumes to one space factor (0.005). A new category of stack space was introduced - super high density (space factor of 0.0035) – to reflect this new mode of storing library materials.</li></ul></li><li>• Departmental research support staff offices/workspaces were moved from Category 3 to Category 4.</li></ul> |
| February 2010      | Published: Inventory of Physical Facilities of Ontario Universities, 2007-08 (#816)   |
| 2010-11            | Changes made starting with the 2010-11 report: <ul style="list-style-type: none"><li>• Northern School of Medicine (NOSM) is included.</li><li>• The Recreation/Athletic space subsidy for universities with enrolment less than 8,000 FTEs was eliminated.</li><li>• The amount of space devoted to AV/TV Facilities has declined over time. The Committee agreed to eliminate Category 11: AV/TV Facilities and report the space under Category 12.2 Central Services (Other Central Services).</li></ul>   |

| <b>Time/Period</b> | <b>Major Change or Publication</b>  |
|--------------------|---|
| June 2013          | Published: Inventory of Physical Facilities of Ontario Universities, 2010-11 (#874)   |
| 2013-14            | Changes made starting with the 2013-14 report: <ul style="list-style-type: none"><li>• The space factor for Student and Central Services was changed from 2.0 to 1.5 NASM / FTE student.</li><li>• The office space factor (academic and administrative) was changed from 13 to 12 NASM / office.</li><li>• The classroom space factor was changed from 1.23 to 1.11.</li><li>• Graduate student office space was changed from 4 to 3 NASM / office.</li><li>• The faculty supplement (15% of total FTE faculty) was eliminated.</li></ul>  |
| May 2015           | Published: Inventory of Physical Facilities of Ontario Universities, 2013-14 (#905)   |
| 2016-17            | Changes made starting with the 2016-17 report: <ul style="list-style-type: none"><li>• Category 1.0 (Classroom Facilities) has been expanded to include Active Learning Classroom space as Category 1.3. It is further divided into tiered and non-tiered ALC space.<ul style="list-style-type: none"><li>○ Classroom Service Space (formerly 1.3) has been moved to a new Category 1.4.</li></ul></li><li>• A new Category 11, Non-Library Study space, which captures data on study space outside the library. Data previously reported in Category 5.5 and 14.3 (areas reporting study space) are now included in this new category.<ul style="list-style-type: none"><li>○ 11.1: Formal library study space (formerly Category 5.5, “study space not under the jurisdiction of the university library system”, which has been removed). A space factor of 0.5 has been assigned.</li><li>○ 11.2: Informal study space (formerly Category 14.3, “lounge and lounge service,” which has been removed). A space factor of 0.4 has been assigned.</li></ul></li></ul> |

## Appendix G: Committee on Space Standards and Reporting: Contacts

Below is a list of contacts should readers of this report require assistance in interpreting individual institutional information.

| University                                    | Name and Title  | Contact Information                                   |
|---|---|---|
| Algoma University                             | Shane Maurice, Director of Physical Plant                               | shane.maurice@algomau.ca<br>705-949-2301 x4110        |
| Brock University                              | Roland Mech, Associate Director, Space Management and Planning          | rmech@brocku.ca<br>905-688-5550 x5901                 |
| Carleton University                           | Kristine Nadon, Director, Space Management and Capital Planning         | KristineNadon@cunet.carleton.ca<br>613-520-2600 x8636 |
| University of Guelph                          | Gord Gavrilovic, Manager, Space & Facility Renewal                      | gord@pr.uoguelph.ca<br>519-824-4120 x52127            |
| Université de Hearst                          | Chantal Pelletier, Responsable des immeubles                            | chantal_pelletier@uhearst.ca<br>705 372-1781x227      |
| Lakehead University                           | Shanon Arnold, Manager, Space & Capital Planning                        | sarnold@lakeheadu.ca<br>807-343-8077                  |
| Laurentian University                         | Brad Parkes, Associate Vice President, Facility Services                | bparkes@laurentian.ca<br>705- 675-1151 x1550          |
| McMaster University                           | Mohammed Attalla, Assistant Vice-President and Chief Facilities Officer | attalla@mcmaster.ca<br>905-525-9140 x23054            |
| Nipissing University                          | David Drenth, Director of Facilities                                    | daviddr@nipissingu.ca<br>705- 474-3450 x4842          |
| Northern School of Medicine                   | Joe Lipinski, Director of Finance                                       | jlipinski@nosm.ca<br>807-766-7307                     |
| OCADU   | Joanne Frisch, Capital Projects Lead                                    | jfrisch@ocadu.ca<br>416-977-6000 x4882                |
| University of Ontario Institute of Technology | Tanya Mayorga, Capital Planning Officer                                 | tanya.mayorga@uoit.ca<br>905-721-8668 x6531           |
| University of Ottawa                          | Diane Bélanger-Brisson, Facility Planning Manager                       | dianebb@uottawa.ca<br>613-562-5700 x2101              |
| Queen's University                            | Stephanie Wardman, Planner, Campus Planning & Development               | sat5@queensu.ca<br>613-533-2026 x32026                |
| Ryerson University                            | John Fauquier, Facilities Analyst                                       | jfauquie@ryerson.ca<br>416-979-5000 x4524             |
| University of Toronto                         | Brian Armstrong, Planner, Space Inventory                               | brian.armstrong@utoronto.ca<br>416-978-1333           |
| Trent University                              | Robert Ballarin, Project Manager  | rballarin@trentu.ca<br>705-748-1011 x7353             |

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| University                 | Name and Title  | Contact Information                          |
|----------------------------|---|--|
| University of Waterloo     | Scott Nicoll, Manager, Space Planning                                 | scott.nicoll@uwaterloo.ca<br>519-888-4631    |
| Western University         | George Qubty, Director, Space Planning & Management                   | gqubty@uwo.ca<br>519-661-2111 x80408         |
| Wilfrid Laurier University | Johanna Romero, Coordinator, Space Administration, Physical Resources | jromero@wlu.ca<br>519-884-1970 x3467         |
| University of Windsor      | Anna Kirby, Executive Director, Facility Services (Acting)            | Anna.Kirby@uwindsor.ca<br>519-253-3000 x4400 |
| York University            | Peter Thompson, Senior Advisor, Institutional Space Planning          | thomp@yorku.ca<br>416-736-2100 x22771        |



**For more information, please contact:**

Council of Ontario Universities  
180 Dundas Street West, Suite 1800  
Toronto, Ontario M5G 1Z8  
416-979-2165  
[cou@cou.on.ca](mailto:cou@cou.on.ca)

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