

# 2019-20 Inventory of Physical Facilities of Ontario Universities

Committee on Space Standards and Reporting

December 2021

# Council of Ontario Universities’ Triennial Inventory of Physical Facilities of Ontario Universities: 2019-20

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## 1. Introduction & Context

### Ontario's Universities: By the Numbers

- 1,500 +: Number of total university buildings/assets
- 9.3M m<sup>2</sup>: Total area of all facilities
- 44 years: Average age of university buildings
  - Oldest is from 1827
  - Include heritage, historical as well as complex research facilities and labs
  - The weighted average age is 39.3 years

Ontario's universities are continually responsive to the changing needs of students, their communities and the province.

Universities are continually adapting their physical spaces, from improving energy efficiency and reducing their carbon footprint to creating collaborative, technology-enabled spaces that help students learn. Universities are also working to improve safety and accessibility, and enhance inclusive spaces for their campus communities.

But the ability to repair, renew and transform university campuses is not without its challenges.

The university sector faces a deferred maintenance backlog of over \$4.6B as of 2020 – more than double the \$2.2B assessment in 2015.

This current and ever-growing pressure is being challenged by the COVID-19 pandemic, which has spurred conversations about the different uses of space for both students, faculty and staff.

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

The Committee also agreed to work toward gathering information on future planning standards – what are universities planning for in terms of new space and retrofit space, in order to differentiate between historical and current averages and what is needed going forward?

### 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 2019-20 report include:

- Overall, Ontario universities occupied approximately 8.7 million Net Assignable Square Metres (NASMs<sup>1</sup>) in 2019-20. Total space has increased 5.7% between 2016-17 and 2019-20, and nearly 56.8% since 2001-02.
  - In that same period, Full-Time Equivalent (FTE) student enrolment increased 6.7% between 2016-17 and 2019-20 and 29.6% since 2007-08.
  - Since 2007-08, there has been a 20.2% increase in the number of full-time faculty (FTEs).
- Actual space per full-time equivalent student<sup>2</sup> has remained relatively stable over the last decade: 8.27 NASM/FTE were reported in 2010-11 compared to 8.25 NASM/FTE in 2019-20.
- Universities are operating with 77.1% of the space they should have according to the current formula and standards. This is referred to as “generated space” in this report — space generated by the standards. This ratio of Actual Inventoried Space (“I”) to Generated Space (“G”) is consistent with the previous report’s 77.7% calculation. 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 81.4% of generated space, with Class Lab space slightly higher at 76.2% Generated space vs. 71.7% in the previous reporting period. Generated space for student experience has remained constant between 2016-17 and 2019-20 at 65.3%.
- Administrative office space has declined from 115.7% in 2016-17 to 103.6% in 2019-20.

Overall, the report demonstrates that universities are using space more efficiently, especially with regards to administrative office space, with the growth of students outpacing the growth in physical space. They are achieving some of these efficiencies by increasing collaborative, multi-purpose and short-term spaces, both when new space is being built and when existing buildings are undergoing major renovations.

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

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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 Categories 1-15; [Appendix A: Space Categories: Definitions, Sub-Categories and Formulae](#) includes a detailed overview of the categories, formulae and definitions.

## 2. Overview of the 2019-20 Inventory of Physical Facilities of Ontario Universities report

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

### 2.1. Changes made to the report

To more accurately classify programs, the 2016-17 report transitioned 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 the 2016-17 report, SPEMAJ codes were mapped to CIP codes, and will be used going forward.

As was reported in the 2016-17 report, 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 D: Program Classification Scheme](#).)

In 2019, the Committee updated space factors for several CIP Code categories to better align with actual use of space, following an analysis of current space use by program. Consequently, programs have been aligned with their closest NASM/Letter Category in order to allow for better comparability and accuracy of the generated space required by institutions. It is important to note the below space factors are derived from existing averages, rather than a future-needs assessment or a “best practice.”

As noted in the table below, many similar programs are grouped together as they have similar space requirements/needs; however, there is no singular standard for any discipline. For example, engineering spans three different space categories depending on the specific type of engineering program. Below is a summary of the changes and the sample disciplines that fall under each research lab category.

2016-17	2019-20	Sample Disciplines
A = 45 NASM	A = 45 NASM	Hard sciences, animal science and agriculture, medicine/dentistry, engineering (e.g., physics, nuclear, electrical, construction)
B = 30 NASM	B = 30 NASM	Psychology, physical sciences technicians, engineering (e.g., chemical, material, industrial, biological)
C = 20 NASM	C = 20 NASM	Nutrition and family science, astronomy, anthropology, visual arts, engineering (e.g., aerospace, agriculture, architectural)



2016-17	2019-20	Sample Disciplines
D = 10 NASM	D = 10 NASM	Visual and fine arts, natural resources/sciences, health education, engineering (e.g., computer, systems)
E = 1 NASM	E = 5 NASM	Architecture, journalism and communications, drama, teacher education, languages, mathematics, accounting
	F = 2 NASM	History, French, sociology, area studies, business administration

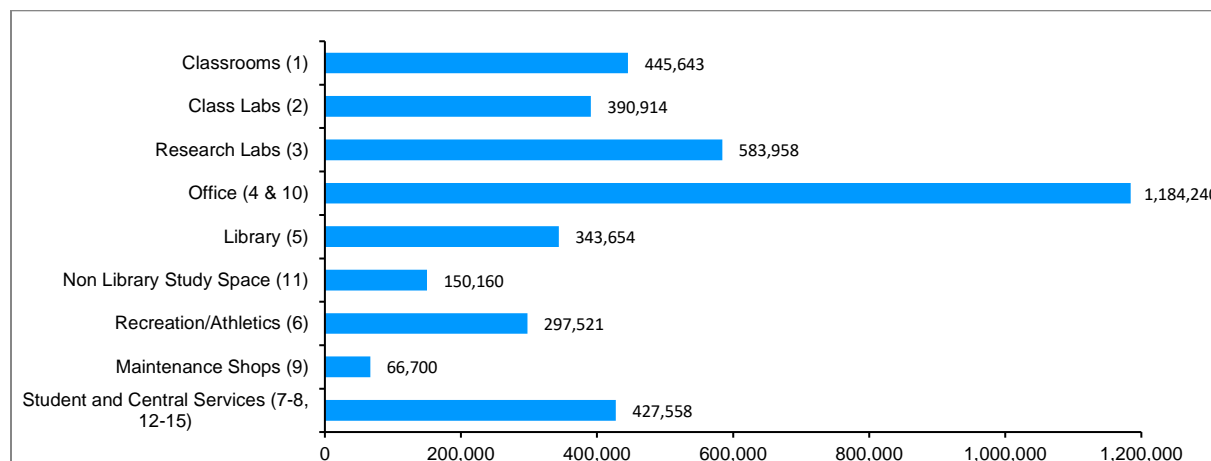
A new category, 12.3, Central student and student support services, was created to include such items as career services and related supports, student learning and/or academic success centres and support services, including accessible learning supports. Some space previously assigned in Category 4, 10 or 13 may now be classified under 12.3, so caution should be taken when comparing those categories year-over-year. Academic advising under an academic department or provided under central administration would continue to be categorized in Category 4 or 10 as appropriate.

To see a summary of the 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, 2019-20 (NASMs)<sup>3</sup>**



Office Space comprises the largest amount of space, followed by Research Labs and Classrooms.

**Figure 2: Actual inventory as a percentage of generated space by functional area, 2019-20 (“% I / G”)**

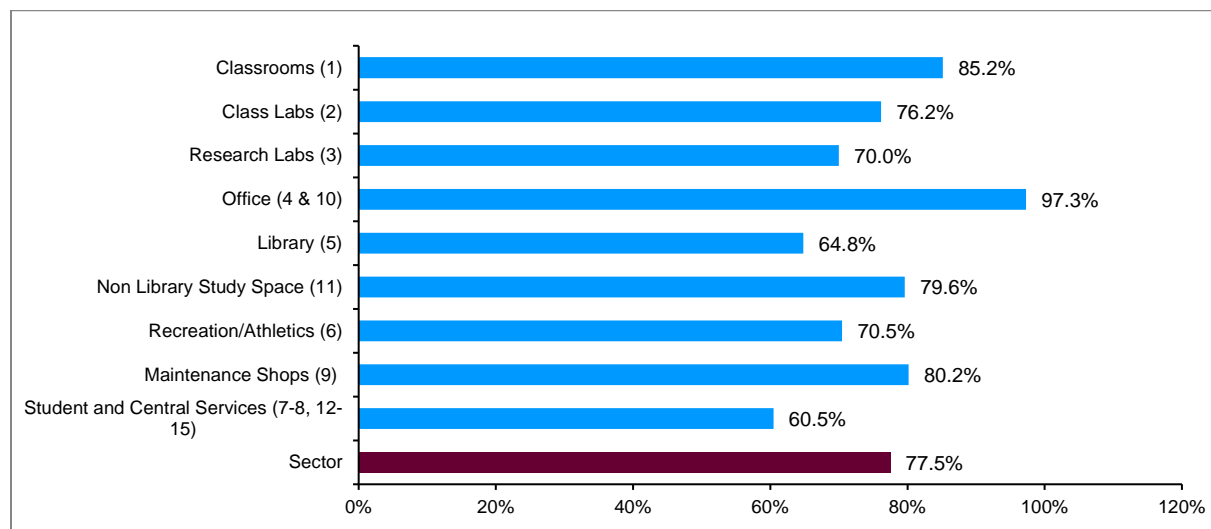
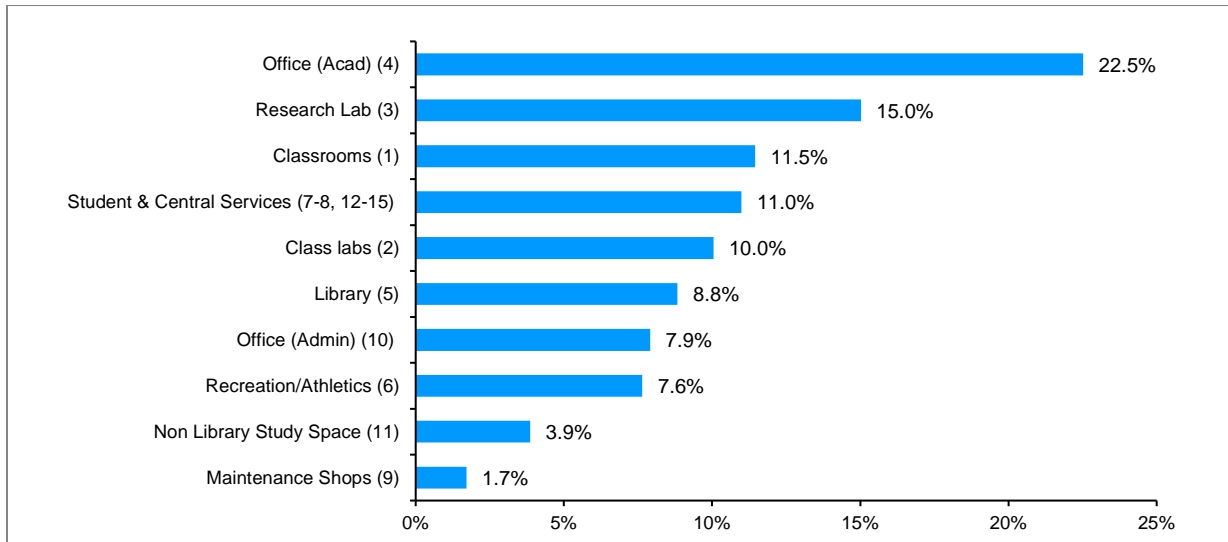


Figure 2 shows that, with the exception of office space, universities are functioning with less space than they should, according to the standards. Of note, Library and Student and Central Services are below 70%.

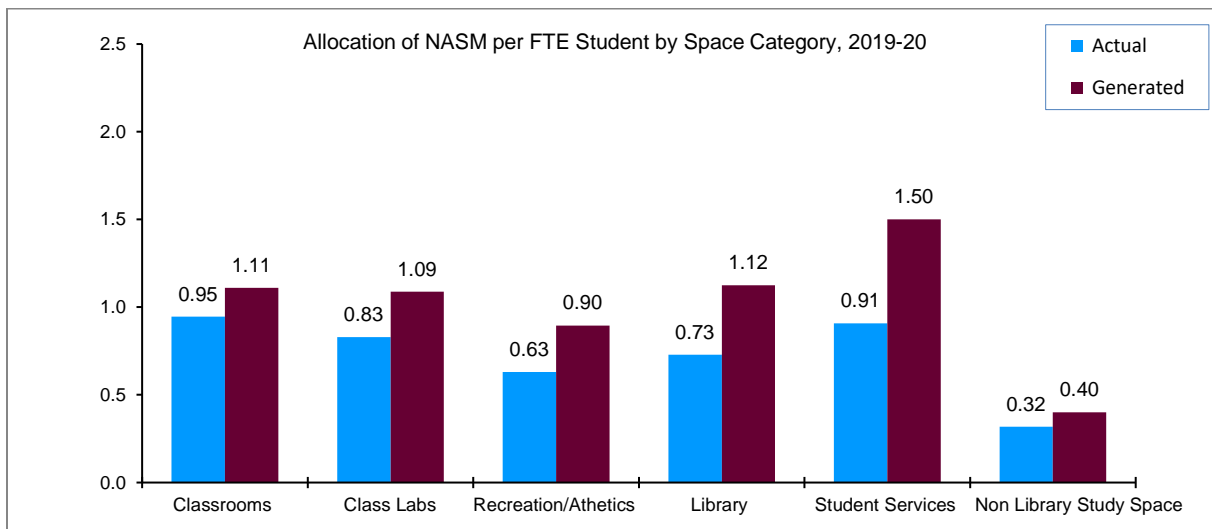
**Figure 3: Distribution of actual space by major “formula categories,” 2019-20**



“Formula space” is usable space where space factors can normally be developed, like classrooms, research labs and office space (See [Appendix C: 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 67.9% of total space, a slight drop from 68.4% reported in 2016-17.

**Figure 4: Space per student Full-time Equivalent (FTE) by category, 2019-20 (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 gap between actual and generated space per FTE.

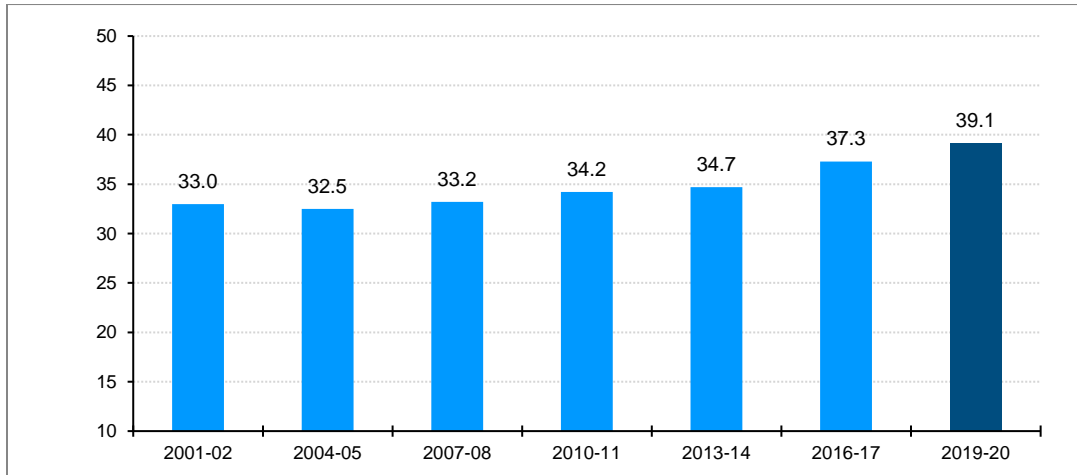
**Table 1: SYSTEM SUMMARY – Actual Inventory of Space and Generated (Required) Space as Measured by COU Space Standards, 2019-20**

SYSTEM SUMMARY							
	Input Measure	Space Factor	Generated Space	Inventory	% I / G	2016-17 % I / G	
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS (1)	471,484.7	1.11	523,348.00	445,643.2	85.2	82.8	
CLASS LABS (2)							
Lab Contact Hours W	88,227.9	0.8	70,582.3	35,261.3			
Lab Contact Hours X	451,712.1	0.6	271,027.3	219,299.5			
Lab Contact Hours Y	225,084.5	0.5	112,542.3	82,069.1			
Lab Contact Hours Z	196,909.2	0.3	59,072.7	48,380.0			
Unclassified	5,675.2			5,904.5			
Total Class Lab	967,608.9		513,224.6	390,914.4	76.2	71.7	
RESEARCH LABS (3)							
Research Disciplines A	7,808.0	45.0	351,360.9	285,589.3			
Research Disciplines B	8,310.1	30.0	249,303.0	136,474.2			
Research Disciplines C	4,324.5	20.0	86,489.1	51,294.3			
Research Disciplines D	4,963.1	10.0	49,630.7	57,021.6			
Research Disciplines E	14,859.2	5.0	74,295.8	26,720.9			
Research Disciplines F	11,545.0	2.0	23,090.0	10,347.7			
Unclassified	48,710.8			16,510.3			
Total Research	100,520.6		834,169.4	583,958.3	70.0	72.1	
OFFICE - ACADEMIC (4)							
Total FTE Faculty	22,557.8	12.0	270,693.3	312,200.7	115.3	126.2	
Research Appointments	7,402.6	12.0	88,831.6	56,174.7	63.2	57.4	
Total FTE Grads	72,147.3	3.0	216,441.9	145,189.7	67.1	70.6	
Total FTE Non-Acd Staff	13,347.1	12.0	160,164.9	164,537.8	102.7	101.1	
Office Service	736,131.7	0.25	184,032.9	198,311.3	107.8	114.3	
Total Academic Office			920,164.7	876,414.2	95.2	99.5	
OFFICE - ADMINISTRATIVE (10)							
Total FTE Non-Acd Staff	16,509.3	12.0	198,111.1	194,512.3	98.2	110.6	
Office Service	198,111.1	0.5	99,055.6	113,313.6	114.4	126.0	
Total Admin. Office			297,166.7	307,826.0	103.6	115.7	
Total Office - Academic & Administrative			1,217,331.4	1,184,240.1	97.3	103.3	
<b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE (5)</b>							
Study (Total FTE Students)	471,484.7	0.50	235,742.3	119,950.7	50.9	51.0	
Traditional Static Shelving Space	27,573,568.6	0.005	137,867.8	n/a			
Mobile Compact Shelving	4,838,690.8	0.004	19,354.8	n/a			
Super High Density	8,921,749.9	0.0035	31,226.1	n/a			
Total Stack	41,334,009.3		188,448.7	150,369.9	79.8	74.2	
Library Support	424,191.1	0.25	106,047.8	73,333.8	69.2	69.0	
Total Library Facilities & Library Study Space			530,238.8	343,654.4	64.8	63.6	
NON-LIBRARY STUDY SPACE (11)	471,484.7	0.4	188,593.9	150,160.1	79.6	71.6	
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>3,806,906.13</b>	<b>3,098,570.60</b>	<b>81.4</b>	<b>81.6</b>	
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS (6)							
Total FTE Students	471,484.7	0.9	422,147.9	297,520.6	70.5	73.1	
MAINTENANCE SHOPS (9)							
Total NASM Inv. (exc. 16.0)	5,547,727.7	0.015	83,215.9	66,700.0	80.2	75.7	
STUDENT AND CENTRAL SERVICES (7, 8, 12-15)							
Total FTE Students	471,484.7	1.5	707,227.0	427,557.6	60.5	59.3	
<b>SUB-TOTAL: OTHER SPACE</b>			<b>1,212,590.81</b>	<b>791,778.12</b>	<b>65.3</b>	<b>65.3</b>	
<b>TOTAL FORMULA AREAS</b>			<b>5,019,496.94</b>	<b>3,890,348.72</b>	<b>77.5</b>	<b>77.7</b>	

### 2.3. Age of building space

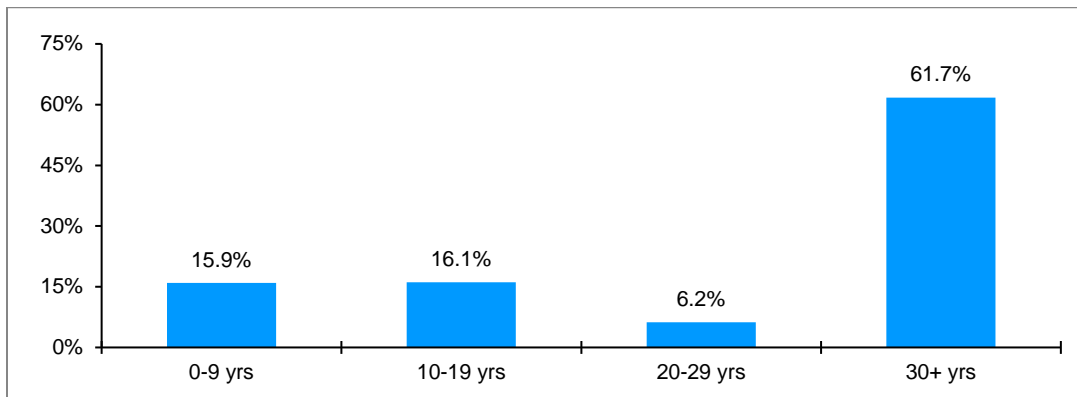
As shown in Figure 5 below, the weighted average age of buildings in the university sector is 39.1 years, up from 37.3 years in 2016-17.

**Figure 5: Average age of building space, 2001-02 to 2019-20**



Over 61% of buildings are over 30 years old, as per Figure 6. This is generally recognized as the age at which major building components should be renewed.

**Figure 6: Percentage of inventory by age grouping, 2019-20**



**Table 2: Age Profile of Ontario University Space (as of November 1, 2019)**

Institution	0-9 Years (NASM)	10-19 Years (NASM)	20-29 Years (NASM)	30-39 Years (NASM)	40-49 Years (NASM)	50+ Years (NASM)	Total (NASM)	Weighted Average Age
Algoma	3,066	2,449	4,249	1,665	518	2,020	13,967	30.2
Brock	15,685	15,458	9,206	8,376	25,004	27,141	100,870	34.6
Carleton	31,290	36,325	22,326	15,161	18,027	66,662	189,791	26.9
Guelph	16,111	29,862	25,014	5,244	40,343	144,272	260,846	50.7
Lakehead	5,367	10,740	17,845	4,591	12,224	35,136	85,903	42.2
Laurentian	9,820	8,885	1,094	11,143	2,735	45,613	79,289	41.0
Laurentian (Hearst)	935	0	0	0	0	3,385	4,320	41.6
McMaster	66,288	56,630	8,834	4,826	53,970	77,816	268,364	33.4
Nipissing	11,885	1,030	0	0	20,516	0	33,431	31.2
NOSM	0	6,447	1,914	0	0	0	8,361	17.2
OCADU	652	0	0	1,040	4,368	21,140	27,201	136.4
Ontario Tech	18,508	24,410	143	0	4,950	5,333	53,343	28.0
Ottawa	49,765	43,516	13,838	33,736	75,570	61,023	277,448	39.5
Queen's	44,400	25,266	20,797	23,801	62,028	81,015	257,305	37.8
Ryerson	24,689	37,815	7,117	12,236	28,784	75,597	186,237	48.7
Toronto (St. George)	42,199	73,304	23,463	47,649	93,434	289,347	569,396	47.3
Toronto (Mississauga)	29,344	19,204	3,504	0	24,012	620	76,683	21.7
Toronto (Scarborough)	32,766	16,949	103	32	4,469	20,222	74,541	21.5
Trent	13,586	8,077	4,703	0	9,715	18,932	55,013	26.5
Waterloo	60,445	40,846	7,886	40,647	46,688	141,289	337,801	37.4
Western	46,169	60,240	23,342	18,172	67,025	154,959	369,908	40.5
WLU	31,616	29,001	8,212	13,603	5,597	20,794	108,824	28.5
WLU (Brantford)	8,686	3,114	883	4,488	0	130	17,301	16.0
Windsor	26,986	10,519	12,265	8,417	29,223	46,768	134,179	36.8
York (Keele)	26,258	63,330	22,910	13,569	20,247	114,674	260,988	35.0
York (Glendon)	0	0	1,896	0	0	17,872	19,767	59.5
<b>TOTAL</b>	<b>616,515</b>	<b>623,417</b>	<b>241,542</b>	<b>268,398</b>	<b>649,447</b>	<b>1,471,759</b>	<b>3,871,078</b>	<b>39.1</b>
% Distribution	15.4%	16.2%	6.3%	7.0%	16.9%	38.3%	100.0%	

The above table shows that the average age of Ontario university buildings is nearly 40 years; 30 years is generally recognized as the age at which major building components need to be renewed. The guidelines for reporting 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.

Notes: Includes Categories 1-15 only, excluding Rentals; Institutions in red are reporting 2016-17 data.

**Table 3: Percent Distribution Age Profile of Ontario University Space (as of November 1, 2019)**

Institution	0-9 Years (NASM)	10-19 Years (NASM)	20-29 Years (NASM)	30-39 Years (NASM)	40-49 Years (NASM)	50+ Years (NASM)
Algoma	22.0%	17.5%	30.4%	11.9%	3.7%	14.5%
Brock	15.6%	15.3%	9.1%	8.3%	24.8%	26.9%
Carleton	16.5%	19.1%	11.8%	8.0%	9.5%	35.1%
Guelph	6.2%	11.4%	9.6%	2.0%	15.5%	55.3%
Lakehead	6.2%	12.5%	20.8%	5.3%	14.2%	40.9%
Laurentian	12.4%	11.2%	1.4%	14.1%	3.4%	57.5%
Laurentian (Hearst)	21.6%	-	-	-	-	78.4%
McMaster	24.7%	21.1%	3.3%	1.8%	20.1%	29.0%
Nipissing	35.6%	3.1%	-	-	61.4%	-
NOSM	-	77.1%	22.9%	-	-	-
OCADU	2.4%	-	-	3.8%	16.1%	77.7%
Ontario Tech	34.7%	45.8%	0.3%	-	9.3%	10.0%
Ottawa	17.9%	15.7%	5.0%	12.2%	27.2%	22.0%
Queen's	17.3%	9.8%	8.1%	9.2%	24.1%	31.5%
Ryerson	13.3%	20.3%	3.8%	6.6%	15.5%	40.6%
Toronto (St. George)	7.4%	12.9%	4.1%	8.4%	16.4%	50.8%
Toronto (Mississauga)	38.3%	25.0%	4.6%	-	31.3%	0.8%
Toronto (Scarborough)	44.0%	22.7%	0.1%	0.0%	6.0%	27.1%
Trent	24.7%	14.7%	8.5%	-	17.7%	34.4%
Waterloo	17.9%	12.1%	2.3%	12.0%	13.8%	41.8%
Western	12.5%	16.3%	6.3%	4.9%	18.1%	41.9%
WLU	29.1%	26.6%	7.5%	12.5%	5.1%	19.1%
WLU (Brantford)	50.2%	18.0%	5.1%	25.9%	-	0.8%
Windsor	20.1%	7.8%	9.1%	6.3%	21.8%	34.9%
York (Keele)	10.1%	24.3%	8.8%	5.2%	7.8%	43.9%
York (Glendon)	-	-	9.6%	-	-	90.4%
<b>TOTAL</b>	<b>15.9%</b>	<b>16.1%</b>	<b>6.2%</b>	<b>6.9%</b>	<b>16.8%</b>	<b>38.0%</b>

Notes: Includes Categories 1-15 only, excluding Rentals; Institutions in red are reporting 2016-17 data.

## 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.

The role of the Task Force is to maintain a consistent facility condition inspection and reporting of results using a consistent software. The resultant report examines the quality of space at Ontario universities as measured by the Facilities Condition Index. The last [Task Force report](#) was published in March 2016.

In the years following that report, the college and university sectors met with MCU to discuss a path forward to harmonize data between sectors to increase comparability between colleges and universities, and also with other public and broader public sector (BPS) entities. The university sector is in the process of a large project to harmonize asset assessment, which will be completed after a five-year rolling audit of university assets. The harmonization project is expected to be completed in 2024-25.

**Table 4: State of Asset Repair in the Public and Broader Public Sector**

Sector	Share of Assets in a State of Good Repair (%)	Share of Assets Not in a State of Good Repair (%)
Highways & Bridges	77.3	22.7
Schools	71.6	28.4
Other	71.1	28.9
Universities	66.2	33.8
Colleges	65.1	34.9
Hospitals	54.1	45.9

The table above compares universities' overall asset condition with those for other public sectors as calculated using the methodology of the [Financial Accountability Office of Ontario \(FAO\)](#). Using FAO assumptions for comparative purposes only with these other public assets, universities would require a \$15.8B investment over 10 years to eliminate the total backlog for all assets and maintain condition.

Current planned government investments of \$80.9M per year are insufficient to eliminate the backlog. Even with added substantial university investments in renewal, which averages \$492M per year, the backlog will continue to grow. Without additional investment, the 10-year funding gap is \$10B.



### 3. Historical trends in the space inventory

As summarized in Table 5 below, total inventory increased by 24.7% between 2007-08 and 2019-20. Administrative Offices saw the largest increase in inventory at 33.3%, followed by Academic Office Space at 29.6%. 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 2019-20)**

	2007-08	2010-11	2013-14	2016-17	2019-20	% Change 2007-08 to 2019-20
FTE Enrolment	363,872	399,124	426,392	442,037	471,485	29.6%
FTE Faculty	18,774	19,813	20,338	19,962	22,558	20.2%
<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>3,890,884</b>	24.7%
Classroom Facilities	342,013	362,011	391,395	406,247	445,643	30.3%
Class Labs	350,201	350,482	368,105	381,246	390,914	11.6%
Research Labs	461,727	488,284	541,952	556,469	584,494	26.6%
Academic Office	676,235	747,041	807,733	827,512	876,414	29.6%
Administrative Office	230,935	250,843	272,100	293,139	307,826	33.3%
Library Study Space & Library Facilities	374,720	384,044	396,144	340,945	343,654	-8.3%
Non-Library Study Space				126,157	150,160	
Recreation/Athletic Space	231,927	251,246	272,410	290,748	297,521	28.3%
Maintenance Shops	53,684	55,335	57,807	59,328	66,700	24.2%
Student and Central Services	398,351	410,609	430,647	393,104	427,558	7.3%

**Figure 7: Sector inventory as a percentage of generated space (%/G), 2001-02 to 2019-20**

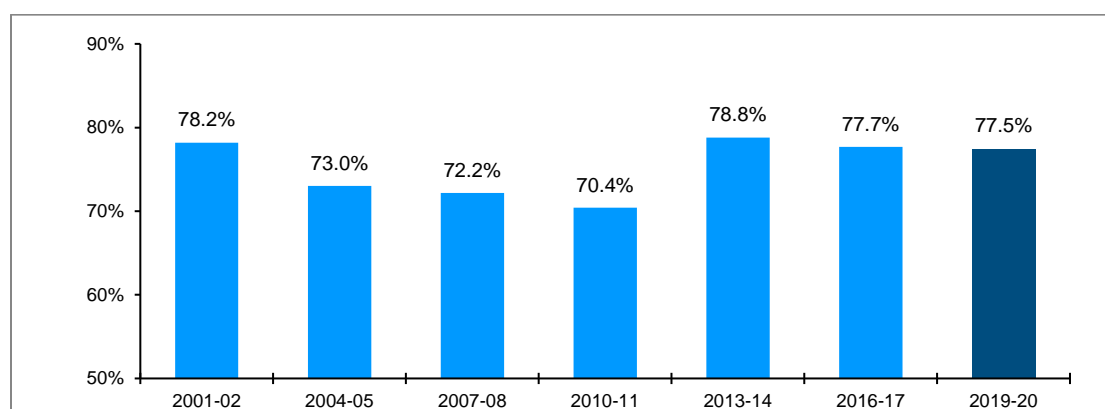


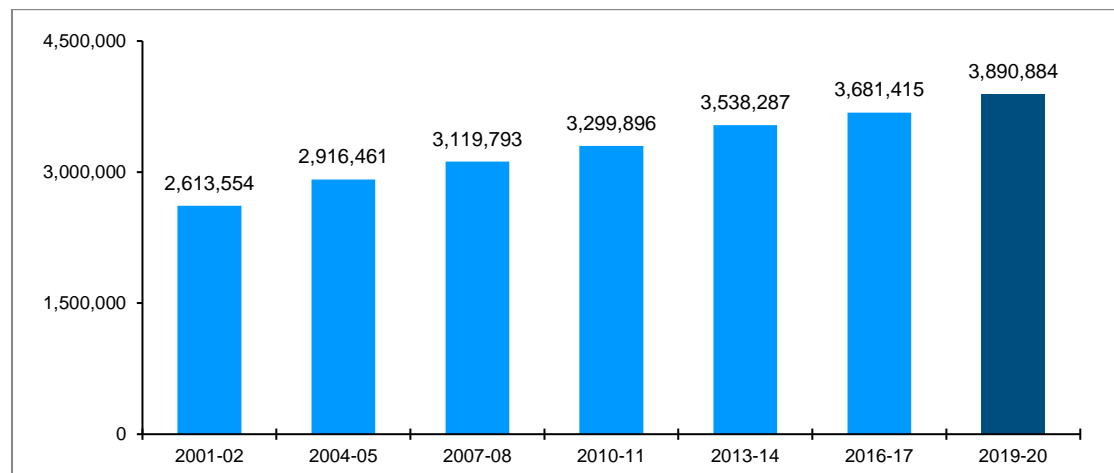
Figure 7 shows the trend over time in the percentage of inventory over generated space (%/G). Universities are operating with 77.5% of the space they should have, consistent with the last reporting cycle.

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

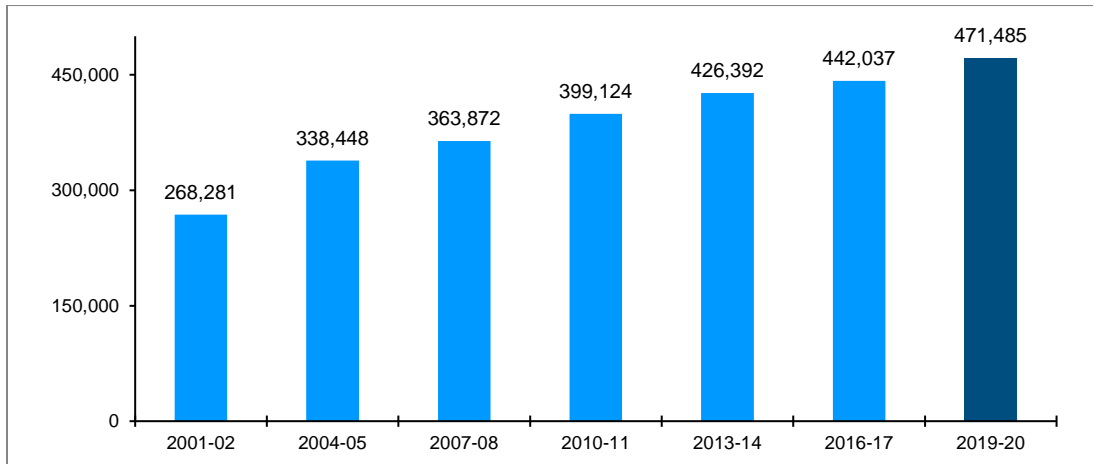
	2007-08	2010-11	2013-14	2016-17	2019-20
Classroom Facilities	76.4%	73.7%	82.7%	82.8%	85.2%
Class Labs	64.7%	66.5%	69.1%	71.7%	76.2%
Research Labs	74.7%	68.8%	73.3%	72.1%	70.0%
Academic Office	83.3%	81.5%	99.6%	99.5%	95.2%
Administrative Office	98.4%	100.2%	109.0%	103.3%	97.3%
Library Study Space & Library Facilities	70.6%	68.4%	67.7%	63.6%	64.8%
Non-Library study space				71.6%	79.6%
Recreation/Athletic Space	68.1%	69.9%	71.0%	73.1%	70.5%
Maintenance Shops	77.0%	76.1%	75.4%	75.7%	80.2%
Student and Central Services	56.7%	53.5%	68.2%	59.3%	60.5%
<b>Total</b>	<b>72.2%</b>	<b>70.4%</b>	<b>78.8%</b>	<b>77.7%</b>	<b>77.5%</b>

Table 6 above shows the trend in formula categories. There has been a slight increase in generated space for Classrooms while office spaces are dropping. A 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 8: Total Formula Area, 2001-02 to 2019-20**

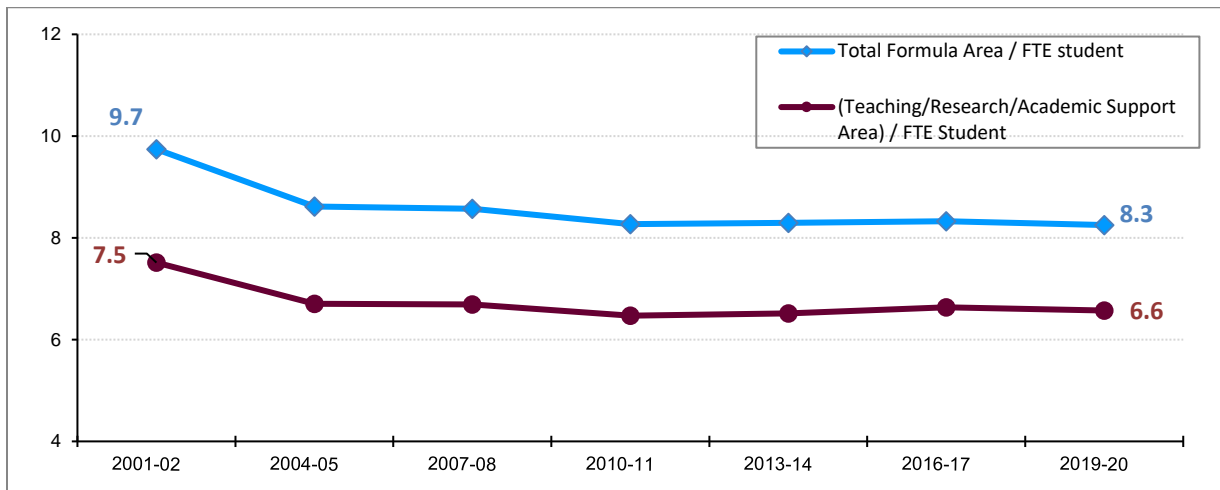


**Figure 9: Total FTE Enrolment, 2001-01 to 2019-20**



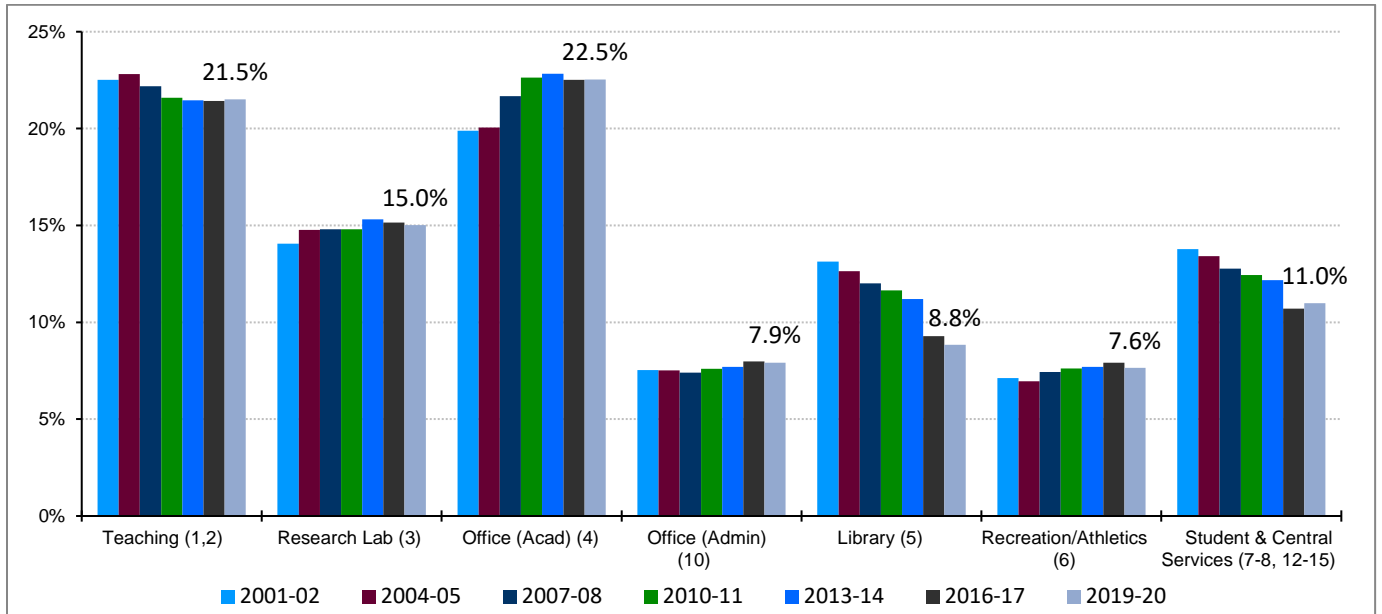
Overall, both total formula area and total FTE enrolment has grown year-over-year, as indicated in Figures 8 and 9.

**Figure 10: Total Formula Area / FTE Student, 2001-02 to 2019-20**



As per Figure 10, total formula area per student is 8.3 and has been relatively constant since 2004-05. Teaching/Research/Academic Support Area per FTE Student also has remained constant at 6.6.

**Figure 11: Distribution of Space Inventory by Aggregated Functional Groups, 2001-02 to 2019-20**



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, though the latter category experienced a slight increase over the last reporting cycle from 10.7% to 11.0%.

Teaching, research labs and offices and have been constant between 2016-17 and 2019-20.

Actual Space Summary Trend Tables<sup>4</sup>

Table 7: Total Actual Space Inventory by COU Space Categories, 2001-02 to 2019-20

Category	Space Category	2001-02	2004-05	2007-08	2010-11	2013-14	2016-17	2019-20	% Change from 2016-17 to 2019-20
<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	445,643	9.7%
2.	Class Labs	323,384	340,900	350,201	350,482	368,105	381,246	390,914	2.5%
3.	Research Labs	367,422	430,612	461,727	488,284	541,952	556,469	584,494	5.0%
4.	Acad. Office & Related	519,890	585,085	676,235	747,041	807,733	827,512	876,414	5.9%
5.	Library Study Space & Library Facilities	343,363	368,804	374,720	384,044	396,144	340,945	343,654	0.8%
10.	Admin. Office & Related	196,723	219,055	230,935	250,843	272,100	293,139	307,826	5.0%
11.	Non Library Study Space						126,157	150,160	19.0%
<b>(B) Other Space</b>									
6.	Recreation/Athletic Space	186,153	202,931	231,927	251,246	272,410	290,748	297,521	2.3%
9.	Plant maintenance	51,640	53,462	53,684	55,335	57,807	59,328	66,700	12.4%
7-8, 12-15	Student and Central Services	359,964	391,147	398,351	410,609	430,647	393,104	427,558	8.8%
<b>Subtotal - Formula Areas</b>		<b>2,613,554</b>	<b>2,916,461</b>	<b>3,119,793</b>	<b>3,299,896</b>	<b>3,538,292</b>	<b>3,674,894</b>	<b>3,890,884</b>	<b>5.9%</b>
16.	<b>Non-Assignable (SM)</b>	1,714,576	2,099,122	2,372,324	2,533,549	2,669,094	2,975,156	3,138,392	5.5%
<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	1,359,958	4.5%
18.	Animal Space	10,324	9,366	12,395	21,340	22,956	22,828	23,971	5.0%
19.	Other	157,215	101,526	196,593	161,010	188,961	173,525	198,272	14.3%
20.	Health Sci. Clinical Facilities	80,440	79,549	77,863	79,632	75,209	72,861	74,643	2.4%
<b>Subtotal - Non-Formula Areas</b>		<b>1,212,818</b>	<b>1,345,105</b>	<b>1,530,635</b>	<b>1,550,246</b>	<b>1,572,016</b>	<b>1,571,076</b>	<b>1,656,844</b>	<b>5.5%</b>
<b>Total</b>		<b>5,540,949</b>	<b>6,360,688</b>	<b>7,022,751</b>	<b>7,383,690</b>	<b>7,779,403</b>	<b>8,221,126</b>	<b>8,686,120</b>	<b>5.7%</b>

Overall, Ontario universities occupied approximately 8.7 million NASMs in 2019-20. Total space has increased 5.7% between 2016-17 and 2019-20, and 56.8% 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>4</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, caution needs to be taken when comparing the results of library study space and student and central services to previous years. Please refer to [Historical Changes to the Inventory](#) for changes made over time.

**Table 8: Percentage Distribution of Total Actual Space Inventory by all COU Space Categories, 2001-02 to 2019-20**

Category	Space Category	2001-02	2004-05	2007-08	2010-11	2013-14	2016-17	2019-20
<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%	5.1%
2.	Class Labs	5.8%	5.4%	5.0%	4.7%	4.7%	4.6%	4.5%
3.	Research Labs	6.6%	6.8%	6.6%	6.6%	7.0%	6.8%	6.7%
4.	Acad. Office & Related	9.4%	9.2%	9.6%	10.1%	10.4%	10.1%	10.1%
5.	Campus Study Space & Library Facilities	6.2%	5.8%	5.3%	5.2%	5.1%	4.1%	4.0%
10.	Admin. Office & Related	3.6%	3.4%	3.3%	3.4%	3.5%	3.6%	3.5%
11	Non Library Study Space						1.5%	1.7%
<b>(B) Other Space</b>								
6.	Recreation/Athletic Space	3.4%	3.2%	3.3%	3.4%	3.5%	3.5%	3.4%
9.	Plant maintenance	0.9%	0.8%	0.8%	0.7%	0.7%	0.7%	0.8%
7-8, 12-15	Student and Central Services	6.5%	6.1%	5.7%	5.6%	5.5%	4.8%	4.9%
<b>Subtotal - Formula Areas</b>		47.2%	45.9%	44.4%	44.7%	45.5%	44.7%	44.8%
16.	<b>Non-Assignable (SM)</b>	30.9%	33.0%	33.8%	34.3%	34.3%	36.2%	36.1%
<b>NON-FORMULA AREAS (NASM)</b>								
17.	Residential Space	17.4%	18.2%	17.7%	17.4%	16.5%	15.8%	15.7%
18.	Animal Space	0.2%	0.1%	0.2%	0.3%	0.3%	0.3%	0.3%
19.	Other	2.8%	1.6%	2.8%	2.2%	2.4%	2.1%	2.3%
20.	Health Sci. Clinical Facilities	1.5%	1.3%	1.1%	1.1%	1.0%	0.9%	0.9%
<b>Subtotal - Non-Formula Areas</b>		21.9%	21.1%	21.8%	21.0%	20.2%	19.1%	19.1%
<b>Total</b>		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Formula space (space funded by MCU), accounts for nearly 45% (3.9 million NASM) of the total space, while non-formula space (space not funded by MCU) accounts for 19% (1.6 million NASM) of the total space.

Non-assignable space (space that is necessary for the support of buildings), (see [Appendix A, Category 16](#)) accounts for 36% (3.1 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 2019-20.

**Table 9: Percentage Distribution of Total Actual Space Inventory by COU Formula Space Categories, 2001-02 to 2019-20**

Category	Space Category	2001-02	2004-05	2007-08	2010-11	2013-14	2016-17	2019-20
<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%	11.5%
2.	Class Labs	12.4%	11.7%	11.2%	10.6%	10.4%	10.4%	10.0%
3.	Research Labs	14.1%	14.8%	14.8%	14.8%	15.3%	15.1%	15.0%
4.	Acad. Office & Related	19.9%	20.1%	21.7%	22.6%	22.8%	22.5%	22.5%
5.	Library Study Space & Library Facilities	13.1%	12.6%	12.0%	11.6%	11.2%	9.3%	8.8%
10.	Admin. Office & Related	7.5%	7.5%	7.4%	7.6%	7.7%	8.0%	7.9%
11	Non Library Study Space						3.4%	3.9%
<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>79.7%</b>
<b>(B) Other Space</b>								
6.	Recreation/Athletic Space	7.1%	7.0%	7.4%	7.6%	7.7%	7.9%	7.6%
9	Plant maintenance	2.0%	1.8%	1.7%	1.7%	1.6%	1.6%	1.7%
7-8, 12-15	Student and Central Services	13.8%	13.4%	12.8%	12.4%	12.2%	10.7%	11.0%
<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>	<b>20.3%</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, though there was a slight uptick in 2019-20. The drop in 2016-17 is more pronounced due to shifting of former 14.3 to category 11.

The Library Study Space and Library Facilities category 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 2019-20**

Category	Space Classification	2001-02	2004-05	2007-08	2010-11	2013-14	2016-17	2019-20
<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%	10.4%
2.	Class Labs	12.2%	12.5%	12.5%	11.2%	11.9%	11.2%	10.2%
3.	Research Labs	13.6%	13.9%	14.3%	15.1%	16.5%	16.5%	16.6%
4.	Academic Office & Related	18.1%	17.4%	18.8%	19.6%	18.1%	17.5%	18.3%
5.	Campus Study Space & Library Facilities	16.0%	13.7%	12.3%	12.0%	13.0%	11.3%	10.6%
10.	Administrative Office & Related	4.8%	5.3%	5.4%	5.3%	5.6%	5.3%	5.9%
11	Non Library Study Space						3.7%	3.8%
<b>Total - Teaching/Research/Academic Support</b>		<b>74.5%</b>	<b>73.4%</b>	<b>73.7%</b>	<b>73.8%</b>	<b>75.5%</b>	<b>75.9%</b>	<b>75.8%</b>
<b>(B) Other Space</b>								
6.	Recreation/Athletics	7.7%	8.0%	7.9%	7.7%	8.5%	8.4%	8.4%
9	Plant maintenance	1.7%	1.6%	1.6%	1.6%	1.7%	1.7%	1.7%
7-8, 12-15	Student and Central Services	16.1%	16.9%	16.9%	17.0%	14.3%	14.0%	14.1%
<b>Total - Other Space</b>		<b>25.5%</b>	<b>26.6%</b>	<b>26.3%</b>	<b>26.2%</b>	<b>24.5%</b>	<b>24.1%</b>	<b>24.2%</b>

**Table 11: ACTUAL Inventory / GENERATED Space (NASM) by COU Formula Space Classification, 2001-02 to 2019-20**

Category	Space Classification	2001-02	2004-05	2007-08	2010-11	2013-14	2016-17	2019-20
<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%	85.2%
2	Class Labs	79.2%	68.0%	64.7%	66.5%	69.1%	71.7%	76.2%
3	Research Labs	80.8%	77.3%	74.7%	68.8%	73.3%	72.1%	70.0%
4	Academic Office & Related	86.1%	84.0%	83.3%	81.5%	99.6%	99.5%	95.2%
5	Library Study Space & Library Facilities	64.2%	67.2%	70.6%	68.4%	67.7%	63.6%	64.8%
10	Administrative Office & Related	123.9%	103.1%	98.4%	100.2%	109.0%	103.3%	97.3%
11	Non Library Study Space						71.6%	79.6%
<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>81.4%</b>
<b>(B) Other Space</b>								
6	Recreation/Athletics	72.6%	63.1%	68.1%	69.9%	71.0%	73.1%	70.5%
9	Plant maintenance	90.0%	83.0%	77.0%	76.1%	75.4%	75.7%	80.2%
7-8, 12-15	Student and Central Services	69.3%	60.0%	56.7%	53.5%	68.2%	59.3%	60.5%
<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>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>	<b>77.5%</b>

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. 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.



**Table 12: Historical Summary of Statistics, 2001-02 to 2019-20**

	2001-02	2004-05	2007-08	2010-11	2013-14	2016-17	2019-20
% Undergraduate FTE Enrolment per Total FTE Enrolment	88.58	89.05	87.48	86.87	86.41	85.71	84.70
% Graduate FTE Enrolment per Total FTE Enrolment	11.42	10.95	12.52	13.13	13.59	14.29	15.30
WSCH <sup>5</sup> per Undergraduate FTE Enrolment	3.09	2.95	3.11	2.79	2.60	2.48	2.41
Classroom NASM <sup>6</sup> per FTE Student	0.99	0.96	0.94	0.91	0.92	0.92	0.95
Graduate Office NASM per FTE Graduate Student	2.39	2.22	2.12	2.16	2.26	2.12	2.01
Administrative Office NASM per FTE Non-Academic Office Staff	20.93	20.11	19.19	19.54	19.62	20.83	18.65
Library Study Space and Library Facilities NASM per FTE Student	1.28	1.09	1.03	0.96	0.93	0.77	0.73
Non-Library study space per FTE student						0.29	0.32
Recreation/Athletics NASM per FTE Student	0.69	0.60	0.64	0.63	0.64	0.66	0.63
Student & Central Services NASM per FTE Student	1.34	1.16	1.09	1.03	1.01	0.89	0.91
Total NASM per FTE Student (categories 1-15)	9.74	8.62	8.57	8.27	8.30	8.32	8.25

Due to the expansion of graduate enrolment, the percentage of enrolment in graduate programs has increased from 11.4% in 2001-02 to 15.3% in 2019-20.

Student contact hours per undergraduate FTE student have declined from 3.1 in 2001-02 to 2.4 in 2019-20.

Library study space and library facilities NASM per FTE student declined from 1.3 in 2001-02 to 0.73 in 2019-20. The decline is more pronounced in 2016-17 than in previous years as the 2016-17 numbers do not include former Category 5.5.

<sup>5</sup> WSCH = Weekly Student Contact Hours

<sup>6</sup> NASM = Net Assignable Square Metres

## 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 15.3% in 2019-20, in response to student demand and the need to enhance the social and economic impact of universities. Table 13 below shows that FTE graduate enrolment increased 14% between 2016-17 and 2019-20 and **increased by 135% since 2001-01**.

Overall, graduate students require more space per student than undergraduate students, as 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.

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

**Table 13: FTE Graduate Enrolment Trend**

2001-02	2004-05	2007-08	2010-11	2013-14	2016-17	2019-20	% change from 2016
30,627	37,071	45,569	52,387	57,937	63,186	72,147	14.2%

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 165% 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	2019-20 Graduate FTEs	% change since 2004-05	% change since 2013-14	% change since 2016-17
Group A	7,187	8,864	9,264	9,216	28%	4%	-1%
Group B	4,487	7,719	9,993	11,887	165%	54%	19%
Group C	3,137	5,120	4,461	6,293	101%	23%	41%
Group D	4,280	6,544	6,721	6,762	58%	3%	1%
Group E	17,634	27,640	31,730	21,136	20%	-24%	-33%
Group F	-	-	-	15,560	-	-	-
<b>Total**</b>	<b>36,822</b>	<b>57,325</b>	<b>62,880</b>	<b>71,492</b>	<b>94%</b>	<b>25%</b>	<b>14%</b>

\*\*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 electrical engineering. Therefore, like programs can be assigned to different Program Groups. Please see [Appendix D: Program Classification Scheme](#) for the detailed breakdown.

## 4. Institutional Tables: 2019-20

### CAVEAT

The tables that follow are the result of the 2019-20 space survey issued to universities.

In interpreting the data from smaller and specialized institutions, it should be noted that the Building Blocks formula<sup>7</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 specialized missions of those institutions they are not included in the total counts.

Hearst and NOSM are reporting 2016-17 survey data.

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<sup>7</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, 2019

Institution	Categories 1-15 (NASM)	Category 16 (SM)	Categories 17-20 (NASM)	Scheduled for Demolition	Rentals	Gross Square Metres	Construction	Gross Square Metres/NASM (1-15, 17-20)
Algoma	15,127.60	7,526.80	4,739.97	0.00	1,160.64	27,373.35	0.00	1.38
Brock	101,021.26	72,744.16	53,719.88	0.00	11.00	260,012.44	0.00	1.68
Carleton	189,791.43	161,866.66	67,133.75	0.00	0.00	487,338.66	0.00	1.90
Guelph	260,846.21	166,409.66	141,051.09	0.00	0.00	655,494.11	0.00	1.63
Lakehead	85,902.96	50,971.88	44,317.77	0.00	0.00	216,815.42	0.00	1.66
Laurentian	79,289.18	55,267.52	44,233.55	0.00	2,843.75	200,036.71	0.00	1.62
Laurentian (Hearst)	5,116.23	2,129.88	2,178.37	0.00	0.00	NR	0.00	NA
McMaster	272,464.80	184,704.25	133,569.41	0.00	12,622.74	686,461.99	23,225.76	1.69
Nipissing	33,431.07	16,086.91	33,927.17	0.00	0.00	32,243.35	0.00	0.48
NOSM	8,360.80	4,346.80	0.00	0.00	0.00	15,248.30	0.00	1.82
OCADU	27,200.67	11,110.14	2,039.02	0.00	11,555.43	46,387.62	0.00	1.59
Ontario Tech	53,343.26	41,826.17	9,838.64	0.00	14,312.80	126,240.09		2.00
Ottawa	284,391.63	261,571.44	107,982.69	43,431.61	11,895.15	755,778.79	0.00	1.93
Queen's	257,540.82	254,484.43	103,119.31	0.00	0.00	1,233,542.54	0.00	3.42
Ryerson	186,237.28	138,666.91	33,989.84	0.00	17,036.83	439,166.75	0.00	1.99
Toronto (St. George)	585,080.98	466,840.85	166,266.39	368.35	9,549.99	1,384,353.60	59,498.00	1.84
Toronto (Mississauga)	76,683.28	79,074.67	35,313.80	0.00	0.00	218,336.39	0.00	1.95
Toronto (Scarborough)	74,541.35	59,144.46	28,774.54	882.85	0.00	186,035.05	0.00	1.80
Trent	55,013.02	40,877.68	38,953.17	0.00	0.00	152,906.19	0.00	1.63
Waterloo	340,936.30	253,604.59	158,993.13	0.00	8,826.93	889,505.61	8,167.00	1.78
Western	369,907.94	260,820.04	212,388.40	0.00	0.00	946,779.40	0.00	1.63
WLU	109,392.20	102,486.17	127,481.05	8,304.42	5,828.51	405,996.47	3,362.41	1.71
WLU (Brantford)	17,300.53	30,581.70	26,035.15	0.00	241.86	86,273.86	3,000.00	1.99
Windsor	140,794.30	113,751.17	21,445.19	0.00	0.00	304,132.47	6,303.40	1.87
York (Keele)	260,988.35	326,131.30	108,803.89	0.00	0.00	832,399.18	0.00	2.25
York (Glendon)	19,767.04	16,057.72	7,878.59	0.00	0.00	50,230.53	0.00	1.82
<b>TOTAL</b>	<b>3,910,470.49</b>	<b>3,179,083.95</b>	<b>1,714,173.77</b>	<b>52,987.23</b>	<b>95,885.62</b>	<b>10,639,088.87</b>	<b>103,556.57</b>	<b>1.92</b>

The inventory NASM figures for categories 1-20 may not necessarily agree at some institutions with the inventory figures reported on Table 2.

Table 16: Distribution of Actual Inventory by Major Space Category and Institution, 2019-20 (PART ONE)

	Classroom Facilities (Cat 1)	Lab Undergrad (Cat 2)	Lab Grad & Faculty (Cat 3)	Acad Office & Related (Cat 4)	Lib Facilities & Library Study Space (Cat 5)	Recreation/ Athletic Space (Cat 6)	Food Service (Cat 7)	Bookstore & Merch Facilities (Cat 8)	Plant Maintenance (Cat 9)	Admin Office & Related (Cat 10)	Non-Library Study Space (Cat 11)	Central Services (Cat 12)
Algoma	2,218	1,473	559	1,254	1,025	4,027	426	269	298	1,536	581	607
Brock	13,544	10,743	12,280	19,334	7,311	9,112	4,931	1,105	2,583	9,184	3,901	2,411
Carleton	19,336	17,240	21,231	37,656	20,703	24,250	7,550	1,663	1,876	17,670	4,413	4,034
Guelph	16,655	27,858	61,462	48,845	17,294	34,151	9,614	1,451	7,509	17,873	3,907	5,898
Lakehead	9,848	13,614	9,911	10,903	6,284	9,287	4,409	717	1,013	7,916	2,184	3,248
Laurentian	8,366	9,365	6,779	16,145	7,369	9,239	3,410	530	1,457	9,382	2,065	1,197
Laurentian (Hearst)	1,063	201	0	788	887	490	475	17	102	249	177	284
McMaster	35,098	18,956	53,753	67,081	21,743	17,738	8,681	3,067	3,438	18,595	9,314	3,303
Nipissing	5,709	3,761	1,481	3,766	2,089	2,031	1,952	51	103	3,501	511	743
NOSM	988	849	1,538	1,597	604	0	0	0	0	2,306	368	75
OCADU	3,515	9,198	1,980	3,717	1,436	0	79	0	172	2,663	952	1,702
OntarioTech	8,596	6,997	8,650	7,151	3,432	5,770	920	0	546	5,927	1,583	2,580
Ottawa	31,241	24,999	43,141	67,678	27,301	24,005	6,418	4,084	6,391	18,417	13,734	3,727
Queen's	22,480	25,164	41,386	63,289	23,836	21,509	11,385	3,042	2,427	18,072	9,229	835
Ryerson	21,955	31,379	18,002	35,159	9,705	14,286	3,603	1,040	3,459	17,543	13,227	3,972
Toronto (St. George)	61,013	41,382	104,444	159,617	81,218	29,809	14,088	3,314	9,922	27,474	20,105	4,331
Toronto (Mississauga)	13,695	8,458	9,280	12,042	5,243	6,852	4,127	473	1,777	6,898	3,063	1,307
Toronto (Scarborough)	7,549	6,342	9,771	11,844	3,840	9,534	3,241	719	3,546	7,375	4,148	1,599
Trent	8,646	4,703	7,760	9,904	5,000	3,965	3,560	454	380	5,948	2,269	1,048
Waterloo	35,132	34,414	58,742	84,366	16,377	18,158	11,732	2,840	7,545	33,800	19,964	6,088
Western	48,182	30,498	60,464	93,152	31,529	18,496	16,635	4,303	2,965	24,308	13,753	7,266
WLU	11,182	5,076	6,239	17,997	8,025	7,214	3,250	1,198	2,229	15,056	5,229	1,523
WLU (Brantford)	3,456	1,089	161	2,514	410	3,242	396	400	464	2,215	1,004	95
Windsor	16,555	21,121	17,658	27,462	16,057	10,716	5,339	970	1,368	11,985	4,921	2,340
York (Keele)	36,291	35,230	27,670	69,006	23,107	10,709	9,559	2,648	4,746	20,757	9,272	4,332
York (Glendon)	3,332	804	153	4,147	1,833	2,932	888	178	384	1,176	290	196
<b>TOTAL</b>	<b>445,643</b>	<b>390,914</b>	<b>584,494</b>	<b>876,414</b>	<b>343,654</b>	<b>297,521</b>	<b>136,668</b>	<b>34,534</b>	<b>66,700</b>	<b>307,826</b>	<b>150,160</b>	<b>64,741</b>

Table 17: Distribution of Actual Inventory by Major Space Category and Institution, 2019-20 (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	64	379	412	15,128	4,403	65	272	-	4,740	7,527	27,394
Brock	555	1,446	2,583	101,021	49,424	169	3,336	792	53,720	72,744	227,485
Carleton	1,437	2,444	8,288	189,791	60,556	735	5,843	0	67,134	161,867	418,792
Guelph	1,951	3,265	3,114	260,846	108,811	8,036	16,445	7,759	141,051	166,410	568,307
Lakehead	1,156	2,776	2,636	85,903	40,128	0	4,190	0	44,318	50,972	181,193
Laurentian	354	2,606	1,025	79,289	33,653	201	10,890	0	44,744	55,268	179,300
Laurentian (Hearst)	0	15	369	5,116	499	0	1,679	0	2,178	2,130	9,424
McMaster	1,998	4,314	5,385	272,465	69,442	1,665	4,060	58,402	133,569	184,704	590,738
Nipissing	111	93	0	25,900	3,356	0	0	0	3,356	14,475	43,731
NOSM	0	37	0	8,361	0	0	0	0	0	4,347	12,708
OCADU	308	182	1,297	27,201	167	0	1,872	0	2,039	11,110	40,350
Ontario Tech	0	695	498	53,344	0	0	9,839	0	9,839	41,826	105,009
Ottawa	1,989	4,789	6,478	284,392	91,313	1,953	14,716	0	107,983	261,551	653,926
Queen's	1,678	5,264	7,758	257,352	94,891	2,509	1,925	2,417	101,742	254,484	613,578
Ryerson	398	7,071	5,439	186,237	23,052	0	10,938	0	33,990	138,667	358,894
Toronto (St. George)	1,909	12,106	14,350	585,081	123,928	3,724	38,614	0	166,266	466,841	1,218,188
Toronto (Mississauga)	422	1,303	1,745	76,683	32,209	0	3,248	0	35,457	79,094	191,235
Toronto (Scarborough)	312	1,657	3,064	74,541	15,078	0	13,696	0	28,775	59,144	162,460
Trent	169	1,072	134	55,013	35,447	946	2,560	0	38,953	40,878	134,844
Waterloo	1,962	5,417	4,398	340,936	145,229	0	11,770	1,995	158,993	253,605	753,534
Western	1,340	4,855	12,163	369,908	191,681	3,707	14,194	2,806	212,388	260,820	843,116
WLU	269	2,220	5,384	92,092	99,011	260	2,556	0	101,827	80,026	273,944
WLU (Brantford)	56	479	1,320	17,301	14,857	0	11,178	0	26,035	30,582	73,918
Windsor	400	1,541	2,360	140,794	18,098	0	2,873	474	21,445	113,751	275,991
York (Keele)	633	8,028	6,263	268,249	97,114	0	11,309	0	108,423	310,784	687,457
York (Glendon)	0	682	946	17,939	7,609	0	269	0	7,879	14,786	40,603
<b>TOTAL</b>	<b>19,471</b>	<b>74,736</b>	<b>97,408</b>	<b>3,890,884</b>	<b>1,359,958</b>	<b>23,971</b>	<b>198,272</b>	<b>74,643</b>	<b>1,656,844</b>	<b>3,138,392</b>	<b>8,686,120</b>

**Table 18: Percent Distribution of Actual Inventory by Major Formula Space Category and Institution, 2019-20**

	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	14.7%	9.7%	3.7%	8.3%	6.8%	26.6%	2.8%	1.8%	2.0%	10.2%	3.8%	4.0%	0.4%	2.5%	2.7%	100.0%
Brock	13.4%	10.6%	12.2%	19.1%	7.2%	9.0%	4.9%	1.1%	2.6%	9.1%	3.9%	2.4%	0.5%	1.4%	2.6%	100.0%
Carleton	10.2%	9.1%	11.2%	19.8%	10.9%	12.8%	4.0%	0.9%	1.0%	9.3%	2.3%	2.1%	0.8%	1.3%	4.4%	100.0%
Guelph	6.4%	10.7%	23.6%	18.7%	6.6%	13.1%	3.7%	0.6%	2.9%	6.9%	1.5%	2.3%	0.7%	1.3%	1.2%	100.0%
Lakehead	11.5%	15.8%	11.5%	12.7%	7.3%	10.8%	5.1%	0.8%	1.2%	9.2%	2.5%	3.8%	1.3%	3.2%	3.1%	100.0%
Laurentian	10.6%	11.8%	8.5%	20.4%	9.3%	11.7%	4.3%	0.7%	1.8%	11.8%	2.6%	1.5%	0.4%	3.3%	1.3%	100.0%
Laurentian (Hearst)	20.8%	3.9%	0.0%	15.4%	17.3%	9.6%	9.3%	0.3%	2.0%	4.9%	3.5%	5.5%	0.0%	0.3%	7.2%	100.0%
McMaster	12.9%	7.0%	19.7%	24.6%	8.0%	6.5%	3.2%	1.1%	1.3%	6.8%	3.4%	1.2%	0.7%	1.6%	2.0%	100.0%
Nipissing	22.0%	14.5%	5.7%	14.5%	8.1%	7.8%	7.5%	0.2%	0.4%	13.5%	2.0%	2.9%	0.4%	0.4%	0.0%	100.0%
NOSM	11.8%	10.2%	18.4%	19.1%	7.2%	0.0%	0.0%	0.0%	0.0%	27.6%	4.4%	0.9%	0.0%	0.4%	0.0%	100.0%
OCADU	12.9%	33.8%	7.3%	13.7%	5.3%	0.0%	0.3%	0.0%	0.6%	9.8%	3.5%	6.3%	1.1%	0.7%	4.8%	100.0%
Ontario Tech	16.1%	13.1%	16.2%	13.4%	6.4%	10.8%	1.7%	0.0%	1.0%	11.1%	3.0%	4.8%	0.0%	1.3%	0.9%	100.0%
Ottawa	11.0%	8.8%	15.2%	23.8%	9.6%	8.4%	2.3%	1.4%	2.2%	6.5%	4.8%	1.3%	0.7%	1.7%	2.3%	100.0%
Queen's	8.7%	9.8%	16.1%	24.6%	9.3%	8.4%	4.4%	1.2%	0.9%	7.0%	3.6%	0.3%	0.7%	2.0%	3.0%	100.0%
Ryerson	11.8%	16.8%	9.7%	18.9%	5.2%	7.7%	1.9%	0.6%	1.9%	9.4%	7.1%	2.1%	0.2%	3.8%	2.9%	100.0%
Toronto (St. George)	10.4%	7.1%	17.9%	27.3%	13.9%	5.1%	2.4%	0.6%	1.7%	4.7%	3.4%	0.7%	0.3%	2.1%	2.5%	100.0%
Toronto (Mississauga)	17.9%	11.0%	12.1%	15.7%	6.8%	8.9%	5.4%	0.6%	2.3%	9.0%	4.0%	1.7%	0.6%	1.7%	2.3%	100.0%
Toronto (Scarborough)	10.1%	8.5%	13.1%	15.9%	5.2%	12.8%	4.3%	1.0%	4.8%	9.9%	5.6%	2.1%	0.4%	2.2%	4.1%	100.0%
Trent	15.7%	8.5%	14.1%	18.0%	9.1%	7.2%	6.5%	0.8%	0.7%	10.8%	4.1%	1.9%	0.3%	1.9%	0.2%	100.0%
Waterloo	10.3%	10.1%	17.2%	24.7%	4.8%	5.3%	3.4%	0.8%	2.2%	9.9%	5.9%	1.8%	0.6%	1.6%	1.3%	100.0%
Western	13.0%	8.2%	16.3%	25.2%	8.5%	5.0%	4.5%	1.2%	0.8%	6.6%	3.7%	2.0%	0.4%	1.3%	3.3%	100.0%
WLU	12.1%	5.5%	6.8%	19.5%	8.7%	7.8%	3.5%	1.3%	2.4%	16.3%	5.7%	1.7%	0.3%	2.4%	5.8%	100.0%
WLU (Brantford)	20.0%	6.3%	0.9%	14.5%	2.4%	18.7%	2.3%	2.3%	2.7%	12.8%	5.8%	0.5%	0.3%	2.8%	7.6%	100.0%
Windsor	11.8%	15.0%	12.5%	19.5%	11.4%	7.6%	3.8%	0.7%	1.0%	8.5%	3.5%	1.7%	0.3%	1.1%	1.7%	100.0%
York (Keele)	13.5%	13.1%	10.3%	25.7%	8.6%	4.0%	3.6%	1.0%	1.8%	7.7%	3.5%	1.6%	0.2%	3.0%	2.3%	100.0%
York (Glendon)	18.6%	4.5%	0.9%	23.1%	10.2%	16.3%	4.9%	1.0%	2.1%	6.6%	1.6%	1.1%	0.0%	3.8%	5.3%	100.0%
<b>TOTAL</b>	<b>11.5%</b>	<b>10.0%</b>	<b>15.0%</b>	<b>22.5%</b>	<b>8.8%</b>	<b>7.6%</b>	<b>3.5%</b>	<b>0.9%</b>	<b>1.7%</b>	<b>7.9%</b>	<b>3.9%</b>	<b>1.7%</b>	<b>0.5%</b>	<b>1.9%</b>	<b>2.5%</b>	<b>100.0%</b>
<b>AVERAGE</b>	<b>13.4%</b>	<b>10.9%</b>	<b>11.6%</b>	<b>19.1%</b>	<b>8.2%</b>	<b>9.3%</b>	<b>3.8%</b>	<b>0.8%</b>	<b>1.7%</b>	<b>9.8%</b>	<b>3.8%</b>	<b>2.2%</b>	<b>0.5%</b>	<b>1.9%</b>	<b>2.9%</b>	

**Table 19: Percent Distribution of Actual Inventory by Major Space Category and Institution, 2019-20**

	<i>Formula space</i> (Cat 1-15)	<i>Non-Formula: Residential space</i> (Cat 17)	<i>Non-Formula: Other Space</i> (Cat 18-20)	<i>Non-Formula space</i> (Cat 17-20)	<i>Non-Assignable space</i> (Cat 16)	<i>Total Space</i> (Cat 1-20)
Algoma	55.2%	16.1%	1.2%	17.3%	27.5%	100%
Brock	44.4%	21.7%	1.9%	23.6%	32.0%	100%
Carleton	45.3%	14.5%	1.6%	16.0%	38.7%	100%
Guelph	45.9%	19.1%	5.7%	24.8%	29.3%	100%
Lakehead	47.4%	22.1%	2.3%	24.5%	28.1%	100%
Laurentian	44.2%	18.8%	6.2%	25.0%	30.8%	100%
Laurentian (Hearst)	54.3%	5.3%	17.8%	23.1%	22.6%	100%
McMaster	46.1%	11.8%	10.9%	22.6%	31.3%	100%
Nipissing	59.2%	7.7%	0.0%	7.7%	33.1%	100%
NOSM	65.8%	0.0%	0.0%	0.0%	34.2%	100%
OCADU	67.4%	0.4%	4.6%	5.1%	27.5%	100%
Ontario Tech	50.8%	0.0%	9.4%	9.4%	39.8%	100%
Ottawa	43.5%	14.0%	2.5%	16.5%	40.0%	100%
Queen's	41.9%	15.5%	1.1%	16.6%	41.5%	100%
Ryerson	51.9%	6.4%	3.0%	9.5%	38.6%	100%
Toronto (St. George)	48.0%	10.2%	3.5%	13.6%	38.3%	100%
Toronto (Mississauga)	40.1%	16.8%	1.7%	18.5%	41.4%	100%
Toronto (Scarborough)	45.9%	9.3%	8.4%	17.7%	36.4%	100%
Trent	40.8%	26.3%	2.6%	28.9%	30.3%	100%
Waterloo	45.2%	19.3%	1.8%	21.1%	33.7%	100%
Western	43.9%	22.7%	2.5%	25.2%	30.9%	100%
WLU	33.6%	36.1%	1.0%	37.2%	29.2%	100%
WLU (Brantford)	23.4%	20.1%	15.1%	35.2%	41.4%	100%
Windsor	51.0%	6.6%	1.2%	7.8%	41.2%	100%
York (Keele)	39.0%	14.1%	1.6%	15.8%	45.2%	100%
York (Glendon)	44.2%	18.7%	0.7%	19.4%	36.4%	100%
<b>TOTAL</b>	<b>44.8%</b>	<b>15.7%</b>	<b>3.4%</b>	<b>19.1%</b>	<b>36.1%</b>	<b>100%</b>
<b>AVERAGE</b>	<b>46.9%</b>	<b>14.4%</b>	<b>4.2%</b>	<b>18.5%</b>	<b>34.6%</b>	



## 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, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
<b>CLASSROOMS</b>							
Total FTE Students	1,023.60	1.11	1,136.20	2,217.65	195.2	83.9	128.5
<b>CLASS LABS</b>							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	1,515.00	0.6	909.00	1,023.38			
Lab Contact Hours Y	0.00	0.5	0.00	67.80			
Lab Contact Hours Z	0.00	0.3	0.00	381.54			
Unclassified	0.00			0.00			
<b>Total Class Lab</b>	<b>1,515.00</b>		<b>909.00</b>	<b>1,472.72</b>	162.0	75.7	n/a
<b>RESEARCH LABS</b>							
Research Disciplines A	4.60	45.0	207.00	469.96			
Research Disciplines B	5.60	30.0	168.00	9.53			
Research Disciplines C	0.00	20.0	0.00	0.00			
Research Disciplines D	7.20	10.0	72.00	14.36			
Research Disciplines E	9.20	5.0	46.00	0.00			
Research Disciplines F	18.80	2.0	37.60	65.16			
Unclassified	6.20			0.00			
Total Research	51.60		530.60	559.01	105.4	70.0	49.0
<b>OFFICE - ACADEMIC</b>							
Total FTE Faculty	103.20	12.0	1,238.40	798.51	64.5	114.1	61.2
Research Appointments	2.00	12.0	24.00	159.14			
Total FTE Grads	0.00	3.0	0.00	0.00	n/a	67.3	n/a
Total FTE Non-Acd Staff	7.00	12.0	84.00	77.99	92.8	103.5	0.0
Office Service	1,346.40	0.25	336.60	218.44	64.9	109.3	38.0
Total Academic Office			1,683.00	1,254.08	74.5	94.9	57.4
<b>OFFICE - ADMINISTRATIVE</b>							
Total FTE Non-Acd Staff	125.00	12.0	1,500.00	1,038.04	69.2	103.3	105.0
Office Service	1,500.00	0.5	750.00	498.43	66.5	120.3	88.1
Total Admin. Office			2,250.00	1,536.47	68.3	109.0	99.4
Total Office - Academic & Administrative			3,933.00	2,790.55	71.0	98.2	78.4
<b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>							
Study (Total FTE Students)	1,023.60	0.5	511.80	466.47	91.1	51.0	111.5
Traditional Static Shelving Space	88,490.57	0.005	442.45				
Mobile Compact Shelving	0.00	0.004	0.00				
Super High Density	0.00	0.0035	0.00				
Total Stack	88,490.57		442.45	386.34	87.3	79.8	62.3
Library Support	954.25	0.25	238.56	172.22	72.2	69.8	55.5
Total Library Facilities & Library Study Space			1,192.82	1,025.03	85.9	65.1	78.2
NON-LIBRARY STUDY SPACE	1,023.60	0.4	409.44	581.03	141.9	76.8	74.8
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>8,111.05</b>	<b>8,645.99</b>	<b>106.6</b>	<b>81.3</b>	<b>99.1</b>
<b>OTHER SPACE</b>							
<b>RECREATION / ATHLETICS</b>							
Total FTE Students	1,023.60	0.9	921.24	4,026.53	437.1	71.0	437.0
<b>MAINTENANCE SHOPS</b>							
Total NASM Inv. (exc. 16.0)	19,867.56	0.015	298.01	297.96	100.0	80.5	91.8
<b>STUDENT AND CENTRAL SERVICES</b>							
Total FTE Students	1,023.60	1.5	1,535.40	2,157.12	140.5	60.4	114.9
<b>SUB-TOTAL: OTHER SPACE</b>			<b>2,754.65</b>	<b>6,481.61</b>	<b>235.3</b>	<b>65.5</b>	<b>220.6</b>
<b>TOTAL FORMULA AREAS</b>			<b>10,865.71</b>	<b>15,127.60</b>	<b>139.2</b>	<b>77.4</b>	<b>134.9</b>

Note: Complete data was not available for this institution for 2016-17 so caution should be taken in making year-over-year comparisons.

**Table 21: BROCK: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
<b>CLASSROOMS</b>							
Total FTE Students	16,642.10	1.11	18,472.73	13,543.72	73.3	83.9	75.2
<b>CLASS LABS</b>							
Lab Contact Hours W	39.00	0.8	31.20	0.00			
Lab Contact Hours X	16,554.50	0.6	9,932.70	5,981.25			
Lab Contact Hours Y	6,817.00	0.5	3,408.50	1,190.53			
Lab Contact Hours Z	14,340.50	0.3	4,302.15	3,570.92			
Unclassified	0.00			0.00			
Total Class Lab	37,751.00		17,674.55	10,742.70	60.8	75.7	50.4
<b>RESEARCH LABS</b>							
Research Disciplines A	167.90	45.0	7,555.28	6,332.96			
Research Disciplines B	48.00	30.0	1,440.00	1,403.51			
Research Disciplines C	9.00	20.0	180.00	1,278.56			
Research Disciplines D	160.86	10.0	1,608.60	1,859.43			
Research Disciplines E	396.61	5.0	1,983.03	461.29			
Research Disciplines F	517.51	2.0	1,035.01	944.03			
Unclassified	0.00			0.00			
Total Research	1,299.87		13,801.91	12,279.78	89.0	70.0	130.9
<b>OFFICE - ACADEMIC</b>							
Total FTE Faculty	661.47	12.0	7,937.64	8,359.37	105.3	114.1	106.1
Research Appointments	46.78	12.0	561.36	288.53	51.4		72.1
Total FTE Grads	1,646.10	3.0	4,938.30	3,471.63	70.3	67.3	75.7
Total FTE Non-Acd Staff	236.66	12.0	2,839.92	3,280.26	115.5	103.5	81.6
Office Service	16,277.22	0.25	4,069.30	3,933.78	96.7	109.3	114.6
Total Academic Office			20,346.53	19,333.57	95.0	94.9	96.4
<b>OFFICE - ADMINISTRATIVE</b>							
Total FTE Non-Acd Staff	509.23	12.0	6,110.76	6,548.88	107.2	103.3	105.7
Office Service	6,110.76	0.5	3,055.38	2,634.67	86.2	120.3	116.4
Total Admin. Office			9,166.14	9,183.55	100.2	109.0	109.2
Total Office - Academic & Administrative			29,512.67	28,517.12	96.6	98.2	100.3
<b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>							
Study (Total FTE Students)	16,642.10	0.5	8,321.05	3,669.59	44.1	51.0	34.5
Traditional Static Shelving Space	797,813.59	0.005	3,989.07				
Mobile Compact Shelving	0.00	0.004	0.00				
Super High Density	0.00	0.0035	0.00				
Total Stack	797,813.59		3,989.07	2,003.44	50.2	79.8	52.6
Library Support	12,310.12	0.25	3,077.53	1,637.56	53.2	69.8	58.2
Total Library Facilities & Library Study Space			15,387.65	7,310.59	47.5	65.1	44.2
NON-LIBRARY STUDY SPACE	16,642.10	0.4	6,656.84	3,900.56	58.6	76.8	70.9
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>101,506.34</b>	<b>76,294.47</b>	<b>75.2</b>	<b>81.3</b>	<b>78.1</b>
<b>OTHER SPACE</b>							
<b>RECREATION / ATHLETICS</b>							
Total FTE Students	16,642.10	0.9	14,977.89	9,112.35	60.8	71.0	64.9
<b>MAINTENANCE SHOPS</b>							
Total NASM Inv. (exc. 16.0)	154,741.14	0.015	2,321.12	2,583.26	111.3	80.5	109.2
<b>STUDENT AND CENTRAL SERVICES</b>							
Total FTE Students	16,642.10	1.5	24,963.15	13,031.18	52.2	60.4	64.5
<b>SUB-TOTAL: OTHER SPACE</b>			<b>42,262.16</b>	<b>24,726.79</b>	<b>58.5</b>	<b>65.5</b>	<b>67.3</b>
<b>TOTAL FORMULA AREAS</b>			<b>143,768.50</b>	<b>101,021.26</b>	<b>70.3</b>	<b>77.4</b>	<b>75.0</b>

**Table 22: CARLETON: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	2016-17 % I / G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
<b>CLASSROOMS</b>							
Total FTE Students	26,322.92	1.11	29,218.44	19,335.70	66.2	83.9	63.6
<b>CLASS LABS</b>							
Lab Contact Hours W	6,415.00	0.8	5,132.00	4,132.50			
Lab Contact Hours X	20,818.00	0.6	12,490.80	6,071.52			
Lab Contact Hours Y	20,443.00	0.5	10,221.50	5,126.95			
Lab Contact Hours Z	28,514.00	0.3	8,554.20	1,908.76			
Unclassified	98.00			0.00			
Total Class Lab	76,288.00		36,398.50	17,239.73	47.4	75.7	49.7
<b>RESEARCH LABS</b>							
Research Disciplines A	416.51	45.0	18,742.95	9,224.33			
Research Disciplines B	526.06	30.0	15,781.65	8,659.50			
Research Disciplines C	272.04	20.0	5,440.80	1,964.78			
Research Disciplines D	198.71	10.0	1,987.05	796.35			
Research Disciplines E	543.02	5.0	2,715.08	109.29			
Research Disciplines F	982.22	2.0	1,964.43	133.13			
Unclassified	35.99			343.58			
Total Research	2,974.53		46,631.96	21,230.96	45.5	70.0	55.2
<b>OFFICE - ACADEMIC</b>							
Total FTE Faculty	1,041.73	12.0	12,500.76	16,221.70	129.8	114.1	136.6
Research Appointments	120.00	12.0	1,440.00	1,333.77	92.6		146.4
Total FTE Grads	3,811.40	3.0	11,434.20	5,493.41	48.0	67.3	49.5
Total FTE Non-Acd Staff	254.45	12.0	3,053.40	4,160.44	136.3	103.5	138.8
Office Service	28,428.36	0.25	7,107.09	10,447.13	147.0	109.3	151.4
Total Academic Office			35,535.45	37,656.45	106.0	94.9	110.5
<b>OFFICE - ADMINISTRATIVE</b>							
Total FTE Non-Acd Staff	735.34	12.0	8,824.08	9,091.56	103.0	103.3	79.1
Office Service	8,824.08	0.5	4,412.04	8,578.37	194.4	120.3	187.7
Total Admin. Office			13,236.12	17,669.93	133.5	109.0	115.3
Total Office - Academic & Administrative			48,771.57	55,326.38	113.4	98.2	111.8
<b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>							
Study (Total FTE Students)	26,322.92	0.5	13,161.46	9,263.52	70.4	51.0	64.7
Traditional Static Shelving Space	941,083.67	0.005	4,705.42				
Mobile Compact Shelving	220,656.16	0.004	882.62				
Super High Density	565,791.30	0.0035	1,980.27				
Total Stack	1,727,531.13		7,568.31	7,719.32	102.0	79.8	99.6
Library Support	20,729.77	0.25	5,182.44	3,720.25	71.8	69.8	78.6
Total Library Facilities & Library Study Space			25,912.22	20,703.09	79.9	65.1	78.9
NON-LIBRARY STUDY SPACE	26,322.92	0.4	10,529.17	4,413.05	41.9	76.8	46.6
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>197,461.85</b>	<b>138,248.91</b>	<b>70.0</b>	<b>81.3</b>	<b>72.5</b>
<b>OTHER SPACE</b>							
<b>RECREATION / ATHLETICS</b>							
Total FTE Students	26,322.92	0.9	23,690.63	24,249.62	102.4	71.0	106.6
<b>MAINTENANCE SHOPS</b>							
Total NASM Inv. (exc. 16.0)	256,925.18	0.015	3,853.88	1,876.46	48.7	80.5	49.7
<b>STUDENT AND CENTRAL SERVICES</b>							
Total FTE Students	26,322.92	1.5	39,484.38	25,416.44	64.4	60.4	62.6
<b>SUB-TOTAL: OTHER SPACE</b>			<b>67,028.89</b>	<b>51,542.52</b>	<b>76.9</b>	<b>65.5</b>	<b>77.4</b>
<b>TOTAL FORMULA AREAS</b>			<b>264,490.74</b>	<b>189,791.43</b>	<b>71.8</b>	<b>77.4</b>	<b>73.8</b>

**Table 23: GUELPH: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	22,632.92	1.11	25,122.54	16,655.00	66.3	83.9	68.5
CLASS LABS							
Lab Contact Hours W	10,871.00	0.8	8,696.80	3,464.07			
Lab Contact Hours X	34,317.00	0.6	20,590.20	14,069.27			
Lab Contact Hours Y	19,885.00	0.5	9,942.50	7,779.70			
Lab Contact Hours Z	14,814.00	0.3	4,444.20	2,545.42			
Unclassified	0.00			0.00			
Total Class Lab	79,887.00		43,673.70	27,858.46	63.8	75.7	53.9
RESEARCH LABS							
Research Disciplines A	1,080.09	45.0	48,604.05	52,311.99			
Research Disciplines B	320.46	30.0	9,613.65	4,507.20			
Research Disciplines C	85.50	20.0	1,710.00	3,559.05			
Research Disciplines D	145.41	10.0	1,454.10	391.42			
Research Disciplines E	398.17	5.0	1,990.85	615.56			
Research Disciplines F	307.89	2.0	615.78	77.03			
Unclassified	0.00			0.00			
Total Research	2,337.52		63,988.43	61,462.25	96.1	70.0	103.5
OFFICE - ACADEMIC							
Total FTE Faculty	943.43	12.0	11,321.11	14,620.60	129.1	114.1	133.2
Research Appointments	459.08	12.0	5,508.96	2,725.85	49.5		60.9
Total FTE Grads	2,897.50	3.0	8,692.50	9,051.45	104.1	67.3	105.1
Total FTE Non-Acd Staff	577.50	12.0	6,930.00	8,824.77	127.3	103.5	131.0
Office Service	32,452.57	0.25	8,113.14	13,621.87	167.9	109.3	162.6
Total Academic Office			40,565.71	48,844.54	120.4	94.9	123.6
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	1,000.44	12.0	12,005.28	11,856.62	98.8	103.3	118.5
Office Service	12,005.28	0.5	6,002.64	6,016.25	100.2	120.3	143.2
Total Admin. Office			18,007.92	17,872.87	99.3	109.0	126.7
Total Office - Academic & Administrative			58,573.63	66,717.41	113.9	98.2	124.3
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	22,632.92	0.5	11,316.46	6,460.92	57.1	51.0	48.9
Traditional Static Shelving Space	607,895.92	0.005	3,039.48				
Mobile Compact Shelving	420,743.22	0.004	1,682.97				
Super High Density	526,172.50	0.0035	1,841.60				
Total Stack	1,554,811.64		6,564.06	7,170.05	109.2	79.8	112.7
Library Support	17,880.52	0.25	4,470.13	3,663.04	81.9	69.8	72.4
Total Library Facilities & Library Study Space			22,350.65	17,294.01	77.4	65.1	74.3
NON-LIBRARY STUDY SPACE	22,632.92	0.4	9,053.17	3,907.19	43.2	76.8	40.9
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>222,762.12</b>	<b>193,894.32</b>	<b>87.0</b>	<b>81.3</b>	<b>86.9</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	22,632.92	0.9	20,369.63	34,150.63	167.7	71.0	171.8
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	401,897.30	0.015	6,028.46	7,508.51	124.6	80.5	118.2
STUDENT AND CENTRAL SERVICES							
Total FTE Students	22,632.92	1.5	33,949.38	25,292.75	74.5	60.4	69.6
<b>SUB-TOTAL: OTHER SPACE</b>			<b>60,347.47</b>	<b>66,951.89</b>	<b>110.9</b>	<b>65.5</b>	<b>109.0</b>
<b>TOTAL FORMULA AREAS</b>			<b>283,109.58</b>	<b>260,846.21</b>	<b>92.1</b>	<b>77.4</b>	<b>91.6</b>

**Table 24: LAKEHEAD: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	2016-17 % I / G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	7,644.34	1.11	8,485.22	9,848.27	116.1	83.9	117.4
CLASS LABS							
Lab Contact Hours W	3,979.00	0.8	3,183.20	1,548.89			
Lab Contact Hours X	8,710.75	0.6	5,226.45	5,865.97			
Lab Contact Hours Y	7,735.27	0.5	3,867.64	3,503.10			
Lab Contact Hours Z	8,102.25	0.3	2,430.68	2,505.37			
Unclassified	0.00			190.89			
Total Class Lab	28,527.27		14,707.96	13,614.22	92.6	75.7	78.7
RESEARCH LABS							
Research Disciplines A	84.82	45.0	3,816.68	2,652.44			
Research Disciplines B	188.72	30.0	5,661.45	3,172.18			
Research Disciplines C	89.50	20.0	1,790.00	1,086.17			
Research Disciplines D	314.85	10.0	3,148.50	826.17			
Research Disciplines E	100.50	5.0	502.50	208.49			
Research Disciplines F	307.58	2.0	615.16	276.83			
Unclassified	0.00			1,688.65			
Total Research	1,085.96		15,534.29	9,910.93	63.8	70.0	53.8
OFFICE - ACADEMIC							
Total FTE Faculty	514.02	12.0	6,168.24	5,855.92	94.9	114.1	113.7
Research Appointments	94.36	12.0	1,132.32	822.30	72.6		59.6
Total FTE Grads	1,437.50	3.0	4,312.50	1,355.84	31.4	67.3	37.4
Total FTE Non-Acd Staff	131.98	12.0	1,583.76	1,528.12	96.5	103.5	87.5
Office Service	13,196.82	0.25	3,299.21	1,340.33	40.6	109.3	46.5
Total Academic Office			16,496.03	10,902.51	66.1	94.9	74.7
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	437.21	12.0	5,246.52	5,033.44	95.9	103.3	90.9
Office Service	5,246.52	0.5	2,623.26	2,882.81	109.9	120.3	99.9
Total Admin. Office			7,869.78	7,916.25	100.6	109.0	93.9
Total Office - Academic & Administrative			24,365.81	18,818.76	77.2	98.2	81.2
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	7,644.34	0.5	3,822.17	3,295.82	86.2	51.0	91.4
Traditional Static Shelving Space	637,168.86	0.005	3,185.84				
Mobile Compact Shelving	0.00	0.004	0.00				
Super High Density	0.00	0.0035	0.00				
Total Stack	637,168.86		3,185.84	1,878.89	59.0	79.8	82.1
Library Support	7,008.02	0.25	1,752.00	1,108.83	63.3	69.8	92.3
Total Library Facilities & Library Study Space			8,760.02	6,283.54	71.7	65.1	88.0
NON-LIBRARY STUDY SPACE	7,644.34	0.4	3,057.74	2,184.39	71.4	76.8	69.5
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>74,911.02</b>	<b>60,660.11</b>	<b>81.0</b>	<b>81.3</b>	<b>79.4</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	7,644.34	0.9	6,879.91	9,287.15	135.0	71.0	139.2
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	130,220.73	0.015	1,953.31	1,013.33	51.9	80.5	53.5
STUDENT AND CENTRAL SERVICES							
Total FTE Students	7,644.34	1.5	11,466.51	14,942.37	130.3	60.4	127.3
<b>SUB-TOTAL: OTHER SPACE</b>			<b>20,299.73</b>	<b>25,242.85</b>	<b>124.4</b>	<b>65.5</b>	<b>124.2</b>
<b>TOTAL FORMULA AREAS</b>			<b>95,210.75</b>	<b>85,902.96</b>	<b>90.2</b>	<b>77.4</b>	<b>88.9</b>

**Table 25: LAURENTIAN: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
<b>CLASSROOMS</b>							
Total FTE Students	6,962.10	1.11	7,727.93	8,365.93	108.3	83.9	102.2
<b>CLASS LABS</b>							
Lab Contact Hours W	0.00	0.8	0.00	350.39			
Lab Contact Hours X	10,027.00	0.6	6,016.20	5,342.17			
Lab Contact Hours Y	1,425.00	0.5	712.50	2,388.83			
Lab Contact Hours Z	3,450.00	0.3	1,035.00	1,283.83			
Unclassified	0.00			0.00			
Total Class Lab	14,902.00		7,763.70	9,365.22	120.6	75.7	167.8
<b>RESEARCH LABS</b>							
Research Disciplines A	139.34	45.0	6,270.30	4,530.83			
Research Disciplines B	66.66	30.0	1,999.80	527.09			
Research Disciplines C	15.37	20.0	307.40	110.77			
Research Disciplines D	77.83	10.0	778.30	967.91			
Research Disciplines E	142.70	5.0	713.50	54.23			
Research Disciplines F	208.75	2.0	417.50	588.16			
Unclassified	0.00			0.00			
Total Research	650.65		10,486.80	6,778.98	64.6	70.0	69.4
<b>OFFICE - ACADEMIC</b>							
Total FTE Faculty	469.73	12.0	5,636.76	6,973.07	123.7	114.1	166.9
Research Appointments	139.00	12.0	1,668.00	1,719.97	103.1		119.9
Total FTE Grads	766.90	3.0	2,300.70	1,781.77	77.4	67.3	45.1
Total FTE Non-Acd Staff	94.50	12.0	1,134.00	2,414.83	212.9	103.5	199.0
Office Service	10,739.46	0.25	2,684.87	3,255.33	121.2	109.3	142.5
Total Academic Office			13,424.33	16,144.97	120.3	94.9	140.1
<b>OFFICE - ADMINISTRATIVE</b>							
Total FTE Non-Acd Staff	316.80	12.0	3,801.60	4,959.46	130.5	103.3	105.4
Office Service	3,801.60	0.5	1,900.80	4,422.58	232.7	120.3	160.2
Total Admin. Office			5,702.40	9,382.04	164.5	109.0	123.6
Total Office - Academic & Administrative			19,126.73	25,527.01	133.5	98.2	134.4
<b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>							
Study (Total FTE Students)	6,962.10	0.5	3,481.05	3,158.89	90.7	51.0	78.0
Traditional Static Shelving Space	720,035.19	0.005	3,600.18				
Mobile Compact Shelving	70,075.61	0.004	280.30				
Super High Density	0.00	0.0035	0.00				
Total Stack	790,110.80		3,880.48	3,071.35	79.1	79.8	95.6
Library Support	7,361.53	0.25	1,840.38	1,138.32	61.9	69.8	64.6
Total Library Facilities & Library Study Space			9,201.91	7,368.56	80.1	65.1	82.6
NON-LIBRARY STUDY SPACE	6,962.10	0.4	2,784.84	2,064.62	74.1	76.8	53.5
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>57,091.91</b>	<b>59,470.32</b>	<b>104.2</b>	<b>81.3</b>	<b>106.0</b>
<b>OTHER SPACE</b>							
<b>RECREATION / ATHLETICS</b>							
Total FTE Students	6,962.10	0.9	6,265.89	9,239.33	147.5	71.0	147.2
<b>MAINTENANCE SHOPS</b>							
Total NASM Inv. (exc. 16.0)	124,032.96	0.015	1,860.49	1,456.72	78.3	80.5	74.9
<b>STUDENT AND CENTRAL SERVICES</b>							
Total FTE Students	6,962.10	1.5	10,443.15	9,122.81	87.4	60.4	78.5
<b>SUB-TOTAL: OTHER SPACE</b>			<b>18,569.53</b>	<b>19,818.86</b>	<b>106.7</b>	<b>65.5</b>	<b>101.6</b>
<b>TOTAL FORMULA AREAS</b>			<b>75,661.44</b>	<b>79,289.18</b>	<b>104.8</b>	<b>77.4</b>	<b>104.8</b>

**Table 26: HEARST: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	2016-17 % I/G	2019-20 System Average	2013-14 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	114.80	1.11	127.43	1,063.00	834.2	83.9	1006.1
CLASS LABS							
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	75.7	2792.2
RESEARCH LABS							
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			
Research Disciplines F	0.00		0.00	0.00			
Unclassified	0.00			0.00			
Total Research	1.00		10.00	0.00	n/a	70.0	na
OFFICE - ACADEMIC							
Total FTE Faculty	1.00	12.0	12.00	456.34	3802.8	114.1	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	67.3	na
Total FTE Non-Acd Staff	5.00	12.0	60.00	90.49	150.8	103.5	165.4
Office Service	72.00	0.25	18.00	138.72	770.7	109.3	1293.7
Total Academic Office			90.00	788.47	876.1	94.9	1219.3
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	10.00	12.0	120.00	213.88	178.2	103.3	127.3
Office Service	120.00	0.5	60.00	35.17	58.6	120.3	180.7
Total Admin. Office			180.00	249.05	138.4	109.0	145.1
Total Office - Academic & Administrative			270.00	1,037.52	384.3	98.2	349.3
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
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	79.8	196.5
Library Support	507.55	0.25	126.89	68.47	54.0	69.8	68.3
Total Library Facilities & Library Study Space			634.44	886.66	139.8	65.1	177.0
NON-LIBRARY STUDY SPACE	114.80	0.4	45.92	176.61	384.6	76.8	na
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>1,091.39</b>	<b>3,364.83</b>	<b>308.3</b>	<b>81.3</b>	<b>339.8</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	114.80	0.9	103.32	490.34	474.6	71.0	0.0
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	7,294.61	0.015	109.42	102.47	93.6	80.5	96.9
STUDENT AND CENTRAL SERVICES							
Total FTE Students	114.80	1.5	172.20	1,158.60	672.8	60.4	1489.4
<b>SUB-TOTAL: OTHER SPACE</b>			<b>384.94</b>	<b>1,751.41</b>	<b>455.0</b>	<b>65.5</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>77.4</b>	<b>414.5</b>

\*\*NOTE: Data for 2019 was not available for this institution, so 2016 data is reflected.

**Table 27: MCMASTER: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	%I/G	System Average	2016-17 %I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
<b>CLASSROOMS</b>							
Total FTE Students	30,501.80	1.11	33,857.00	35,097.96	103.7	83.9	85.3
<b>CLASS LABS</b>							
Lab Contact Hours W	10,112.67	0.8	8,090.13	2,860.89			
Lab Contact Hours X	23,721.80	0.6	14,233.08	12,718.75			
Lab Contact Hours Y	12,419.51	0.5	6,209.75	1,524.12			
Lab Contact Hours Z	7,371.24	0.3	2,211.37	1,460.62			
Unclassified	0.00			392.00			
Total Class Lab	53,625.21		30,744.34	18,956.38	61.7	75.7	53.9
<b>RESEARCH LABS</b>							
Research Disciplines A	706.56	45.0	31,795.20	20,465.67			
Research Disciplines B	597.09	30.0	17,912.55	10,862.65			
Research Disciplines C	387.90	20.0	7,758.00	1,764.01			
Research Disciplines D	283.31	10.0	2,833.10	12,373.66			
Research Disciplines E	586.89	5.0	2,934.43	2,031.97			
Research Disciplines F	621.74	2.0	1,243.47	531.76			
Unclassified	0.00			5,723.43			
Total Research	3,183.48		64,476.75	53,753.16	83.4	70.0	93.5
<b>OFFICE - ACADEMIC</b>							
Total FTE Faculty	1,021.02	12.0	12,252.24	17,598.53	143.6	114.1	123.8
Research Appointments	863.44	12.0	10,361.32	12,116.71	116.9		50.4
Total FTE Grads	4,460.40	3.0	13,381.20	9,483.51	70.9	67.3	83.2
Total FTE Non-Acd Staff	1,084.28	12.0	13,011.31	14,392.76	110.6	103.5	98.4
Office Service	49,006.07	0.25	12,251.52	13,489.62	110.1	109.3	92.7
Total Academic Office			61,257.59	67,081.13	109.5	94.9	89.1
<b>OFFICE - ADMINISTRATIVE</b>							
Total FTE Non-Acd Staff	976.48	12.0	11,717.70	13,160.39	112.3	103.3	283.0
Office Service	11,717.70	0.5	5,858.85	5,434.97	92.8	120.3	204.9
Total Admin. Office			17,576.55	18,595.36	105.8	109.0	257.0
Total Office - Academic & Administrative			78,834.14	85,676.49	108.7	98.2	105.0
<b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>							
Study (Total FTE Students)	30,501.80	0.5	15,250.90	8,957.32	58.7	51.0	49.5
Traditional Static Shelving Space	1,146,559.54	0.005	5,732.80				
Mobile Compact Shelving	644,253.60	0.004	2,577.01				
Super High Density	234,353.66	0.0035	820.24				
Total Stack	2,025,166.80		9,130.05	8,492.64	93.0	79.8	113.4
Library Support	24,380.95	0.25	6,095.24	4,293.53	70.4	69.8	73.3
Total Library Facilities & Library Study Space			30,476.19	21,743.49	71.3	65.1	73.7
NON-LIBRARY STUDY SPACE	30,501.80	0.4	12,200.72	9,313.84	76.3	76.8	67.6
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>250,589.13</b>	<b>224,541.32</b>	<b>89.6</b>	<b>81.3</b>	<b>87.1</b>
<b>OTHER SPACE</b>							
<b>RECREATION / ATHLETICS</b>							
Total FTE Students	30,501.80	0.9	27,451.62	17,737.87	64.6	71.0	68.6
<b>MAINTENANCE SHOPS</b>							
Total NASM Inv. (exc. 16.0)	406,034.21	0.015	6,090.51	3,437.63	56.4	80.5	60.2
<b>STUDENT AND CENTRAL SERVICES</b>							
Total FTE Students	30,501.80	1.5	45,752.71	26,747.98	58.5	60.4	57.2
<b>SUB-TOTAL: OTHER SPACE</b>			<b>79,294.84</b>	<b>47,923.48</b>	<b>60.4</b>	<b>65.5</b>	<b>61.4</b>
<b>TOTAL FORMULA AREAS</b>			<b>329,883.97</b>	<b>272,464.80</b>	<b>82.6</b>	<b>77.4</b>	<b>81.3</b>



**Table 28: NIPISSING: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	3,919.50	1.11	4,350.65	5,708.51	131.2	83.9	131.2
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	2,539.00	0.6	1,523.40	1,227.19			
Lab Contact Hours Y	5,417.50	0.5	2,708.75	1,701.05			
Lab Contact Hours Z	3,515.00	0.3	1,054.50	833.10			
Unclassified	0.00			0.00			
Total Class Lab	11,471.50		5,286.65	3,761.34	71.1	75.7	67.3
RESEARCH LABS							
Research Disciplines A	11.30	45.0	508.50	738.75			
Research Disciplines B	0.00	30.0	0.00	397.92			
Research Disciplines C	0.00	20.0	0.00	0.00			
Research Disciplines D	4.00	10.0	40.00	199.39			
Research Disciplines E	0.00	5.0	0.00	0.00			
Research Disciplines E	64.45	2.0	128.90	15.39			
Unclassified	0.00			129.10			
Total Research	79.75		677.40	1,480.55	218.6	70.0	49.2
OFFICE - ACADEMIC							
Total FTE Faculty	336.70	12.0	4,040.40	2,950.79	73.0	114.1	73.0
Research Appointments	7.00	12.0	84.00	170.29	202.7		202.7
Total FTE Grads	157.50	3.0	472.50	123.34	26.1	67.3	26.1
Total FTE Non-Acd Staff	258.00	12.0	3,096.00	509.94	16.5	103.5	16.5
Office Service	7,692.90	0.25	1,923.23	11.39	0.6	109.3	0.6
Total Academic Office			9,616.13	3,765.75	39.2	94.9	39.2
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	18.00	12.0	216.00	2,133.24	987.6	103.3	987.6
Office Service	216.00	0.5	108.00	1,367.61	1266.3	120.3	1266.3
Total Admin. Office			324.00	3,500.85	1080.5	109.0	1080.5
Total Office - Academic & Administrative			9,940.13	7,266.60	73.1	98.2	73.1
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	3,919.50	0.5	1,959.75	0.00	0.0	51.0	0.0
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	1,645.00	142.5	79.8	0.6
Library Support	3,113.88	0.25	778.47	444.00	57.0	69.8	49.6
Total Library Facilities & Library Study Space			3,892.35	2,089.00	53.7	65.1	10.1
NON-LIBRARY STUDY SPACE	3,919.50	0.4	1,567.80	510.72	32.6	76.8	32.6
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>25,714.97</b>	<b>20,816.72</b>	<b>81.0</b>	<b>81.3</b>	<b>67.5</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	3,919.50	0.9	3,527.55	2,030.70	57.6	71.0	83.8
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	29,256.17	0.015	438.84	102.73	23.4	80.5	24.0
STUDENT AND CENTRAL SERVICES							
Total FTE Students	3,919.50	1.5	5,879.25	2,949.85	50.2	60.4	50.2
<b>SUB-TOTAL: OTHER SPACE</b>			<b>9,845.64</b>	<b>5,083.28</b>	<b>51.6</b>	<b>65.5</b>	<b>61.1</b>
<b>TOTAL FORMULA AREAS</b>			<b>35,560.61</b>	<b>25,900.00</b>	<b>72.8</b>	<b>77.4</b>	<b>65.8</b>

**Table 29: Northern Ontario School of Medicine (NOSM): Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	2016-17 % I/G	2019-20 System Average	2013-14 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	512.00	1.11	568.32	987.90	173.8	83.9	695.3
CLASS LABS							
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	75.7	368.4
RESEARCH LABS							
Research Disciplines A	45.50	45.0	2,047.50	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	5.0	0.00	0.00			
Research Disciplines F	0.00	2.0	0.00	0.00			
Unclassified	0.00			0.00			
Total Research	45.50		2,047.50	1,538.20	75.1	70.0	122.1
OFFICE - ACADEMIC							
Total FTE Faculty	26.00	12.0	312.00	694.60	222.6	114.1	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		67.3	
Total FTE Non-Acd Staff	203.00	12.0	2,436.00	815.10	33.5	103.5	33.5
Office Service	2,796.00	0.25	699.00	87.30	12.5	109.3	12.5
Total Academic Office			3,495.00	1,597.00	45.7	94.9	45.7
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	37.00	12.0	444.00	1,418.20	319.4	103.3	319.2
Office Service	444.00	0.5	222.00	887.40	399.7	120.3	399.7
Total Admin. Office			666.00	2,305.60	346.2	109.0	346.2
Total Office - Academic & Administrative			4,161.00	3,902.60	93.8	98.2	93.8
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
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	79.8	1141.9
Library Support	295.35	0.25	73.84	155.00	209.9	69.8	533.8
Total Library Facilities & Library Study Space			369.18	604.30	163.7	65.1	499.0
NON-LIBRARY STUDY SPACE	512.00	0.4	204.80	367.50	179.4	76.8	na
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>7,581.20</b>	<b>8,249.20</b>	<b>108.8</b>	<b>81.3</b>	<b>134.7</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	512.00	0.9	460.80	0.00	0.0	71.0	0.0
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	8,360.80	0.015	125.41	0.00	0.0	80.5	0.0
STUDENT AND CENTRAL SERVICES							
Total FTE Students	512.00	1.5	768.00	111.60	14.5	60.4	187.0
<b>SUB-TOTAL: OTHER SPACE</b>			<b>1,354.21</b>	<b>111.60</b>	<b>8.2</b>	<b>65.5</b>	<b>83.0</b>
<b>TOTAL FORMULA AREAS</b>			<b>8,935.42</b>	<b>8,360.80</b>	<b>93.6</b>	<b>77.4</b>	<b>131.2</b>

\*\*NOTE: Data for 2019 was not available for this institution, so 2016 data is reflected.

**Table 30: OCADU: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
<b>CLASSROOMS</b>							
Total FTE Students	7,937.90	1.11	8,811.07	3,515.24	39.9	83.9	59.8
<b>CLASS LABS</b>							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	45,859.00	0.6	27,515.40	8,915.55			
Lab Contact Hours Y	0.00	0.5	0.00	0.00			
Lab Contact Hours Z	250.00	0.3	75.00	282.37			
Unclassified	0.00			0.00			
Total Class Lab	46,109.00		27,590.40	9,197.92	33.3	75.7	42.9
<b>RESEARCH LABS</b>							
Research Disciplines A	0.00	45.0	0.00	0.00			
Research Disciplines B	1.47	30.0	44.10	0.00			
Research Disciplines C	0.00	20.0	0.00	0.00			
Research Disciplines D	76.08	10.0	760.80	263.54			
Research Disciplines E	207.53	5.0	1,037.65	1,715.96			
Research Disciplines f	15.24	2.0	30.48	0.00			
Unclassified	0.00			0.00			
Total Research	300.32		1,873.03	1,979.50	105.7	70.0	91.9
<b>OFFICE - ACADEMIC</b>							
Total FTE Faculty	327.97	12.0	3,935.64	1,329.89	33.8	114.1	62.4
Research Appointments	26.97	12.0	323.64	125.80	38.9		226.2
Total FTE Grads	276.50	3.0	829.50	1,200.78	144.8	67.3	117.5
Total FTE Non-Acd Staff	27.00	12.0	324.00	843.17	260.2	103.5	197.6
Office Service	5,412.78	0.25	1,353.20	217.24	16.1	109.3	41.6
Total Academic Office			6,765.98	3,716.88	54.9	94.9	87.2
<b>OFFICE - ADMINISTRATIVE</b>							
Total FTE Non-Acd Staff	254.62	12.0	3,055.44	2,193.02	71.8	103.3	0.0
Office Service	3,055.44	0.5	1,527.72	470.14	30.8	120.3	32.4
Total Admin. Office			4,583.16	2,663.16	58.1	109.0	10.8
Total Office - Academic & Administrative			11,349.14	6,380.04	56.2	98.2	48.7
<b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>							
Study (Total FTE Students)	7,937.90	0.5	3,968.95	308.05	7.8	51.0	16.6
Traditional Static Shelving Space	105,994.39	0.005	529.97				
Mobile Compact Shelving	5,450.18	0.004	21.80				
Super High Density	0.00	0.0035	0.00				
Total Stack	111,444.58		551.77	738.78	133.9	79.8	53.7
Library Support	4,520.72	0.25	1,130.18	388.71	34.4	69.8	63.3
Total Library Facilities & Library Study Space			5,650.90	1,435.54	25.4	65.1	38.2
NON-LIBRARY STUDY SPACE	7,937.90	0.4	3,175.16	951.56	30.0	76.8	32.2
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>58,449.70</b>	<b>23,459.80</b>	<b>40.1</b>	<b>81.3</b>	<b>47.0</b>
<b>OTHER SPACE</b>							
<b>RECREATION / ATHLETICS</b>							
Total FTE Students	7,937.90	0.9	7,144.11	0.00	0.0	71.0	0.0
<b>MAINTENANCE SHOPS</b>							
Total NASM Inv. (exc. 16.0)	29,239.70	0.015	438.60	171.91	39.2	80.5	0.0
<b>STUDENT AND CENTRAL SERVICES</b>							
Total FTE Students	7,937.90	1.5	11,906.85	3,568.96	30.0	60.4	17.6
<b>SUB-TOTAL: OTHER SPACE</b>			<b>19,489.56</b>	<b>3,740.87</b>	<b>19.2</b>	<b>65.5</b>	<b>11.0</b>
<b>TOTAL FORMULA AREAS</b>			<b>77,939.25</b>	<b>27,200.67</b>	<b>34.9</b>	<b>77.4</b>	<b>40.8</b>

**Table 31: ONTARIO TECH: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	2016-17 % I / G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	8,570.76	1.11	9,513.54	8,595.61	90.4	83.9	80.4
CLASS LABS							
Lab Contact Hours W	1,052.00	0.8	841.60	1,399.34			
Lab Contact Hours X	7,806.01	0.6	4,683.61	3,150.99			
Lab Contact Hours Y	5,147.50	0.5	2,573.75	1,601.68			
Lab Contact Hours Z	2,766.87	0.3	830.06	844.89			
Unclassified	0.00			0.00			
Total Class Lab	16,772.38		8,929.02	6,996.90	78.4	75.7	58.9
RESEARCH LABS							
Research Disciplines A	85.85	45.0	3,863.25	2,361.34			
Research Disciplines B	117.75	30.0	3,532.50	2,732.27			
Research Disciplines C	58.95	20.0	1,179.00	1,038.55			
Research Disciplines D	92.88	10.0	928.85	1,450.53			
Research Disciplines E	111.89	5.0	559.45	975.37			
Research Disciplines E	64.65	2.0	129.30	91.88			
Unclassified	1.50			0.00			
Total Research	533.48		10,192.35	8,649.94	84.9	70.0	78.0
OFFICE - ACADEMIC							
Total FTE Faculty	304.00	12.0	3,648.00	4,353.43	119.3	114.1	126.7
Research Appointments	33.75	12.0	405.00	70.01	17.3		34.6
Total FTE Grads	607.20	3.0	1,821.60	594.52	32.6	67.3	45.2
Total FTE Non-Acd Staff	118.50	12.0	1,422.00	1,185.76	83.4	103.5	71.4
Office Service	7,296.60	0.25	1,824.15	947.72	52.0	109.3	48.1
Total Academic Office			9,120.75	7,151.44	78.4	94.9	83.3
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	356.80	12.0	4,281.60	3,964.55	92.6	103.3	86.4
Office Service	4,281.60	0.5	2,140.80	1,962.40	91.7	120.3	77.1
Total Admin. Office			6,422.40	5,926.95	92.3	109.0	83.3
Total Office - Academic & Administrative			15,543.15	13,078.39	84.1	98.2	83.3
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	8,570.76	0.5	4,285.38	1,615.09	37.7	51.0	41.0
Traditional Static Shelving Space	64,059.04	0.005	320.30				
Mobile Compact Shelving	6,972.50	0.004	27.89				
Super High Density	0.00	0.0035	0.00				
Total Stack	71,031.54		348.19	1,079.59	310.1	79.8	203.0
Library Support	4,633.56	0.25	1,158.39	737.59	63.7	69.8	102.4
Total Library Facilities & Library Study Space			5,791.96	3,432.27	59.3	65.1	64.6
NON-LIBRARY STUDY SPACE	8,570.76	0.4	3,428.30	1,582.61	46.2	76.8	28.8
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>53,398.32</b>	<b>42,335.72</b>	<b>79.3</b>	<b>81.3</b>	<b>71.3</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	8,570.76	0.9	7,713.68	5,769.57	74.8	71.0	75.2
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	63,182.50	0.015	947.74	545.87	57.6	80.5	62.7
STUDENT AND CENTRAL SERVICES							
Total FTE Students	8,570.76	1.5	12,856.14	4,692.70	36.5	60.4	35.7
<b>SUB-TOTAL: OTHER SPACE</b>			<b>21,517.56</b>	<b>11,008.14</b>	<b>51.2</b>	<b>65.5</b>	<b>51.0</b>
<b>TOTAL FORMULA AREAS</b>			<b>74,915.87</b>	<b>53,343.86</b>	<b>71.2</b>	<b>77.4</b>	<b>65.5</b>

**Table 32: OTTAWA: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	%I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
<b>CLASSROOMS</b>							
Total FTE Students	38,184.77	1.11	42,385.09	31,240.85	73.7	83.9	64.3
<b>CLASS LABS</b>							
Lab Contact Hours W	3,061.50	0.8	2,449.20	2,306.41			
Lab Contact Hours X	29,113.69	0.6	17,468.21	13,592.40			
Lab Contact Hours Y	23,611.17	0.5	11,805.59	6,141.35			
Lab Contact Hours Z	9,615.37	0.3	2,884.61	2,765.36			
Unclassified	189.19			193.25			
Total Class Lab	65,590.92		34,607.61	24,998.77	72.2	75.7	61.9
<b>RESEARCH LABS</b>							
Research Disciplines A	668.85	45.0	30,098.25	20,010.30			
Research Disciplines B	959.40	30.0	28,782.00	12,617.56			
Research Disciplines C	527.05	20.0	10,541.00	3,451.53			
Research Disciplines D	287.00	10.0	2,870.00	2,582.04			
Research Disciplines E	967.80	5.0	4,839.00	618.10			
Research Disciplines F	1,485.00	2.0	2,970.00	2,281.53			
Unclassified	0.00			1,579.91			
Total Research	4,895.10		80,100.25	43,140.97	53.9	70.0	58.5
<b>OFFICE - ACADEMIC</b>							
Total FTE Faculty	2,787.66	12.0	33,451.92	22,965.15	68.7	114.1	103.8
Research Appointments	691.42	12.0	8,297.04	4,142.31	49.9		132.9
Total FTE Grads	6,702.20	3.0	20,106.60	12,344.96	61.4	67.3	63.6
Total FTE Non-Acad Staff	902.31	12.0	10,827.72	14,126.53	130.5	103.5	91.4
Office Service	72,683.28	0.25	18,170.82	14,099.14	77.6	109.3	88.1
Total Academic Office			90,854.10	67,678.09	74.5	94.9	89.4
<b>OFFICE - ADMINISTRATIVE</b>							
Total FTE Non-Acad Staff	1,040.99	12.0	12,491.88	11,754.20	94.1	103.3	98.9
Office Service	12,491.88	0.5	6,245.94	6,662.35	106.7	120.3	91.2
Total Admin. Office			18,737.82	18,416.56	98.3	109.0	96.3
Total Office - Academic & Administrative			109,591.92	86,094.65	78.6	98.2	91.0
<b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>							
Study (Total FTE Students)	38,184.77	0.5	19,092.38	10,887.03	57.0	51.0	53.5
Traditional Static Shelving Space	1,760,970.89	0.005	8,804.85				
Mobile Compact Shelving	0.00	0.004	0.00				
Super High Density	1,552,919.84	0.0035	5,435.22				
Total Stack	3,313,890.72		14,240.07	11,338.99	79.6	79.8	92.2
Library Support	33,332.46	0.25	8,333.11	5,075.26	60.9	69.8	65.3
Total Library Facilities & Library Study Space			41,665.57	27,301.28	65.5	65.1	68.3
NON-LIBRARY STUDY SPACE	38,184.77	0.4	15,273.91	13,733.60	89.9	76.8	68.2
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>323,624.36</b>	<b>226,510.11</b>	<b>70.0</b>	<b>81.3</b>	<b>72.2</b>
<b>OTHER SPACE</b>							
<b>RECREATION / ATHLETICS</b>							
Total FTE Students	38,184.77	0.9	34,366.29	24,005.29	69.9	71.0	72.4
<b>MAINTENANCE SHOPS</b>							
Total NASM Inv. (exc. 16.0)	392,374.31	0.015	5,885.61	6,391.03	108.6	80.5	75.6
<b>STUDENT AND CENTRAL SERVICES</b>							
Total FTE Students	38,184.77	1.5	57,277.15	27,485.20	48.0	60.4	43.2
<b>SUB-TOTAL: OTHER SPACE</b>			<b>97,529.06</b>	<b>57,881.52</b>	<b>59.3</b>	<b>65.5</b>	<b>55.4</b>

**Table 33: QUEEN'S: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	26,713.91	1.11	29,652.44	22,479.81	75.8	83.9	84.2
CLASS LABS							
Lab Contact Hours W	9,140.50	0.8	7,312.40	1,997.12			
Lab Contact Hours X	11,759.00	0.6	7,055.40	5,681.55			
Lab Contact Hours Y	26,649.16	0.5	13,324.58	16,277.25			
Lab Contact Hours Z	4,654.50	0.3	1,396.35	857.73			
Unclassified	132.00			350.17			
Total Class Lab	52,335.17		29,088.73	25,163.82	86.5	75.7	92.9
RESEARCH LABS							
Research Disciplines A	334.15	45.0	15,036.57	14,721.53			
Research Disciplines B	246.72	30.0	7,401.45	7,197.11			
Research Disciplines C	205.66	20.0	4,113.13	6,431.32			
Research Disciplines D	279.22	10.0	2,792.22	6,605.60			
Research Disciplines E	876.32	5.0	4,381.59	3,361.25			
Research Disciplines F	1,600.47	2.0	3,200.94	1,327.75			
Unclassified	62.49			1,741.24			
Total Research	3,605.01		36,925.90	41,385.80	112.1	70.0	79.2
OFFICE - ACADEMIC							
Total FTE Faculty	1,073.73	12.0	12,884.80	19,580.45	152.0	114.1	158.2
Research Appointments	562.26	12.0	6,747.17	4,345.30	64.4		76.1
Total FTE Grads	4,980.20	3.0	14,940.60	10,626.02	71.1	67.3	84.4
Total FTE Non-Acd Staff	929.22	12.0	11,150.65	14,681.26	131.7	103.5	149.8
Office Service	45,723.22	0.25	11,430.80	14,056.40	123.0	109.3	140.6
Total Academic Office			57,154.02	63,289.43	110.7	94.9	124.8
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	977.04	12.0	11,724.47	11,179.32	95.4	103.3	153.2
Office Service	11,724.47	0.5	5,862.23	6,893.06	117.6	120.3	176.6
Total Admin. Office			17,586.70	18,072.38	102.8	109.0	161.0
Total Office - Academic & Administrative			74,740.72	81,361.81	108.9	98.2	131.6
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	26,713.91	0.5	13,356.96	8,659.91	64.8	51.0	73.1
Traditional Static Shelving Space	3,200,249.55	0.005	16,001.25				
Mobile Compact Shelving	178,150.45	0.004	712.60				
Super High Density	0.00	0.0035	0.00				
Total Stack	3,378,400.00		16,713.85	10,681.14	63.9	79.8	49.2
Library Support	30,070.80	0.25	7,517.70	4,494.60	59.8	69.8	51.6
Total Library Facilities & Library Study Space			37,588.51	23,835.65	63.4	65.1	56.5
NON-LIBRARY STUDY SPACE	26,713.91	0.4	10,685.56	9,228.54	86.4	76.8	85.0
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>218,681.86</b>	<b>203,455.43</b>	<b>93.0</b>	<b>81.3</b>	<b>92.0</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	26,713.91	0.9	24,042.52	21,508.77	89.5	71.0	80.0
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	359,093.63	0.015	5,386.40	2,427.20	45.1	80.5	44.5
STUDENT AND CENTRAL SERVICES							
Total FTE Students	26,713.91	1.5	40,070.87	29,960.64	74.8	60.4	80.3
<b>SUB-TOTAL: OTHER SPACE</b>			<b>69,499.79</b>	<b>53,896.61</b>	<b>77.5</b>	<b>65.5</b>	<b>77.2</b>
<b>TOTAL FORMULA AREAS</b>			<b>288,181.65</b>	<b>257,352.04</b>	<b>89.3</b>	<b>77.4</b>	<b>88.7</b>

**Table 34: RYERSON: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	36,627.78	1.11	40,656.84	21,954.66	54.0	83.9	50.3
CLASS LABS							
Lab Contact Hours W	14,321.50	0.8	11,457.20	4,807.62			
Lab Contact Hours X	44,035.00	0.6	26,421.00	16,941.69			
Lab Contact Hours Y	14,145.00	0.5	7,072.50	5,020.39			
Lab Contact Hours Z	33,530.00	0.3	10,059.00	4,608.93			
Unclassified	0.00			0.00			
Total Class Lab	106,031.50		55,009.70	31,378.63	57.0	75.7	60.7
RESEARCH LABS							
Research Disciplines A	141.50	45.0	6,367.50	4,116.22			
Research Disciplines B	410.00	30.0	12,300.00	7,348.54			
Research Disciplines C	250.50	20.0	5,010.00	2,821.63			
Research Disciplines D	186.00	10.0	1,860.00	764.17			
Research Disciplines E	778.52	5.0	3,892.58	1,550.22			
Research Disciplines F	487.00	2.0	974.00	1,401.26			
Unclassified	1.00			0.00			
Total Research	2,254.52		30,404.08	18,002.04	59.2	70.0	53.8
OFFICE - ACADEMIC							
Total FTE Faculty	1,317.91	12.0	15,814.92	16,845.67	106.5	114.1	97.4
Research Appointments	317.60	12.0	3,811.20	1,934.54	50.8		19.8
Total FTE Grads	2,679.00	3.0	8,037.00	1,073.98	13.4	67.3	17.4
Total FTE Non-Acd Staff	716.31	12.0	8,595.72	4,554.79	53.0	103.5	61.6
Office Service	36,258.84	0.25	9,064.71	10,750.34	118.6	109.3	101.1
Total Academic Office			45,323.55	35,159.32	77.6	94.9	71.5
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	1,244.43	12.0	14,933.16	11,279.14	75.5	103.3	88.6
Office Service	14,933.16	0.5	7,466.58	6,263.88	83.9	120.3	90.2
Total Admin. Office			22,399.74	17,543.02	78.3	109.0	89.1
Total Office - Academic & Administrative			67,723.29	52,702.34	77.8	98.2	77.1
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	36,627.78	0.5	18,313.89	3,686.95	20.1	51.0	22.1
Traditional Static Shelving Space	685,306.53	0.005	3,426.53				
Mobile Compact Shelving	43,200.00	0.004	172.80				
Super High Density	0.00	0.0035	0.00				
Total Stack	728,506.53		3,599.33	3,588.84	99.7	79.8	106.4
Library Support	21,913.22	0.25	5,478.31	2,428.77	44.3	69.8	39.3
Total Library Facilities & Library Study Space			27,391.53	9,704.56	35.4	65.1	36.7
NON-LIBRARY STUDY SPACE	36,627.78	0.4	14,651.11	13,227.33	90.3	76.8	90.5
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>235,836.54</b>	<b>146,969.56</b>	<b>62.3</b>	<b>81.3</b>	<b>61.7</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	36,627.78	0.9	32,965.00	14,285.91	43.3	71.0	45.4
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	220,227.12	0.015	3,303.41	3,459.40	104.7	80.5	88.4
STUDENT AND CENTRAL SERVICES							
Total FTE Students	36,627.78	1.5	54,941.67	21,522.41	39.2	60.4	35.8
<b>SUB-TOTAL: OTHER SPACE</b>			<b>91,210.08</b>	<b>39,267.72</b>	<b>43.1</b>	<b>65.5</b>	<b>41.0</b>
<b>TOTAL FORMULA AREAS</b>			<b>327,046.62</b>	<b>186,237.28</b>	<b>56.9</b>	<b>77.4</b>	<b>55.9</b>

**Table 35: TORONTO-ST. GEORGE: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	2016-17 % I / G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
<b>CLASSROOMS</b>							
Total FTE Students	55,631.55	1.11	61,751.02	61,013.35	98.8	83.9	98.4
<b>CLASS LABS</b>							
Lab Contact Hours W	8,621.15	0.8	6,896.92	3,053.29			
Lab Contact Hours X	35,571.32	0.6	21,342.79	27,399.88			
Lab Contact Hours Y	7,022.12	0.5	3,511.06	8,050.59			
Lab Contact Hours Z	2,510.22	0.3	753.07	2,878.49			
Unclassified	0.00			0.00			
Total Class Lab	53,724.81		32,503.84	41,382.25	127.3	75.7	109.9
<b>RESEARCH LABS</b>							
Research Disciplines A	1,357.92	45.0	61,106.40	48,640.35			
Research Disciplines B	1,794.06	30.0	53,821.65	27,754.50			
Research Disciplines C	1,324.86	20.0	26,497.20	16,947.96			
Research Disciplines D	553.90	10.0	5,539.00	3,713.00			
Research Disciplines E	3,601.71	5.0	18,008.55	6,013.47			
Research Disciplines F	2,371.03	2.0	4,742.05	1,374.55			
Unclassified	0.00			0.00			
Total Research	11,003.47		169,714.85	104,443.83	61.5	70.0	64.8
<b>OFFICE - ACADEMIC</b>							
Total FTE Faculty	2,542.06	12.0	30,504.72	49,991.24	163.9	114.1	168.2
Research Appointments	1,830.90	12.0	21,970.80	9,853.98	44.9		56.6
Total FTE Grads	17,982.90	3.0	53,948.70	27,071.65	50.2	67.3	52.3
Total FTE Non-Acd Staff	3,024.37	12.0	36,292.44	34,086.88	93.9	103.5	99.3
Office Service	142,716.66	0.25	35,679.17	38,613.55	108.2	109.3	117.2
Total Academic Office			178,395.83	159,617.30	89.5	94.9	96.4
<b>OFFICE - ADMINISTRATIVE</b>							
Total FTE Non-Acd Staff	1,616.08	12.0	19,392.96	19,599.72	101.1	103.3	105.1
Office Service	19,392.96	0.5	9,696.48	7,874.18	81.2	120.3	91.9
Total Admin. Office			29,089.44	27,473.90	94.4	109.0	100.7
Total Office - Academic & Administrative			207,485.27	187,091.20	90.2	98.2	97.1
<b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>							
Study (Total FTE Students)	55,631.55	0.5	27,815.77	25,210.58	90.6	51.0	94.9
Traditional Static Shelving Space	8,626,621.51	0.005	43,133.11				
Mobile Compact Shelving	1,668,329.65	0.004	6,673.32				
Super High Density	2,636,151.00	0.0035	9,226.53				
Total Stack	12,931,102.16		59,032.95	37,295.18	63.2	79.8	60.9
Library Support	86,848.73	0.25	21,712.18	18,711.84	86.2	69.8	77.6
Total Library Facilities & Library Study Space			108,560.91	81,217.60	74.8	65.1	72.5
NON-LIBRARY STUDY SPACE	55,631.55	0.4	22,252.62	20,105.27	90.4	76.8	87.4
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>602,268.50</b>	<b>495,253.50</b>	<b>82.2</b>	<b>81.3</b>	<b>84.3</b>
<b>OTHER SPACE</b>							
<b>RECREATION / ATHLETICS</b>							
Total FTE Students	55,631.55	0.9	50,068.39	29,808.70	59.5	71.0	63.2
<b>MAINTENANCE SHOPS</b>							
Total NASM Inv. (exc. 16.0)	751,347.37	0.015	11,270.21	9,921.52	88.0	80.5	82.7
<b>STUDENT AND CENTRAL SERVICES</b>							
Total FTE Students	55,631.55	1.5	83,447.32	50,097.26	60.0	60.4	58.0
<b>SUB-TOTAL: OTHER SPACE</b>			<b>144,785.92</b>	<b>89,827.48</b>	<b>62.0</b>	<b>65.5</b>	<b>61.8</b>
<b>TOTAL FORMULA AREAS</b>			<b>747,054.42</b>	<b>585,080.98</b>	<b>78.3</b>	<b>77.4</b>	<b>79.9</b>



**Table 36: TORONTO-MISSISSAUGA: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	2016-17 % I / G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
<b>CLASSROOMS</b>							
Total FTE Students	13,634.00	1.11	15,133.74	13,695.10	90.5	83.9	90.5
<b>CLASS LABS</b>							
Lab Contact Hours W	0.00	0.8	0.00	41.09			
Lab Contact Hours X	8,423.39	0.6	5,054.03	6,079.94			
Lab Contact Hours Y	3,349.17	0.5	1,674.59	1,033.15			
Lab Contact Hours Z	6,690.58	0.3	2,007.17	1,303.51			
Unclassified	0.00			0.00			
Total Class Lab	18,463.14		8,735.79	8,457.69	96.8	75.7	87.3
<b>RESEARCH LABS</b>							
Research Disciplines A	141.50	45.0	6,367.50	5,615.73			
Research Disciplines B	86.37	30.0	2,591.10	2,008.28			
Research Disciplines C	37.00	20.0	740.00	609.24			
Research Disciplines D	41.00	10.0	410.00	587.41			
Research Disciplines E	74.00	5.0	370.00	223.35			
Research Disciplines E	365.20	2.0	730.40	236.04			
Unclassified	0.00			0.00			
Total Research	745.07		11,209.00	9,280.05	82.8	70.0	66.9
<b>OFFICE - ACADEMIC</b>							
Total FTE Faculty	463.71	12.0	5,564.52	6,209.38	111.6	114.1	114.2
Research Appointments	104.30	12.0	1,251.60	727.87	58.2		58.0
Total FTE Grads	821.40	3.0	2,464.20	1,363.03	55.3	67.3	79.2
Total FTE Non-Acd Staff	149.87	12.0	1,798.44	1,837.93	102.2	103.5	118.4
Office Service	11,078.76	0.25	2,769.69	1,903.30	68.7	109.3	77.0
Total Academic Office			13,848.45	12,041.51	87.0	94.9	96.4
<b>OFFICE - ADMINISTRATIVE</b>							
Total FTE Non-Acd Staff	359.85	12.0	4,318.20	4,699.48	108.8	103.3	104.0
Office Service	4,318.20	0.5	2,159.10	2,198.85	101.8	120.3	100.1
Total Admin. Office			6,477.30	6,898.33	106.5	109.0	102.7
Total Office - Academic & Administrative			20,325.75	18,939.84	93.2	98.2	98.4
<b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>							
Study (Total FTE Students)	13,634.00	0.5	6,817.00	2,682.98	39.4	51.0	51.7
Traditional Static Shelving Space	1,096.89	0.005	5.48				
Mobile Compact Shelving	479,855.05	0.004	1,919.42				
Super High Density	36,018.00	0.0035	126.06				
Total Stack	516,969.94		2,050.97	1,508.87	73.6	79.8	72.4
Library Support	8,867.97	0.25	2,216.99	1,050.86	47.4	69.8	47.4
Total Library Facilities & Library Study Space			11,084.96	5,242.71	47.3	65.1	55.0
NON-LIBRARY STUDY SPACE	13,634.00	0.4	5,453.60	3,062.66	56.2	76.8	47.6
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>71,942.84</b>	<b>58,678.05</b>	<b>81.6</b>	<b>81.3</b>	<b>79.3</b>
<b>OTHER SPACE</b>							
<b>RECREATION / ATHLETICS</b>							
Total FTE Students	13,634.00	0.9	12,270.60	6,851.56	55.8	71.0	61.6
<b>MAINTENANCE SHOPS</b>							
Total NASM Inv. (exc. 16.0)	112,140.70	0.015	1,682.11	1,776.73	105.6	80.5	96.1
<b>STUDENT AND CENTRAL SERVICES</b>							
Total FTE Students	13,634.00	1.5	20,451.00	9,376.94	45.9	60.4	44.7
<b>SUB-TOTAL: OTHER SPACE</b>			<b>34,403.71</b>	<b>18,005.23</b>	<b>52.3</b>	<b>65.5</b>	<b>53.2</b>
<b>TOTAL FORMULA AREAS</b>			<b>106,346.55</b>	<b>76,683.28</b>	<b>72.1</b>	<b>77.4</b>	<b>70.9</b>

**Table 37: TORONTO-SCARBOROUGH: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	2016-17 % I / G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	11,523.20	1.11	12,790.75	7,549.19	59.0	83.9	54.9
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	8,627.67	0.6	5,176.60	5,008.89			
Lab Contact Hours Y	581.25	0.5	290.63	600.15			
Lab Contact Hours Z	104.00	0.3	31.20	733.17			
Unclassified	0.00			0.00			
Total Class Lab	9,312.92		5,498.43	6,342.21	115.3	75.7	93.0
RESEARCH LABS							
Research Disciplines A	213.50	45.0	9,607.50	7,364.76			
Research Disciplines B	66.00	30.0	1,980.00	1,496.50			
Research Disciplines C	17.00	20.0	340.00	631.65			
Research Disciplines D	17.00	10.0	170.00	0.00			
Research Disciplines E	66.50	5.0	332.50	0.00			
Research Disciplines E	114.85	2.0	229.70	277.74			
Unclassified	0.00			0.00			
Total Research	494.85		12,659.70	9,770.65	77.2	70.0	64.4
OFFICE - ACADEMIC							
Total FTE Faculty	404.48	12.0	4,853.76	5,709.48	117.6	114.1	115.0
Research Appointments	108.20	12.0	1,298.40	454.86	35.0		54.3
Total FTE Grads	361.40	3.0	1,084.20	1,911.65	176.3	67.3	187.9
Total FTE Non-Acd Staff	96.69	12.0	1,160.28	1,155.27	99.6	103.5	99.0
Office Service	8,396.64	0.25	2,099.16	2,612.38	124.4	109.3	127.5
Total Academic Office			10,495.80	11,843.64	112.8	94.9	117.2
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	390.08	12.0	4,680.96	4,776.72	102.0	103.3	103.8
Office Service	4,680.96	0.5	2,340.48	2,598.07	111.0	120.3	103.8
Total Admin. Office			7,021.44	7,374.79	105.0	109.0	103.8
Total Office - Academic & Administrative			17,517.24	19,218.43	109.7	98.2	111.6
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	11,523.20	0.5	5,761.60	1,646.96	28.6	51.0	29.9
Traditional Static Shelving Space	213,298.41	0.005	1,066.49				
Mobile Compact Shelving	20,393.68	0.004	81.57				
Super High Density	101,596.00	0.0035	355.59				
Total Stack	335,288.10		1,503.65	1,282.30	85.3	79.8	78.6
Library Support	7,265.25	0.25	1,816.31	910.72	50.1	69.8	49.7
Total Library Facilities & Library Study Space			9,081.57	3,839.98	42.3	65.1	42.7
NON-LIBRARY STUDY SPACE	11,523.20	0.4	4,609.28	4,147.82	90.0	76.8	80.3
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>62,156.96</b>	<b>50,868.28</b>	<b>81.8</b>	<b>81.3</b>	<b>75.2</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	11,523.20	0.9	10,370.88	9,533.99	91.9	71.0	96.0
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	103,315.89	0.015	1,549.74	3,546.30	228.8	80.5	234.2
STUDENT AND CENTRAL SERVICES							
Total FTE Students	11,523.20	1.5	17,284.80	10,592.78	61.3	60.4	53.3
<b>SUB-TOTAL: OTHER SPACE</b>			<b>29,205.42</b>	<b>23,673.07</b>	<b>81.1</b>	<b>65.5</b>	<b>77.9</b>
<b>TOTAL FORMULA AREAS</b>			<b>91,362.38</b>	<b>74,541.35</b>	<b>81.6</b>	<b>77.4</b>	<b>76.0</b>

**Table 38: TRENT: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	9,669.37	1.11	10,733.00	8,646.01	80.6	83.9	92.2
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	12,965.00	0.6	7,779.00	2,513.08			
Lab Contact Hours Y	1,789.00	0.5	894.50	1,191.03			
Lab Contact Hours Z	2,247.00	0.3	674.10	754.28			
Unclassified	0.00			244.32			
Total Class Lab	17,001.00		9,347.60	4,702.71	50.3	75.7	56.4
RESEARCH LABS							
Research Disciplines A	37.15	45.0	1,671.75	3,671.70			
Research Disciplines B	38.00	30.0	1,140.00	644.86			
Research Disciplines C	28.55	20.0	571.00	558.76			
Research Disciplines D	98.45	10.0	984.50	1,519.60			
Research Disciplines E	57.00	5.0	285.00	0.00			
Research Disciplines F	141.65	2.0	283.30	89.02			
Unclassified	107.50			1,275.91			
Total Research	508.30		4,935.55	7,759.85	157.2	70.0	151.0
OFFICE - ACADEMIC							
Total FTE Faculty	543.65	12.0	6,523.80	5,068.36	77.7	114.1	169.6
Research Appointments	30.00	12.0	360.00	406.28	112.9		135.2
Total FTE Grads	581.30	3.0	1,743.90	1,555.91	89.2	67.3	134.1
Total FTE Non-Acd Staff	129.62	12.0	1,555.44	1,333.68	85.7	103.5	97.0
Office Service	10,183.14	0.25	2,545.79	1,539.95	60.5	109.3	112.4
Total Academic Office			12,728.93	9,904.18	77.8	94.9	136.0
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	336.60	12.0	4,039.20	4,248.27	105.2	103.3	125.1
Office Service	4,039.20	0.5	2,019.60	1,699.47	84.1	120.3	101.6
Total Admin. Office			6,058.80	5,947.74	98.2	109.0	117.3
Total Office - Academic & Administrative			18,787.73	15,851.92	84.4	98.2	128.5
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	9,669.37	0.5	4,834.69	2,141.76	44.3	51.0	44.3
Traditional Static Shelving Space	537,112.93	0.005	2,685.56				
Mobile Compact Shelving	0.00	0.004	0.00				
Super High Density	2,705.00	0.0035	9.47				
Total Stack	539,817.93		2,695.03	1,601.59	59.4	79.8	72.7
Library Support	7,529.72	0.25	1,882.43	1,256.37	66.7	69.8	56.9
Total Library Facilities & Library Study Space			9,412.15	4,999.72	53.1	65.1	57.6
NON-LIBRARY STUDY SPACE	9,669.37	0.4	3,867.75	2,269.24	58.7	76.8	63.3
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>57,083.77</b>	<b>44,229.45</b>	<b>77.5</b>	<b>81.3</b>	<b>93.5</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	9,669.37	0.9	8,702.43	3,965.14	45.6	71.0	56.2
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	93,966.19	0.015	1,409.49	380.42	27.0	80.5	34.1
STUDENT AND CENTRAL SERVICES							
Total FTE Students	9,669.37	1.5	14,504.06	6,438.01	44.4	60.4	46.2
<b>SUB-TOTAL: OTHER SPACE</b>			<b>24,615.99</b>	<b>10,783.57</b>	<b>43.8</b>	<b>65.5</b>	<b>49.1</b>
<b>TOTAL FORMULA AREAS</b>			<b>81,699.76</b>	<b>55,013.02</b>	<b>67.3</b>	<b>77.4</b>	<b>80.3</b>

**Table 39: WATERLOO: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	33,740.79	1.11	37,452.28	35,132.36	93.8	83.9	91.2
CLASS LABS							
Lab Contact Hours W	3,697.88	0.8	2,958.30	2,110.62			
Lab Contact Hours X	27,127.74	0.6	16,276.64	17,067.65			
Lab Contact Hours Y	13,931.24	0.5	6,965.62	7,815.67			
Lab Contact Hours Z	2,504.98	0.3	751.49	4,356.85			
Unclassified	5,256.00			3,063.41			
Total Class Lab	52,517.84		26,952.06	34,414.20	127.7	75.7	102.9
RESEARCH LABS							
Research Disciplines A	536.07	45.0	24,122.93	22,844.89			
Research Disciplines B	692.54	30.0	20,776.20	18,599.58			
Research Disciplines C	422.99	20.0	8,459.80	5,267.36			
Research Disciplines D	758.53	10.0	7,585.30	8,116.42			
Research Disciplines E	882.13	5.0	4,410.65	594.40			
Research Disciplines F	400.78	2.0	801.55	274.30			
Unclassified	312.35			3,045.26			
Total Research	4,005.38		66,156.43	58,742.21	88.8	70.0	77.1
OFFICE - ACADEMIC							
Total FTE Faculty	1,625.22	12.0	19,502.64	24,775.12	127.0	114.1	135.7
Research Appointments	653.52	12.0	7,842.24	3,997.10	51.0		68.7
Total FTE Grads	5,184.80	3.0	15,554.40	23,387.66	150.4	67.3	146.1
Total FTE Non-Acd Staff	1,170.62	12.0	14,047.44	14,105.25	100.4	99.4	111.8
Office Service	56,946.72	0.25	14,236.68	18,101.21	127.1	108.3	134.7
Total Academic Office			71,183.40	84,366.34	118.5	94.0	127.1
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	1,386.00	12.0	16,632.00	21,120.09	127.0	99.3	118.5
Office Service	16,632.00	0.5	8,316.00	12,679.64	152.5	115.7	132.1
Total Admin. Office			24,948.00	33,799.73	135.5	104.8	123.0
Total Office - Academic & Administrative			96,131.40	118,166.07	122.9	96.6	125.9
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	33,740.79	0.5	16,870.40	4,870.78	28.9	51.0	26.5
Traditional Static Shelving Space	1,258,039.06	0.005	6,290.20				
Mobile Compact Shelving	346,538.86	0.004	1,386.16				
Super High Density	684,090.01	0.0035	2,394.32				
Total Stack	2,288,667.92		10,070.67	7,731.07	76.8	79.8	87.6
Library Support	26,941.06	0.25	6,735.27	3,775.32	56.1	69.8	59.8
Total Library Facilities & Library Study Space			33,676.33	16,377.17	48.6	65.1	52.1
NON-LIBRARY STUDY SPACE	33,740.79	0.4	13,496.32	19,963.73	147.9	76.8	128.8
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>273,864.81</b>	<b>282,795.74</b>	<b>103.3</b>	<b>80.8</b>	<b>96.9</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	33,740.79	0.9	30,366.71	18,158.24	59.8	71.0	46.0
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	499,929.43	0.015	7,498.94	7,545.11	100.6	80.5	99.9
STUDENT AND CENTRAL SERVICES							
Total FTE Students	33,740.79	1.5	50,611.19	32,437.21	64.1	60.4	62.3
<b>SUB-TOTAL: OTHER SPACE</b>			<b>88,476.84</b>	<b>58,140.56</b>	<b>65.7</b>	<b>65.5</b>	<b>60.0</b>
<b>TOTAL FORMULA AREAS</b>			<b>362,341.65</b>	<b>340,936.30</b>	<b>94.1</b>	<b>77.1</b>	<b>88.4</b>

**Table 40: WESTERN: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	2016-17 % I / G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	37,023.50	1.11	41,096.09	48,181.85	117.2	85.2	102.3
CLASS LABS							
Lab Contact Hours W	12,461.40	0.8	9,969.12	2,670.94			
Lab Contact Hours X	49,184.35	0.6	29,510.61	23,677.02			
Lab Contact Hours Y	15,490.50	0.5	7,745.25	2,748.52			
Lab Contact Hours Z	21,960.40	0.3	6,588.12	1,401.74			
Unclassified	0.00			0.00			
Total Class Lab	99,096.65		53,813.10	30,498.22	56.7	76.2	53.0
RESEARCH LABS							
Research Disciplines A	1,109.55	45.0	49,929.89	35,260.84			
Research Disciplines B	1,118.23	30.0	33,546.87	18,668.16			
Research Disciplines C	330.96	20.0	6,619.29	2,032.86			
Research Disciplines D	220.76	10.0	2,207.63	3,430.74			
Research Disciplines E	1,706.29	5.0	8,531.43	536.36			
Research Disciplines F	330.20	2.0	660.40	535.23			
Unclassified	0.00			0.00			
Total Research	4,816.00		101,495.52	60,464.19	59.6	70.0	64.4
OFFICE - ACADEMIC							
Total FTE Faculty	1,858.88	12.0	22,306.52	30,230.87	135.5	115.3	120.9
Research Appointments	989.75	12.0	11,876.95	3,029.63	25.5		16.6
Total FTE Grads	6,422.10	3.0	19,266.30	16,893.19	87.7	67.1	92.8
Total FTE Non-Acd Staff	1,441.22	12.0	17,294.66	22,380.26	129.4	102.7	98.2
Office Service	70,744.44	0.25	17,686.11	20,617.65	116.6	107.8	121.9
Total Academic Office			88,430.55	93,151.60	105.3	95.2	92.4
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	1,445.69	12.0	17,348.24	13,102.79	75.5	98.2	87.5
Office Service	17,348.24	0.5	8,674.12	11,204.79	129.2	114.4	145.6
Total Admin. Office			26,022.37	24,307.58	93.4	103.6	106.9
Total Office - Academic & Administrative			114,452.91	117,459.18	102.6	97.3	95.4
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	37,023.50	0.5	18,511.75	9,211.22	49.8	50.9	51.9
Traditional Static Shelving Space	1,722,266.85	0.005	8,611.33				
Mobile Compact Shelving	21,748.50	0.004	86.99				
Super High Density	2,129,418.03	0.0035	7,452.96				
Total Stack	3,873,433.39		16,151.29	13,837.15	85.7	79.8	85.9
Library Support	34,663.04	0.25	8,665.76	8,480.72	97.9	69.2	107.2
Total Library Facilities & Library Study Space			43,328.80	31,529.09	72.8	64.8	76.0
NON-LIBRARY STUDY SPACE	37,023.50	0.4	14,809.40	13,752.63	92.9	79.6	55.4
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>368,995.82</b>	<b>301,885.16</b>	<b>81.8</b>	<b>81.4</b>	<b>77.9</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	37,023.50	0.9	33,321.15	18,496.02	55.5	70.5	61.4
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	582,296.34	0.015	8,734.45	2,964.97	33.9	80.2	34.2
STUDENT AND CENTRAL SERVICES							
Total FTE Students	37,023.50	1.5	55,535.25	46,561.79	83.8	60.5	84.2
<b>SUB-TOTAL: OTHER SPACE</b>			<b>97,590.85</b>	<b>68,022.78</b>	<b>69.7</b>	<b>65.3</b>	<b>72.0</b>
<b>TOTAL FORMULA AREAS</b>			<b>466,586.66</b>	<b>369,907.94</b>	<b>79.3</b>	<b>77.5</b>	<b>76.7</b>

**Table 41: WILFRID LAURIER: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
<b>CLASSROOMS</b>							
Total FTE Students	15,085.89	1.11	16,745.34	11,181.91	66.8	83.9	76.7
<b>CLASS LABS*</b>							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	7,161.87	0.6	4,297.12	2,556.89			
Lab Contact Hours Y	3,816.27	0.5	1,908.14	730.55			
Lab Contact Hours Z	8,017.20	0.3	2,405.16	1,788.41			
Unclassified	0.00			0.00			
Total Class Lab	18,995.34		8,610.42	5,075.85	59.0	75.7	77.3
<b>RESEARCH LABS</b>							
Research Disciplines A	53.30	45.0	2,398.50	2,520.90			
Research Disciplines B	88.25	30.0	2,647.50	1,090.34			
Research Disciplines C	2.00	20.0	40.00	0.00			
Research Disciplines D	114.05	10.0	1,140.50	2,450.27			
Research Disciplines E	381.35	5.0	1,906.75	0.00			
Research Disciplines F	451.95	2.0	903.90	177.51			
Unclassified	2.95			0.00			
Total Research	1,093.85		9,037.15	6,239.02	69.0	70.0	75.1
<b>OFFICE - ACADEMIC</b>							
Total FTE Faculty	498.00	12.0	5,976.00	8,794.26	147.2	114.1	145.0
Research Appointments	11.80	12.0	141.60	649.14	458.4		212.0
Total FTE Grads	1,345.50	3.0	4,036.50	2,532.93	62.8	67.3	55.7
Total FTE Non-Acd Staff	208.00	12.0	2,496.00	1,911.85	76.6	103.5	113.4
Office Service	12,650.10	0.25	3,162.53	4,109.29	129.9	109.3	141.1
Total Academic Office			15,812.63	17,997.47	113.8	94.9	121.9
<b>OFFICE - ADMINISTRATIVE</b>							
Total FTE Non-Acd Staff	714.40	12.0	8,572.80	9,027.01	105.3	103.3	108.3
Office Service	8,572.80	0.5	4,286.40	6,029.46	140.7	120.3	113.3
Total Admin. Office			12,859.20	15,056.47	117.1	109.0	110.0
Total Office - Academic & Administrative			28,671.83	33,053.94	115.3	98.2	117.0
<b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>							
Study (Total FTE Students)	15,085.89	0.5	7,542.95	1,920.09	25.5	51.0	25.5
Traditional Static Shelving Space	685,249.41	0.005	3,426.25				
Mobile Compact Shelving	0.00	0.004	0.00				
Super High Density	201,309.54	0.0035	704.58				
Total Stack	886,558.95		4,130.83	4,907.95	118.8	79.8	112.7
Library Support	11,673.78	0.25	2,918.44	1,197.22	41.0	69.8	75.1
Total Library Facilities & Library Study Space			14,592.22	8,025.26	55.0	65.1	58.2
NON-LIBRARY STUDY SPACE	15,085.89	0.4	6,034.36	5,228.92	86.7	76.8	76.1
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>83,691.31</b>	<b>68,804.90</b>	<b>82.2</b>	<b>81.3</b>	<b>86.8</b>
<b>OTHER SPACE</b>							
<b>RECREATION / ATHLETICS</b>							
Total FTE Students	15,085.89	0.9	13,577.30	7,213.75	53.1	71.0	74.5
<b>MAINTENANCE SHOPS</b>							
Total NASM Inv. (exc. 16.0)	193,918.40	0.015	2,908.78	2,229.09	76.6	80.5	44.4
<b>STUDENT AND CENTRAL SERVICES</b>							
Total FTE Students	15,085.89	1.5	22,628.84	13,843.88	61.2	60.4	66.9
<b>SUB-TOTAL: OTHER SPACE</b>			<b>39,114.92</b>	<b>23,286.72</b>	<b>59.5</b>	<b>65.5</b>	<b>67.9</b>
<b>TOTAL FORMULA AREAS</b>			<b>122,806.23</b>	<b>92,091.62</b>	<b>75.0</b>	<b>77.4</b>	<b>80.7</b>

**Table 42: WILFRID LAURIER (BRANTFORD): Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I/G	System Average	2016-17 % I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	2,431.50	1.11	2,698.97	3,455.80	128.0	83.9	
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	166.63	0.6	99.98	222.37			
Lab Contact Hours Y	43.89	0.5	21.95	11.92			
Lab Contact Hours Z	185.11	0.3	55.53	671.69			
Unclassified	0.00			183.16			
Total Class Lab	395.63		177.46	1,089.14	613.8	75.7	
RESEARCH LABS							
Research Disciplines A	0.00	45.0	0.00	0.00			
Research Disciplines B	4.00	30.0	120.00	36.10			
Research Disciplines C	2.00	20.0	40.00	0.00			
Research Disciplines D	16.00	10.0	160.00	124.66			
Research Disciplines E	67.40	5.0	337.00	0.00			
Research Disciplines F	28.40	2.0	56.80	0.00			
Unclassified	0.00			0.00			
Total Research	117.80		713.80	160.76	22.5	70.0	
OFFICE - ACADEMIC							
Total FTE Faculty	79.00	12.0	948.00	1,311.22	138.3	114.1	
Research Appointments	2.50	12.0	30.00	38.05	126.8		
Total FTE Grads	84.60	3.0	253.80	162.93	64.2	67.3	
Total FTE Non-Acd Staff	31.60	12.0	379.20	384.71	101.5	103.5	
Office Service	1,611.00	0.25	402.75	616.68	153.1	109.3	
Total Academic Office			2,013.75	2,513.59	124.8	94.9	
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	109.70	12.0	1,316.40	1,128.54	85.7	103.3	
Office Service	1,316.40	0.5	658.20	1,086.53	165.1	120.3	
Total Admin. Office			1,974.60	2,215.07	112.2	109.0	
Total Office - Academic & Administrative			3,988.35	4,728.66	118.6	98.2	
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	2,431.50	0.5	1,215.75	233.72	19.2	51.0	
Traditional Static Shelving Space	17,160.37	0.005	85.80				
Mobile Compact Shelving	0.00	0.004	0.00				
Super High Density	0.00	0.0035	0.00				
Total Stack	17,160.37		85.80	130.00	151.5	79.8	
Library Support	1,301.55	0.25	325.39	45.83	14.1	69.8	
Total Library Facilities & Library Study Space			1,626.94	409.55	25.2	65.1	
NON-LIBRARY STUDY SPACE	2,431.50	0.4	972.60	1,004.29	103.3	76.8	
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>10,178.11</b>	<b>10,848.20</b>	<b>106.6</b>	<b>81.3</b>	
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	2,431.50	0.9	2,188.35	3,241.79	148.1	71.0	
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	43,335.82	0.015	650.04	463.76	71.3	80.5	
STUDENT AND CENTRAL SERVICES							
Total FTE Students	2,431.50	1.5	3,647.25	2,746.92	75.3	60.4	
<b>SUB-TOTAL: OTHER SPACE</b>			<b>6,485.64</b>	<b>6,452.47</b>	<b>99.5</b>	<b>65.5</b>	
<b>TOTAL FORMULA AREAS</b>			<b>16,663.75</b>	<b>17,300.67</b>	<b>103.8</b>	<b>77.4</b>	
<b>**NOTE:</b> This is the first reporting year for WLU's Brantford Campus							

**Table 43: WINDSOR: Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	2016-17 % I / G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	14,920.51	1.11	16,561.77	16,554.66	100.0	83.9	108.5
CLASS LABS							
Lab Contact Hours W	4,455.29	0.8	3,564.23	4,518.17			
Lab Contact Hours X	12,470.88	0.6	7,482.53	12,439.04			
Lab Contact Hours Y	12,423.00	0.5	6,211.50	1,420.82			
Lab Contact Hours Z	8,831.44	0.3	2,649.43	2,743.45			
Unclassified	0.00			0.00			
Total Class Lab	38,180.61		19,907.69	21,121.48	106.1	75.7	145.5
RESEARCH LABS							
Research Disciplines A	248.78	45.0	11,194.88	9,625.96			
Research Disciplines B	762.65	30.0	22,879.50	4,303.61			
Research Disciplines C	21.38	20.0	427.50	552.70			
Research Disciplines D	556.93	10.0	5,569.25	2,830.98			
Research Disciplines E	337.90	5.0	1,689.50	160.48			
Research Disciplines F	659.68	2.0	1,319.35	184.66			
Unclassified	0.00			0.00			
Total Research	2,587.30		43,079.98	17,658.39	41.0	70.0	50.2
OFFICE - ACADEMIC							
Total FTE Faculty	624.11	12.0	7,489.32	12,461.24	166.4	114.1	174.6
Research Appointments	243.50	12.0	2,922.00	819.69	28.1		27.4
Total FTE Grads	4,049.60	3.0	12,148.80	5,106.75	42.0	67.3	49.7
Total FTE Non-Acd Staff	376.00	12.0	4,512.00	3,736.39	82.8	103.5	89.4
Office Service	27,072.12	0.25	6,768.03	5,338.28	78.9	109.3	82.6
Total Academic Office			33,840.15	27,462.35	81.2	94.9	89.4
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	396.00	12.0	4,752.00	7,702.18	162.1	103.3	159.6
Office Service	4,752.00	0.5	2,376.00	4,282.79	180.3	120.3	152.6
Total Admin. Office			7,128.00	11,984.97	168.1	109.0	157.3
Total Office - Academic & Administrative			40,968.15	39,447.32	96.3	98.2	102.5
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	14,920.51	0.5	7,460.26	3,799.70	50.9	51.0	43.1
Traditional Static Shelving Space	1,245,686.95	0.005	6,228.43				
Mobile Compact Shelving	147,513.45	0.004	590.05				
Super High Density	0.00	0.0035	0.00				
Total Stack	1,393,200.40		6,818.49	9,354.90	137.2	79.8	113.3
Library Support	14,278.74	0.25	3,569.69	2,902.00	81.3	69.8	85.3
Total Library Facilities & Library Study Space			17,848.43	16,056.60	90.0	65.1	80.7
NON-LIBRARY STUDY SPACE	14,920.51	0.4	5,968.20	4,921.00	82.5	76.8	80.7
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>144,334.22</b>	<b>115,759.45</b>	<b>80.2</b>	<b>81.3</b>	<b>90.0</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	14,920.51	0.9	13,428.46	10,716.15	79.8	71.0	86.2
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	162,239.47	0.015	2,433.59	1,368.39	56.2	80.5	59.1
STUDENT AND CENTRAL SERVICES							
Total FTE Students	14,920.51	1.5	22,380.77	12,950.29	57.9	60.4	60.0
<b>SUB-TOTAL: OTHER SPACE</b>			<b>38,242.82</b>	<b>25,034.83</b>	<b>65.5</b>	<b>65.5</b>	<b>69.1</b>
<b>TOTAL FORMULA AREAS</b>			<b>182,577.03</b>	<b>140,794.28</b>	<b>77.1</b>	<b>77.4</b>	<b>85.2</b>



**Table 44: YORK (KEELE): Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	%I/G	System Average	2016-17 %I/G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
CLASSROOMS							
Total FTE Students	41,774.57	1.11	46,369.77	36,291.48	78.3	83.9	81.2
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	32,853.50	0.6	19,712.10	20,904.40			
Lab Contact Hours Y	22,943.00	0.5	11,471.50	6,143.90			
Lab Contact Hours Z	11,694.50	0.3	3,508.35	7,356.30			
Unclassified	0.00			825.60			
Total Class Lab	67,491.00		34,691.95	35,230.20	101.6	75.7	86.8
RESEARCH LABS							
Research Disciplines A	223.30	45.0	10,048.50	10,569.60			
Research Disciplines B	166.10	30.0	4,983.00	2,377.90			
Research Disciplines C	236.25	20.0	4,725.00	1,187.40			
Research Disciplines D	472.10	10.0	4,721.00	5,154.00			
Research Disciplines E	2,452.45	5.0	12,262.25	7,397.70			
Research Disciplines F	0.00	2.0	0.00	0.00			
Unclassified	39.00			983.20			
Total Research	3,589.20		36,739.75	27,669.80	75.3	70.0	70.2
OFFICE - ACADEMIC							
Total FTE Faculty	2,737.80	12.0	32,853.60	25,487.44	77.6	114.1	93.3
Research Appointments	60.50	12.0	726.00	5,931.34	817.0		419.6
Total FTE Grads	4,802.70	3.0	14,408.10	8,583.70	59.6	67.3	58.9
Total FTE Non-Acd Staff	1,083.38	12.0	13,000.56	11,515.31	88.6	103.5	108.7
Office Service	60,988.26	0.25	15,247.07	17,487.82	114.7	109.3	129.5
Total Academic Office			76,235.33	69,005.61	90.5	94.9	100.3
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	1,669.65	12.0	20,035.80	12,411.33	61.9	103.3	104.3
Office Service	20,035.80	0.5	10,017.90	8,345.96	83.3	120.3	147.6
Total Admin. Office			30,053.70	20,757.29	69.1	109.0	118.7
Total Office - Academic & Administrative			106,289.03	89,762.90	84.5	98.2	104.4
LIBRARY FACILITIES & LIBRARY STUDY SPACE							
Study (Total FTE Students)	41,774.57	0.5	20,887.28	7,223.38	34.6	51.0	37.3
Traditional Static Shelving Space	1,903,584.41	0.005	9,517.92				
Mobile Compact Shelving	539,908.77	0.004	2,159.64				
Super High Density	251,225.00	0.0035	879.29				
Total Stack	2,694,718.18		12,556.84	10,715.16	85.3	79.8	47.7
Library Support	33,444.13	0.25	8,361.03	5,168.12	61.8	69.8	50.5
Total Library Facilities & Library Study Space			41,805.16	23,106.66	55.3	65.1	44.4
NON-LIBRARY STUDY SPACE	41,774.57	0.4	16,709.83	9,271.91	55.5	76.8	55.7
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>282,605.48</b>	<b>221,332.95</b>	<b>78.3</b>	<b>81.3</b>	<b>79.1</b>
<b>OTHER SPACE</b>							
RECREATION / ATHLETICS							
Total FTE Students	41,774.57	0.9	37,597.11	10,709.16	28.5	71.0	29.5
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	376,672.44	0.015	5,650.09	4,745.60	84.0	80.5	89.3
STUDENT AND CENTRAL SERVICES							
Total FTE Students	41,774.57	1.5	62,661.85	31,461.69	50.2	60.4	45.6
<b>SUB-TOTAL: OTHER SPACE</b>			<b>105,909.05</b>	<b>46,916.45</b>	<b>44.3</b>	<b>65.5</b>	<b>42.3</b>
<b>TOTAL FORMULA AREAS</b>			<b>388,514.52</b>	<b>268,249.40</b>	<b>69.0</b>	<b>77.4</b>	<b>69.1</b>

**Table 45: YORK (GLENDON): Institutional Space Requirements as Measured by COU Space Standards, 2019-20**

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	2016-17 % I / G
<b>TEACHING/RESEARCH/ACADEMIC SUPPORT</b>							
<b>CLASSROOMS</b>							
Total FTE Students	1,738.60	1.11	1,929.85	3,331.71	172.6	83.9	140.9
<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	1,228.00	0.3	368.40	493.00			
Unclassified	0.00			310.90			
Total Class Lab	1,228.00		368.40	803.90	218.2	75.7	207.9
<b>RESEARCH LABS</b>							
Research Disciplines A	0.00	45.0	0.00	0.00			
Research Disciplines B	6.00	30.0	180.00	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	113.30	5.0	566.50	93.40			
Research Disciplines F	0.00	2.0	0.00	0.00			
Unclassified	0.00			0.00			
Total Research	119.30		746.50	152.70	20.5	70.0	27.0
<b>OFFICE - ACADEMIC</b>							
Total FTE Faculty	251.30	12.0	3,015.60	2,558.08	84.8	114.1	105.1
Research Appointments	0.00	12.0	0.00	209.32	n.a.		0.0
Total FTE Grads	88.60	3.0	265.80	19.08	7.2	67.3	0.0
Total FTE Non-Acd Staff	90.00	12.0	1,080.00	604.03	55.9	103.5	87.3
Office Service	4,361.40	0.25	1,090.35	756.42	69.4	109.3	83.4
Total Academic Office			5,451.75	4,146.93	76.1	94.9	92.8
<b>OFFICE - ADMINISTRATIVE</b>							
Total FTE Non-Acd Staff	45.84	12.0	550.08	872.27	158.6	103.3	118.0
Office Service	550.08	0.5	275.04	303.81	110.5	120.3	73.6
Total Admin. Office			825.12	1,176.08	142.5	109.0	103.2
Total Office - Academic & Administrative			6,276.87	5,323.01	84.8	98.2	95.5
<b>LIBRARY FACILITIES &amp; LIBRARY STUDY SPACE</b>							
Study (Total FTE Students)	1,738.60	0.5	869.30	452.24	52.0	51.0	40.7
Traditional Static Shelving Space	299,020.00	0.005	1,495.10				
Mobile Compact Shelving	0.00	0.004	0.00				
Super High Density	0.00	0.0035	0.00				
Total Stack	299,020.00		1,495.10	1,071.65	71.7	79.8	70.1
Library Support	2,364.40	0.25	591.10	308.64	52.2	69.8	42.5
Total Library Facilities & Library Study Space			2,955.50	1,832.53	62.0	65.1	54.8
NON-LIBRARY STUDY SPACE	1,738.60	0.4	695.44	289.50	41.6	76.8	33.8
<b>SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT</b>			<b>12,972.56</b>	<b>11,733.35</b>	<b>90.4</b>	<b>81.3</b>	<b>89.7</b>
<b>OTHER SPACE</b>							
<b>RECREATION / ATHLETICS</b>							
Total FTE Students	1,738.60	0.9	1,564.74	2,932.00	187.4	71.0	145.8
<b>MAINTENANCE SHOPS</b>							
Total NASM Inv. (exc. 16.0)	25,817.75	0.015	387.27	383.63	99.1	80.5	88.0
<b>STUDENT AND CENTRAL SERVICES</b>							
Total FTE Students	1,738.60	1.5	2,607.90	2,890.18	110.8	60.4	92.8
<b>SUB-TOTAL: OTHER SPACE</b>			<b>4,559.91</b>	<b>6,205.81</b>	<b>136.1</b>	<b>65.5</b>	<b>111.0</b>
<b>TOTAL FORMULA AREAS</b>			<b>17,532.46</b>	<b>17,939.16</b>	<b>102.3</b>	<b>77.4</b>	<b>96.2</b>

## 6. Summary Tables by Category of Space

**Table 46: Teaching/Research/Academic Support Space (1,2,3,4,5,10,11): Generated Space and Inventory, 2019-20**

	<b>Generated Space</b>	<b>Inventory NASM</b>	<b>2019-20 % I/G</b>	<b>2016- 17 % I / G</b>
Algoma	8,111.1	8,646.0	106.6	99.1
Brock	101,506.3	76,294.5	75.2	78.1
Carleton	197,461.9	138,248.9	70.0	72.5
Guelph	222,762.1	193,894.3	87.0	86.9
Lakehead	74,911.0	60,660.1	81.0	79.4
Laurentian	57,091.9	59,470.3	104.2	106.0
McMaster	250,589.1	224,541.3	89.6	87.1
Nipissing	25,715.0	20,816.7	81.0	67.5
OCADU	58,449.7	23,459.8	40.1	47.0
Ontario Tech	53,398.3	42,335.7	79.3	71.3
Ottawa	323,624.4	226,510.1	70.0	72.2
Queen's	218,681.9	203,455.4	93.0	92.0
Ryerson	235,836.5	146,969.6	62.3	61.7
Toronto (St. George)	602,268.5	495,253.5	82.2	84.3
Toronto (Mississauga)	71,942.8	58,678.1	81.6	79.3
Toronto (Scarborough)	62,157.0	50,868.3	81.8	75.2
Trent	57,083.8	44,229.5	77.5	93.5
Waterloo	253,945.6	282,795.7	111.4	96.9
Western	368,995.8	301,885.2	81.8	77.9
Wilfrid Laurier	83,691.3	68,804.9	82.2	86.8
Wilfrid Laurier (Brantford)	10,178.1	10,848.2	106.6	0.0
Windsor	144,334.2	115,759.5	80.2	90.0
York (Keele)	282,605.5	221,333.0	78.3	79.1
York (Glendon)	12,972.6	11,733.4	90.4	89.7
<b>Subtotal</b>	<b>3,798,233.5</b>	<b>3,087,491.8</b>	<b>81.3</b>	<b>81.5</b>
<b>Hearst</b>	<b>1,091.4</b>	<b>3,364.8</b>	<b>308.3</b>	<b>339.8</b>
<b>NOSM</b>	<b>7,581.2</b>	<b>8,249.2</b>	<b>108.8</b>	<b>134.7</b>
<b>Total</b>	<b>3,806,906.1</b>	<b>3,099,105.8</b>	<b>81.4</b>	<b>81.6</b>

**Table 47: Student Experience / Other Space (6,7,8,9,12,13,14,15): Generated Space and Inventory, 2019-20**

	<b>Generated Space</b>	<b>Inventory NASM</b>	<b>2019-20 % I/G</b>	<b>2016-17 % I / G</b>
Algoma	2,754.7	6,481.6	235.3	220.6
Brock	42,262.2	24,726.8	58.5	67.3
Carleton	67,028.9	51,542.5	76.9	77.4
Guelph	60,347.5	66,951.9	110.9	109.0
Lakehead	20,299.7	25,242.9	124.4	124.2
Laurentian	18,569.5	19,818.9	106.7	101.6
McMaster	79,294.8	47,923.5	60.4	61.4
Nipissing	9,845.6	5,083.3	51.6	61.1
OCADU	19,489.6	3,740.9	19.2	11.0
Ontario Tech	21,517.6	11,008.1	51.2	51.0
Ottawa	97,529.1	57,881.5	59.3	55.4
Queen's	69,499.8	53,896.6	77.5	77.2
Ryerson	91,210.1	39,267.7	43.1	41.0
Toronto (St. George)	144,785.9	89,827.5	62.0	61.8
Toronto (Mississauga)	34,403.7	18,005.2	52.3	53.2
Toronto (Scarborough)	29,205.4	23,673.1	81.1	77.9
Trent	24,616.0	10,783.6	43.8	49.1
Waterloo	88,476.8	58,140.6	65.7	60.0
Western	97,590.8	68,022.8	69.7	72.0
Wilfrid Laurier	39,114.9	23,286.7	59.5	67.9
Windsor	38,242.8	25,034.8	65.5	69.1
York (Keele)	105,909.0	46,916.5	44.3	42.3
York (Glendon)	4,559.9	6,205.8	136.1	111.0
<b>Subtotal</b>	<b>1,206,554.4</b>	<b>783,462.6</b>	<b>64.9</b>	<b>65.2</b>
Hearst	384.9	1,751.4	455.0	640.0
NOSM	1,354.2	111.6	8.2	83.0
<b>Total</b>	<b>1,208,293.5</b>	<b>785,325.7</b>	<b>65.0</b>	<b>65.3</b>

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

**Table 48: Classroom Facilities (1): Generated Space and Inventory, 2019-20**

	<b>FTE Students</b>	<b>Generated Space</b>	<b>Inventory NASM</b>	<b>Inventory/ FTE Student</b>	<b>2019- 20 % I/G</b>	<b>2016-17 % I / G</b>
Algoma	1,023.6	1,136	2,218	2.17	195.2	128.5
Brock	16,642.1	18,473	13,544	0.81	73.3	75.2
Carleton	26,322.9	29,218	19,336	0.73	66.2	63.6
Guelph	22,632.9	25,123	16,655	0.74	66.3	68.5
Lakehead	7,644.3	8,485	9,848	1.29	116.1	117.4
Laurentian	6,962.1	7,728	8,366	1.20	108.3	102.2
McMaster	30,501.8	33,857	35,098	1.15	103.7	85.3
Nipissing	3,919.5	4,351	5,709	1.46	131.2	131.2
OCADU	7,937.9	8,811	3,515	0.44	39.9	59.8
Ontario Tech	8,570.8	9,514	8,596	1.00	90.4	80.4
Ottawa	38,184.8	42,385	31,241	0.82	73.7	64.3
Queen's	26,713.9	29,652	22,480	0.84	75.8	84.2
Ryerson	36,627.8	40,657	21,955	0.60	54.0	50.3
Toronto (St. George)	55,631.5	61,751	61,013	1.10	98.8	98.4
Toronto (Mississauga)	13,634.0	15,134	13,695	1.00	90.5	90.5
Toronto (Scarborough)	11,523.2	12,791	7,549	0.66	59.0	54.9
Trent	9,669.4	10,733	8,646	0.89	80.6	92.2
Waterloo	33,740.8	37,452	35,132	1.04	93.8	91.2
Western	37,023.5	41,096	48,182	1.30	117.2	102.3
Wilfrid Laurier	15,085.9	16,745	11,182	0.74	66.8	76.7
Wilfrid Laurier (Brantford)	2,431.5	2,699.0	3,455.8	1.42	128.0	0.0
Windsor	14,920.5	16,562	16,555	1.11	100.0	108.5
York (Keele)	41,774.6	46,370	36,291	0.87	78.3	81.2
York (Glendon)	1,738.6	1,930	3,332	1.92	172.6	140.9
<b>SUBTOTAL</b>	<b>470,857.9</b>	<b>522,652</b>	<b>443,592</b>	<b>0.94</b>	<b>84.9</b>	<b>82.5</b>
Hearst	114.8	127	1,063	9.26	834.2	1006.1
NOSM	512.0	568	988	1.93	173.8	695.3
<b>TOTAL</b>	<b>471,484.7</b>	<b>523,348</b>	<b>445,643</b>	<b>0.95</b>	<b>85.2</b>	<b>82.8</b>

**Table 49: Class Lab Space (2): Generated Space and Inventory, 2019-20**

	<b>Class Lab Hours</b>	<b>Generated Space</b>	<b>Inventory NASM</b>	<b>2019-20 % I/G</b>	<b>2016-17 % I / G</b>
Algoma	1,515.0	909	1,473	162.0	n/a
Brock	37,751.0	17,675	10,743	60.8	50.4
Carleton	76,288.0	36,399	17,240	47.4	49.7
Guelph	79,887.0	43,674	27,858	63.8	53.9
Lakehead	28,527.3	14,708	13,614	92.6	78.7
Laurentian	14,902.0	7,764	9,365	120.6	167.8
McMaster	53,625.2	30,744	18,956	61.7	53.9
Nipissing	11,471.5	5,287	3,761	71.1	67.3
OCADU	46,109.0	27,590	9,198	33.3	42.9
Ontario Tech	16,772.4	8,929	6,997	78.4	58.9
Ottawa	65,590.9	34,608	24,999	72.2	61.9
Queen's	52,335.2	29,089	25,164	86.5	92.9
Ryerson	106,031.5	55,010	31,379	57.0	60.7
Toronto (St. George)	53,724.8	32,504	41,382	127.3	109.9
Toronto (Mississauga)	18,463.1	8,736	8,458	96.8	87.3
Toronto (Scarborough)	9,312.9	5,498	6,342	115.3	93.0
Trent	17,001.0	9,348	4,703	50.3	56.4
Waterloo	52,517.8	26,952	34,414	127.7	102.9
Western	99,096.7	53,813	30,498	56.7	53.0
Wilfrid Laurier	18,995.3	8,610	5,076	59.0	77.3
Wilfrid Laurier (Brantford)	395.6	177	1,089	613.8	0.0
Windsor	38,180.6	19,908	21,121	106.1	145.5
York (Keele)	67,491.0	34,692	35,230	101.6	86.8
York (Glendon)	1,228.0	368	804	218.2	207.9
<b>SUBTOTAL</b>	<b>967,212.9</b>	<b>512,991</b>	<b>389,865</b>	<b>76.0</b>	<b>71.7</b>
Hearst	12.0	4	201	5584.4	2,792.2
NOSM	384.0	230	849	368.4	368.4
<b>TOTAL</b>	<b>967,608.9</b>	<b>513,225</b>	<b>390,914</b>	<b>76.2</b>	<b>71.7</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 previous years' data as at some institutions 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 C](#)) for programs in Groups W, X, Y, and Z (as defined in [Appendix D](#)). Actual Class Lab inventory divided by Class Lab Hours (weighted average as defined in Input Measure).

	<b>Input Measure</b>	<b>Inventory</b>	<b>System Average</b>	<b>Space Factor</b>
Group W	88,227.89	35,261.34	0.40	0.80
Group X	451,712.09	219,299.53	0.49	0.60
Group Y	225,084.55	82,069.05	0.36	0.50
Group Z	196,909.16	48,379.99	0.25	0.30

**Table 50: Lab - Research Facilities (3): Generated Space and Inventory, 2019-20**

	Research Staff	Generated Space	Inventory NASM	Inventory/Research Staff	2019-20 % I/G	2016-17 % I/G
Algoma	51.6	531	559	10.8	105.4	49.0
Brock	1,299.9	13,802	12,280	9.4	89.0	130.9
Carleton	2,974.5	46,632	21,231	7.1	45.5	55.2
Guelph	2,337.5	63,988	61,462	26.3	96.1	103.5
Lakehead	1,086.0	15,534	9,911	9.1	63.8	53.8
Laurentian	650.7	10,487	6,779	10.4	64.6	69.4
McMaster	3,183.5	64,477	53,753	16.9	83.4	93.5
Nipissing	79.8	677	1,481	18.6	218.6	49.2
OCADU	300.3	1,873	1,980	6.6	105.7	91.9
Ontario Tech	533.5	10,192	8,650	16.2	84.9	78.0
Ottawa	4,895.1	80,100	43,141	8.8	53.9	58.5
Queen's	3,605.0	36,926	41,386	11.5	112.1	79.2
Ryerson	2,254.5	30,404	18,002	8.0	59.2	53.8
Toronto (St. George)	11,003.5	169,715	104,444	9.5	61.5	64.8
Toronto (Mississauga)	745.1	11,209	9,280	12.5	82.8	66.9
Toronto (Scarborough)	494.9	12,660	9,771	19.7	77.2	64.4
Trent	508.3	4,936	7,760	15.3	157.2	151.0
Waterloo	4,005.4	66,156	58,742	14.7	88.8	77.1
Western	4,816.0	101,496	60,464	12.6	59.6	64.4
Wilfrid Laurier	1,093.9	9,037	6,239	5.7	69.0	75.1
Wilfrid Laurier (Brantford)	117.8	713.8	160.8	1.4	22.5	
Windsor	2,587.3	43,080	17,658	6.8	41.0	50.2
York (Keele)	3,589.2	36,740	27,670	7.7	75.3	70.2
York (Glendon)	119.3	747	153	1.3	20.5	27.0
<b>SUBTOTAL</b>	<b>52,332.3</b>	<b>832,112</b>	<b>582,955</b>	<b>11.1</b>	<b>70.1</b>	<b>72.2</b>
Hearst	1.0	10	0	0.0	0.0	n.a.
NOSM	45.5	2,048	1,538	33.8	75.1	122.1
<b>TOTAL</b>	<b>52,378.8</b>	<b>834,169</b>	<b>584,494</b>	<b>11.2</b>	<b>70.1</b>	<b>72.1</b>

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 F 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](#).) Actual Research space divided by Research Staff (weighted average as defined in Input Measure).

	Input Measure	Inventory	System Average	Space Factor
Group A	8,007.27	283,690.48	35.4	45
Group B	7,751.39	135,709.93	17.5	30
Group C	4,330.91	51,618.78	11.9	20
Group D	5,268.70	57,081.00	10.8	10
Group E	15,458.13	27,020.99	1.7	5
Group F	11,214.81	10,347.73	0.9	2

**Table 51: Academic Departmental Office Space and Related Space (4): Generated Space and Inventory, 2019-20**

	<b>FTE Faculty</b>	<b>Generated Space</b>	<b>Inventory NASM</b>	<b>2019-20 % I/G</b>	<b>2016-17 % I/G</b>
Algoma	103.2	1,683	1,254	74.5	57.4
Brock	661.5	20,347	19,334	95.0	96.4
Carleton	1,041.7	35,535	37,656	106.0	110.5
Guelph	943.4	40,566	48,845	120.4	123.6
Lakehead	514.0	16,496	10,903	66.1	74.7
Laurentian	469.7	13,424	16,145	120.3	140.1
McMaster	1,021.0	61,258	67,081	109.5	89.1
Nipissing	336.7	9,616	3,766	39.2	39.2
OCADU	328.0	6,766	3,717	54.9	87.2
Ontario Tech	304.0	9,121	7,151	78.4	83.3
Ottawa	2,787.7	90,854	67,678	74.5	89.4
Queen's	1,073.7	57,154	63,289	110.7	124.8
Ryerson	1,317.9	45,324	35,159	77.6	71.5
Toronto (St. George)	2,542.1	178,396	159,617	89.5	96.4
Toronto (Mississauga)	463.7	13,848	12,042	87.0	96.4
Toronto (Scarborough)	404.5	10,496	11,844	112.8	117.2
Trent	543.7	12,729	9,904	77.8	136.0
Waterloo	1,625.2	62,698	84,366	134.6	127.1
Western	1,858.9	88,431	93,152	105.3	92.4
Wilfrid Laurier	498.0	15,813	17,997	113.8	121.9
Wilfrid Laurier (Brantford)	79.0	948.0	1,311.2	138.3	0.0
Windsor	624.1	33,840	27,462	81.2	89.4
York (Keele)	2,737.8	76,235	69,006	90.5	100.3
York (Glendon)	251.3	5,452	4,147	76.1	92.8
<b>SUBTOTAL</b>	<b>22,530.8</b>	<b>915,514</b>	<b>872,826</b>	<b>95.3</b>	<b>99.7</b>
<b>Hearst</b>	<b>1.0</b>	<b>90</b>	<b>788</b>	<b>876.1</b>	<b>1,219.3</b>
<b>NOSM</b>	<b>26.0</b>	<b>3,495</b>	<b>1,597</b>	<b>45.7</b>	<b>45.7</b>
<b>TOTAL</b>	<b>22,557.8</b>	<b>919,099</b>	<b>875,212</b>	<b>95.2</b>	<b>99.5</b>

Input Measure: Total FTE Faculty (as defined in [Appendix C](#)), 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 52: Graduate Student Office Space (4.3): Generated Space and Inventory, 2019-20**

	Graduate Students	Generated Space	Inventory NASM	Inventory/ FTE Graduate Student	2019-20 % I/G	2016-17 % I/G
Algoma	not applicable					
Brock	1,646.1	4,938	3,472	2.1	70.3	75.7
Carleton	3,811.4	11,434	5,493	1.4	48.0	49.5
Guelph	2,897.5	8,693	9,051	3.1	104.1	105.1
Lakehead	1,437.5	4,313	1,356	0.9	31.4	37.4
Laurentian	766.9	2,301	1,782	2.3	77.4	45.1
McMaster	4,460.4	13,381	9,484	2.1	70.9	83.2
Nipissing	157.5	473	123	0.8	26.1	26.1
OCADU	276.5	830	1,201	4.3	144.8	117.5
Ontario Tech	607.2	1,822	595	1.0	32.6	45.2
Ottawa	6,702.2	20,107	12,345	1.8	61.4	63.6
Queen's	4,980.2	14,941	10,626	2.1	71.1	84.4
Ryerson	2,679.0	8,037	1,074	0.4	13.4	17.4
Toronto (St. George)	17,982.9	53,949	27,072	1.5	50.2	52.3
Toronto (Mississauga)	821.4	2,464	1,363	1.7	55.3	79.2
Toronto (Scarborough)	361.4	1,084	1,912	5.3	176.3	187.9
Trent	581.3	1,744	1,556	2.7	89.2	134.1
Waterloo	5,184.8	15,554	23,388	4.5	150.4	146.1
Western	6,422.1	19,266	16,893	2.6	87.7	92.8
Wilfrid Laurier	1,345.5	4,037	2,533	1.9	62.8	55.7
Wilfrid Laurier (Brantford)	84.6	253.8	162.9	1.9	64.2	0.0
Windsor	4,049.6	12,149	5,107	1.3	42.0	49.7
York (Keele)	4,802.7	14,408	8,584	1.8	59.6	58.9
York (Glendon)	88.6	266	19	0.2	n/a	n/a
<b>SUBTOTAL</b>	<b>72,147.3</b>	<b>216,442</b>	<b>145,190</b>	<b>2.0</b>	<b>67.1</b>	<b>70.6</b>
Hearst	not applicable					
NOSM	not applicable					
<b>TOTAL</b>	<b>72,147.3</b>	<b>216,442</b>	<b>145,190</b>	<b>2.0</b>	<b>67.1</b>	<b>70.6</b>

Input Measure: Total FTE Graduate Students.

Space Factor: 3.0 NASM

System Average: 2.01 NASM per Graduate Student. (Actual Space for Graduate Students (including service space) divided by Total Graduate Students.)

**Table 53: Administrative Office Space (10): Generated Space and Inventory, 2019-20**

	<b>FTE Non-Acad Office Staff</b>	<b>Space Generated</b>	<b>Inventory NASM</b>	<b>Inventory/ Office Staff</b>	<b>2019-20 % I/G</b>	<b>2016-17 % I / G</b>
Algoma	125.0	2,250	1,536	12.3	68.3	99.4
Brock	509.2	9,166	9,184	18.0	100.2	109.2
Carleton	735.3	13,236	17,670	24.0	133.5	115.3
Guelph	1,000.4	18,008	17,873	17.9	99.3	126.7
Lakehead	437.2	7,870	7,916	18.1	100.6	93.9
Laurentian	316.8	5,702	9,382	29.6	164.5	123.6
McMaster	976.5	17,577	18,595	19.0	105.8	257.0
Nipissing	18.0	324	3,501	194.5	1080.5	1,080.5
OCADU	254.6	4,583	2,663	10.5	58.1	10.8
Ontario Tech	356.8	6,422	5,927	16.6	92.3	83.3
Ottawa	1,041.0	18,738	18,417	17.7	98.3	96.3
Queen's	977.0	17,587	18,072	18.5	102.8	161.0
Ryerson	1,244.4	22,400	17,543	14.1	78.3	89.1
Toronto (St. George)	1,616.1	29,089	27,474	17.0	94.4	100.7
Toronto (Mississauga)	359.9	6,477	6,898	19.2	106.5	102.7
Toronto (Scarborough)	390.1	7,021	7,375	18.9	105.0	103.8
Trent	336.6	6,059	5,948	17.7	98.2	117.3
Waterloo	1,386.0	24,948	33,800	24.4	135.5	123.0
Western	1,445.7	26,022	24,308	16.8	93.4	106.9
Wilfrid Laurier	714.4	12,859	15,056	21.1	117.1	110.0
Wilfrid Laurier (Brantford)	109.7	1,974.6	2,215	20.2	112.2	0.0
Windsor	396.0	7,128	11,985	30.3	168.1	157.3
York (Keele)	1,669.7	30,054	20,757	12.4	69.1	118.7
York (Glendon)	45.8	825	1,176	25.7	142.5	103.2
<b>SUBTOTAL</b>	<b>16,462.3</b>	<b>296,321</b>	<b>305,271</b>	<b>18.5</b>	<b>103.0</b>	<b>115.1</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>16,509.3</b>	<b>297,167</b>	<b>307,826</b>	<b>18.6</b>	<b>103.6</b>	<b>115.7</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: 18.6 NASM per Non-Academic Office Staff (Total Actual Non-Academic Office Staff Space (including service space) divided by Non-Academic Staff.)

**Table 54: Library Facilities & Library Study Space (5.1 to 5.4): Generated Space and Inventory, 2019-20**

	<b>FTE Students</b>	<b>Generated Space</b>	<b>Inventory NASM</b>	<b>Inventory/ FTE Student</b>	<b>2019-20 % I/G</b>	<b>2016-17 % I/G</b>
Algoma	1,023.6	1,193	1,025	1.0	85.9	78.2
Brock	16,642.1	15,388	7,311	0.4	47.5	44.2
Carleton	26,322.9	25,912	20,703	0.8	79.9	78.9
Guelph	22,632.9	22,351	17,294	0.8	77.4	74.3
Lakehead	7,644.3	8,760	6,284	0.8	71.7	88.0
Laurentian	6,962.1	9,202	7,369	1.1	80.1	82.6
McMaster	30,501.8	30,476	21,743	0.7	71.3	73.7
Nipissing	3,919.5	3,892	2,089	0.5	53.7	10.1
OCADU	7,937.9	5,651	1,436	0.2	25.4	38.2
Ontario Tech	8,570.8	5,792	3,432	0.4	59.3	64.6
Ottawa	38,184.8	41,666	27,301	0.7	65.5	68.3
Queen's	26,713.9	37,589	23,836	0.9	63.4	56.5
Ryerson	36,627.8	27,392	9,705	0.3	35.4	36.7
Toronto (St. George)	55,631.5	108,561	81,218	1.5	74.8	72.5
Toronto (Mississauga)	13,634.0	11,085	5,243	0.4	47.3	55.0
Toronto (Scarborough)	11,523.2	9,082	3,840	0.3	42.3	42.7
Trent	9,669.4	9,412	5,000	0.5	53.1	57.6
Waterloo	33,740.8	33,676	16,377	0.5	48.6	52.1
Western	35,318.7	42,312	32,140	0.9	76.0	71.6
Wilfrid Laurier	15,085.9	14,592	8,025	0.5	55.0	58.2
Wilfrid Laurier (Brantford)	2,431.5	1,627	410	0.2	25.2	0.0
Windsor	14,920.5	17,848	16,057	1.1	90.0	80.7
York (Keele)	41,774.6	41,805	23,107	0.6	55.3	44.4
York (Glendon)	1,738.6	2,956	1,833	1.1	62.0	54.8
<b>SUBTOTAL</b>	<b>470,857.9</b>	<b>529,235</b>	<b>342,163</b>	<b>0.7</b>	<b>64.7</b>	<b>63.5</b>
Hearst	114.8	634	887	7.7	139.8	177.0
NOSM	512.0	369	604	1.2	163.7	499.0
<b>TOTAL</b>	<b>471,484.7</b>	<b>530,239</b>	<b>343,654</b>	<b>0.7</b>	<b>64.8</b>	<b>63.6</b>

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: 0.73 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 55: Campus Study Space (5.4 and 11): Generated Space and Inventory, 2019-20**

	<b>FTE Students</b>	<b>Generated Space</b>	<b>Inventory NASM</b>	<b>Inventory/ FTE Students</b>	<b>2019-20 % I/G</b>	<b>2016-17 % I/G</b>
Algoma	1,023.6	921	1,048	1.02	113.7	95.2
Brock	16,642.1	14,978	7,570	0.45	50.5	50.7
Carleton	26,322.9	23,691	13,677	0.52	57.7	56.7
Guelph	22,632.9	20,370	10,368	0.46	50.9	45.4
Lakehead	7,644.3	6,880	5,480	0.72	79.7	81.7
Laurentian	6,962.1	6,266	5,224	0.75	83.4	67.1
McMaster	30,501.8	27,452	18,271	0.60	66.6	57.5
Nipissing	3,919.5	3,528	511	0.13	14.5	14.5
OCADU	7,937.9	7,144	1,260	0.16	17.6	23.5
Ontario Tech	8,570.8	7,714	3,198	0.37	41.5	35.6
Ottawa	38,184.8	34,366	24,621	0.64	71.6	60.0
Queen's	26,713.9	24,043	17,888	0.67	74.4	78.4
Ryerson	36,627.8	32,965	16,914	0.46	51.3	52.5
Toronto (St. George)	55,631.5	50,068	45,316	0.81	90.5	91.5
Toronto (Mississauga)	13,634.0	12,271	5,746	0.42	46.8	49.9
Toronto (Scarborough)	11,523.2	10,371	5,795	0.50	55.9	52.3
Trent	9,669.4	8,702	4,411	0.46	50.7	52.8
Waterloo	33,740.8	30,367	24,835	0.74	81.8	72.0
Western	37,023.5	33,321	22,964	0.62	68.9	53.4
Wilfrid Laurier	15,085.9	13,577	7,149	0.47	52.7	48.0
Wilfrid Laurier (Brantford)	2,431.5	2,188.4	1,238.0	0.51	56.6	
Windsor	14,920.5	13,428	8,721	0.58	64.9	59.8
York (Keele)	41,774.6	37,597	16,495	0.39	43.9	45.5
York (Glendon)	1,738.6	1,565	742	0.43	47.4	37.6
<b>SUBTOTAL</b>	<b>470,857.9</b>	<b>423,772</b>	<b>269,439</b>	<b>0.57</b>	<b>63.6</b>	<b>60.1</b>
Hearst	114.8	103	304	2.65	294.6	294.6
NOSM	512.0	461	368	0.72	79.8	79.8
<b>TOTAL</b>	<b>471,484.7</b>	<b>424,336</b>	<b>270,111</b>	<b>0.57</b>	<b>63.7</b>	<b>60.2</b>

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: 0.57 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 56: Campus Study Space (5.4 and 11), totals and sub-types of study space as a percentage of the total study space, 2019-20**

	Study Space within the Library (Cat 5.4)	Non-Formula Study Space (Cat 11)	Total Study Space	% of Study Space (Cat 5.4)	% of Study Space (Cat 11)
Algoma	466.5	581.0	1,047.5	44.5%	55.5%
Brock	3,669.6	3,900.6	7,570.2	48.5%	51.5%
Carleton	9,263.5	4,413.1	13,676.6	67.7%	32.3%
Guelph	6,460.9	3,907.2	10,368.1	62.3%	37.7%
Lakehead	3,295.8	2,184.4	5,480.2	60.1%	39.9%
Laurentian	3,158.9	2,064.6	5,223.5	60.5%	39.5%
McMaster	8,957.3	9,313.8	18,271.2	49.0%	51.0%
Nipissing	0.0	510.7	510.7	0.0%	100.0%
OCADU	308.1	934.1	1,242.1	24.8%	75.2%
Ontario Tech	1,615.1	1,582.6	3,197.7	50.5%	49.5%
Ottawa	10,887.0	13,733.6	24,620.6	44.2%	55.8%
Queen's	8,659.9	9,228.5	17,888.5	48.4%	51.6%
Ryerson	3,687.0	13,227.3	16,914.3	21.8%	78.2%
Toronto (St. George)	25,210.6	20,105.3	45,315.9	55.6%	44.4%
Toronto (Mississauga)	2,683.0	3,062.7	5,745.6	46.7%	53.3%
Toronto (Scarborough)	1,647.0	4,147.8	5,794.8	28.4%	71.6%
Trent	2,141.8	2,269.2	4,411.0	48.6%	51.4%
Waterloo	4,870.8	19,963.7	24,834.5	19.6%	80.4%
Western	9,211.2	13,752.6	22,963.9	40.1%	59.9%
Wilfrid Laurier	1,920.1	5,228.9	7,149.0	26.9%	73.1%
Wilfrid Laurier (Brantford)	233.7	1,004.3	1,238.0	18.9%	81.1%
Windsor	3,799.7	4,921.0	8,720.7	43.6%	56.4%
York (Keele)	7,223.4	9,271.9	16,495.3	43.8%	56.2%
York (Glendon)	452.2	289.5	741.7	61.0%	39.0%
<b>SUBTOTAL</b>	<b>119,823.0</b>	<b>149,598.5</b>	<b>269,421.5</b>	<b>44.5%</b>	<b>55.5%</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>119,950.7</b>	<b>150,142.6</b>	<b>270,093.4</b>	<b>44.4%</b>	<b>55.6%</b>

**Table 57: Recreation / Athletics Space (6): Generated Space and Inventory, 2019-20**

	FTE Students	Generated Space	Inventory NASM	Inventory/FTE Students	2019-20 % I/G	2016-17 % I/G
Algoma	1,023.6	921	4,027	3.9	437.1	437.0
Brock	16,642.1	14,978	9,112	0.5	60.8	64.9
Carleton	26,322.9	23,691	24,250	0.9	102.4	106.6
Guelph	22,632.9	20,370	34,151	1.5	167.7	171.8
Lakehead	7,644.3	6,880	9,287	1.2	135.0	139.2
Laurentian	6,962.1	6,266	9,239	1.3	147.5	147.2
McMaster	30,501.8	27,452	17,738	0.6	64.6	68.6
Nipissing	3,919.5	3,528	2,031	0.5	57.6	83.8
OCADU	7,937.9	7,144	not applicable			
Ontario Tech	8,570.8	7,714	5,770	0.7	74.8	75.2
Ottawa	38,184.8	34,366	24,005	0.6	69.9	72.4
Queen's	26,713.9	24,043	21,509	0.8	89.5	80.0
Ryerson	36,627.8	32,965	14,286	0.4	43.3	45.4
Toronto (St. George)	55,631.5	50,068	29,809	0.5	59.5	63.2
Toronto (Mississauga)	13,634.0	12,271	6,852	0.5	55.8	61.6
Toronto (Scarborough)	11,523.2	10,371	9,534	0.8	91.9	96.0
Trent	9,669.4	8,702	3,965	0.4	45.6	56.2
Waterloo	33,740.8	30,367	18,158	0.5	59.8	46.0
Western	37,023.5	33,321	18,496	0.5	55.5	61.4
Wilfrid Laurier	15,085.9	13,577	7,214	0.5	53.1	74.5
Wilfrid Laurier (Brantford)	2,431.5	2,188.4	3,241.8	1.3	148.1	0.0
Windsor	14,920.5	13,428	10,716	0.7	79.8	86.2
York (Keele)	41,774.6	37,597	10,709	0.3	28.5	29.5
York (Glendon)	1,738.6	1,565	2,932	1.7	187.4	145.8
<b>SUBTOTAL</b>	<b>470,857.9</b>	<b>423,772</b>	<b>297,030</b>	<b>0.6</b>	<b>70.1</b>	<b>73.1</b>
Hearst	114.8	103	490	4.3	474.6	0.0
NOSM	512.0	461	not applicable			n/a
<b>TOTAL</b>	<b>471,484.7</b>	<b>424,336</b>	<b>297,030</b>	<b>0.6</b>	<b>70.0</b>	<b>73.1</b>

Input Measure: Total FTE Students (as defined in [Appendix C](#)).

Space Factor: 0.9 NASM

System Average: 0.63 NASM per FTE Student. (Total Actual Physical Education/Athletics space divided by Total FTE students.)

**Table 58: Maintenance Space (9): Generated Space and Inventory, 2019-20**

	<b>NASM Inventory</b>	<b>Generated Space</b>	<b>Inventory NASM</b>	<b>2019-20 % I/G</b>	<b>2016- 17 % I/G</b>
Algoma	19,867.6	298	298	100.0	91.8
Brock	154,741.1	2,321	2,583	111.3	109.2
Carleton	256,925.2	3,854	1,876	48.7	49.7
Guelph	401,897.3	6,028	7,509	124.6	118.2
Lakehead	130,220.7	1,953	1,013	51.9	53.5
Laurentian	124,033.0	1,860	1,457	78.3	74.9
McMaster	406,034.2	6,091	3,438	56.4	60.2
Nipissing	29,256.2	439	102.7	23.4	24.0
OCADU	29,239.7	439	172	39.2	0.0
Ontario Tech	63,182.5	948	546	57.6	62.7
Ottawa	392,374.3	5,886	6,391	108.6	75.6
Queen's	359,093.6	5,386	2,427	45.1	44.5
Ryerson	220,227.1	3,303	3,459	104.7	88.4
Toronto (St. George)	751,347.4	11,270	9,922	88.0	82.7
Toronto (Mississauga)	112,140.7	1,682	1,777	105.6	96.1
Toronto (Scarborough)	103,315.9	1,550	3,546	228.8	234.2
Trent	93,966.2	1,409	380	27.0	34.1
Waterloo	499,929.4	7,499	7,545	100.6	99.9
Western	582,296.3	8,734	2,965	33.9	34.2
Wilfrid Laurier	193,918.4	2,909	2,229	76.6	44.4
Wilfrid Laurier (Brantford)	43,335.8	650.0	463.8	71.3	0.0
Windsor	162,239.5	2,434	1,368	56.2	59.1
York (Keele)	376,672.4	5,650	4,746	84.0	89.3
York (Glendon)	25,817.8	387	384	99.1	88.0
<b>SUBTOTAL</b>	<b>5,532,072.3</b>	<b>82,981</b>	<b>66,598</b>	<b>80.3</b>	<b>75.7</b>
Hearst	7,294.6	109	102	93.6	96.9
NOSM	8,360.8	125	0	0	n/a
<b>TOTAL</b>	<b>5,547,727.7</b>	<b>83,216</b>	<b>66,700</b>	<b>80.2</b>	<b>75.7</b>

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

Space Factor: 0.015 NASM

System Average: 0.012 NASM (Total Actual Maintenance space divided by Total NASM Inventory.)

**Table 59: Student and Central Services Space (7-8, 12-15): Generated Space and Inventory, 2019-20**

	FTE Students	Generated Space	Inventory NASM	Inventory/FTE Students	2019-20 % I/G	2016-17 % I/G
Algoma	1,023.6	1,535.4	2,157	2.1	140.5	114.9
Brock	16,642.1	24,963.1	13,031	0.8	52.2	64.5
Carleton	26,322.9	39,484.4	25,416	1.0	64.4	62.6
Guelph	22,632.9	33,949.4	25,293	1.1	74.5	69.6
Lakehead	7,644.3	11,466.5	14,942	2.0	130.3	127.3
Laurentian	6,962.1	10,443.2	9,123	1.3	87.4	78.5
McMaster	30,501.8	45,752.7	26,748	0.9	58.5	57.2
Nipissing	3,919.5	5,879.3	2,950	0.8	50.2	50.2
OCADU	7,937.9	11,906.9	3,569	0.4	30.0	17.6
Ontario Tech	8,570.8	12,856.1	4,693	0.5	36.5	35.7
Ottawa	38,184.8	57,277.2	27,485	0.7	48.0	43.2
Queen's	26,713.9	40,070.9	29,961	1.1	74.8	80.3
Ryerson	36,627.8	54,941.7	21,522	0.6	39.2	35.8
Toronto (St. George)	55,631.5	83,447.3	50,097	0.9	60.0	58.0
Toronto (Mississauga)	13,634.0	20,451.0	9,377	0.7	45.9	44.7
Toronto (Scarborough)	11,523.2	17,284.8	10,593	0.9	61.3	53.3
Trent	9,669.4	14,504.1	6,438	0.7	44.4	46.2
Waterloo	33,740.8	50,611.2	32,437	1.0	64.1	62.3
Western	37,023.5	55,535.3	46,562	1.3	83.8	84.2
Wilfrid Laurier	15,085.9	22,628.8	13,844	0.9	61.2	66.9
Wilfrid Laurier (Brantford)	2,431.5	3,647.3	2,747	1.1	75.3	0.0
Windsor	14,920.5	22,380.8	12,950	0.9	57.9	60.0
York (Keele)	41,774.6	62,661.8	31,462	0.8	50.2	45.6
York (Glendon)	1,738.6	2,607.9	2,890	1.7	110.8	92.8
<b>SUBTOTAL</b>	<b>470,857.9</b>	<b>706,286.8</b>	<b>426,287</b>	<b>0.9</b>	<b>60.4</b>	<b>59.2</b>
Hearst	114.8	172.2	1,159	10.1	672.8	1,489.4
NOSM	512.0	768.0	112	0.2	14.5	187.0
<b>TOTAL</b>	<b>471,484.7</b>	<b>707,227.0</b>	<b>427,558</b>	<b>0.9</b>	<b>60.5</b>	<b>59.3</b>

Input Measure: Total FTE Students (as defined in [Appendix C](#)).

Space Factor: 1.5 NASM

System Average: 0.91 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 60: Total Space (1-15): Generated Space and Inventory, 2019-20**

	FTE Students	Generated Space	Generated per FTE	Inventory NASM	Inventory per FTE	2019-20 % I/G	2016-17 % I/G	% of system share: Generated Space	% of system share: Inventory NASM
Algoma	1,023.6	10,865.7	10.6	15,128	14.8	139.2	134.9	0.2%	0.4%
Brock	16,642.1	143,768.5	8.6	101,021	6.1	70.3	75.0	2.9%	2.6%
Carleton	26,322.9	264,490.7	10.0	189,791	7.2	71.8	73.8	5.3%	4.9%
Guelph	22,632.9	283,109.6	12.5	260,846	11.5	92.1	91.6	5.6%	6.7%
Lakehead	7,644.3	95,210.8	12.5	85,903	11.2	90.2	88.9	1.9%	2.2%
Laurentian	6,962.1	75,661.4	10.9	79,289	11.4	104.8	104.8	1.5%	2.0%
McMaster	30,501.8	329,884.0	10.8	272,465	8.9	82.6	81.3	6.6%	7.0%
Nipissing	3,919.5	35,560.6	9.1	25,900	6.6	72.8	65.8	0.7%	0.7%
OCADU	7,937.9	77,939.3	9.8	27,201	3.4	34.9	40.8	1.6%	0.7%
Ontario Tech	8,570.8	74,915.9	8.7	53,344	6.2	71.2	65.5	1.5%	1.4%
Ottawa	38,184.8	421,153.4	11.0	284,392	7.4	67.5	68.0	8.4%	7.3%
Queen's	26,713.9	288,181.6	10.8	257,352	9.6	89.3	88.7	5.7%	6.6%
Ryerson	36,627.8	327,046.6	8.9	186,237	5.1	56.9	55.9	6.5%	4.8%
Toronto (St. George)	55,631.5	747,054.4	13.4	585,081	10.5	78.3	79.9	14.9%	15.0%
Toronto (Mississauga)	13,634.0	106,346.6	7.8	76,683	5.6	72.1	70.9	2.1%	2.0%
Toronto (Scarborough)	11,523.2	91,362.4	7.9	74,541	6.5	81.6	76.0	1.8%	1.9%
Trent	9,669.4	81,699.8	8.4	55,013	5.7	67.3	80.3	1.6%	1.4%
Waterloo	33,740.8	362,341.7	10.7	340,936	10.1	94.1	88.4	7.2%	8.8%
Western	37,023.5	466,586.7	12.6	369,908	10.0	79.3	76.7	9.3%	9.5%
Wilfrid Laurier	15,085.9	122,806.2	8.1	92,092	6.1	75.0	80.7	2.4%	2.4%
Wilfrid Laurier (Brantford)	2,431.5	16,663.7	6.9	17,301	7.1	103.8	0.0	0.3%	0.4%
Windsor	14,920.5	182,577.0	12.2	140,794	9.4	77.1	85.2	3.6%	3.6%
York (Keele)	41,774.6	388,514.5	9.3	268,249	6.4	69.0	69.1	7.7%	6.9%
York (Glendon)	1,738.6	17,532.5	10.1	17,939	10.3	102.3	96.2	0.3%	0.5%
<b>SUBTOTAL</b>	<b>470,857.9</b>	<b>5,011,273.5</b>	<b>10.6</b>	<b>3,877,407</b>	<b>8.2</b>	<b>77.4</b>	<b>77.6</b>	<b>99.8%</b>	<b>99.7%</b>
Hearst	114.8	1,476.3	12.9	5,116	44.6	346.6	414.5	0.0%	0.1%
NOSM	512.0	8,935.4	17.5	8,361	16.3	93.6	131.2	0.2%	0.2%
<b>TOTAL</b>	<b>471,484.7</b>	<b>5,021,685.3</b>	<b>10.7</b>	<b>3,890,884</b>	<b>8.3</b>	<b>77.5</b>	<b>77.7</b>	<b>100.0%</b>	<b>100.0%</b>

This table presents a comparison of the Total Generated Space and existing Inventory in categories 1 through 15 per FTE Student.

## 7. Appendices

### Appendix A: Space Categories: Definitions, Sub-Categories and Formulae

**Note:** Changes new to the 2019 reporting cycle are **highlighted in red**.

#### **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.

##### **Notes**

Do not prorate classroom space to create phantom space. Phantom space is included in the total classroom space. **In other words: the “whole room counts.”**

##### **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 (ALCs)

Pedagogical space primarily moderated for group interaction. The room may or may not utilize technology. The focus is on group learning. Report tiered and non-tiered space separately, if applicable:

###### 1.3a Tiered classroom

###### 1.3b Non-Tiered classroom

ALCs are defined as rooms that have multiple circular tables, or moveable tables that can be combined, and that are technology-rich and that have no front of room. Rooms that can be used for multiple modes of delivery (for traditional delivery or active group interaction) should not be included here.

###### 1.4 Classroom service **and exam** space

Examination rooms (**including those for special accommodations**), projection rooms, preparation rooms, closets, storage rooms and other related areas.

<b>Room types excluded</b>	<b>Category</b>
All instructional laboratory or studio space	2

Room types excluded	Category
Conference rooms	4.5 and 10.2
Assembly facilities (theatres, concert halls, etc.)	15
Rooms equipped with computers and is a requirement for the class	15

### 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 enroll 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 35 hours per week**

Room utilization standard for a room Monday to 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 (45 daytime hours per week and 12 nighttime hours per week = 57 hours per week. The daytime utilization rate is 70% and nighttime utilization rate is 30%.

Therefore: 45 hours x .70 = 31.5 hours and 12 hours x .30 = 3.6 hours, for a total of 35.1 hours per week that a classroom is used.

#### **S = 0.70<sup>8</sup> (i.e., 70% seats occupied when the room is used)**

<sup>8</sup> In 2010-11 it was assumed that 65% of the seats would be occupied when the room is used. This

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 24.5. 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 35 and 0.70\* respectively, the space formula is 1.11 sq. m.

$$\frac{\text{NASM / FTE Student}}{1.7} = \frac{1.7}{35 \times .70} \times 16 \text{ hours} = 1.11^* \text{ NASM}$$

### 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.

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changed the space factor from 1.23 to 1.11 NASM.

## 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.

**If the timetable states that it is a lab, count it as a lab and include the lab contact hours.**

Room types excluded	Category
A class where students may bring their computers to class, but is not a requirement of the class	1
Research laboratory space for graduate students and faculty	3
Athletic facilities	6
Clinic facilities for university health services	13
Non-university clinic facilities for health science programs in hospitals or other health care areas	20
Greenhouses classified elsewhere	3, 9 and 15
Animal areas classified elsewhere	3 and 18
Academic office	4
Computer labs for student study, not used for scheduled instruction	11.1
<b>Service areas for the above excluded room types</b>	

**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:

$$\text{Laboratory space for specific group (W, X, Y, Z)} = \text{WSLabCH for group} \times \text{Space factor for group (0.8, 0.6, 0.5, 0.3)}$$

**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, with some relationship to discipline groups (denoted W, X, Y, Z), are used.
- 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 Hours x Seat Utilization</b>	<b>Space Factor 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

**Formula:**

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

Room types excluded	Category
Undergraduate laboratories and their support space	2
Greenhouses not in support of research	2, 9 and 15
Animal areas classified elsewhere	2 and 18
Academic office	4
Graduate student space	4
Technicians' office/workroom	4
Non-Academic office	10

#### 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, F)	= Count x	Space Factor for group (45, 30, 20, 10, 5, 2)
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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, six space standards are used: A = 45 NASM; B = 30 NASM; C = 20 NASM; D = 10 NASM; E = 5 NASM; F = 2 NASM.

- Station areas (i.e. space factors) associated with the letter groups were derived over time from data reported by the universities in the Ontario system together with standards from other jurisdictions; several groups were updated in 2019 to more rationally account for space requirements associated with specific programs or disciplines.
- 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 conducting research that 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, **server rooms and IT closets for specific departments/units**, special reference libraries, file rooms, vaults, photocopy rooms, waiting and reception areas, interview rooms, storage areas, private toilets, lunchrooms, and private departmental lounges. **Also includes collaborative or makerspace for entrepreneurship and innovation, and/or seminar and multipurpose spaces that are under the control of departments/units.**

Room types excluded	Category
<b>All space under the administration of the university library system</b>	
Technicians' workshops classified elsewhere	2, 5, and 12
Graduate laboratory work stations	3
Lounge space that is a component of graduate student offices reported in Category 4.3	4.5
<b>Collaborative or makerspace for entrepreneurship and innovation under the jurisdiction of the Library</b>	<b>5.4</b>
Offices for general university administration	10
Lounges intended for general university use	11
Central photocopying and printing areas	12
Student offices associated with extra-curricular student organizations	14
<b>Collaborative and entrepreneurial space not otherwise categorized</b>	<b>14.1</b>

#### Formula

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

##### 1. Category 4.1 (Academic Offices)

- a. Faculty: # FTE Faculty x 12m<sup>2</sup>.<sup>9</sup> [12.0 NASM]

##### **Faculty Offices**

**As a guide, include all persons holding an academic appointment and involved in teaching who receive remuneration via the university from all salary funding**

<sup>9</sup> In 2010-11 the space factor for faculty, research appointments and non-academic departmental support staff was 13m<sup>2</sup>.

sources. This includes those up to and including deans, department heads or chairs.

Exclude faculty on unpaid leave of absence and academics with administrative appointments in the central administration of the university.

#### **Instructor & TA Offices**

Include instructors/teachers. Exclude those below the rank of lecturer or institutional equivalent; exclude undergraduate staff.

### **2. Category 4.2 (Research office / project space)**

- a. Research Appointments: (# PDFs + FTE Research Associates + FTE Research Funded Support Staff) x 12m<sup>2</sup>. [12 NASM]

#### **Post-Doctoral Fellows (PDFs) and Research Associates**

These individuals are generators of research who are not regular faculty as defined in "Faculty" but who have similar research space requirements. They are paid by the university and originate and direct their own research or are co-investigators.

#### **Non-Academic Office Staff**

Non-academic staff, professional academic staff and technicians requiring offices who support the research of a faculty member as principal investigator. **Exclude** graduate students and upper year undergraduate students who perform the work of graduate students. Exclude lab-based technicians who do not require office space.

### **3. Category 4.3 (Graduate Student Offices)**

- a. Graduate Students: # FTE Graduate Students x 3m<sup>2</sup>.<sup>10</sup> [3.0 NASM]

### **4. Category 4.4 (Departmental administrative and support staff offices)**

- a. Non-Academic Departmental Support Staff: # FTE Non-Academic Staff, paid from operating funds, requiring offices x 12m<sup>2</sup>. [12 NASM]

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. **Exclude** graduate students and upper-year undergraduate students who perform the work of graduate students.

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<sup>10</sup> In 2010-11 the space factor for graduate students was 4m<sup>2</sup>.

## 5. Category 4.5 (Office Service)

- a. Office Support Space: 25% of the total space generated for faculty, administrative staff and graduate students

### Formula Assumptions

The office facilities formula is based on the following assumptions:

- 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 and Library 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 & 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. (See definition of [Error! Reference source not found.](#))

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 **and Collaborative** 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. **Also includes collaborative or makerspace for entrepreneurship and innovation, and/or seminar and multipurpose spaces that are under the jurisdiction of the Library.**

<b>Room types excluded</b>	<b>Category</b>
Classrooms in libraries	1
Media storage for language laboratories	2

Room types excluded	Category
Faculty and instructional areas associated with academic programs in library science and teacher education	2, 3
Special reference libraries & departmental reading rooms not under the control of university library administration	4, 12, 17 and 19
Graduate office space and study areas assigned to individuals for their exclusive use in areas not administered by the university library system	4.3
Collaborative and entrepreneurial space under the control of departments/units	4.5
Study and collaborative space not under the jurisdiction of the University Library system	11
Media storage for audio-visual facilities	12.2
Media storage for recreational purposes	14
Collaborative and entrepreneurial space not otherwise categorized	14.1
Types of space located in the library that is not directly related to library function (e.g. Student services, health counsellors)	various

### 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 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 and enough space to accommodate an average of 25% of the student population:  $2 \times .25 = 0.5$  NASM/FTE student.
- Formula assumption is based on 2 NASM per station regardless of the type of space. It is assumed that 0.5 NASM per FTE student will allow approximately one quarter of the student population to be housed at any one time. The assumption of accommodating 25% 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.
- Study space includes space physically located within the library system and space that is located elsewhere on the university campus (excluding residences).

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

Gymnasias, 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 gymnasias, 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.

<b>Room types excluded</b>	<b>Category</b>
Laboratories required to support programs in Physical and Health Education	2, 3
Office and office-related space in support of programs in Physical and Health Education	4
Office and office-related space serving athletic facilities	10
Indoor rifle ranges associated with military training	19

#### **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 7: Food Service

### 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.

Room types excluded	Category
Departmental lounges and kitchenettes	4.5
Refreshment booths in athletic facilities	6
Office and office related space which support university-administered food service facilities	10
Kitchen and dining areas located in private living quarters	17
Office and office related space which support externally administered food service facilities	19.3

### Formula

- Range of 0.5 to 0.7 NASM / FTE student



**Note:**

- The space factor for the aggregated Student & Central Services categories (7, 8, 12, 13, 14 and 15) is 1.5 NASM per FTE student to better align the standard with current space use at universities.

**Category 8: Bookstore and Other Merchandising Facilities**

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.

Room types excluded	Category
Stores that service a particular department or program	4
Departmental and campus mail rooms	4, 10 and 12
General use food service facilities	7
Merchandising facilities exclusively or primarily to the non-university community	19.3

**Formula**

Range of 0.1 to 0.2 NASM / FTE student

**Note:**

The space factor for the aggregated Student & Central Services categories (7, 8, 12, 13, 14 and 15) is 1.5 NASM per FTE student to better align the standard with current space use at universities.

**Category 9: Plant Maintenance**

**Definition**

Space associated with the operation and maintenance of university buildings, grounds, vehicles and other elements of the physical plant. **Includes campus-wide facilities**, whereas Categories 12 and 16 include space specific to a building.

**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. Include janitorial storage and supply spaces.

Room types excluded	Category
Vocational, technical and academic support shops	2 and 3
Greenhouses for teaching and research	2.3 or 3.2
Office and office related	10
Security and security related	10
Central stores	12
Computer repair shops	12
AV/TV repair shops	12.2
Central utility plant and related	16
Other non-assignable spaced	16

### Formula

- 1.5% x 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 and private departmental lounges.

Room types excluded	Category
Deans, Associate or Vice-Deans and their immediate support personnel	4
Office and office-related areas classified elsewhere	4, 5, 8, 13, 14, 17 and 19
Library faculty and staff	5

Room types excluded	Category
Lounges intended for general use	11
Central mail, duplicating and printing areas	12

## Formula

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

- Offices: # FTE Non-Academic Staff requiring offices x 12 sq. m.<sup>11</sup> [12.0 NASM]
  - Central administrative and support staff in non-academic units. This includes executives, administrative, professional and management staff as well as administrative support staff with offices.
 

**Include for example:** office, professional and managerial staff in the following departments; security, athletics, food service, plant maintenance, custodial, grounds, central services and student services and student housing services.

**Exclude for example:** library staff, other staff working directly for athletics, food services, grounds, security, shipping/receiving, printing, health services or residences.
- Office Support Space: 50% of the total space generated for the Non-Academic Staff

## 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).

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<sup>11</sup> In 2010-11 the space factor for administrative offices was 13m<sup>2</sup>.

## Subcategories

### 11.1 Formal study space

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

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.

Room types excluded	Category
Graduate office space	4.3
Study <b>and Collaborative</b> Space under the jurisdiction of the University Library System	5.4
Space in untraditional space (cafeterias, unoccupied rooms)	7.1
Dedicated path of travel space in corridors and hallways	16.2

## Formula

- 0.4 NASM / FTE student

## Category 12: Central Services

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.

Include server rooms and closets.

## Subcategories

### 12.1 Computing facilities

Central data processing facilities (**including big data centres**), 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.

### 12.3 Central student and student support services

Includes, for example, career services and related supports, student learning and/or academic success centres and support services, including accessible learning supports.

Room types excluded	Category
Computer rooms for scheduled instruction	2.1
Computer rooms for research	3
Data processing facilities and related areas intended for the sole use of the academic and non-academic staff of a single unit	4.5 and 10.2
Academic advising under an academic department or provided under central administration	4 and 10
Film and tape libraries located in the central library	5
Laundry and drying rooms classified elsewhere	6, 8, 17 and 19
Office or office-related space serving these facilities (including Student Housing Offices)	10
Counselling and health services	13
Campus infrastructure communications and data closets	16.2

#### Formula

- Range of 0.15 to 0.40 NASM / FTE student

#### Note:

- The space factor for the aggregated Student & Central Services categories (7, 8, 12, 13, 14 and 15) is 1.5 NASM per FTE student to better align the standard with current space use at universities.

### **Category 13: Health Service Facilities**

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 and mental health counselling centres, their support areas, offices and related areas within health service facilities, and first-aid rooms located elsewhere and used for the general university.

Room types excluded	Category
Laboratory clinics for teaching or research	2 and 3
Clinic facilities for health science programs in hospitals or other health care areas	2, 3 and 20
Academic counselling/advising under an academic department or provided under central administration	4 and 10
Athletic / Recreation first-aid and physiotherapy rooms	6

### Formula

- Range of 0.03 to 0.05 NASM / FTE student

### Note:

- The space factor for the aggregated Student & Central Services categories (7, 8, 12, 13, 14 and 15) is 1.5 NASM per FTE student to better align the standard with current space use at universities.

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

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, **including clubs run by a faculty for students. Also includes collaborative and entrepreneurial space, including incubators, makerspace, and digital labs that are not under the jurisdiction of the Library or a specific department/unit. This can include shared space for entrepreneurship and innovation that is not otherwise categorized.**

##### 14.2 Recreational facilities and service

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 **and multi-faith** rooms, quiet rooms, and pubs.

Room types excluded	Category
Lounge space classified elsewhere	4, 5 10, 11 and 17
Collaborative and entrepreneurial space under the control of departments/units	4.5
Collaborative and entrepreneurial space under the Jurisdiction of the Library	5.4

Room types excluded	Category
Athletic facilities, wherever situated, such as gymnasias, pools and basketball, handball & squash courts	6
Offices for administrative staff concerned with student affairs and services	10
Student lounge and study space	11

### Formula

- Range of 0.5 to 0.7 NASM / FTE student

### **Category 15: Assembly and Exhibition Facilities**

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 display only and supporting areas.

Room types excluded	Category
Assembly facilities for the primary use of academic programs	1 and 2
Areas for displaying collections intended primarily for instructional and research purposes	2 and 3

### Formula

- Range of 0.15 to 0.40 NASM / FTE student

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

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.

**Note:** A block of bookstacks, auditoria, classrooms, large laboratories, accounts payable office with their file areas or spectator seating areas are considered part of the appropriate space category and are **not** considered non-assignable space.

## 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, **campus infrastructure communications and data closets**, an 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.

Include here any other space in parking structures not counted in 16.4 (for example, stairs, electrical/mechanical and elevators.)

### 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.

Include space that is being renovated and not available for occupancy for the long term; space occupied on a temporary basis by departments that are displaced due to renovations in their regular space.

### 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, do not count the top floor.

Room types excluded	Category
IT closets for specific departments/units	4.5
Custodial lunch, locker, shower and change rooms	9.1
Offices for custodial supervisors and plant engineers	10
Space that is deemed available for immediate occupancy but which have not yet been assigned to individuals or groups	19.5



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

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). Include 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.

<b>Room types excluded</b>	<b>Category</b>
General use study and library areas	5
Food services and merchandising (coded elsewhere)	7 and 8
Offices related to student housing services	10
General use lounges	11
General use recreation areas	14
Public washrooms in residences	16

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

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.

<b>Room types excluded</b>	<b>Category</b>
Short-term holding and care of animals either before or following surgical or other investigative treatment, located on campus and closely related to academic departments <b>in support of teaching</b>	2

Room types excluded	Category
Short-term holding and care of animals either before or following surgical or other investigative treatment, located on campus and closely related to academic departments <b>in support of research</b>	3
Specialized facilities within central animal areas which are in direct support of research by one or several academic departments such as operating suites	3

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

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, exclusively or primarily to the non-university community (e.g. variety store)

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 **and external companies**, or other institutions occupying university space. **Includes entrepreneurial space for external use**. 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.

Room types excluded	Category
Bookstore	8
Space that is unavailable for a long term due to construction	16.3

**Category 20: Health Science Clinical Facilities**

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; and
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.

<b>Room types excluded</b>	<b>Category</b>
Space occupied by the basic medical sciences, such as Anatomy, Biochemistry, Biophysics, Genetics, Microbiology, Pathology (where non-clinical), Pharmacology and Physiology	1-15
Offices occupied by the Chair and associated staff of all clinical teaching departments	4
Space occupied by university health service	13

**Clinical Facilities**

The inventory of universities with programs in the health sciences may include spaces which are used as hospitals or may house clinical staff usually located in hospitals. Much, but not all of the funding for these facilities were provided under the Health Resources Development Plan (historically referred to as Z formula space). In the 1978 edition of Building Blocks, Volume 6, no specific method of reporting hospital or clinical facilities was identified.

The 1986 edition defines Category 20 as 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.

In addition to the above categories of space, Category 20 should also be used for health science space in support of clinical instruction or research where the corresponding input measures are not included in Categories 1–15.

Input measures and inventory supporting the basic medical sciences (Anatomy, Biochemistry, Biophysics, Genetics, Microbiology, Pathology, Pharmacology, and Physiology) will continue to be reported in Categories 1–15, along with other health programs (Dentistry, Nursing, Pharmacy, Optometry, Rehabilitation Therapy) identified in the Undergraduate and Research Laboratory groups.

For convenience, the definition of FTE Undergraduates has been drawn up in such a way that it will include interns and residents.

**Error! Reference source not found.** It is felt that the distortion of generated space is not serious.

The space inventory should relate only to clinical space owned and operated by the university. For more detailed information, see *Building Blocks Volume 3: Report of the Task Force Space for Health Sciences, 1973*.

## Appendix B: List of Input Measures & COU Space Formula

Below is a summary chart that shows the Category Number, Category Name, Space Factor and assigned Letter Group if applicable, as well as the Input Measures.

### Note:

- The space factor for the aggregated Student & Central Services categories (7, 8, 12, 13, 14 and 15) is 1.5 NASM per FTE student to better align the standard with current space use at universities. The table below includes **suggested ranges** for each of the six categories.

Space Category	Space Factor & Letter Group	Input Measure
<b>1 Classroom Facilities</b>	1.11 NASM	FTE Students
<b>2 Laboratory – Instructional</b>	0.8 NASM (W) 0.6 NASM (X) 0.5 NASM (Y) 0.3 NASM (Z)	Weekly Student Laboratory Contact Hours
<b>3 Laboratory – Graduate and Faculty</b>	45 NASM (A) 30 NASM (B) 20 NASM (C) <b>10 NASM (D)</b> <b>5 NASM (E)</b> <b>2 NASM (F)</b>	FTE Tenured/Leading to Tenure Faculty + 0.5 FTE Other Research Appointments (Post-Doctoral Fellows and FTE Research Associates) + 0.5 FTE Graduates
<b>4 Academic Departmental Offices</b>  <i>Category 4.1 (Academic Offices)</i>	12 NASM	FTE Faculty
<i>Category 4.2 (Research office/project space)</i>	12 NASM	Other Research Appointments  PDFs + FTE Research Associates + FTE Research Funded Support Staff (requiring office type work space)

<b>Space Category</b>	<b>Space Factor &amp; Letter Group</b>	<b>Input Measure</b>
<i>Category 4.3 (Graduate student offices)</i>	3.0 NASM	FTE Graduate Students
<i>Category 4.4 (Departmental administrative and support staff offices)</i>	12 NASM	FTE Non-Academic Office Staff, paid from operating funds (requiring offices)
<i>Category 4.5 (office service)</i>		25% of the total space generated for faculty, non-academic staff and graduate students
<b>5 Library Facilities &amp; Library Study Space</b>		Library Collections (Equivalent Volumes) & FTE Students
<ul style="list-style-type: none"> <li><i>Stack</i></li> </ul>	0.005 NASM	Traditional static shelving
	0.004 NASM	Mobile compact storage
	0.0035 NASM	Offsite/onsite high-density storage
<ul style="list-style-type: none"> <li><i>Study</i></li> </ul>	0.5 NASM	FTE Students
<ul style="list-style-type: none"> <li><i>Support</i></li> </ul>		25% of stack and study
<b>6 Recreation / Athletic Space</b>	0.9 NASM	FTE Students
<b>7 Food Service</b>	0.5 to 0.7 NASM	FTE Students
<b>8 Bookstore &amp; Other Merchandising Facilities</b>	0.1 to 0.2 NASM	FTE Students
<b>9 Plant Maintenance</b>	0.015 x Total Net Assignable Inventory (Categories 1-15 and 17-20)	
<b>10 Administrative Offices</b>	12 NASM	FTE Non-Academic Office Staff (requiring offices)
<ul style="list-style-type: none"> <li><i>Office Service</i></li> </ul>	50% x total generated for FTE non-academic staff (for admin offices)	
<b>11 Non-Library Study &amp; Collaborative Space</b>	0.4 NASM	FTE Students

<b>Space Category</b>	<b>Space Factor &amp; Letter Group</b>	<b>Input Measure</b>
<b>12 Central Services</b>	0.15 to 0.40 NASM	FTE Students
<b>13 Health Service Facilities</b>	0.03 to 0.05 NASM	FTE Students
<b>14 Common Use &amp; Student Activity Space</b>	0.5 to 0.7 NASM	FTE Students
<b>15 Assembly and Exhibition Facilities</b>	0.15 to 0.4 NASM	FTE Students

## Appendix C: 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 [Historical Changes to the Inventory](#) 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 there are 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 deans, 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.

There is no common definition for FTE faculty. Each university will use the definition employed at their university.

### 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 (when the instructor is in the room) 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 and services not ordinarily available in classrooms.

This would normally include courses requiring the use of language laboratories, the subject classrooms of faculties of education, visual arts and other studios, the teaching of musical instruments, and didactic practice of a sport activity, as well as the traditional engineering, physical and biological science laboratories.

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 (e.g., 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 [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 October 1. 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 [Category 16: Net 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 September 2018 it was called the Ministry of Advanced Education and Skills Development; from September 2018 to the present it is called the Ministry of Colleges and Universities (MCU).

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

Generators of research are those 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:

- **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.
- **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)**

- 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.
- 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 D: Program Classification Scheme

COU space standards make use of program or discipline groups in the generation of instructional labs and research space.

The program/discipline groups are derived from the USER (University Statistical Enrolment Report) manual (Element 5815-CIP). The programs have been classified at the second level. The second level is made up of 'subseries' which are identified using four-digit codes.

CIP Codes and their associated letter categories and space factors for classroom labs and research labs are included in this document, but also appended as a separate Excel document for easier sorting and searching.

<b>CIP Code</b>	<b>CIP Name</b>	<b>Class lab category</b>	<b>Class lab space factor</b>	<b>Research lab category</b>	<b>Research lab space factor</b>
1.00	Agricultural, general	W	0.8	A	45
1.01	Agricultural business and management	W	0.8	A	45
1.02	Agricultural mechanization	W	0.8	A	45
1.03	Agricultural production operations	W	0.8	A	45
1.04	Agricultural and food products processing	W	0.8	A	45
1.05	Agricultural and domestic animal services	W	0.8	A	45
1.06	Applied horticulture/horticultural business services	W	0.8	A	45
1.07	International agriculture	W	0.8	A	45
1.08	Agricultural public services	W	0.8	A	45
1.09	Animal sciences	W	0.8	A	45
1.10	Food science and technology	Y	0.5	C	20
1.11	Plant sciences	Y	0.5	A	45
1.12	Soil science	Y	0.5	A	45
1.99	Agriculture, agriculture operations and related sciences, other	Y	0.5	A	45
3.01	Natural resources conservation and research	Y	0.5	D	10
3.02	Natural resources management and policy	Y	0.5	D	10
3.03	Fishing and fisheries sciences and management	Y	0.5	D	10
3.05	Forestry	X	0.6	B	30
3.06	Wildlife and wildlands science and management	Y	0.5	D	10
3.99	Natural resources and conservation, other	Y	0.5	D	10
4.02	Architecture	X	0.6	E	5

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<b>CIP Code</b>	<b>CIP Name</b>	<b>Class lab category</b>	<b>Class lab space factor</b>	<b>Research lab category</b>	<b>Research lab space factor</b>
4.03	City/urban, community and regional planning	Y	0.5	D	10
4.04	Environmental design/architecture	X	0.6	F	2
4.05	Interior architecture	X	0.6	F	2
4.06	Landscape architecture	X	0.6	F	2
4.08	Architectural history and criticism	Z	0.3	F	2
4.09	Architectural sciences and technology	X	0.6	F	2
4.10	Real estate development	Z	0.3	F	2
4.99	Architecture and related services, other	X	0.6	F	2
5.01	Area studies	Z	0.3	F	2
5.02	Ethnic, cultural minority, gender and group studies	Z	0.3	F	2
5.99	Area, ethnic, cultural, gender, and group studies, other	Z	0.3	E	5
9.01	Communication and media studies	Z	0.3	F	2
9.04	Journalism	Z	0.3	E	5
9.07	Radio, television and digital communication	X	0.6	F	2
9.09	Public relations, advertising and applied communication	Z	0.3	E	5
9.10	Publishing	Z	0.3	F	2
9.99	Communication, journalism and related programs, other	Z	0.3	F	2
10.01	Communications technology/technician	X	0.6	E	5
10.02	Audiovisual communications technologies/technicians	X	0.6	E	5
10.03	Graphic communications	X	0.6	E	5
10.99	Communications technologies/technicians and support services, other	X	0.6	E	5
11.01	Computer and information sciences, general	Z	0.3	D	10
11.02	Computer programming	Z	0.3	D	10
11.03	Data processing and data processing technology/technician	Z	0.3	D	10
11.04	Information Science/Studies	X	0.6	E	5
11.05	Computer systems analysis/analyst	X	0.6	E	5

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11.06	Data entry/microcomputer applications	X	0.6	E	5
11.07	Computer science	Z	0.3	D	10
11.08	Computer software and media applications	X	0.6	E	5
11.09	Computer systems networking and telecommunications	X	0.6	E	5
11.10	Computer/information technology administration and management	X	0.6	E	5
11.99	Computer and information sciences and support services, other	X	0.6	E	5
12.03	Funeral service and mortuary science	Y	0.5	F	2
12.04	Cosmetology and related personal grooming services	Y	0.5	F	2
12.05	Culinary arts and related services	Y	0.5	F	2
12.99	Personal and culinary services, other	Y	0.5	F	2
13.01	Education, general	Y	0.5	F	2
13.02	Bilingual, multilingual and multicultural education	Y	0.5	E	5
13.03	Curriculum and instruction	Y	0.5	E	5
13.04	Educational administration and supervision	Y	0.5	E	5
13.05	Educational/instructional media design	Y	0.5	E	5
13.06	Educational assessment, evaluation and research	Y	0.5	E	5
13.07	International and comparative education	Y	0.5	E	5
13.09	Social and philosophical foundations of education	Y	0.5	E	5
13.10	Special education and teaching	Y	0.5	E	5
13.11	Student counselling and personnel services	Y	0.5	E	5
13.12	Teacher education and professional development, specific levels and methods	Y	0.5	E	5
13.13	Teacher education and professional development, specific subject areas	Y	0.5	E	5
13.14	Teaching English or French as a second or foreign language	Y	0.5	E	5

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<b>CIP Code</b>	<b>CIP Name</b>	<b>Class lab category</b>	<b>Class lab space factor</b>	<b>Research lab category</b>	<b>Research lab space factor</b>
13.15	Teaching assistants/aides	Y	0.5	E	5
13.99	Education, other	Y	0.5	E	5
14.01	Engineering, general	Y	0.5	B	30
14.02	Aerospace, aeronautical and astronautical /space engineering	Y	0.5	C	20
14.03	Agricultural engineering	Y	0.5	C	20
14.04	Architectural engineering	Y	0.5	C	20
14.05	Bioengineering and biomedical engineering	W	0.8	C	20
14.06	Ceramic sciences and engineering	W	0.8	B	30
14.07	Chemical engineering	W	0.8	B	30
14.08	Civil engineering	W	0.8	B	30
14.09	Computer engineering	X	0.6	D	10
14.10	Electrical, electronics and communications engineering	Y	0.5	C	20
14.11	Engineering mechanics	X	0.6	A	45
14.12	Engineering physics/applied physics	X	0.6	A	45
14.13	Engineering science	X	0.6	A	45
14.14	Environmental/environmental health engineering	W	0.8	B	30
14.18	Materials engineering	W	0.8	B	30
14.19	Mechanical engineering	Y	0.5	B	30
14.20	Metallurgical engineering	Y	0.5	B	30
14.21	Mining and mineral engineering	W	0.8	A	45
14.22	Naval architecture and marine engineering	W	0.8	A	45
14.23	Nuclear engineering	W	0.8	A	45
14.24	Ocean engineering	W	0.8	A	45
14.25	Petroleum engineering	W	0.8	A	45
14.27	Systems engineering	X	0.6	D	10
14.28	Textile sciences and engineering	W	0.8	B	30
14.32	Polymer/plastics engineering	W	0.8	B	30
14.33	Construction engineering	W	0.8	B	30
14.35	Industrial engineering	W	0.8	B	30
14.36	Manufacturing engineering	W	0.8	C	20
14.37	Operations research	W	0.8	B	30
14.38	Surveying engineering	W	0.8	B	30
14.39	Geological/geophysical engineering	W	0.8	B	30



<b>CIP Code</b>	<b>CIP Name</b>	<b>Class lab category</b>	<b>Class lab space factor</b>	<b>Research lab category</b>	<b>Research lab space factor</b>
14.40	Paper science and engineering	W	0.8	B	30
14.41	Electromechanical engineering	W	0.8	B	30
14.42	Mechatronics, robotics, and automation engineering	W	0.8	B	30
14.43	Biochemical engineering	W	0.8	B	30
14.44	Engineering chemistry	W	0.8	B	30
14.45	Biological/biosystems engineering	W	0.8	B	30
14.99	Engineering, other	W	0.8	B	30
15.00	Engineering technology, general	W	0.8	B	30
15.01	Architectural engineering technology/technician	X	0.6	A	45
15.02	Civil engineering technology/technician	X	0.6	A	45
15.03	Electrical and electronic engineering technologies / technicians	X	0.6	A	45
15.04	Electromechanical and instrumentation and maintenance technologies/technicians	X	0.6	A	45
15.05	Environmental control technologies/technicians	X	0.6	A	45
15.06	Industrial production technologies/technicians	X	0.6	A	45
15.07	Quality control and safety technologies/technicians	X	0.6	A	45
15.08	Mechanical engineering related technologies/technicians	X	0.6	A	45
15.09	Mining and petroleum technologies/technicians	X	0.6	A	45
15.10	Construction engineering technology/technician	X	0.6	A	45
15.11	Engineering-related technologies	X	0.6	A	45
15.12	Computer engineering technologies/technicians	W	0.8	A	45
15.13	Drafting/design engineering technologies/technicians	W	0.8	A	45
15.14	Nuclear engineering technology/technician	W	0.8	A	45
15.15	Engineering-related fields	W	0.8	B	30
15.16	Nanotechnology	X	0.6	A	45

<b>CIP Code</b>	<b>CIP Name</b>	<b>Class lab category</b>	<b>Class lab space factor</b>	<b>Research lab category</b>	<b>Research lab space factor</b>
15.99	Engineering technologies and engineering-related fields, other	X	0.6	A	45
16.01	Linguistic, comparative and related language studies and services	Z	0.3	F	2
16.02	African languages, literatures and linguistics	Z	0.3	E	5
16.03	East Asian languages, literatures and linguistics	Z	0.3	E	5
16.04	Slavic, Baltic and Albanian languages, literatures and linguistics	Z	0.3	E	5
16.05	Germanic languages, literatures and linguistics	Z	0.3	E	5
16.06	Modern Greek language and literature	Z	0.3	E	5
16.07	South Asian languages, literatures and linguistics	Z	0.3	E	5
16.08	Iranian languages, literatures and linguistics	Z	0.3	E	5
16.09	Romance languages, literatures and linguistics	Z	0.3	E	5
16.10	Aboriginal languages, literatures and linguistics	Z	0.3	E	5
16.11	Middle/Near Eastern and Semitic languages, literatures and linguistics	Z	0.3	E	5
16.12	Classics and classical languages, literatures and linguistics, general	Z	0.3	E	5
16.13	Celtic languages, literatures and linguistics	Z	0.3	E	5
16.14	Southeast Asian and Australasian/Pacific languages, literatures and linguistics	Z	0.3	E	5
16.15	Turkic, Uralic-Altaic, Caucasian and Central Asian languages, literatures and linguistics	Z	0.3	E	5
16.16	Sign language	Z	0.3	E	5
16.17	Second language learning <sup>CAN</sup>	Z	0.3	E	5
16.99	Aboriginal and foreign languages, literatures and linguistics, other	Z	0.3	E	5
19.00	Work and family studies	Z	0.3	C	20

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19.01	Family and consumer sciences/human sciences, genera	Z	0.3	C	20
19.02	Family and consumer sciences/human sciences business services	Z	0.3	C	20
19.04	Family and consumer economics and related services	Z	0.3	C	20
19.05	Foods, nutrition and related services	Y	0.5	C	20
19.06	Housing and human environments	Z	0.3	E	5
19.07	Human development, family studies and related services	Z	0.3	E	5
19.09	Apparel and textiles	X	0.6	E	5
19.99	Family and consumer sciences/human sciences, other	X	0.6	E	5
21.01	Pre-technology education/pre-industrial arts programs <sup>CAN</sup>	X	0.6	E	5
22.00	Non-professional general legal studies (undergraduate)	Z	0.3	E	5
22.01	Law (LLB, JD, BCL)	Z	0.3	E	5
22.02	Legal research and advanced professional studies (post-LLB/JD)	Z	0.3	E	5
22.03	Legal support services	Z	0.3	E	5
22.99	Legal professions and studies, other	Z	0.3	E	5
23.01	English language and literature, general	Z	0.3	E	5
23.13	English rhetoric and composition/writing studies	Z	0.3	E	5
23.14	English literature	Z	0.3	E	5
23.99	English language and literature/letters, other	Z	0.3	E	5
24.01	Liberal arts and sciences, general studies and humanities	W	0.8	F	2
25.01	Library science and administration	Z	0.3	E	5
25.03	Library and archives assisting	Z	0.3	E	5
25.99	Library science, other	Z	0.3	E	5
26.01	Biology, general	X	0.6	A	45
26.02	Biochemistry/biophysics and molecular biology	X	0.6	C	20
26.03	Botany/plant biology	X	0.6	A	45

<b>CIP Code</b>	<b>CIP Name</b>	<b>Class lab category</b>	<b>Class lab space factor</b>	<b>Research lab category</b>	<b>Research lab space factor</b>
26.04	Cell/cellular biology and anatomical sciences	X	0.6	A	45
26.05	Microbiological sciences and immunology	X	0.6	B	30
26.07	Zoology/animal biology	X	0.6	A	45
26.08	Genetics	X	0.6	A	45
26.09	Physiology, pathology and related sciences	X	0.6	B	30
26.10	Pharmacology and toxicology	X	0.6	A	45
26.11	Biomathematics, bioinformatics, and computational biology	X	0.6	A	45
26.12	Biotechnology	W	0.8	A	45
26.13	Ecology, evolution, systematics and population biology	X	0.6	A	45
26.14	Molecular medicine	X	0.6	A	45
26.15	Neurobiology and neurosciences	X	0.6	A	45
26.99	Biological and biomedical sciences, other	X	0.6	A	45
27.01	Mathematics	Z	0.3	F	2
27.03	Applied mathematics	Z	0.3	E	5
27.05	Statistics	Z	0.3	E	5
27.99	Mathematics and Statistics, Other	Z	0.3	E	5
28.08	Military science, leadership and operational art <sup>CAN</sup>	X	0.6	A	45
29.05	Military technologies and applied sciences <sup>CAN</sup>	X	0.6	A	45
30.01	Biological and physical sciences	X	0.6	A	45
30.05	Peace studies and conflict resolution	X	0.6	E	5
30.06	Systems science and theory	X	0.6	E	5
30.08	Mathematics and computer science	Z	0.3	E	5
30.10	Biopsychology	Z	0.3	E	5
30.11	Gerontology	Z	0.3	E	5
30.12	Historic preservation and conservation	Z	0.3	E	5
30.13	Medieval and renaissance studies	Z	0.3	E	5
30.14	Museology/museum studies	Z	0.3	E	5
30.15	Science, technology and society	Z	0.3	E	5

<b>CIP Code</b>	<b>CIP Name</b>	<b>Class lab category</b>	<b>Class lab space factor</b>	<b>Research lab category</b>	<b>Research lab space factor</b>
30.16	Accounting and computer science	Z	0.3	E	5
30.17	Behavioural sciences	X	0.6	D	10
30.18	Natural sciences	X	0.6	D	10
30.19	Nutrition sciences	Y	0.5	C	20
30.20	Global/international studies	Z	0.3	E	5
30.21	Holocaust and related studies	Z	0.3	E	5
30.22	Classical and ancient studies	Z	0.3	E	5
30.23	Intercultural/multicultural and diversity studies	Z	0.3	E	5
30.25	Cognitive science	X	0.6	A	45
30.26	Cultural studies/critical theory and analysis	Z	0.3	E	5
30.27	Human biology	Z	0.3	E	5
30.28	Dispute resolution	Z	0.3	E	5
30.29	Maritime studies	Z	0.3	E	5
30.30	Computational science	Z	0.3	E	5
30.31	Human computer interaction	Z	0.3	E	5
30.32	Marine sciences	Z	0.3	E	5
30.33	Sustainability studies	X	0.6	D	10
30.99	Multidisciplinary/interdisciplinary studies, other	X	0.6	D	10
31.01	Parks, recreation and leisure studies	Y	0.5	F	2
31.03	Parks, recreation and leisure facilities management	Y	0.5	F	2
31.05	Health and physical education/fitness	Z	0.3	D	10
31.06	Outdoor education	Z	0.3	D	10
31.99	Parks, recreation, leisure and fitness studies, other	Y	0.5	F	2
32.01	Basic skills (not for credit)	Z	0.3	E	5
33.01	Citizenship activities (not for credit)	Z	0.3	E	5
34.01	Health-related knowledge and skills (not for credit)	Z	0.3	E	5
35.01	Interpersonal and social skills (not for credit)	Z	0.3	E	5
36.01	Leisure and recreational activities (not for credit)	Z	0.3	E	5
37.01	Personal awareness and self-improvement (not for credit)	Z	0.3	E	5
38.00	Philosophy and religious studies, general	Z	0.3	E	5

<b>CIP Code</b>	<b>CIP Name</b>	<b>Class lab category</b>	<b>Class lab space factor</b>	<b>Research lab category</b>	<b>Research lab space factor</b>
38.01	Philosophy, logic and ethics	Z	0.3	E	5
38.02	Religion/religious studies	Z	0.3	E	5
38.99	Philosophy and religious studies, other	Z	0.3	E	5
39.00	Theology and religious vocations	Z	0.3	E	5
39.02	Bible/Biblical studies	Z	0.3	E	5
39.03	Missions/missionary studies and missiology	Z	0.3	E	5
39.04	Religious education	Z	0.3	E	5
39.05	Religious/sacred music	Z	0.3	E	5
39.06	Theological and ministerial studies	Z	0.3	E	5
39.07	Pastoral counselling and specialized ministries	Z	0.3	E	5
39.99	Theology and religious vocations, other	Z	0.3	E	5
40.01	Physical sciences, general	X	0.6	A	45
40.02	Astronomy and astrophysics	X	0.6	C	20
40.04	Atmospheric sciences and meteorology	X	0.6	C	20
40.05	Chemistry	X	0.6	A	45
40.06	Geological and Earth sciences/geosciences	X	0.6	A	45
40.08	Physics	X	0.6	A	45
40.10	Materials sciences	X	0.6	B	30
40.99	Physical sciences, other	X	0.6	A	45
41.00	Science technologies/technicians, general	X	0.6	B	30
41.01	Biology technician/biotechnology laboratory technician	X	0.6	B	30
41.02	Nuclear and industrial radiologic technologies/technicians	X	0.6	B	30
41.03	Physical science technologies/technicians	X	0.6	B	30
41.99	Science technologies/technicians, other	X	0.6	B	30
42.01	Psychology, general	Y	0.5	B	30
42.27	Research and experimental psychology	Y	0.5	B	30
42.28	Clinical, counselling and applied psychology	Y	0.5	B	30

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<b>CIP Code</b>	<b>CIP Name</b>	<b>Class lab category</b>	<b>Class lab space factor</b>	<b>Research lab category</b>	<b>Research lab space factor</b>
42.99	Psychology, other	Y	0.5	B	30
43.01	Criminal justice and corrections	Z	0.3	D	10
43.02	Fire protection	Z	0.3	D	10
43.03	Security and protective services, specialized programs	Z	0.3	D	10
43.99	Security and protective services, other	Z	0.3	D	10
44.00	Human services, general	Z	0.3	F	2
44.02	Community organization and advocacy	Z	0.3	E	5
44.04	Public administration	Z	0.3	E	5
44.05	Public policy analysis	Z	0.3	E	5
44.07	Social work	Z	0.3	E	5
44.99	Public administration and social service professions, other	Z	0.3	E	5
45.01	Social sciences, general	Z	0.3	E	5
45.02	Anthropology	Y	0.5	C	20
45.03	Archaeology	Y	0.5	D	10
45.04	Criminology	Z	0.3	E	5
45.05	Demography and population studies	Y	0.5	D	10
45.06	Economics	Z	0.3	F	2
45.07	Geography and cartography	Y	0.5	D	10
45.09	International relations and national security studies	Z	0.3	E	5
45.10	Political science and government	Z	0.3	F	2
45.11	Sociology	Z	0.3	F	2
45.12	Urban studies / affairs	Z	0.3	E	5
45.13	Sociology and anthropology	Z	0.3	E	5
45.14	Rural sociology	Z	0.3	E	5
45.99	Social sciences, other	Z	0.3	E	5
46.00	Construction trades, general	Z	0.3	E	5
46.01	Masonry/mason	Z	0.3	E	5
46.02	Carpentry/carpenter	Z	0.3	E	5
46.03	Electrical and power transmission installers	Z	0.3	E	5
46.04	Building/construction finishing, management and inspection	Z	0.3	E	5
46.05	Plumbing and related water supply services	Z	0.3	E	5
46.99	Construction trades, other	Z	0.3	E	5
47.00	Mechanics and repairers, general	Z	0.3	E	5

<b>CIP Code</b>	<b>CIP Name</b>	<b>Class lab category</b>	<b>Class lab space factor</b>	<b>Research lab category</b>	<b>Research lab space factor</b>
47.01	Electrical/electronics maintenance and repair technology	Z	0.3	E	5
47.02	Heating, air conditioning, ventilation and refrigeration maintenance technology/technician	Z	0.3	E	5
47.03	Heavy/industrial equipment maintenance technologies	Z	0.3	E	5
47.04	Precision systems maintenance and repair technologies	Z	0.3	E	5
47.05	Stationary energy sources installer and operator <sup>CAN</sup>	Z	0.3	E	5
47.06	Vehicle maintenance and repair technologies	Z	0.3	E	5
47.99	Mechanic and repair technologies/technicians, other	Z	0.3	E	5
48.00	Precision production trades, general	Z	0.3	E	5
48.03	Leatherworking and upholstery	Z	0.3	E	5
48.05	Precision metal working	Z	0.3	E	5
48.07	Woodworking	Z	0.3	E	5
48.08	Boilermaking/boilermaker	Z	0.3	E	5
48.99	Precision production, other	Z	0.3	E	5
49.01	Air transportation	Z	0.3	E	5
49.02	Ground transportation	Z	0.3	E	5
49.03	Marine transportation	Z	0.3	E	5
49.99	Transportation and materials moving, other	Z	0.3	E	5
50.01	Visual, digital and performing arts, general	X	0.6	C	20
50.02	Crafts/craft design, folk art and artisanry	X	0.6	C	20
50.03	Dance	X	0.6	E	5
50.04	Design and applied arts	X	0.6	E	5
50.05	Drama/theatre arts and stagecraft	X	0.6	E	5
50.06	Film/video and photographic arts	X	0.6	E	5
50.07	Fine arts and art studies	X	0.6	D	10
50.09	Music	X	0.6	F	2
50.10	Arts, entertainment, and media management	X	0.6	E	5



## 2019-20 Inventory of Physical Facilities of Ontario Universities

<b>CIP Code</b>	<b>CIP Name</b>	<b>Class lab category</b>	<b>Class lab space factor</b>	<b>Research lab category</b>	<b>Research lab space factor</b>
50.99	Visual and performing arts, other	X	0.6	E	5
51.00	Health services/allied health/health sciences, general	X	0.6	D	10
51.01	Chiropractic (DC)	X	0.6	B	30
51.02	Communication disorders sciences and services	X	0.6	C	20
51.04	Dentistry	X	0.6	A	45
51.05	Advanced/graduate dentistry and oral sciences (Cert., MS, MSc, PhD)	X	0.6	A	45
51.06	Dental support services and allied professions	X	0.6	A	45
51.07	Health and medical administrative services	Z	0.3	E	5
51.08	Allied health and medical assisting services	Z	0.3	E	5
51.09	Allied health diagnostic, intervention and treatment professions	X	0.6	E	5
51.10	Clinical/medical laboratory science/research and allied professions	X	0.6	A	45
51.11	Health/medical preparatory programs	X	0.6	A	45
51.12	Medicine (MD)	X	0.6	A	45
51.14	Medical scientist (MS, MSc, PhD)	X	0.6	A	45
51.15	Mental and social health services and allied professions	X	0.6	A	45
51.17	Optometry (OD)	X	0.6	A	45
51.20	Pharmacy, pharmaceutical sciences and administration	X	0.6	B	30
51.21	Podiatric medicine/podiatry (DPM)	X	0.6	A	45
51.22	Public health	X	0.6	E	5
51.23	Rehabilitation and therapeutic professions	X	0.6	B	30
51.24	Veterinary medicine (DVM)	W	0.8	A	45
51.25	Veterinary biomedical and clinical sciences	W	0.8	A	45
51.26	Health aides/attendants/orderlies	X	0.6	E	5
51.27	Medical illustration and informatics	X	0.6	E	5

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CIP Code	CIP Name	Class lab category	Class lab space factor	Research lab category	Research lab space factor
51.31	Dietetics and clinical nutrition services	X	0.6	E	5
51.32	Bioethics/medical ethics	X	0.6	E	5
51.33	Alternative and complementary medicine and medical systems	X	0.6	E	5
51.34	Alternative and complementary medicine and medical systems <b>[includes midwifery]</b>	X	0.6	E	5
51.35	Somatic bodywork and related therapeutic services	X	0.6	E	5
51.36	Movement and mind-body therapies	X	0.6	E	5
51.37	Energy-based and biologically-based therapies	X	0.6	E	5
51.38	Registered nursing, nursing administration, nursing research and clinical nursing	Z	0.3	F	2
51.39	Practical nursing, vocational nursing and nursing assistants	Z	0.3	F	2
51.99	Health professions and related clinical sciences, other	X	0.6	A	45
52.01	Business/commerce, general	Z	0.3	F	2
52.02	Business administration, management and operations	Z	0.3	F	2
52.03	Accounting and related services	Z	0.3	F	2
52.04	Business operations support and assistant services	Z	0.3	E	5
52.05	Business/corporate communications	Z	0.3	E	5
52.06	Business/managerial economics	Z	0.3	E	5
52.07	Entrepreneurial and small business operations	Z	0.3	E	5
52.08	Finance and financial management services	Z	0.3	E	5
52.09	Hospitality administration/management	Z	0.3	E	5
52.10	Human resources management and services	Z	0.3	E	5
52.11	International business/trade/commerce	Z	0.3	E	5
52.12	Management information systems and services	Z	0.3	E	5
52.13	Management science and quantitative methods	Z	0.3	E	5

## 2019-20 Inventory of Physical Facilities of Ontario Universities

<b>CIP Code</b>	<b>CIP Name</b>	<b>Class lab category</b>	<b>Class lab space factor</b>	<b>Research lab category</b>	<b>Research lab space factor</b>
52.14	Marketing	Z	0.3	F	2
52.15	Real estate	Z	0.3	E	5
52.16	Taxation	Z	0.3	E	5
52.17	Insurance	Z	0.3	E	5
52.18	General sales, merchandising and related marketing operations	Z	0.3	E	5
52.19	Specialized sales, merchandising and marketing operations	Z	0.3	E	5
52.20	Construction management	Z	0.3	E	5
52.21	Telecommunications management	Z	0.3	E	5
52.99	Business, management, marketing and related support services, other	Z	0.3	E	5
53.01	High school/secondary diploma programs	Z	0.3	E	5
53.02	High school/secondary certificate programs	Z	0.3	E	5
54.01	History	Z	0.3	F	2
55.01	French language and literature, general	Z	0.3	F	2
55.13	French rhetoric and composition/writing studies <sup>CAN</sup>	Z	0.3	F	2
55.14	French literature <sup>CAN</sup>	Z	0.3	F	2
55.99	French language and literature/letters, other <sup>CAN</sup>	Z	0.3	F	2
60.01	Dental residency programs	X	0.6	A	45
60.03	Veterinary residency programs	X	0.6	A	45
60.04	Medical residency programs - general certificates	X	0.6	A	45
60.05	Medical residency programs - subspecialty certificates	X	0.6	A	45
60.06	Podiatric medicine residency programs	X	0.6	A	45
60.99	Dental, medical and veterinary residency programs, other	X	0.6	A	45

## Appendix E: 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, the University of British Columbia and Dalhousie University) 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.

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. In 2020, universities recommended to the Ministry a modified formula for the FRP that considered various factors more closely related to the condition of physical facilities. The revised formula as developed was not accepted by the Ministry; at present, the Ministry is allocating the FRP based on a hybrid formula that includes a generated space component.

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

In the late 1980's, the Committee began to coordinate the triennial survey, conducting 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 affect 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.

### ***Task Force on University Space Transformation: 2018 to present***

The Task Force on University Space Transformation (the Task Force) was approved by the Council of Senior Administrative Officers (CSAO) in February 2018 to take a strategic and forward-looking approach in reviewing current university space standards. The Task Force met and broadly evaluated space and capital planning needs and strategic priorities.

In light of the COVID-19 pandemic, including the increase of remote work policies and reduced or changed use of physical space on campus, it is proposed that the mandate of the Task Force shift its focus to implementation of the initial recommendations and serve as the overarching and cross-functional group to review strategic issues related to space management and capital planning in the university sector.

The Task Force will act as a coordinating body across diverse units to bring synergies to "best practices" on space transformation and corresponding implications for policies, protocols, and support needs (IT, HR, facilities, health and safety, research etc.)

The Task Force will provide strategic oversight to the review of issues related to overall capital planning and space management, infrastructure programs, and deferred maintenance, with appropriate linkages with the Facilities Condition Assessment Program (FCAP) Task Force and the Committee on Space Standards and Reporting. This includes review data, benchmarks, accountability and reporting mechanisms, a review of data systems to support information gathering and analysis, sharing of best practices, and governance and management of these issues going forward.

Work will be undertaken in 2021-22 in the second phase of the Task Force.

### ***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 were 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>
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:

Time/Period	Major Change or Publication
	<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	<p>Changes made starting with the 2004-05 report:</p> <ul style="list-style-type: none"> <li>• UOIT (now Ontario Tech University) 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> <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 they were reported in Category 19.</li> <li>• A number of changes to the Library/Learning Commons space were made.</li> </ul>

Time/Period	Major Change or Publication
December 2005	Published: Inventory of Physical Facilities of Ontario Universities, 2004-05 (#779)
2007-08	<p>Changes made starting with the 2007-08 report:</p> <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	<p>Changes made starting with the 2010-11 report:</p> <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>
June 2013	Published: Inventory of Physical Facilities of Ontario Universities, 2010-11 (#874)
2013-14	<p>Changes made starting with the 2013-14 report:</p> <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> </ul>



Time/Period	Major Change or Publication
	<ul style="list-style-type: none"> <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	<p>Changes made starting with the 2016-17 report:</p> <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>
June 2018	Published: Inventory of Physical Facilities of Ontario Universities, 2016-17 (#934)
2019-20	<p>In 2019, the Committee updated space factors for several CIP Code categories to better align with actuals/reality, following an analysis of current space use by program. Consequently, programs have been aligned with their closest NASM/Letter Category in order to allow for better comparability and accuracy of the generated space required by institutions. It is important to note the space factors are derived from existing averages, rather than a future-needs assessment or a “best practice.”</p> <p>A new Category 12.3, Central student and student support services, was created to include, for example, career services and related supports, student learning and/or academic success centres and support services, including accessible learning supports.</p>

## Appendix F: 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
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