Thompson Rivers University

Space Planning Study - Kamloops Campus

Final Report – December 23, 2015

Educational Consulting Services Corp.

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Section 1 - Introduction

Study Scope and Intended Outcomes

Thompson Rivers University (TRU) wishes to strengthen its space utilization, allocation and management practices and has commissioned a **Space Planning Study** (the Study) to help achieve this objective.

The Study's terms of reference call for the following activities and deliverables:

- Review of TRU's overall space allocations in relation to the University's own strategic priorities and plans, and in some instances in relation to relevant provincial and national benchmarks.
- Assessment of the University's instructional spaces utilization (classrooms, auditoria, laboratories, workshops and studios) and comments on TRU's current, and proposed changes to, scheduling practices and policies.
- Review of TRU's formal and day-to-day space allocation and management practices and relevant policies.
- Development of space planning options for the University to guide investment in existing space, in major building renovations and / or in new buildings over a short- to-medium term planning horizon (two to five years).

While some aspects of the Study apply to TRU as a whole (i.e. policies and practices in place on a University-wide basis), the review of physical space is limited to TRU's Main Campus in Kamloops (as per the Study's terms of reference).

Of note, the spaces, staff and student counts related to the presence on campus of the British Columbia Centre for Open Learning staff on the third and fourth floor of the BCCOL Building have not been considered in the Study.

About Educational Consulting Services Corp.

Educational Consulting Services Corp. (ECS) responded to the Request for Proposal No. 2014_0024 issued on March 12, 2015 and was selected by the University to carry out the Space Planning Study.

ECS was established in 1973 and specializes in facilities planning for the post-secondary education sector. ECS's range of services includes space utilization and allocation assessments, functional programming, space requirement analyses and master planning.

Many of ECS's past assignments have focused on the utilization of instructional spaces, matching inventory to need and developing space plans that accommodate program and enrolment requirements, evolving teaching methods, and emerging or changing needs to support the research enterprise of an institution.

Other assignments have studied province-wide space allocation standards and utilization practices for Alberta's 22 public post-secondary institutions and Ontario's 24 colleges of applied arts and technology.

2014 TRU Master Plan vs. 2015 Space Planning Study

In February 2014 the University adopted a Master Plan for its Kamloops Campus that sets out a vision and framework for future development and land use concepts for the next 60 years. This was followed in January 2015 by an Implementation Plan describing the Master Plan's ramifications on the campus's infrastructure in terms of utility networks, energy, transportation, sustainability, and design guidelines.

Both the 2014 Master Plan and subsequent Implementation Plan were developed on the basis of an *exceptionally* long planning horizon (20 to 60 years). Such a long-term outlook to the future is warranted when it comes to land use and infrastructure planning on and around TRU's Main Campus in Kamloops. However, this outlook does not address the more immediate concerns and issues related to the utilization, latent demand and possible opportunities that may exist in TRU's existing buildings, and the buildings that the University may build in the next three to five years.

Thus, in addition to the intended outcomes previously stated, the Space Planning Study aims to inform short and mid-term space planning decisions by the University in two ways:

- Recommendations on changes to the practices and policies in place at TRU that touch on space management and allocation decisions. Such changes, if implemented, will hopefully lead to more transparent, priority-driven and evidence-based space allocation decisions in the coming five years that will more equitably balance user priorities and be more readily accepted by all concerned.

- Recommendations on discrete changes in how the University handles issues and opportunities around space arising from changes in allocations, utilization or additions to the existing space inventory.

ECS's recommendations must also consider, confirm or suggest modifications to TRU's short-to-medium-term plans for major investments in new buildings and / or major renovations that are already proposed or being contemplated:

- Expansion to the Trades and Technology building (currently at the "notional approval" stage as per the Province's capital framework).

- Construction of a new building dedicated to the Faculty of Nursing.

- Provision of a TRU *Collegium* either in the form of a new building or as a result of major renovations to an existing building. This *Collegium* facility will provide TRU's commuter students with learn-live-play amenities and services that engage them more fully in student and campus life.

Key Inputs in the Space Planning Study

ECS used the following inputs for the Space Planning Study:

- Strategic Plan and related institutional considerations about TRU's academic programs, student enrolments, research plans and service model plans.

- Detailed space inventory of the University and building plans, validated and adjusted by ECS on the basis of walking tours that took place from September 22 to September 25, 2015.

- Scheduling data and booking data for the University's instructional rooms for the Winter 2015 and Fall 2015 semesters. Data for rooms that are centrally scheduled was provided by the Registrar's office. Data for the rooms found in the Trades & Technology building was provided by the School of Trades and Technology.

- Interviews with key stakeholders from September 21 to September 25, as per the following list:

▪ Dr. Allan Shaver	President
▪ Dr. Christine Bovis-Cnossen	Provost & Vice-President Academic
▪ Matt Milovick	Vice-President Administration and Finance
▪ Christopher Seguin	Vice-President Advancement
▪ Dr. Will Garrett-Petts	Assoc. VP Research and Graduate Studies
▪ Denis Powers	Assoc. VP Human Resources & Planning
▪ Dr. Gordon Tarzwell	Assoc. Vice Provost Open Learning
▪ Dr. Michael Henry	Dean, School of Business and Economics
▪ Dr. Donna Murhaghan	Dean, School of Nursing
▪ Dr. Sandra Vermeulen	Assoc. Dean, Faculty of Arts
▪ Dr. Lindsay Langill	Dean, School of Trades & Technology
▪ Dr. Tom Dickinson	Dean, Faculty of Science
▪ Dr. Cindy Piwowar	Assoc. Dean, Faculty of Human, Social and Educational Development
▪ Dr. Brad Morse	Dean, Faculty of Law
▪ Dr. Rob Hood	Dean, Faculty of Adventure, Culinary Arts and Tourism
▪ Christine Adam	Vice-Provost Student Services
▪ Michael Bluhm	Strategic Enrolment & University Registrar
▪ Brenda Mathenia	University Librarian
▪ Paul Michel	Exec. Director of Aboriginal Education
▪ Warren Asuchak	Director of Facilities
▪ Linda McAbbe	Senior Scheduling Team
▪ Marion Hannaford	Senior Scheduling Team
▪ Scott Mann	Faculty Focus Group – September 24
▪ Dr. John Karakatshoulis	Faculty Focus Group – September 24
▪ Brenda Smith	Faculty Focus Group – September 24
▪ Krista Lussier	Faculty Focus Group – September 24
▪ Dr. Joanne Rosvick	Faculty Focus Group – September 24
▪ Donald Lawrence	Faculty Focus Group – September 24
▪ Dr. Harold Richins	Faculty Focus Group – September 24
▪ Ron McGivern	Faculty Focus Group – September 24
▪ Les Matthews	Faculty Focus Group – September 24
▪ Dr. David Hill	Faculty Focus Group – September 24

- Alex McLellan — TRUSU Focus Group – September 25
- Melissa Gordon — TRUSU Focus Group – September 25
- Amber Storvold — TRUSU Focus Group – September 25
- Dana Prymak — TRUSU Focus Group – September 25
- Ryan Makar — TRUSU Focus Group – September 25
- Jarryd Burke — TRUSU Focus Group – September 25
- Eric Rankin — TRUSU Focus Group – September 25
- Nathan Lane — TRUSU Focus Group – September 25

Organization of the Study Report

The remainder of this document is organized as follows:

Section 2 – Inventory Overview and Key Space Allocations

Section 2 reviews TRU's Kamloops Main Campus space inventory with a focus on the key space types that support the activities and functions of the University in terms of instruction, research, learner success, student services, campus life, etc.

Where appropriate, key indicators and benchmarks have been calculated and are compared to those observed at comparable[1] Canadian institutions for which similar indicators are available. These findings and observations are then considered in Section 5 of the Study, where scenarios for future investment in space are explored.

Section 3 – Utilization Analysis and TRU Scheduling Practices

Section 3 examines the utilization of TRU's instructional spaces (seminar rooms, classrooms, auditoria, laboratories, studios and workshops).

Instructional spaces count for almost a third (29.8%) of TRU's total building inventory at its Kamloops Campus. Yet this is where many students will spend up to 80% of their time while they are on campus. It follows that instructional spaces have a major impact on student experience and learner success, and thus particular attention and investment are due in providing high-quality space.

ECS learned in the early stages of the Study that the University is now in a transitional phase in terms of its scheduling practices, whereby new policies and new scheduling software tools are being gradually introduced. Section 3 also presents observations by ECS on these new practices and tools in support of TRU's efforts to schedule instructional spaces and, more importantly, on its efforts to achieve *quality timetables* for its students and faculty.

Section 4 - Space Planning and Space Management Practices

ECS consultants also noted in early stages of the Study that TRU lacks a robust, evidence-based and consistently applied "policies and practices" framework to guide its space planning and management decisions. Section 4 of the Study suggests possible pathways the University could follow to establish or strengthen this type of policy framework. The reasons for this are briefly outlined below.

Space is a finite, costly, and somewhat inflexible resource that must be managed in a strategic, timely, and equitable manner in large and complex institutional settings such as universities. There are common challenges to securing and managing space as an enabling resource, including:

- *For major capital projects* - The time required to translate the initial concept for a new major university building into an occupied facility is rarely less than three years, and often spans five years or more. Thus the space planning principles and allocation decisions made in the early stages of such projects should be sufficiently robust to stand the test of time until occupancy.

  This is most often achieved if the functions to be accommodated in the building are identified through rigorous campus-wide assessments of space needs supported by transparent and clear decision-making processes.

  As a counter-example, during consultations in September several TRU staff expressed to ECS that, in their opinion, the House of Learning project did not stand the test of time as described above.

- *For major renovation projects* – Major renovation projects within existing buildings can be executed more quickly. But major renovations bring different sets of risks and constraints. These projects often rely on temporary relocations and must be guided by carefully-crafted space allocation plans with each step or phase implemented sequentially.

[1] Other Canadian institutions were deemed *comparable* if they met two of the following three criteria:

- Mostly undergraduate program offerings (non-medical) with emerging research enterprise
- Between 6,000 and 12,000 full-time equivalent students (excluding distance education)
- Formerly a college or polytechnic institution

- ***For day-to-day space allocation and management decisions*** – Many institutions allocate building space on a case-by-case basis, using processes and criteria that vary each time, and where the authority to decide "*who-goes-where*" is vested in a few senior administrators. This somewhat unscripted approach to space allocation management has drawbacks, including most notably strong notions of space control and ownership by users.

  Several stakeholders expressed concerns to ECS about this perceived or real situation at TRU and indicated a strong interest in the establishment of a space planning framework that was more inclusive, evidence-based, and predictable.

Section 5 – Scenarios for Investment in Space on a Short-Term to Mid-Term Basis

Section 5 proposes short-to-medium-term space allocation scenarios and outlines recommendations that consider the findings and observations reported in sections 2, 3 and 4 of this document. ECS's recommendations also consider TRU's existing plans for the expansion the Trades and Technology Building, the construction of a new Faculty of Nursing Building and the creation of a campus *Collegium* for commuter students.

Section 2 -
Inventory Overview and Key Space Allocations

Introduction

This section reviews TRU's Kamloops Main Campus space inventory. The review is focussed on the Kamloops Main Campus, with emphasis on the key spaces that support instruction, research, learner success, student services and campus life. Table 2-1 below summarizes how each TRU building was considered:

Table 2-1 Scope of the Space Inventory Review

	Considered / Included in Calculation of Benchmarks and Indicators		NOT Considered / Included in Calculation of Benchmarks and Indicators	
	Area (GSM)			
Building Description	**Primary and Legacy/ Temporary Main Campus Buildings**	**Other Main Campus Buildings**	**On or Near Campus Buildings**	**Off Campus Buildings**
Old Main	21,335			
Trades & Technology	9,800			
Science	7,571			
House Of Learning	7,343			
Campus Activity Center	6,139			
International Building	4,621			
Arts & Education	4,620			
Library	2,811			
Gymnasium	2,676			
Clock Tower	2,309			
Culinary Arts	1,845			
Open Learning - TRU Space Levels 1 & 2	1,598			
Independent Centre	1,322			
Trades Storage	1,184			
Animal Health Technology	1,047			
Human Resources	534			
Daycare	461			
House 10 - Horticulture	346			
Horticulture	326			
Faculty Annex	270			
House 9 - Welcome Centre	267			
House 5 - Aboriginal Culture Centre	264			
Research Centre	237			
House 4 - Sustainability Office	134			
House 8 - Radio Station	131			
House 1 - Faculty Association	129			
Materials Distribution Centre		2,499		
Weather Station		144		
Electrical Distribution Shed		121		
Chemical Storage		35		
Open Learning - BCCOL Space Levels 3 & 4			x	
Residence			x	
City Tournament Capital Centre			x	
City Field House			x	
City Hillside Stadium			x	
Williams Lake Campus				x
Vancouver Campus				x
ACC Regional Centre				x
Barriere Regional Centre				x
Clearwater Regional Centre				x
HMH Regional Centre				x
LL Regional Centre				x
Grand Total (GSM)	**79,319**	**2,799**		
	82,118			

Definitions

For the purpose of the review the following definitions and concepts touching on university space allocations should be noted:

- **Assignable Space** – Assignable space is defined as the areas allocated to users, functions or services such as classrooms, academic offices and study spaces. Assignable spaces are measured to the inside faces of the surfaces (generally walls) that form the perimeter of a room or area allocated to that use. They are typically referred to as net assignable square feet (NASF), or net assignable square meter (NASM).

  The portion of assignable space found in a typical Canadian university academic facility will range between 50% and 70% of that building's total area.

- **Non-Assignable or Building Service Space** – Non-assignable spaces include building hallways, washrooms, mechanical rooms, stairwells, wall thicknesses, etc. These spaces are essential to the safe and comfortable utilization of a facility but generally do not *directly* support the activities and functions that are located within it.

  The portion of non-assignable space found in a typical Canadian university academic facility will range between 30% and 50% of that building's total area.

- **Gross Building Space** – The sum of the assignable and non-assignable areas of a building is referred to as gross space, commonly expressed as gross square feet (GSF) or gross square meters (GSM).

  The sum of the percentages calculated for assignable spaces and non-assignable spaces of a building or of a campus is always 100%.

- **Benchmarks** describe the amount of space *currently* available at TRU's Main Campus to support certain activities of the University such as classroom instruction, food services, etc. Benchmarks are most often expressed in the form of a ratio, whereby the amount of space available is the nominator of a calculation whereby the number of students on campus is the denominator. The example shown below is typical:

  $$\frac{\text{10,280 square meters of classroom space}}{\text{6,433 FTE students}} = \text{1.60 square meter per FTE student (i.e. the benchmark)}$$

  Benchmarks are used primarily as a means of comparing overall or discrete types of space allocations between institutions, faculties, departments, etc.

- **Space standards** describe the amount of space that *should be allocated* in support of a given type of function. Standards are most often expressed in the form of a multiplier used to estimate the amount of space required or deemed to be desirable. The example below is typical:

  1.11 square meter of classroom space per FTE student (i.e. the space standard)
  x 6,433 FTE students
  = 7,140 square meters of classroom space estimated as required

  Space standards can be native to an institution, prescribed by a third party (generally one that oversees the institution, such as a provincial government agency) or recommended by a third party that advocates for the interest of its members (such as the Council of Ontario Universities or the American Library Association).

- **Design guidelines and code requirements** usually deal with detailed aspects of how spaces should be laid out, serviced and/or accessed in a room or a building. A typical design guideline will specify that a 30-seat classroom should provide as a minimum an average of 2.0 square meters per station. Another typical code requirement is that rooms with 60 or more seats should have two separate points of egress (i.e. doors).

Enrolment Values

Most of the benchmarks, standards, and guidelines defined above and used in the Study are predicated on the number of students on campus expressed either on a full-time-equivalent basis (FTE) or unduplicated headcount basis. Table 2-2 lists TRU's Kamloops Main Campus student population figures used by ECS for the purpose of calculating benchmarks and standardized space allocations[1]:

Table 2-2 TRU Kamloops Main Campus Full-time Equivalent (FTE) Student Population - Fall 2014 & Winter 2015

Division	Kamloops Main Campus Domestic FTE	Kamloops Main Campus International FTE	Kamloops Main Campus Total FTE	Kamloops Main Campus % FTE
Faculty of Adventure, Culinary Arts & Tourism	249	143	392	6%
Faculty of Arts	946	84	1,030	16%
Faculty of Human, Social & Educational Development	426	106	533	8%
Faculty of Law	282	1	283	4%
Faculty of Science	1,161	237	1,398	22%
School of Business & Economics	594	773	1,367	21%
School of Nursing	339	4	343	5%
School of Trades & Technology	1,020	1	1,022	16%
No College Designated	66	0	66	1%
Total	5,084	1,350	6,433	100%

[1] Source – Office of Institutional Planning and Analysis

The full-time-equivalent values shown are average Fall 2014 and Winter 2015 enrolments. These student population figures exclude:

- William Lake students
- Regional centre students
- BCCOL students enrolled in distance education programs offered by TRU. In that regard it should be noted that the 3rd and 4th floor of the BCCOL Building were not considered to be part of the Kamloops Main Campus space inventory reviewed here.

Inventory Overview

The tables and figures presented on pages 2-4 to 2-9 present a tally of the Kamloops space inventory in various formats. Specifically:

- **Table 2-3** breaks down TRU's Main Campus inventory of 82,119 GSM by building groups, buildings and the 70 different space categories used by all British Columbia post-secondary institutions to report space to the Ministry of Advanced Education (AVED).

  In the opinion of ECS the use of so many space categories to describe the space inventory of a university or a college dilutes one's capacity to see the "big picture". Further, it prevents comparisons with other institutions operating outside BC.

- **Table 2-4** also breaks down TRU's Main Campus inventory by building groups and buildings, but uses the space categories of the Council of Ontario Universities (COU) instead of the BC's AVED classifications. COU allows for 20 different categories, of which TRU requires 18 to describe its own inventory.

  The COU space classification and space standards framework has become, over the years, the *de facto* standard framework for Canadian universities, in particular those belonging to the U5 Group of Canadian Research Universities such as the University of British Columbia, the University of Alberta and the University of Calgary. Many smaller institutions also rely on COU for space planning purposes, including for example the University of Lethbridge. And, of course, Ontario's 21 universities use the framework as well.

  Table 2-4 also expresses the areas found in the buildings under each COU category as a percentage of how the space for a given category is distributed across various Main Campus buildings, and as a percentage of TRU's total inventory. Such a breakdown by percentage is particular useful for benchmarking purposes.

Building Groups

For the purposes of this study, ECS has organized the buildings on the Kamloops Campus into three groups, as follows:

- **Primary** buildings contain the majority of total functional space on the Campus and most academic activity occurs within them. The effective use of space within these buildings determines the overall success of space allocation policies on the Kamloops Campus.
- **Legacy/Temporary** buildings are the Houses and other small structures housing some academic activity as well as administrative and student/staff support functions. They are older or temporary, and their small footprints provide limited flexibility or value in repurposing for other functions.
- **Other** buildings are facilities in support of campus and building services. They do not contain any academic space.

Table 2-3 *TRU Kamloops Main Campus Space Inventory by BC AVED Space Categories, in Square Meters*

Group	Building Description	020 Conference / Meeting Rm & Services	020 Office - Administrative	020 Office - Associated With Gymnasiums	025 Faculty Office	025 Office - Faculty	030 Office - Associated With Libraries	035 Office - Assoc. With Teaching Kitchens	055 Office Services	056 Office Services - Admin	105C Seminar / Small Classroom	110C Mid-Sized Classroom	110C Nursing / Community Care Lab	115C Mid-Sized Tiered Classroom	120C Large Classroom	125C Lecture Theatre & Instr. Assembly	150C Classroom Support Services	201L Computer / Language / Business Lab	202L CAD / GIS / Drafting / Multimedia Lab	203L Dry Science - Lower Level	204L Dry Science - Upper Level	205L Wet Science - Lower Level	206L Wet Science - Lower Level	206L Wet Science - Upper Level	209L Fine Arts Studio
Primary	Old Main	15	2,461			944			290	457	593	3,583				196	39	918	272						1,312
	Trades & Technology		330			377			175	36	558	391		62			141	429							
	Trades Storage																								
	Science		580			210			4	73			68		116	308	6	7		797	232	314	112	585	
	House Of Learning		149			480	133		78		92	90			124	452									
	Campus Activity Center		246							105		180													
	International Building		379			448			106	14	212			144		694	24	318							
	Arts & Education		160			1,178			86		111	850		89		382	78	232	10	91	42				
	Library						197																		
	Gymnasium			187																					
	Clock Tower		591			169			25	329						169									
	Culinary Arts					70		43	7		93	71													
	Independent Centre		93						32			98					3								
	Animal Health Technology					76			25			71										163			
	Open Learning - TRU Space		507							163		110													
Primary Total		**15**	**5,495**	**187**		**3,951**	**331**	**43**	**827**	**1,177**	**1,659**	**5,445**	**68**	**295**	**240**	**2,202**	**290**	**1,905**	**281**	**889**	**275**	**477**	**112**	**585**	**1,312**
Legacy/Temporary	Human Resources		237							72															
	Daycare																								
	House 10 - Horticulture				85				2		85						1								
	Horticulture																								
	Faculty Annex					176			9																
	House 9 - Welcome Centre		57						62																
	House 5 - Aboriginal Culture Centre		39						1	19								81							
	Research Centre					21			3																
	House 4 - Sustainability Office		57						6																
	House 8 - Radio Station		56						2																
	House 1 - Faculty Association		13			9			2																
Legacy/Temporary Total			**459**		**85**	**206**			**86**	**91**	**85**						**1**	**81**							
Other	Materials Distribution Centre		194							64															
	Weather Station																								
	Electrical Distribution Shed																								
	Chemical Storage																								
Other Total			**194**							**64**															
Grand Total		**15**	**6,148**	**187**	**85**	**4,157**	**331**	**43**	**913**	**1,333**	**1,744**	**5,445**	**68**	**295**	**240**	**2,202**	**291**	**1,986**	**281**	**889**	**275**	**477**	**112**	**585**	**1,312**

Table 2-3 TRU Kamloops Main Campus Space Inventory by BC AVED Space Categories, in Square Meters - Continued

Group	Building Description	210L Other	220L Special-Class &/Or Individual Study Lab	250L Lab Support Services & Non-Class Lab	250L Research / Non-Class Laboratory	260L Research / Non-Class Laboratory	265L Research / Non-Class Lab Services	305S Carpentry / Building Trades	310S Electrical	310S Instructional Shop & Yard Services	325S Automotive Mechanics	330S Heavy Duty / Diesel	350S Instructional Shop & Yard Services	410 Library Reading/Study Space	420 Stack Space	425 Library Office	430 Remainder Library Space	440 Reading Study Area, Non-Library	450 A-V And Educational Support Services	510 Media Production	515 Media Production Services	520 Athletic / Physical Education	530 Building Services Area In Gymnasia	550 Demonstration	560 Animal Quarters And Services	580 Greenhouse And Services
Primary	Old Main		407	580									150	378	140			347		281				29		
	Trades & Technology		28					437	80	114	272	798	2,469					50								
	Trades Storage												1,184													
	Science		17	548	117	317	24											29								67
	House Of Learning		90											435	513	75	255	611								
	Campus Activity Center																	175								
	International Building			12		34	6											133								
	Arts & Education		44	41															7							
	Library													317	1,499		433									
	Gymnasium	74																				1,965	450			
	Clock Tower		41	7																						
	Culinary Arts																									
	Independent Centre													62				487								
	Animal Health Technology			108		29								27											315	
	Open Learning - TRU Space			83											12											
Primary Total		**74**	**627**	**1,379**	**117**	**379**	**30**	**437**	**80**	**114**	**272**	**798**	**3,803**	**1,219**	**2,164**	**75**	**688**	**1,833**	**7**	**281**	**78**	**1,965**	**450**	**29**	**315**	**67**
Legacy/Temporary	Human Resources																				78					
	Daycare																									
	House 10 - Horticulture																									
	Horticulture																									326
	Faculty Annex																									
	House 9 - Welcome Centre																									
	House 5 - Aboriginal Culture Centre																									
	Research Centre					96	11																			
	House 4 - Sustainability Office																									
	House 8 - Radio Station																									
	House 1 - Faculty Association																									
Legacy/Temporary Total						**96**	**11**														**78**					**326**
Other	Materials Distribution Centre																									
	Weather Station																									
	Electrical Distribution Shed																									
	Chemical Storage																									
Other Total																										
Grand Total		**74**	**627**	**1,379**	**117**	**475**	**42**	**437**	**80**	**114**	**272**	**798**	**3,803**	**1,219**	**2,164**	**75**	**688**	**1,833**	**7**	**281**	**78**	**1,965**	**450**	**29**	**315**	**393**

Table 2-3 TRU Kamloops Main Campus Space Inventory by BC AVED Space Categories, in Square Meters - Continued

Group	Building Description	590 Other (All Purpose)	591 Daycare	610 Assembly And Auditorium	615 Assembly & Auditorium Support Space	620 Exhibition And Services	630 Cafeteria, With Seating	640 Kitchen, Teaching	650 Kitchen, Non-Teaching	660 All Other Food Service Rooms	665 Merchandising Facilities	670 All Other Eating Spaces	680 Conference / Meeting Rm & Services	680 Student Offices & Support Space	710 Data Processing / Computer	720 Building Maintenance And Storage	810 Health Care	YYY Unfinished Or Inactive Area	ZZZ Bldg Services Area In Fd Srvc Area	ZZZ Building Services	ZZZ Building Services Area - Library Cmplx	Grand Total
Primary	Old Main			168	215	88			11	607	59	180	31	50		245	101	14		6,178	281	21,335
	Trades & Technology						65				58	146					13			2,769		9,800
	Trades Storage																					1,184
	Science											156					140			2,742		7,571
	House Of Learning	7				9				41		50	61							3,592	8	7,343
	Campus Activity Center			516	35	51	585		130	41	548	6	526						143	2,854		6,138
	International Building						196		32	6		36	186							1,642		4,621
	Arts & Education				3							56								1,158		4,620
	Library																				364	2,811
	Gymnasium																					2,676
	Clock Tower				35							52	16			47				828		2,309
	Culinary Arts						288	356	14	353									441	110		1,845
	Independent Centre								24	12		17	182							313		1,322
	Animal Health Technology																			233		1,047
	Open Learning - TRU Space								19			82	85		150					387		1,598
Primary Total		**7**		**684**	**288**	**148**	**1,134**	**356**	**230**	**1,059**	**665**	**782**	**1,086**	**50**	**150**	**291**	**253**	**14**	**583**	**22,804**	**653**	**76,220**
Legacy/Temporary	Human Resources									19										128		534
	Daycare		461																			461
	House 10 - Horticulture																	5		169		346
	Horticulture																					326
	Faculty Annex																			86		270
	House 9 - Welcome Centre											13								135		267
	House 5 - Aboriginal Culture Centre												74			5				46		264
	Research Centre												17							89		237
	House 4 - Sustainability Office																			71		134
	House 8 - Radio Station																			74		131
	House 1 - Faculty Association												29							76		129
Legacy/Temporary Total			**461**							**19**		**13**	**119**			**5**		**5**		**873**		**3,098**
Other	Materials Distribution Centre								4			44				1,782				411		2,499
	Weather Station	144																				144
	Electrical Distribution Shed																			121		121
	Chemical Storage															35						35
Other Total		**144**							**4**			**44**				**1,817**				**532**		**2,799**
Grand Total		**151**	**461**	**684**	**288**	**148**	**1,134**	**356**	**234**	**1,078**	**665**	**839**	**1,205**	**50**	**150**	**2,113**	**253**	**19**	**583**	**24,209**	**653**	**82,118**

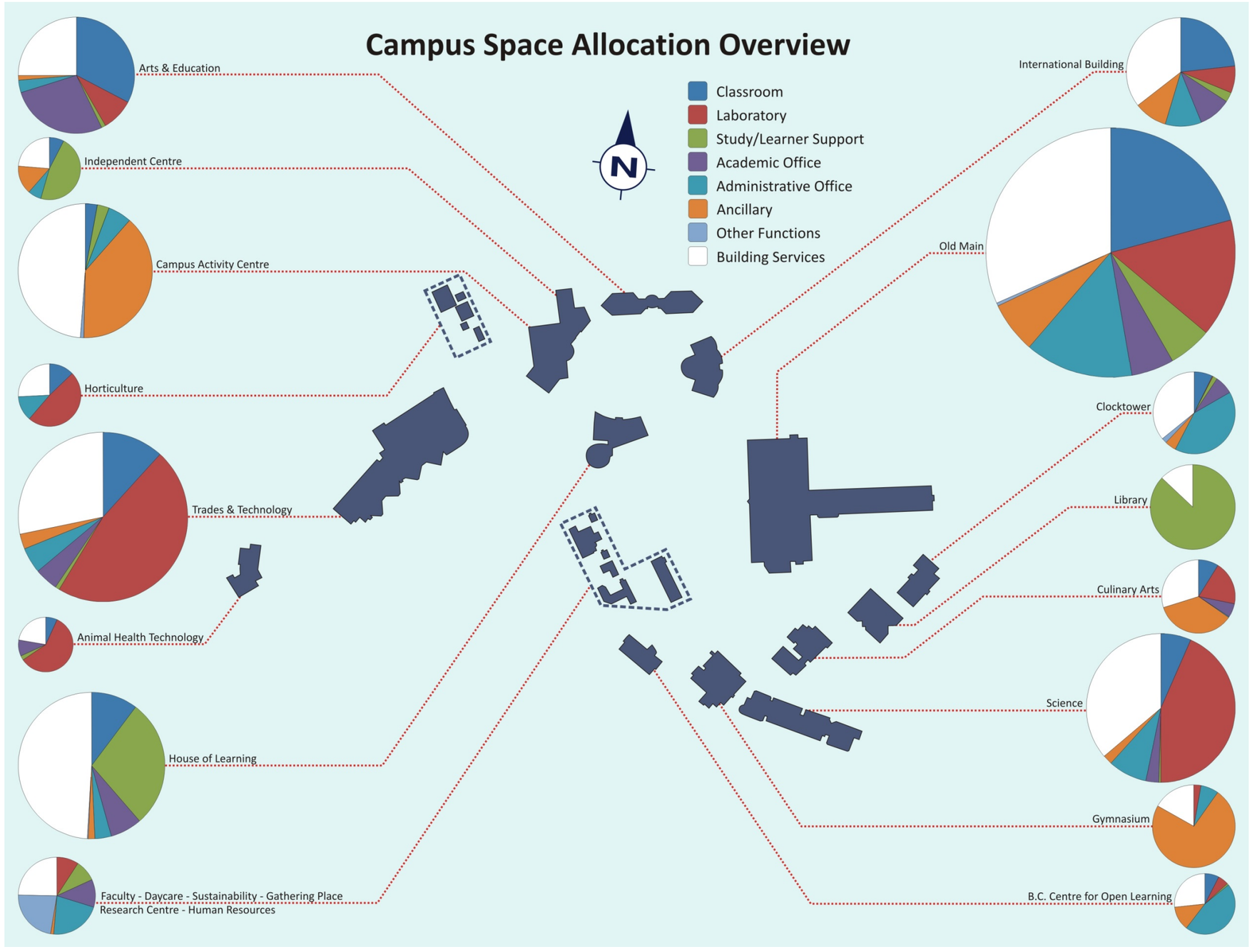
Table 2-4 *TRU Kamloops Main Campus Space Inventory by Council of Ontario Universities (COU) Space Categories, in Square Meters*

		1			2			3			4			5			6			7			8		
		Classroom Facilities			Laboratory - Undergraduate			Research Laboratory			Academic Offices			Library and Campus Study Space			Recreation / Athletics Space			Food Service			Bookstore / Merchadising		
Group	Building Description	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space
Primary	Old Main	4,411	43%	5%	3,667	25%	4%				1,234	24%	2%	585	10%	1%				798	24%	1%	59	9%	0%
	Trades & Technology	1,152	11%	1%	4,628	32%	6%				552	11%	1%	50	1%	0%				211	6%	0%	58	9%	0%
	Trades Storage				1,184	8%	1%																		
	Science	498	5%	1%	2,797	19%	3%	341	66%	0%	215	4%	0%	29	0%	0%				156	5%	0%			
	House Of Learning	759	7%	1%	90	1%	0%				557	11%	1%	2,021	34%	2%				91	3%	0%			
	Campus Activity Center	180	2%	0%										175	3%	0%				760	23%	1%	548	82%	1%
	International Building	1,074	10%	1%	330	2%	0%	40	8%	0%	554	11%	1%	133	2%	0%				270	8%	0%			
	Arts & Education	1,510	15%	2%	462	3%	1%				1,265	24%	2%							56	2%	0%			
	Library													2,447	41%	3%									
	Gymnasium				74	1%	0%										1,965	100%	2%						
	Clock Tower	169	2%	0%	48	0%	0%				194	4%	0%							52	2%	0%			
	Culinary Arts	164	2%	0%	356	2%	0%				119	2%	0%							655	20%	1%			
	Independent Centre	100	1%	0%							32	1%	0%	549	9%	1%				53	2%	0%			
	Animal Health Technology	71	1%	0%	272	2%	0%	29	6%	0%	100	2%	0%	27	0%	0%									
	Open Learning - TRU Space	110	1%	0%	83	1%	0%							12	0%	0%				101	3%	0%			
Primary Total		**10,199**	**99%**	**12%**	**13,991**	**97%**	**17%**	**410**	**79%**	**0%**	**4,821**	**93%**	**6%**	**6,028**	**100%**	**7%**	**1,965**	**100%**	**2%**	**3,206**	**98%**	**4%**	**665**	**100%**	**1%**
Legacy/Temporary	Human Resources																			19	1%	0%			
	Daycare																								
	House 10 - Horticulture	86	1%	0%							87	2%	0%												
	Horticulture				326	2%	0%																		
	Faculty Annex										184	4%	0%												
	House 9 - Welcome Centre										62	1%	0%							13	0%	0%			
	House 5 - Aboriginal Culture Centre				81	1%	0%				1	0%	0%												
	Research Centre							107	21%	0%	25	0%	0%												
	House 4 - Sustainability Office										6	0%	0%												
	House 8 - Radio Station										2	0%	0%												
	House 1 - Faculty Association										11	0%	0%												
Legacy/Temporary Total		**86**	**1%**	**0%**	**407**	**3%**	**0%**	**107**	**21%**	**0%**	**377**	**7%**	**0%**							**32**	**1%**	**0%**			
Other	Materials Distribution Centre																			48	1%	0%			
	Weather Station																								
	Electrical Distribution Shed																								
	Chemical Storage																								
Other Total																				**48**	**1%**	**0%**			
Grand Total		**10,285**	**100%**	**13%**	**14,398**	**100%**	**18%**	**517**	**100%**	**1%**	**5,197**	**100%**	**6%**	**6,028**	**100%**	**7%**	**1,965**	**100%**	**2%**	**3,285**	**100%**	**4%**	**665**	**100%**	**1%**

Table 2-4 TRU Kamloops Main Campus Space Inventory by Council of Ontario Universities (COU) Space Categories, in Square Meters - Continued

		9			10			12			13			14			15			16			18			19			Total % for Space Type	Total % of Total Space
		Plant Maintenance			Administration			Central Services			Health Services			Common Use / Student Activity			Assembly & Exhibition			Non-Assignable Space			Animal Space			Other Facilities			Total SM		
Group	Building Description	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space	SM	% for Space Type	% of Total Space		
Primary	Old Main	245	12%	0%	2,933	38%	4%	281	42%	0%	101	40%	0%	50	42%	0%	501	22%	1%	6,472	25%	8%							21,335	26%	26%
	Trades & Technology				366	5%	0%				13	5%	0%							2,769	11%	3%							9,800	12%	12%
	Trades Storage																												1,184	1%	1%
	Science				653	8%	1%				140	55%	0%							2,742	11%	3%							7,571	9%	9%
	House Of Learning				149	2%	0%	7	1%	0%							70	3%	0%	3,599	14%	4%							7,343	9%	9%
	Campus Activity Center				351	5%	0%										1,128	50%	1%	2,997	12%	4%							6,138	7%	7%
	International Building				393	5%	0%										186	8%	0%	1,642	6%	2%							4,621	6%	6%
	Arts & Education				160	2%	0%	7	1%	0%							3	0%	0%	1,158	4%	1%							4,620	6%	6%
	Library																			364	1%	0%							2,811	3%	3%
	Gymnasium				187	2%	0%													450	2%	1%							2,676	3%	3%
	Clock Tower	47	2%	0%	920	12%	1%										51	2%	0%	828	3%	1%							2,309	3%	3%
	Culinary Arts																			550	2%	1%							1,845	2%	2%
	Independent Centre				93	1%	0%							70	58%	0%	111	5%	0%	313	1%	0%							1,322	2%	2%
	Animal Health Technology																			233	1%	0%	315	100%	0%				1,047	1%	1%
	Open Learning - TRU Space				670	9%	1%	150	23%	0%							85	4%	0%	387	1%	0%							1,598	2%	2%
Primary Total		**291**	**14%**	**0%**	**6,874**	**89%**	**8%**	**444**	**67%**	**1%**	**253**	**100%**	**0%**	**120**	**100%**	**0%**	**2,135**	**95%**	**3%**	**24,504**	**95%**	**30%**	**315**	**100%**	**0%**				**76,220**	**93%**	**93%**
Legacy/Temporary	Human Resources				309	4%	0%	78	12%	0%										128	0%	0%							534	1%	1%
	Daycare																									461	100%	1%	461	1%	1%
	House 10 - Horticulture																			173	1%	0%							346	0%	0%
	Horticulture																												326	0%	0%
	Faculty Annex																			86	0%	0%							270	0%	0%
	House 9 - Welcome Centre				57	1%	0%													135	1%	0%							267	0%	0%
	House 5 - Aboriginal Culture Centre	5	0%	0%	58	1%	0%										74	3%	0%	46	0%	0%							264	0%	0%
	Research Centre																17	1%	0%	89	0%	0%							237	0%	0%
	House 4 - Sustainability Office				57	1%	0%													71	0%	0%							134	0%	0%
	House 8 - Radio Station				56	1%	0%													74	0%	0%							131	0%	0%
	House 1 - Faculty Association				13	0%	0%										29	1%	0%	76	0%	0%							129	0%	0%
Legacy/Temporary Total		**5**	**0%**	**0%**	**550**	**7%**	**1%**	**78**	**12%**	**0%**							**119**	**5%**	**0%**	**878**	**3%**	**1%**				**461**	**100%**	**1%**	**3,098**	**4%**	**4%**
Other	Materials Distribution Centre	1,782	84%	2%	258	3%	0%													411	2%	1%							2,499	3%	3%
	Weather Station							144	22%	0%																			144	0%	0%
	Electrical Distribution Shed																			121	0%	0%							121	0%	0%
	Chemical Storage	35	2%	0%																									35	0%	0%
Other Total		**1,817**	**86%**	**2%**	**258**	**3%**	**0%**	**144**	**22%**	**0%**										**532**	**2%**	**1%**							**2,799**	**3%**	**3%**
Grand Total		**2,113**	**100%**	**3%**	**7,682**	**100%**	**9%**	**666**	**100%**	**1%**	**253**	**100%**	**0%**	**120**	**100%**	**0%**	**2,254**	**100%**	**3%**	**25,914**	**100%**	**32%**	**315**	**100%**	**0%**	**461**	**100%**	**1%**	**82,118**	**100%**	**100%**

Figure 2-6 *Distribution of Major Space Types across Kamloops Main Campus Primary and Legacy / Temporary Buildings*



Observations and Issues Regarding Space Inventory Allocations

The remainder of this section draws from the inventory and enrolment data previously presented and on the discussions held between ECS and various University stakeholders in September 2015 in order to offer high-level observations and describe key issues regarding TRU's Kamloops Main Campus space inventory.

Instructional Facilities – Seminar Rooms, Classrooms and Lecture Halls

Note A detailed utilization and scheduling analysis of the Main Campus classroom pool is presented in Section 3 of this document. What follows looks at the classroom space category from a benchmarking and space allocation standards points of view.

Benchmarks Achieved

TRU counts 10,280 NASM of classroom space out of its total space inventory of 82,119 GSM (see Grand Total line of Table 2-4). Thus, classroom space represents 12.5 % of the total space operated by the University at the Main Campus (see Grand Total line of Table 2-5).

In ECS's experience, many stakeholders will be surprised to learn that classroom facilities comprise this relatively small portion of the total inventory of an institution, particularly in view of the fact that classroom space is a) central to the academic mission of an institution, and b) intrinsically linked to the quality of instruction, the amount of time a student spends on campus, and her or his overall experience.

In light of the above, it is crucial that institutions pay attention to the quality and optimization of its pool of classrooms, to ensure that whatever limited resources are allocated towards their improvement are directed wisely (for example, in terms of Information Technology and furniture).

The benchmarks outlined below and ECS's findings on utilization presented in Section 3 suggest that TRU currently has more classroom space than various standards and guidelines indicate. Consider the following:

- TRU allocates on average **1.60 NASM** per FTE student of classroom space (10,280 NASM / 6,433 FTE Students = 1.60 NASM per FTE student).

- The space standard proposed by the Research Universities' Council of British Columbia [2] is set at **1.023 NASM** per FTE student.

- The space standard proposed by the Council of Ontario Universities (COU)[3] is set at **1.11 NASM** per FTE student. In reality Ontario's universities allocate on average **0.92 NASM** per FTE student.

- The average classroom space allocations observed by ECS at larger Western Canadian universities are as follows:

- University of Regina	**1.09 NASM** per FTE student (2014)
- University of Saskatchewan	**0.87 NASM** per FTE student (2014)
- University of Calgary	**1.20 NASM** per FLE student (2010)
- University of Alberta	**1.40 NASM** per FLE student (2010)
- University of Lethbridge	**1.20 NASM** per FLE student (2010)
- Mount-Royal University	**1.40 NASM** per FLE student (2010)
- McEwan University	**1.80 NASM** per FLE student (2010)

The above benchmark comparisons must be used with circumspection, with the understanding that each institution is unique and operating in different conditions and environments.

Potential Opportunities Noted in Light of the Benchmark Achieved

The 1.60 NASM per FTE student benchmark achieved by TRU points to the *possibility* of leveraging existing classroom spaces to solve other types of space issues on the Campus; for example, concerns around the quality of the classroom spaces themselves, the quantity of space allocated to other functions, and the location on campus of certain services or functions.

These potential opportunities are amplified by the fact that TRU is introducing new policies, practices and tools to support the development of its room, program and teaching faculty timetables.

ECS noted, during its September 2015 round of consultations, that the manner and the pace in which the University is introducing these changes is prudent and thoughtful. The changes should yield good results from timetabling quality and efficiency points of view which, in turn, should allow TRU to leverage its existing classroom space in the pursuit of other objectives.

[2] Source – B.C. Universities Space Manual, Research Universities' Council of British Columbia 27 February 2003 page 33

[3] Source – Inventory of Physical Facilities of Ontario Universities 2013-14, Council of Ontario Universities, May 2015, page 74

Distribution of Classroom Space across Campus

The Kamloops Main Campus classroom pool is distributed in relatively few buildings and in a way that is not entirely aligned with the distribution of FTE enrolments by faculty or school. For example:

- Together the Faculty of Science and the School of Nursing represent 27% of TRU's Main Campus FTE student population. Yet the **Science Building** which is viewed as the "home" of these two groups accommodates only 5% of the Main Campus classroom space.

- The School of Business & Economics counts 21% of TRU's FTE student population, yet the **International Building** the School calls "home" holds only 10% of the Main Campus classroom space.

These facts are noted by ECS simply from a student expectation point of view. ECS has learned, from past project work, that students seek pride with their chosen field of study through place and through peers. Given the choice, a Business student will prefer to have most of her or his classes in a "Business" building, a Nursing student in a "Nursing" building, and so on.

Such expectations by students are not entirely reasonable, and institutions should not necessarily try to meet them at all cost. But, at TRU, the expectation is likely not met for a great number of students given that almost half of the Main Campus classroom space is located in Old Main Building. And, unfortunately, the majority of the Old Main Building classrooms are less than ideal. This is further discussed below.

Old Main Building Classrooms

Old Main Building accommodates almost half (43%) of the classroom space at the Main Campus (see Table 2-7). In ECS's opinion the classrooms located on Level 1 and Level 2 generally appear oversized, relative to the number of stations they contain. Most are laid out in a traditional manner (parallel rows of tables). Most are somewhat dated in terms of furniture, and the room finishes are in need of freshening.

The above observations, considered in combination with the results of the utilization analysis presented in Section 3, indicate opportunities to optimize and upgrade the TRU classroom pool without necessarily increasing its footprint, and without necessarily locating such a large portion of the classroom pool in the Old Main Building.

Instructional Facilities – Computer Laboratories

Benchmarks Achieved

TRU counts 1,986 NASM of computer laboratory space out of its total space inventory of 82,119 GSM (see Grand Total line of Table 2-4). This includes computer laboratories that are used for scheduled instruction, unscheduled student access, and some combination of the two.

TRU allocates on average **0.31 NASM** per FTE student of instructional laboratory space (14,398 NASM / 6,433 FTE Students = 0.31 NASM per FTE student).

The 19 computer laboratories on campus provide **475** stations. Rather than designating some computer labs for scheduled instruction and others for unscheduled open access, TRU mixes scheduled and open-access activities in most computer labs. In ECS's experience, providing separate scheduled and open-access computer facilities can ease the scheduling of these rooms, ensure that students always have access to unscheduled computer labs, and allow installation of specialized software, A/V equipment, etc. in support of scheduled instruction in discipline-specific computer labs.

On average, 37% of the 45-hour weekly scheduling window is used for scheduled instruction, leaving 63% of the potential capacity for unscheduled student access. Disregarding the location of particular stations, this utilization rate indicates that, on average, TRU provides approximately **299** open-access computer stations for unscheduled student use.

The trend in Canadian universities is to provide fewer open-access computer stations per FTE student, as more and more students use their own laptops or mobile devices in other study space on campus. TRU should focus on providing high quality computer lab space, especially for scheduled and specialized instruction.

Distribution of Computer Laboratory Space across Campus

TRU has computer laboratory space in the Arts & Education building, the International building, the Trades & Technology building, and (significantly) in Old Main, where the majority of computer labs are located. In ECS's experience, open-access computing facilities are best located in proximity to other study space – in TRU's case, the House of Learning building would be the most suitable location for the majority of the Campus' open-access computer laboratory space.

Instructional Facilities – Specialized Undergraduate Laboratories

Benchmarks Achieved

TRU counts 14,398 NASM of instructional laboratory space out of its total space inventory of 82,119 GSM (see Grand Total line of Table 2-4). Thus, instructional laboratory space represents 17.5 % of the total space operated by the University at the Main Campus (see Grand Total line of Table 2-5).

TRU allocates on average **2.24 NASM** per FTE student of instructional laboratory space (14,398 NASM / 6,433 FTE Students = 2.24 NASM per FTE student).

Comparing this space allocation to other institutions is not particularly useful, because the amount of instructional laboratory space required per FTE student depends heavily on a specific university's teaching methods and especially on the unique mix of programs offered. For example, a university focussing heavily on teaching in healthcare will require more instructional lab space per FTE student than a university focussing on teaching in foundation sciences such as chemistry and physics.

Distribution of Instructional Laboratory Space across Campus

Instructional laboratories on the Kamloops Campus are located as follows: Wet and Dry Science instructional labs are exclusively in the Sciences & Health Sciences building, Fine Art studios and CAD / GIS / Drafting labs are exclusively in Old Main, and instructional workshops are exclusively in the Trades & Technology building. In addition, the Animal Health Technology building houses several specialized animal health teaching labs.

This segregation of lab location by function has both positive and negative implications. Some efficiencies may be achieved in the provision of specialized lab support space and services, the location of lab support personnel offices, and the convenience for students in a particular discipline to remain in a single location for classes in multiple rooms. However, opportunities for interdisciplinary teaching and learning may be missed when instructional laboratory space is segregated in this way. There is also less opportunity to maximize efficiency in the provision of general-purpose lab support services.

Sciences & Health Sciences Building Instructional Laboratories

Instructional labs in the Science & Health Sciences building accommodate the majority of laboratory teaching activity on the Kamloops Campus. The age of the building and the rooms' outdated fittings, furnishings, and equipment has a negative impact on the quality of teaching, the flexibility of the rooms to be used for multiple functions, and the ability of instructors to deliver various modes of instruction in line with desired and evolving pedagogy in the sciences.

Research Facilities

The 2005 provincial legislation that granted TRU its university status stipulates that the University must "*undertake and maintain research and scholarly activities*". It follows that TRU is a member of the Research Universities' Council of British Columbia and that it made research one of its five strategic priorities.

The University currently counts 517 NASM of dedicated research space at the Kamloops Main Campus (see Table 2-4). This modest allocation reflects the fact that research at TRU is an emerging enterprise destined to expand. However, the manner by which this expansion is to occur will be specific to TRU, as explained below:

ECS learned during its September 2015 consultations that the University will not seek to grow its research activities in ways that mirror or emulate what is done in other institutions (in particular, other universities in BC). Instead, TRU plans to create a *sustainable* research culture touching on the following themes:

- Technology and Optimization
- Sustainability, Environment and the Physical World
- Aboriginal Understanding
- Community and Culture
- Education, Health and Diversity

The stakeholders consulted by ECS further indicated that the types of research TRU can sustain, given the modest space resources now available, will preferably be community-oriented, applied, supporting Trades subjects, and guided by intended undergraduate outcomes.

On the basis of the above Dr. Will Garrett-Petts, Associate Vice-President Research, indicated to ECS that the University is aiming to double the amount of space it dedicates to research to approximately 1,200 NASM in the short term. This figure remains modest and well below the threshold by which meaningful benchmark comparisons with other Canadian institutions can be made.

ECS was also made aware by other TRU stakeholders of mounting pressure to support the research enterprise of the University stemming from the planned addition of new academic programs and from increases in the number of graduate students that ideally should have access to both research facilities (in the Faculty of Science in particular) and to dedicated study space (in the form of graduate offices) in nearby locations.

At this time it is not possible to determine if the concerns about research space expressed by many stakeholders during ECS's September 2015 consultations will be resolved through TRU's target of doubling its research space allocations to approximately 1,200 NASM. This uncertainty points, in turn, to shortcomings in the University's space planning and management practices. This is further explored in Section 4 of this document.

Library / Learner Support / Study Space

Benchmarks Achieved

TRU allocates 6,028 NASM to library and study space on campus (see Table 2-4). This translates into an overall benchmark of 0.94 NASM per FTE student, inclusive of all spaces allocated to book collections and library technical and administrative functions.

The amount of space allocated to hard copy books and technical services is, on the whole, dependant on an institution's age and policies on collection management. Older and research-intensive institutions tend to maintain larger collections. Younger institutions, such as TRU, tend not to do this, and ECS has deemed that benchmarking this type of space is not particularly relevant in the context of this Space Planning Study. There are, however, major concerns around the split of TRU's collections in both the Library Building and the House of Learning Building. These are outlined next.

A more relevant benchmark that touches directly on student experience and learner support is the amount of study space allocated at the Main Campus, regardless of location. ECS has confirmed through a survey and a review of inventory records that TRU allocates 3.0511 NASM of study space at its Main Campus (see Table 2-3 AVED categories 410 and 440). This translates into the following benchmark:

- 3,051 NASM / 6,433 FTE students = **0.47 NASM per FTE student**

This benchmark is 21% *below* the COU standard of 0.60 NASM per FTE student. Further, the distribution of study space across campus is not ideal. The Library Building, for example, accounts for less study space (10%) than what is available in the House of Learning Building (34%), Old Main Building (24%) and the Independent Centre (18%). Table 2-5 gives further details on this distribution:

Table 2-5 Distribution of Study Space across the Kamloops Main Campus

Building Description	Formal Study Space (SM)	% SM	Other Study Space (SM)	% SM	Total SM	Total % SM
Old Main	377	12%	347	11%	724	24%
Trades & Technology			50	2%	50	2%
Science			29	1%	29	1%
House Of Learning	435	14%	611	20%	1,046	34%
Campus Activity Center			175	6%	175	6%
International Building			133	4%	133	4%
Library	317	10%			317	10%
Independent Centre	62	2%	487	16%	549	18%
Animal Health Technology	27	1%			27	1%
Grand Total	**1,218**	**40%**	**1,832**	**60%**	**3,051**	**100%**

Split of the Collections

When the House of Learning Building was being planned it was decided that the University's library collections would be split between this new facility and the existing Library Building. Subsequently the collections pertaining to law subjects were placed in the new Law Library in the Old Main Building.

During consultations ECS learned that TRU is now re-considering its prior decision to split its book collections between the Main Library Building and the House of Learning Building. The House of Learning Building is deemed less than ideal to support library functions. The book collections are subjected to too much humidity due to the presence in the building of a living wall, and the building's open atrium carries too much noise to designated quiet study areas. Importantly, the operation of two locations instead of one is expensive from a human resources point of view.

The University Librarian indicated to ECS that it is willing to consider any and all measures that allow the consolidation of the two collections back into the Library Building. These measures includes the culling of collections, the further use of compact shelving storage in the Library Building and the construction of a high-density storage building accessible only to Library staff.

Student and Central Services

Both COU and the Research Universities' Council of British Columbia group several types of functions and services into a single combined standard to assess certain space requirements. This grouping includes:

- Food Services
- Bookstore and Other Merchandising Facilities
- Central Services
- Health Services
- Study Activity Space
- Assembly and Exhibition Facilities

Table 2-6 below summarizes the space allocation at TRU's Main Campus (Line A), the benchmarks achieved at the University (Line C) and the standards indicated by both provincial councils (Line D for Ontario and Line E for British Columbia).

Observations by ECS on aspects of the space allocations described in Table 2-6 follow on the next page.

Table 2-6 Student and Central Services Space Allocations

		7	8	12	13	14	15	Grand Total
	Building Description	**Food Service**	**Bookstore / Merchadising**	**Central Services**	**Health Services**	**Common Use / Student Activity**	**Assembly & Exhibition**	
	House Of Learning	91		7			70	168
	Old Main	798	59	281	101	50	501	1,789
	Independent Centre	53				70	111	235
	International Building	270					186	456
	Trades & Technology	211	58		13			283
	Science	156			140			296
	Campus Activity Center	760	548				1,128	2,436
	Arts & Education	56		7			3	65
	Materials Distribution Centre	48						48
	Weather Station			144				144
	Clock Tower	52					51	103
	Culinary Arts	655						655
	Human Resources	19		78				97
	House 9 - Welcome Centre	13						13
	House 5 - Aboriginal Culture Centre						74	74
	Research Centre						17	17
	House 1 - Faculty Association						29	29
	Open Learning - TRU Space	101		150			85	336
	BCCOL	29					81	110
A	**Grand Total**	**3,314**	**665**	**666**	**253**	**120**	**2,335**	**7,353**
B	**Campus FTE Student**	6,433	6,433	6,433	6,433	6,433	6,433	6,433
C = A / B	**Benchmark Achieved - NASM per FTE Student**	0.52	0.10	0.10	0.04	0.02	0.36	1.14
D	**COU Standard - NASM per FTE Student**	0.50 to 0.70	0.10 to 0.20	0.15 to 0.20	0.03 to 0.05	0.50 to 0.70	0.15 to 0.40	1.50
E	**Research Universities' Council of BC - NASM oer FTE Student**							1.60

Food Services

The benchmark for Food Services achieved at the Main Campus (0.52 NASM per FTE student) falls within the range indicated by COU for this service (between 0.50 and 0.70 NASM per FTE student).

This result is surprising to ECS in light of the many negative comments it heard from stakeholders during its September consultations regarding food service's locations, the limited hours of operation, and food menu choices. Students, in particular, were quite vocal about this aspect of campus experience.

Part of the concerns noted above might be due to the dispersed locations of food services across campus which, in turn, prevents providers from achieving the critical mass, the visibility, and the efficiencies needed to offer the University community satisfactory services. In ECS's experience most institutions with a campus of 6,500 FTE students would feature one main cafeteria supported by a few "grab-and-go" outlets. TRU, for a variety of legacy and programmatic reasons, has three major food locations:

- Campus Activity Centre 760 NASM
- Old Main Building 798 NASM
- Culinary Arts Building 655 NASM (exclusive of the Teaching Kitchen)

Smaller food and coffee vendors are also present in the House of Learning, the Science Building, the Trades & Technology Building, and the International Building.

Common Use / Student Activity/ Assembly & Exhibition

The benchmark achieved at the Main Campus for Common Use / Student Activity space (0.02 NASM per FTE student) is markedly lower than the COU standard (between 0.50 and 0.70 NASM per FTE student). This low benchmark indicates an opportunity to provide additional Common Use / Student Activity space on campus. However, this low benchmark may in part be caused by the manner in which the University's inventory database records such space.

During consultations with student stakeholders, ECS received the impression that the Campus Activity Centre (CAC) is geared more towards infrequent or non-student events (banquets, weddings, conferences etc.) than as a location for student activities, recreation, and leisure. It may be possible to provide an adequate amount of Common Use / Student Activity space through a) reconfiguring some space in the CAC towards student activities, and b) repurposing existing space of other types.

The benchmark achieved for Assembly & Exhibition space (0.36 NASM per FTE student) falls within the range indicated by COU for this service (between 0.15 and 0.40 NASM per FTE student).

Section 3 -
Instructional Space Utilization Analysis

Classroom Utilization Analysis

This section describes the daytime utilization of Thompson Rivers University Kamloops Campus classroom pool for both the Winter 2015 semester and the on-going (as of November 2015) Fall 2015 semester. The scheduling data used for this analysis was obtained from the Registrar's Office.

For the purpose of the utilization analysis a classroom is defined as a room used for scheduled lecture, seminar, or active learning activity that does not require discipline-specific equipment or furnishings. This category includes lecture theatres.

Classroom Inventory

The scheduling data provided by TRU's Registrar's Office captured activities taking place in **78** classrooms with a combined total of 3,918 stations ranging in capacity from 16 up to 300 stations. Given its origin ECS deemed the scheduling data for these 78 rooms to be reliable. In fact TRU's Department of Institutional Planning & Analysis produces a yearly report on the utilization of the same 78 rooms that is analogous to the analysis presented here, using the same data.

However, the Kamloops Main Campus counts more rooms. A review by ECS of TRU's space inventory and a campus survey indicates there are **125** classrooms at the Main Campus ranging in capacity from 12 up to 300 stations for a total of 5,097 stations. Scheduling data was available to ECS from one source or another for 99 classrooms out of these 125 rooms. But the reliability of the data for these 21 additional rooms is only fair. And the reliability of the data for the remaining 26 rooms is poor, or no data is available.

In view of the above ECS carried out the classroom utilization analysis as outlined below. Comments by ECS on TRU's scheduling practices and the factors that dictated this approach are provided at the conclusion of this section.

Analysis	ECS Comment
▪ Classroom Utilization Summary – 78 Classrooms	▪ Reliable data provided by Registrar's Office
▪ Classroom Utilization Summary – 99 Classrooms	▪ Reliable data provided by Registrar's Office for 78 rooms ▪ Semi-reliable (fair) data on 21 rooms assembled by ECS from Registrar's Office and other sources, including Trades & Technology schedulers
▪ Classroom Utilization Summary – 125 Classrooms	▪ Reliable data provided by Registrar's Office for 78 rooms ▪ Semi-reliable (fair) data on 21 rooms assembled by ECS from Registrar's Office and other sources, including Trades & Technology schedulers ▪ No reliable data for 26 rooms.
▪ Optimal Classroom Pool – 78 Classrooms	▪ Reliable data provided by Registrar's Office for 78 rooms
▪ Time-of-day Utilization – 78 Classrooms	▪ Reliable data provided by Registrar's Office for 78 rooms
▪ Room-by-room Utilization – 78 Classrooms	▪ Reliable data provided by Registrar's Office for 78 rooms
▪ Room-by-room Utilization – 99 Classrooms	▪ Reliable data provided by Registrar's Office for 78 rooms ▪ Semi-reliable (fair) data on 21 rooms assembled by ECS from Registrar's Office and other sources, including Trades & Technology schedulers

Benchmarks Used for Classroom Utilization

The utilization analysis focuses on the daytime activity scheduled within a weekly scheduling window of 45 hours spanning from 8:00 AM to 5:00 PM, Monday to Friday.

ECS recommends to its university clients that classrooms be used, on average, 75% of the 45-hour weekly scheduling window described above, or 34 hours a week. The target of 75% is the threshold of utilization beyond which an institution should consider adding classrooms to its inventory even though it is possible to schedule above the target of 75% if required.

High utilization, however, leaves little flexibility for scheduling changes, the scheduling of ad hoc events and for access to the rooms in daytime for maintenance and cleaning. Also, the quality of student's timetable might be affected in terms of distribution of one's classes across the week, the length of gaps between classes in a given day, and late changes to one's timetable once the semester is under way.

Rates lower than 75% indicate that the classroom pool has latent capacity to absorb higher levels of enrolment and/or the repurposing of some classrooms for other high priority uses.

Classroom Utilization Results

Tables 3-1, 3-2, and 3-3 set out a summary of how the common classroom pool was used in Winter 2015 and Fall 2015. The tables consider:

- The capacity of the rooms (column A);
- The total number of hours regularly scheduled in the rooms on a weekly basis during the Winter 2015 and Fall 2015 semester (column B);
- Number of rooms in inventory at each capacity range (column C);
- The average daytime weekly utilization (column D), expressed as a percentage of the total time these classrooms are available in daytime during the week (45 hours).

The scheduling information for the common classrooms reflects scheduling activity from the weeks of March 2nd to the 8th for Winter 2015 semester, and October 12th to 18th for the Fall 2015 semester. The weeks selected for the semesters had the highest hours of overall instruction for their respective semesters.

The results indicate an average utilization range of the classroom pool of 59% for Winter 2015, and between 65% and 68% for Fall 2015. This is below the 75% utilization benchmark considered to be the threshold of utilization beyond which an institution should consider adding classrooms to its inventory.

Table 3-1 Classroom Utilization Summary – 78 Rooms

The following table presents average utilization rates, by room capacity range, for the 78 rooms for which ECS has reliable scheduling data. These are also the 78 rooms included in TRU's 2014 Classroom Utilization study.

A	B	C	D = B / (C × 45)	B1	C1	D1 = B1 / (C1 × 45)
Winter 2015 Daytime				Fall 2015 Daytime		
Room Capacity Range	Hours per Week	Number of Rooms	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Number of Rooms	Daytime Utilization (Based on 45-hour Week)
9 to 16 Seats	0	1	0%	0	1	0%
17 to 24 Seats	330	11	67%	398	11	80%
25 to 32 Seats	62	4	34%	82	4	45%
33 to 40 Seats	665	28	53%	851	28	68%
41 to 48 Seats	131	5	58%	130	5	58%
49 to 60 Seats	548	17	72%	568	17	74%
61 to 80 Seats	208	7	66%	211	7	67%
81 to 100 Seats	74	2	82%	65	2	72%
101 to 120 Seats	41	1	91%	35	1	77%
201 to 240 Seats	14	1	31%	24	1	53%
241 + Seats	17	1	37%	18	1	40%
Grand Total	2,088	78	59%	2,380	78	68%

Table 3-2 Classroom Utilization Summary – 99 Rooms

The following table presents average utilization rates, by room capacity range, for the 99 rooms for which ECS has reliable or semi-reliable (fair) scheduling data. This data was assembled by ECS from scheduling records provided by the Registrar's Office and other sources, including Trades & Technology schedulers.

A	B	C	D = B / (C × 45)	B1	C1	D1 = B1 / (C1 × 45)
Winter 2015 Daytime				Fall 2015 Daytime		
Room Capacity Range	Hours per Week	Number of Rooms	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Number of Rooms	Daytime Utilization (Based on 45-hour Week)
9 to 16 Seats	0	1	0%	0	1	0%
17 to 24 Seats	762	28	60%	830	28	66%
25 to 32 Seats	105	5	46%	82	5	36%
33 to 40 Seats	682	31	49%	900	31	65%
41 to 48 Seats	131	4	73%	130	4	72%
49 to 60 Seats	582	18	72%	605	18	75%
61 to 80 Seats	208	7	66%	211	7	67%
81 to 100 Seats	74	2	82%	65	2	72%
101 to 120 Seats	41	1	91%	35	1	77%
201 to 240 Seats	14	1	31%	24	1	53%
241 + Seats	17	1	37%	18	1	40%
Grand Total	2,613	99	59%	2,898	99	65%

Table 3-3 Classroom Utilization Summary – 125 Rooms

The following table presents average utilization rates, by room capacity range, for the 125 rooms that ECS has identified as classrooms. These rooms were identified through the 2015 Space Inventory provided by TRU's Facilities Services as well as a campus survey by ECS. The utilization analysis below is informed by the same scheduling data as that used in Table 3-2, which only contains records for the 99 rooms examined above. Table 3-3 thus presents utilization rates based on the assumption that no activity presently occurs in the additional 26 rooms that ECS has no scheduling data for. While this may not be an accurate activity model, it allows TRU to consider the case wherein all 125 classrooms are used to accommodate the scheduled instructional activity that occurred in the Winter and Fall 2015 terms.

A	B	C	D = B / (C × 45)	B1	C1	D1 = B1 / (C1 × 45)
Winter 2015 Daytime				Fall 2015 Daytime		
Room Capacity Range	Hours per Week	Number of Rooms	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Number of Rooms	Daytime Utilization (Based on 45-hour Week)
9 to 16 Seats	0	8	0%	0	8	0%
17 to 24 Seats	762	36	47%	830	36	51%
25 to 32 Seats	105	10	23%	82	10	18%
33 to 40 Seats	682	35	43%	900	35	57%
41 to 48 Seats	131	5	58%	130	5	58%
49 to 60 Seats	582	19	68%	605	19	71%
61 to 80 Seats	208	7	66%	211	7	67%
81 to 100 Seats	74	2	82%	65	2	72%
101 to 120 Seats	41	1	91%	35	1	77%
201 to 240 Seats	14	1	31%	24	1	53%
241 + Seats	17	1	37%	18	1	40%
Grand Total	2,613	125	46%	2,898	125	52%

Modelling the Optimal Classroom Pool

Tables 3-4 and 5-5 on the following pages present a two-part analysis of how the Campus' classroom pool was used in Winter 2015 and Fall 2015. These tables analyze only the **78** rooms for which ECS has reliable scheduling data.

Part 1 - Seat Utilization

As a measure of seat utilization, the upper portions of table 3-4 and 3-5 (coloured section) compares the capacity of the rooms in which classes were scheduled (Y axis of the table) to the size of the student groups or section sizes enrolled in those classes (X axis of the table). Each table totals the number of hours per week in which classes of a certain group size were scheduled in rooms of a certain capacity. The background colours indicate the following:

- WHITE **background**: Instructional hours for which the **capacity of the room matched the size of the student group**. In Winter 2015, 14.8% of all classes that took place at Campus in the classroom pool fell into this category. In Fall 2015, 14.2% of all classes that took place at Campus in the classroom pool fell into this category.
- GREEN **background**: Instructional hours for which the **capacity of the room exceeded the size of the student group.** In Winter 2015, 84.5% of all classes that took place at the Campus common classroom pool fell into this category. In Fall 2015, 83.4% of all classes that took place at the Campus common classroom pool fell into this category.
- BLUE **background**: Instructional hours for which the **capacity of the room was less than the size of the student group**. In principle this should not occur as there are not enough seats in these classrooms to accommodate all the students scheduled to be present. In many cases the scheduled group size may be just a few students additional to the room capacity and in reality the room may have sufficient seats.

Table 3-4 and 3-5 suggest that the capacities of the rooms that are part of the e classroom pool are less than optimal given the high percentage of activity (84.5% in Winter 2015 and 83.4% in Fall 2015) taking place in rooms that are too big (shown with a GREEN background). The definition of what the optimal common classroom pool should be, all other variables remaining constant, is discussed in Part 2 (Optimal Classroom Pool).

Part 2- Optimal Classroom Pool

The lower portion of Table 3-4 and 3-5 calculates what an optimal classroom pool should look like in terms of both the number of rooms and their capacities.

- **Line A** details the total number of scheduled hours of activity occurring per week, by student group size.
- **Line B** shows the total number of classrooms available for scheduling in Winter and Fall 2015 by room capacity.
- **Lines C, D, and E** display how the utilization target per room, expressed in hours per week, is calculated. The target is set at 75% of a 45-hour week.
- **Line F** calculates how many rooms would optimally be required to absorb the number of hours of activity taking place by student group size.
- **Line G** calculates the differences in the number of existing classrooms available for scheduling and the optimal number of classrooms calculated as per Line F, at each capacity range.

Table 3-4 and 3-5 indicates that the optimal classroom pool for the Campus needed to support daytime use as scheduled in Winter and Fall 2015 is comprised of 70 classrooms. This assumes that each one of the rooms was used on average 34 hours per week (75% of a 45-hour week). Theoretically, the analysis indicates a surplus of approximately 8 classrooms.

In ECS's experience, one reason for the mismatch between class size and room capacity is linked to the way academic departments communicate their timetabling requirements to the scheduling office. Academic departments tend to overestimate how many students will register in a given course, but, just-in-case, the scheduling office timetables that course in a room that could hold that maximum number of students. When the actual course registrations are finalized and are found to be lower than the projected maximum, it is too late in the scheduling cycle to make changes whereby rooms with the correct capacities are used instead. The way to avoid this situation is to use enrolment projections that are closer to historical averages for each course.

Table 3-4 Common Classroom Seat Utilization and Optimal Classroom Pool Calculation - Daytime Winter 2015 – 2014 Classroom Study (78 Rooms)

	Existing Room Capacity	1 to 8 Students	9 to 16 Students	17 to 24 Students	25 to 32 Students	33 to 40 Students	41 to 48 Students	49 to 60 Students	61 to 80 Students	81 to 100 Students	101 to 120 Students	121 to 160 Students	161 to 200 Students	201 to 240 Students	241 + Students	Number of Section Hours Generated
	1 to 8 Seats															
	9 to 16 Seats															
	17 to 24 Seats	42.0	94.5	160.5	5.0											302.0
	25 to 32 Seats	7.0	25.0	30.0												62.0
	33 to 40 Seats	28.0	128.5	224.5	203.5	75.5	4.5									664.5
	41 to 48 Seats	4.0	18.5	60.5	54.5	11.0	10.0									158.5
	49 to 60 Seats	17.0	22.0	59.0	155.0	141.0	123.5	30.0								547.5
	61 to 80 Seats	3.0	14.0	27.0	11.0	18.0	36.5	66.0	32.0							207.5
	81 to 100 Seats			12.0	12.0	9.0	3.0	6.0	25.0	7.0						74.0
	101 to 120 Seats				5.0	6.0	3.0	5.0	16.0	6.0						41.0
	121 to 160 Seats															
	161 to 200 Seats															
	201 to 240 Seats							3.0		11.0						14.0
	241 + Seats					3.0		4.5		3.0	6.0					16.5
A	**Number of Section Hours Generated**	**101.0**	**302.5**	**573.5**	**446.0**	**263.5**	**180.5**	**114.5**	**73.0**	**27.0**	**6.0**					**2,087.5**

0.8%	Hours of Use Whereby the Number of Students Exceeds the Capacity of the Classroom
14.8%	Hours of Use Whereby the Number of Students Matches the Capacity of the Classroom
84.5%	Hours of Use Whereby the Capacity of the Classroom Exceeds the Number of Students

B	**Number of Rooms in TRU Analysis 2014**	**0**	**1**	**11**	**4**	**28**	**5**	**17**	**7**	**2**	**1**	**0**	**0**	**1**	**1**	**78**
C1	**Daytime Weekly Utilization Window - Hours**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	
C2	**Room Utilization Target Percentage**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	
C3 = C1 x C2	**Room Utilization Target - Hours**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	
D = A / C3	**Number of Rooms Required - Optimal Classroom Inventory**	**3.0**	**8.9**	**16.9**	**13.1**	**7.8**	**5.3**	**3.4**	**2.1**	**0.8**	**0.2**	**0.0**	**0.0**	**0.0**	**0.0**	**61.4**
E =	**Actual Inventory vs. Optimal Inventory**	**-3.0**	**-7.9**	**-5.9**	**-9.1**	**+20.3**	**-0.3**	**+13.6**	**+4.9**	**+1.2**	**+0.8**	**+0.0**	**+0.0**	**+1.0**	**+1.0**	**+16.6**

Table 3-5 Common Classroom Seat Utilization and Optimal Classroom Pool Calculation - Daytime Fall 2015 - 2014 Classroom Study (78 Rooms)

	Existing Room Capacity	1 to 8 Students	9 to 16 Students	17 to 24 Students	25 to 32 Students	33 to 40 Students	41 to 48 Students	49 to 60 Students	61 to 80 Students	81 to 100 Students	101 to 120 Students	121 to 160 Students	161 to 200 Students	201 to 240 Students	241 + Students	Number of Section Hours Generated
	1 to 8 Seats															
	9 to 16 Seats															
	17 to 24 Seats	189.0	100.5	59.5	15.0											364.0
	25 to 32 Seats	24.0	35.5	19.0	3.0											81.5
	33 to 40 Seats	42.5	172.5	202.5	221.0	196.0	13.0	3.0								850.5
	41 to 48 Seats	3.0	16.0	48.5	22.0	68.0	6.0									163.5
	49 to 60 Seats	24.0	65.5	99.0	138.5	130.5	65.5	45.0								568.0
	61 to 80 Seats	1.5	14.0	27.5	31.5	41.0	11.5	44.5	29.0	10.0						210.5
	81 to 100 Seats		7.0	8.0	5.0	13.5	3.5	6.0	6.0	16.0						65.0
	101 to 120 Seats			2.0	6.0	1.5		5.0	14.0	6.0						34.5
	121 to 160 Seats															
	161 to 200 Seats															
	201 to 240 Seats			3.0	2.0				3.0	10.0	3.0	3.0				24.0
	241 + Seats				3.0		6.5	1.5		1.0	3.0	3.0				18.0
A	**Number of Section Hours Generated**	**284.0**	**411.0**	**469.0**	**447.0**	**450.5**	**106.0**	**105.0**	**52.0**	**43.0**	**6.0**	**6.0**				**2,379.5**

2.4%	**Hours of Use Whereby the Number of Students Exceeds the Capacity of the Classroom**
14.2%	**Hours of Use Whereby the Number of Students Matches the Capacity of the Classroom**
83.4%	**Hours of Use Whereby the Capacity of the Classroom Exceeds the Number of Students**

B	**Number of Rooms in TRU Analysis 2014**	**0**	**1**	**11**	**4**	**28**	**5**	**17**	**7**	**2**	**1**	**0**	**0**	**1**	**1**	**78**
C1	**Daytime Weekly Utilization Window - Hours**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	
C2	**Room Utilization Target Percentage**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	**0.75**	
C3 = C1 x C2	**Room Utilization Target - Hours**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	**34**	
D = A / C3	**Number of Rooms Required - Optimal Classroom Inventory**	**8.4**	**12.1**	**13.8**	**13.1**	**13.3**	**3.1**	**3.1**	**1.5**	**1.3**	**0.2**	**0.2**	**0.0**	**0.0**	**0.0**	**70.0**
E =	**Actual Inventory vs. Optimal Inventory**	**-8.4**	**-11.1**	**-2.8**	**-9.1**	**+14.8**	**+1.9**	**+13.9**	**+5.5**	**+0.7**	**+0.8**	**-0.2**	**+0.0**	**+1.0**	**+1.0**	**+8.0**

Time-of-Day Utilization

Table 3-6 and 3-7 provides graphic representations of how the Campus classroom pool was scheduled across the course of a typical week, 8 AM to 9:30 PM, Monday to Friday in Winter and Fall 2015. The X axis represents the time of the day in half hour increments with each day of the week indicated by a different colour. The Y axis represents the number of classrooms in use for each time of day interval, the total number of available rooms being **78**.

The time-of-day graphics show a typical college pattern of higher utilization between 8:30 am and 4 pm with use tapering off late in the day, at 4:30 pm. There is a notable decrease in general activity on Fridays, especially after 12:30 PM.

Table 3-6 Common Classroom Time-of-Day Utilization Analysis
Daytime Winter 2015

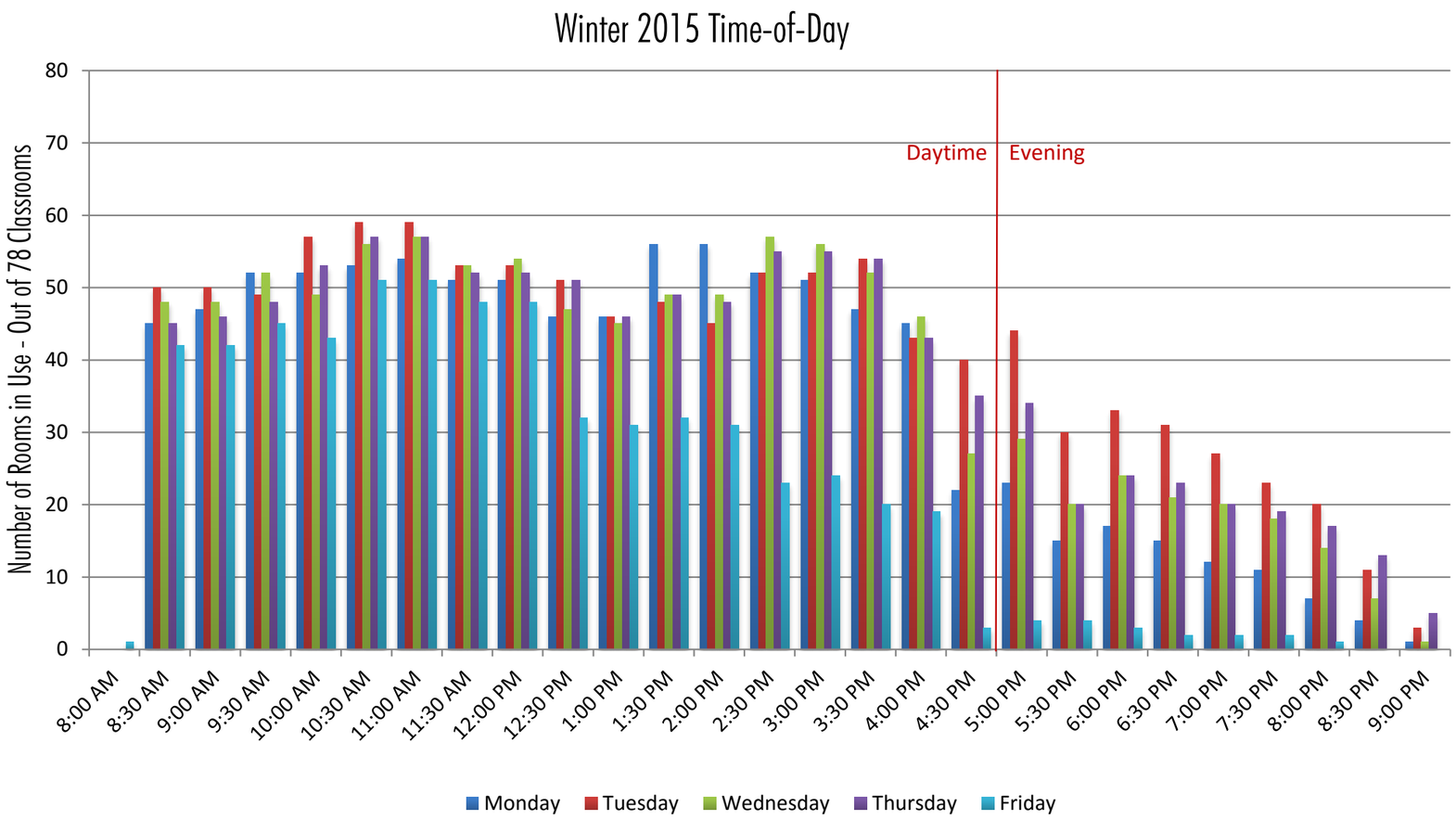


Table 3-7 Common Classroom Time-of-Day Utilization Analysis
Daytime Fall 2015

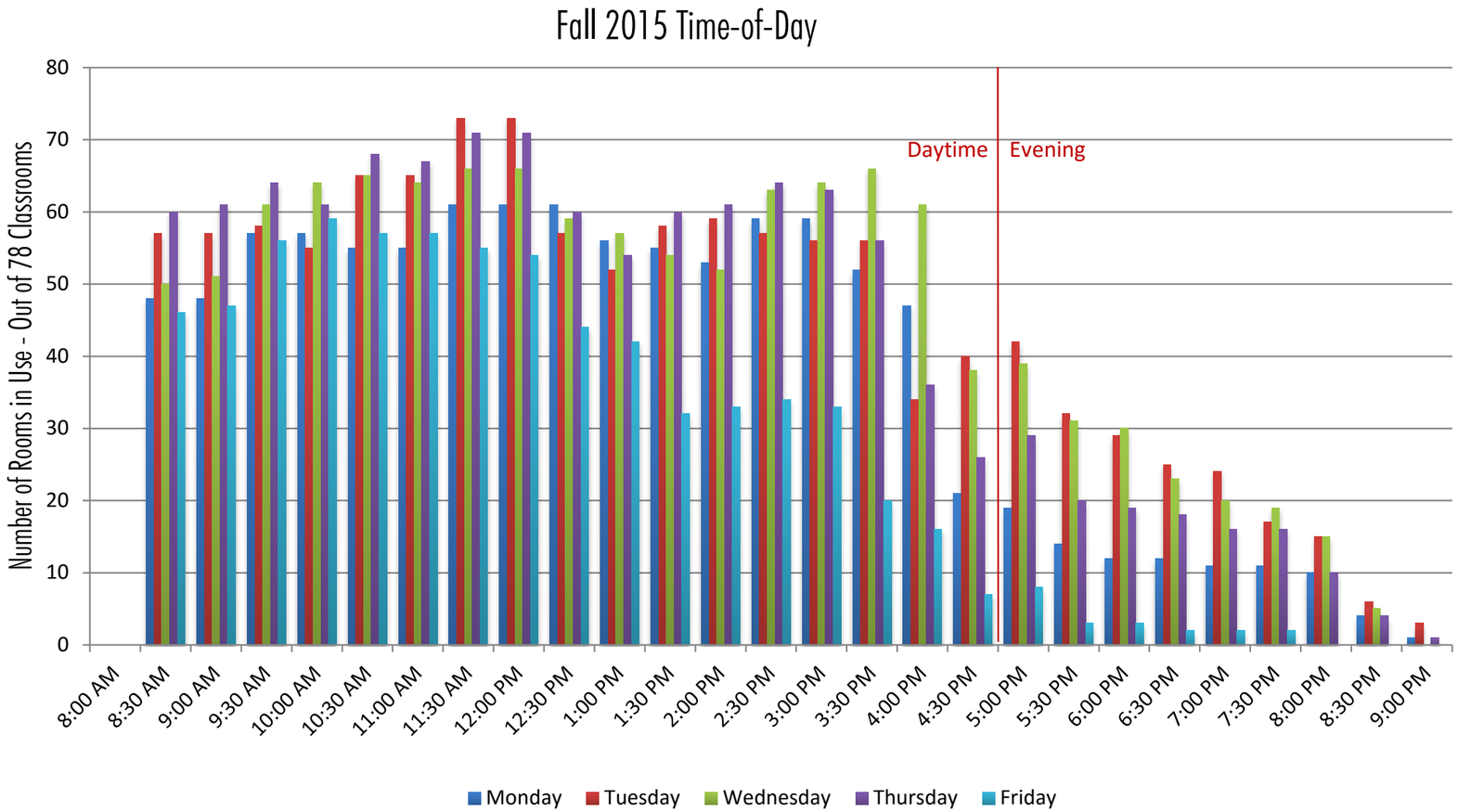


Table 3-8 Room-by-Room Utilization - Daytime Winter 2015 and Fall 2015 (78 Rooms)

Table 3-8 lists, on a room-by-room basis, capacity, number of hours scheduled per week and the corresponding percent utilization rate (# hours scheduled/45) for Winter and Fall 2015 semesters. The **78** rooms listed below are those for which ECS has reliable scheduling data.

			Winter 2015 Daytime		Fall 2015 Daytime	
Room Capacity Range	Room Number	Room Capacity	Hours per Week	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Daytime Utilization (Based on 45-hour Week)
9 to 16 Seats	S-201	16	0	0%	0	0%
9 to 16 Seats Total			**0**	**0%**	**0**	**0%**
17 to 24 Seats	AE-163	24	19	42%	29	64%
	AE-166	24	24	53%	33	73%
	AHT-151	24	22	49%	28	62%
	IB-1023	20	25	56%	30	67%
	OM-1761	24	26	58%	30	67%
	OM-2466	24		0%	35	78%
	OM-2468	24	36	80%	36	80%
	OM-2515	24	38	84%	36	80%
	OM-2517	24	32	71%	36	80%
	OM-2552	24	38	84%	34	76%
	OM-2558	24	42	93%	37	82%
17 to 24 Seats Total			**330**	**61%**	**398**	**74%**
25 to 32 Seats	AE-100	25	13	29%	25	56%
	AE-300	30	22	49%	17	38%
	IB-3035	25	22	49%	31.5	70%
	OM-2594	30	5	11%	8	18%
25 to 32 Seats Total			**62**	**34%**	**81.5**	**45%**
33 to 40 Seats	AE-164	40	31	69%	28.5	63%
	AE-212	40	19	42%	35	78%
	AE-260	40	27	60%	35	78%
	AE-263	40	26	58%	31.5	70%
	AE-266	40	32	71%	37	82%
	AE-304	36	14	31%	18	40%
	AE-308	36	34	76%	38	84%
	HOL-204	40	12	27%	20	44%
	IB-1007	40	27.5	61%	35	78%
	IB-1019	36	34	76%	31	69%
	OM-1741	36	39	87%	34.5	77%
	OM-1751	34	20	44%	34.5	77%
	OM-1752	40	27.5	61%	34	76%
	OM-1762	38	31	69%	36	80%
	OM-1771	36	31.5	70%	25.5	57%
	OM-1772	36	29.5	66%	29.5	66%
	OM-1791	40	20.5	46%	29	64%
	OM-2216	40	23	51%	30	67%
	OM-2741	40	28	62%	39	87%
	OM-2751	40	30	67%	38	84%
	OM-2761	40	34.5	77%	36.5	81%
	OM-2771	40	19.5	43%	36	80%
	OM-3732	36	11	24%	21	47%
	OM-3741	35	5	11%	26	58%
	OM-3752	36	11	24%	21	47%
	OM-3762	36	11	24%	21	47%
	OM-3772	36	3	7%	23.5	52%
	S-375	36	33	73%	26.5	59%
33 to 40 Seats Total			**664.5**	**53%**	**850.5**	**68%**

Table 3-8 (continued)

			Winter 2015 Daytime		Fall 2015 Daytime	
Room Capacity Range	Room Number	Room Capacity	Hours per Week	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Daytime Utilization (Based on 45-hour Week)
41 to 48 Seats	AE-104	45	37	82%	36.5	81%
	AE-208	45	32	71%	36	80%
	HOL-269	48	28	62%	34	76%
	OM-2742	42	32	71%	21	47%
	OM-2791	42	29.5	66%	36	80%
41 to 48 Seats Total			**130.5**	**70%**	**129.5**	**73%**
49 to 60 Seats	AE-262	60	33	73%	37.5	83%
	AE-362	50	7	16%	18	40%
	AE-366	50	26.5	59%	23	51%
	IB-1008	52	39	87%	36	80%
	IB-1010	52	33	73%	37.5	83%
	IB-1014	56	42	93%	38	84%
	OM-1732	50	36.5	81%	39	87%
	OM-1792	60	41	91%	36	80%
	OM-2201	50	39	87%	32.5	72%
	OM-2211	50	35	78%	37.5	83%
	OM-2221	50	35	78%	35	78%
	OM-2402	60	31	69%	36	80%
	OM-2422	60	36	80%	29	64%
	OM-2612	60	32	71%	33	73%
	OM-2622	60	30	67%	30	67%
	OM-2652	50	20	44%	27.5	61%
	S-373	60	31.5	70%	42.5	94%
49 to 60 Seats Total			**547.5**	**72%**	**568**	**74%**
61 to 80 Seats	AE-108	70	41	91%	29	64%
	AE-162	70	36.5	81%	33.5	74%
	OM-3612	65	21	47%	27	60%
	OM-3632	65	18	40%	24.5	54%
	OM-3782	65	24	53%	27.5	61%
	S-203	70	32	71%	34	76%
	S-337	80	35	78%	35	78%
61 to 80 Seats Total			**207.5**	**66%**	**210.5**	**67%**
81 to 100 Seats	IB-1015	100	38	84%	34	76%
	IB-1020	100	36	80%	31	69%
81 to 100 Seats Total			**74**	**82%**	**65**	**72%**
101 to 120 Seats	OM-2621	120	41	91%	34.5	77%
101 to 120 Seats Total			**41**	**91%**	**34.5**	**77%**
201 to 240 Seats	CT-200	212	14	31%	24	53%
201 to 240 Seats Total			**14**	**31%**	**24**	**53%**
241 + Seats	HOL-190	300	16.5	37%	18	40%
241 + Seats Total			**16.5**	**37%**	**18**	**40%**
Grand Total			**2,088**	**59%**	**2,380**	**67%**

Table 3-9 Room-by-Room Utilization - Daytime Winter 2015 and Fall 2015 (99 Rooms)

Table 3-9 lists, on a room-by-room basis, capacity, number of hours scheduled per week and the corresponding percent utilization rate (# hours scheduled/45) for Winter and Fall 2015 semesters. The **99** rooms listed below are those for which ECS has reliable or semi-reliable (fair) scheduling data.

			Winter 2015 Daytime		Fall 2015 Daytime	
Room Capacity Range	Room Number	Room Capacity	Hours per Week	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Daytime Utilization (Based on 45-hour Week)
9 to 16 Seats	S-201	16	0	0%	0	0%
9 to 16 Seats Total			**0**	**0%**	**0**	**0%**
17 to 24 Seats	AE-163	24	19	42%	29	64%
	AE-166	24	24	53%	33	73%
	AHT-131	24		0%	2	4%
	AHT-151	24	22	49%	28	62%
	IB-1021	20	2	4%		0%
	IB-1023	20	25	56%	30	67%
	OM-1761	24	26	58%	30	67%
	OM-2466	24		0%	35	78%
	OM-2468	24	36	80%	36	80%
	OM-2515	24	38	84%	36	80%
	OM-2517	24	32	71%	36	80%
	OM-2533	18		0%	2	4%
	OM-2552	24	38	84%	34	76%
	OM-2558	24	42	93%	37	82%
	TT-105	24	40	89%	37.5	83%
	TT-107	24	32.5	72%	45	100%
	TT-109	24		0%	32.5	72%
	TT-113	24	32.5	72%	32.5	72%
	TT-115	24	32.5	72%		0%
	TT-119	24	45	100%	45	100%
	TT-129	24	45	100%	32.5	72%
	TT-135	24	32.5	72%	32.5	72%
	TT-137	24	32.5	72%	32.5	72%
	TT-139	24	32.5	72%	32.5	72%
	TT-141	24	32.5	72%	32.5	72%
	TT-149	24	32.5	72%	32.5	72%
	TT-205	20	40	89%	40	89%
17 to 24 Seats Total			**734**	**60%**	**796**	**65%**
25 to 32 Seats	AE-100	25	13	29%	25	56%
	AE-300	30	22	49%	17	38%
	IB-3035	25	22	49%	31.5	70%
	OM-2594	30	5	11%	8	18%
	OM-2731	25	42.5	94%		0%
25 to 32 Seats Total			**104.5**	**46%**	**81.5**	**36%**

Table 3-9 (continued)

			Winter 2015 Daytime		Fall 2015 Daytime	
Room Capacity Range	Room Number	Room Capacity	Hours per Week	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Daytime Utilization (Based on 45-hour Week)
33 to 40 Seats	AE-151	40	17	38%	15	33%
	AE-164	40	31	69%	28.5	63%
	AE-212	40	19	42%	35	78%
	AE-260	40	27	60%	35	78%
	AE-263	40	26	58%	31.5	70%
	AE-266	40	32	71%	37	82%
	AE-304	36	14	31%	18	40%
	AE-308	36	34	76%	38	84%
	HOL-204	40	12	27%	20	44%
	IB-1007	40	27.5	61%	35	78%
	IB-1019	36	34	76%	31	69%
	OM-1219	36		0%	6	13%
	OM-1741	36	39	87%	34.5	77%
	OM-1751	34	20	44%	34.5	77%
	OM-1752	40	27.5	61%	34	76%
	OM-1762	38	31	69%	36	80%
	OM-1771	36	31.5	70%	25.5	57%
	OM-1772	36	29.5	66%	29.5	66%
	OM-1791	40	20.5	46%	29	64%
	OM-2202	40		0%	28.5	63%
	OM-2216	40	23	51%	30	67%
	OM-2741	40	28	62%	39	87%
	OM-2751	40	30	67%	38	84%
	OM-2761	40	34.5	77%	36.5	81%
	OM-2771	40	19.5	43%	36	80%
	OM-3732	36	11	24%	21	47%
	OM-3741	35	5	11%	26	58%
	OM-3752	36	11	24%	21	47%
	OM-3762	36	11	24%	21	47%
	OM-3772	36	3	7%	23.5	52%
	S-375	36	33	73%	26.5	59%
33 to 40 Seats Total			**681.5**	**49%**	**900**	**65%**
41 to 48 Seats	AE-104	45	37	82%	36.5	81%
	AE-208	45	32	71%	36	80%
	HOL-269	48	28	62%	34	76%
	OM-2742	42	32	71%	21	47%
	OM-2791	42	29.5	66%	36	80%
41 to 48 Seats Total			**158.5**	**70%**	**163.5**	**73%**

Table 3-9 (continued)

			Winter 2015 Daytime		Fall 2015 Daytime	
Room Capacity Range	Room Number	Room Capacity	Hours per Week	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Daytime Utilization (Based on 45-hour Week)
49 to 60 Seats	AE-262	60	33	73%	37.5	83%
	AE-362	50	7	16%	18	40%
	AE-366	50	26.5	59%	23	51%
	IB-1008	52	39	87%	36	80%
	IB-1010	52	33	73%	37.5	83%
	IB-1014	56	42	93%	38	84%
	OM-1732	50	36.5	81%	39	87%
	OM-1792	60	41	91%	36	80%
	OM-2201	50	39	87%	32.5	72%
	OM-2211	50	35	78%	37.5	83%
	OM-2221	50	35	78%	35	78%
	OM-2402	60	31	69%	36	80%
	OM-2422	60	36	80%	29	64%
	OM-2612	60	32	71%	33	73%
	OM-2622	60	30	67%	30	67%
	OM-2651	50	34	76%	37	82%
	OM-2652	50	20	44%	27.5	61%
	S-373	60	31.5	70%	42.5	94%
49 to 60 Seats Total			**581.5**	**72%**	**605**	**75%**
61 to 80 Seats	AE-108	70	41	91%	29	64%
	AE-162	70	36.5	81%	33.5	74%
	OM-3612	65	21	47%	27	60%
	OM-3632	65	18	40%	24.5	54%
	OM-3782	65	24	53%	27.5	61%
	S-203	70	32	71%	34	76%
	S-337	80	35	78%	35	78%
61 to 80 Seats Total			**207.5**	**66%**	**210.5**	**67%**
81 to 100 Seats	IB-1015	100	38	84%	34	76%
	IB-1020	100	36	80%	31	69%
81 to 100 Seats Total			**74**	**82%**	**65**	**72%**
101 to 120 Seats	OM-2621	120	41	91%	34.5	77%
101 to 120 Seats Total			**41**	**91%**	**34.5**	**77%**
201 to 240 Seats	CT-200	212	14	31%	24	53%
201 to 240 Seats Total			**14**	**31%**	**24**	**53%**
241 + Seats	HOL-190	300	16.5	37%	18	40%
241 + Seats Total			**16.5**	**37%**	**18**	**40%**
Grand Total			2,613	59%	2,898	65%

Utilization of Laboratories

Computer Laboratories

Computer laboratories are dispersed across the Kamloops campus. Some are primarily used for scheduled instruction while others are unscheduled/open-access or a combination of scheduled and unscheduled. Table 3-10 lists the computer labs for which the Registrar's Office provided scheduling data. Computer labs with very few scheduled hours may be open to unscheduled student use and therefore not as underutilized as Table 3-10 suggests.

The analysis of Campus's computer labs is shown in the following table. The overall rate of room utilization is 32% for the Winter 2015 and 34% for the Fall 2015.

Table 3-10 Computer Laboratory Utilization – **Winter 2015 and Fall 2015**

			Winter 2015 Daytime		Fall 2015 Daytime	
Laboratory Type	Room Number	Room Capacity	Hours per Week	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Daytime Utilization (Based on 45-hour Week)
Computer Lab	AE-200	24	23	51%	26	58%
Computer Lab	AE-305	18		0%	3	7%
Computer Lab	AE-361	24	4	9%	7	16%
Computer Lab	IB-2004	31	5	11%	9	20%
Computer Lab	IB-2006	33	11	24%	8	18%
Computer Lab	IB-2057	33	21.5	48%	24	53%
Computer Lab	IB-2058	24	31.5	70%	12	27%
Computer Lab	OM-1327	40	37.5	83%	23.5	52%
Computer Lab	OM-1330	20	2	4%	12	27%
Computer Lab	OM-1335	40	30	67%	27.5	61%
Computer Lab	OM-1340	20	8	18%	37.5	83%
Computer Lab	OM-1345	20	8	18%	8	18%
Computer Lab	OM-1350	40	12	27%	18	40%
Computer Lab	OM-1355	20	12	27%	4	9%
Computer Lab	OM-1360	20	5	11%	5.5	12%
Computer Lab	OM-1365	20	6	13%	6	13%
Computer Lab	OM-1411	20	27	60%	24	53%
Computer Lab	TT-261	16		0%	32.5	72%
Computer Lab	TT-282A	12	32.5	72%		0%
Total			**276**	**32%**	**288**	**34%**

Specialized Laboratories

ECS recommends the following benchmark, or target, against which to assess the utilization of laboratories and workshop space:

- 27 hours per week, or 60% of a 45-hour weekly scheduling window between 8:00 AM to 5:30 PM, Monday to Friday.

This target is lower than the rate recommended for classrooms to account for lab preparation, workshop maintenance, and independent access by students.

The specialized nature of laboratories and workshops also precludes common conclusions on how laboratories are used 'on average'. Certain programs may require certain laboratories only a few hours per week or per semester, yet a facility must be provided regardless of utilization.

The following tables summarize how the laboratory inventory was used in Winter 2015 and Fall 2015 in daytime. Note that research laboratories are not included in the following utilization analysis, as scheduling records for these research labs were not provided.

Table 3-11 Dry Science Instructional Laboratory Utilization – **Winter 2015 and Fall 2015**

			Winter 2015 Daytime		Fall 2015 Daytime	
Laboratory Type	Room Number	Room Capacity	Hours per Week	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Daytime Utilization (Based on 45-hour Week)
Dry Science - Instructional	AE-101	18	4	9%	3	7%
	S-232	21	6	13%	10	22%
	S-233	40	20	44%	15	33%
	S-260	20	14	31%	21	47%
	S-266	20	17	38%	15	33%
	S-270	12	14	31%	10	22%
	S-278	20	21	47%	18	40%
	S-301	30	22	49%	19	42%
	S-307	30	22	49%	19	42%
	S-331	15	18	40%	16	36%
	S-333	15	16	36%	14	31%
Total			**174**	**35%**	**160**	**32%**

Table 3-12 Wet Science Instructional Laboratory Utilization – Winter 2015 and Fall 2015

			Winter 2015 Daytime		Fall 2015 Daytime	
Laboratory Type	Room Number	Room Capacity	Hours per Week	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Daytime Utilization (Based on 45-hour Week)
Wet Science - Instructional	AHT-117	24	15	33%	13	29%
	AHT-118	n/a	9	20%	9	20%
	AHT-122	n/a	9	20%	9	20%
	S-237	16	10	22%	18	40%
	S-261	20	18	40%	18	40%
	S-269	20	23	51%	18	40%
	S-273	20	24	53%	16	36%
	S-360	20	24	53%	33	73%
	S-364	20	18	40%	26	58%
	S-367	24	18	40%	25	56%
	S-370	16	13	29%	6	13%
	S-371	20	15	33%	21	47%
	S-378	16	17	38%	31	69%
Total			**181**	**36%**	**191**	**42%**

Table 3-13 Instructional Workshop Utilization – Winter 2015 and Fall 2015

The following instructional workshops were the only rooms of this type for which scheduling records were provided. ECS is aware that additional labs of this type are operated in the Trades & Technology building.

			Winter 2015 Daytime		Fall 2015 Daytime	
Laboratory Type	Room Number	Room Capacity	Hours per Week	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Daytime Utilization (Based on 45-hour Week)
Instructional Workshop	TT-253	16	33	73%	33	73%
	TT-272	52	45	100%	45	100%
Total			**78**	**87%**	**81**	**87%**

Table 3-14 CAD / GIS / Drafting Laboratory Utilization – Winter 2015 and Fall 2015

			Winter 2015 Daytime		Fall 2015 Daytime	
Laboratory Type	Room Number	Room Capacity	Hours per Week	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Daytime Utilization (Based on 45-hour Week)
CAD / GIS / Drafting	OM-2632	24	31	69%	20	44%
	OM-2712	24	25	56%	38	84%
	OM-2740	48	22	49%	23	51%
Total			**78**	**58%**	**81**	**60%**

Table 3-15 Fine Art Studio Utilization – Winter 2015 and Fall 2015

Users and academic administrators indicated to ECS that these fine art studios are used partially as open-access studios for unscheduled undergraduate and graduate student work. This type of activity is not represented in the following utilization analysis.

			Winter 2015 Daytime		Fall 2015 Daytime	
Laboratory Type	Room Number	Room Capacity	Hours per Week	Daytime Utilization (Based on 45-hour Week)	Hours per Week	Daytime Utilization (Based on 45-hour Week)
Fine Art Studio	OM-1498	0		0%	12	27%
	OM-1501	18	8	18%	15	33%
	OM-1509	18	8	18%	4	9%
	OM-1519	10	4	9%	7	16%
	OM-1522	18	12	27%		0%
	OM-1561	18	4	9%	4	9%
	OM-1562	18	12	27%	8	18%
	OM-1564	18	8	18%	7	16%
	OM-1565	18	8	18%	8	18%
Total			**64**	**16%**	**65**	**16%**

Scheduling Practices at TRU

Complexity

TRU is in the process of changing the method by which it creates course, student, faculty and room timetables, with the goal of improving their overall quality.

At the best of times, generating university timetables is a complex undertaking involving the juggling of inter-related variables while avoiding scheduling conflicts, managing user expectations and making the best use of limited and costly resources (staff and space in particular).

Complexity also stems from the issues of who holds scheduling authority, and for what aspects of the scheduling process.

Scheduling Authority

Most universities, including TRU, use a hybrid timetabling model whereby scheduling decisions are made by two groups:

- One party, usually the Registrar's Office, that performs centralized scheduling functions on behalf of the entire institution

- Other parties, usually academic departments, to whom decentralized scheduling authority has been delegated. These parties have scheduling authority on various aspects of the room, student and staff timetables for the courses and events they deliver each semester.

There are different levels of interaction between centralized and decentralized scheduling parties that add to the complexity of the process. In some instances an academic department will determine when a course or event is to be scheduled (i.e. the day and the time) but will leave the decision as to where (i.e. the room) to the party in charge of central scheduling (i.e. the Registrar's Office). In other instances an academic department will decide when and where the course or event is to be scheduled given that it has sole control of a given set of rooms.

Over time the hybrid approach described here becomes entrenched in the culture of an organization, and is viewed to be the only viable way of developing timetables that meet the expectations and needs of all stakeholders. Several stakeholders ECS interviewed in September 2015 at TRU held this view. But, because all the schedule variables are not under the purview of one authority, and because of the inherent complexity of the task, hybrid models impact the quality and efficiency of the timetables produced.

The low utilization results previously noted in this section are typical of a hybrid approach. Many issues around scheduling brought to the attention of ECS also suggest that the quality of timetabling at TRU is, at best, uneven.

ECS has learned that there are 31 scheduling parties at TRU. One party resides in the Registrar's Office (embodying centralized scheduling) and thirty other parties exist among various academic departments (embodying decentralized scheduling). This, in ECS's opinion, is a "worst-case" situation.

In the opinion of ECS, TRU would be better off adopting either a fully centralized scheduling model, or a fully decentralized scheduling model. ECS was therefore encouraged to learn in September that TRU is moving towards fully centralized scheduling. ECS would also have been equally encouraged to learn that the University was moving towards a fully decentralized model (with some caveats).

Transition to a Centralized Scheduling Model

Transition from a hybrid scheduling model to a centralized scheduling model is a delicate undertaking.

ECS has firsthand knowledge of institutions that have attempted, and in some instances failed, at making this transition. These institutions pay a heavy price for a poor transition process, most importantly in terms of fostering negative attitudes among stakeholders (sometimes to the point of cynicism or complete rejection of centralized scheduling), but also at the cost of foregoing the benefits of better timetables.

This is why ECS was pleased to learn during its September 2015 round of consultations that the process adopted by the University to implement changes to its scheduling practices was cautious, slow-paced, iterative and consultative. This augurs well for the success of the initiative at TRU.

ECS noted the following positives points about TRU's transition process from a hybrid to a centralized scheduling model:

- TRU has begun using a sophisticated scheduling software package (by Infosilem, a Canadian company) which, based on the feedback heard by ECS at other institutions, is entirely up to the task of generating quality timetables for all types of programs and activities TRU offers, including Trades programs, exam scheduling, and event bookings.

- TRU has recently adopted a policy that touches on key aspects of scheduling, including:
  - The length of the academic week and hours of operation
  - The adoption of scheduling patterns for course delivery that increase efficiency
  - The measures and exceptions the University is prepared to allow to accommodate the needs of students and staff (such as accommodating one's request not to be in class at certain times for medical reasons).

- The circumstances at TRU are right to introduce the goal of higher room utilization to stakeholders. As reported in Section 2, and as shown in the preceding utilization analysis of this Section, the under-utilization of classroom space at TRU translates into opportunity if this fact is presented to stakeholders in a way that encourages them to accept change. For example, higher utilization rates will allow for enrolment growth and/or the conversion of existing spaces to other uses to solve discrete space problems throughout the Kamloops Main Campus.

ECS also noted the following points that warrant attention by the University about, or related to, the transition process now under way:

- Several individuals interviewed by ECS described a need for large lecture halls and assembly spaces. The utilization figures and class-section-size profile observed at TRU do not indicate a shortfall in this type of instructional space.

- TRU's classroom pool is, for the most part, made up of very traditional and somewhat outdated rooms (particularly on Levels 1 and 2 of the Old Main Building).

Improved scheduling practices will allow the University to gradually reduce the number of classrooms and laboratories needed at the Main Campus. The remaining rooms must, however, be of the highest quality. No rooms should be under-equipped, of a lower quality standard, or lacking in flexibility if the number of rooms available on campus has been optimized and utilization rates are high, in order to avoid reasons as to why a room cannot be used for a particular function.

Section 4 -
Space Management

Introduction

Several TRU stakeholders interviewed by ECS in September 2015 indicated that, in their opinion, the University allocates and manages its spaces on an ad hoc basis without the benefits of a set process and of stated planning principles. This prompted ECS to recommend to the University that the Space Planning Study includes a section outlining a proposed model for space allocation and management. The remainder of this section outlines a starting point from which the University can beginning developing its own space management framework. The outline is organized as follows:

- Space Management Principles
- Space Allocation Standards
- Space Management Process and Model
- Update Terms of Reference for Space-Related Committees

TRU should benefit from the development and application of a space management framework that is open and consistent. Institutional culture, history, scale, geographic area and a host of other features affect how any management practice is designed and put into effect. A space allocation and management framework, once customized to suit TRU's unique needs and institutional context, should bring the University closer to transparent, priority-driven and evidence-based space allocation decisions.

Space Management Principles

TRU's space management principles should integrate four separate perspectives on space:

- **Strategic** – overall University direction as set out in mission, goals and strategic planning statements
- **Functional** – the space resources that are required to deliver on the University's mandate
- **Physical** – the capacity and condition of the existing facilities
- **Financial** – the availability of capital budgets for renewal and new construction and operating budgets for existing facilities

Additionally, TRU's space allocation and management decisions should be informed by the actions listed below:

- **Link Academic Planning Initiatives to Space Management Processes**

  TRU's Strategic, Academic and Research Plans should provide an overarching framework for planning at TRU and provide key criteria for resolving space issues.

- **Balance Local and Central Control**

  The space management framework should provide appropriate balance of inputs and devolved responsibility at the local level – whether academic faculties or service departments – and centralized control that establishes overall institutional goals and objectives, sets standards, and provides a forum where space issues can be discussed and resolved.

- **Differentiate Among Categories of Space**

  The space management structure and process should differentiate among the types of space being managed, in particular shared facilities vs. dedicated space. Classroom and instructional laboratory facilities, study and library facilities, major research installations, recreation and athletic space, and space accommodating central services are key space categories that provide services to multiple user groups. A strong central perspective is required to manage these types of space.

  Other categories of space such as special purpose instructional laboratories, research laboratory space, departmental offices and support space, while requiring central oversight to establish standards for utilization and allocation, can be managed best at a local level with solutions to space needs generated by informed users.

- **Manage Space within the Framework of the University's Master Plan**

  TRU's Kamloops Main Campus Master Plan provides a framework for planning and direction for addressing existing space needs and future challenges. The optimal space management process should integrate the Master Plan framework into needs assessment and analysis, developing planning options and decision-making about space issues including major alterations, building fabric and systems upgrades and major capital projects – both renovations and new construction.

- **Maintain a Central Information Source for Current Space Allocations**

  Basic information should be available such as space inventories, room allocations, and utilization rates for various categories of space in order to provide a common base for discussions about space and a shared understanding of facility condition and capacity.

- **Be Standards and Guidelines Driven**

  TRU's space standards and allocation guidelines should provide a transparent input to assessing need with the aim of achieving equity in how space is distributed.

- **Define Terms and Conditions for Use of University Space by Non-University Activities**

  Use of TRU space for contract research and other exterior enterprises and agencies should be based on formal lease agreements that set out occupancy conditions, costs, responsibilities, and rights, duration of the occupancy and other terms as required.

Space Allocation Standards

A precedent to consider when developing TRU's own space standards is the work done by the Council of Ontario Universities (COU). COU fosters research and discussion on university issues including funding, research, graduate studies, international relations, accessibility, and space inventory and space standards. It is an advocacy body working to advance university affairs on behalf of its members with the Government of Ontario and the private sector.

COU first implemented a framework to collect space inventory data and analyze space allocation and utilization at member institutions in 1973. The framework is based on the U.S. Higher Education General Information Survey (HEGIS), predecessor to the current Integrated Postsecondary Education Data System (IPEDS). IPEDS data is collected and maintained by the National Center for Education Statistics in Washington, D.C.

The COU framework has benefitted from periodic evaluations to ensure its responsiveness to evolving demands on university facilities. It consists of:

- 'Building blocks' representing a classification of campus space into clearly defined categories
- Standards for each space category that are derived from formulae consisting of space factors and input measures, e.g. 1.11 net assignable square metres (NASM) x full-time equivalent (FTE) students for classroom space.
- A triennial survey of existing space and various input measures at Ontario universities (21 universities and 24 campuses as of the last survey in 2012-13)
- Analysis of findings, in particular, a comparison of generated space requirements using COU space standards and university inputs against actual floor areas in the system
- Publication and wide distribution of findings in a report on the inventory of physical facilities at Ontario universities[1]
- A Secretariat located in downtown Toronto which coordinates all COU activities
- A Committee on Space Standards and Reporting composed of senior representatives from the Universities and a COU Secretariat representative. Committee roles and responsibilities include coordinating the triennial survey, reviews of the space standards, and special studies on the availability and utilization of university space.

Many Canadian jurisdictions and individual institutions across Canada have used the COU approach including, among others: British Columbia Advanced Education with its Universities Space Manual (2003)[2]; the University of Calgary, University of Alberta, Grant McEwan University; and the Colleges Ontario Facilities Standards and Inventory – COFSI. The Higher Education Branch of the Quebec Ministry of Education maintains space standards and inputs that largely echo as well those used by COU[3].

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[1] Council of Ontario Universities (COU) Space Classification Scheme in COU's Inventory of Physical Facilities on Ontario Universities, 2008. http://www.cou.on.ca/issues-resources/student-resources/publications/reports/pdfs/inventory-of-physical-facilities-of-ontario-univer.aspx

[2] British Columbia Ministry of Advanced Education (AVED) B.C. Universities Space Manual, 2003. http://www.aved.gov.bc.ca/cppm/documents/univ_space.pdf

[3] Québec Ministry of Education, Normes d'espaces, Cadre normatif des investissements universitaires, 2003 http://www.mels.gouv.qc.ca/ens-sup/ens-univ/financement/14-5011.pdf and
Éducation, Loisir et Sport Québec, Direction générale du Financement et de l'Équipement, Direction de l'Équipement, 2008, Système d'information sur les locaux des universités (SILU), Guide de transmission, P560C, Version 3
http://www.mels.gouv.qc.ca/sections/publications/publications/Ens_Sup/Affaires_universitaires_collegiales/Ens_et_recherche_universitaires/Guide_de_teletrans

Jurisdictions and institutions that base their space planning guidelines on the COU's generally make adjustments to space definitions, inputs, reporting mechanisms, and ultimately to space standards to reflect regional differences, perceptions, or preferences. For example, while the COU recommends 1.11 NASM per full-time student for classroom space, BC recommends 1.0 NASM per student. Quebec breaks the category into three levels: 0.9 NASM per student for classrooms; 0.14 NASM for group workrooms; and 0.17 NASM for computer laboratories.

Regardless of adjustments to customize space planning guidelines, using the COU framework as a starting point allows Canadian post-secondary institutions to contextualize and compare, at a high level, the allocation and utilization of their physical resources.

Space Management Process and Model

Responsibilities and Rights of the University

Space Ownership

All space is University space: although space is allocated to faculties, departments and specific users, all space is owned by the University, represented by the Vice President, Administration and Finance and the University Provost.

TRU's Facilities Department (FD) and Institutional Planning & Analysis Department (IPA) are the co-agents exercising the rights and responsibilities of the University with respect to space with responsibility for space planning and management of physical assets. FD and IPA must be provided with the capacity to give professional advice and analytical services in order to assist faculties, departments, and service units to meet their responsibilities with respect to space use.

Allocating Space

The University has the responsibility to allocate blocks of space to faculties or service units for their use. The University has an obligation to provide space for academic staff, administrative staff and students that is appropriate and sufficient to support activities that are part of the University's mandate, according to the University's space standards.

The University can reallocate space, at its discretion, to meet changing needs and priorities.

Space is allocated to users for certain lengths of time with the allocations to be reviewed periodically. For example, classrooms are allocated for one to three hour time slots in contrast to offices and research spaces which are allocated for longer periods of time, not exceeding five years per allocation. Space use will be reviewed periodically and space assignments reconfirmed accordingly.

Needs-Based Allocations and Space Standards

For all users and all categories of space, space standards will be used to allocate space based on assessed need. These space standards may be adjusted in accordance with the total amount of space available. In this way, an overall space shortage or surplus can be resolved fairly. In many cases, existing uses and space assignments may not meet the standards and will not face an unfair imposition of these standards. However, any reallocation, renovation, or provision of new building space shall conform to the University space standards as closely as possible.

Suitable Space

Space provided shall be suitable in terms of size, quality, and location. Where space is to be renovated, the University will ensure that the designated space is adequate and appropriate for the intended use.

Uses of a similar nature or uses which are functionally related will be allocated in proximity to one another wherever possible. In particular, University departments, whenever practical, will have their special facilities (such as laboratories), offices and support spaces located contiguously.

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New Activity Initiatives

For all initiatives under consideration or being proposed by any academic and administrative units, the impact on space resources will be assessed and included in documentation submitted to senior administrators for approval. The assessment shall reflect University space allocations and utilization standards. Where new activities and/or staff are being proposed, the proposal document shall indicate how the space requirements will be met: through **reallocation of existing space** or, if existing space is not available or appropriate, the **sources of funding for creating new space**. The planning initiative document will provide a **detailed financial plan** and indicate how any facility needs will be met within the required timeframe.

This process is particularly relevant in the case of applications for major research grants that involve new staff, commitments to provide dedicated space or investments in major equipment installations. The relevant space planning committees will be involved in this assessment and in generating solutions and making recommendations.

Appropriate Furnishings

Furniture acquired by University departments is required to meet the University's furniture standards.

Maintenance

With ownership of space, the University has the responsibility to keep this space in good order in terms of maintenance, services, cleaning, etc.

Audit Function

The University has the right to assess space use in order to ensure that the institution can meet evolving needs and institutional priorities.

Responsibility and Rights of Users

Access to Appropriate Space

Users will be provided with the space required to support their activities.

Using Space Effectively

All space allocated to a department or service unit must be used efficiently. It is the responsibility of the user to seek opportunities to introduce compatible, approved University uses to maintain utilization at a level which is consistent with University standards.

Resolving Space Issues

It is the responsibility of the user to address changing and emerging needs for space by optimising the utilization of the space they currently occupy. The first response to a perceived need is to identify space resources already available to the user that can meet the need.

Identifying Opportunities

It is an obligation of users to identify underutilized space and provide for improved space use.

Sharing Space and Functions

To avoid duplication of space, equipment, and staff services, and to avoid unnecessary costs, as much space as possible should be shared among departments. This applies especially to meeting rooms, office work rooms, staff lounge areas, technical support work areas, and storage areas. Where there are multiple users, protocols shall be developed to establish responsibilities and priorities for use and management of the space.

Consultation

It is the right of users of space to be consulted on matters of space allocation and utilization.

Space Management Framework

TRU's space management framework should articulate these inputs and activities:

- Space Planning Information
- Committee Structure
- Professional support

Space Planning Information

Up-to-date and accurate information on space allocations and utilization is a key element in effective planning and management of space at TRU. Space management tools include:

Building Space Audits

FD and IPA commission audits on a revolving basis to assess how space is used in TRU buildings. These audits provide information on allocations, utilization, and inputs that drive space need calculations.

Space Inventory Data and Floor Plans

FD and IPA maintain a central record of space inventory in all buildings that provides information on room floor areas, classification by primary and secondary use, occupant and responsibility and condition. This information is updated on a regular basis with input from academic and administrative users.

Utilization Assessments

Utilization analyses measure how effectively space is used. These analyses compare inputs such as enrolments, hours of instruction, staff establishment, measures of research activity, etc. to utilization standards and benchmarks. For different categories of space, different metrics and analysis techniques are required:

- For classrooms and instructional laboratories, rates of hourly use compared to benchmarks expressed in hours per week for the defined scheduling window
- For research laboratories, measures of productivity of investigators as assessed by size and composition of research project teams – students, research associates, post-doctoral fellows, etc., infrastructure requirements and equipment installations, scholarly activity in the form of peer-reviewed publications, research grants, and contracts, etc. For different discipline clusters, different measures may be appropriate.
- For offices, comparisons between optimal allocations for appointment types – full-time, sessional, part-time, etc. and the space actually occupied.
- Overall, these three space categories comprise approximately two-thirds of the assignable floor area of a university. Utilization reports that address these categories will provide a fairly comprehensive picture of how effective space utilization is and where unused capacity can be found.

Campus Master Plan

The Campus Master Plan is an essential document for space planning. Because the Master Plan's focus is on high-level direction, it should be supplemented with more detailed implementation plans that operationalize its overall aims. The implementation plans for campuses or campus precincts would integrate the findings of the various building audits and utilization analyses to create a framework for evaluating space requests and proposals.

Space Planning Standards and Guidelines

A set of space allocation standards and guidelines (COU-based for example) provides common measures for utilization and space allocations when assessing need and developing planning solutions.

Criteria for the Evaluation of Space Allocation Requests (and the Allocation of Other University Assets and Resources)

The University is encouraged to develop a set of criteria to evaluate and prioritize requests for the allocation of space and/or changes to existing spaces in the form of renovations, swaps, etc. Ideally the same set of criteria should be formulated in a generic manner that allows the University to evaluate and prioritize other types of capital expenditures (such as those incurred for procuring instructional and research equipment for example).

The set of criteria should be known and understood by members of the University community. They should be formulated and worded so as to be perceived as being equitable and balancing the needs of academic stakeholders with the needs of other operating and service units. Importantly the criteria should be consistent from year to year or from one funding pot to another. Equity and consistency will add to the credibility among stakeholders of the Space Management Framework herein described.

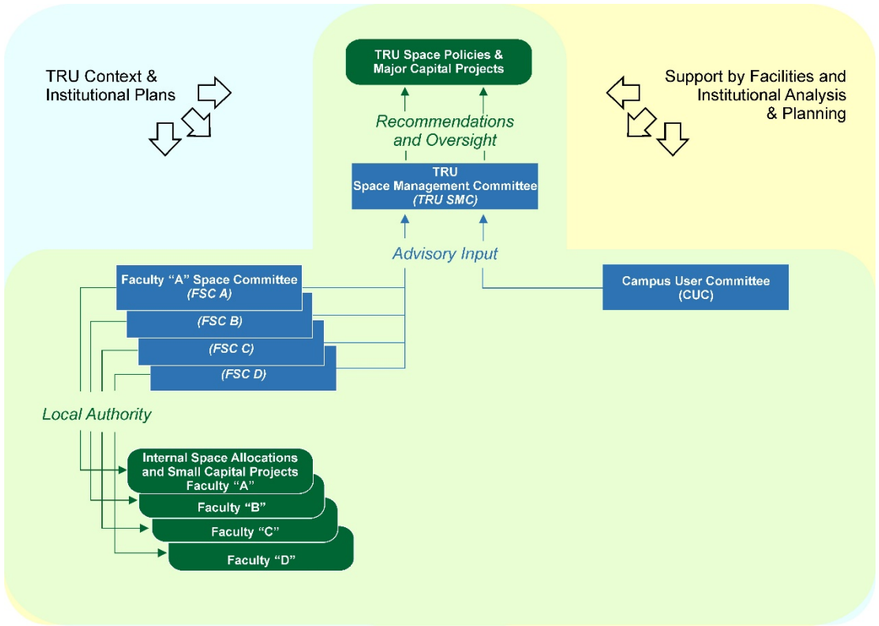
A sample set of resource allocation evaluation criteria is provided in Appendix B as a starting point the University can use to start developing its own. The Appendix B sample proposes five weighted criteria as follows:

- Criterion A – Alignment with University Plans and Standards
- Criterion B – Excellence, Innovation, Creativity and Inclusiveness
- Criterion C – Benefits
- Criterion D - Stewardship and Sustainability
- Criterion E – Investment and Risk

Committee Structure

Committees should provide forums for discussing and generating solutions to TRU's space allocation needs and issues. The committees will have varying responsibilities to address policy, practices, allocations, dispute resolution issues in a structure tailored to reflect the University's organization.

Overview of Proposed Committee Framework



Committee Descriptions

- **TRU Space Management Committee** (TRU SMC) will have oversight of all space policy, plans and major capital projects. Its principal areas of responsibility include:

  - Institution wide policies and procedures governing space
  - Impact of academic planning and innovation initiatives on space resources
  - Major new and building renewal projects

  Members of the TRU SMC should include:

- Provost & Vice-President Academic	Voting Member
- Vice-President Administration & Finance	Voting Member
- Assistant Vice-President HR & Planning	Voting Member
- Vice-Provost Student Services	Voting Member
- Faculty Dean A	Voting Member
- Faculty Dean B	Voting Member
- Teaching Faculty Representative	Voting Member
- Administrative Staff Representative	Voting Member
- Director of Facilities Department	Advisor, Non-Voting
- Director of Institutional Planning & Analysis	Advisor, Non-Voting

- **Faculty Space Committee** (FSC - one per faculty) will regularly advise and update the TRU SMC on faculty-specific spaces occupied or required, including:

  - defining needs
  - identifying priorities
  - developing solutions to competing demands for space
  - identifying opportunities for improved utilization
  - advocacy of priorities

  The various FSCs should responsible for addressing space needs and resolving competing needs for issues within the boundaries of their faculties, whereby the requests or issues can be successfully resolved within existing space and with minor investment. Where there are needs that cannot be met, conflicts that cannot be resolved, or if major investment is required, these issues will be forwarded to the TRU SMC.

  FSC membership will be at the discretion of each Faculty Dean. The following is suggested:

  - Dean or Designate
  - Department Head A
  - Department Head B
  - Faculty Administrative Staff responsible for space allocations
  - Support Staff Representative

Campus User Committee (CUC) to advise TRU SMC on shared spaces categories, including:

- classrooms
- library and study space
- student services
- student and campus life amenities
- athletics and recreation

CUC will represent a broad range of University interests for key issues related to shared space with responsibility to develop policy recommendations and management processes for the space resource. Advisory to the University's senior management team on issues of policy and procedure.

CUC membership should include:

- University Registrar
- University Scheduling Team Representative
- Faculty Dean C
- Faculty Dean D
- University Librarian
- Director of Ancillary Services (Food, Residence, etc.)
- Director, Office of Sustainability
- Student Association Representative

Professional Support

All committees will require professional space planning support from FD and IPA. Their role will be to assist the committees by providing data on space use, preparing utilization analyses, developing planning solutions to address space issues and preparing recommendations for consideration by relevant committees.

Tasks and responsibilities of FD and IPA include:

- **Attend space planning committee meetings** as required. University space planning staff will be available to faculty/service unit space planning committees to provide information and guidance on University space guidelines, policies, and procedures.
- **Maintain space inventory database and as-built drawings.** The space inventory database and building drawings will be updated regularly using space audit findings, the annual reports from the space planning committees and building changes from renovation and new construction projects.
- **Issue annual updates and reports.** An annual report on space planning will be prepared summarizing space planning activities, changes to building inventories, and raising common issues and identifying upcoming demands for space modifications and additions.
- **Assess renovation requests.** FD and IPA will receive requests for renovations forwarded from faculties and service units through their respective space planning sub-committees. Requests will be reviewed in terms of University strategic priorities, facility condition issues, and University space planning guidelines. FD and IPA will provide a report with recommendations addressing the requests to the University-wide committee for their consideration and action.
- **Review program plans and their demands on space.** FD and IPA will review program plans that require changes to space to provide assessments of the impact of these proposals in terms of space requirements and costs.

Draft Terms of Reference for Space-Related Committees

Thompson River Space Management Committee – TRU SMC

Role and Responsibilities

TRU SMC will provide recommendations to the University's senior management team on standards, policies, procedures, allocations and capital requests for space for all University units and services.

Specific responsibilities of the Committee include:

- Maintain and publish a comprehensive set of policies and procedures for managing space at the University
- Review program and activity initiatives to ensure that resource requirements that impact space are considered and factored into the assessment of each proposal
- Review, prioritize and recommend requests for additional space or reallocations of existing space
- Review and sign off on annual renovation programs where projects involve reallocation of space to new users or major changes to the use of space
- Review, on an annual basis, current utilization of space by each faculty
- Provide an annual report on space

Draft Terms of Reference

The Advisory Committee on Space Planning and Management will examine and report on the University's current practices for the allocation and utilization of space at the University. It will recommend policies and processes for the allocation and reallocation of facilities at the University. As part of its role, the Committee will consider appropriate benchmarks that can be used in the effective utilization of space and explore management strategies that may be used to encourage the efficient use of space. The Committee will review all space requests and prioritize and make recommendations for consideration by the University's senior management team.

Reporting Structure

Reporting to the senior management team - President and Vice-Presidents.

Frequency of Meetings

As required to carry out its responsibilities, estimated to be 8 to 10 times per year.

Faculty Space Committee - FSC

Role and Responsibilities

FSCs will be established with responsibility for reviewing and modifying, where necessary, the allocation of assigned space among departments and sub-units within their respective faculties.

Specific FSC responsibilities will be:

- Ensure compliance with University space policies and establish faculty or service unit specific policies where necessary to ensure effective management of space
- Address all internal issues related to the availability and occupancy of space
- Maintain a record of how space is allocated within the faculty/service unit, updated on an annual basis
- Review requests for new space initiated within the faculty. As many as possible of all requests for new spaces will be expected to be resolved at the FSC level with the assistance of the responsible Deans.
- Prepare report for presentation to IPA on space utilization on an annual basis
- Review, prioritize and recommend renovation requests to TRU SMC
- Address reductions in space allocations if requested by TRU SMC

Draft Terms of Reference

FSCs will examine and report on current practices for the allocation and utilization of space within their faculties and will implement policies and procedures for the allocation and reallocation of space as set out by TRU SMC and will consider appropriate practices that can promote the effective utilization of space within their unit.

Reporting Structure and Requirements

Reporting to TRU SMC.

Frequency of Meetings

As required but, as a minimum, sufficiently frequently to deal with internal space related issues on a timely basis and to provide the annual assessments and reports described – 6 times per year.

Campus User Committee - CUC

Role and Responsibilities

CUC is responsible for considering TRU-wide issues for specific categories of space such as classrooms, library and study spaces, etc.

Specific responsibilities of these committees will be tailored to suit the particular type of space but in general terms they will be responsible to:

- Ensure compliance with University space policies and establish specific policies where necessary to ensure effective management of space
- Establish targets for utilization and provision of space to meet the needs of these activities
- Address all internal issues related to the availability and occupancy of space
- Maintain records of how space is used on an annual basis
- Review requests for new space initiated by users or managers of these facilities. As many as possible of legitimate requests will be expected to be resolved by the Committee within the existing available space with the assistance of the responsible Dean, Director or Manager.
- Prepare report for presentation to the TRU SMC on how space is used on an annual basis
- Review, prioritize and recommend renovation requests to TRU SMC
- Address changes in space allocations if requested by the TRU SMC

Draft Terms of Reference

The Committees will examine and report on current practices for the allocation and utilization of space within their areas of responsibilities. They will implement policies and processes for the management of facilities as set out by TRU SMC and will consider appropriate practices that can promote the effective utilization of space within their inventory.

Reporting Structure and Requirements

Reporting to TRU SMC.

Frequency of Meetings

As required but, as a minimum, sufficiently frequently to deal with internal space related issues on a timely basis and to provide the annual assessments and reports described – 6 times per year.

Section 5 -
High Level Planning Scenarios

High Level Planning Scenarios

Introduction

This section presents three high-level scenarios for the future of TRU's Main Campus. The scenarios describe possible options for future development of the Campus in ways that address TRU's planning priorities and needs. The current and foreseen initiatives (plans, needs, and opportunities) for TRU are listed here in order to form the context for the planning scenarios.

A Major Initiatives Underway or Under Consideration by TRU

A1) Extension of Trades & Technology Building

A2) Provision of a new, distinct School of Nursing / Health Sciences Facility

A3) Creation of a "Collegium" Facility

B Other Needs, Plans, and Priorities at TRU

B1) Consolidation of library collections and services into the Main Library Building

B2) Doubling of research space allocation (currently 517m^2) to approximately 1200m^2

B3) Upgrades / updates to Learning Spaces (classrooms, seminar rooms, lecture theatres etc.) on campus

B4) Rationalization of Student Service facilities currently in Old Main Building – Level 1

B5) Centralization / Improvement of Food Services facilities on campus

B6) Expansion of Aboriginal Student Services space

B7) Creation of large assembly space

C Emerging Opportunities

C1) Better scheduling of classrooms will free up ~3,000m^2 of classroom space

C2) Implementation of space management policy and process will improve efficiency, transparency, and strategic efficacy of space allocations

Scenario A – Minimal Additional Space Added to Campus

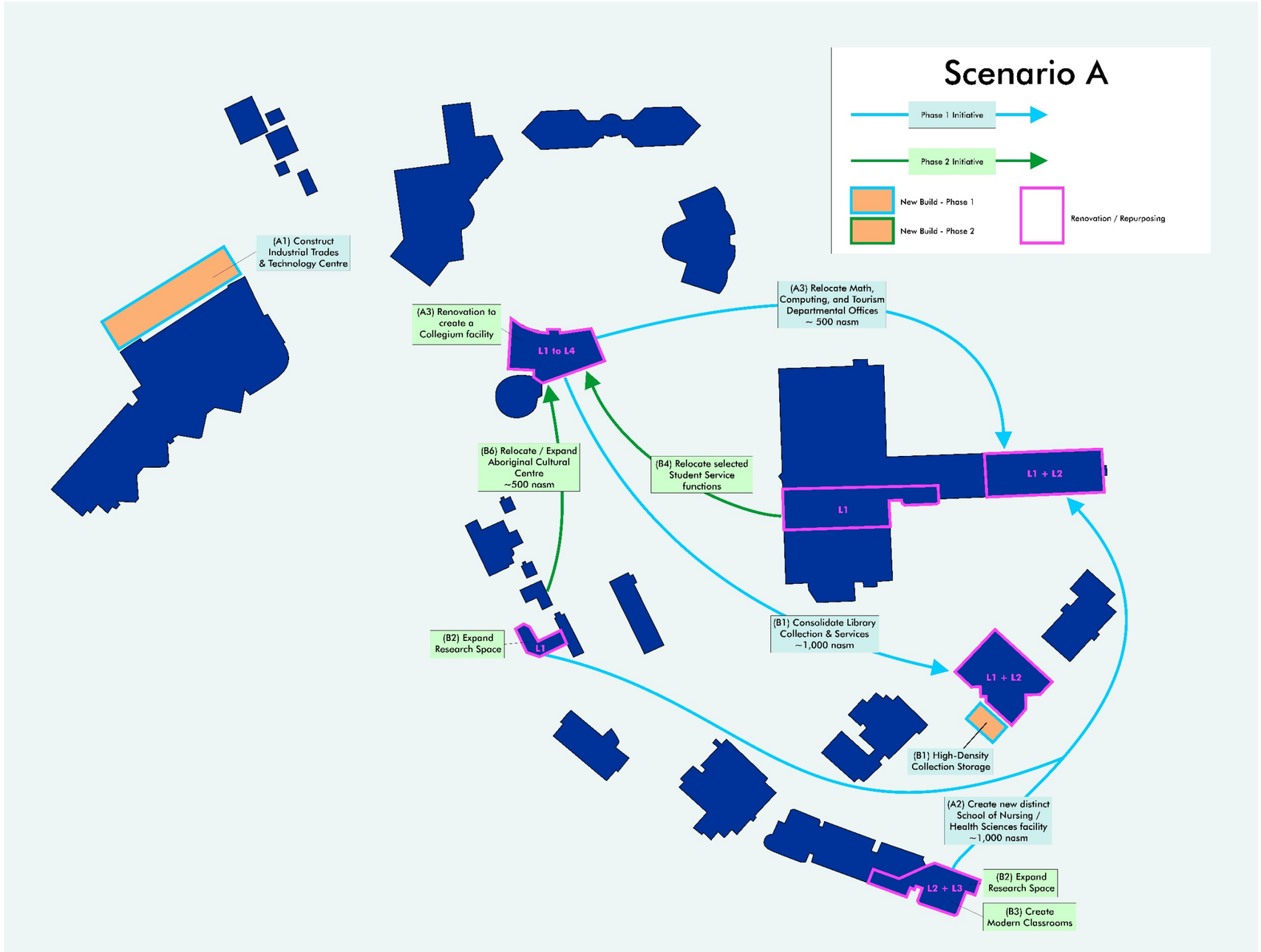
This scenario envisions a campus development plan with a minimal amount of new space added to the Kamloops Campus. By taking advantage of surplus classroom space and improved room utilization, TRU would address planning priorities mainly through renovation and repurposing of space in existing buildings. Low-quality classroom space on Levels 1 and 2 of the Old Main building would be repurposed to create a new, flagship School of Nursing / Health Sciences teaching facility in the building. Space Vacated by Nursing in the Science building would be used to address TRU's goal of expanding its research enterprise.

Two new buildings are proposed – the Industrial Trades & Technology Centre, and a high-density storage facility to allow the consolidation of the Library collection and services into the Main Library building. Vacated space in the Brown Family House of Learning building would then be repurposed to create a "Collegium" facility. The Collegium would include relevant Student Service functions relocated from the Old Main building, allowing the rationalization of services remaining in Old Main.

Scenario A – Minimal Additional Space Added to Campus		
Measures	**Contingent Upon**	**Allowing For**
Phase 1		
▪ (A1) Construct Industrial Trades & Technology Centre	▪ Approval from the Province of B.C.	▪ Addition of new programs in Trades & Technology
▪ (B1) Consolidation of library collections and services into the Main Library Building	▪ Construction of a high density collection storage facility next to Main Library Building; and renovation of existing facility	▪ Approximately 1,000 NASM in the Brown Family House of Learning Building available for other uses
▪ (A3) Convert low-quality classrooms in Old Main for Math, Computing, and Tourism departmental offices	▪ Possible now, but easier with (C1) and (C2) freeing additional classroom space in Old Main	▪ Approximately _____ NASM in the Brown Family House of Learning Building available for other uses
▪ (A2) Renovate existing low-quality classroom space in Old Main to create new, distinct School of Nursing / Health Sciences facility	▪ Possible now, but easier with (C1) and (C2) freeing additional classroom space in Old Main	▪ Creates space in Science Building for other uses

Scenario A – Minimal Additional Space Added to Campus

Measures	Contingent Upon	Allowing For
Phase 2		
▪ (A3) Reorganization / Renovation of House of Learning Building toward creation of a Collegium facility in the building ▪ (B4) Relocation of some Student Service facilities (tutoring, counselling, health services etc.) from Old Main Building in ways that support and improve the Collegium environment sought by the University ▪ (B6) Creation of an enlarged Aboriginal Students space in the House of Learning Building	▪ (A3) and (B1) in Phase 1 as described above	▪ Space vacated in the Student Services cluster in the Old Main Building - Level 1, allowing for the rationalization of remaining services ▪ Decommissioning of outdated House 5 – Aboriginal Cultural Centre
▪ (B2) Expand research space on Campus ▪ (B3) Create classrooms in Science Building	▪ (A2) in Phase 1 as described above	▪ Higher levels of research activity ▪ Modern tech-enabled classrooms with priority for Science teaching


Scenario A
Phase 1 Initiative
Phase 2 Initiative
New Build - Phase 1
New Build - Phase 2
Renovation / Repurposing
(A1) Construct Industrial Trades & Technology Centre
(A3) Renovation to create a Collegium facility
L1 to L4
(A3) Relocate Math, Computing, and Tourism Departmental Offices ~ 500 nasm
L1 + L2
L1
(B6) Relocate / Expand Aboriginal Cultural Centre ~500 nasm
(B4) Relocate selected Student Service functions
(B1) Consolidate Library Collection & Services ~1,000 nasm
(B2) Expand Research Space
L1
L1 + L2
(B1) High-Density Collection Storage
(A2) Create new distinct School of Nursing / Health Sciences facility ~1,000 nasm
L2 + L3
(B2) Expand Research Space
(B3) Create Modern Classrooms

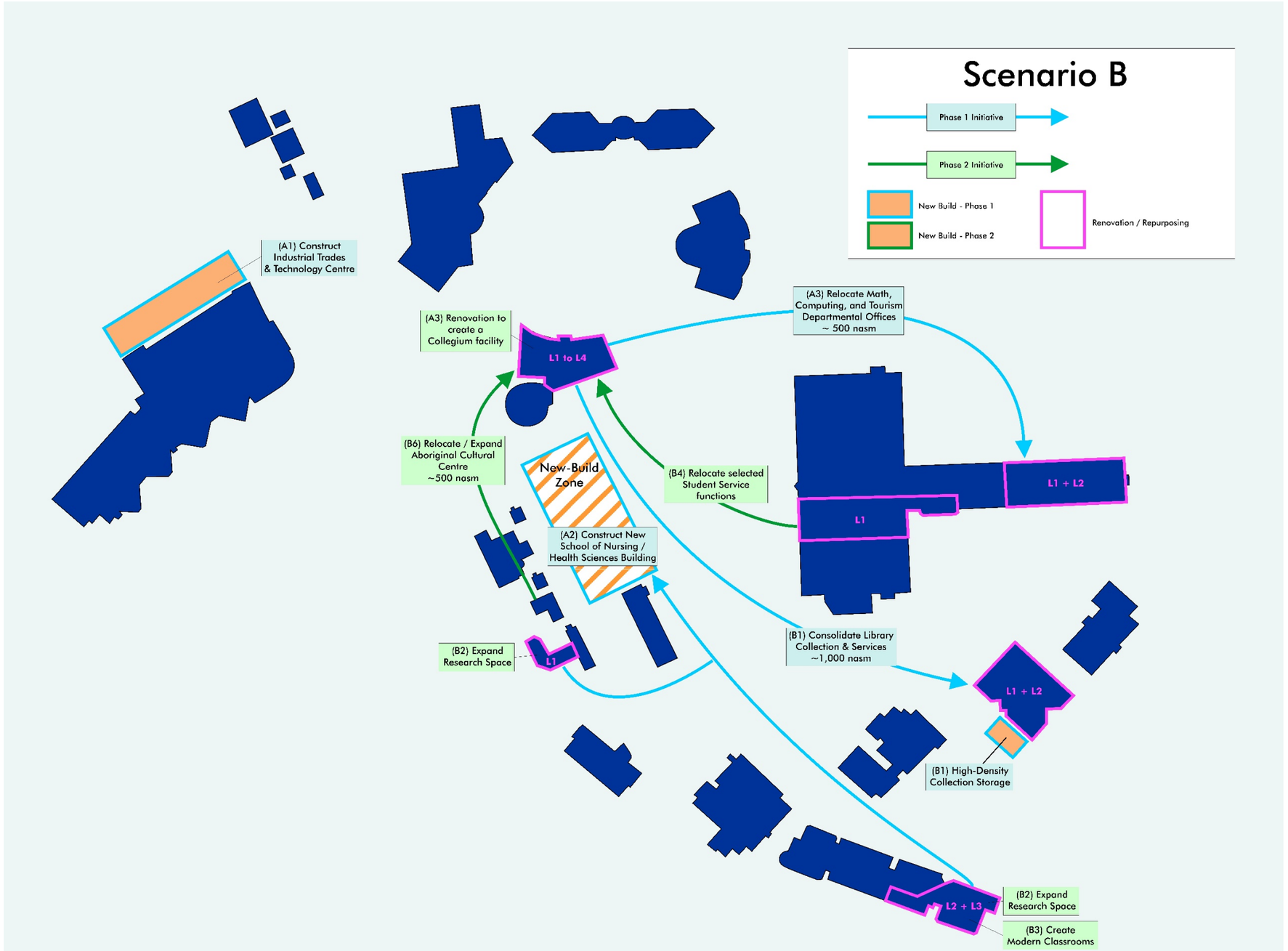
Scenario B – New School of Nursing / Health Sciences Building

This scenario envisions a campus development plan wherein three new buildings are constructed, and additional planning priorities are addressed through renovation and repurposing of space in existing buildings.

A new School of Nursing / Health Sciences building would be constructed, and space vacated by Nursing in the Science building would be used to address TRU's goal of expanding its research enterprise. TRU would also construct an Industrial Trades & Technology Centre, and a high-density storage facility to allow the consolidation of the Library collection and services into the Main Library building. Vacated space in the Brown Family House of Learning building would then be repurposed to create a "Collegium" facility. The Collegium would include relevant Student Service functions relocated from the Old Main building, allowing the rationalization of services remaining in Old Main.

Scenario B – New School of Nursing / Health Sciences Building		
Measures	**Contingent Upon**	**Allowing For**
Phase 1		
▪ (A1) Construct Industrial Trades & Technology Centre	▪ Approval from the Province of B.C.	▪ Addition of new programs in Trades & Technology
▪ (B1) Consolidation of library collections and services into the Main Library Building	▪ Construction of a high density collection storage facility next to Main Library Building; and renovation of existing facility	▪ Approximately 1,000 NASM in the Brown Family House of Learning Building available for other uses
▪ (A3) Convert low-quality classrooms in Old Main for Math, Computing, and Tourism departmental offices	▪ Possible now, but easier with (C1) and (C2) freeing additional classroom space in Old Main	▪ Approximately _____ NASM in the Brown Family House of Learning Building available for other uses
▪ (A2) Construction of a new, distinct School of Nursing / Health Sciences Building	▪ Approval from Province of B.C.	▪ Creates space in Science Building for other uses

Scenario B – New School of Nursing / Health Sciences Building		
Measures	**Contingent Upon**	**Allowing For**
Phase 2		
▪ (A3) Reorganization / Renovation of House of Learning Building toward creation of a Collegium facility in the building ▪ (B4) Relocation of some Student Service facilities (tutoring, counselling, health services etc.) from Old Main Building in ways that support and improve the Collegium environment sought by the University ▪ (B6) Creation of an enlarged Aboriginal Students space in the House of Learning Building	▪ (A3) and (B1) in Phase 1 as described above	▪ Space vacated in the Student Services cluster in the Old Main Building - Level 1, allowing for the rationalization of remaining services ▪ Decommissioning of outdated House 5 – Aboriginal Cultural Centre
▪ (B2) Expand research space on Campus ▪ (B3) Create classrooms in Science Building	▪ (A2) in Phase 1 as described above	▪ Higher levels of research activity ▪ Modern tech-enabled classrooms with priority for Science teaching


Scenario B
Phase 1 Initiative
Phase 2 Initiative
New Build - Phase 1
New Build - Phase 2
Renovation / Repurposing
(A1) Construct Industrial Trades & Technology Centre
(A3) Renovation to create a Collegium facility
L1 to L4
(A3) Relocate Math, Computing, and Tourism Departmental Offices ~ 500 nasm
(B6) Relocate / Expand Aboriginal Cultural Centre ~500 nasm
New-Build Zone
(A2) Construct New School of Nursing / Health Sciences Building
(B4) Relocate selected Student Service functions
L1
L1 + L2
(B1) Consolidate Library Collection & Services ~1,000 nasm
(B2) Expand Research Space
L1
L1 + L2
(B1) High-Density Collection Storage
L2 + L3
(B2) Expand Research Space
(B3) Create Modern Classrooms

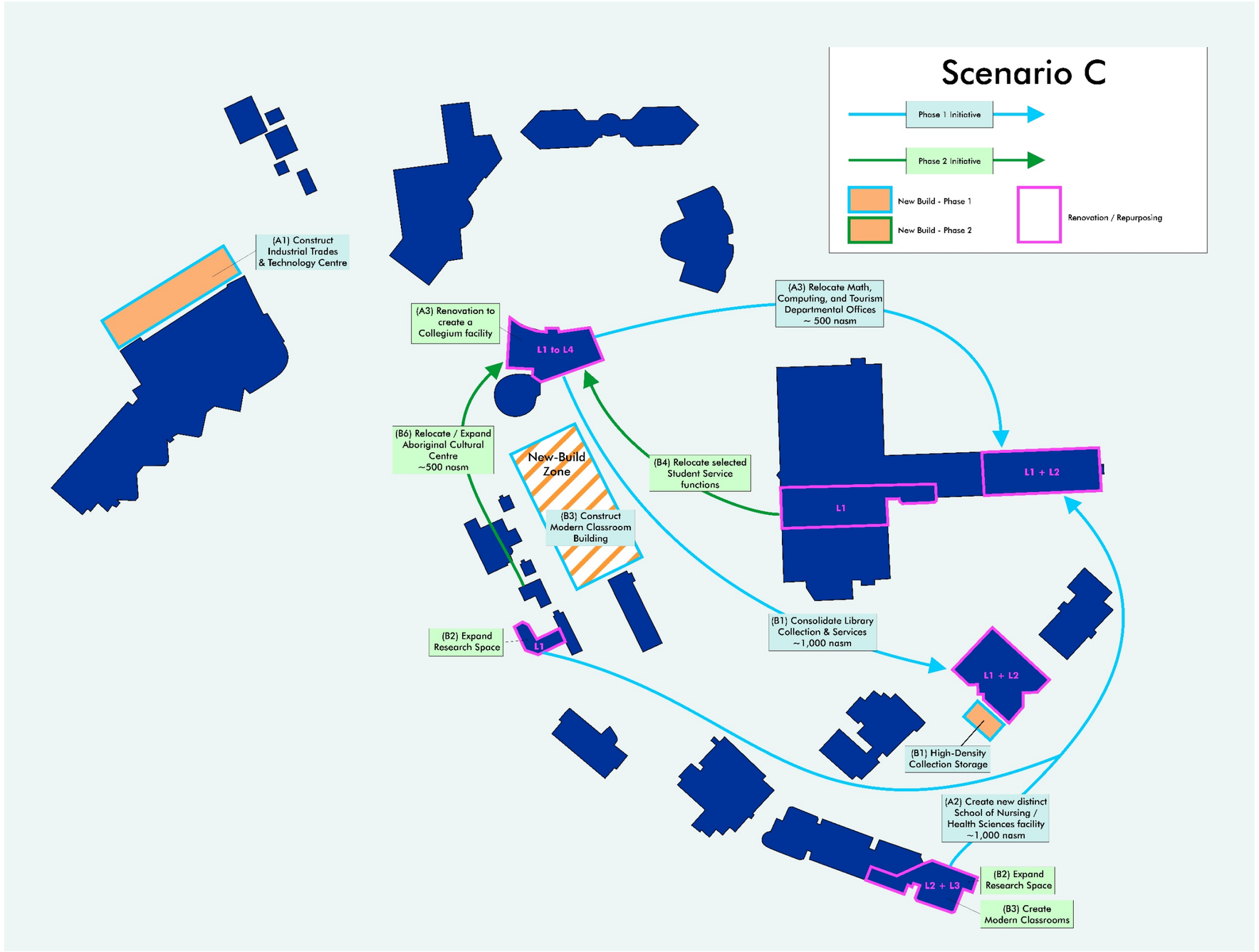
Scenario C – New Modern Classroom Building

This Scenario envisions a campus development plan wherein three new buildings are constructed, and additional planning priorities are addressed through renovation and repurposing of space in existing buildings. A new Modern Classroom building would be constructed and low-quality classroom space on Levels 1 and 2 of the Old Main building would be repurposed to create a new, flagship School of Nursing / Health Sciences teaching facility in the building. Space vacated by Nursing in the Science Building would be used to address TRU's goal of expanding its research enterprise. Additional low-quality classroom space on Campus would be available for repurposing to address other planning priorities.

TRU would also construct an Industrial Trades & Technology Centre and a high-density storage facility to allow the consolidation of the Library collection and services into the Main Library building. Vacated space in the Brown Family House of Learning Building would then be repurposed to create a "Collegium" facility. The Collegium would include relevant Student Service functions relocated from the Old Main building, allowing the rationalization of services remaining in Old Main.

Scenario C – New Modern Classroom Building		
Measures	**Contingent Upon**	**Allowing For**
Phase 1		
▪ (A1) Construct Industrial Trades & Technology Centre	▪ Approval from the Province of B.C.	▪ Addition of new programs in Trades & Technology
▪ (B1) Consolidation of library collections and services into the Main Library Building	▪ Construction of a high density collection storage facility next to Main Library Building; and renovation of existing facility	▪ Approximately 1,000 NASM in the Brown Family House of Learning Building available for other uses
▪ (A3) Convert low-quality classrooms in Old Main for Math, Computing, and Tourism departmental offices	▪ Possible now, but easier with (C1) and (C2) freeing additional classroom space in Old Main	▪ Approximately _____ NASM in the Brown Family House of Learning Building available for other uses
▪ (A2) Renovate existing low-quality classroom space in Old Main to create new, distinct School of Nursing / Health Sciences facility	▪ Possible now, but easier with (C1) and (C2) freeing additional low-quality classroom space in Old Main	▪ Creates space in Science Building for other uses
▪ (B3) Construction of a new building containing modern, flexible, right-sized, technology-enabled classrooms	▪ Approval from Province of B.C.	▪ Renovation of existing low-quality classrooms on campus to be repurposed towards other planning priorities

Scenario C – New Modern Classroom Building		
Measures	**Contingent Upon**	**Allowing For**
Phase 2		
▪ (A3) Reorganization / Renovation of House of Learning Building toward creation of a Collegium facility in the building ▪ (B4) Relocation of some Student Service facilities (tutoring, counselling, health services etc.) from Old Main Building in ways that support and improve the Collegium environment sought by the University ▪ (B6) Creation of an enlarged Aboriginal Students space in the House of Learning Building	▪ (A3) and (B3) in Phase 1 as described above	▪ Space vacated in the Student Services cluster in the Old Main Building - Level 1, allowing for the rationalization of remaining services ▪ Decommissioning of outdated House 5 – Aboriginal Cultural Centre
Phase 3		
▪ (B2) Expand research space in Science building ▪ (B3) Create classrooms in Science Building	▪ (A2) in Phase 2 as described above	▪ Higher levels of research activity ▪ Modern tech-enabled classrooms with priority for Science teaching


Scenario C
Phase 1 Initiative
Phase 2 Initiative
New Build - Phase 1
New Build - Phase 2
Renovation / Repurposing
(A1) Construct Industrial Trades & Technology Centre
(A3) Renovation to create a Collegium facility
L1 to L4
(A3) Relocate Math, Computing, and Tourism Departmental Offices ~ 500 nasm
(B6) Relocate / Expand Aboriginal Cultural Centre ~500 nasm
New-Build Zone
(B3) Construct Modern Classroom Building
(B4) Relocate selected Student Service functions
L1 + L2
L1
(B1) Consolidate Library Collection & Services ~1,000 nasm
(B2) Expand Research Space
L1
L1 + L2
(B1) High-Density Collection Storage
(A2) Create new distinct School of Nursing / Health Sciences facility ~1,000 nasm
L2 + L3
(B2) Expand Research Space
(B3) Create Modern Classrooms

Appendix A -
What is a Quality Timetable?

Introduction

Most of the TRU staff and students consulted by ECS for this Space Planning Study were asked to provide a spontaneous and candid one-sentence answer to the following question:

"What is a Quality Timetable?"

There are, of course, many answers to such a broad question given that each respondent had to formulate her or his answer on the basis of her or his own experience and perspective. Yet, the reader of this appendix will see that the majority of respondents attempted to formulate answers that considered what was beneficial for the University as a whole and for its students in particular.

Answers

- A Quality Timetable has time for school, work, life and me.
- A Quality Timetable is evenly spaced out throughout the week but during the day does not have long breaks.
- A Quality Timetable is one that allows you to access all the required courses for your program while accommodating more needs and opportunities for engagement outside class.
- A Quality Timetable is one that allows students to have courses scheduled within a section of the day (example noon onwards) while still allowing breaks.
- A Quality Timetable is one that balances both the student's needs / wants and what is required for the program / course so that the student can progressively complete their program.
- A Quality Timetable is something that allows students to come to campus and use their time in the best manner. It serves the needs of the students.
- A Quality Timetable is one that meets learning outcomes while providing an exceptional student experience.
- A Quality Timetable is one that best suits a student's schedule, taking into consideration their work and extra-curricular activities.
- A Quality Timetable is reliable.
- A Quality Timetable is one that optimizes spaces available and provides the best possible overall student experience.
- A Quality Timetable is one that puts students first.
- A Quality Timetable is one that balances the needs for options for the students and makes effective use of campus resources in an efficient manner.
- A Quality Timetable is one that effectively distributes work load for both students (as they schedule their class) and faculty members (as they distribute their responsibilities) and serve these populations independently as they manage their needs. It is generally equitable for each faculty as part of their team and equitable for students across all programs offered at TRU.
- A Quality Timetable depends upon whose timetable it is (student, faculty). It should provide an efficient use of a person's time.
- A Quality Timetable is appropriate to the task at hand.

- A Quality Timetable is one that reflects the students' needs, keeping in mind the significant diversity of those needs. It minimizes the number of conflicting courses so that student are not precluded from completing their studies.

- A Quality Timetable is a schedule which fits to the personal availability and willingness to commit the time to certain activities.

- A Quality Timetable is one that you can dedicate space for specific groups and should have priority for the booking of that space. If the space is not used there should be a fair process that allows use of that space.

- A Quality Timetable permits each individual student to excel.

- A Quality Timetable is one that allows one to learn effectively and to fit all the other parts of his or her life into it. It also provides time to learn effectively.

- A Quality Timetable optimizes student experience and programming, including being cognizant of a student's right to complete their degree in a timely manner.

- A Quality Timetable is one that provides appropriate space with appropriate technology and resources to meet the learning needs of the students.

- A Quality Timetable values accessibility for the learner, while ensuring financial sustainability for the institution.

- A Quality Timetable is one that includes times for student between their classes to take care of themselves academically, physically, socially and builds times outside class for students to access TRU's services.

- A Quality Timetable is one that allows students to complete their degrees in a timely fashion and allows them the flexibility to do all the things students should and can do, including employment, athletics, volunteering, etc.

- A Quality Timetable works for students, the faculty and rooms.

- A Quality Timetable is when a student can finish their program on time, the professors have a reasonable schedule and the infrastructure can be maintained.

Appendix B -
Sample Criteria for the Evaluation of Resource Allocations

Resource Request Evaluation Criteria

	A1	A2	A3	B	C = A x B
	0 to 3 pts Inadequate to Poor	4 to 7 pts Average	8 to 10 pts Good to Excellent	Weighing Factor	Total
Criterion A – Alignment with University Plans and Standards **Assessment Statement** The resource supports implementation or aspects of the University's: • Strategic Plan • Academic and enrolment plans • Research enterprise • Business, staffing and service plans • Campus Master Plan and related asset renewal or maintenance plans • Alignment with standards the University is seeking to achieve	The allocation of the resource is NOT or is only marginally aligned with the University's plans.	The allocation of the resource is aligned with some of the University's plans and contributes to their implementation and achievement.	The allocation of the resource is highly aligned with most of the University's plans and greatly contributes to their implementation and achievement	2	___ / 20 pts
	___ out of 10 pts				

Rationale Statement

In the resource request process, applicants are encouraged to:

Describe how the resource aligns with and / or supports the achievement of University's plans, standards as listed above as well as its research and outreach mandates. **Outline** benchmarks, indicators, direct comparison with other institutions, and before-and-after descriptions to demonstrate change and progress in the pursuit of the University's plans.

Resource Request Evaluation Criteria

	A1	A2	A3	B	C = A x B
	0 to 3 pts **Inadequate to Poor**	**4 to 7 pts** **Average**	**8 to 10 pts** **Good to Excellent**	**Weighing Factor**	**Total**
Criterion B – Excellence, Innovation, Creativity and Inclusiveness **Assessment Statements** The resource supports: • The leadership, competitive position and differentiation of the faculty, school or department within the relevant environment(s) or market(s) it targets or intends to target • The fostering of learning excellence / the promotion or demonstration of innovation / the creation of conditions that mirror external best-in-class practices • The varied needs (including special needs) and expectations of students, clients, partners or users • Compliance with applicable accreditation requirements	The allocation of the resource is poorly aligned with the assessment statements and does NOT or only marginally contributes to excellence, innovation and inclusiveness at the University.	The allocation of the resource aligns with 1 or 2 of the assessment statements and contributes, directly and demonstrably, to excellence, innovation and inclusiveness at the University	The allocation of the resource aligns with 3 or 4 of the assessment statements and greatly cont ributes, directly and demonstrably, to excellence, innovation and inclusiveness at the University	2	___ / 20 pts
	___ out of 10 pts				
Rationale Statement In the resource request process, applicants are encouraged to: **Describe** how the requested resource contributes to the pursuit of Excellence, Innovation, Creativity and Inclusiveness by the faculty, school or the department, and in relation to the Assessment Statements listed above. **Outline** the anticipated impact(s) or risk(s) incurred by the faculty, school or the department if the resource is not allocated in relation to the Assessment Statements listed above.					

Resource Request Evaluation Criteria

	A1	A2	A3	B	C = A x B
	0 to 3 pts **Inadequate to Poor**	**4 to 7 pts** **Average**	**8 to 10 pts** **Good to Excellent**	**Weighing Factor**	**Total**
Criterion C – Benefits **Assessment Statements** The resource creates measurable: • Additional revenue stream(s), saving(s) or efficiencies • Collaboration and strengthening of pathways, synergies and asset sharing between programs or services • Exceptional learner success / user experience / customer satisfaction • Enhancement(s) of industry, alumni, education and/or community partnerships	The allocation of the resource is poorly aligned with the assessment statements and does NOT or only marginally contributes direct and demonstrable benefits to the University.	The allocation of the resource aligns with 1 or 2 of the assessment statements and contributes direct and demonstrable benefits to the University.	The allocation of the resource aligns with 3 or 4 of the assessment statements and greatly cont ributes direct and demonstrable benefits to the University.	3	___ / 30 pts
	___ out of 10 pts				

Rationale Statement

In the resource request process, applicants are encouraged to:

Describe and/or **quantify** how the requested resource benefits the University in general, or specific stakeholder or client group in particular, as per the Assessment Statements listed above. **Identify** the direct and indirect beneficiaries of investment in the resource. **Outline** the baseline(s) and the measurement method(s) to be used to monitor the continued benefits resulting from investment in the resource.

Resource Request Evaluation Criteria

	A1	A2	A3	B	C = A x B
	0 to 3 pts **Inadequate to Poor**	**4 to 7 pts** **Average**	**8 to 10 pts** **Good to Excellent**	**Weighing Factor**	**Total**
Criterion D – Stewardship and Sustainability **Assessment Statements** The resource fosters, demonstrates or addresses: • Alignment with University Sustainability Plan • Highest and best use of University resources • Life-cycle status of resource(s) being replaced • Long-term potential to adapt or re-purpose allocated resource(s) • Social and ecological sustainability	The allocation of the resource is poorly aligned with the assessment statements and does NOT or only marginally contributes to the stewardship and sustainability objectives of the University.	The allocation of the resource aligns with 1 or 2 of the assessment statements and contributes, directly and demonstrably, to the stewardship and sustainability objectives of the University	The allocation of the resource aligns with 3 or more of the assessment statements and greatly contributes, directly and demonstrably, to the stewardship and sustainability objectives of the University	1	___ / 10 pts
	___ out of 10 pts				
Rationale Statement In the resource request process, applicants are encouraged to: **Describe** how the requested resource fosters, demonstrates or addresses the University's Stewardship and Sustainability goals and plans as per the Assessment Statements listed above. **Outline** the qualitative and quantitative baseline(s) and the measurement method(s) to be used to monitor progress in the pursuit of Stewardship and Sustainability resulting from investment in the resource.					

Resource Request Evaluation Criteria

	A1	A2	A3	B	C = A x B
	0 to 3 pts Inadequate to Poor	4 to 7 pts Average	8 to 10 pts Good to Excellent	Weighing Factor	Total
Criterion E – Investment and Risk **Assessment Statements** The request for resource allocation considers or recognizes: • Size of initial investment in capital or other resources, space in particular • Donation, unencumbered funding, or contribution in kind from external source(s) • Recurrent operating, renewal and maintenance costs • Compliance with regulatory requirements • Implementation or operational risk factors	The allocation of the resource has low feasibility with respect to the assessment statements and represents a poor investment / risk decision for the University.	The allocation of the resource has acceptable feasibility with respect to the assessment statements and represents an acceptable investment / risk decision for the University.	The allocation of the resource has high feasibility with respect to the assessment statements and represents a good investment / risk decision for the University.	2	___ / 20 pts
	___ out of 10 pts				

Rationale Statement

In the resource request process, applicants are encouraged to:

Summarize key aspects of the business case, costs, amortization, payback and/or risks associated with procuring the requested resource in relation to the Assessment Statements listed above. **Describe** potential future deferred costs and cumulated risk(s) factors related to forgoing the requested investment. **Outline** known risk factors related to the implementation / installation of the requested resource.

TOTAL SCORE CRITERIA A to E	__ / 100 pts