



# Vancouver Scheduling Project

Recommendations Sessions

November 25-27, 2020





## Agenda

1. Welcome
2. Project Overview
3. Simulations & Evaluations
4. UBCV Scheduling Recommendations
5. Next Steps (Phase 2)



# Project Phase 1

September 2018

June 2019

July 2019

April 2020

May 2020

December 2020

## Project Direction and Analysis

- Develop project charter and plan
- Establish project team & governance
- Approval of project plan, scope and budget from sponsors
- Dept/Institution level current state analysis
- Identify system requirements and inputs gathering tool
- Analysis of room inventory

## Consultation

- Inputs gathering from departments/faculties/students
- Data analysis and reporting on scheduling requirements and constraints gleaned from consultations
- Identify system tools to support future model
- Identify simulation options

## Simulations & Evaluation

- Perform scheduling simulations
- Conduct impact assessments
- Report on and consult with stakeholders on simulation findings and recommendations
- Seek approval from project sponsors on recommendations of a new pattern and model



Identify Improved Scheduling Pattern & Model



# Scheduling Pattern & Model Spectrum

PATTERN

Limited flexibility on allowable day and start time combinations

## Limited Block Pattern

★ current state pattern

Moderate flexibility on allowable day and start time combinations

## Multi-Block Pattern

Complete flexibility on allowable day and start time combinations

## No Pattern

MODEL

★ current state model

## Distributed

Departments manually determine when (dates/times) and where (room) a section will be scheduled

## Hybrid

Departments determine when (dates/times) a section is offered and Scheduling Services leverages Scientia to assign classrooms (GTS)

## Coordinated

Departments provide scheduling inputs (requirements, constraints, and considerations) and Scheduling Services leverages scheduling system, Scientia, to produce the schedule



## Hybrid Model

### Hybrid Simulation A

#### Room Allocation Model

- Department Zone

#### Scheduling Pattern

- Current pattern

#### Room inventory

- Current state

### Hybrid Simulation B

#### Room Allocation Model

- Department Zone

#### Scheduling Pattern

- Current Pattern

#### Room Inventory

- Future state room inventory

## Coordinated Model

#### Room Allocation Model

- Campus Zone

#### Scheduling Pattern

- Monash adapted (no pattern)

#### Room inventory

- Current state



## Scheduling Recommendations

You can continue to use the M/W/F , T/R pattern, as it exists within the new pattern.. Changes to course offerings, including dates and times are at the discretion of faculties/departments.

### MULTI-BLOCK PATTERN

“McGill/Queen’s” Pattern:

- 1 hour blocks on M/T/R, M/W/F, T/R/F
- 1.5 hour blocks on M/W, T/R, W/F
- 2 hour blocks on M, T, W, R, F
- 3 hour blocks on M, T, W, R, F





### HYBRID SCHEDULING MODEL

- Departments determine when a course section is offered
- Scheduling Services leverages Scientia and a Department Zone Model to assign General Teaching Space (GTS)



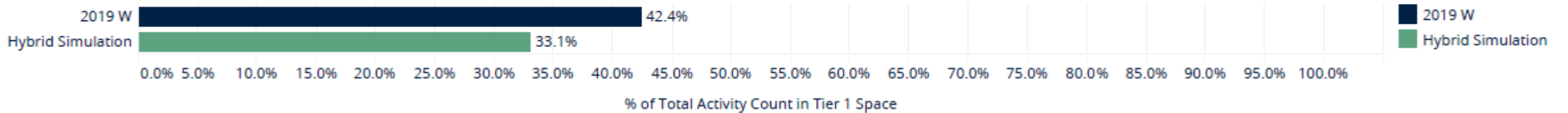


# Departmental Room Zone Allocation Model

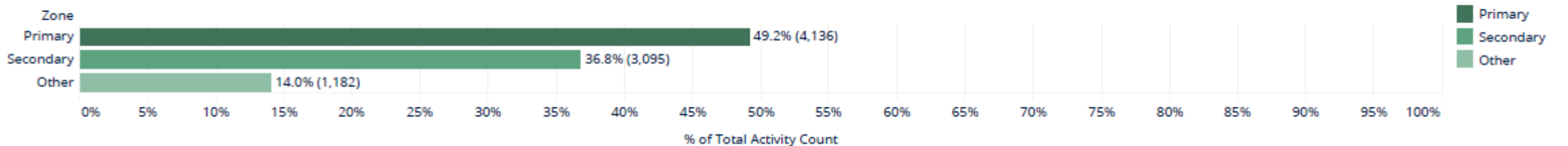
- The Departmental Zone model replaces the Tiered Priority model for room allocation.
- Academic units identify their departmental centroid.
- GTS space is assigned based on pedagogical requirements, within a five to ten minute walk from the Departmental centroid.
  - ❖ Primary: 5 minutes 
  - ❖ Secondary: 10 minutes 
  - ❖ Other: Outside of Primary or Secondary\*



## Tier 1 Space Comparison



## Location of activities in the Departmental Zone Room Allocation Model (Hybrid Simulation)





## Course Codes Without Current Tier 1 Access

Department	Course Code	Primary Zone	Secondary Zone	Tier 1 Access
Arts Interdisciplinary Studies Program	ASIC	BUCH A101, BUCH A102, BUCH A103, BUCH A104, BUCH A201, BUCH A202, BUCH A203, BUCH B141, BUCH B208, BUCH B209, BUCH B210, BUCH B211, BUCH B213, BUCH B215, BUCH B216, BUCH B218, BUCH B219, BUCH B302, BUCH B303, BUCH B304, BUCH B306, BUCH B307, BUCH B308, BUCH B309, BUCH B310, BUCH B312, BUCH B313, BUCH B315, BUCH B316, BUCH B318, BUCH B319, BUCH D201, BUCH D204, BUCH D205, BUCH D207, BUCH D209, BUCH D213, BUCH D214, BUCH D216, BUCH D217, BUCH D218, BUCH D219, BUCH D221, BUCH D222, BUCH D228, BUCH D229, BUCH D301, BUCH D304, BUCH D306, BUCH D307, BUCH D312, BUCH D313, BUCH D314, BUCH D315, BUCH D316, BUCH D317, BUCH D319, BUCH D322, BUCH D323, BUCH D325	ALRD 105, ALRD 112, ALRD 113, ALRD 121, ALRD B101, AUDX 142, AUDX 157, HENN 200, HENN 201, HENN 202, HENN 301, HENN 302, HENN 304, IBLC 155, IBLC 156, IBLC 157, IBLC 158, IBLC 182, IBLC 185, IBLC 191, IBLC 192, IBLC 193, IBLC 194, IBLC 261, IBLC 263, IBLC 264, IBLC 265, IBLC 266, IBLC 460, IBLC 461, LASR 102, LASR 104, LASR 105, LASR 211, LASR 5C, MATH 100, MATH 102, MATH 104, MATH 105, MATH 202, MATH 203, MATH 204, MATH 225, MATX 1100, UCLL 101, UCLL 103, UCLL 107, UCLL 109	None





## ACADEMIC COURSE SCHEDULING POLICIES

### HYBRID MODEL

### CORE SCHEDULING ELEMENTS

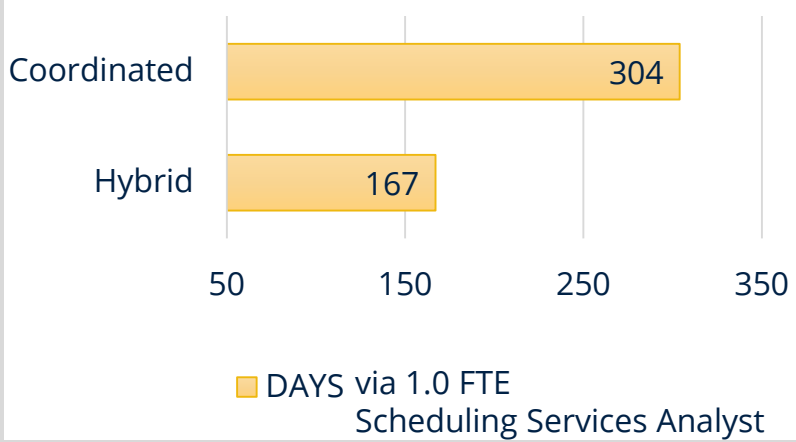
- **Course priority order:** Accessibility requirements, large to small core, large to small electives
- **Conflict free core courses:** Departments retain the task of creating a conflict free schedule
- **Teaching hours:** Change of daytime hours to 8:30 am to 5:30 pm
- **Distribution across the day:** No more than 10% difference in prime time vs non-prime time
- **Distribution across the week:** Even distribution across the week
- **Room utilization rate:** Target: 70%
- **Seat alignment rate :** Target: 70%
- **Room allocation model:** Zoning model that groups courses by geographical location
- **Faculty availability:** At the discretion of the Faculty/Department
- **Thursday block:** Under review by Senate Academic Policy Committee

### MULTI-BLOCK PATTERN



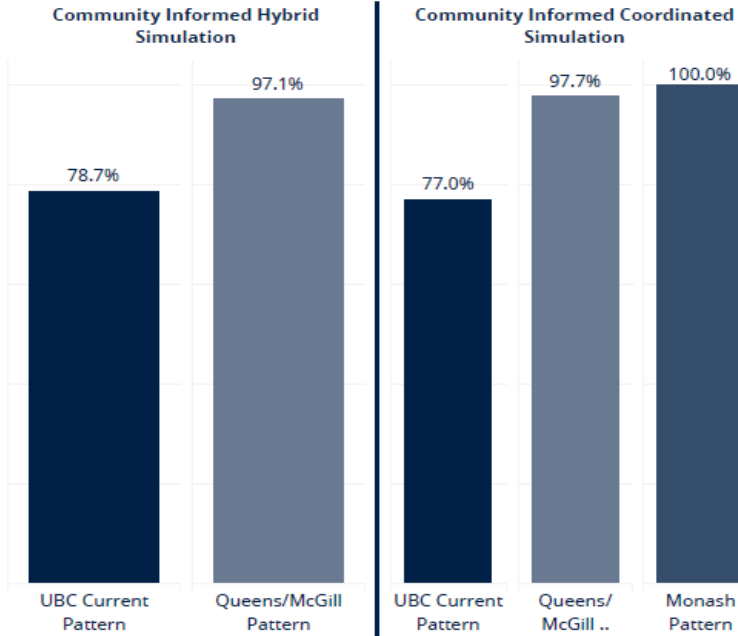
# Simulation Results & Analysis

## Scheduling Services effort



## Pattern flexibility analysis

Metric 1.1: X% of courses, for which a scheduling pattern exists



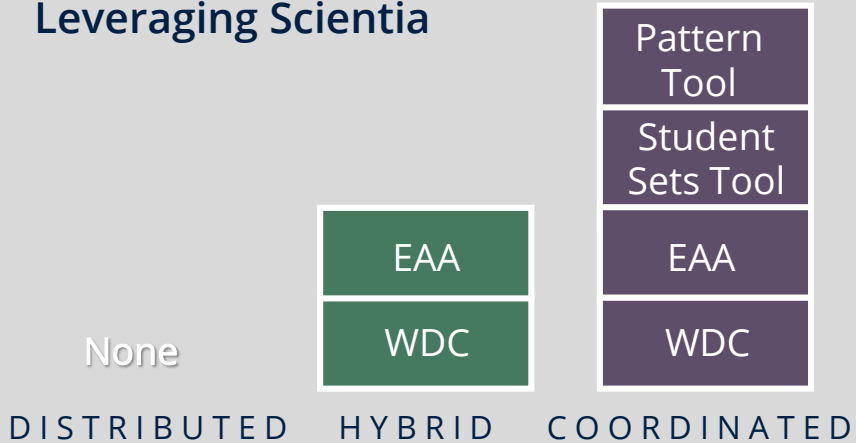
## Seat utilization

In both models we can schedule within the target utilization range (70-80%) while meeting the majority of pedagogical requirements

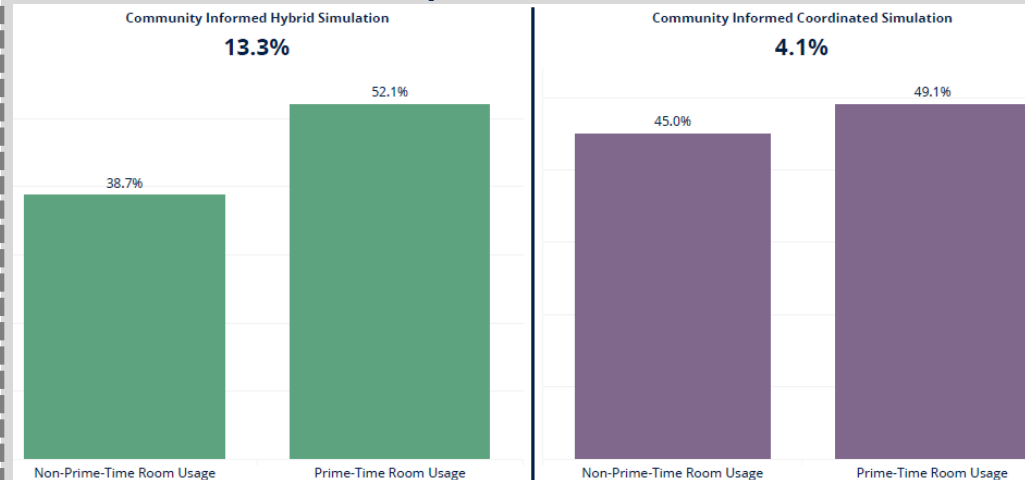
## Room utilization

Room capacity	# of Rooms	2019W	Hybrid	Coordinated
101-150	19	76.40%	70.60%	73.60%
151-200	15	80.00%	74.60%	79.60%
201-300	12	86.00%	79.70%	73.30%
Over 300	5	90.10%	76.30%	77.40%

## Leveraging Scientia



## Prime time vs non-prime time



## Room requirements

Both models provided flexibility to accommodate room assignments based on pedagogical requirements:  
 Coordinated (86.3%)  
 Hybrid (81.5%)



## Recommended Scheduling Solutions for Implementation

### MULTI-BLOCK PATTERN

### HYBRID SCHEDULING MODEL

## NOTABLE CHANGES

- Elimination of Tier 1 and 2 room priority assignments and introduction of room zone allocation model
- T-Reps will schedule in accordance with recommended Core Scheduling Elements that will be outlined in a Scheduling Policy
- Potentially the timetable start time shifts from 8am to 8:30am\*
- T-Reps will leverage new scheduling system tools in Scientia (e.g. WDC instead of TimeTabler)
- Business process timelines will be adjusted (TBD in Implementation)

\* This proposal is currently under analysis due to mixed feedback; and may be deferred.



### MULTI-BLOCK PATTERN



### HYBRID SCHEDULING MODEL

- ✓ Aligns with UBC Vancouver's cultural readiness for change
- ✓ Collaborative scheduling models are a best practice in higher education; increases partnership between Scheduling Services & Academic units

- ✓ Affords departments agency in their course schedule
- ✓ Minimal sustainment requirements (e.g. ~1 Scheduling Services FTE)

#### KEY BENEFITS

- Eases the T-rep workload; simplifies and standardizes scheduling practices and processes (e.g. WDC)
- Ensures appropriate allocation of space based on teaching requirements and increases the efficient use of teaching space
- Room allocation model reduces walking time and distance for teaching faculty and students
- Provides flexibility and adaptability for pedagogical innovation and change
- Leverages functionality in existing scheduling software



# Project Next Steps



Simulation & Evaluation

Implementation

Share results and recommendations w/ Committee of Deans

Share results and recommendations Advisory groups, TRAC, SPSC and Sponsors

Share results and recommendations with scheduling community

Approval of recommendations in alignment with project governance

Phase 2 Budget Approval

Share phase 1 decisions and recommendations with Scheduling Community

Phase 2 project work begins

Go Live: 2022W schedule



Questions? Comments?

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