EXECUTIVE SUMMARY

Goal: Support excellence in transformative teaching and learning. (p. 1)

KPI 1: A scheduling pattern that is flexible to accommodate the scheduling of various courses, across disciplines.

- Compared to the current UBC pattern, both the McGill/Queens and Monash patterns offer 20% more flexibility. The Monash pattern can accommodate has slightly higher pattern coverage, but can only be applied with the Coordinated model.

Goal: Achieve agility and ease in administration and user experience. (p. 2-3)

KPI 2: Increased use of Scientia's scheduling functionality to improve user experience and scheduling business process.

- The Coordinated model leverages more Scientia functionally than the Hybrid model:
  - Two new Scientia tools would be introduced with the Hybrid model and four with the Coordinated model. These tools would streamline business process and improve user experience.
- Scheduling using the Coordinated model took approximately twice as long as scheduling using a Hybrid model.

Goal: Ensure optimal and effective use of the institution's teaching space and resources. (p. 4-7)

KPI 1: Improved access to classroom space that meets the pedagogical needs of the course.

- The Coordinated model (86.5%) provides slightly more flexibility than the Hybrid model (81.5%) to facilitate assignment of room space based on pedagogical requirements.

KPI 2: Improved utilization of general teaching space.

ROOM UTILIZATION:

- In both Coordinated and Hybrid simulations, large classrooms (101+ capacity) have a strong utilization rate (above 70%). While smaller classrooms are notably underutilized (~45% across both simulations).
- Note: We have limited visibility into RTS spaces; the actual utilization may be higher than currently reported (~24.5% across both simulations).

Distribution:

- It is feasible for both models to accomplish the target distribution of sections scheduled within prime-time vs. non-prime-time (no more than 10% difference).
- The Coordinated model provides more flexibility than the Hybrid model to facilitate a more even distribution across the day.

Seat alignment:

- Both models meet the 70-80% target range for the seat alignment, with the Coordinated model providing a slightly higher seat alignment ratio than the Hybrid model.
- In both models we can schedule within the target utilization range (70-80%) while meeting the majority of pedagogical needs.

Goal: Ensure reliable, integrated and accessible data that enables informed and strategic decision-making. (p. 8)

KPI 1: Improved transparency of accurate scheduling data captured in Scientia.

KPI 2: Ability to produce scheduling reports to inform strategic decision making.

- In a Hybrid model some additional information is captured from departments (i.e. room requirements and course offerings).
- In a Coordinated model a comprehensive set of scheduling requirements is captured.
- Note: The KPI's for this goal will only be measured post-implementation.

Goal: Support academic success. (p. 9)

KPI 1: Core courses are scheduled in a manner that minimizes course scheduling conflicts.

Note: Core courses are part of the approved program curriculum and listed in the academic calendar.

- In the Coordinated simulation, for core courses scheduled in GTS, there are no student schedule conflicts.
  - In a Coordinated model there is an opportunity to mitigate core course conflicts with the use of Scientia's Student Sets feature.
  - In a Hybrid model the responsibility for creating conflict free courses remains with the department, thus conflicts may exist.

**Goal: Support excellence in transformative teaching and learning.**
- Support the pedagogical needs of various courses and programs, which vary across disciplines.
- Provide scheduling stakeholders with flexibility and adaptability for innovation and change.

KPI 1: A scheduling pattern that is flexible to accommodate the scheduling of various courses, across disciplines.

Metric 1.1: X% of courses, for which a scheduling pattern exists. (Target: 95%)
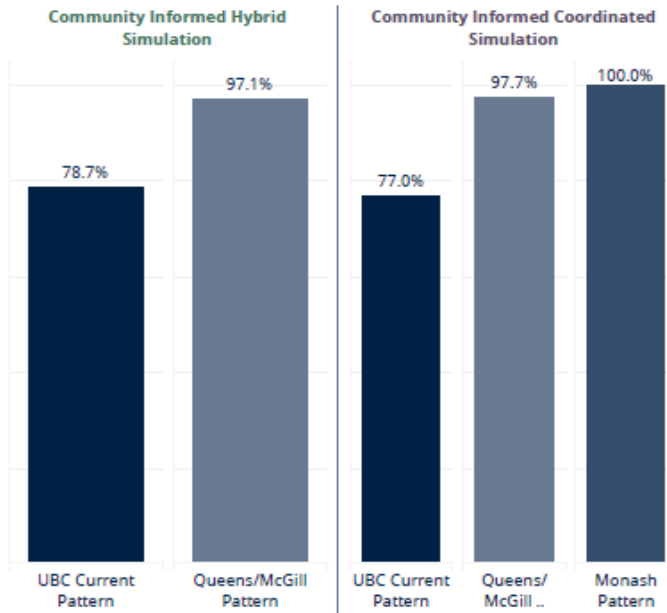
Metric 1.2: X% of courses, for which a pattern exists, actually being scheduled on pattern. (Target 85%)
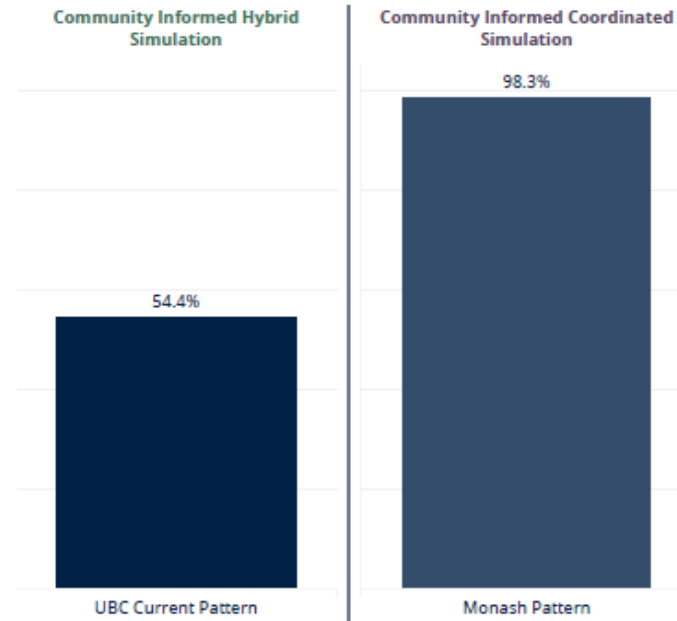
Summary: Monash has a higher coverage, with a difference of 2.3%. Monash provides opportunity to have a higher rate of compliance because of the flexibility it offers. Note: The Monash Pattern is not applicable to the Hybrid Scheduling Model.

Goal: Achieve agility and ease in administration and user experience.

- Simplify, streamline and align scheduling practices and processes.
- Leverage functionality in existing scheduling software (i.e. Scientia) to gain efficiencies in human resources, business processes and teaching space resources.

KPI 1: Increased coordination between faculties, schools and Scheduling Services in the development of the academic course schedule.

Metric 1.1: X% reduction in scheduling requests requiring manual intervention by Scheduling Services.

(To be measured in post-implementation)

KPI 2: Increased use of Scientia's scheduling functionality to improve user experience and scheduling business process

Metric 2.1: Implementation of additional Scientia tools.

Community Informed Hybrid Simulation	Community Informed Coordinated Simulation
Two additional tools to be implemented - Web Data Collector (WDC) - Enterprise Activity Adjuster (Phase 2)	Four additional tools to be implemented: - Web Data Collector (WDC) - Enterprise Activity Adjuster (Phase 2) - Student Sets Tool - Pattern Tool

Metric 2.3: Time required to complete simulated campus timetable:

Community Informed Hybrid Simulation

WDC Import	7 hrs
Data Cleanup, Validation, Prepwork	693 hrs
Quality Control	21 hrs
Simulation	448 hrs

Total time: 1,169 hours (167 days)

Community Informed Coordinated Simulation

WDC Import	7 hours
Data Cleanup, Validation, Prepwork	1589 hours
Quality Control	56 hours
Simulation	476 hours

Total time: 2,128 hours (304 work days).

Summary:

The Coordinated model leverages more Scientia functionally than the Hybrid model.

Scheduling using the Coordinated model took approximately twice as long as scheduling using a Hybrid Model.

KPI 3: Improved user experience for stakeholders.

Metrics 3.1: X% decrease of UBC IT troubleshooting tickets for Scientia issues.
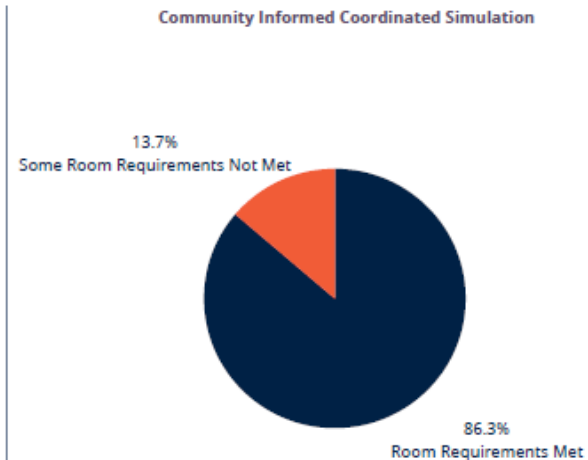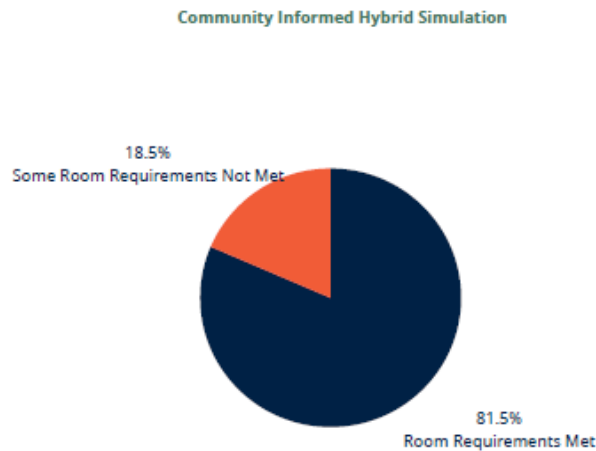*(To be measured in post-implementation)*

Goal: Ensure optimal and effective use of the institution's teaching space and resources.

- Ensure appropriate allocation of space based on teaching requirements and increase utilization of teaching spaces.

KPI 1: Improved access to classroom space that meets the pedagogical needs of the course.

Metric 1.1: At least 80% of room requirements are met.

Community Informed Hybrid Simulation

18.5%
Some Room Requirements Not Met

81.5%
Room Requirements Met

Community Informed Coordinated Simulation

13.7%
Some Room Requirements Not Met

86.3%
Room Requirements Met

Summary:

Hybrid Simulation

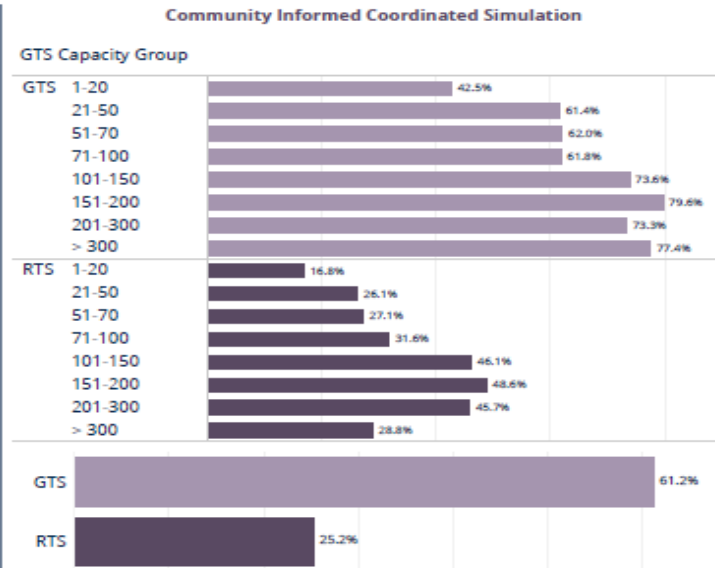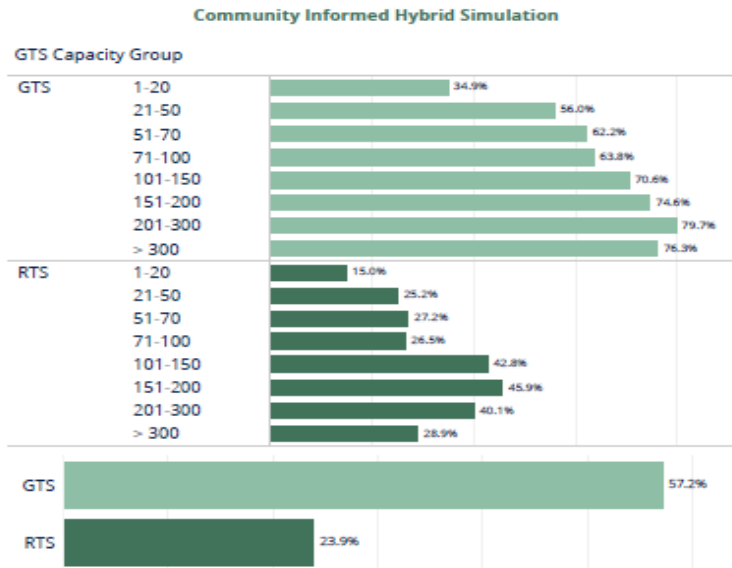- Out of the activities that had room requirements, 81.5% had all requirements met.

Coordinated Simulation

- Out of the activities that had room requirements, 86.3% had all requirements met.

KPI 2: Improved utilization of general teaching space.

Metric 2.1: 70% room utilization in each capacity group.

Community Informed Hybrid Simulation

GTS Capacity Group

GTS	1-20	34.9%
	21-50	56.0%
	51-70	62.2%
	71-100	63.8%
	101-150	70.6%
	151-200	74.6%
	201-300	79.7%
	> 300	76.3%
RTS	1-20	15.0%
	21-50	25.2%
	51-70	27.2%
	71-100	26.5%
	101-150	42.8%
	151-200	45.9%
	201-300	40.1%
	> 300	28.9%
GTS		57.2%
RTS		23.9%

Community Informed Coordinated Simulation

GTS Capacity Group

GTS	1-20	42.5%
	21-50	61.4%
	51-70	62.0%
	71-100	61.8%
	101-150	73.6%
	151-200	79.6%
	201-300	73.3%
	> 300	77.4%
RTS	1-20	16.8%
	21-50	26.1%
	51-70	27.1%
	71-100	31.6%
	101-150	46.1%
	151-200	48.6%
	201-300	45.7%
	> 300	28.8%
GTS		61.2%
RTS		25.2%

Summary:

Hybrid Simulation

- Rooms at a capacity of 101+ has an average GTS room utilization of 75.3%.
- The average room utilization rate is 63.0% between the 51-100 room capacity.
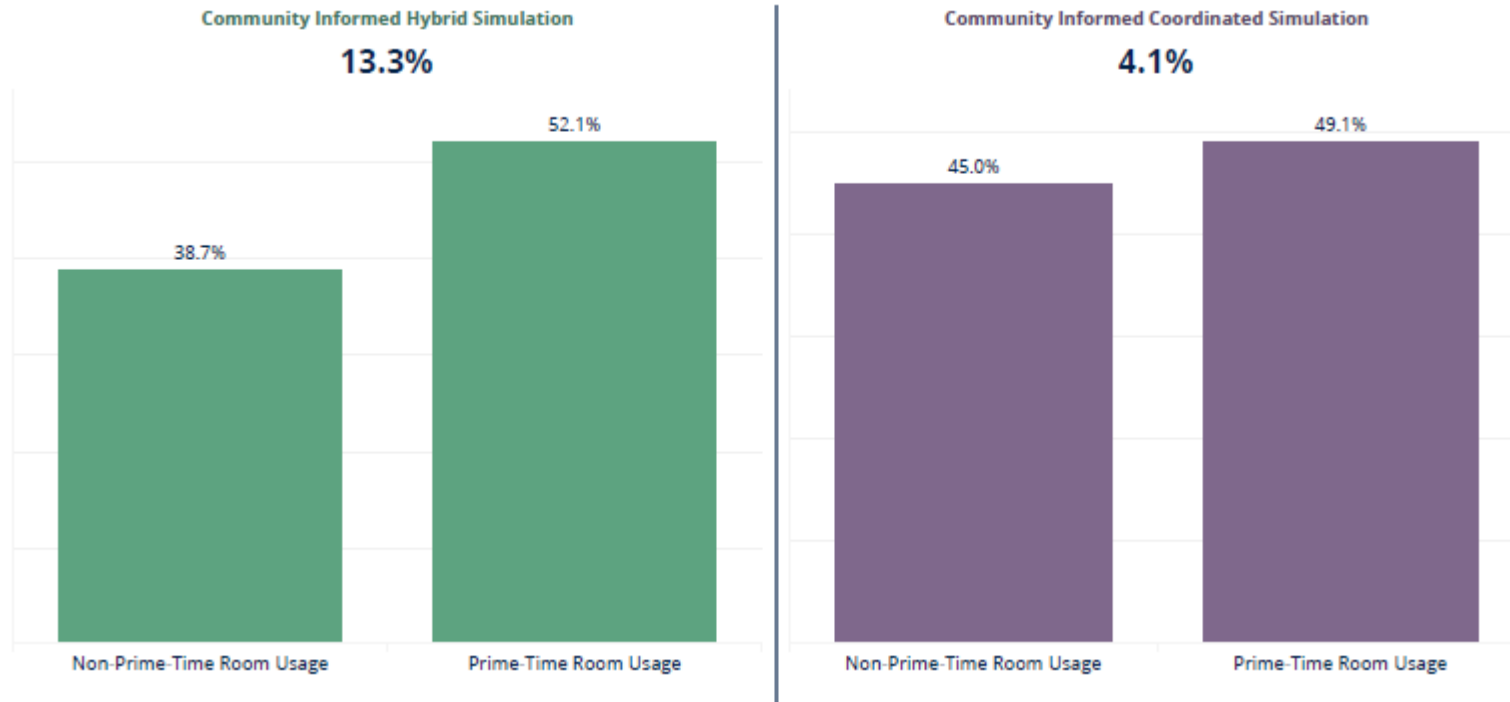- Rooms smaller than a capacity of 50 have a lower room utilization rate.

Coordinated Simulation

- Rooms at a capacity of 100+ has an average GTS room utilization of 76.0%.
- The average room utilization rate is 61.9% between the 51-100 room capacity.
- Rooms smaller than a capacity of 50 have a lower room utilization rate.

Note: Scheduling Services has no visibility into RTS spaces. The actual utilization may be higher than currently reported (~24.5% across both simulations).

Metric 2.2: Prime-time room usage vs non-prime time, with a target difference of no more than 10% between each group.
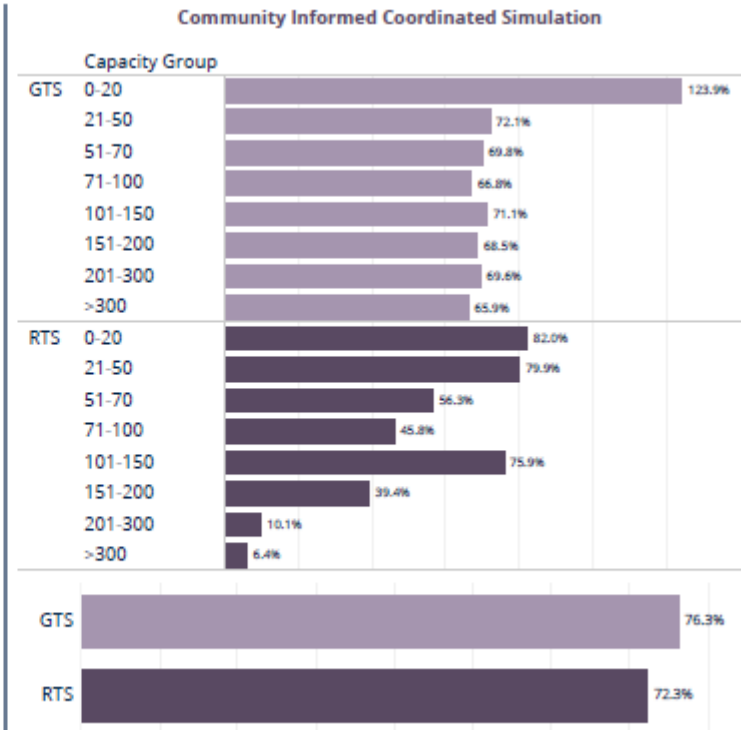

Community Informed Hybrid Simulation
13.3%

52.1%

38.7%

Non-Prime-Time Room Usage | Prime-Time Room Usage

Community Informed Coordinated Simulation
4.1%

49.1%

45.0%

Non-Prime-Time Room Usage | Prime-Time Room Usage

Summary:

- With the Coordinated model, there is a better distribution across the day. The difference between prime-time and non-prime-time is approximately 4.1%.
- The Hybrid model can pose some constraints in terms of providing a more even distribution across the day. In comparison to the Coordinated model, the Hybrid model provides less opportunities for rearranging activities between prime- and non-prime-times. This makes it challenging to meet the target 10% difference.

Metric 2.3: 70% seat alignment between section plan size and classroom size.

Summary:
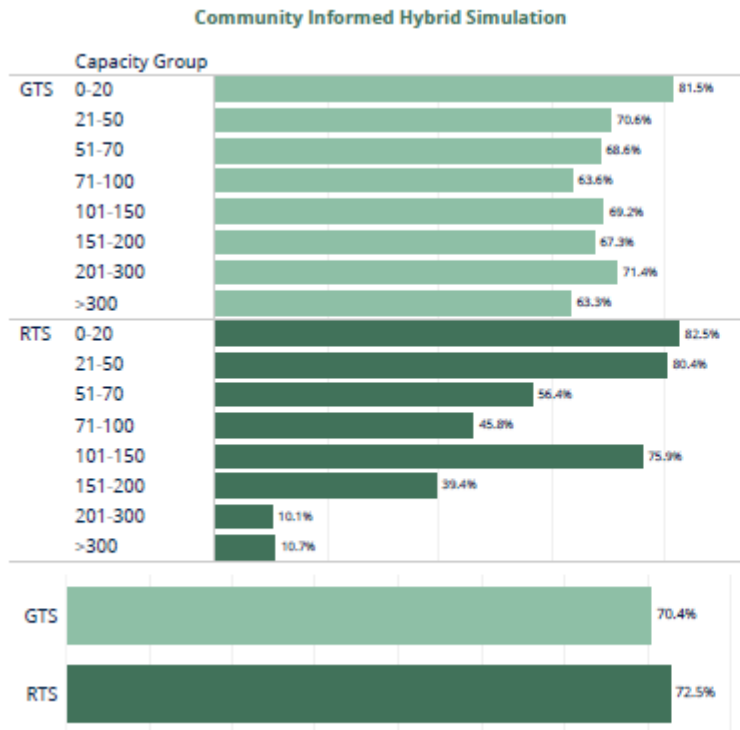
Hybrid Simulation	Coordinated Simulation
The overall GTS seat alignment meets the targeted 70%.	The overall GTS seat alignment is above the target at 76.3%.

Goal: Ensure reliable, integrated and accessible data that enables informed and strategic decision-making.

- Improve access and capture of accurate scheduling data to support more informed strategic decision making.

KPI 1: Improved transparency of accurate scheduling data captured in Scientia.

Metric 1.1: X% increase in the population of data within Scientia required for creating a schedule.
(To be measured in post-implementation)
Metric 1.2: Plan size (i.e. course section size) data in Scientia within X% of enrolment data in SIS.
(To be measured in post-implementation)
Metric 1.3: 100% of academic course activities scheduled into Scientia (i.e. restricted teaching space, department administrative space, informal space, general teaching space, etc.)
(To be measured in post-implementation)

KPI 2: Ability to produce scheduling reports to inform strategic decision making.

Metric 2.1: Regular production of scheduling reports for each department (e.g. room and seat utilization and course offerings and trends).
(To be measured in post-implementation)

Summary:

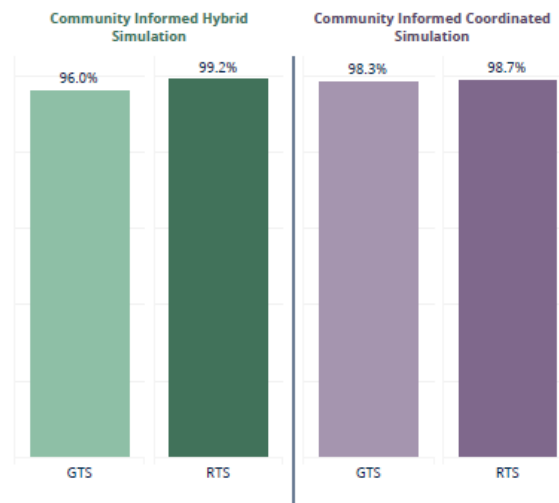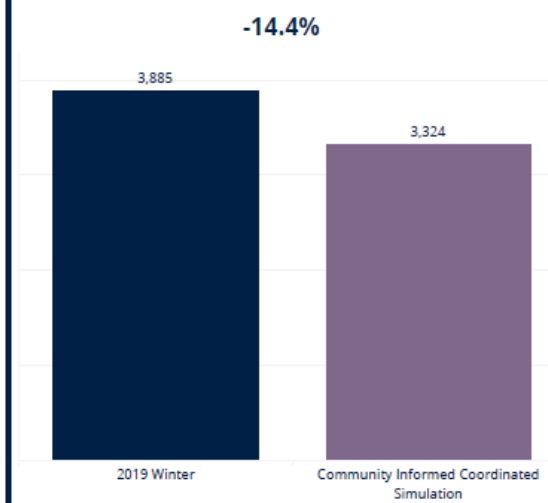| Hybrid Simulation	Coordinated Simulation
Some additional information is captured from departments (i.e. room requirements and course offerings).	A comprehensive set of scheduling requirements is captured.

Goal: Support academic success.

- Mitigate student schedule conflicts allowing for increased availability of core courses
- Core courses are part of an approved program curriculum and listed in the academic calendar.

KPI 1: Core courses are scheduled in a manner that minimizes course scheduling conflicts.

Metric 1.1: Core courses for each specialization and year level are conflict free.

Metric 1.2: 10% less core course sections scheduled in prime-time compared to 2019W.

Community Informed Hybrid Simulation: GTS 96.0%, RTS 99.2%
Community Informed Coordinated Simulation: GTS 98.3%, RTS 98.7%

-14.4%
2019 Winter: 3,885
Community Informed Coordinated Simulation: 3,324

Summary:

- In the Coordinated simulation, for core courses scheduled in GTS, there are no student schedule conflicts.
- In a Coordinated model there is an opportunity to mitigate core course conflicts with the use of Scientia's Student Sets feature.
- In a Hybrid model the responsibility for creating conflict free courses remains with the department, thus conflicts may exist.

- The Coordinated model shows a more even distribution in prime-time and an improvement by 14.4% compared with the 2019W schedule.