



SPARTANS WILL.

**Pulling a Rabbit out of a Hat...
Course Scheduling
and
Seat Demand**

**Kimberly Blair-Chambers, Associate Registrar
Kristin Schuette, Associate Registrar**

Overview

Initiative

Course scheduling and seat availability for incoming students.

Drivers

- Mobility Project
- Student Success Go Green! Go 15! Campaign
- Anticipated largest incoming class in history

Efforts

- Identify congested meeting times
- Rework outdated scheduling patterns
- Predict course seat demand for new, continuing and transfer students using first year plans and historical data
- Pre-enroll incoming students in planned university and major courses

Results

- Data analysis identified un-met demand in key courses
- Secured funds for additional offerings

Outcome

- Student will get the right course at the right time

Campus Mobility

University wide presidential initiative

Mobility Survey

- July 2017
- 2,571 out of ~11,000 MSU faculty and staff on EL campus responded
- Congestion Contributions
- 89% drive a personal vehicle to work
- More respondents move cars for meetings than for lunch
- Course scheduling configurations
- Predominance of 8-5 work schedule
- Supervisors not already granting flex-time are perceived as being unsupportive of potentially granting flex-time



A culture change related to longstanding practices and perceptions of course scheduling, attending meetings, and work schedules is needed.

Go Green Go 15

Background (<https://msutoday.msu.edu/news/2017/how-msu-is-helping-students-graduate-on-time-and-save-money/>)

- Students who **attempted 15 or more credits** in their first fall, spring and summer semesters recorded **six-year** graduation rates of nearly **88 percent**.
- That compares to MSU's **current 78 percent** graduation rate (which is already nearly 20 percentage points higher than the national average for public universities.)
- Students taking only **12 credits** during their first year had a **2.5 average GPA**, while those taking a minimum of **15 credits** had a **3.1 average GPA**.
- Students who took 15 or more credits were less likely to re-take classes.

Campaign

- Launched Fall 17
- Students encouraged to take 15 credits/semester
- Goal is to graduate within four years
- Save money!
- Marketing - Schedule of Courses, Table Tents, etc.



Go Green Go 15

Status

- Students w/ 15+ as of first day of classes:
 - Fall 16: 28%
 - Fall 17: 43%
 - Fall 18: 50%+
- 2018 Graduation rate 80%

Goal

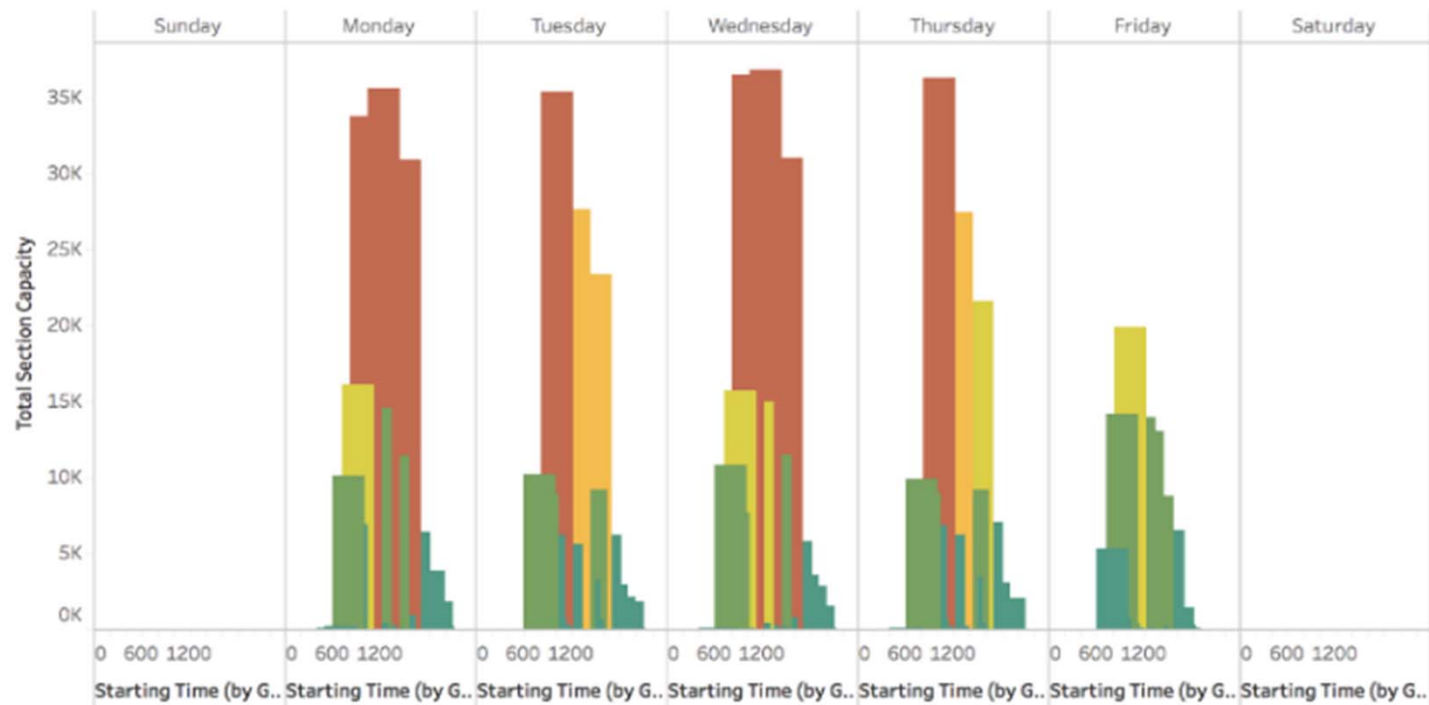
- Increase 6 year graduation rate to 82%



Course Scheduling

An overwhelmingly large number of courses are scheduled to start between the hours of 10:20 a.m. and 3:00 p.m., especially on Mondays and Wednesdays

72% of scheduled seats in Fall 2017 were in classes that began within this five-hour window



Institutional Studies, Office of Planning and Budgets

Scheduling Issues Revealed

- The Go Green, Go 15 effort revealed the difficulties many students had in arranging workable schedules.
- Distributing classes more broadly throughout the day and week will improve a student's ability to schedule classes they need and decrease campus congestion.
- Improve a student's ability to schedule courses closer to one another, alleviating the need for them to leave and return to campus.

Course Scheduling Action Plan

Increase our engagement with colleges and departments...

- Continue to encourage distribution of classes more broadly throughout the day and week
- Proactively encourage more evening offerings
- Provide reports that highlight specific 10:20-3:00 Start-Time, Friday, Online/Hybrid, and Evening capacity trends for Departments and Programs

2018-2019 Course Scheduling Efforts

- Colleges encouraged to distribute their courses throughout the week and across a larger portion of the day.
- New tool added to workcopy to show capacity across each day/hour including this year/last year comparison.
- New 3-day (M-W-F) 4-credit course scheduling option made available.

Enrollment Distribution Charts by Day of Week

Term: FS18

College: Social Science

Department: Ctr Integrative

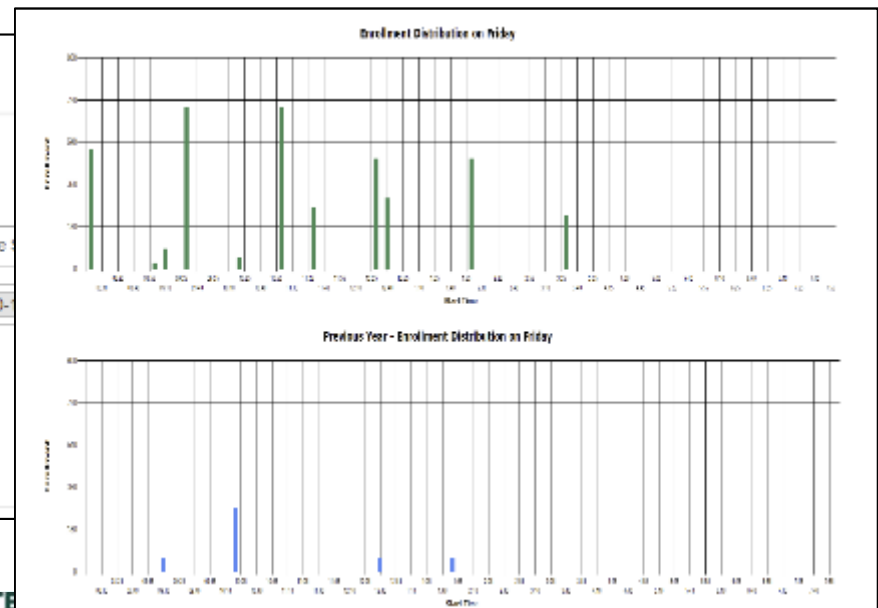
Subject: ISS

Course: *001-099 *100-

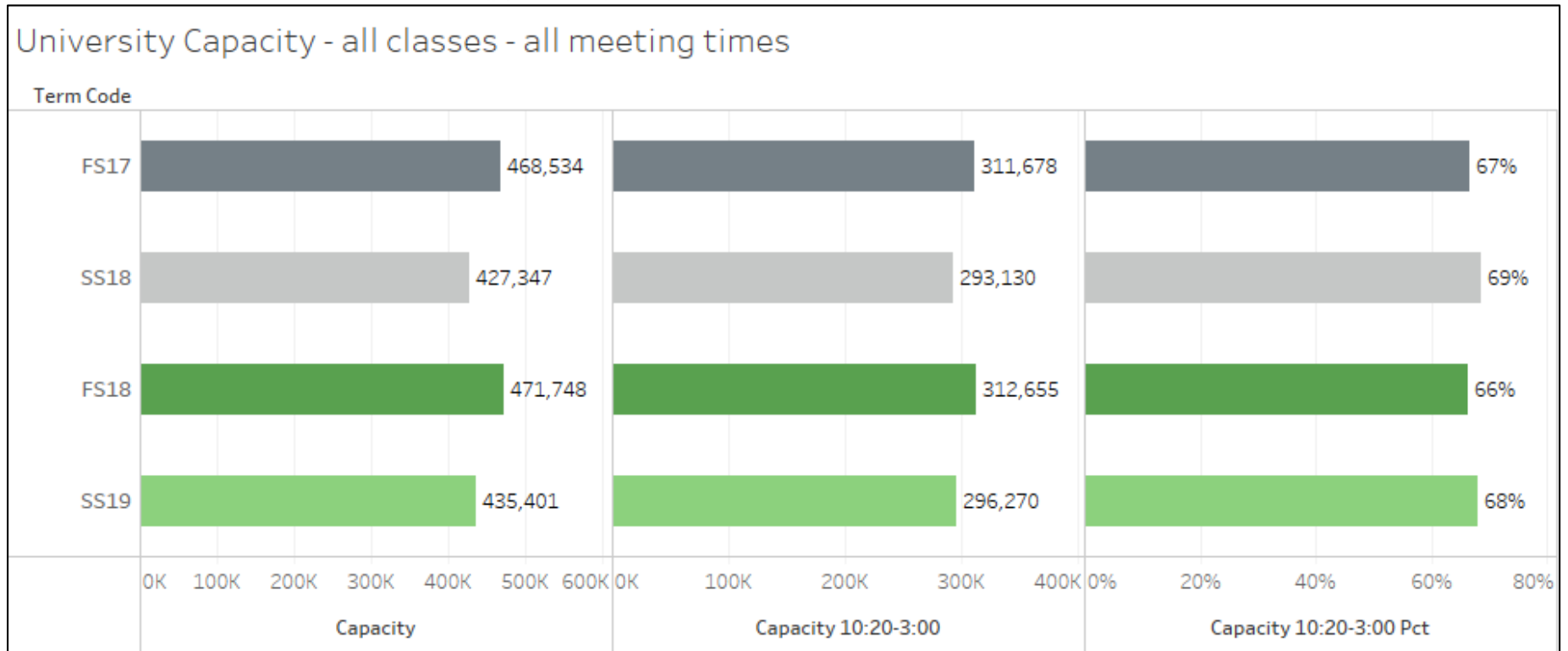
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Include last year's work copy enrollment data

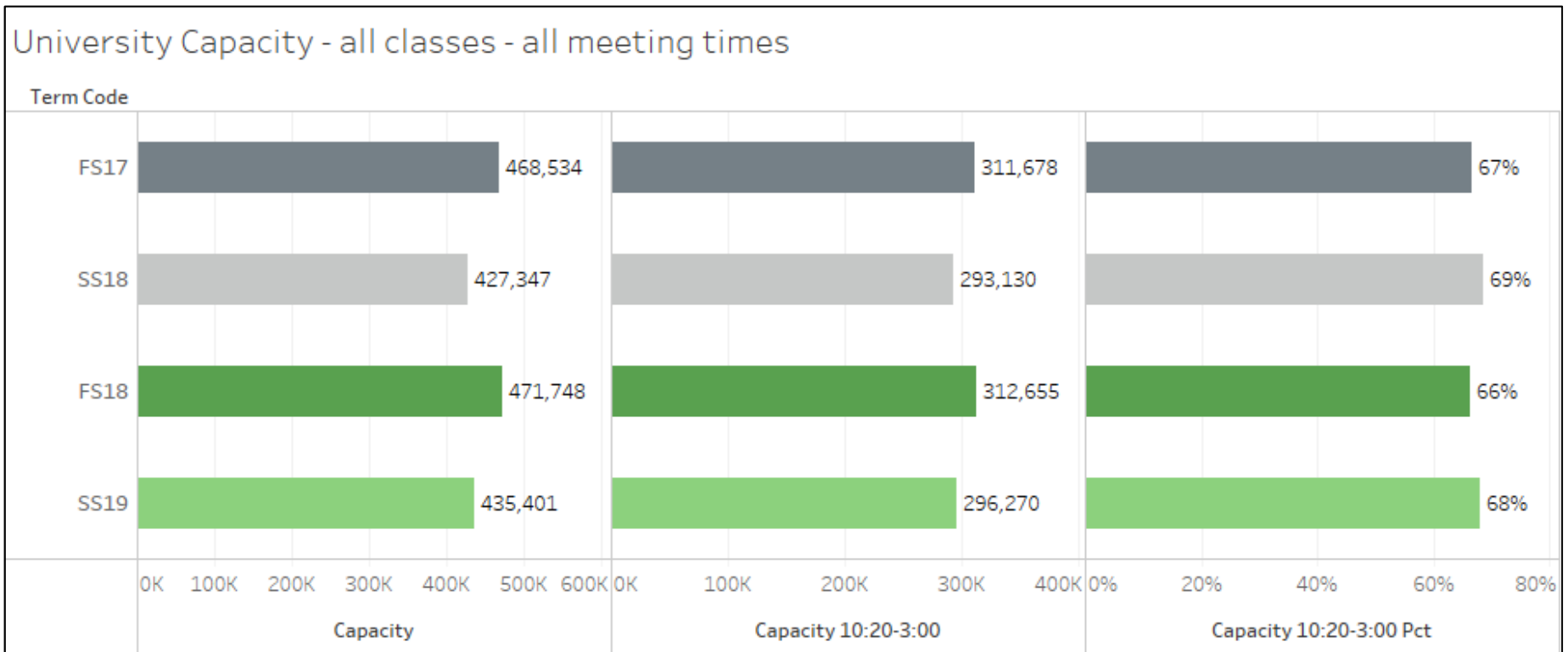
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Overall, little changed...

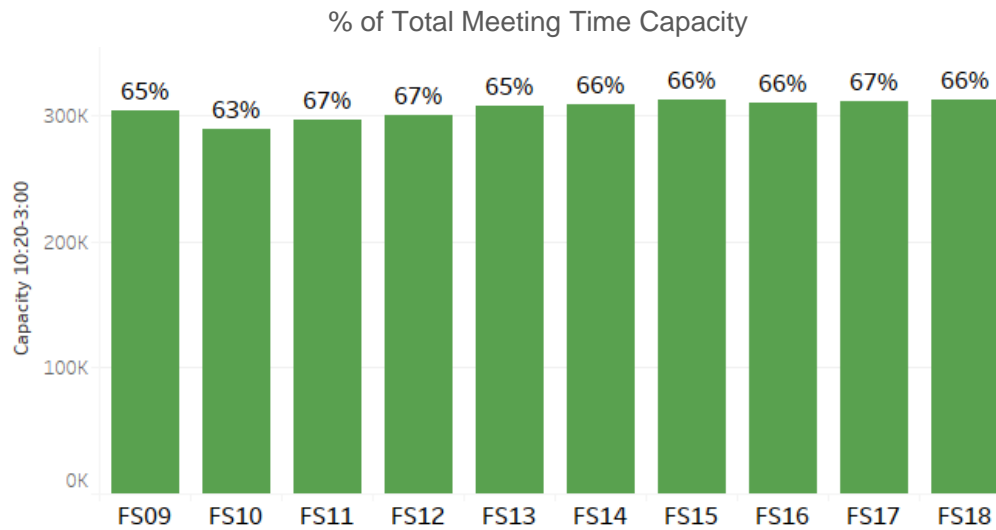


UN Courses (100-400 course level), Mon-Thurs

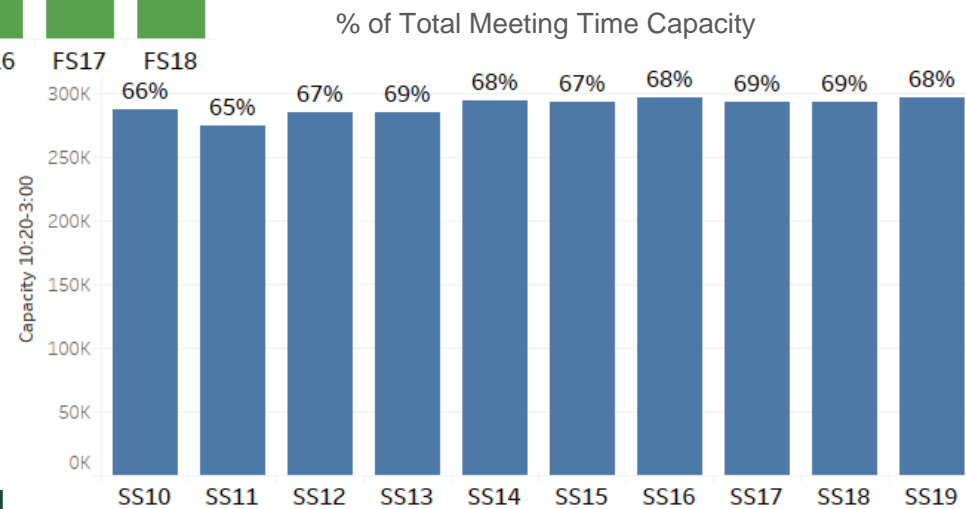


University Capacity - All Courses 10:20-3:00 Start-Time

Fall Terms



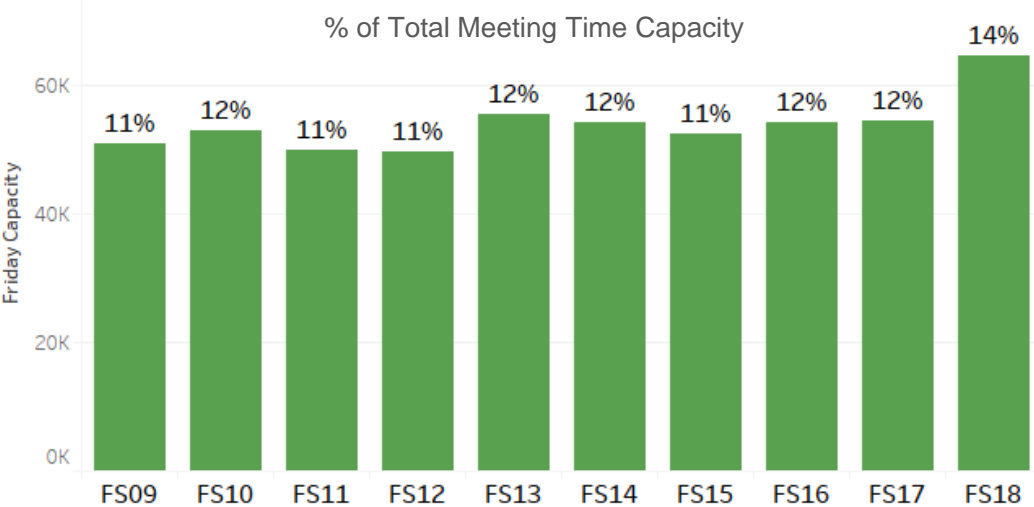
Spring Terms



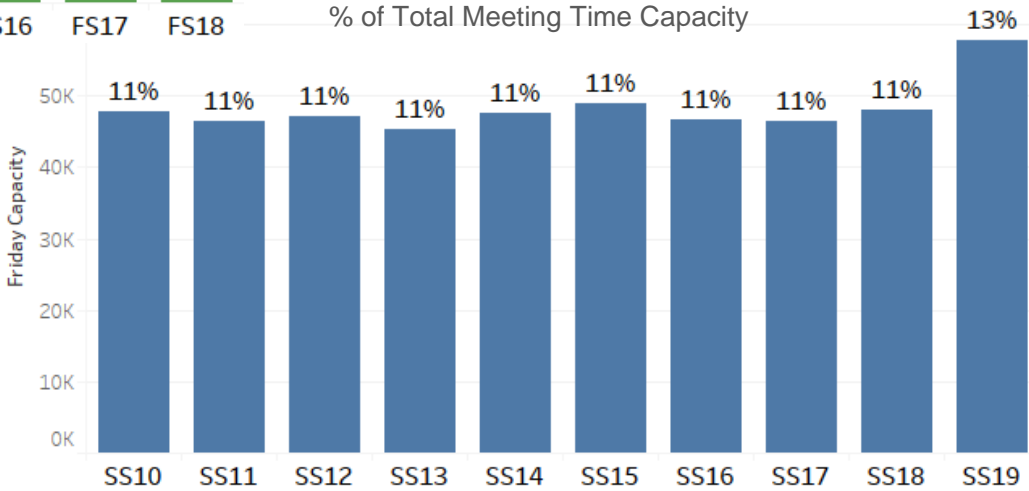
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University Capacity - Friday Meeting Times

Fall Terms

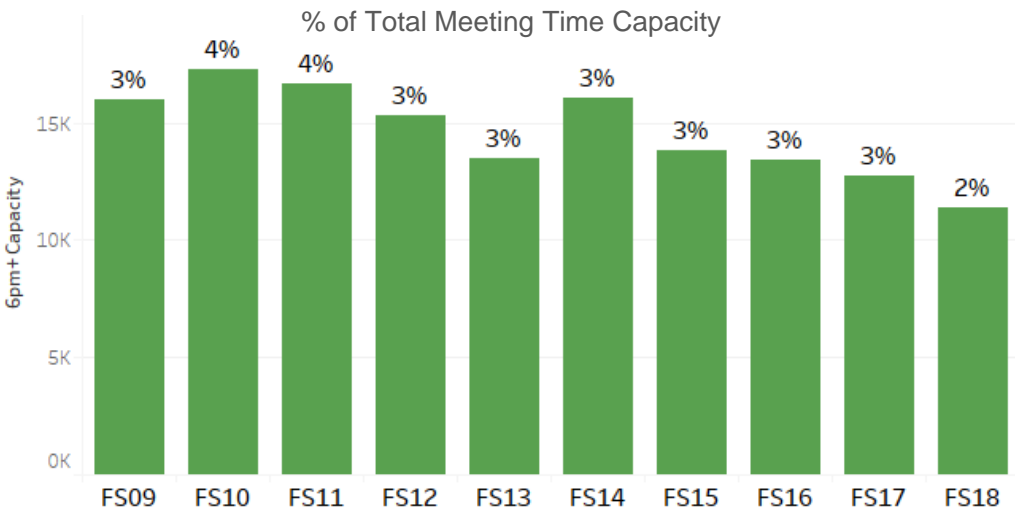


Spring Terms

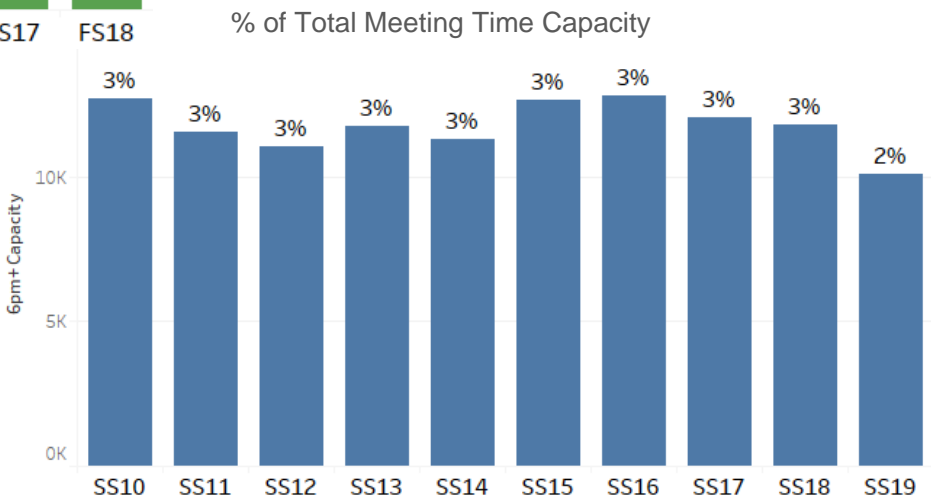


University Capacity - Evening Meeting Times (6pm and after)

Fall Terms

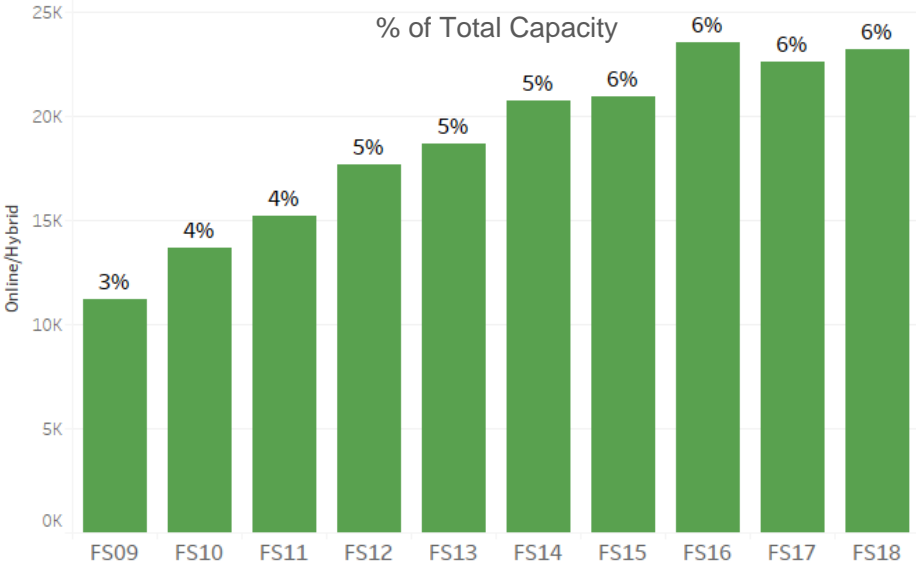


Spring Terms

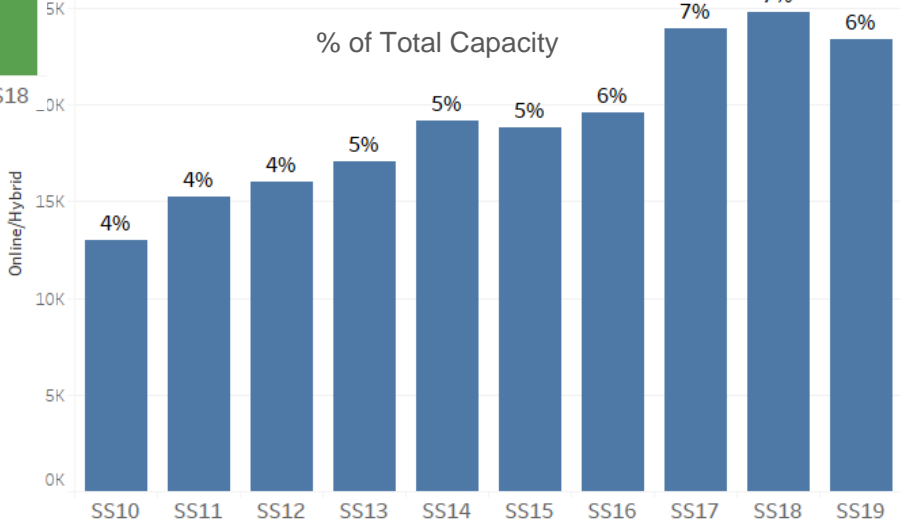


University Capacity - Online/Hybrid

Fall Terms



Spring Terms



Course Demand and Seat Prediction Analysis

Historical data for first time and transfer

- Adjusted for large incoming class
- Adjusted for Go15 initiative

Not real data...

Demand Based on Last Year Enrollment - including Increase in FirstTime Students and 15 Credit Push															
Course	FirstTime Seats (actual)	FirstTime Seats Increase	FirstTime Seats 15Cr Bump	Total FirstTime Seat Need	-----	Transfer Seats (actual)	Transfer Seats Increase	Transfer Seats 15Cr Bump	Total Transfer Seat Need	-----	Total Seat Need	Current Seats SoC	Surplus/ Shortage After SOC	Seat Reserves	Surplus/ Shortage After Soc Seat Reserves
CEM 141	1,700	100	150	1,950		160	0	20	180		2,130	2,000	(130)	50	(80)
WRA 101	2,200	140	210	2,550		50	0	5	180		2,730	600	(2,130)	2,000	(130)

Pre-enrollment plans, specific to incoming students by major

Compare the two and use best judgement!

Based on Pre-Enrollment Matrix (FirstTime only, no transfer)					
Course	Estimated PreEnroll Seats Needed	Current Seats SoC	Surplus/ Shortage After SOC	Seat Reserves	Surplus/ Shortage After Soc Seat Reserves
CEM 141	1,600	2,000	400	50	450
WRA 101	3,500	600	(2,900)	2,000	(900)

Pre-enrollment System

- Academic Units enter first year plans
- RO runs program to schedule incoming students in as many courses as possible

Matrix Type	Group Name	Math Score	First Choice	Second Choice	
Basic	Math	0-9	MTH 101	MTH 102	
		10-11	MTH 101	MTH 102	
		12-14	MTH 101	MTH 102	
		15-18	STT 200	STT 201	
		19+	STT 200	STT 201	
	WRA		Spring WRA *		
	ISS		Either ISS *		
	Specific Course			Fall IAH 221C 006-015	Fall PLS 160
				Fall PLS 160	Fall PLS 170
				Spring PLS 100	

First Choice	Second Choice
MTH 101	MTH 102
Other WRA *	
Spring ISS 210	
Spring ISS 215	
Fall SW 200	Fall SOC 100
Fall PLS 100	Spring PLS 100
Fall CEP 260	Fall CEP 261
Spring SOC 100	Spring SW 200
Spring MMG 141	Fall MMG 141
Spring MTH 101	Spring MTH 102

Matrix Type	Group Name	Math Score	First Choice	Second Choice
Advanced 10-11	Math	10-11	MTH 101	MTH 102
	WRA		Either WRA *	
	ISS		Spring ISS 210	
			Spring ISS 215	
Specific Course			Fall MMG 141	Fall HNF 150
			Fall SW 200	Spring SW 200
			Fall PLS 100	Fall PLS 140
			Spring MTH 102	Spring MTH 101
			Fall CEP 260	Fall CEP 261
			Spring SOC 100	Spring SOC 100
			Spring PSY 101	

Pre-enrollment Effort

- Enrolled 8600 students
 - 51,032 courses
 - 26,870 Fall 18
 - 24,162 Spring 19
- Worked throughout summer with department to add seats
 - Specific efforts in Math/ISS/IAH/WRA/CEM
 - Reran several times gaining an additional 7,000+ enrollments

Pre-enrollment Data

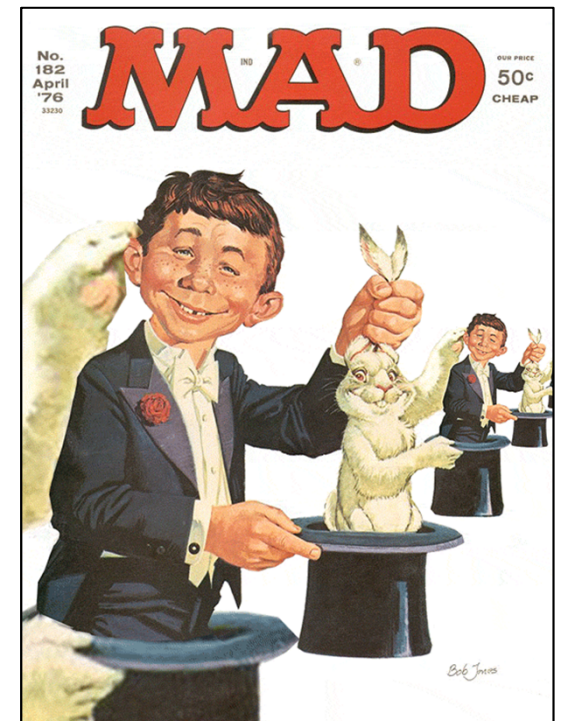
Able to generate detailed demand data by course

Fall							Spring			
Course	UnMet AOP PreEnroll Demand Fall	UnMet AOP Alert Demand Fall	Cont Stu Seat Alerts Fall (no enr)	Tran Stu Deman Fall (based on LY with cr bump)	SoC Seats Avail Fall	Fall Unmet Demand	Cont Stu Seat Alerts Spring (no enr)	Tran Stu Deman Spring (based on LY with cr bump)	SoC Seats Avail Spring	Spring Unmet Demand
MI 101	0	0	6	47.4	142	0				
MMG 141	0.5	0	3	12.4	0	15.9				
MMG 201	0	0	0	0	0	0				
MS 110	0	0	0	1.1	62	0				
MTH 101	55.5	2	13	9	0	79.5				
MTH 102	28.5	0	11	40.6	0	80.1				
MTH 103	8	0	3	142.2	36	117.2				
MTH 103A	24	0	3	0	0	27				
MTH 103B	0	0	0	0	0	0				
MTH 110	0	0	0	0	0	0				
MTH 114	0	0	0	30.5	7	23.5		24.7	128	0
MTH 116	2	0	1	21.4	53	0		7.8	41	0
MTH 124	11.5	0	1	261.8	142	132.3		20.2	64	0
MTH 126	0	0	0	1.1	10	0		0	0	0
MTH 132	23.5	0	2	58.7	63	21.2		52.7	13	43
MTH 133	0	0	5	57.6	21	41.6		38.1	77	0
MTH 201	1	0	2	12.5	11	5.5		54.9	249	0
								0	0	0
								0	41	0
								0	0	0
								0	0	0
								5.5	88	0
								0	76	0
								9.5	152	0
								0	8	0
								4.5	202	0
								65	93	10

Pulling the Rabbit out of the Hat

Despite increase in class size and very few scheduling adjustments...

- Increased percentage of first time students in first year courses
 - WRA 101: enrolled 3% more than previous year
 - MTH 100-level (degree counting): up 5%
 - IAH 200-level: up 2%
 - ISS 200-level: up 14%
 - C
- 74% pre-enrolled courses kept/adjusted
 - 77% for those with same major
- Average pre-enroll credits
 - 8.92 Fall, 7.81 Spring
 - Students with 15+ credits Fall credits up from 43% to 50%



What do we see in the Crystal Ball?

- Go Green Go 15
- Mobility Efforts
- Block Tuition
- New President
- Incoming class size?
- New SIS???





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Questions?

**Kimberly Blair-Chambers, blairch4@msu.edu
Kristin Schuette, schuett1@msu.edu**