

Development of Campus Parking Model

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Abstract

- Goal: Optimize parking on Valparaiso University's campus
- Determine: Parking lot occupancy & building usage
- Data segregated by:
 - Parking Class (Commuter/Faculty)
 - Building Usage (Number of Students in Building for Class)
- Video Data Collection used to track parking usage throughout the day

Data Collection

Parking Counts

- Lots analyzed: Lots 1, 2, 3, & 5
- When: Tuesday, October 22, 2019 & Wednesday, October 23, 2019
- Times: Morning, Mid-day, & Afternoon

- Faculty
- Commuter



Building Usage

- Buildings Analyzed: GEM/Fites, Meier Hall, & Urschel Hall
- Data: Number of students in class throughout the day
- Days: Tuesday & Wednesday
- Goal: Make correlation with parking usage

Video Data Collection

- VUCA Handicap Lot
- When: November 18th – 22nd, 2019
- Data Collected:
 - Occupancy throughout each day
 - Average time parked



Lot 1 – Faculty

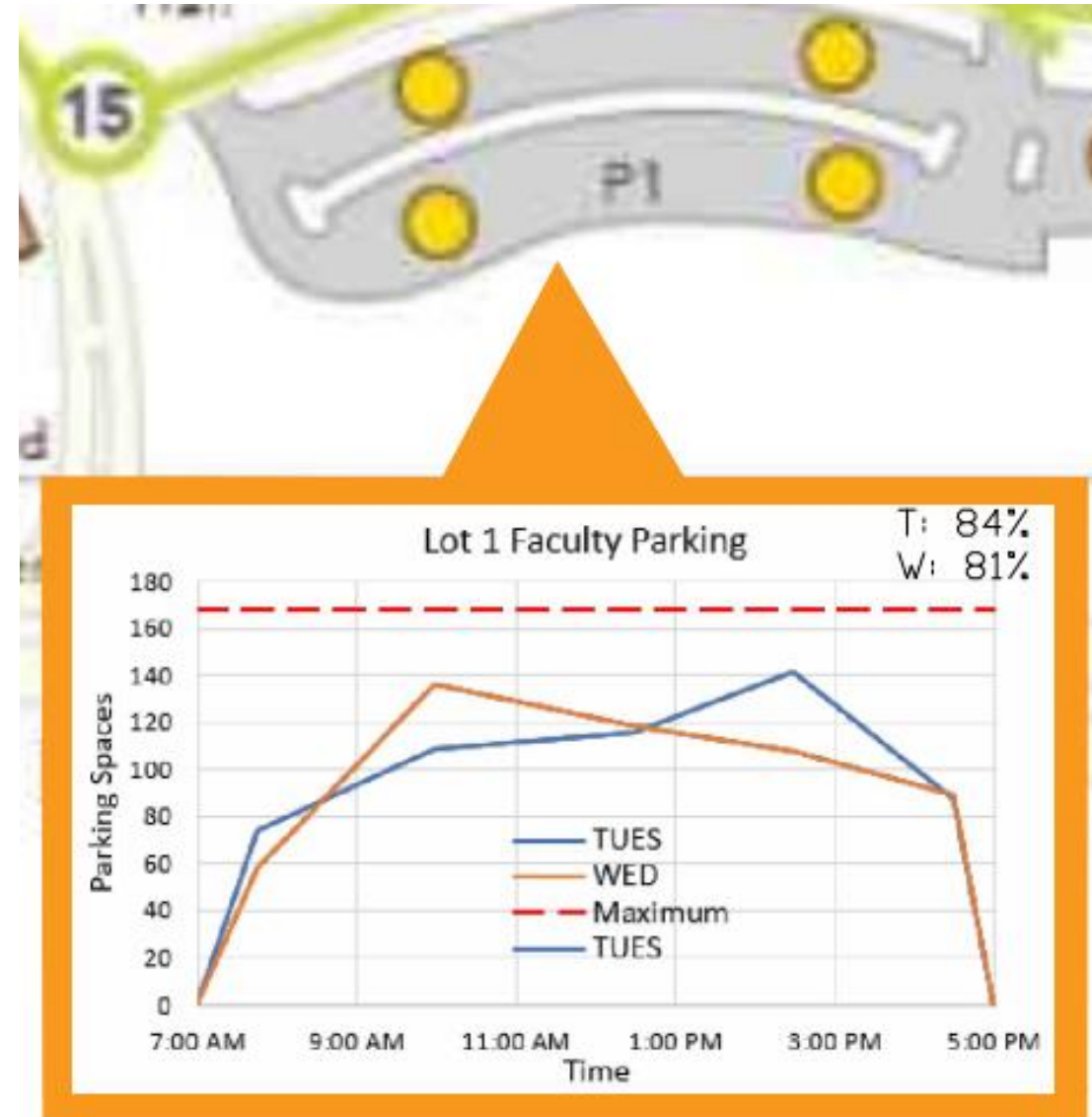
Percent Maximum Occupancy

Tuesday: 84%

Wednesday: 81%

Table 1. Parking Lot 1.

Tuesday			Wednesday		
Time	Occupied Spaces	Total Spaces	Time	Occupied Spaces	Total Spaces
7:00 AM	0	168	7:00 AM	0	168
7:45 AM	74	168	7:45 AM	58	168
10:00 AM	109	168	10:00 AM	136	168
12:30 PM	116	168	12:30 PM	118	168
2:30 PM	141	168	2:30 PM	108	168
4:30 PM	87	168	4:30 PM	89	168
5:00 PM	0	168	5:00 PM	0	168



Lot 2 – Commuter

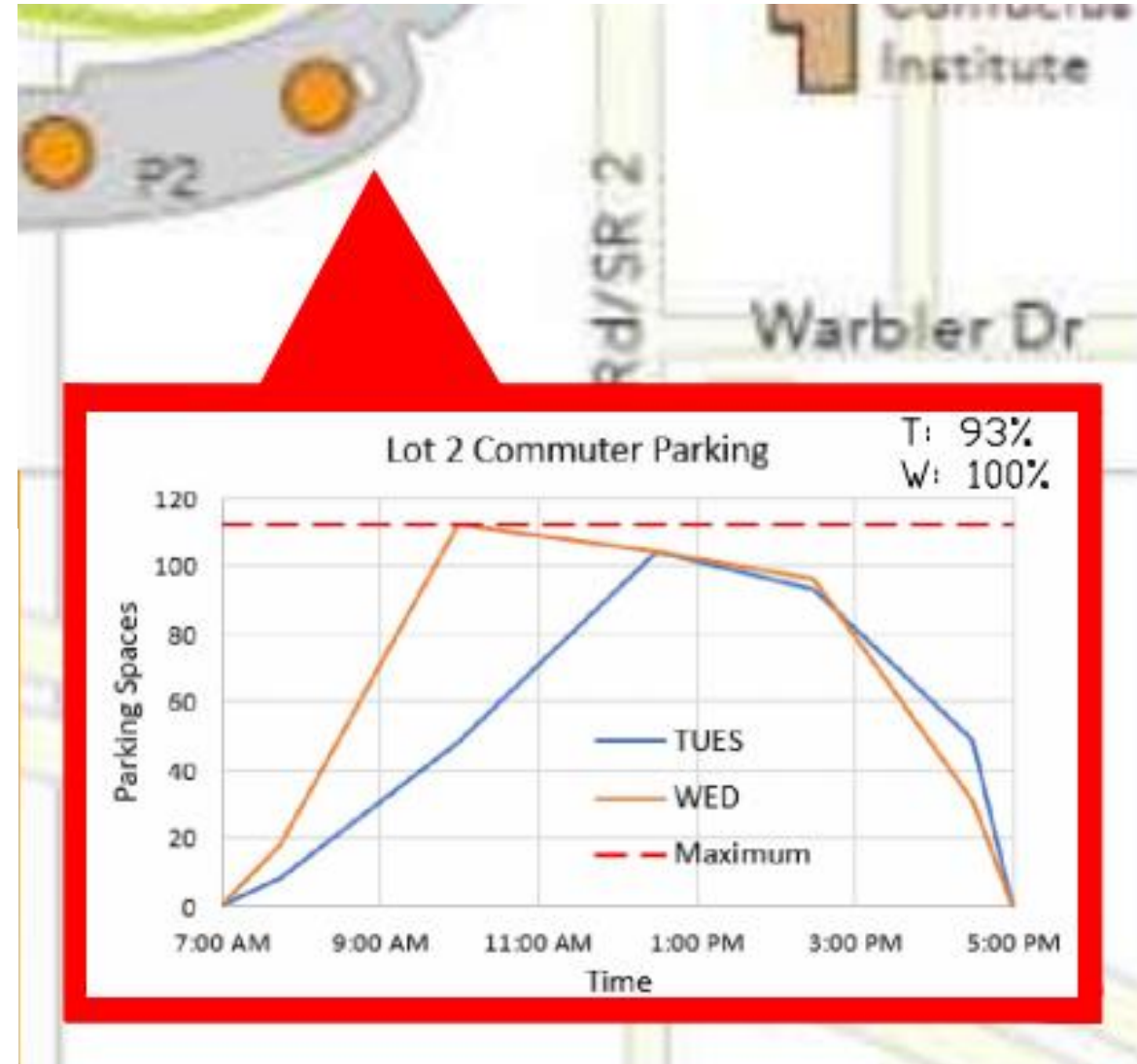
Percent Maximum Occupancy

Tuesday: 93%

Wednesday: 100%

Table 2. Parking Lot 2.

Tuesday			Wednesday		
Time	Occupied Spaces	Total Spaces	Time	Occupied Spaces	Total Spaces
7:00 AM	0	112	7:00 AM	0	112
7:45 AM	8	112	7:45 AM	18	112
10:00 AM	48	112	10:00 AM	112	112
12:30 PM	104	112	12:30 PM	104	112
2:30 PM	93	112	2:30 PM	96	112
4:30 PM	49	112	4:30 PM	31	112
5:00 PM	0	112	5:00 PM	0	112



Lot 3 – Faculty & Faculty/Commuter

Faculty: Percent Maximum Occupancy

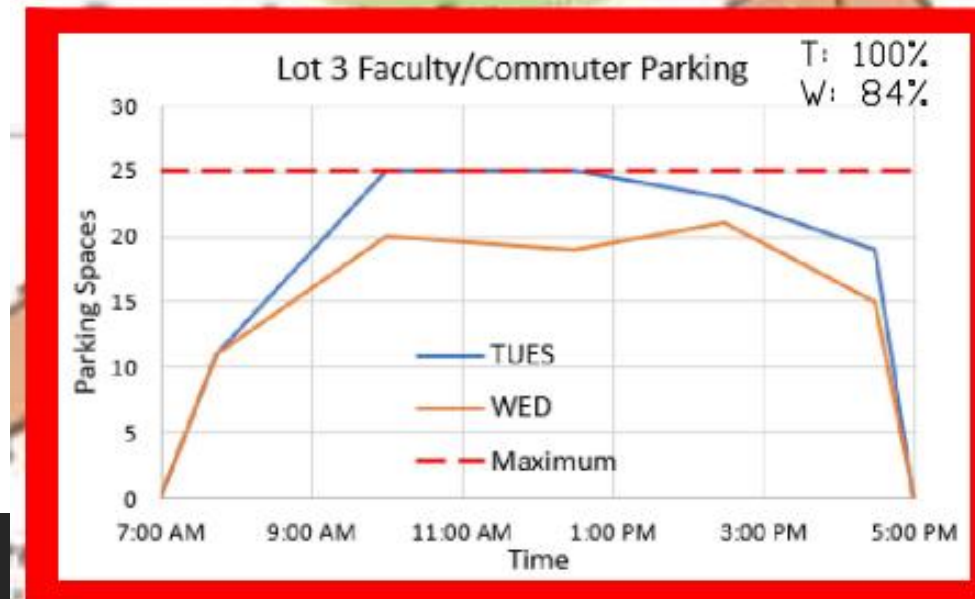
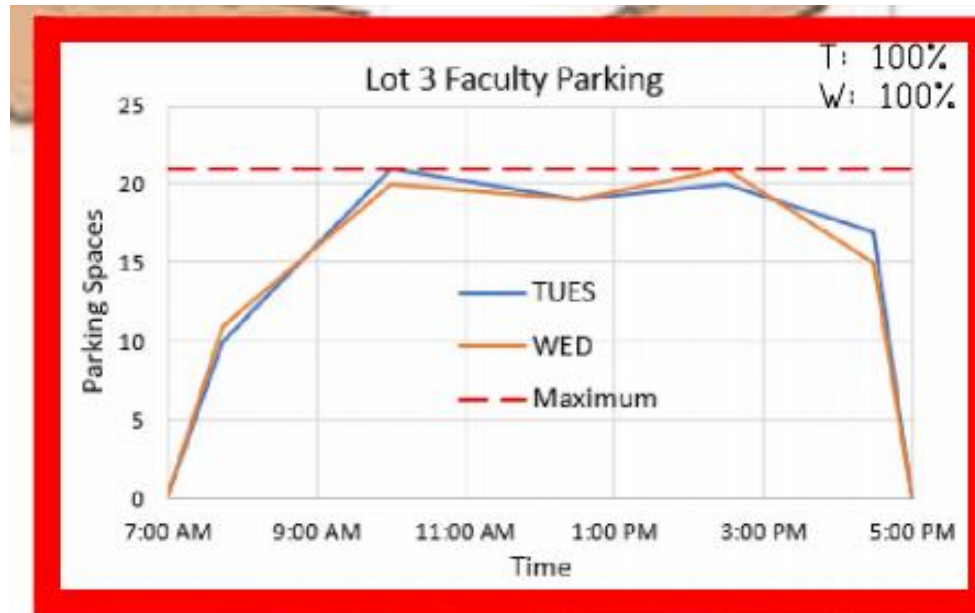
Tuesday: 100%

Wednesday: 100%

Faculty/Commuter: Percent Maximum Occupancy

Tuesday: 100%

Wednesday: 84%



Lot 5 – Faculty & Commuter

Faculty: Percent Maximum Occupancy

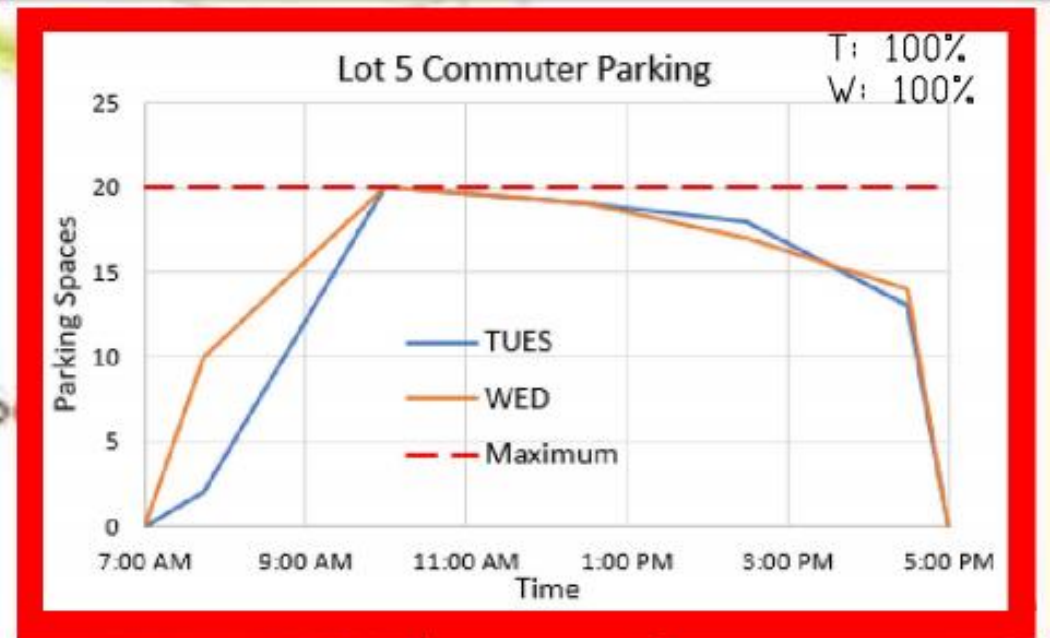
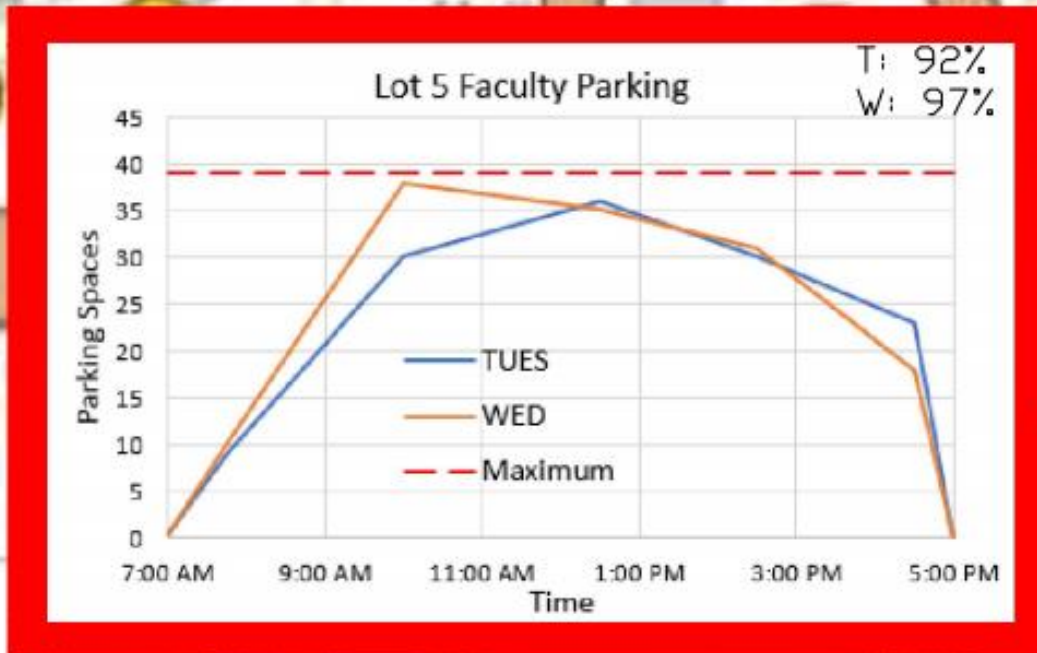
Tuesday: 92%

Wednesday: 97%

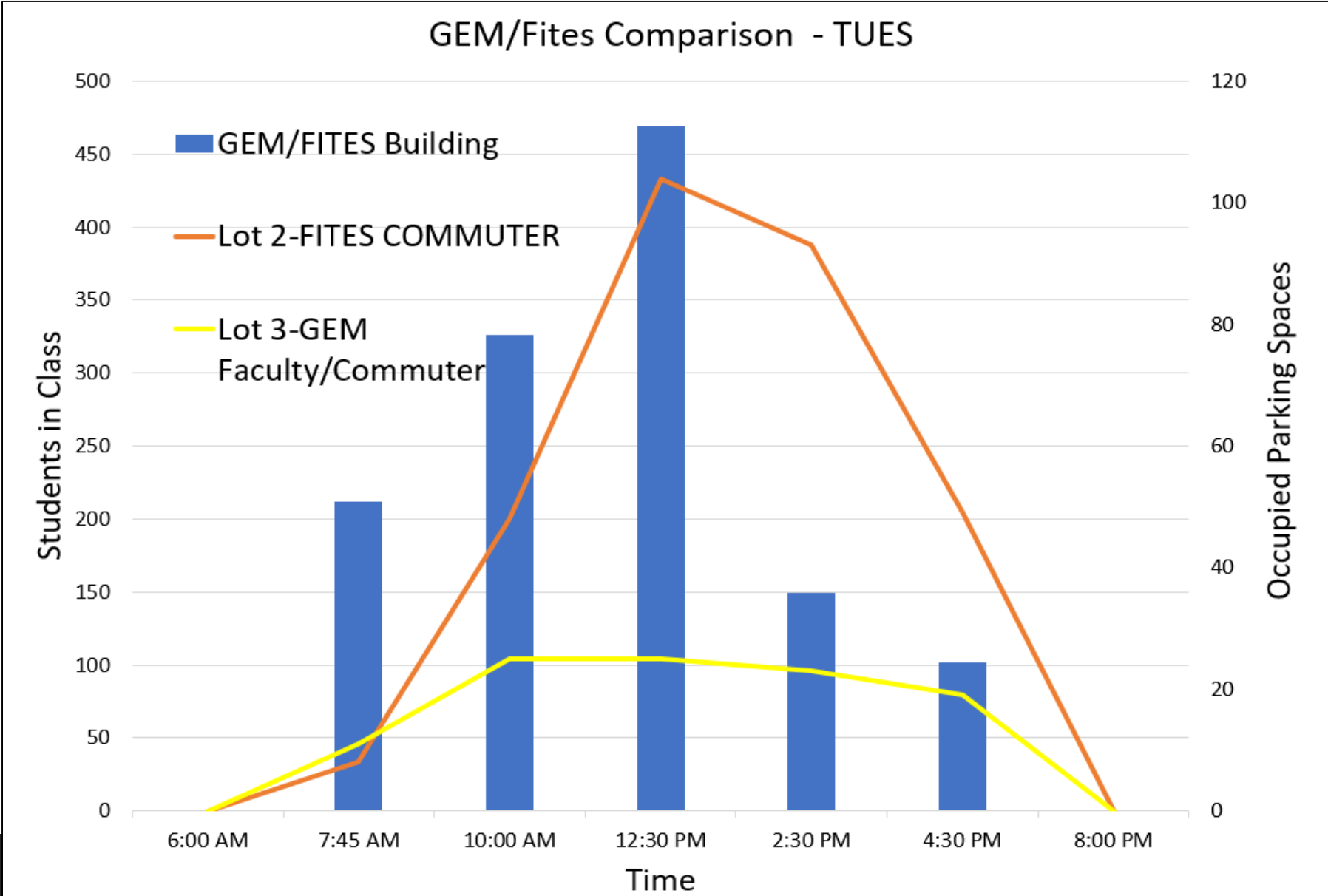
Commuter: Percent Maximum Occupancy

Tuesday: 100%

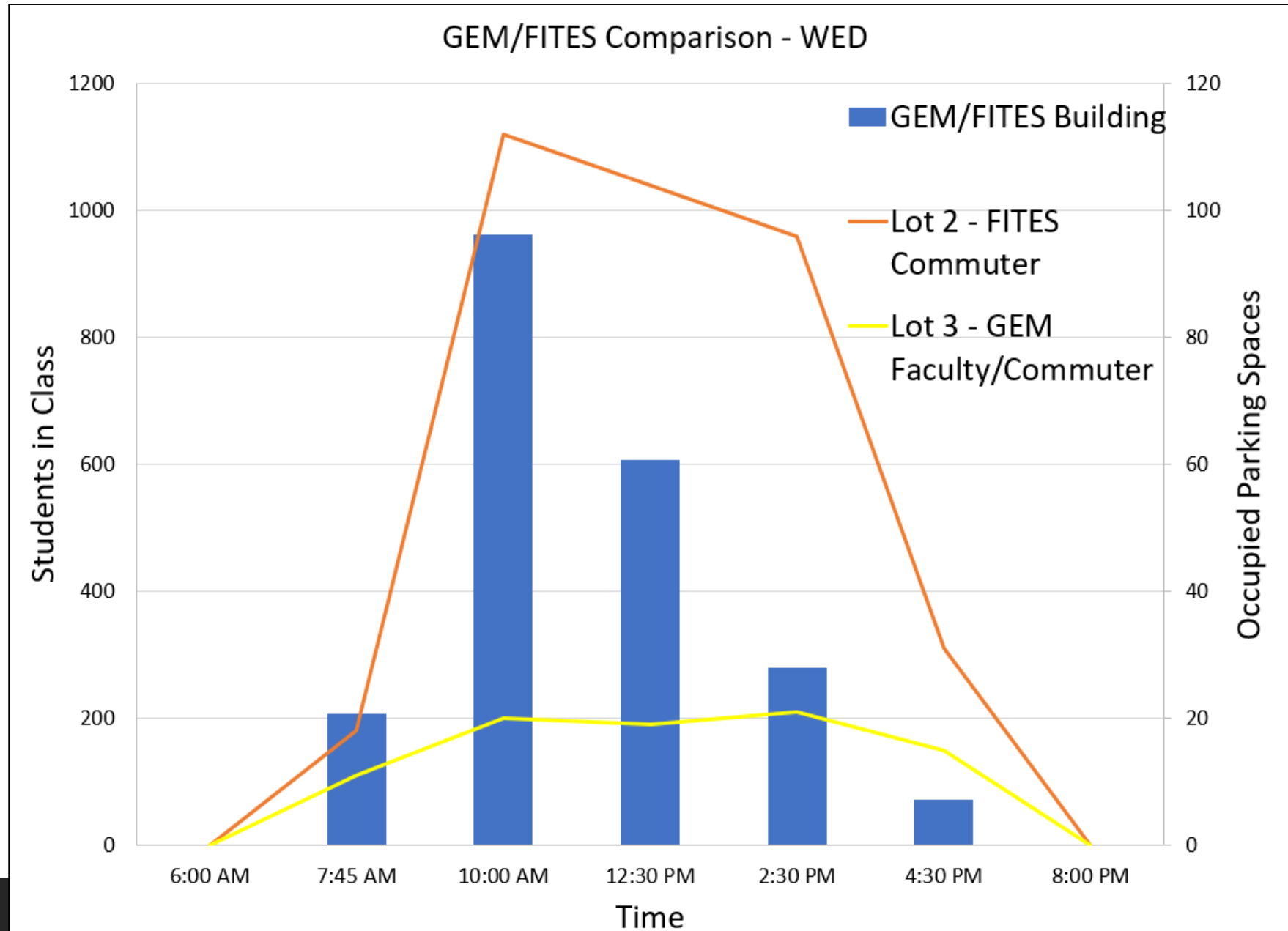
Wednesday: 100%



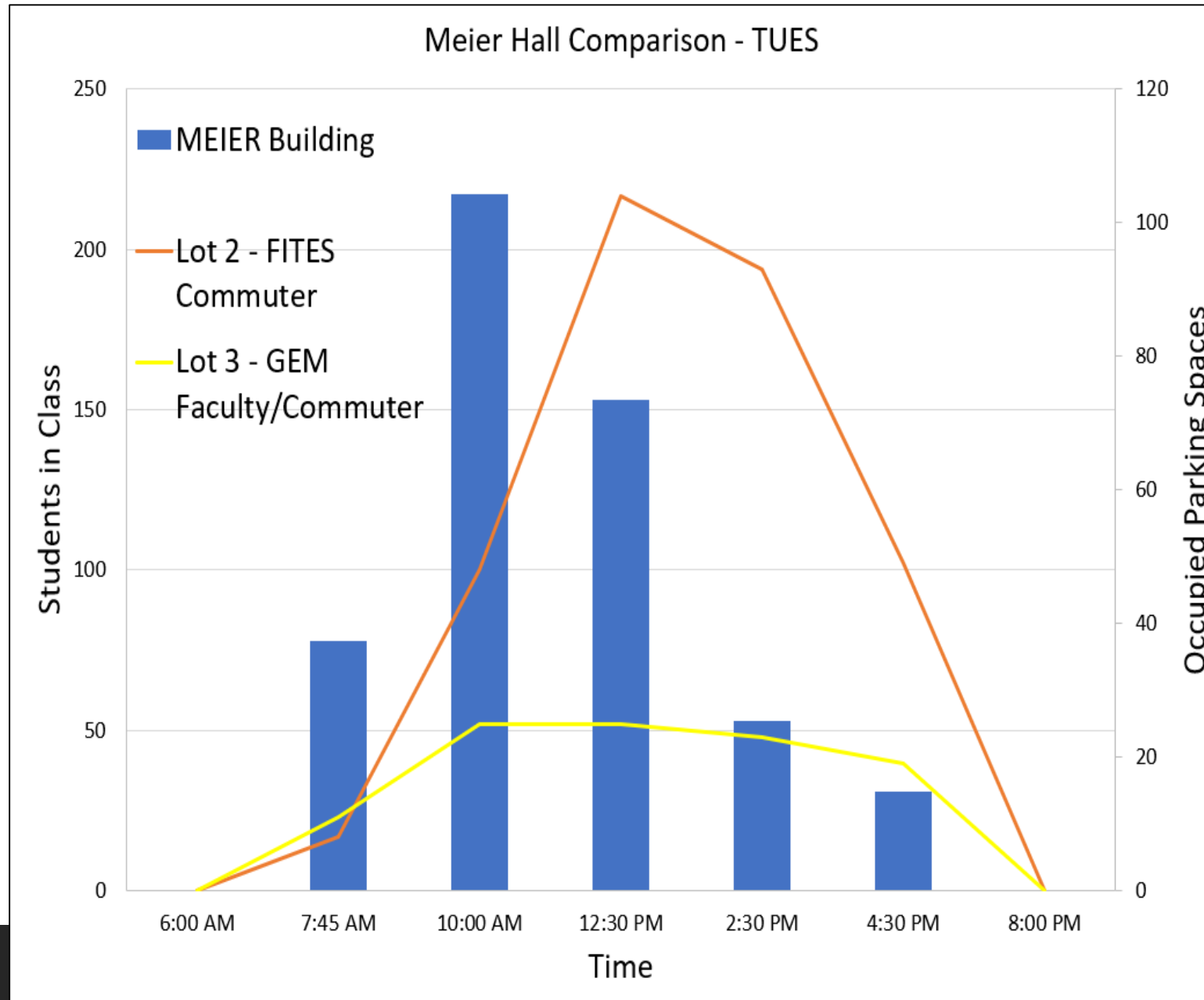
GEM/Fites with Lot 2 & 3 - Tuesday



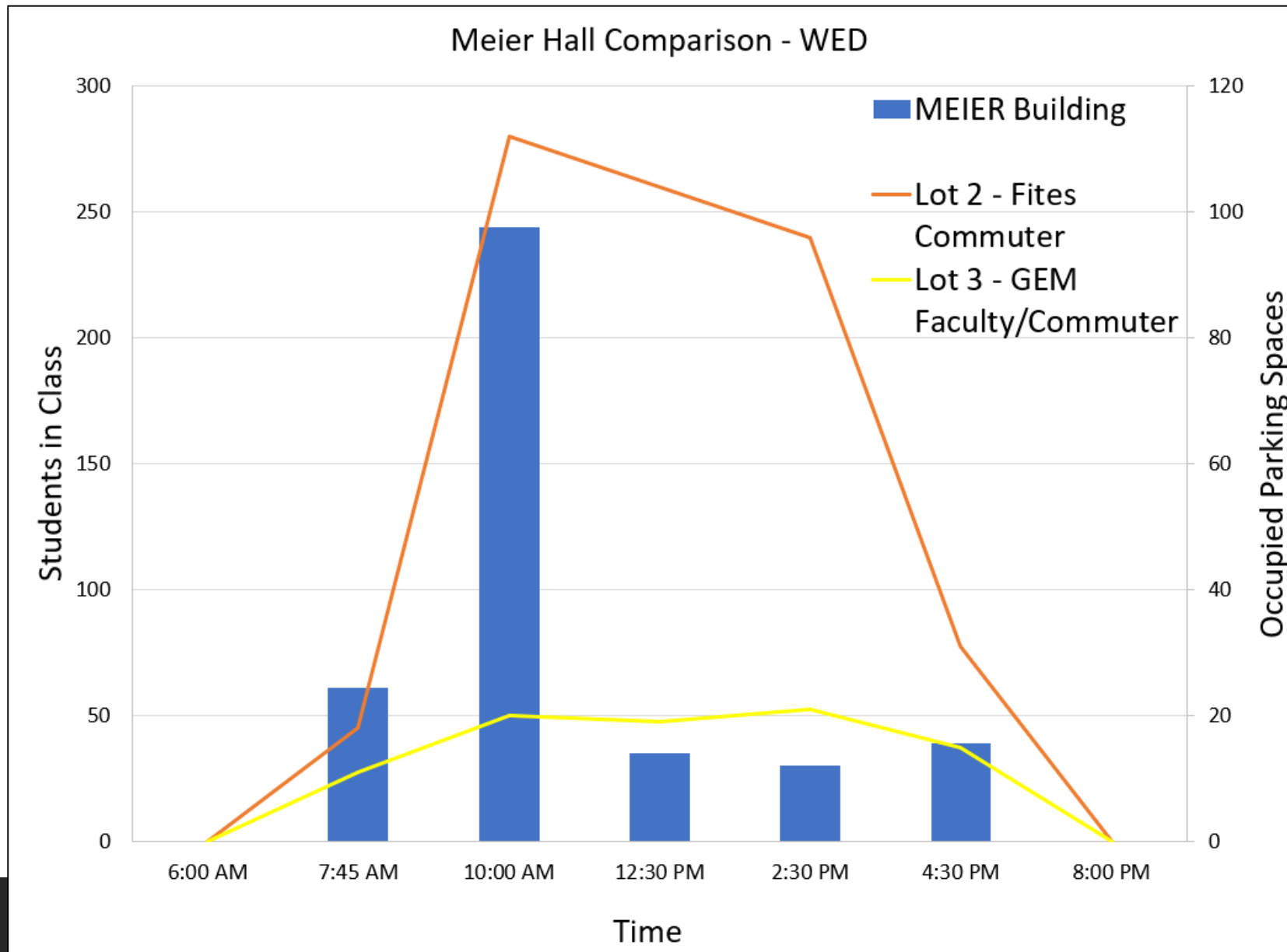
GEM/Fites with Lot 2 & 3 - Wednesday



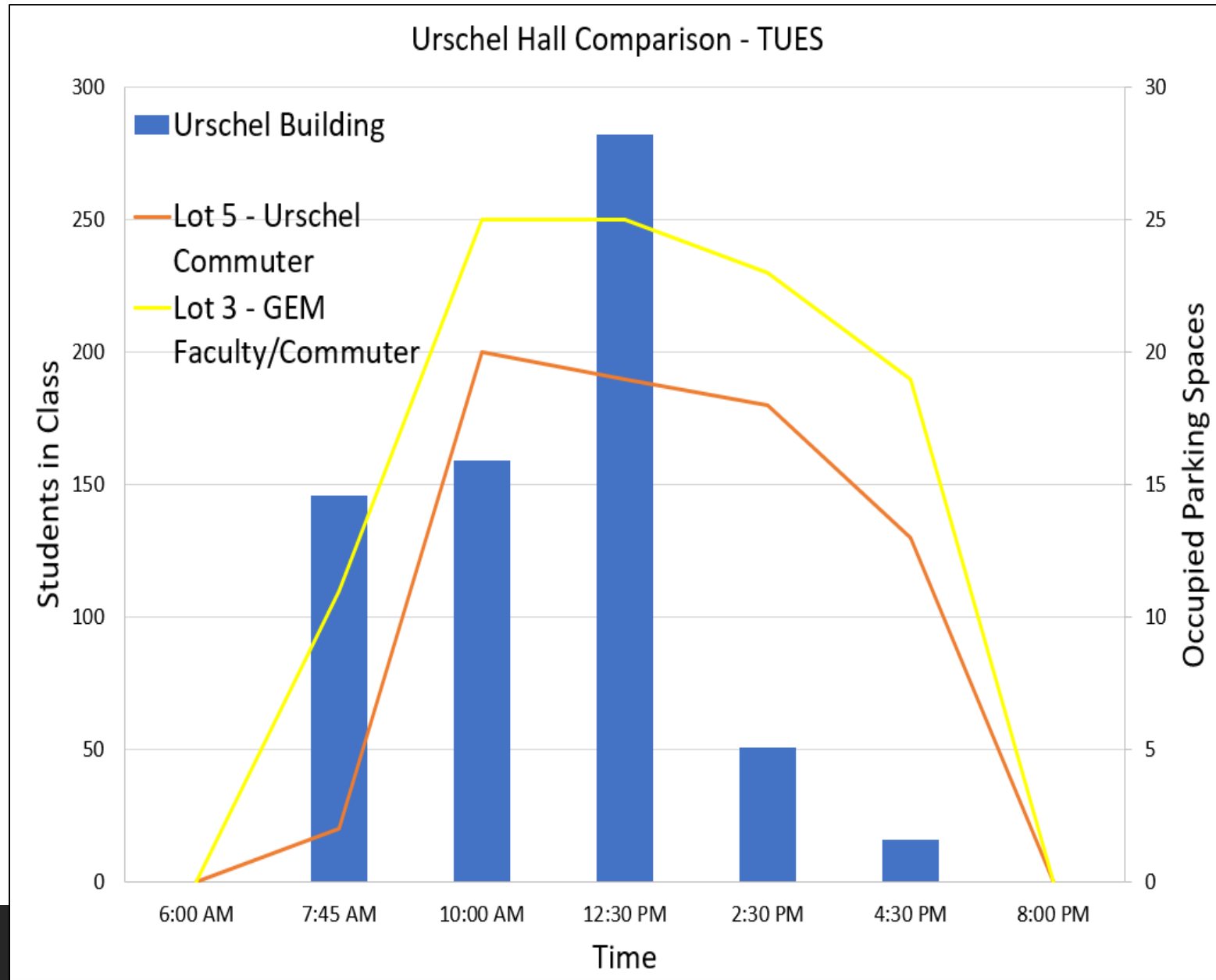
Meier Hall with Lot 2 & 3 - Tuesday



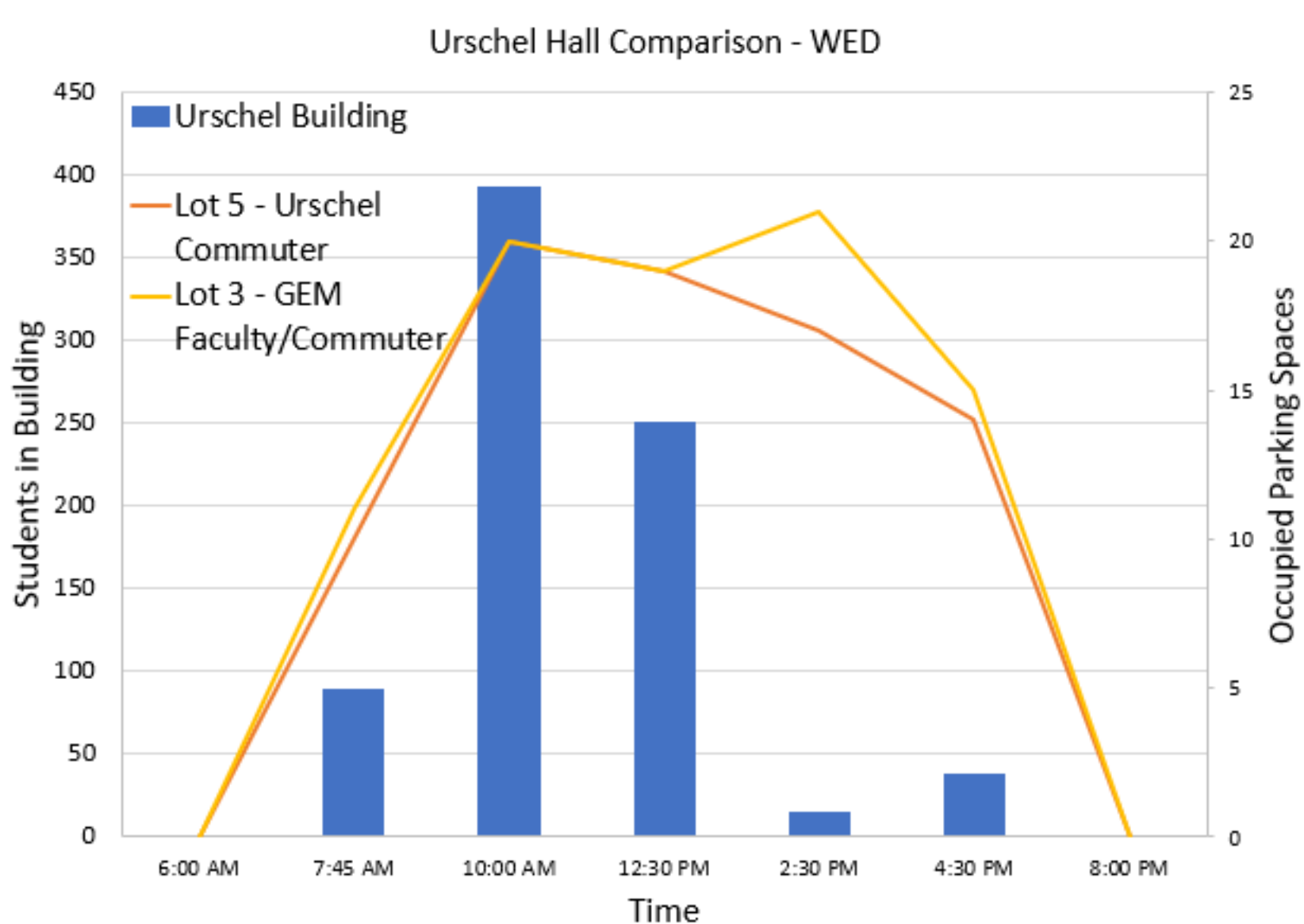
Meier Hall with Lot 2 & 3 - Wednesday



Urschel Hall with Lot 3 & 5 - Tuesday



Urschel Hall with Lot 3 & 5 - Wednesday



Results from Handicapped Lot

Table 9. Daily Parking Data.

Day	Vehicles Per Day	Total Time Parked Per Day (Hours)	Average Time Parked Per Vehicle (Hours)	Maximum Occupancy (Vehicles)	Time of Maximum Occupancy
Monday	8	23.6	2.95	4	12:20 PM
Tuesday	12	28.5	2.38	8	7:00 PM
Wednesday	13	24.3	1.87	7	7:00 PM
Thursday	15	23.5	1.57	6	3:20 PM
Friday	5	3	0.60	3	11:30 PM

Table 10. Weekly Parking Data.

Total Vehicles	53
Total Hours Parked	102.9
Average Maximum Occupancy (Vehicles)	5.6
Average Time Parked (Hours)	1.94

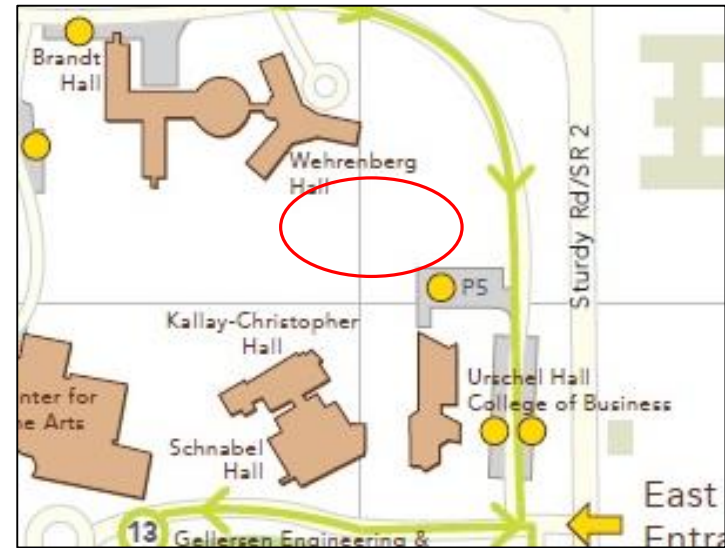
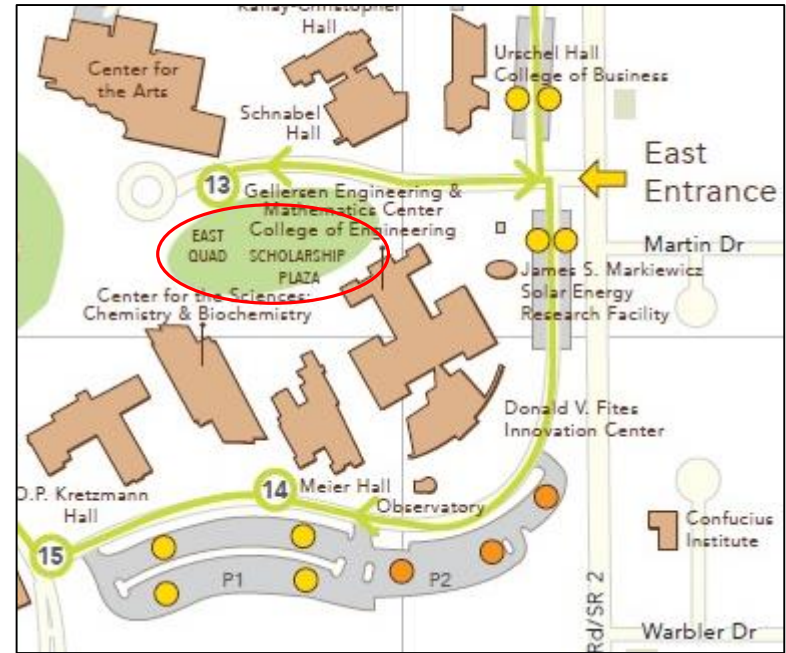
Overall Results

- Lots 2, 3 (faculty), and 5 (commuter) have capacity concerns
- Lots 2 & 3 show strong correlations with student building occupancy
- Handicapped Lot has no serious concerns

Possible Solutions

- Designate spaces from Lot 1 as Commuter Parking
- Create additional parking in the Scholarship Plaza area
- Expand Lot 5 into area between Wehrenberg Hall & Urschel Hall

- Faculty
- Commuter



Thank You!
Questions?
