Classroom Scheduling

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What is the Optimizer?

- The Optimizer is a product offered by CollegeNET that allows you to schedule classes to classrooms in bulk. The Optimizer reads the input data that describes your locations and classes, builds a model of this configuration, and then quickly decides where the classes should be placed.

- The Optimizer algorithm has three objectives when placing classes:

    - To maximize the number of placements
    - To maximize organizational satisfaction with placements
    - To maximize space utilization

What doesn't the Optimizer do?

- Reschedule classes-the Optimizer will not change the days or times of a class to assign a room
- Alter term data-the Optimizer can only use the data that it has been given and will not adjust the data to assign the class a room
- Read minds- it doesn't know that the instructor wants a specific room unless the appropriate information is given
- Remember past placement-the Optimizer doesn't look back at past semesters to see where the instructor or class has been scheduled

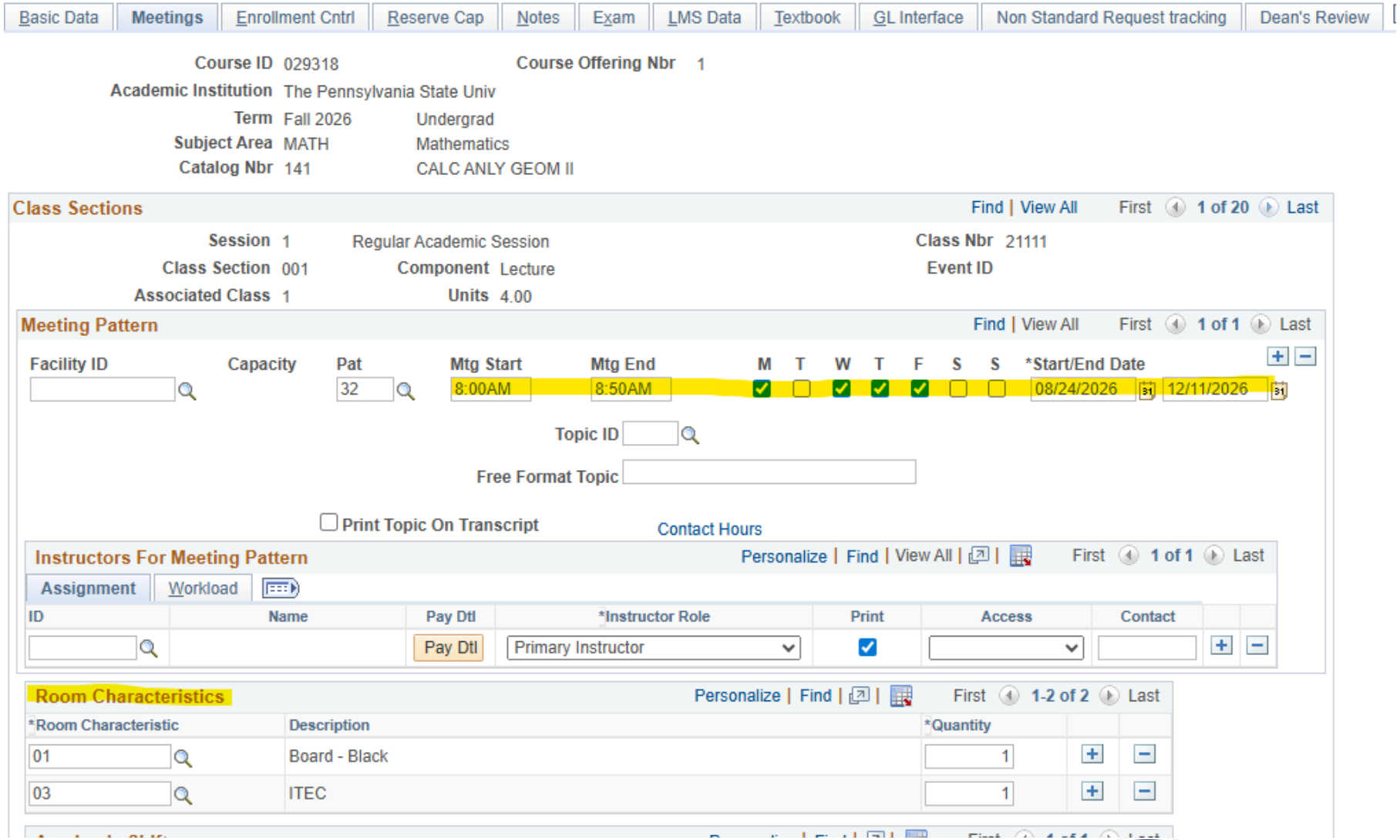
What data does the Optimizer use?

- The Optimizer uses the data that is found in LionPATH on the Maintain Schedule of Classes screens.

- This data is rolled from like semester to the next like semester (classrooms do not roll)
  - Fall to fall- right after Labor Day
  - Spring to spring- middle of April
  - Summer to summer- middle of July

- Schedulers have roughly nine weeks to adjust their schedules before Optimizer

What data does the Optimizer use?



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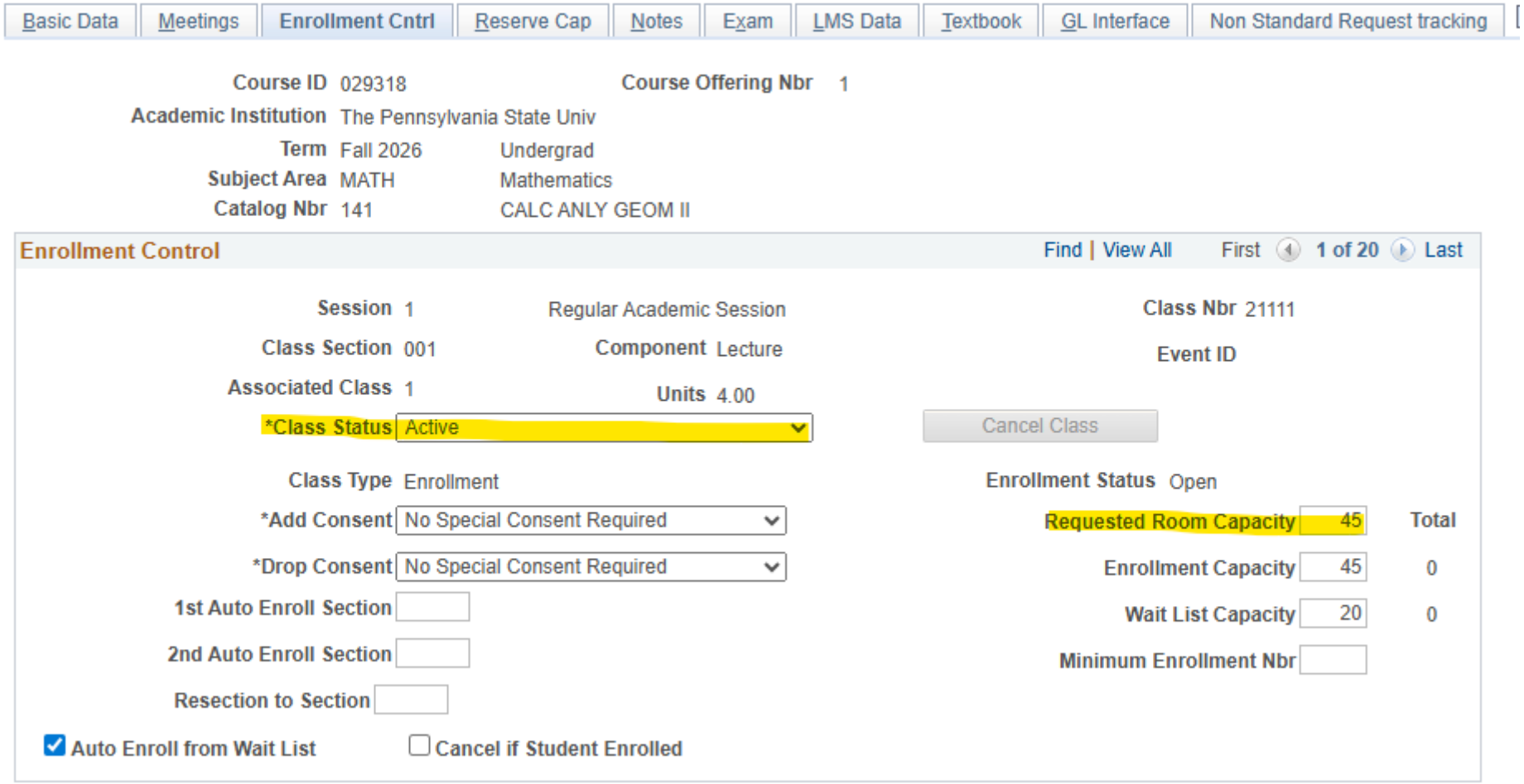

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Room Characteristics

Search Results

View 100 First 1-69 of 69 Last

Room Characteristic	Description
01	Board - Black
02	Board - Oversized
03	ITEC
04	Lighting - Dimmable
05	AV - Projector Dual Image
06	PTEC
07	STEC - Mac
08	STEC - PC
09	Seat - Auditorium with Arm
10	Seat - Auditorium w/ Lapboards
11	Seat - Fix Tables Loose Chairs
12	Seat - Fixed Tablet Armchairs
13	Seat - Loose Tablet Armchairs
14	Seat - Moveable Tables/Chairs
15	Seat - Powered
16	Seat - Stackable Tables/Chairs
18	VTEC
19	Board - White
20	Piano
24	Bring Your Own Device
25	Seat - Fix Tables Chrs No Arm
26	Media Assistance
27	AV - Stereo Equipment (MUSIC)
28	Sink
29	Board - Smart
30	3-D Rendering
31	Student Drawing Tablets
33	Large Format B&W Printing
34	CHEM Prep
35	PHYS Prep
36	MUSIC Prep
37	Curtains - Black Out
38	AV - Projector Color-Calibrtrd

040000100

UP: Thomas Bldg 100

Details | List | Availability (Daily) | Availability (Weekly) | Calendar | Audit Trail

Edit Mode

Off On

Comments

Default Instructions

Features

- Air Conditioning 1
- AV - In-Ceiling Speakers 1
- AV - Projector 1
- AV - Projector Document Camera 1
- AV - Projector Dual Image 1
- Floor - Tile 1
- ITEC 1
- Lighting - Dimmable 1
- Media Assistance 1
- Seat - Auditorium with Arm 726

Layouts

Max Capacity

726

Default Layout

As Is

Click on a layout name to view its details in the Layout Details panel.

Name	Cap	Setup	Takedown	Remove
As Is	726			
Social Distancing	135			

Add Layout

Select an item

Categories

- Building - THOMAS
- Campus - University Park
- S25 Assignable
- Type - Classroom (General Use)

Select an item

Partitions

Partitions are sections of campus buildings that are used by the Office of the University Registrar to schedule classrooms during the Optimizer process. Each subject is able to pick one primary partition and multiple secondary partitions as suggestions for the Optimizer run, at which time the system will try to find a room for those subjects. Partition selection for each subject stays in place until a change is requested by the department or college.

View University Park Partitions

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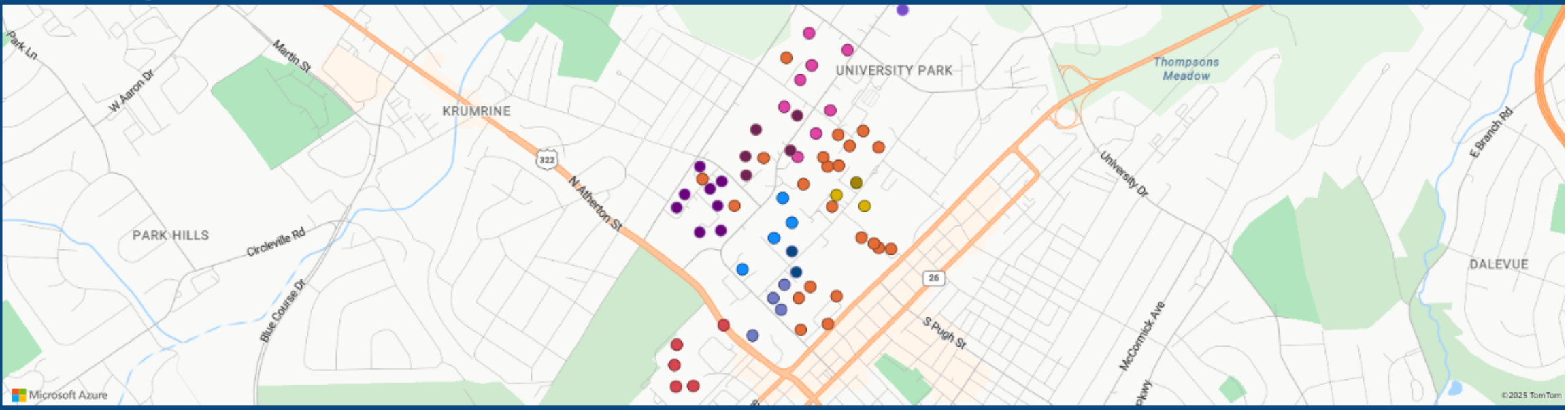
Home Page | Partition Selection by Subject | Number of Subjects by Partition

University Park Partitions by Building

UP Partition Map



UP Partitions: All

UP - Black	UP - Nittany	UP - Wagner
UP - Blue	UP - Osmond	UP - White
UP - Boucke	UP - Penn	UP - Willard-Carn...
UP - Business Bldg	UP - Pink	
UP - Chambers	UP - PSU	

Partition Classrooms and Capacity

Location Name	Location Formal Name	Max Capacity
003003E302	UP: Paterno Library E302	32
005000117	UP: HUB 117 John Bill Freeman Auditorium	352
012000060	UP: Willard Bldg 060	93
012000062	UP: Willard Bldg 062	93
012000064	UP: Willard Bldg 064	60
012000067	UP: Willard Bldg 067	40
012000069	UP: Willard Bldg 069	30
012000071	UP: Willard Bldg 071	32
012000073	UP: Willard Bldg 073	81
012000075	UP: Willard Bldg 075	68
012000151	UP: Willard Bldg 151	39

Number of Features in Partition

Feature	Quantity
** FEE associated with reservation **	1
3-D Rendering	1
AE Prep	6
AERSP Prep	4
Air Conditioning	367
ALC-Flex-Learning	22
ALC-Learn2 Collaborative	2
ALC-Media-Sharing	2
ALC-Turn-To-Team	7
Animal Specimens	1

Scheduling Issues

- Departments not pre-assigning their department labs or department classrooms prior to the Optimizer run.
- Classes asking for too many or conflicting room characteristics
- Cross-listed classes not combined prior to the Optimizer
- Hybrid classes not cleaned up-Zoom or Web facility ID missing from the online meeting pattern
- Nonstandard classes
  - 279 for Spring 2026
  - 351 for Fall 2026
- Continuing loss of general-purpose classrooms (GPCs)
  - Spring 2017 we had 412 rooms
  - Fall 2026 we have 369 rooms
  - Rooms will continue to decrease with upcoming capital plans

Spring 2026 Distribution of Classes (pulled 7/28/25)

Spring 2026 UGRD															
COLLEGE		MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY			TOTAL		Non-Standard	Primetime
AA		173	20.84%	185	22.29%	150	18.07%	185	22.29%	137	16.51%		830		32.76%	46.63%
AG		99	21.52%	91	19.78%	103	22.39%	90	19.57%	77	16.74%		460		14.83%	55.65%
BA		126	17.40%	190	26.24%	137	18.92%	183	25.28%	88	12.15%		724		4.12%	51.52%
CM		58	15.47%	87	23.20%	85	22.67%	88	23.47%	57	15.20%		375		20.83%	40.27%
ED		78	20.91%	94	25.20%	91	24.40%	88	23.59%	22	5.90%		373		20.59%	32.71%
EM		83	20.10%	77	18.64%	98	23.73%	77	18.64%	78	18.89%		413		6.07%	53.75%
EN		270	20.52%	245	18.62%	314	23.86%	243	18.47%	244	18.54%		1316		12.57%	54.64%
HH		193	20.62%	190	20.30%	216	23.08%	190	20.30%	147	15.71%		936		3.21%	53.74%
IS		63	20.32%	73	23.55%	63	20.32%	74	23.87%	37	11.94%		310		2.16%	46.45%
LA		813	21.12%	784	20.36%	811	21.06%	753	19.56%	689	17.90%		3850		1.04%	63.95%
NR		19	15.45%	31	25.20%	24	19.51%	32	26.02%	17	13.82%		123		87.50%	20.33%
SC		467	23.00%	317	15.62%	497	24.48%	338	16.65%	411	20.25%		2030		26.51%	48.47%
TOTAL		2442	19.77%	2364	21.58%	2589	21.87%	2341	21.48%	2004	15.30%		11740		19.35%	47.34%

POLICY: Daily course offerings between 15% and 30%

POLICY: No more than 50% during prime time (10am-2pm)

within 3 percentage points of limit

beyond policy limit

https://undergrad.psu.edu/aappm/C-1-developing-the-course-offering.html

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Fall 2026 Distribution of Classes (pulled 10/27/25)

Fall 2026 UGRD																
COLLEGE		MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY			TOTAL		Non-Standard	Primetime
AA		187	23.23%	172	21.37%	176	21.86%	182	22.61%	88	10.93%		805		21.84%	43.61%
AG		121	21.42%	118	20.88%	132	23.36%	114	20.18%	80	14.16%		565		17.05%	55.22%
BA		144	18.37%	184	23.47%	161	20.54%	177	22.58%	118	15.05%		784		1.30%	50.38%
CM		66	18.59%	81	22.82%	74	20.85%	78	21.97%	56	15.77%		355		32.99%	43.66%
ED		65	16.13%	111	27.54%	108	26.80%	93	23.08%	26	6.45%		403		17.72%	26.30%
EM		76	19.79%	71	18.49%	92	23.96%	71	18.49%	74	19.27%		384		0.98%	48.04%
EN		286	22.15%	239	18.51%	290	22.46%	228	17.66%	248	19.21%		1291		7.11%	47.09%
HH		191	20.60%	168	18.12%	218	23.52%	167	18.02%	183	19.74%		927		0.00%	45.63%
IS		79	22.32%	67	18.93%	84	23.73%	68	19.21%	56	15.82%		354		2.60%	44.63%
LA		840	22.16%	723	19.07%	843	22.24%	687	18.12%	698	18.41%		3791		0.67%	48.40%
NR		16	12.70%	30	23.81%	29	23.02%	37	29.37%	14	11.10%		126		75.00%	25.40%
SC		532	23.00%	327	14.14%	549	23.74%	423	18.29%	482	20.84%		2313		25.23%	45.22%
TOTAL		2603	20.04%	2291	20.60%	2756	23.01%	2325	20.80%	2123	15.56%		12098		16.87%	43.63%

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*Started enforcing this policy effective Fall 2026

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Size Requests for Spring 2026

Room Size Ranges	Number of Rooms	Max Number of Classes	Number of Requests
314-736	10	150	141
150-270	18	270	256
80-149	40	600	462
51-79	36	540	568
45-50	55	825	833
30-44	123	1845	1338
12-29	89	1335	2475
Total	371	5565	6073

If we only look at standard time with MWF 50-minute classes and TR 75-minute classes, a classroom can only accommodate 15 classes between 8:00am and 6:00pm.

Size Requests for Fall 2026

Room Size Ranges	Number of Rooms	Max Number of Classes	Number of Requests
314-736	12	180	167
150-270	18	270	267
80-149	38	570	464
51-79	37	555	612
45-50	53	795	977
30-44	124	1860	1694
12-29	87	1305	2810
Total	369	5535	6991

If we only look at standard time with MWF 50-minute classes and TR 75-minute classes, a classroom can only accommodate 15 classes between 8:00am and 6:00pm.

Time Requests for Spring 2026

Meeting Pattern	UGRD	GRAD	Total
TR 10:35 am - 11:50 am	447	35	482
MWF 10:10 am - 11:00 am	434	24	458
MWF 11:15 am - 12:05 pm	412	23	435
TR 1:35 pm – 2:50 pm	388	45	433
TR 12:05 pm - 1:20 pm	368	48	416
TR 9:05 am – 10:20 am	378	32	410
TR 3:05 pm - 4:20 pm	366	31	397

As a reminder, we only have 371 general-purpose classrooms.

Time Requests for Fall 2026

Meeting Pattern	UGRD	GRAD	Total
TR 9:05 am - 10:20 am	429	37	466
TR 3:05 pm - 4:20 pm	391	39	430
TR 1:35 pm - 2:50 pm	365	53	418
TR 10:35 am – 11:50 am	367	48	415
TR 12:05pm – 1:20 pm	350	54	404
MWF 9:05 am – 9:55 am	295	11	306
MWF 10:10 am – 11:00 am	238	24	262

As a reminder, we only have 369 general-purpose classrooms.

Best Practices

- Prior to Optimizer:
  - Make sure the classes that rolled will still be offered
  - Make adjustments to class times, instructors, and section sizes
    - Enrollment calculator can help determine the number of sections and sizes needed
  - Adhere to C-1, especially the distribution of courses https://aappm.psu.edu/policy/c-1-developing-the-course-offering
  - Give your academic scheduler all the information in a timely manner so they can make updates in time
  - Work with college to make sure you're not requesting the same space for same days/times
- After Optimizer:
  - If class did not get a room, consider changing days/times
  - Do not allow enrollment in class that does not have a room

Discussion & Questions