

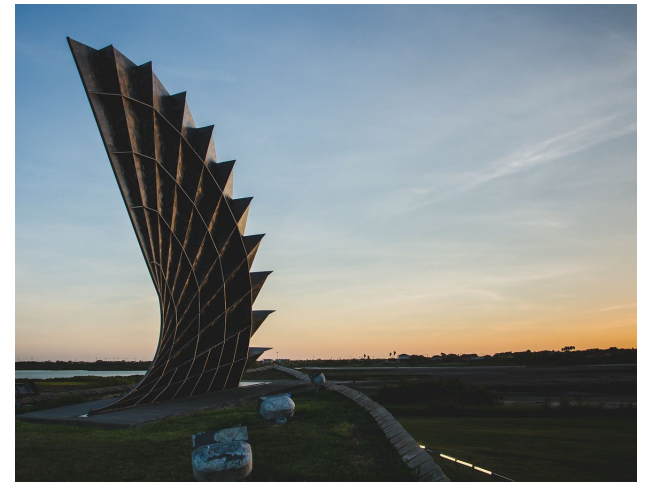
Texas Summit 2019

Using the Room Optimizer to it's Fullest!

Christie Roberts, Associate Registrar

Institution Background

- Area's premier institution of higher learning
- Student Population: 11,500 +
- Part of the Texas A&M System
 - We are Islanders....not Aggies
- Offers more than 250 days of sunshine, a Gulf Breeze, and mild weather year-around
- Ad Astra Client for 12+ years
 - Schedule
 - Platinum Analytics



Presenter Background

- Associate Registrar- employed at TAMUCC for 10 years
- Graduation from TAMUCC-2006
- Campus Lead for Course Scheduling
 - Day to Day operations of Registrar office
 - Athletic and Academic Certifications
 - Degree Works Scribe
- Leading lady of a house of 4 males: 2 fun toddlers (6 & 3) , 1 wonderful husband and 1 adorable dog





Our Tools



Ad Astra Schedule

Utilizing the optimizer with progressive optimizations: starting with 100% seat fill. The bread and butter of creating the best schedule.



Ad Astra Platinum Analytics

Has allowed our institution to make data driven decisions. Changed the way think about the classes that we offer. Practical application and brought everyone on board from the top to the bottom. SLOW but STEADY change.



Classroom Viewbook

Created viewbook to show campus what our classroom inventory looks at. We update this on a semester basis as rooms and capacity's change.

Scheduling Process Optimize Your Life!



WHAT?

Roll course schedule from like terms- clearing out
max enrollment and room assignments



ENGAGE

Send out preference set and historical
enrollment deviation reports



LEARN TO LOVE

Work with many departments to involve
everyone in the process: facilities, IT, Academic
Departments



OPTIMIZE

Optimize course schedule



COMMUNICATE

Communication to Campus Community



OPPORTUNITIES

Improving SUE Score
and better scheduling
opportunities

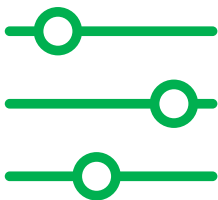
Time Flies when You Are Having Fun

Timeline



NOTIFICATION

Course Creation and Building : Roll schedule from like term to like term, clear out max enrollments and room data. Provide historical enrollment reports.



GREAT SUPPORT

Course Preference set up. Work with departments to ensure they are knowledgeable about the rooms and features. Provide historical enrollment so departments can make data driven decisions.



Optimize. Optimize. Optimize

Investing in a good optimization process generally results in acquiring an a healthy course schedule.



Room Shopping

Room Shopping begins and departments have the opportunity to switch their room assignments. We see about a 5% change in what our office schedules.

Where did we start

Schedule Policy Development



Departmentally “owned” spaces

- Colleges now understand how we each classroom fits into the puzzle and can help achieve funding for newer buildings by working together.
- Provide training and spoke with departments at their meetings to facilitate discussion.



Changing the Way we Think about Scheduling

- When our office took over scheduling in 2012, Ad Astra was a bad word on our campus. We worked to change that!
- It wasn't just a “computer” scheduling but an actual person/people piecing together the puzzle.



Teamwork Makes the Dreamwork

- Working together with facilities, IT, Academic Affairs, Administrative Services for the betterment of the University and most importantly our students.
- Enforcing standard time block

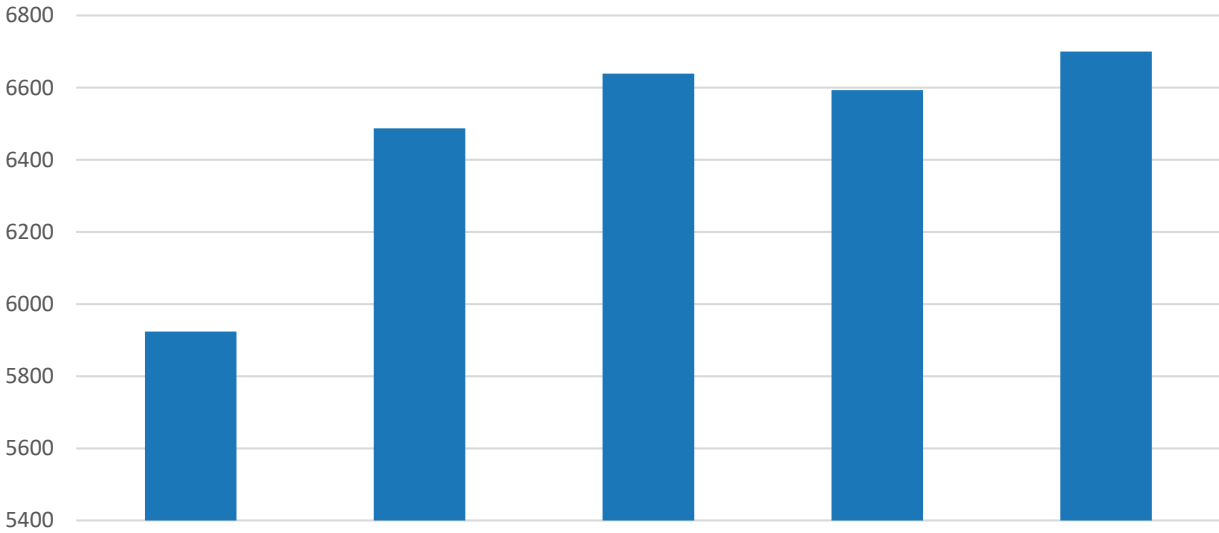


- Managed scheduling and offering of 6,700 (Includes traditional and online course)
 - Average Course Offering has increased 3.19% since 2015
- Historical data reports from the last four years (of like semesters) to assist in entering the most accurate maximum enrollment cap for your courses.

The Optimizer: Scheduling Preferences

- Classroom Viewbook helps departments choose the correct preferences.
- Preferences with varying weights: MUST BE PEDAGOGICAL
 - Building Preferences
 - Multimedia Requests
 - Proximity to labs
 - Professor's needs (instructional and physical)
- Support policy and change
- Review and refine preference set- should be built on course need to accommodate change and avoid future reworking
- Created a classroom view book to aid departments in choosing preferences

Courses Offered by Academic Year,
2015-2019



Classroom Viewbook

Island Hall 160

- Room Type
- Large Lecture Classroom
- Max Occupancy
- Max Occupancy
- 150
- 65% Fill Rule
- 98
- Features
- Seating- Fixed
 - Smart Classroom Technology
- Similar Classrooms
- Max Occupancy – 65% Fill Rule
- BH 103- 256/166
 - CI 138- 232/150



Optimizer: Sequencing

- Import courses from Banner, scheduled in Ad Astra, then pushed back to Banner
- First Year Islander Program (freshman courses) optimizer runs- Priority scheduling
- Progressive Optimizations
 - Strict parameters
 - Eight Runs 100- Decreasing 5% each run.

ASTRA SCHEDULE

ASTRA HOME | CALENDARS | ACADEMICS | RESOURCES | EVENTS | PEOPLE | REPORTING | SETUP

Settings | Results

Save As...

Room Optimization Info

Name: FALL 2015-1.0 Room Preference Set: General Preference Set Status: Optimizer completed 3/5/2015 10:00 AM (Run Time 0.6 minutes) Total # Sections Processed: 2834 Total # Bottleneck Sections: 248 Total # Infeasible Sections: 360 Total # Sections Scheduled: 492

Section Data Source:

- Production Term
- Sandbox
- Academic Sections
- Exams

 Keep Existing Room Assignments

Term: 201509

Room Filters

Regions: Classroom

Buildings: BH, CCH, CI

Section Filters

Campus: M

Meeting Types: LAB, LEC, RCT, Subjects, ACOT, ANTH, ARTS

Priorities and Settings

Scoring Balance (%)

Seat Fill: 75

Preferences: 25

Total: 100

Pre-process required prefs

Require Same Building

Require Same Room

Back-to-back interval (minutes): 15

Maximum capacity

Actual enrollment

Minimum seat fill (%): 80

Preference Weighting (%)

Room Types: 10

Features: 10

Regions: 10

Buildings: 40

Rooms: 30

Total: 100

Reports

- Infeasible Report
 - Helps show departments why a room was not assigned
- Bottleneck Sections Report
 - Use in conjunction with manual section list validation & infeasible report
- Departments are given reports before, during and after room shopping period begun.

ASTRA SCHEDULE

Infeasible Sections

Sanbox Run: FALL 2015-1.0

Enrollment Value Used (Actual or Max): Maximum

7/1/2015 12:32PM

Sub./Crs./Sec./MtgType	Instructor	Time	Days	Dates	Enrollment	Hard Constraints	Reason
Subject: ASTR							
ASTR 1311 001 LEC		5:30PM - 6:20PM	TR	8/26/15 - 12/1/15	0	RoomType:Classroom	No rooms available due to preferences
Subject: BIMS							
BIMS 2200 001 LEC	Silva	7:00PM - 8:40PM	M	8/26/15 - 12/1/15	15	RoomType:Classroom	No rooms available due to preferences
BIMS 2200 002 LEC	Silva	7:00PM - 8:40PM	T	8/26/15 - 12/1/15	11	RoomType:Classroom	No rooms available due to preferences
BIMS 2200 003 LEC	Pennoyer	7:00PM - 8:40PM	W	8/26/15 - 12/1/15	15	RoomType:Classroom	No rooms available due to preferences
BIMS 4395 001 LEC	Hornsby	5:30PM - 6:20PM	M	8/26/15 - 12/1/15	10	RoomType:Classroom	No rooms available due to preferences
BIMS 4590 005 LEC	Berkich	2:00PM - 3:15PM	MW	8/26/15 - 12/1/15	5	RoomType:Classroom	No rooms available due to preferences
BIMS 5311 001 LEC	Gonzales	12:30PM - 1:45PM	TR	8/26/15 - 12/1/15	5	RoomType:Classroom	No rooms available due to preferences
BIMS 5374 001 LEC	Buck	7:00PM - 8:15PM	MW	8/26/15 - 12/1/15	10	RoomType:Classroom	No rooms available due to preferences
Subject: BIOL							
BIOL 1406 111 LAB	Huang	8:00AM - 9:50AM	W	8/26/15 - 12/1/15	24	Room:CI 208 - LSCI Lab, CI 207 - LSCI Lab	No rooms available due to preferences
BIOL 1407 001 LEC	Soliman	12:00PM - 12:50PM	MWF	8/26/15 - 12/1/15	168	RoomType:Classroom	No rooms available due to preferences
BIOL 1407 102 LAB	Norris	8:00AM - 9:50AM	W	8/26/15 - 12/1/15	24	Room:CI 208 - LSCI Lab, CI 207 - LSCI Lab	No rooms available due to preferences
BIOL 2200 001 LEC	Silva	7:00PM - 8:40PM	M	8/26/15 - 12/1/15	11	RoomType:Classroom	No rooms available due to preferences
BIOL 2200 002 LEC	Silva	7:00PM - 8:40PM	T	8/26/15 - 12/1/15	14	RoomType:Classroom	No rooms available due to preferences
BIOL 2200 003 LEC	Pennoyer	7:00PM - 8:40PM	W	8/26/15 - 12/1/15	12	RoomType:Classroom	No rooms available due to preferences
BIOL 4429 102 LAB	Fisher	1:00PM - 3:50PM	R	8/26/15 - 12/1/15	20	Room:CS 240 - LSCI Lab	No rooms available due to preferences
BIOL 4432 102 LAB	Tornabene	5:00PM - 7:50PM	T	8/26/15 - 12/1/15	24	Room:CS 235 - LSCI Lab	No rooms available due to preferences
BIOL 4590 006 LEC	Berkich	2:00PM - 3:15PM	MW	8/26/15 - 12/1/15	5	RoomType:Classroom	No rooms available due to preferences

Infeasible Sections

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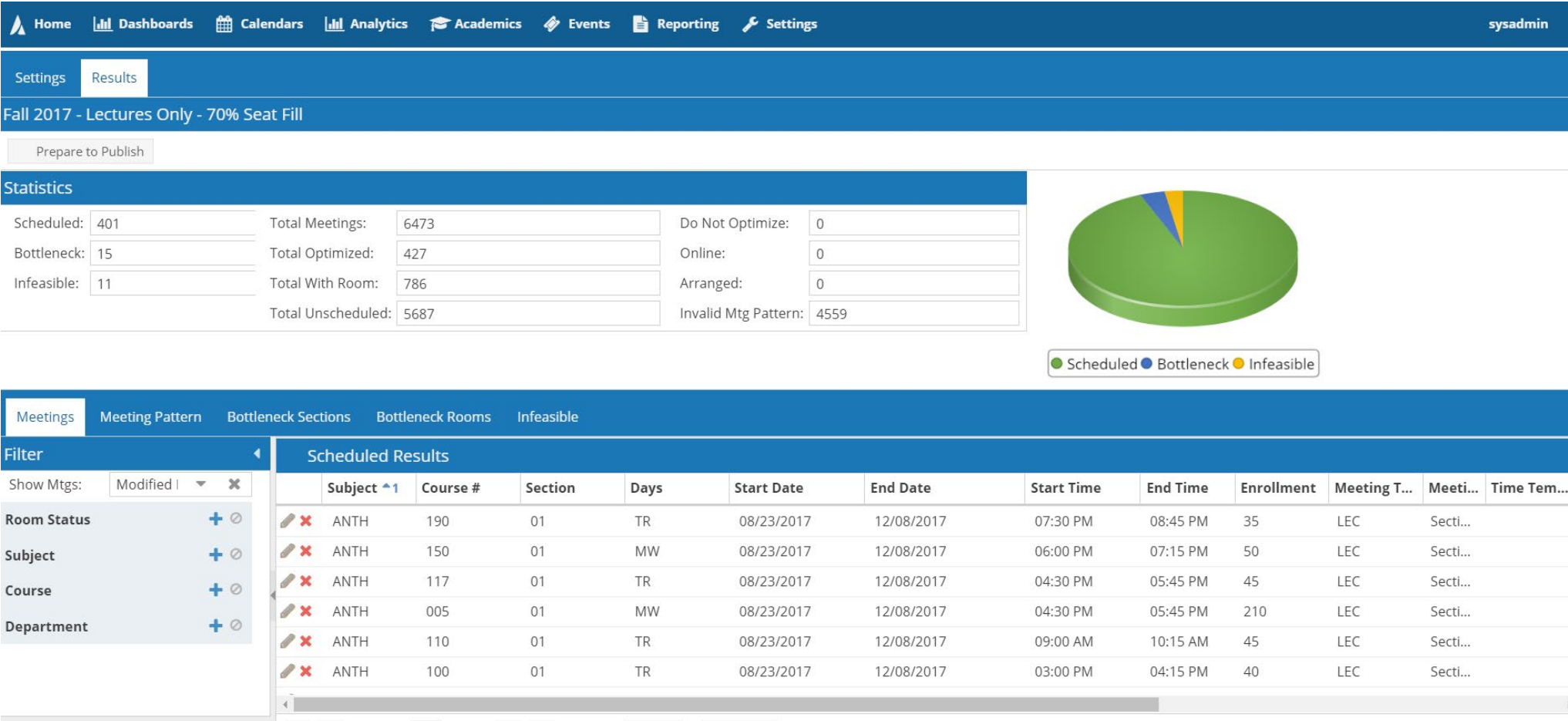
Optimizer Explained

- Sandboxes
 - Creates copy of term or previous sandbox and uses an algorithm to schedule unplaced classes into rooms based on preference sets, filters, and settings
- Adjustable Settings
 - Minimum Seat Fill
 - Preference weights
 - Scoring Balance
- Filters
 - Regions, Buildings
 - Campus, Meeting Types, Subjects, Departments, Time Frames

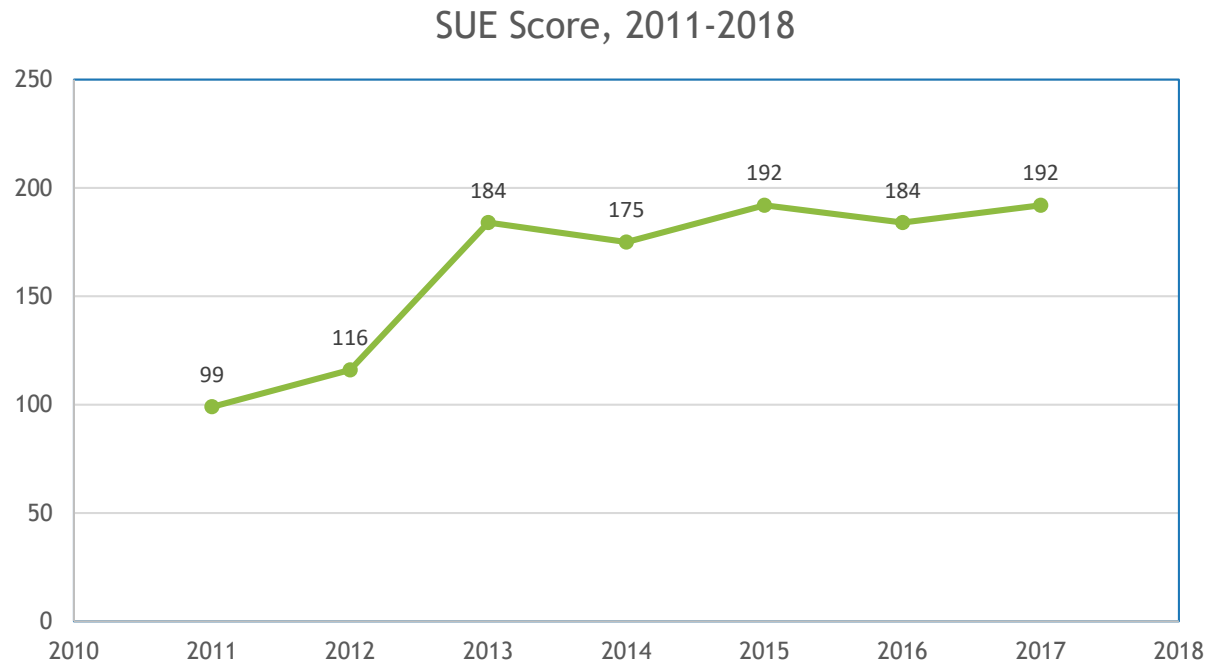
Best Practices Prior To Optimization

- Data Clean Up (Prior to Term Import)
 - Ensure section imports data is mapped appropriately from the SIS to Astra Schedule
 - Have Facilities Involved/ Walk the campus to keep inventory up to date
 - Ensure accurate Room Types and Features
 - Reports check for mis-scheduled classes, Invalid combined sections, etc...
- Special Requests (Between Term Import and Optimization)
 - Placing matching classes, special instructor needs, etc...
 - Documented information due to our office by Data Entry Deadline
 - Mark totally non-standard sections as “Do Not Optimize”
- Department Space
 - Typically allow two weeks for departments to place their labs / seminars in their own space before beginning optimization

Reading Results and Comparing Runs



Space Utilization Efficiency (SUE) Score



- TAMU-CC started using Ad Astra in 2007
- TAMU-CC started using the Optimizer in 2013

****The Office of the University Registrar began scheduling in Spring 2013****

Managing the Change

- Stop pre-assignments and roll forwards!
- Deal with the political porcupine!
- Support policy and change on campus!
- Create What-If? Scenarios!
- Use results and reporting to succeed!



Questions and Conversation

Know of something that could help us? Can we help you?
Contact Me!

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