Strategic Scheduling
It’s just scheduling. What’s the big deal?
What’s the difference

“course” vs. “class”
Let’s learn how a course becomes a class

Step 1: Instructor Proposal in ECAS
Step 2: Approval Process
Step 3: Department Schedulers Work in CCS

New Class!
Step 1: Instructor Proposal in ECAS

ECAS is also used for:
- Adding topics courses
- Updating existing courses*
  - Editing
  - Deactivating
  - Changing a grade basis
  - ...and more!
Step 2: Approval Process

Once approved, the course is added to the University’s course catalog.

**Approvers' Course and Topic Proposals:**

This is generally only useful to course approvers.

This allows them to find only the course and topic proposals awaiting a given type of approver, filtering out all other proposals. The numbers in parentheses are the numbers of proposals pending the given level of approval. A "0" indicates that there are no outstanding proposals for the given type of approver.

- **Department (558)**
- **Colleges and Deans (168)**
- **Provost Approval (29)**
- **Honors Approval (0)**
- **LE Approval (14)**
- **Writing Intensive Approval (17)**
- **TC Graduate School (0)**
- **Catalog Edit (5)**
- **CCE Catalog Edit (1)**
- **PeopleSoft Entry (0)**
Step 3: Department Schedulers work in CCS

- Subset of panels in PeopleSoft.
- CCS is either open or closed.
Class scheduling cycle

1. Class information imported from PeopleSoft to Astra
   Schedule via the interface

2. Batch Scheduling of General Purpose Classrooms using Astra
   Optimizer completed when CCS is closed

3. General Purpose Classroom assignments published to Astra
   Schedule Academics

4. Classroom assignments exported to PeopleSoft

Office of Classroom Management
Course became a Class

- Students can register for the class
- Instructors can view room assignments
Course,  Class,  Classroom,  Calendar

ECAS  CCS  Astra Schedule  Scheduled!
OK, so scheduling is complicated. But once it’s on the class schedule we’re done—right?
OCM Lens: room access vs. class access

- Student
- Room
- Class

Scheduling
Room Lens

Hours of demand on General Purpose Classrooms (GPC) only

CLA requires 124 of 327 GPC to accommodate the 50 minutes of class time offered between 11:15am-12:20pm
Room Lens

> Are classrooms the right size and location?

> Does room stock need to be adjusted?

> Is there a budget for room updates?
Classes offered at the same time complete for the same limited number of students.

Wednesday 12:20 - 1:10
Enrollment: 4,488
CLA Classes: 110 scheduled
Class Lens

> What classes are competing?

> Can we offer classes so that students can register for more classes required for graduation, not choose between them?

> Can we increase productive credit hours earned per year by scheduling strategically?
Student Lens

Availability of classes needed for graduation:

13.6% expressed some dissatisfaction
25.7% were somewhat satisfied
60.8% were satisfied
Student Lens

> Are these acceptable numbers?
> Is the UMN satisfied with a 61% success rate?
  - Too many students vie for too few seats
  - Oversubscribed & cancelled offerings wreak havoc
  - Without access, students fall behind
OK, so how did we get into this mess and how do we fix it?
Roll forward

• Class data in PeopleSoft/CCS rolls forward
  • Data is copied like term to like term-
    Fall 17 to Fall 18
    Spring 18 to Spring 19
  • Used as a convenience & to save time
  • Requires regular review & refinement
Demand varies by semester:

- Students are in various stages of degree progress
- Enrollments are dynamic & change faster than schedules
- Student class needs & class schedules are disconnected
Roll forward

• Positive-
  • Minimize internal & staffing disruptions
  • Stable class offerings across years

• Negative- If schedules are not refined...
  • Limits class access
  • Limits response to dynamic enrollments
Supply & Demand

> Base class offerings on student needs
> Schedules require thoughtful allocation & alignment with student needs
> Faculty is the most valuable resource to students
  > Minimize low enrollment classes- reduce unneeded sections
  > Shift resources to high demand classes- increase needed sections
> Spread class offerings throughout the day and across the week
Supply & Demand

> Increase institutional space utilization
  > Limit non-standard class meetings
  > Align classroom size with class enrollment
  > Equitably share prime rooms during prime time
  > Spread class offerings throughout the day and across the week
# Standard Time Grid

## Minneapolis Campus

<table>
<thead>
<tr>
<th>Period</th>
<th>A Times (MTWTHF)</th>
<th>B Times (TTh only)</th>
<th>C Times (MW, WF, MF only)</th>
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</thead>
<tbody>
<tr>
<td>I</td>
<td>08:00 - 08:50</td>
<td>08:15 - 09:30</td>
<td>08:15 - 09:30</td>
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<td>II</td>
<td>09:05 - 09:55</td>
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<td>III</td>
<td>10:10 - 11:00</td>
<td>09:45 - 11:00</td>
<td>09:45 - 11:00</td>
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<td>11:15 - 12:05</td>
<td>11:15 - 12:30</td>
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<tr>
<td>VI</td>
<td>13:25 - 14:15</td>
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<tr>
<td>VII</td>
<td>14:30 - 15:20</td>
<td>14:30 - 15:45</td>
<td>14:30 - 15:45</td>
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<td>VIII</td>
<td>15:35 - 16:25</td>
<td>16:00 - 17:15</td>
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<td>IX</td>
<td>16:40 - 17:30</td>
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Office of Classroom Management
Standard Time Grid

Following standard times provides the best class access & the best use of rooms
Non-Standard Time Grid

Non-Standard time limits class access & results in less desirable room placement
Room Utilization

A Back-of-the-Envelope Calculation for Alternative Utilization Goals

classroom demand = 200 (Avg. room hours per hour)
annual cost of a classroom = $15,000 (for argument’s sake)

time utilization = 50%
Policy Goal
time utilization = 71%

200/50% = 400
Implied Room Inventory
200/71% = 278

400*$15,000 = $6,000,000
Implied total annual classroom cost
278*$15,000 = $4,170,000

Savings $6,000,000 – 4,170,000 = $1,830,000
OK, so what’s next?
## Student Success Strategies

<table>
<thead>
<tr>
<th>Demand-side Strategies</th>
<th>Supply-side Strategies</th>
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</thead>
<tbody>
<tr>
<td>Intrusive Advising</td>
<td>Remedial Education Reform</td>
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<tr>
<td>Data Analytics</td>
<td>Simplified Degree Requirements</td>
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<tr>
<td>Degree Roadmaps</td>
<td>Improved Course Availability</td>
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<tr>
<td>Informational Campaigns</td>
<td>Incentivize Timely Completion</td>
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“One overriding concern that college leaders should keep in mind is the danger that, if not framed well, approached carefully and paired with supply-side strategies, demand-side strategies can be interpreted as an implicit judgment that what the college puts out for students is fine and that students just need to make better choices.

Leaders must be very clear that improving timely graduation requires the college to ask itself tough questions about what it can do better to simplify and empower the choices that students make as they navigate the institution.”

Strategic Scheduling

> Implement Strategic Scheduling
  > Join class schedule data to student degree progress data
  > Offer the right classes (curriculum)
  > In right number of sections (enrollment)
  > To the right number of people (enrollment)
  > At the right time of day (scheduling)
Strategic Scheduling

> Outcomes
  > Efficient resource utilization
  > Improved student success
  > Ability to respond to change

Strategic scheduling may be difficult to implement but it is worth the effort and is a major contributing factor to degree completion.
Our Opportunity

Student Data + Class Data + Analytics

Informs Scheduling + Rooms = Strategic Scheduling
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