

## EXECUTIVE SUMMARY

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# THE HIGHER EDUCATION SCHEDULING INDEX

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## JULY 2016 REPORT

Ad Astra Information Systems

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## EXECUTIVE SUMMARY

The **Higher Education Scheduling Index (HESI™)** is a database that tracks how effectively colleges and universities allocate their faculty and classrooms to meet students' course needs. The database includes metrics from a cross section of 4-year public, 4-year private, and 2-year public higher education institutions. Its goal is to generate benchmarks that can inform institutional scheduling practices and course offerings, in order to improve on-time graduation rates, and better utilize existing space and other institutional resources.

Among other findings, the 2016 benchmarking index found that over a third (36%) of entry level courses at the 4-year public institutions studied had enrollment ratios of 95% or more, creating bottlenecks that keep students from graduating on time. The HESI Report also found that, even during peak hours, classroom utilization ranged from only 63% at community colleges sampled to 70% at 4-year public institutions. This indicates that scheduling practices, more so than physical space constraints, limit students' course access and contribute to bottlenecks on many campuses. In 2015, colleges and universities spent more than \$11.6 billion on construction; \$8.7 billion of this went to construction of new buildings, 42% of which included classrooms, according to College Planning & Management's [annual survey](#).

This 2016 Annual Report of the Higher Education Scheduling Index (HESI) highlights data derived from the HESI database in July 2016, when 157 colleges and universities were included. The data can be segmented by "like" institutions and is comprised of 82 four-year public schools, 52 community colleges and 23 four-year private institutions.

## REPORT HIGHLIGHTS

The general pattern in the data reflects an imbalance between seats offered and seats needed for most courses. Only around a third of the courses taught at all types of institutions measured have a "balanced" seat supply and demand. Some of the other highlights of the findings are listed below:

**Space Isn't The Issue:** Classrooms at 4-year public schools included in the benchmarking were in use less than half of the time during a standard week, and were in use only 70% of the time during primetime hours. This was even more pronounced at 2-year public institutions, where classrooms were only in use for 39% of the standard week.

**Facing the Goldilocks Problem:** Public, 4-year colleges included in the index were more likely to have courses that were either underutilized (36%) or overloaded (33%) than courses that effectively balanced seat supply with student demand (31%).

**Bottlenecks Block Progress:** 36% of first year (100-level) courses at 4-year public institutions were overloaded, creating access and progression bottlenecks that impact students. 4-year private colleges fared slightly better, but still had 29% of entry level courses that were overloaded.

**Community Colleges Provide Access:** True to their mission, the community colleges included in the benchmarking seem to prioritize access to entry-level courses. Only 16% of 100-level courses were overloaded at community colleges.

**Opportunities Exist for Cost Savings:** Based on the data available, all three types of institutions included in the index have opportunities to save money by reducing or eliminating courses that do not have sufficient student demand. This opportunity is greatest at 4-year private schools (up to 20% of courses at these schools could either be reduced or eliminated based on demand), though also exists for community colleges (18%) and 4-year colleges (16%).

#### ■ SPACE MANAGEMENT METRICS

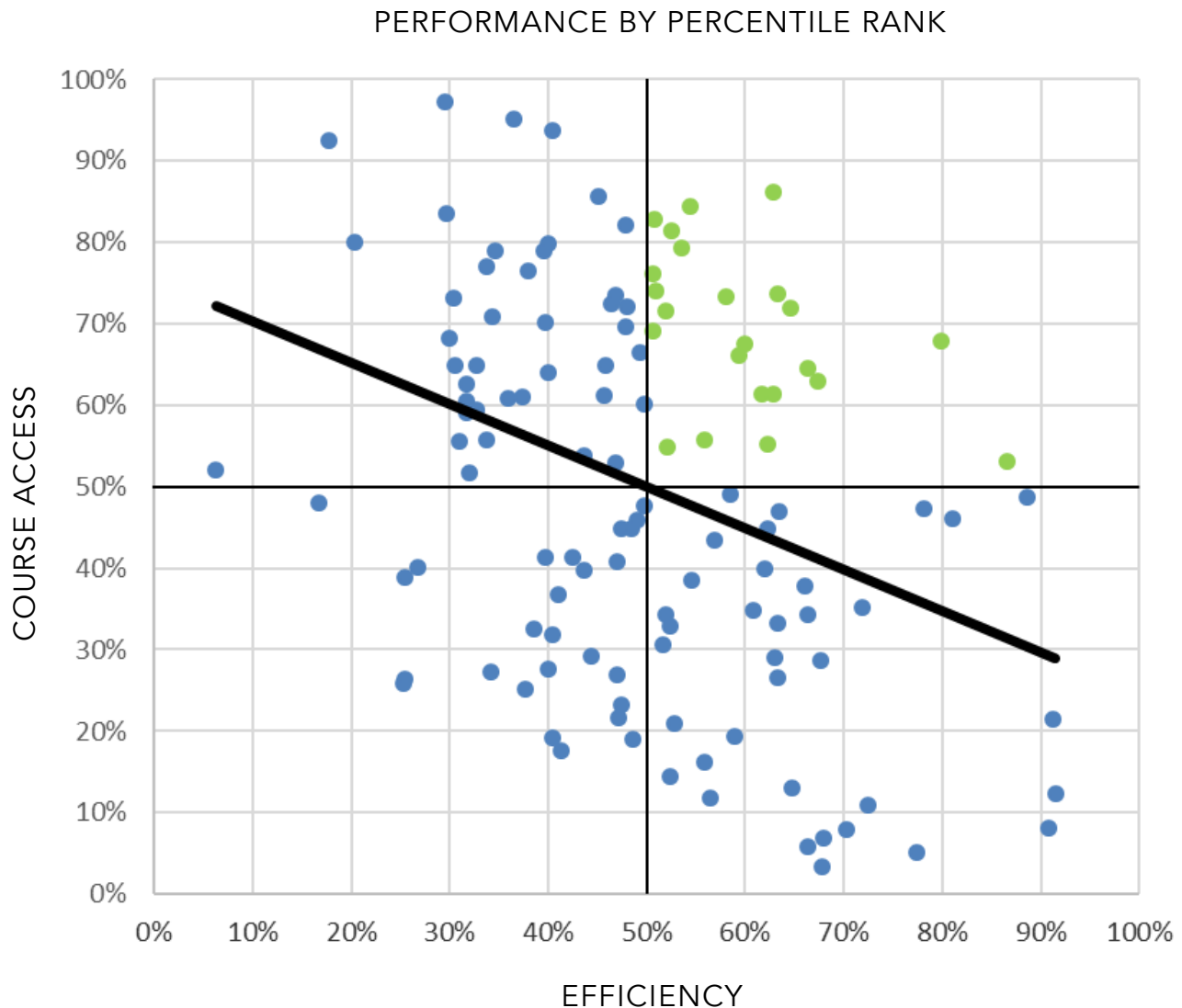
Measure	Description	4 Year Public	4 Year Private	2 Year Public
Classroom Utilization Standard Week	The percentage of hours in a standard week (as defined by each institution's usage patterns) that a typical classroom is in use	49%	50%	39%
Classroom Utilization Primetime	The percentage of hours in the primetime subset of a standard week (as defined by each institution's usage patterns) that a typical classroom is in use	70%	66%	63%
Seat Fill Utilization - Enrollment	The percentage of seats in use ( <i>based on enrollment</i> ) in a classroom when it is scheduled (Average Enrollment divided by room capacity)	62%	57%	63%
Off-Grid Waste	The percentage of capacity wasted by scheduling non-standard meeting patterns during Primetime Hours	16%	15%	17%

## COURSE OFFERING METRICS

Measure	Description	4 Year Public	4 Year Private	2 Year Public
Enrollment Ratio	Overall average fill rate for course offerings calculated as census enrollment divided by enrollment capacity	81%	74%	74%
Balanced Course Ratio	The percentage of unique courses offered that are balanced with student need, defined as having an Enrollment Ratio between 70% and 95%	31%	30%	37%
Under-Utilized Course Ratio	The percentage of unique courses offered that are an inefficient use of faculty and classroom resources because they are under-enrolled, defined as having an Enrollment Ratio less than 70%	36%	43%	48%
Overloaded Course Ratio	The percentage of unique courses offered that are difficult for students to register for because they have an Enrollment Ratio greater than 95%	33%	27%	15%
First Year Overloaded Course Ratio	The percentage of unique 100-level courses offered that are difficult for students to register for because they have an Enrollment Ratio greater than 95%	36%	29%	16%
Addition Candidates Offered	The percentage of total sections in a schedule that could potentially be added to the schedule based on sufficient student demand to justify one or more additional sections, limited to courses offered in the analyzed term	5%	4%	2%
Efficiency Candidates	<p>The percentage of total sections/courses in a schedule that could potentially be removed based on insufficient demand. Efficiency candidates include:</p> <ul style="list-style-type: none"> <li>• Reduction Candidates: Percentage of total sections across multi-section courses that could potentially be removed from the schedule based on insufficient demand to justify these sections</li> <li>• Elimination Candidates: Courses with one section that could potentially be removed from the schedule as long as graduation requirements are not compromised</li> </ul>	16%	20%	18%

## SNAPSHOT: HESI INSTITUTIONS

The following scatter plot of HESI institutions demonstrates the opportunity to balance students' course access with campus efficiency. Success in these areas is frequently inversely correlated (e.g. efficient institutions tend to have less course access, and vice versa). Only 23 of the 157 institutions in the 2016 HESI Report excelled in both categories. They are represented in the top-right quadrant of this graph (green dots) where student course access and campus efficiency performance are both better than industry averages.

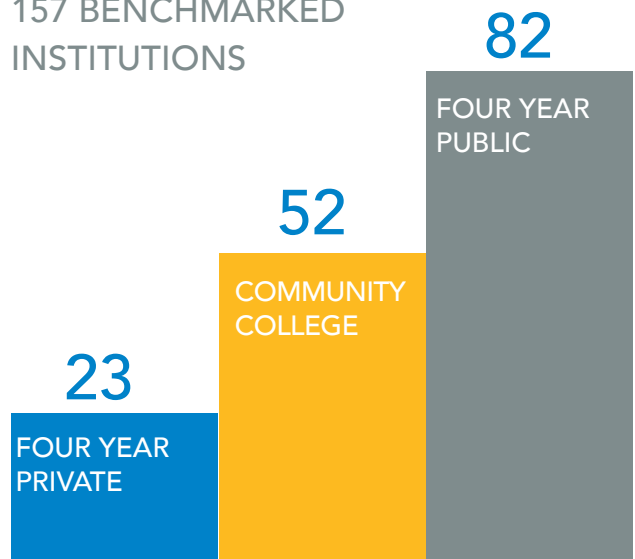


## METHODOLOGY

This Index is based on data from a subset of higher education institutions working with Ad Astra Information Systems from 2010-2016. Information about academic facilities, student academic history, and course sections was aggregated and analyzed over multiple academic terms.

The resulting performance metrics objectively describe and track the allocation of faculty and space resources and measure the effectiveness of course and room scheduling at each institution, as well as across like institutions and collectively across the data set.

157 BENCHMARKED  
INSTITUTIONS



## ABOUT AD ASTRA INFORMATION SYSTEMS

Ad Astra Information Systems offers data-informed software solutions and consulting that help institutions better allocate resources and forecast student course demand. Partnering with Ad Astra helps campuses achieve improved resource stewardship and student outcomes.