

COURSE MIXOLOGY

MEASURING CREDIT HOURS BY
STUDENT HOME COLLEGE AND COURSE COLLEGE
FOR RESOURCE ALLOTMENT

PRESENTED BY JASMINE AHMAD, M.S.

ILLINOIS ASSOCIATION OF INSTITUTIONAL RESEARCH
OCTOBER 24, 2014



DEPAUL UNIVERSITY

ENROLLMENT MANAGEMENT AND MARKETING

Institutional Research & Market Analytics

A Challenging Climate

US college enrollments decline for a second year (US Census, 2014)

- Fewer high school graduates
- Rising costs

Missing enrollment and revenue targets (Carlson, 2014)

The Chronicle surveyed 368 small and mid-size institutions

- 58% of AACSU₁ institutions surveyed did not meet either enrollment or revenue goals
- 62% of CIC₂ institutions surveyed did not meet either enrollment or revenue goals

Moving Forward

Of institutions missing targets, a majority are...

- improving enrollment-management operations
- putting more resources into marketing
- starting new programs to attract students

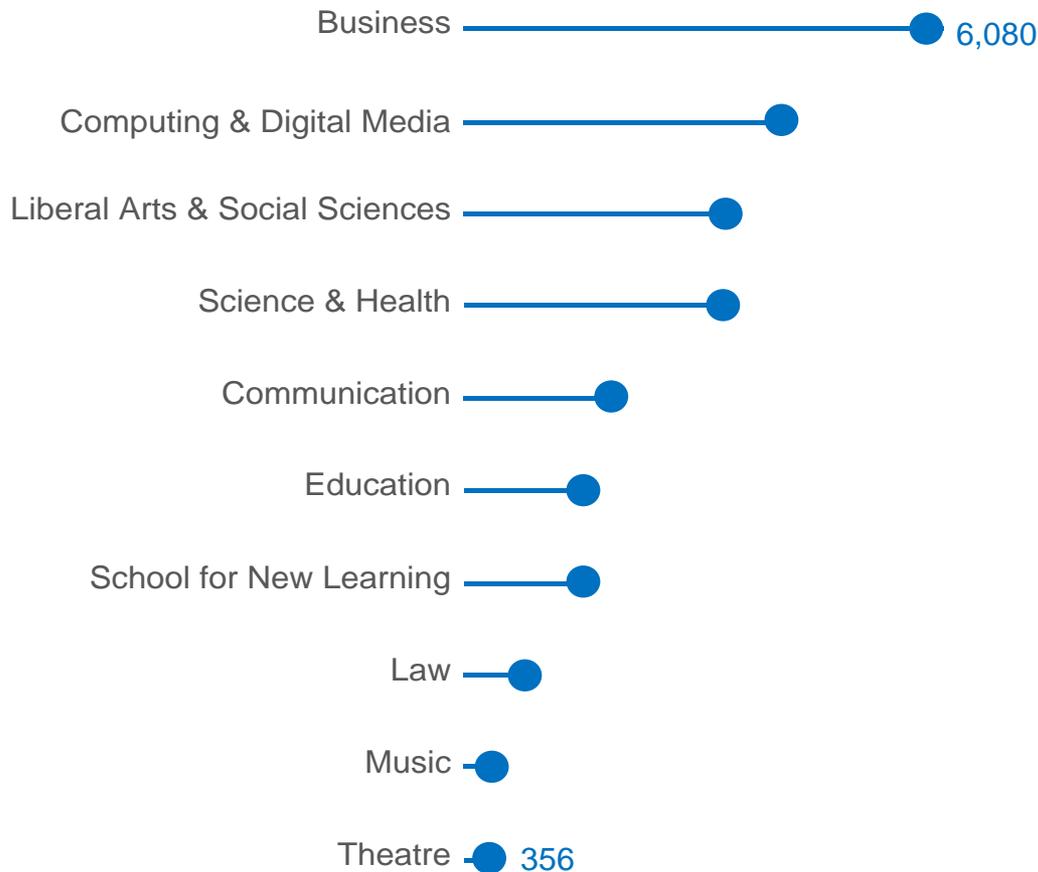
Demand for quick, reliable and accurate data is stronger than ever!

¹ AACSU: American Association of State College and Universities

² CIC: Council of Independent Colleges

About DePaul

Colleges by Fall 2014 Enrollment



23,799 enrollments

68% Undergrad

29% Grad

3% Law

Approximately 300

undergraduate & graduate
programs

Credit hours by location

42% in the Loop Campus

46% in Lincoln Park Campus

12% in suburban campuses, online,
or study abroad

Strategic Resource Allocation Process Overview

Step 1: Enrollments

Continuing Students

- Determine probability that current students will persist into the next class or graduate

New Students

- Forecast based on historical trends
- Modify forecasts with input from admissions, enrollment management, executives, and college deans
- Examine marketing conditions and trends

Strategic Resource Allocation Process Overview

Step 2: Credit Hours

Home college credit hours: Hours generated by students in the college

- Multiply enrollments by the average credit hours historically taken by students

Course college credit hours: Hours generated by all courses in the college

- Reallocate home credit hours based on historical course taking patterns
E.g., typically Business students take 10% of courses in the Fall in LAS,
allocate credit hours from those students into LAS
- Revenue is based on course college credit hours

Transparency in a Time of Uncertainty

Disparate reports

- EM&M produces reports on enrollments and **home college hours**
- Finance produces reports on **course credit hours** and revenue
- Administration needed to see trends in **both** home and course college hours in one report

Black box

- How are projections calculated?
- Is a college's service to the university taken into consideration?
- Need a **clear view** of the historical data feeding the projections

Home- by Course- College Matrix Dashboard

User Requirements

- Side-by-side views comparing course- and home- college
- Views over time
- Trends for each college

Tools

- Student and course data in Microsoft Analysis Services (data cubes)
- Tableau Desktop and Server
- Driver to support data connection (downloaded through Tableau)

[Launch Demo](#)

About Course Load Matrices & Next Steps

Crossing student major or home college with courses is a common practice with many applications

- See Suslow (1976) for instructional article on creating course load matrix coefficients to view course taking patterns by major
- Useful for predictive analytics
- Forecast the effect of changes to course requirements
- Predict the impact of new courses and programs

Caveats

Predictions are more robust with a greater N

- Budgets and projections are set at the college-level instead of the major
- Colleges distribute revenue within their departments

Awareness of structural changes effecting course-taking patterns

Moving Forward

Create an interactive projection model that allows user inputs

Questions?

THANK YOU &
HAPPY MIXING!



Screenshots

One Year Views

display one fiscal year, filterable by term

Matrix

The credit hour matrix crosses course college hours by home college hours to reflect the proportion of courses a student takes within, or outside, their own college.

<https://tableau.is.depaul.edu/views/HomeandCourseCollegeDashboard/Matrix>



Matrix by Level

Two matrices, divided by level (undergraduate and graduate) display course college hours by home college hours. Students taking courses across levels are not included in this view.

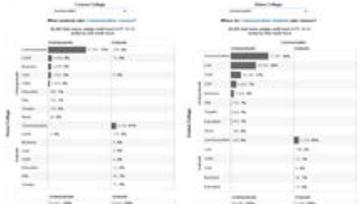
<https://tableau.is.depaul.edu/views/HomeandCourseCollegeDashboard/MatrixbyLevel>



Hours by College

Two sets of bar charts provide a detailed look at students' course taking patterns by home college and course college. This view is filterable by year, term, and college.

<https://tableau.is.depaul.edu/views/HomeandCourseCollegeDashboard/HoursbyCollege>



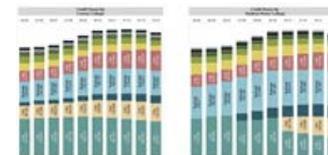
Views Over Time

display multiple fiscal years

Number of Hours Over Time by College

This view displays the number of home college and course college hours over time, filterable by college and term.

<https://tableau.is.depaul.edu/views/HomeandCourseCollegeDashboard/NumberofHoursOverTimebyCollege>



Proportion of University Credit Hours by College

This view displays the proportion of university credit hours by home college and course college, filterable by term.

<https://tableau.is.depaul.edu/views/HomeandCourseCollegeDashboard/ProportionUniversityCreditHours>



Percent Credit Hours by Home College

This line graph displays the proportion of course credit hours taken by students within, or outside, the college over time.

<https://tableau.is.depaul.edu/views/HomeandCourseCollegeDashboard/PercentCreditHoursbyHomeCollege>

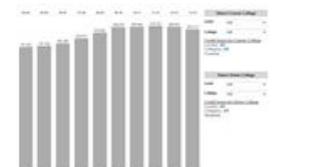


Credit Hours Over Time

This view is a tool to examine trends over time by course college, home college, and level.

Using the filters, this chart can be used to display the number graduate credit hours (course college) taken by undergraduate students (home college).

<https://tableau.is.depaul.edu/views/HomeandCourseColl..>



Fiscal Year (Summer-Spring)
13-14

All

Course College										
	Business	Communication	CDM	Education	LAS	Music	SNL	CSH	Theatre	Home College Total
Business	158,525	4,011	12,414	293	47,939	908	526	18,773	692	244,081
Communication	3,783	42,242	10,753	430	25,216	374	874	5,890	658	90,219
CDM	2,450	1,972	99,896	74	18,917	263	130	4,525	304	128,530
Education	238	380	1,351	34,809	12,133	166	246	4,800	129	54,252
LASS	7,642	4,047	9,130	1,115	104,360	612	710	11,532	716	139,863
Music	244	42	478	176	2,282	11,027	48	612	48	14,957
SNL	284	405	1,480	385	325		33,535	351	21	36,784
CSH	2,350	3,210	6,969	844	39,785	678	730	84,315	642	139,523
Theatre	318	256	764	32	3,255	32	30	724	14,862	20,273
Course College Total	175,834	56,564	143,235	38,158	254,211	14,059	36,829	131,521	18,072	868,481

Notes: The matrix examines two ways of grouping credit hours, by home college and course college.
Home college credit hours are based on the college where the student is majoring, while the course college credit hours are based on the college where the course was offered.
Data is for enrolled students at census.
Law is not included.
IPD students are counted in the enrolling college, typically CDM.

Source: Student Course Revenue Data Cube

HOVER HERE
for student home
& course college
definitions
and an example.

Course College

Undergraduate Level

	Business	Communi..	CDM	Education	LAS	Music	SNL	CSH	Theatre	Home College Total
Business	113,731	4,007	11,042	293	47,899	908	526	18,745	692	197,843
Communication	3,759	37,002	10,573	402	25,128	374	866	5,890	658	84,651
CDM	1,010	1,936	60,614	62	18,881	263	130	4,513	304	87,712
Education	198	376	1,322	12,725	11,573	166	232	4,524	129	31,245
LASS	7,490	3,933	8,914	747	85,972	612	706	11,490	716	120,579
Music	244	42	478	172	2,282	7,711	48	612	48	11,637
SNL	216	397	1,344	357	235		31,372	347	15	34,282
CSH	2,234	3,206	6,924	764	39,725	678	730	61,736	642	116,639
Theatre	290	236	720	32	3,219	32	30	724	12,740	18,023
Course College Total	129,172	51,134	101,931	15,554	234,913	10,743	34,640	108,580	15,944	702,609

Graduate Level

	Business	Communi..	CDM	Education	LAS	Music	SNL	CSH	Theatre	Home College Total
Business	44,154	4	1,372		40			28		45,598
Communication	24	5,044	180	28	88		8			5,372
CDM	1,440	36	39,006	12	36			12		40,542
Education	40	4	29	22,084	380		14	192		22,743
LASS	92	114	216	300	18,176		4	32		18,934
Music				4		3,304				3,308
SNL	68	8	104	28	90		2,163	4	6	2,471
CSH	28	4	45	60	60			17,505		17,702
Theatre	28	16	44		36				1,937	2,061
Course College Total	45,874	5,230	40,996	22,516	18,906	3,304	2,189	17,773	1,943	158,731

ωοη

LAS **Course College**

What students take LAS courses?

254,211 total course college credit hours in FY 13-14
sorted by total credit hours

	Undergraduate	Graduate	
Un	LASS	85,972, 37%	192, 1%
	Business	47,899, 20%	
	CSH	39,725, 17%	
	Communication	25,128, 11%	
	CDM	18,881, 8%	
	Education	11,573, 5%	
	Theatre	3,219, 1%	
	Music	2,282, 1%	
	SNL	235, 0%	
	Gra	LASS	20, 0%
Business			40, 0%
CSH			60, 0%
Communication			88, 0%
CDM			36, 0%
Education		180, 0%	380, 2%
Theatre			36, 0%
SNL			90, 0%
		235,113, 100%	19,098, 100%

LASS **Home College**

Where do LASS students take classes?

139,863 total home college credit hours in FY 13-14
sorted by total credit hours

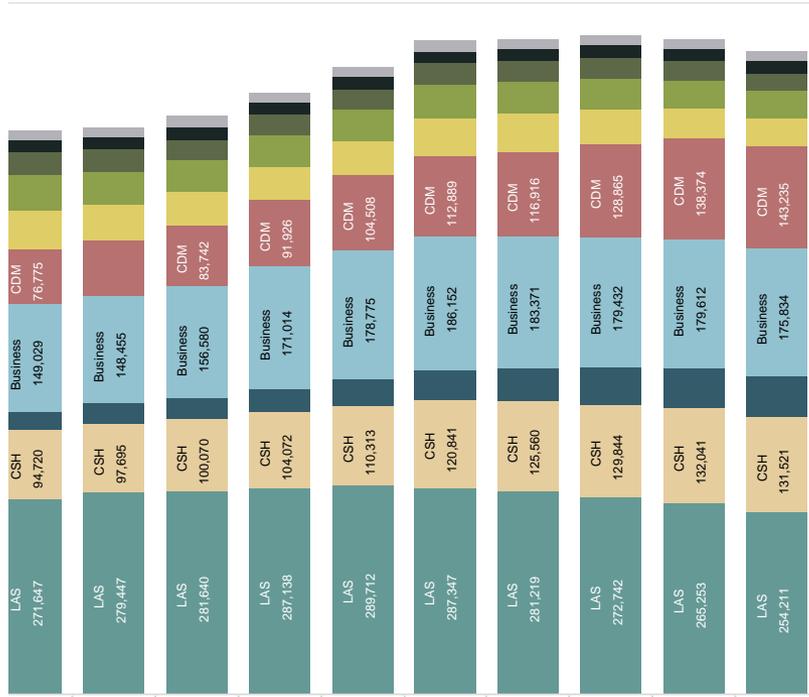
	Undergraduate	Graduate	
Un	LASS	85,972, 71%	20, 0%
	CSH	11,490, 10%	
	CDM	8,914, 7%	
	Business	7,490, 6%	
	Communication	3,933, 3%	
	Education	747, 1%	0, 0%
	Theatre	716, 1%	
	SNL	706, 1%	0, 0%
	Music	612, 1%	
	Gra	LASS	192, 0%
CSH		10, 0%	32, 0%
CDM			216, 1%
Business		60, 0%	92, 0%
Communication			114, 1%
Education		68, 0%	300, 2%
SNL			4, 0%
		120,909, 100%	18,954, 100%

All

All

Credit Hours by Course College

04-05 05-06 06-07 07-08 08-09 09-10 10-11 11-12 12-13 13-14

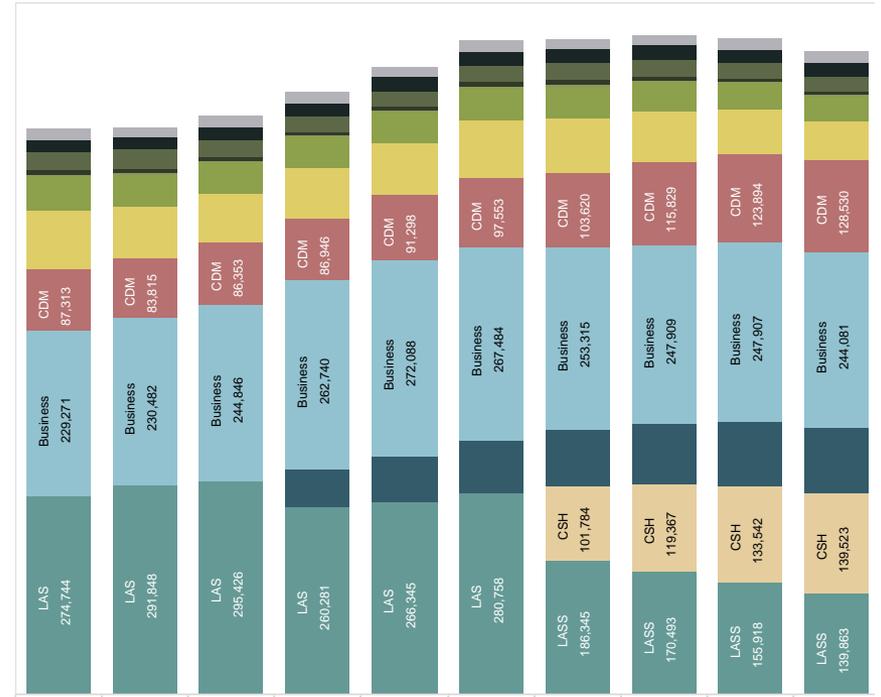


All

All

Credit Hours by Student Home College

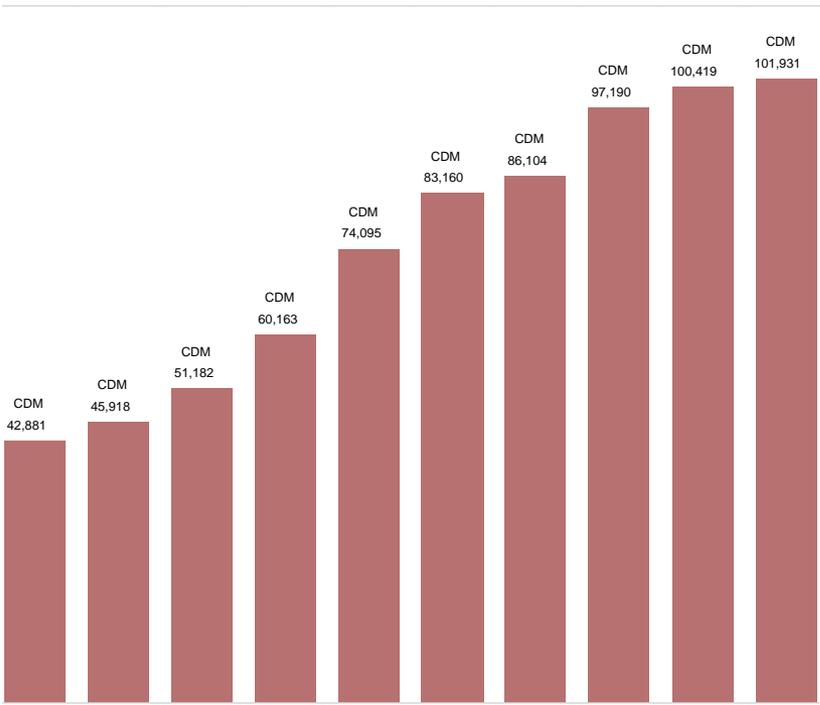
04-05 05-06 06-07 07-08 08-09 09-10 10-11 11-12 12-13 13-14



Undergraduate CDM

Credit Hours by Course College

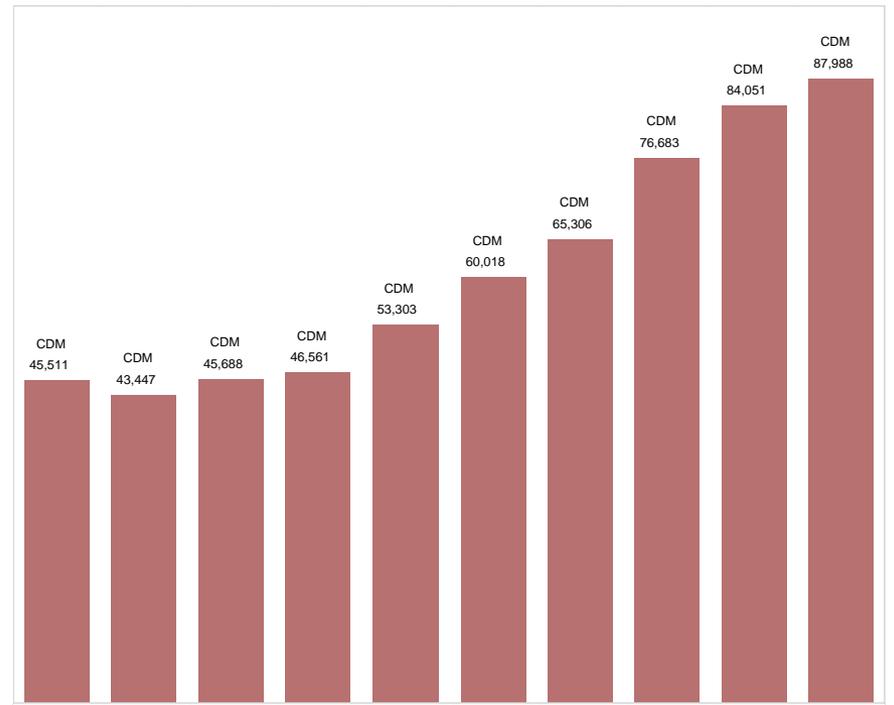
04-05 05-06 06-07 07-08 08-09 09-10 10-11 11-12 12-13 13-14



Undergraduate CDM

Credit Hours by Student Home College

04-05 05-06 06-07 07-08 08-09 09-10 10-11 11-12 12-13 13-14



Term
All

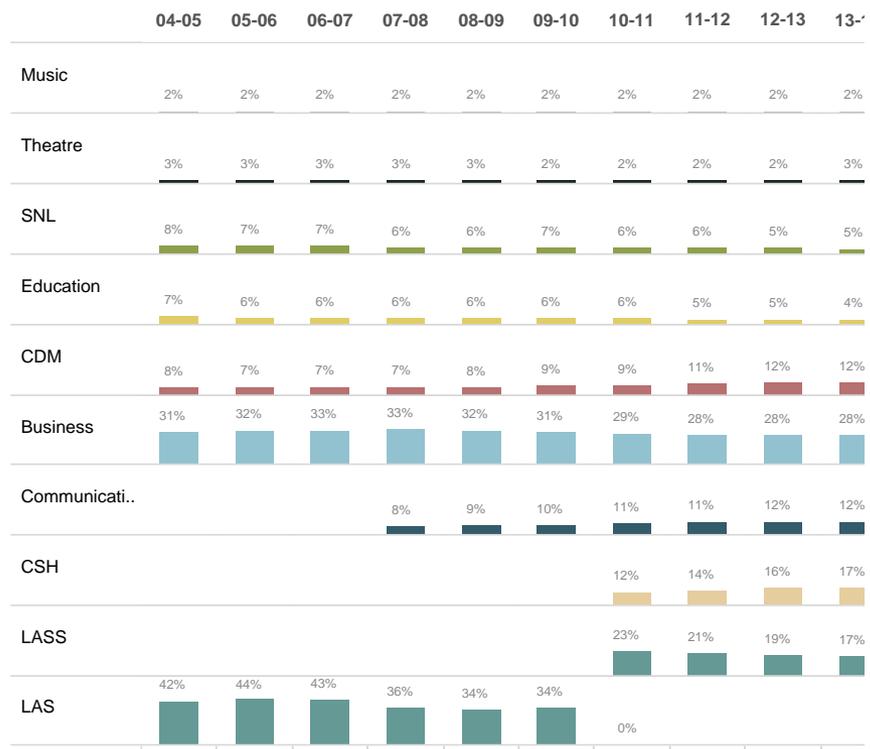
Level
Undergraduate

Proportion of Credit Hours by Course College



Undergraduate

Proportion of Credit Hours by Student Home College



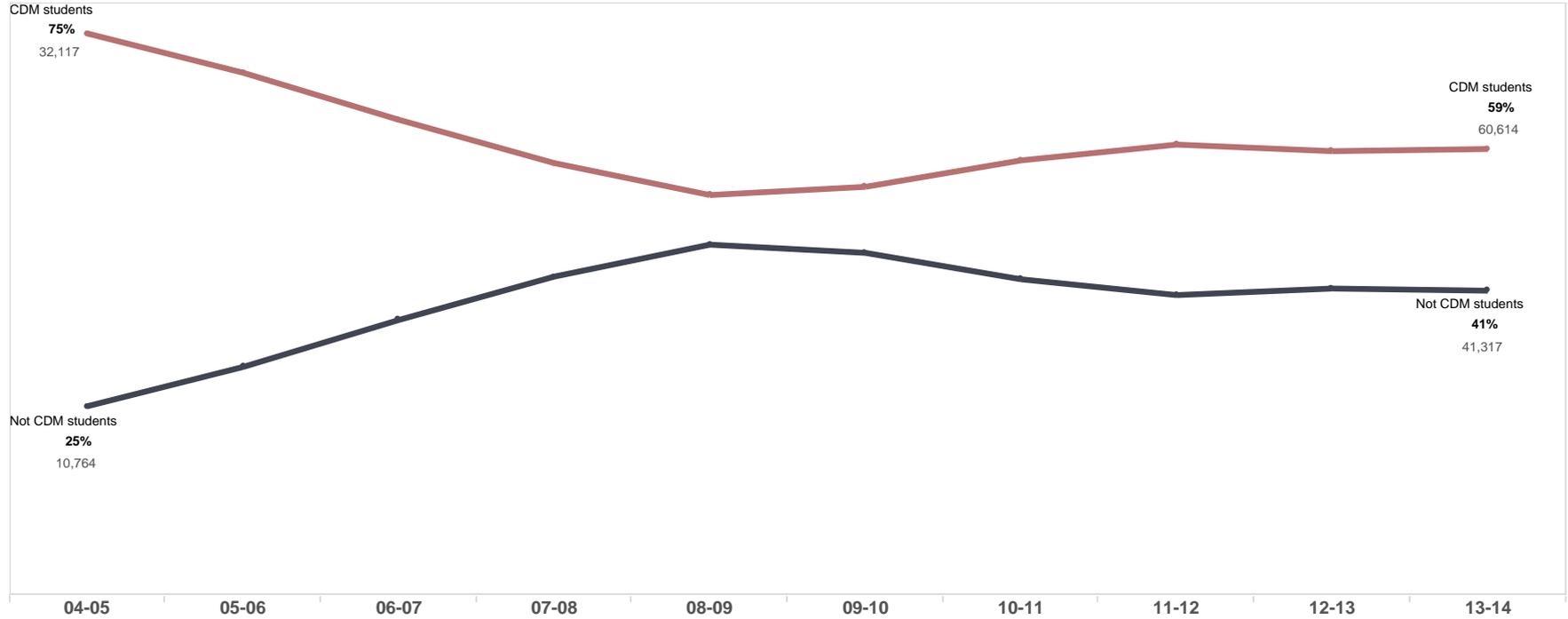
Course College Level
Undergraduate

Course College
CDM

CDM

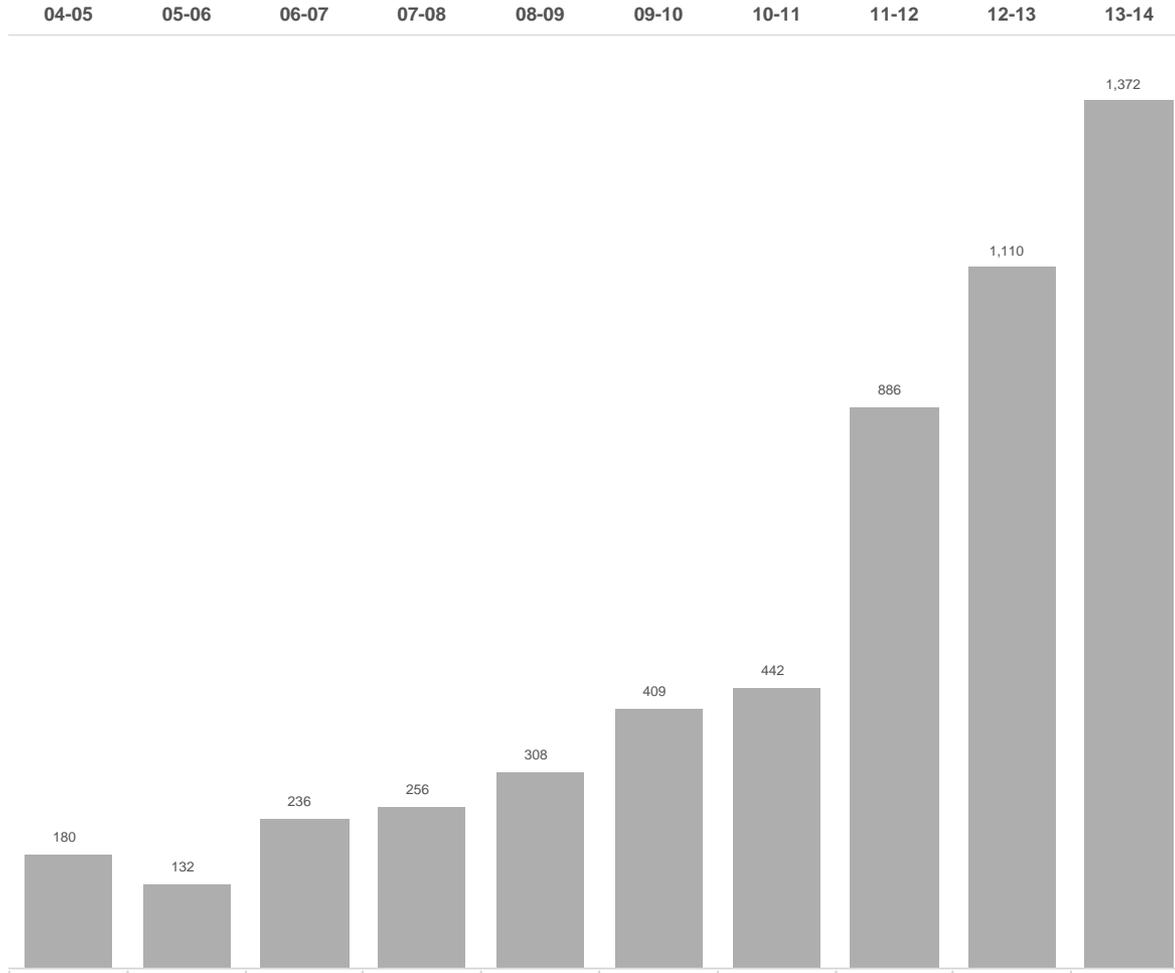
< For best view, select
the SAME course college
and home college

Percent of Undergraduate CDM course credit hours by home college of the student



Total Undergraduate CDM course college hours

100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
42,881	45,918	51,182	60,163	74,095	83,160	86,104	97,190	100,419	101,931



Select Course College

- Level**
- Graduate
 - CDM

Credit hours by Course College
 Level(s): **Graduate**
 College(s): **CDM**
Courses

Select Home College

- Level**
- All
 - Business

Credit hours by Home College
 Level(s): **All**
 College(s): **Business**
Students