

WILEY University Services

State of the

Education Market:

Trends and Insights in Key Master's Disciplines

2021

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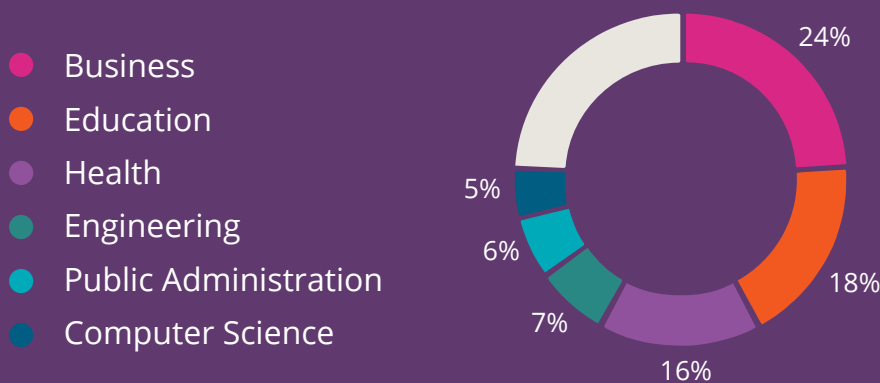
Introduction

Since 2010, the master's degree market has grown overall by a speedy 20%. However, not all degree disciplines have enjoyed equal growth. While some have the proven scale and success to thrive over the coming decade, others have been on the decline.

Research Methodology

Data for this report is based on schools reporting graduates (i.e., completed students) and was collected from IPEDS/NCES through the end of the 2018/2019 academic year. Completions, while a historical indicator, enable analysis down to the individual degree. Enrollments, by comparison, only provide data at a broad, vertical level and do not permit such refined analysis.

Accounting for 69% of all graduates, this report focuses on five of the largest master's-level verticals: business, education, health, engineering, and computer science. The end of this report delves into an array of notable programs outside of these disciplines. As an example, public administration is a large vertical, graduating even more students than computer science. However, 90% of graduates within this field received one of two degrees: a Master of Social Work (MSW) or a Master of Public Administration (MPA). As a result, they are included in the Notable Programs section of this report.



**Master's graduates,
2019 total**

845,434

How to Read This Report

The sections of this report are broken down into four main topics:

- 1. General Overview:** A macro view of overall trends in a degree vertical (e.g., business, health)
- 2. The Largest Program:** A deep dive into the largest program in each vertical
- 3. Biggest, Fastest-Growing, and Shrinking Programs:** A high-level look at some of the biggest, fastest-growing, and declining programs (Icon Legend below)
- 4. Programs Spotlight:** Additional context and notable trends for specific programs from each vertical

Icon Legend



Biggest Programs



Fastest-Growing Programs



Shrinking Programs



STEM Programs



Understanding CIP Codes

Schools report their program and graduate info to the U.S. Department of Education by Classification of Instructional Program (CIP) codes. These six-digit codes are akin to the Dewey Decimal System. For instance, a degree in project management has a CIP code of 52.0211.



Here's how it works:

The base two digits show a general degree. For example, all business degrees are reported using a CIP code that begins with 52.

The next four numbers narrowly define the discipline, while the whole six-digit number represents the specific degree program.

Example: **Project Management**

52.0211

52.0211

Business (general degree)

52.0211

Business Administration, Management, and Operations (degree type)

52.0211

Project Management (specific degree)

Data Definitions

The following metrics are key to understanding the higher education market and are utilized repeatedly throughout this report:

- **School years:** These correspond to the end of the academic calendar. For example, the most recent school year in IPEDS is 2018/2019 and is often abbreviated to “2019”.
- **Graduates:** This is the total number of students receiving degrees in a given academic year.
- **Growth:** This usually refers to the average year-over-year increase in graduates from 2014 to 2019 unless stated otherwise.



- **Average program size:** This metric indicates what a given program’s typical graduating class size might be. It is calculated based on the number of graduates divided by the number of schools reporting graduates. While the size of each individual program’s class varies from school to school, this metric helps reveal if a program is trending toward growth or decline.

- **Median program size:** This data shows the most standard program size. Median is defined as the most middle value in a list of numbers ordered smallest to greatest. Here, it means the most middle program size. Unlike average program size, which can be skewed by the presence of very large programs in the market, this metric does not reliably indicate a range of program sizes.
- **Percent online:** The number of universities reporting that they offer their program in an online/distance format. This may mean that the program is available both online and on campus, or online only.



Broad Graduate Education Trends

COVID-19 and Graduate Education

Adding unforeseen complexity to the state of the market is COVID-19. The pandemic's economic effect on the master's degree market will not be apparent in graduate data for another two years. Until then, enrollments will be more of a leading indicator of trends. For instance, preliminary data shows fall 2020 graduate enrollment was up 3.6% year-over-year (Y/Y)¹.

Now that vaccines are available to the majority of the public, it is imperative that universities quickly and deftly assess which programs they should either seize the moment to launch, keep up momentum with, or expand as the country synthesizes a new normal.

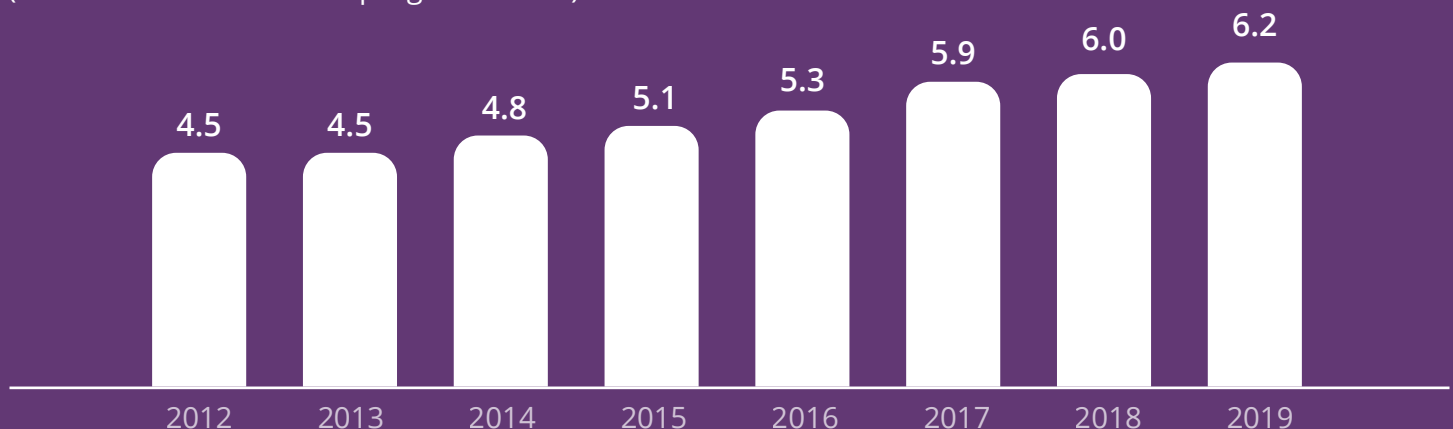
Expansion of Online Learning

The number of online master's programs has doubled since 2012, the first year schools began reporting data about distance learning to IPEDS. Sixty-four percent of schools offered at least one master's program online in 2019, compared to 43% of schools in 2012. Because online programs often feature a more flexible learning format, this has become a critical success factor for busy professionals seeking higher-level study later in their careers. With the number of universities offering online programs on the rise, it is critical that schools choose which disciplines to take online carefully so they are set up for success.

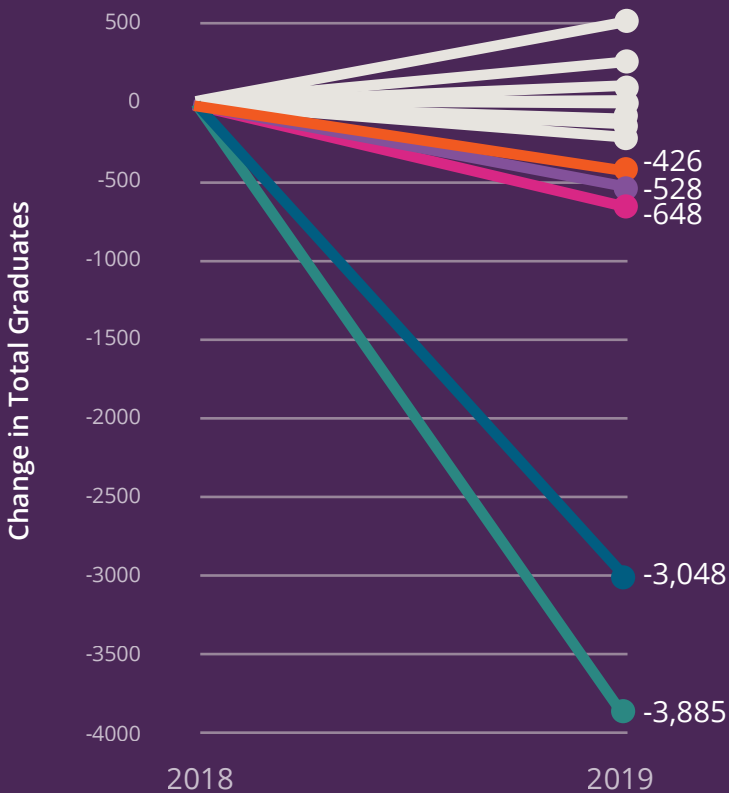
¹ "Current Term Enrollment Estimates," https://nscresearchcenter.org/wp-content/uploads/CTEE_Report_Fall_2020.pdf

Average Number of Online Programs Per University

(schools with at least one program online)



International Grads Hardest Hit



Declines in International Graduates

The overall population of international students seeking master's degrees declined after peaking in 2017. However, this decline was not evenly distributed across all areas of study. The sharpest declines are seen within engineering and computer science. As master's degrees typically take around two years to complete, international enrollment likely began decreasing in the 2016/2017 academic year.

- Business
- Computer Science
- Education
- Engineering
- Health
- Other

Reclassification of STEM-Related Programs

Many universities are incentivizing international students to enroll by reclassifying some programs into the STEM category. International students are eligible to extend their F-1 visas up to 24 months if they earn a degree from a CIP code the Department of Homeland Security (DHS) has given STEM designation (see the full list of DHS-approved STEM degrees [here](#)).



#1 Business: *The Leader of the Pack*

24%
of all 2019
master's
grads

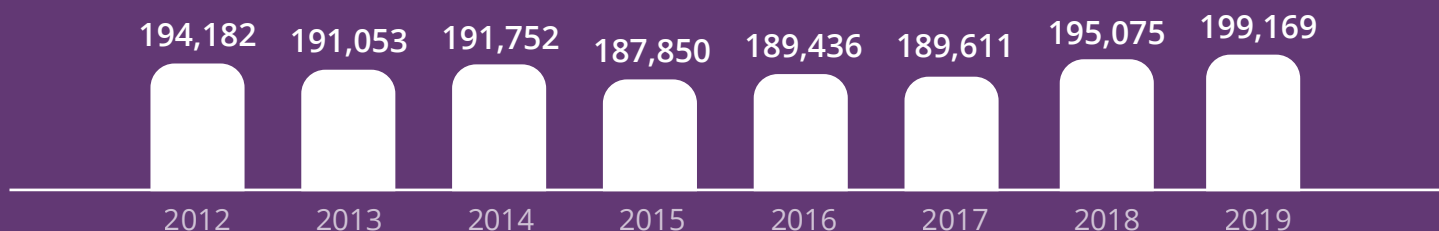
Base CIP Code: **52**

Business is the largest vertical in the master's-level education market, and the Master of Business Administration (MBA) is the largest program within the field. The MBA supports a suite of other business degrees and serves as a foundation for building out multiple concentrations.

Graduates

Business has led the master's-level education market since 2011 when it surpassed education. It accounted for nearly a quarter of all master's graduates (24%) in 2019 and has regained modest growth after years of remaining flat.

Number of Graduates

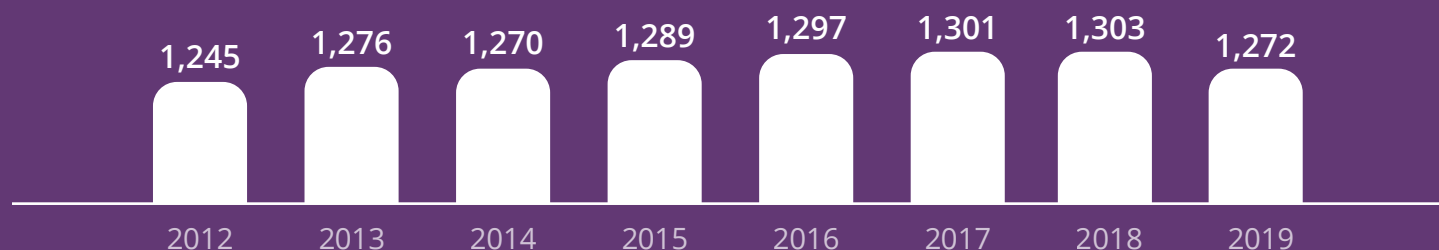


Universities in the Market

The number of universities in the graduate business market is running counter to the number of graduates. From 2015 to 2017,

the number of schools rose moderately, but has declined slightly in 2019.

Number of Universities

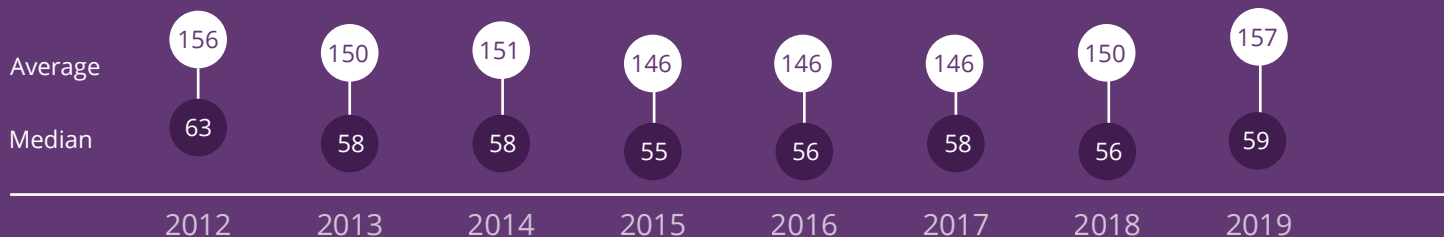


Program Size

Median program sizes have been remarkably consistent – around 57 graduates per year – but average program sizes have increased due to graduates being spread across fewer

schools. This change in distribution can be traced back to for-profit schools exiting the market. Since 2013, 42% fewer for-profits have reported business graduates.

Average/Median Program Size

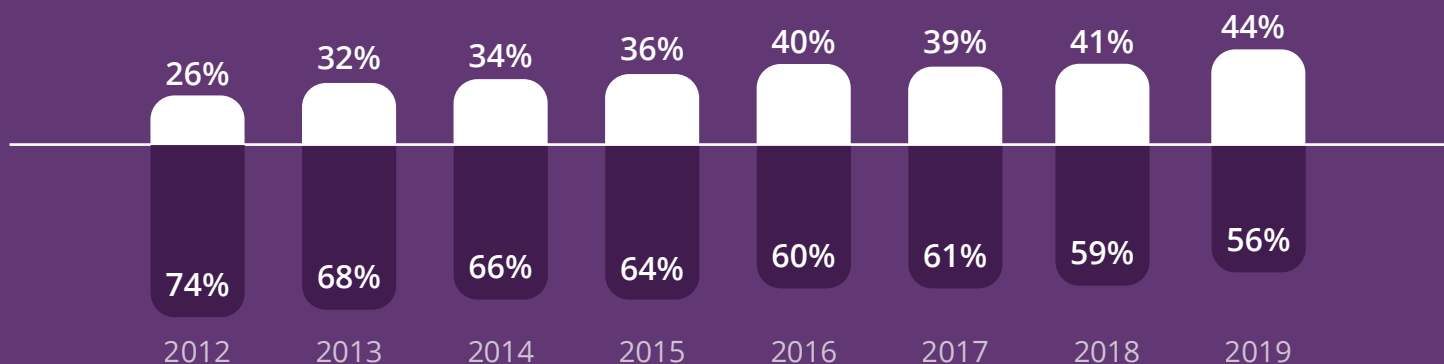


Programs Online

Most master’s-level business programs are still ground-only, but the percentage of

programs offered online has nearly doubled from 26% to 44% since 2012.

Percentage of Programs Online



Graduate Business Programs With Highest Online Adoption

(min. 100 programs reporting grads)

Organizational Leadership	Business Administration	Human Resources Management/ Administration	Management Information Systems	Marketing Marketing Management
69%	57%	50%	47%	41%

The Largest Business Program



Business Administration 52.0211

The Master of Business Administration (MBA) is the single most popular master's-level program. While graduate growth had been relatively flat until recently, this program is huge. It consistently graduates over 100k students every year and accounted for a hefty 55% of the entire vertical's graduates in 2019.

Online = Growth. In the 2018 and 2019 school years, this discipline grew Y/Y for the first time since 2012, graduating 110,365 students. Much of this growth is due to the expansion of online programs. In fact, 66% of MBA graduates attended universities with an online option.

Popular Online MBA Concentrations

- Accounting
- Finance
- Health Care Administration
- HR Management
- International Business
- Marketing



110K+

grads,
2019

111

average
program size

0%

yearly
growth

56%

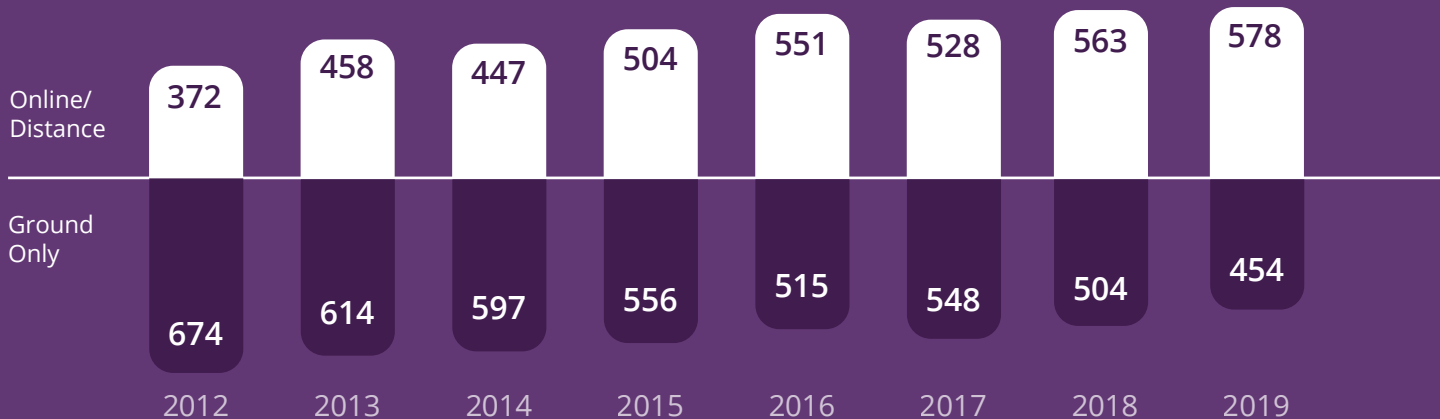
online,
2019

While the overall number of schools in the market has remained relatively consistent – hovering just above 1,000 every year since

2012 – over 200 universities have taken their programs online in the same timeframe.

Number of Ground Only and Online/Distance Programs

Master of Business Administration



In addition to offering programs online more, universities can also benefit from restructuring their program portfolio to capitalize on the MBA in two ways:

1. Cross-listing the MBA's courses to anchor other business programs
2. Offering multiple concentrations to the MBA

Online Programs Have Adapted to Meet Students' Needs

- Lower cost
- Fewer entrance barriers (e.g., waiving GMAT/GRE requirements)
- Faster completion time
- Concentration options

2029 Labor Forecast: Management Occupations

Managerial jobs are projected to grow 4.7% through 2029. They will account for 6.6% of all jobs and have a median wage of over \$100k.



Biggest, Fastest-Growing, & Shrinking Business Programs

Program Icon Legend



Biggest



Fastest-Growing



Shrinking

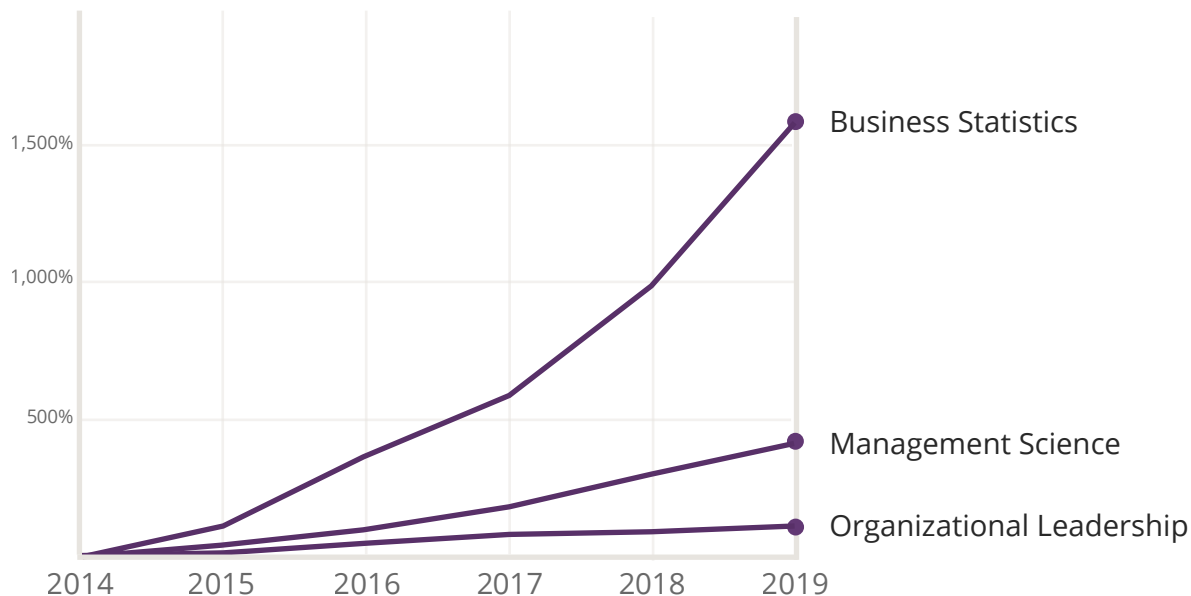


STEM



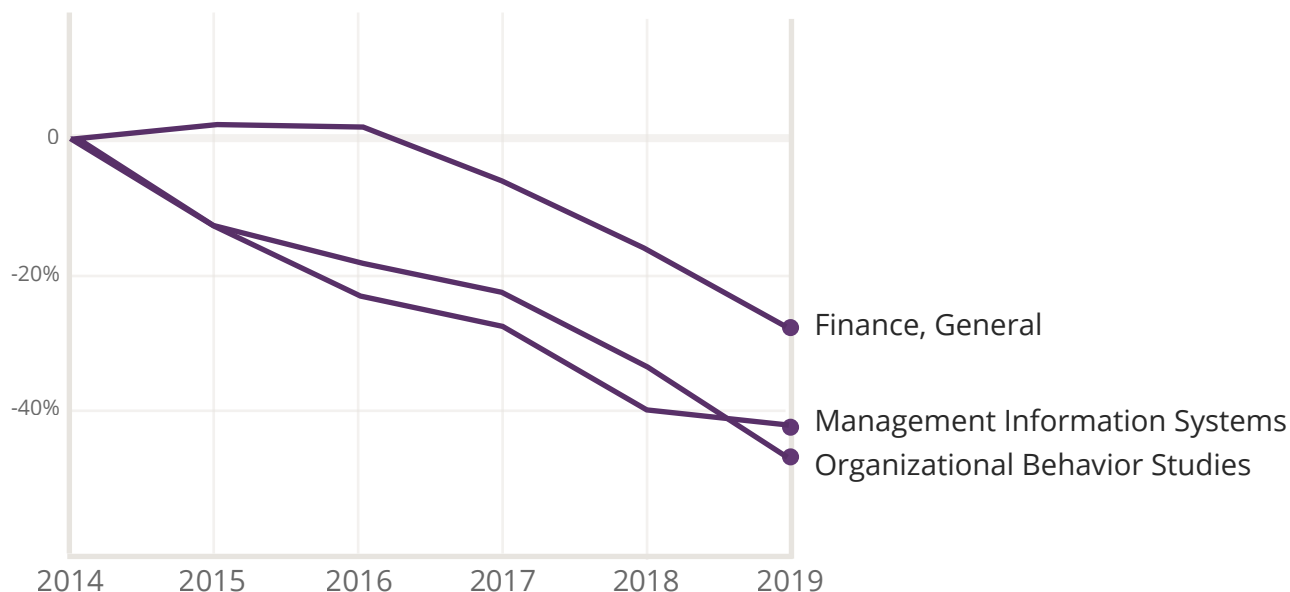
Fastest-Growing Business Programs

Overall growth since 2014



Shrinking Business Programs

Overall growth since 2014



**Accounting****52.0301****19K+**grads,
2019**40**average
program size**1%**yearly
growth**23%**online,
2019**Business/Commerce****52.0101****9,319**grads,
2019**91**average
program size**-2%**yearly
growth**38%**online,
2019**Business Statistics****52.1302****1,799**grads,
2019**43**average
program size**79%**yearly
growth**27%**online,
2019**Finance****52.0801****4,963**grads,
2019**33**average
program size**-6%**yearly
growth**26%**online,
2019**2029 Labor Forecast: *Financial Managers***

Substantial growth is expected. Financial managers are anticipated to grow 15.5% by 2029, well beyond the national average of 3.7%.

Human Resources Management 52.1001

5,121
grads,
2019

29
average
program size

1%
yearly
growth

46%
online,
2019

Management Information Systems 52.1201

1,756
grads,
2019

24
average
program size

-10%
yearly
growth

32%
online,
2019

Management Science 52.1301

10K+
grads,
2019

52
average
program size

40%
yearly
growth

28%
online,
2019

Organizational Behavior Studies 52.1003

1,092
grads,
2019

23
average
program size

-11%
yearly
growth

41%
online,
2019

Organizational Leadership 52.0213

6,278
grads,
2019

32
average
program size

17%
yearly
growth

66%
online,
2019



Business Programs Spotlight

Cutting Through the Fog



Management Science



Business Statistics

The sphere of data-centric degrees has changed rapidly since 2010, the last time CIP codes were updated. Currently, there aren't enough specific classifications for individual data degrees, so universities must make their best guess on how to report them. For instance, business analytics, data

analytics, and data science are often spread between more generalized CIP codes such as management science and business statistics. Some of this ambiguity will be resolved soon when more individualized CIP codes become available as of the 2019/2020 school year. More CIP codes will ultimately help universities gain a more nuanced understanding of analytics degrees. Regardless of the specifics that emerge in the future, this field is definitely on the rise.

Inverting Trends



Organizational Leadership



Organizational Behavior Studies

While organizational behavior studies is fizzling out, organizational leadership is

seeing a rapid rise. Since 2012, two-thirds of the overall decline in organizational behavior studies is due to universities switching to organizational leadership, a program more aligned with current demand.

#2 Education: *The Big Engine That Could*

18%
of all 2019
master's
grads

Base CIP Code: **13**

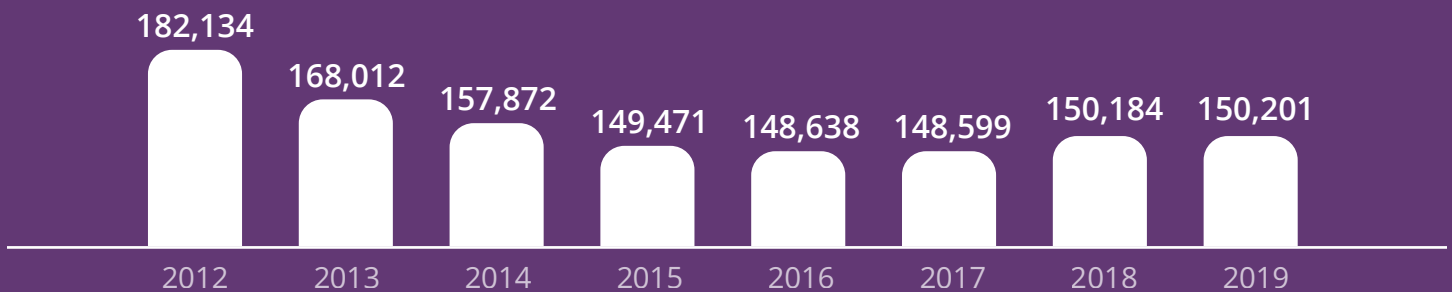
Most students in this vertical are educators in the workforce. With this demographic in mind, universities can make their programs more attractive to learners who need flexible learning options by offering them online.

Graduates

Education was once the largest master's-level vertical, but declined after 2010. Since 2015, the yearly number of graduates has remained relatively flat, at around 150k per year.

Education differs from business (currently the largest vertical) because it is less concentrated around a single program. In 2019, the entire education vertical only graduated about 40k more students than MBA programs alone. Whereas 55% of all business students graduated with an MBA, no education program accounted for more than 13% of the vertical's graduates.

Number of Graduates

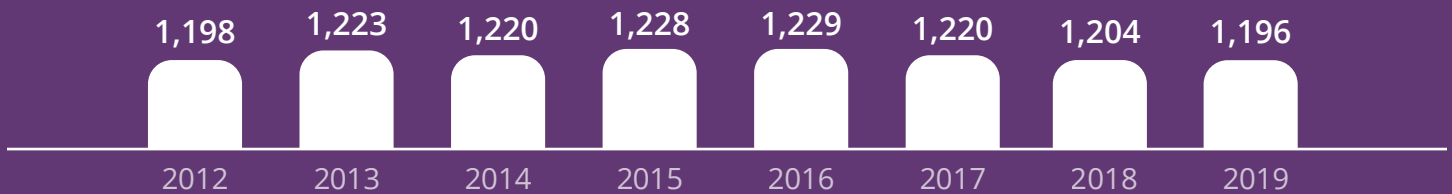


Universities in the Market

The number of universities in the market has backtracked in recent years. While the number grew modestly between 2013 and

2016, there were fewer universities in 2019 than there were in 2012 (1,196 vs. 1,198).

Number of Universities

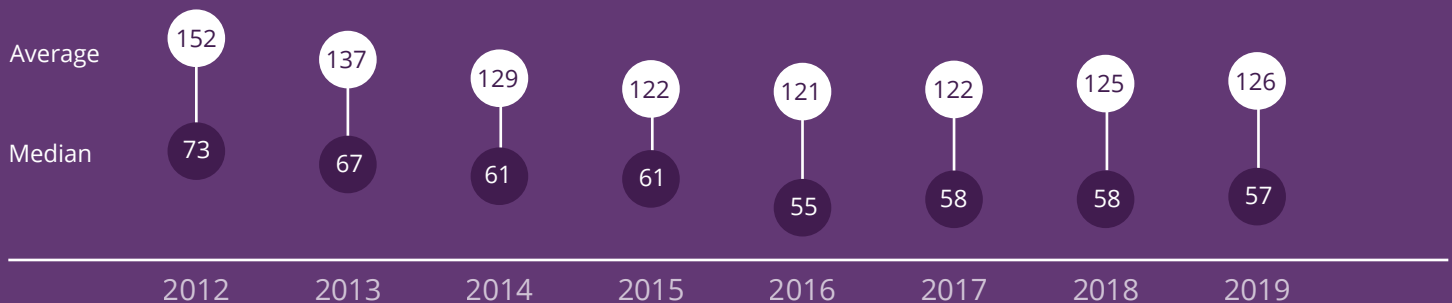


Program Size

Median program sizes have dropped slightly, indicating that declines are spread throughout the entire market rather

than concentrated within a few very large programs.

Average/Median Program Size

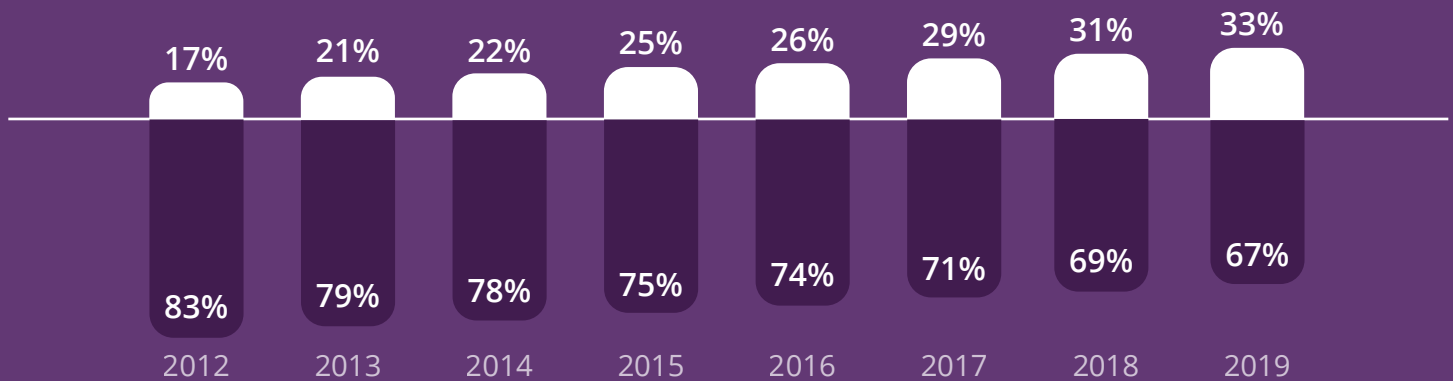


Programs Online

While education differs from business in terms of its concentration of programs, it is quite similar in terms of its growing online

presence. Education essentially doubled its online program availability, rising from 17% in 2012 to 33% in 2019.

Percentage of Programs Online



Graduate Education Programs with Highest Online Adoption

(min. 100 programs reporting grads)

Educational/
Instructional
Technology

71%

Curriculum and
Instruction

50%

Educational
Leadership and
Administration

43%

Higher
Education
Administration

39%

Special Education
and Teaching

37%



The Largest Education Program

Education, General 13.0101

The general master's in education was the leading education discipline, though the market has declined slightly since it peaked in 2011 with 28,857 graduates. Educational Leadership and Administration will likely overtake general education in the 2019/2020 school year as the largest master's-level education program.

A significant factor in this discipline's decline is due to for-profit schools leaving the market, although graduates at public and private schools have been declining as well. Graduates of for-profit schools have declined 52% since 2011, compared to a 25% decline in public school graduates and a 26% decline in private school graduates.

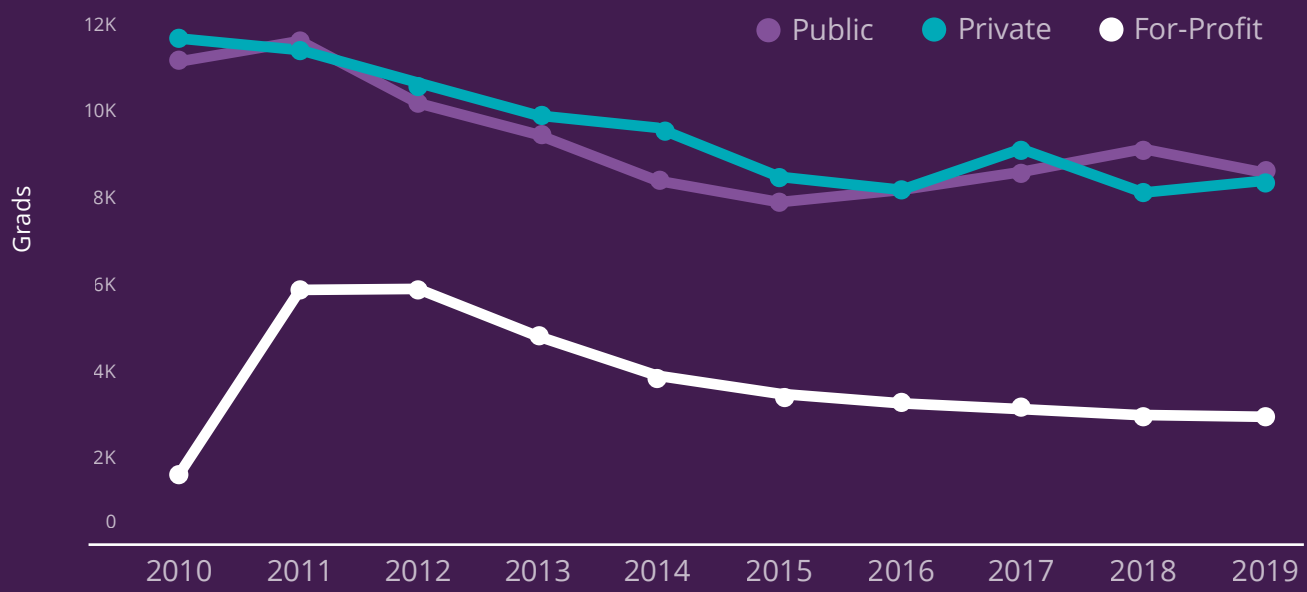
19K+
grads, 2019

57
average
program size

-2%
yearly
growth

33%
online, 2019

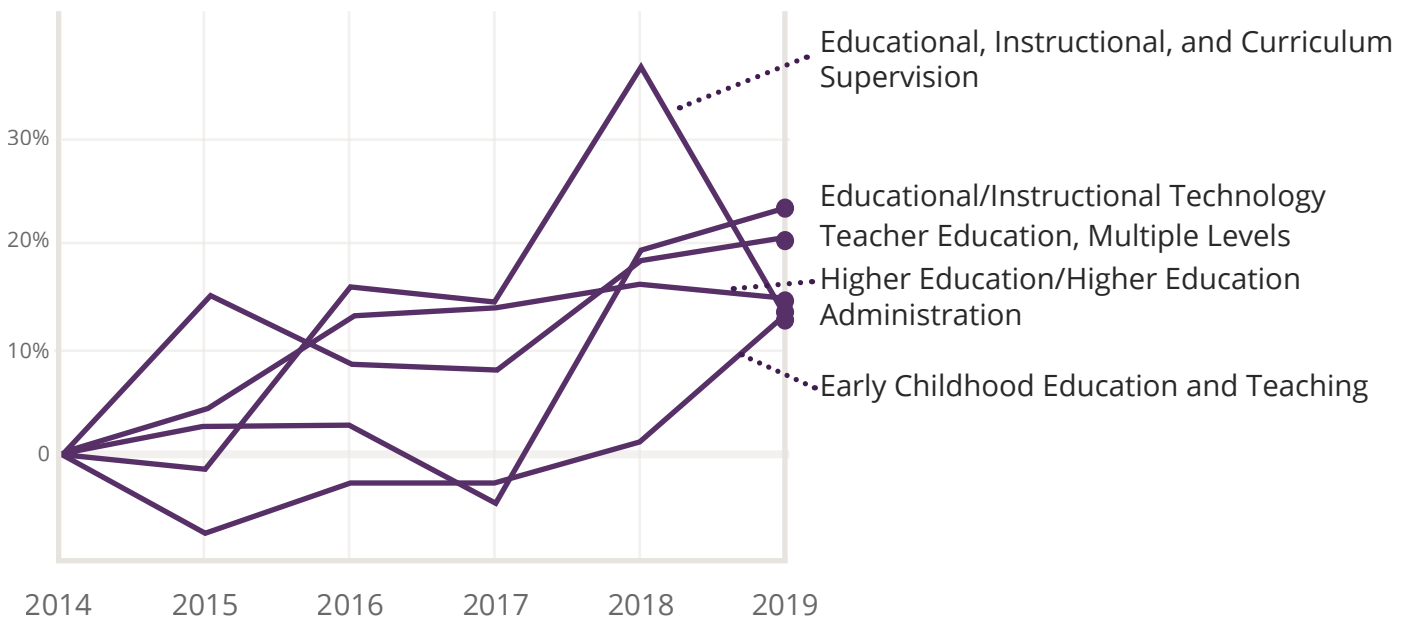
Graduate Market Share (Public, Private, and For-Profit)
Master's-Level Education, General



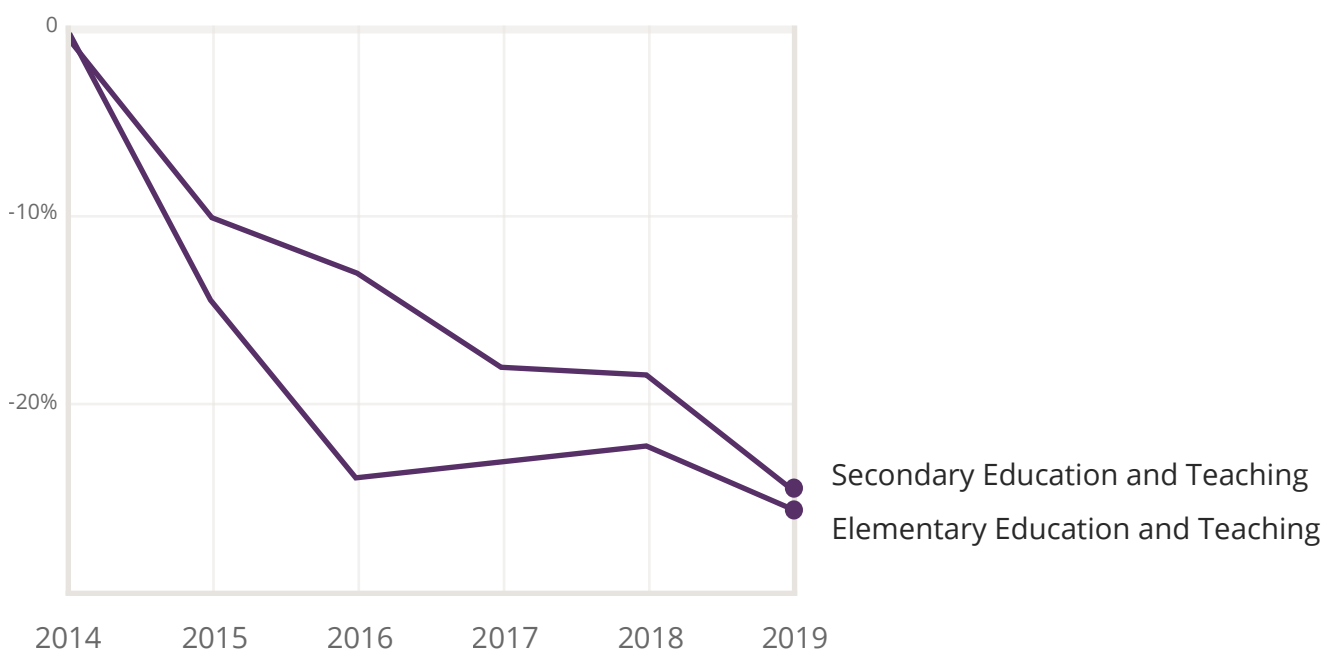
Biggest, Fastest-Growing, & Shrinking Education Programs

Program Icon Legend  Biggest  Fastest-Growing  Shrinking  STEM

Fastest-Growing Education Programs Overall growth since 2014



Shrinking Education Programs Overall growth since 2014



 **Counselor Education/School Counseling and Guidance Services** **13.1101**

11K+
grads,
2019

27
average
program size

-1%
yearly
growth

17%
online,
2019

 **Curriculum and Instruction** **13.0301**

16K+
grads,
2019

44
average
program size

0%
yearly
growth

45%
online,
2019


 **Early Childhood Education** **13.1210**

3,466
grads,
2019

20
average
program size

2%
yearly
growth

24%
online,
2019

 **Educational, Instructional, and Curriculum Supervision** **13.0404**

1,110
grads,
2019

23
average
program size

3%
yearly
growth

44%
online,
2019

 **Educational Leadership and Administration** **13.0401**

19K+
grads,
2019

35
average
program size

1%
yearly
growth

41%
online,
2019

 **Educational Technology** **13.0501**

5,655
grads,
2019

26
average
program size

5%
yearly
growth

66%
online,
2019

Elementary Education and Teaching 13.1202

7,363

grads,
2019

23

average
program size

-5%

yearly
growth

20%

online,
2019

Higher Education Administration 13.0406

3,102

grads,
2019

20

average
program size

3%

yearly
growth

38%

online,
2019

Secondary Education and Teaching 13.1205

4,923

grads,
2019

17

average
program size

-5%

yearly
growth

22%

online,
2019

Special Education and Teaching 13.1001

12K+

grads,
2019

26

average
program size

0%

yearly
growth

33%

online,
2019

Teacher Education, Multiple Levels 13.1206

4,156

grads,
2019

34

average
program size

4%

yearly
growth

27%

online,
2019



Education Programs Spotlight

The Working Professional's Choice



Educational Leadership and Administration

Educational leadership and administration is likely the preferred degree for individuals who have already started their careers as

65% of students graduated from online programs. This broad program is also popular for its versatility compared to specialized degrees like higher education administration.

Very Virtual



Curriculum and Instruction

This program has high online presence, with 45% of programs available online. While an

impressive 75% of students within the entire field graduated from online programs, this ratio means the market for attracting online students is very competitive.

Developing Interest



Special Education and Teaching

This program declined from 2012 to 2015 but has rebounded, primarily due to universities taking their programs online.

While this bigger program has now flattened, the general field has growth potential. Smaller, yet more specialized programs (e.g., teaching individuals with autism) are on the rise.

#3 Health: *The Perfect Balance*

16%
of all 2019
master's
grads

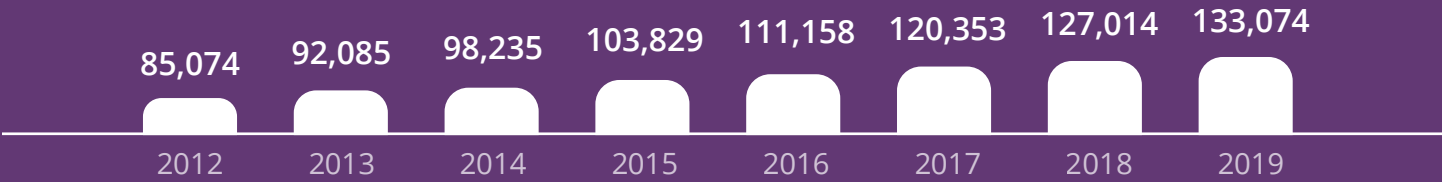
Base CIP Code: **51**

Growth in the health vertical has been driven mainly by nursing degrees, which accounted for 38% of all master's-level health grads in 2019. Specializations such as family nurse practitioner (MSN-FNP) and nursing administration have become the norm in this field and can be excellent opportunities for universities seeking to build out their suite of health programs.

Graduates

This vertical is balanced just right. Health has recently had the best combination of scale and growth, with 133,074 graduates and 6% yearly growth.

Number of Graduates

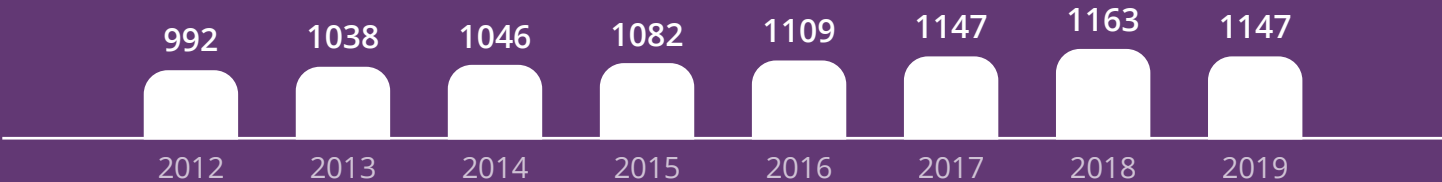


Universities in the Market

Health has grown steadily since 2012, despite a slight decline in 2019. One more year of data is needed to determine if this

decline is merely incidental or indicating that the market has peaked.

Number of Universities

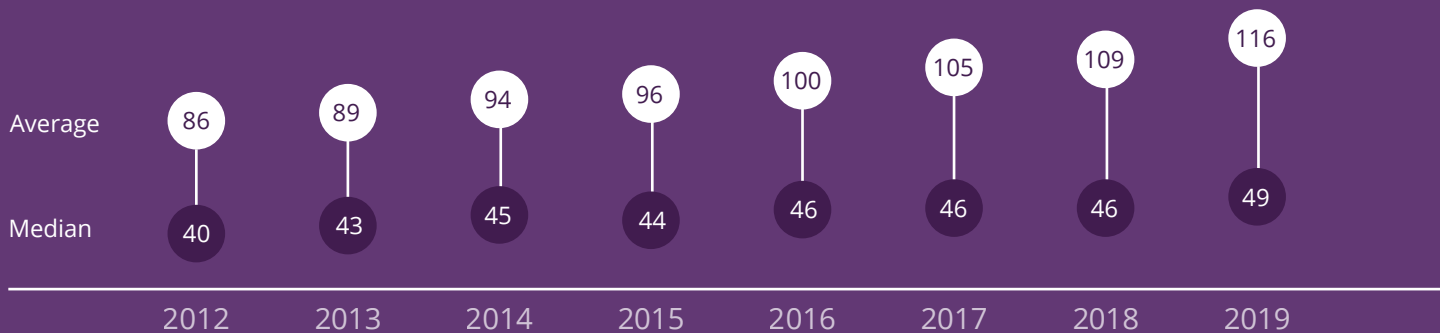


Program Size

Average program sizes are increasing faster than median program sizes, pointing to the

presence of some very large programs in the market.

Average/Median Program Size

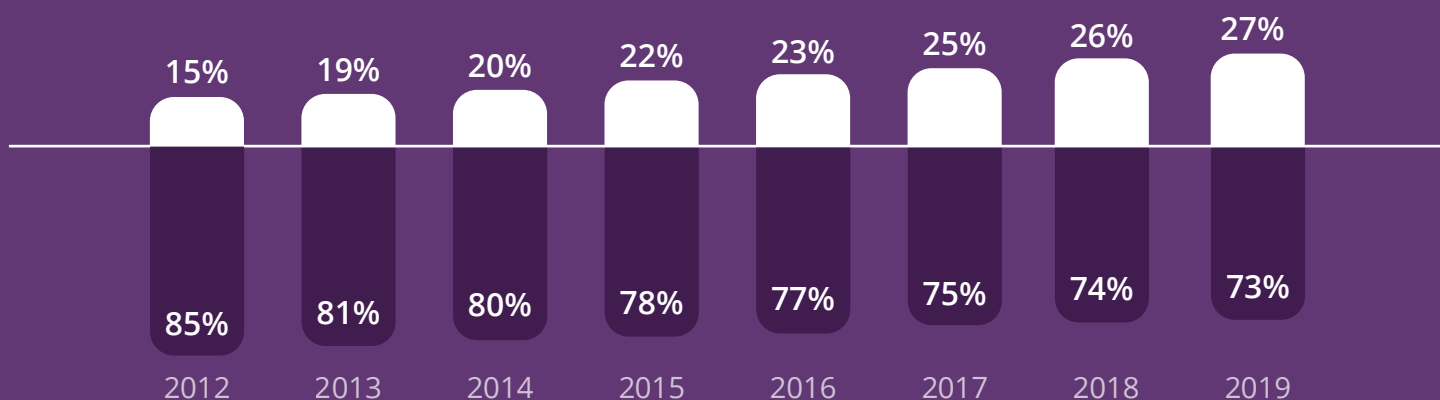


Programs Online

While health offers fewer programs online than others, the percentage of online health

degrees has nearly doubled, standing at 27% in 2019 compared to only 15% in 2012.

Percentage of Programs Online



Graduate Health Programs with Highest Online Adoption

(min. 100 programs reporting grads)

Nursing Education

58%

Nursing Administration

57%

Health Care Administration

52%

Registered Nursing

51%

Public Health

41%

The Largest Health Program



Registered Nursing **51.3801**

The Master of Science in Nursing (MSN) remains the largest of all health degrees and has grown steadily at 4% Y/Y since 2015. Online availability is also critical for universities offering this degree. **Only five out of the 25 largest programs were ground-only.**

The general MSN takes the top spot for most graduates overall, but the family nurse practitioner MSN (MSN-FNP) graduated more students per school on average (71 vs. 76). Regardless, average program sizes for both degrees have been on the rise.

17K+

grads, 2019

71

average program size

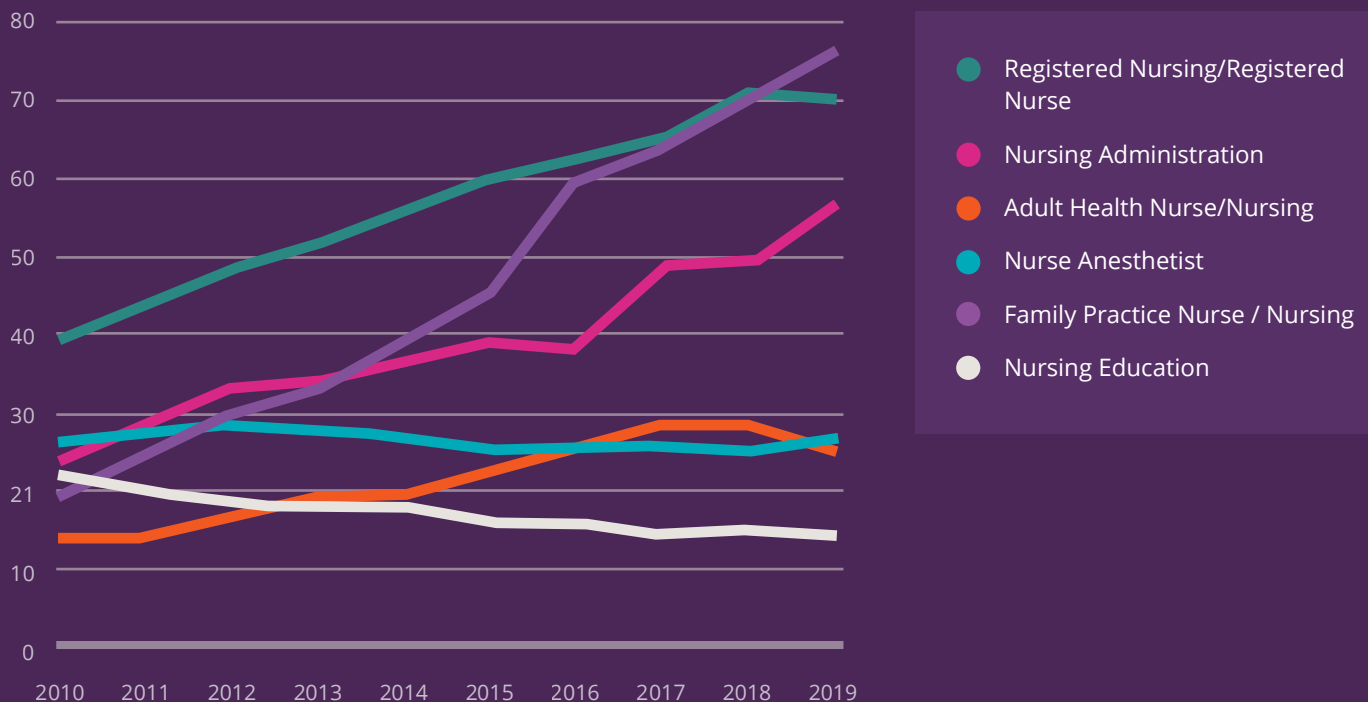
4%

yearly growth

47%

online, 2019

Average Program Size, MSN specializations



Biggest, Fastest-Growing, & Shrinking Health Programs

Program Icon Legend



Biggest



Fastest-Growing



Shrinking

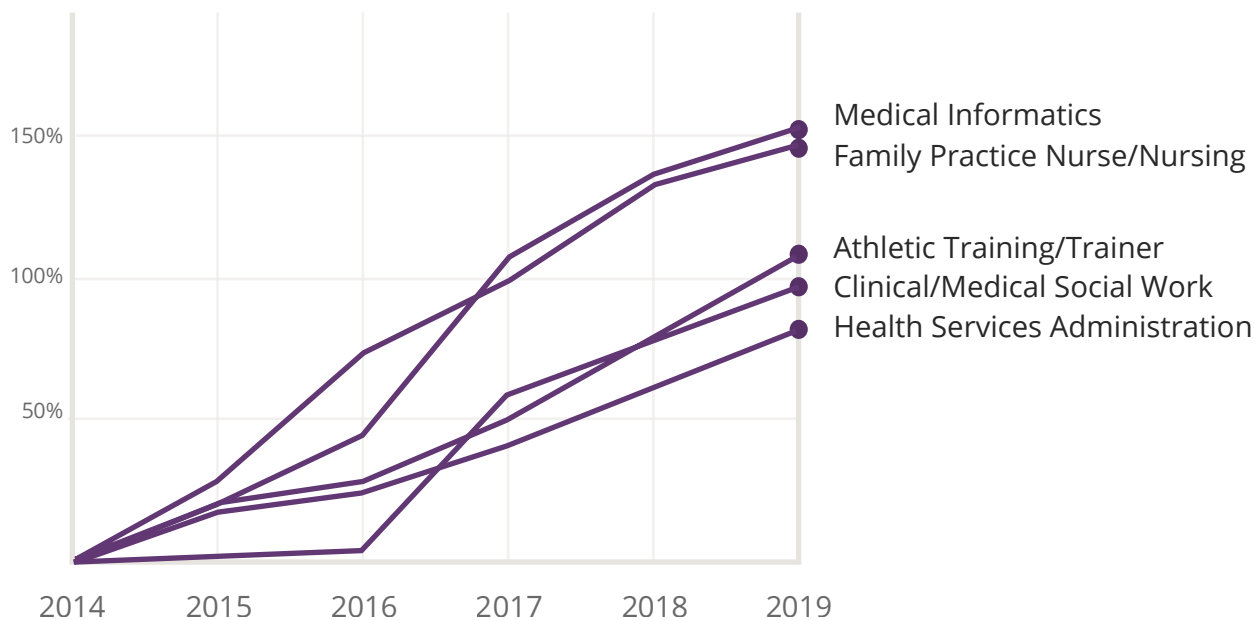


STEM



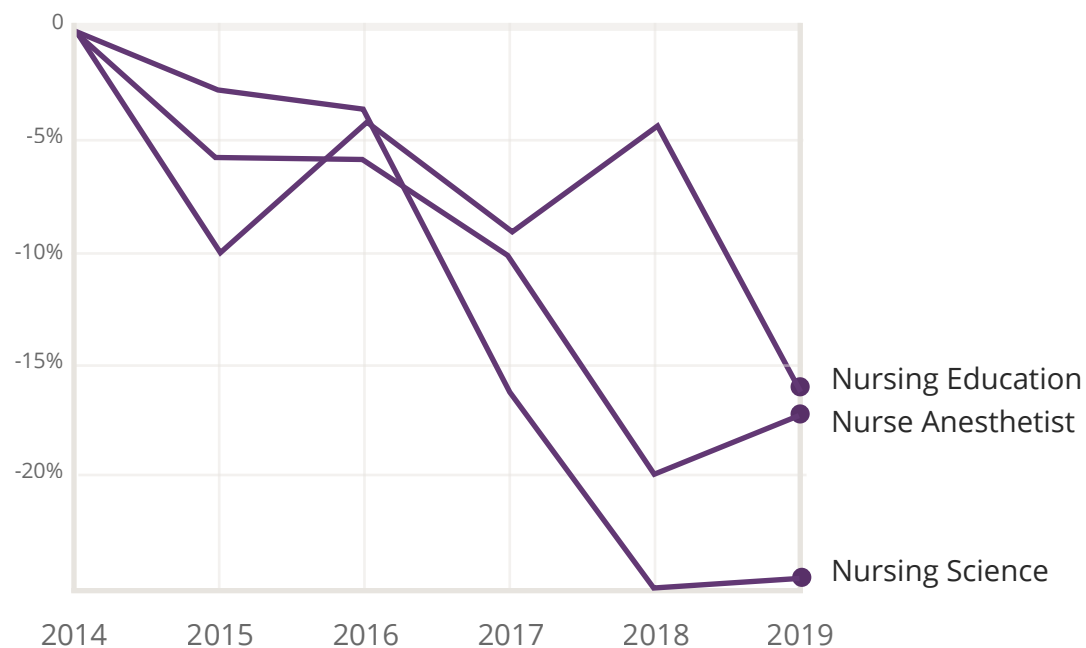
Fastest-Growing Health Programs

Overall growth since 2014



Shrinking Health Programs

Overall growth since 2014





Athletic Training

51.0913

1,163

grads,
2019

12

average
program size

16%

yearly
growth

5%

online,
2019



Family Nurse Practitioner

51.3805

13K+

grads,
2019

76

average
program size

20%

yearly
growth

31%

online,
2019



Clinical/Medical Social Work

51.1503

1,381

grads,
2019

69

average
program size

16%

yearly
growth

14%

online,
2019



Health Care Administration

51.0701

10K+

grads,
2019

41

average
program size

7%

yearly
growth

50%

online,
2019



Health Services Administration

51.2211

1,172

grads,
2019

23

average
program size

13%

yearly
growth

28%

online,
2019



Medical Informatics
51.2706

1,156

grads,
2019

18

average
program size

21%

yearly
growth

53%

online,
2019

Nursing Administration
51.3802

7,492

grads,
2019

56

average
program size

11%

yearly
growth

52%

online,
2019

Nurse Anesthetist
51.3804

1,427

grads,
2019

27

average
program size

-4%

yearly
growth

1%

online,
2019

Nursing Education
51.3817

1,542

grads,
2019

14

average
program size

-3%

yearly
growth

46%

online,
2019

Nursing Science 51.3808

1,652

grads,
2019

38

average
program size

-5%

yearly
growth

36%

online,
2019





Physician Assistant 51.0902

9,192

grads,
2019

47

average
program size

7%

yearly
growth

5%

online,
2019



Public Health 51.2201

10K+

grads,
2019

47

average
program size

5%

yearly
growth

41%

online,
2019



2029 Labor Forecast: *Healthcare Professionals*

Nurse practitioners are projected to grow a striking 52.4% by 2029, an increase of 110k new jobs.

Healthcare support personnel and healthcare practitioners are expected to account for 40% of all new jobs through 2029, an increase of 2.4m.

Health Programs Spotlight

Decisiveness Required



Family Nurse Practitioner

The MSN-FNP has grown substantially, but universities intending to join this market will have to commit quickly as licensure in this profession may require a doctorate in the coming years.

Singular Interest



Nursing Administration

While this degree has grown by 11%, it should be noted that a single school is responsible for nearly all graduate growth. Other schools have not expanded their graduating classes in this program, so it appears that growth cannot be attributed to widespread interest in the field. However, this degree still makes strategic sense in a broader nursing suite.

Where Health and Business Meet



Health Care Administration

This health degree is also one of the most popular concentrations for the MBA. Universities better known for business degrees could experiment with offering this as an MBA concentration first and then launch a standalone degree if enrollments merit.

Changing Requirements

Family nursing is not the only profession that may require even higher credentials. Occupational therapists and other nurse practitioners may also require a doctorate for licensure soon. While shrinking enrollment at the master's-level will present a challenge, new requirements can provide universities opportunities to offer doctorate-level programs in the future.

More Than Meets the Eye



Medical Informatics

Medical informatics is a growing degree, but the market for this field may actually be larger than it appears. There are several other informatics CIP codes schools can use to classify this area of study, and not all of them are specific to the health vertical. Informatics (11.0104) had 611 grads and 14% yearly growth, while health information/medical records administration (51.0706) had 568 grads and 13% yearly growth.

Get Clinical



Clinical/Medical Social Work

While smaller than the general social work degree, this discipline presents unique opportunities. The health vertical is growing overall, so universities strong in health programs can capitalize on this degree's clinical training requirements to build out their social work programs as well.



#4 Engineering: *International Fallout*

7%
of all 2019
master's
grads

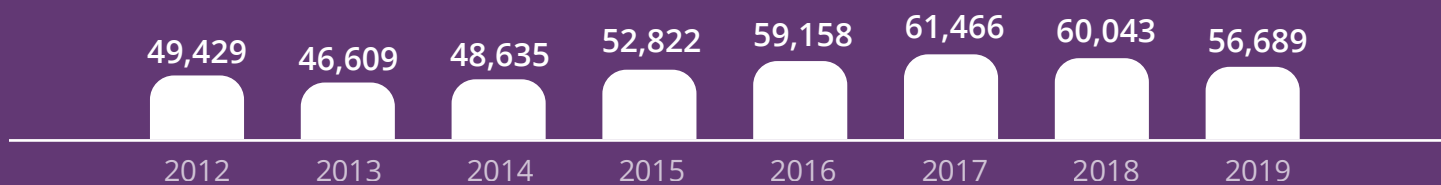
Base CIP Code: **14/15**

This report combines engineering (CIP 14) and engineering management (CIP 15) into one section. **All engineering degrees are STEM-designated and commonly offered by public, research-intensive universities highly-ranked by *U.S. News*.**

Graduates

This vertical peaked in 2017 and has since declined. However, this rise and fall is not due to simple lack of interest, but is almost entirely due to a sharp and complicated decline in international enrollments. Domestically, graduates have stayed in the same range since 2012, around 27k-28k per year.

Number of Graduates

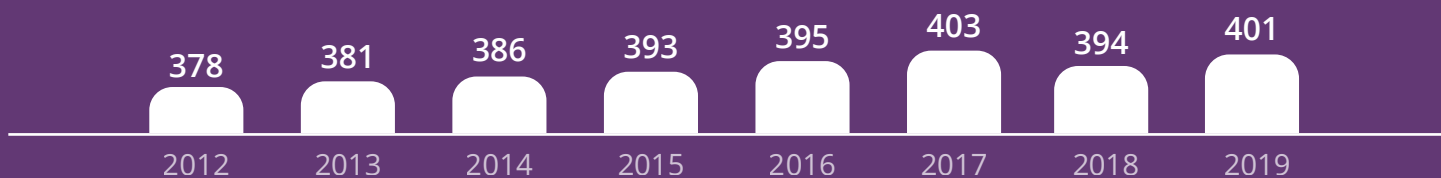


Universities in the Market

Like the growth of graduates, the growth of schools in the market peaked in 2017. Unlike graduate growth, the number of

universities has flattened, hovering around 400 schools year to year.

Number of Universities

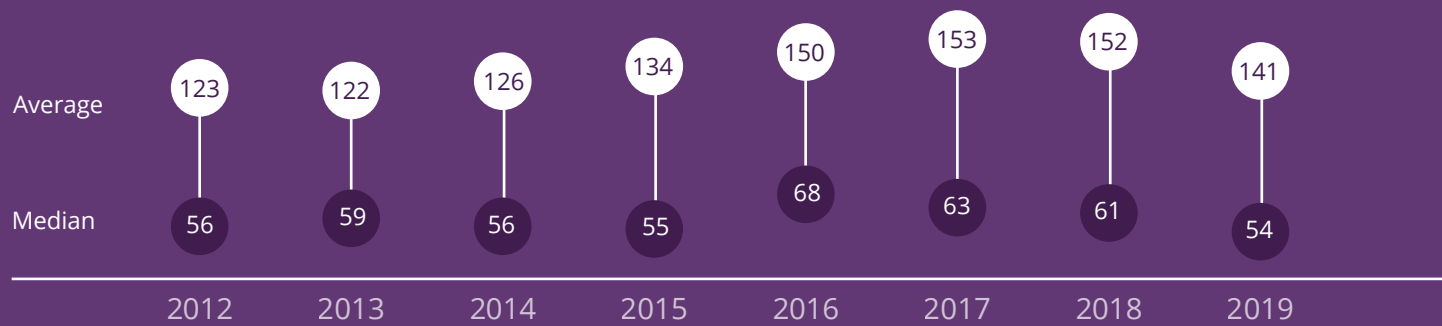


Program Size

Average and median program sizes have behaved similarly to the number of graduates. This indicates that this trend

extends across the entire discipline, not just within large programs.

Average/Median Program Size

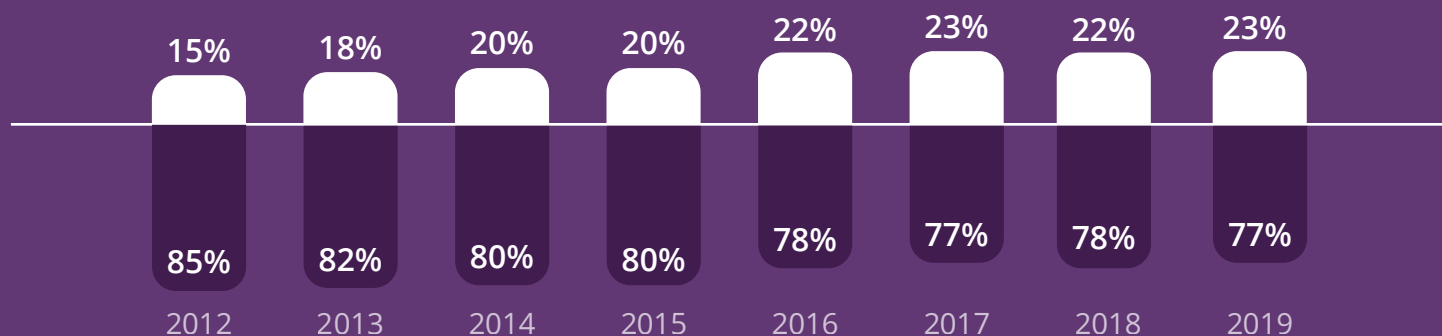


Programs Online

Master's-level engineering degrees have not increased their online presence as much as others, with most programs remaining

ground-only. Only 21% of programs were offered online in 2019.

Percentage of Programs Online



Graduate Engineering Programs with Highest Online Adoption

(min. 100 programs reporting grads)

Engineering Management

51%

Engineering, General

29%

Electrical Engineering

22%

Computer Engineering

20%

Mechanical Engineering

18%

The Largest Engineering Program



Electrical Engineering 14.1001

Electrical engineering is the largest master's-level engineering program, though it has declined due to decreased international enrollments. **After peaking in 2016, graduates coming from abroad have dropped 34%.**

While the number of programs available has consistently stayed around 230, average class sizes have dropped. For universities that relied heavily on international student tuition, these programs may become less sustainable than before.

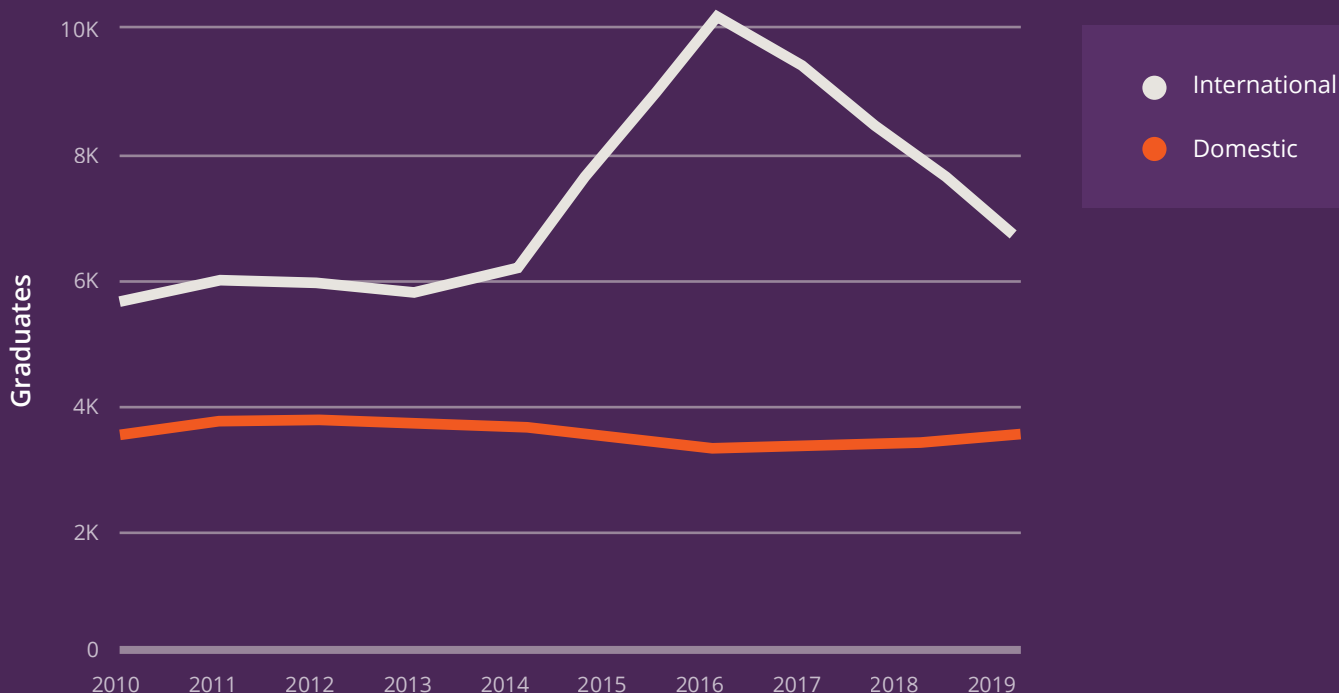
10K+
grads, 2019

44
average
program size

2%
yearly
growth

22%
online, 2019

Domestic vs. International Electrical Engineering Graduates



Biggest, Fastest-Growing, & Shrinking Engineering Programs

Program Icon Legend



Biggest



Fastest-Growing



Shrinking

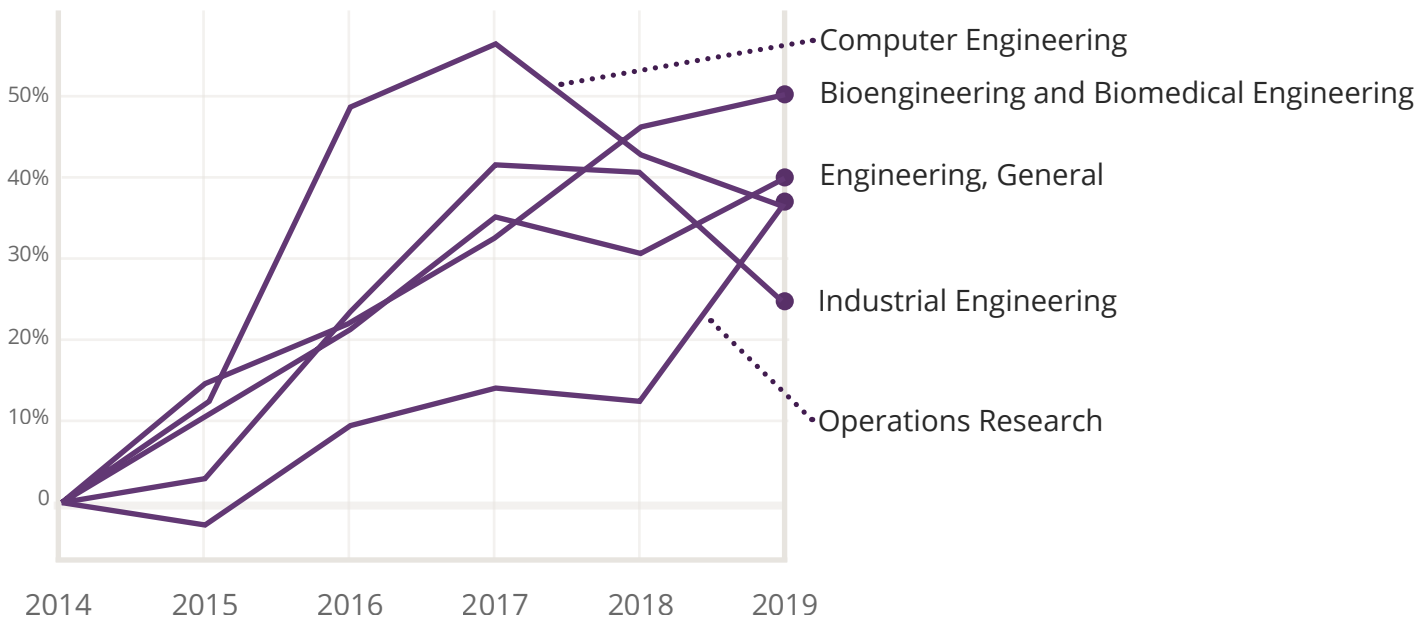


STEM



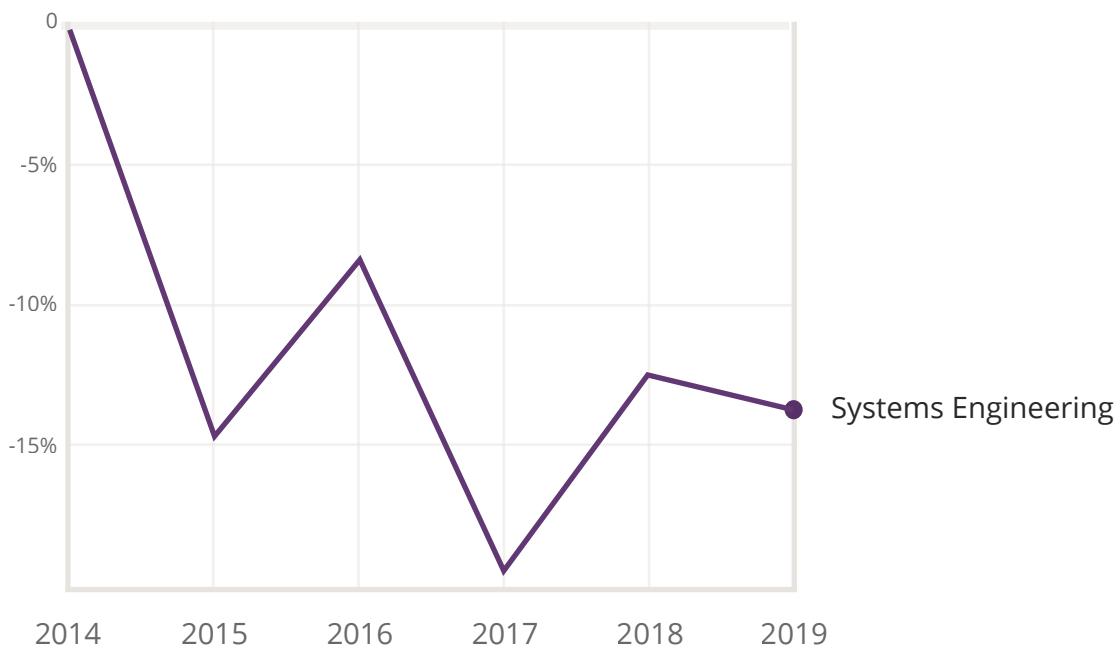
Fastest-Growing Engineering Programs

Overall growth since 2014



Shrinking Engineering Programs

Overall growth since 2014





Bioengineering and Biomedical Engineering

14.0501

2,908

grads,
2019

19

average
program size

9%

yearly
growth

4%

online,
2019



Civil Engineering

14.0801

5,183

grads,
2019

27

average
program size

0%

yearly
growth

17%

online,
2019



Computer Engineering

14.0901

2,742

grads,
2019

26

average
program size

7%

yearly
growth

21%

online,
2019



Engineering, General

14.0101

2,933

grads,
2019

32

average
program size

7%

yearly
growth

25%

online,
2019

2029 Labor Forecast: *Engineering Occupations*

Overall, engineering degrees are expected to grow 3.8%, close to the national average for all occupations (3.7%). This translates to 69k new jobs by 2029, or about 1.9m engineering jobs total.

While engineering is generally expected to grow in line with the national average, not every engineering occupation will trend this way. Electrical and electronics engineering more slowly (only 1.7%).



Engineering Management

15.1501

3,400

grads,
2019

30

average
program size

3%

yearly
growth

48%

online,
2019



Industrial Engineering

14.3501

2,860

grads,
2019

33

average
program size

5%

yearly
growth

32%

online,
2019



Mechanical Engineering

14.1901

7,862

grads,
2019

34

average
program size

5%

yearly
growth

17%

online,
2019



Operations Research

14.3701

1,085

grads,
2019

54

average
program size

7%

yearly
growth

26%

online,
2019



Systems Engineering

14.2701

2,019

grads,
2019

31

average
program size

-2%

yearly
growth

40%

online,
2019



Engineering Programs Spotlight

In a League of Their Own

 Mechanical Engineering

 Civil Engineering

Mechanical and civil engineering were the only two programs other than electrical engineering to graduate more than 5k students in 2019. No other disciplines crossed this threshold as they graduated 3.4k students or fewer.



More Online Than Most

 Engineering Management

 Engineering, General

Degrees in the broader field of industrial or engineering management are relatively small compared to technical engineering degrees. The individual degree of engineering management is the largest of

these but only had 3.4k grads in 2019. This program stands out due to its high online adoption rate (48%) compared to the rest of the greater engineering vertical (21%).

General engineering has followed a similar trend, with 25% of programs offered online and 46% of students graduating from online programs.

#5

Computer Science: Domestic Interest

5%
of all 2019
master's
grads

Base CIP Code: **11**

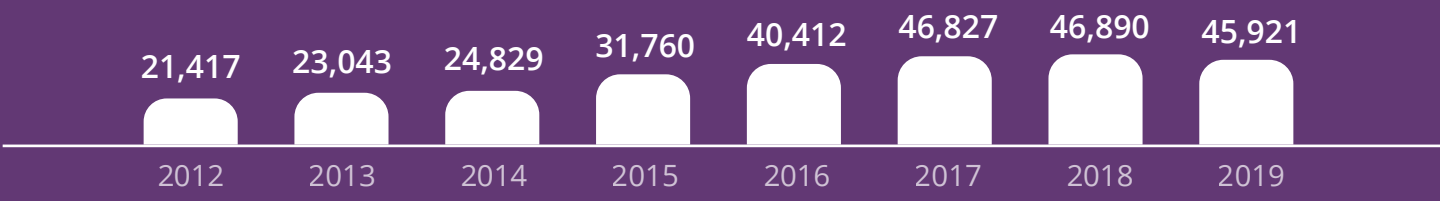
Scale and growth go hand in hand for computer science. Within this master's-level vertical, any discipline that has gained a foothold in the market is growing. No computer science program with more than 1k grads in 2019 has declined Y/Y on average since 2014. Unlike other verticals, there are no "shrinking" programs in this section.



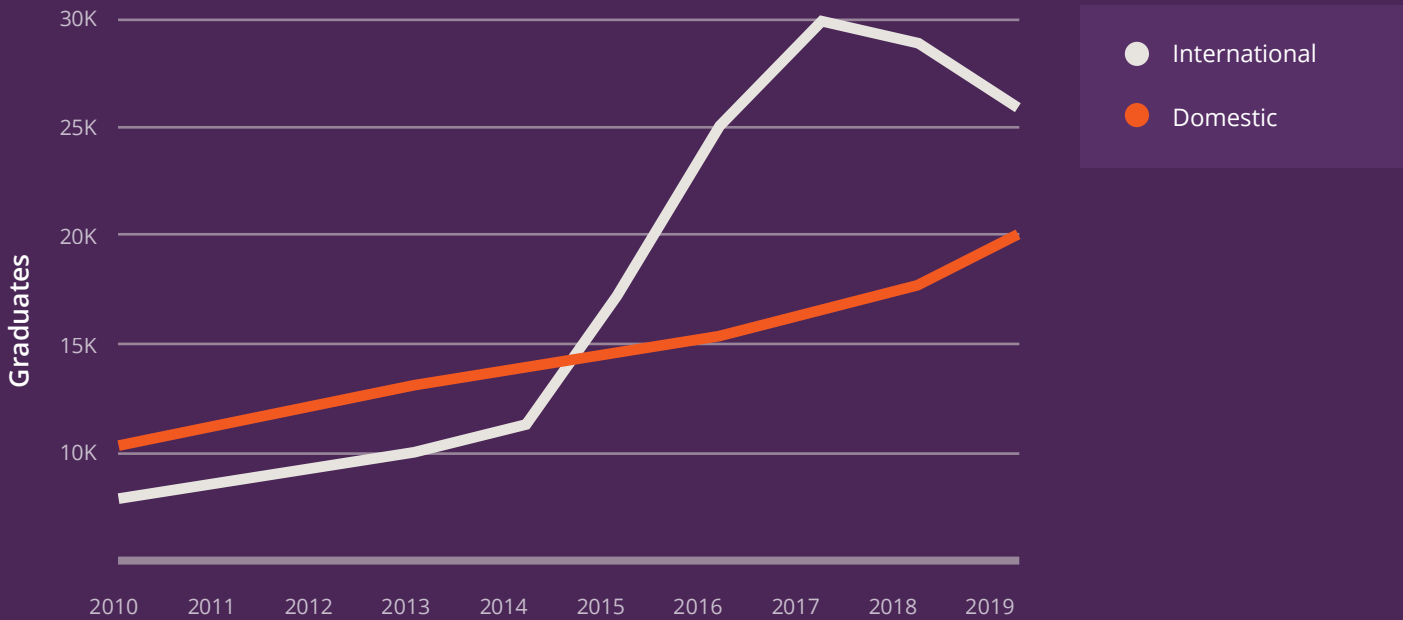
Graduates

Like engineering, computer science has also been affected by the dramatic shift in international graduates. Universities with computer science programs will still have to contend with overall market profitability as fewer students are paying international tuition rates. Fortunately, the solution to this problem lies in domestic graduates. Unlike engineering, domestic graduates have been steadily increasing in computer science. As such, schools will want to focus on fostering this natural growth in order to compensate for the loss of graduates from abroad.

Number of Graduates



Domestic vs. International Computer Science Graduates

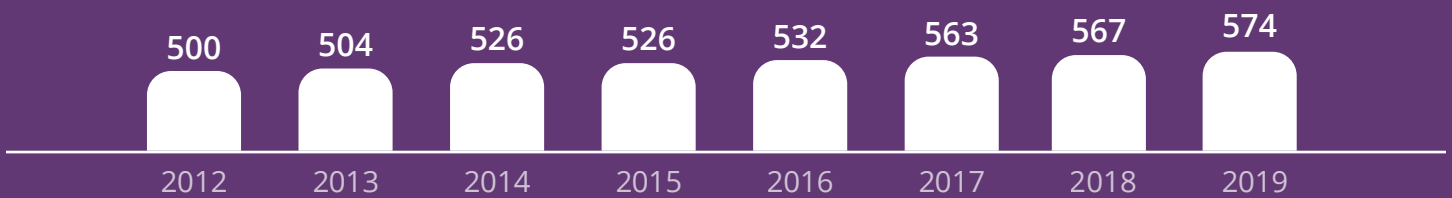


Universities in the Market

Like the growth of graduates, the growth of schools in the market peaked in 2017. Unlike graduate growth, the number of

universities has flattened, hovering around 400 schools year to year.

Number of Universities



Graduate Computer Science Programs with Highest Online Adoption

(min. 100 programs reporting grads)

Computer Security/
Information Assurance

53%

Information Technology

50%

Information Science

50%

Computer and Information Sciences

24%

Computer Science

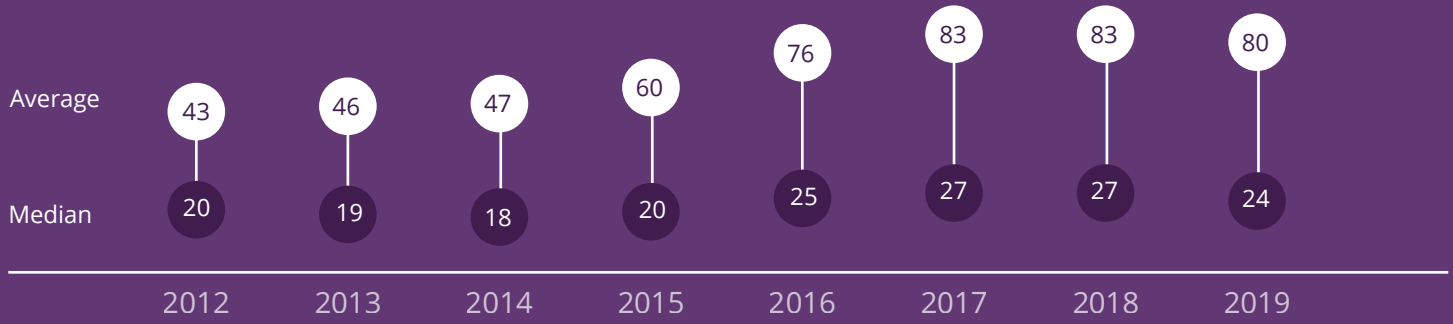
17%

Program Size

Average program sizes have grown more quickly than median sizes, indicating that

there are some very large programs in the market.

Average/Median Program Size

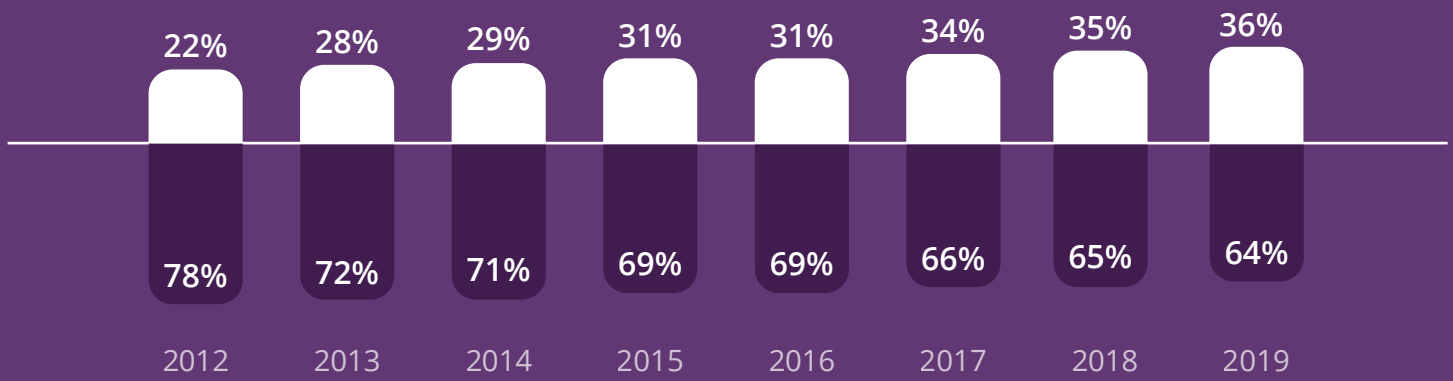


Programs Online

Computer science degrees have a more substantial online presence than other

master's-level verticals, with 36% of programs online.

Percentage of Programs Online



The Largest Computer Science Program



Computer Science **11.0701**

In 2015, a wide gap between average and median program sizes emerged in this discipline due to the influx of international students. This gap also indicated that international students were not evenly distributed across individual programs in the market. In fact, the rise and fall of

graduates can be traced back to just a few schools. Meanwhile, U.S.-born graduates, **who have only made up about one-third of this degree population previously, have provided some stability with steady growth in the past five years.**

11K+
grads,
2019

48
average
program size

14%
yearly
growth

17%
online,
2019



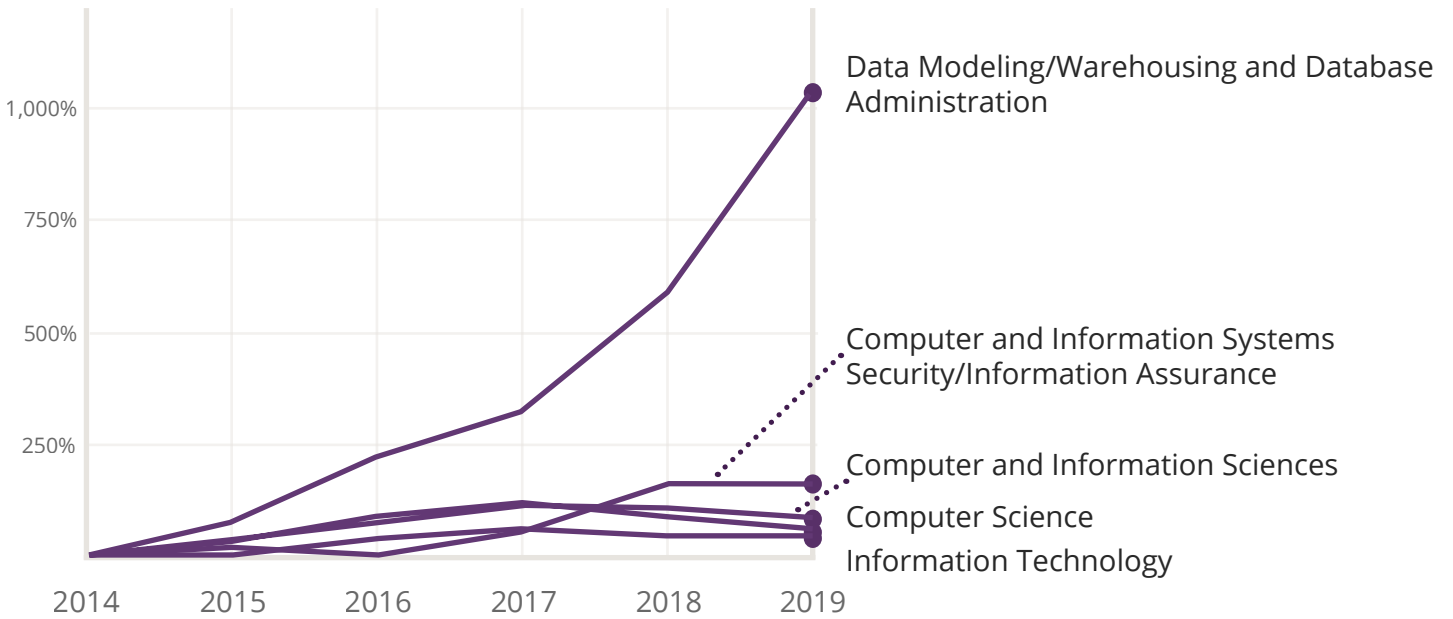
Biggest & Fastest-Growing Computer Science Programs

Program Icon Legend  Biggest  Fastest-Growing  Shrinking  STEM



Fastest-Growing Computer Science Programs

Overall growth since 2014





Computer and Information Sciences

11.0101

9,760

grads,
2019

54

average
program size

15%

yearly
growth

21%

online,
2019



Computer Security/ Information Assurance

11.1003

5,221

grads,
2019

41

average
program size

25%

yearly
growth

54%

online,
2019



Data Modeling/ Warehousing and Database Administration

11.0802

1,250

grads,
2019

46

average
program size

64%

yearly
growth

45%

online,
2019



Information Science/ Studies

11.0401

6,478

grads,
2019

49

average
program size

8%

yearly
growth

48%

online,
2019



Information Technology

11.0103

4,947

grads,
2019

49

average
program size

10%

yearly
growth

47%

online,
2019

2029 Labor Forecast:
Information Security Analysts

This is one of the fastest-growing occupations. Within the next 10 years, these jobs are expected to grow by 31.2%, for a total of 172k. This projected growth is expected as companies scale up their IT security personnel and capabilities in response to increasing cyber threats to financial and other sensitive data.

Computer Science Programs Spotlight

The Generalists Graduate More

 Information Science/Studies

 Data Modeling/Warehousing and Database Administration

These degrees are quite similar as they both educate on the collection, modification, and storage of data. However, the generalist

degree – information science – graduated four times as many students as the specialized discipline – warehousing and database administration – in 2019. As all industries require data management in this technological age, graduates of these programs may go on to work in a wide variety of fields.



Watchers of the (Fire)Wall

 Computer Security/ Information Assurance

This degree is essentially cybersecurity. However, there isn't a specific cybersecurity CIP code yet, so this is currently the best classification available. It is also fitting that this field of study is extremely online.

A whopping 81% of graduates came from universities with programs offered online. With such high competition in the online space, schools will have to compete on cost and program design. Successful programs will build curriculum around in-demand skills and technical certifications.

#6

Notable Programs: *Master's-Level Mélange*

Beyond the disciplines covered earlier, a collection of individual programs within other verticals deserve attention.

Notable Graduate Programs with Highest Online Adoption
(min. 100 programs reporting grads)

Criminal Justice/ Law Enforcement Administration 53%	Criminal Justice/ Safety Studies 52%
Divinity/Ministry 32%	Social Work 27%
Sport and Fitness Administration/ Management 48%	Public Administration 42%



Kinesiology and Exercise Science 20%	Liberal Arts and Sciences 19%
Theology/ Theological Studies 33%	Speech Communication and Rhetoric 18%

The Largest Notable Program



Social Work 44.0701

As mentioned in the introduction, the Master of Social Work (MSW) is the largest program in the public administration vertical by far. It graduated almost three times as many students as the next largest degree within the vertical, general public administration (30,969 vs. 12,631). Universities would benefit from offering a traditional MSW as well as an advanced standing option for those who already have a Bachelor of Social Work (BSW) to create the widest potential applicant pool.

Also, note that this degree is going increasingly online, likely because many learners are active professionals in the workforce who want to pursue licensure. **As of 2019, only 28% of MSW programs were offered online, but those programs accounted for 46% of the entire discipline's graduates that year.**

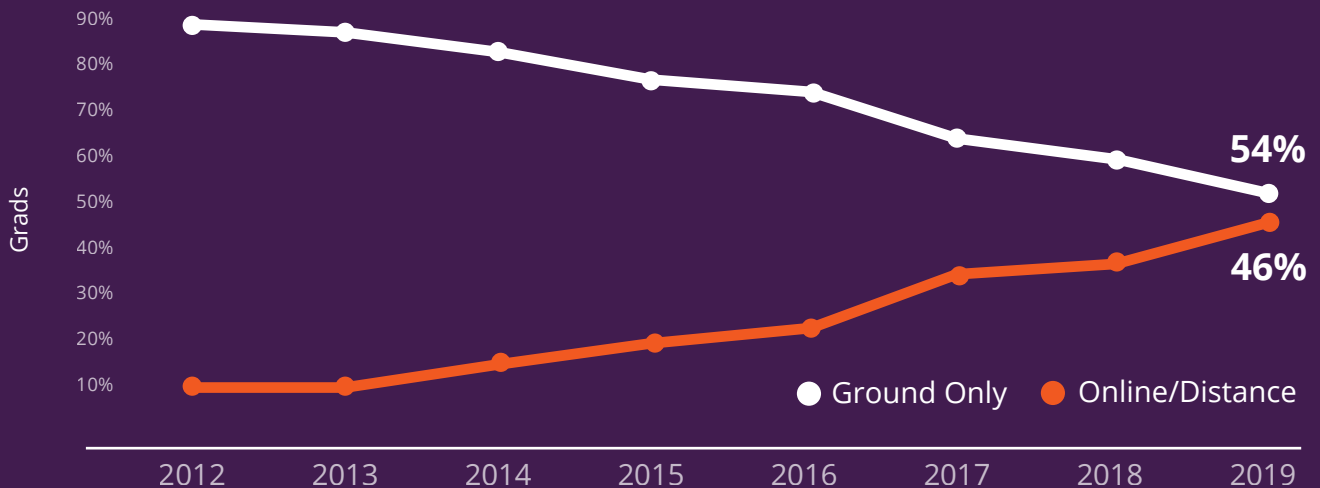
30K+
grads,
2019

108
average
program size

5%
yearly
growth

28%
online,
2019

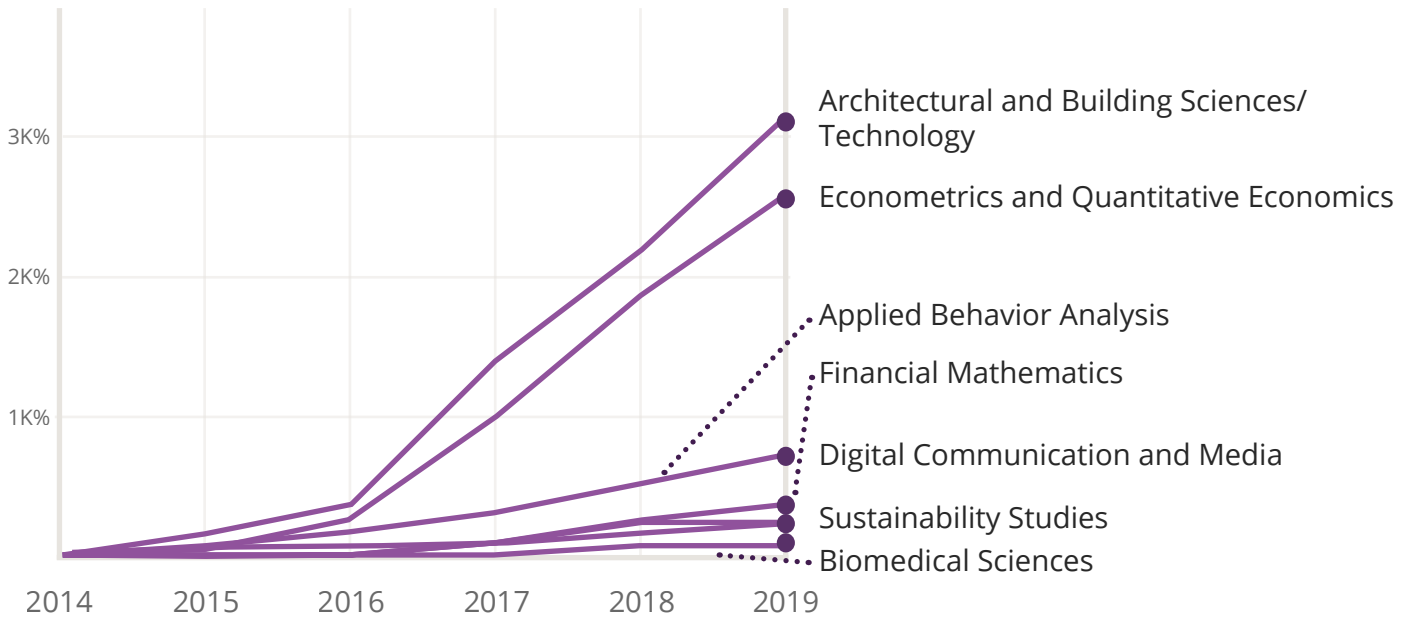
Ground-Only and Online/Distance Graduate Market Share
Master of Social Work



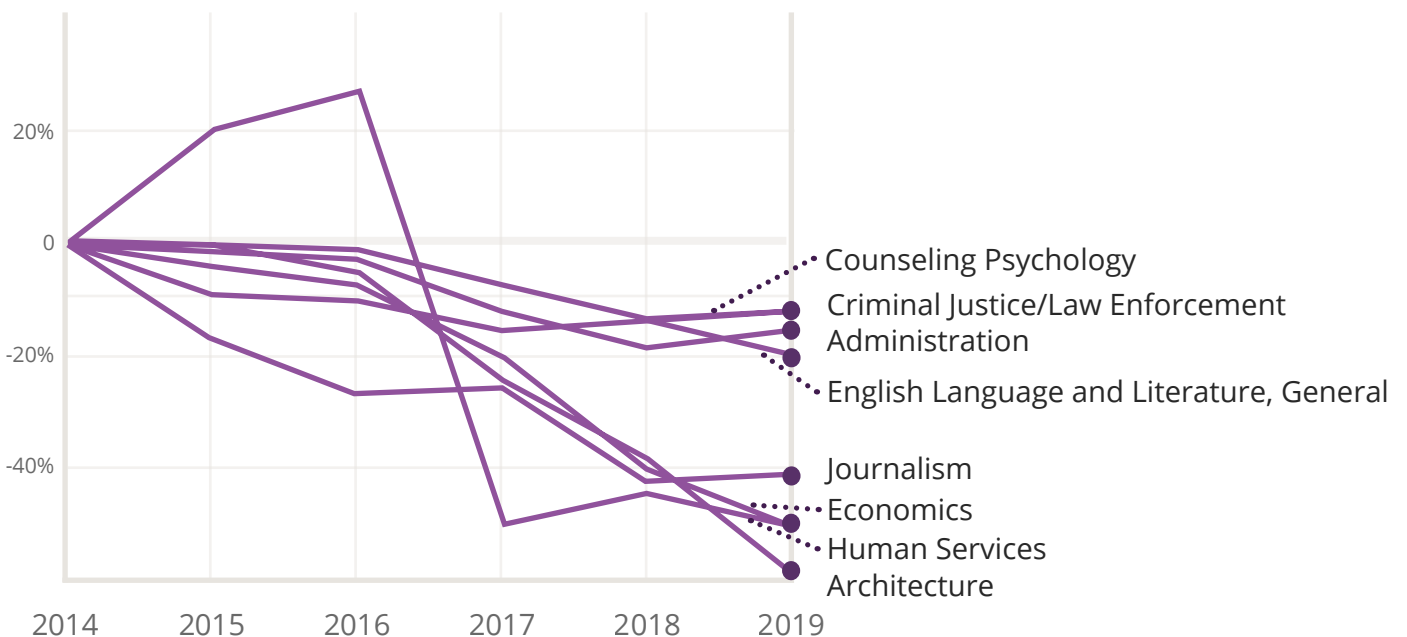
Notable Biggest, Fastest-Growing & Shrinking Programs

Program Icon Legend  Biggest  Fastest-Growing  Shrinking  STEM

Notable Fastest-Growing Programs Overall growth since 2014



Notable Shrinking Degrees Overall growth since 2014





Applied Behavior Analysis

42.2814

2,445

grads,
2019

43

average
program size

53%

yearly
growth

21%

online,
2019



Architectural and Building Sciences/Technology

04.0902

2,740

grads,
2019

50

average
program size

109%

yearly
growth

7%

online,
2019



Architecture

04.0201

1,780

grads,
2019

24

average
program size

-15%

yearly
growth

3%

online,
2019



Biomedical Sciences

26.0102

2,845

grads,
2019

30

average
program size

14%

yearly
growth

9%

online,
2019



Counseling Psychology

42.2803

8,364

grads,
2019

37

average
program size

-2%

yearly
growth

16%

online,
2019





**Criminal Justice/
Law Enforcement
Administration**

43.0103

2,638

grads,
2019

21

average
program size

-3%

yearly
growth

51%

online,
2019



**Digital Communication
and Media**

09.0702

1,340

grads,
2019

21

average
program size

29%

yearly
growth

24%

online,
2019



Divinity/Ministry

39.0602

5,625

grads,
2019

25

average
program size

-2%

yearly
growth

33%

online,
2019



**Econometrics and
Quantitative Economics**

45.0603

2,248

grads,
2019

26

average
program size

101%

yearly
growth

4%

online,
2019



Economics

45.0601

1,425

grads,
2019

12

average
program size

-13%

yearly
growth

5%

online,
2019





English Language and Literature

23.0101

4,109

grads,
2019

11

average
program size

-4%

yearly
growth

9%

online,
2019



Financial Mathematics

27.0305

3,554

grads,
2019

56

average
program size

37%

yearly
growth

1%

online,
2019



Human Services

44.0000

1,233

grads,
2019

27

average
program size

-7%

yearly
growth

55%

online,
2019



Journalism

09.0401

1,058

grads,
2019

18

average
program size

-9%

yearly
growth

22%

online,
2019



Library and Information Science

25.0101

4,988

grads,
2019

79

average
program size

-3%

yearly
growth

67%

online,
2019



Public Administration

44.0401

12K+

grads,
2019

37

average
program size

-1%

yearly
growth

41%

online,
2019



Sustainability Studies

30.3301

1,011

grads,
2019

17

average
program size

26%

yearly
growth

20%

online,
2019



Psychology

42.0101

6,202

grads,
2019

19

average
program size

0%

yearly
growth

12%

online,
2019



Sport and Fitness Administration

31.0504

4,439

grads,
2019

29

average
program size

5%

yearly
growth

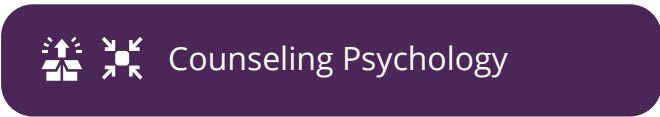
47%

online,
2019



Notable Programs Spotlight

A Potential Anchor



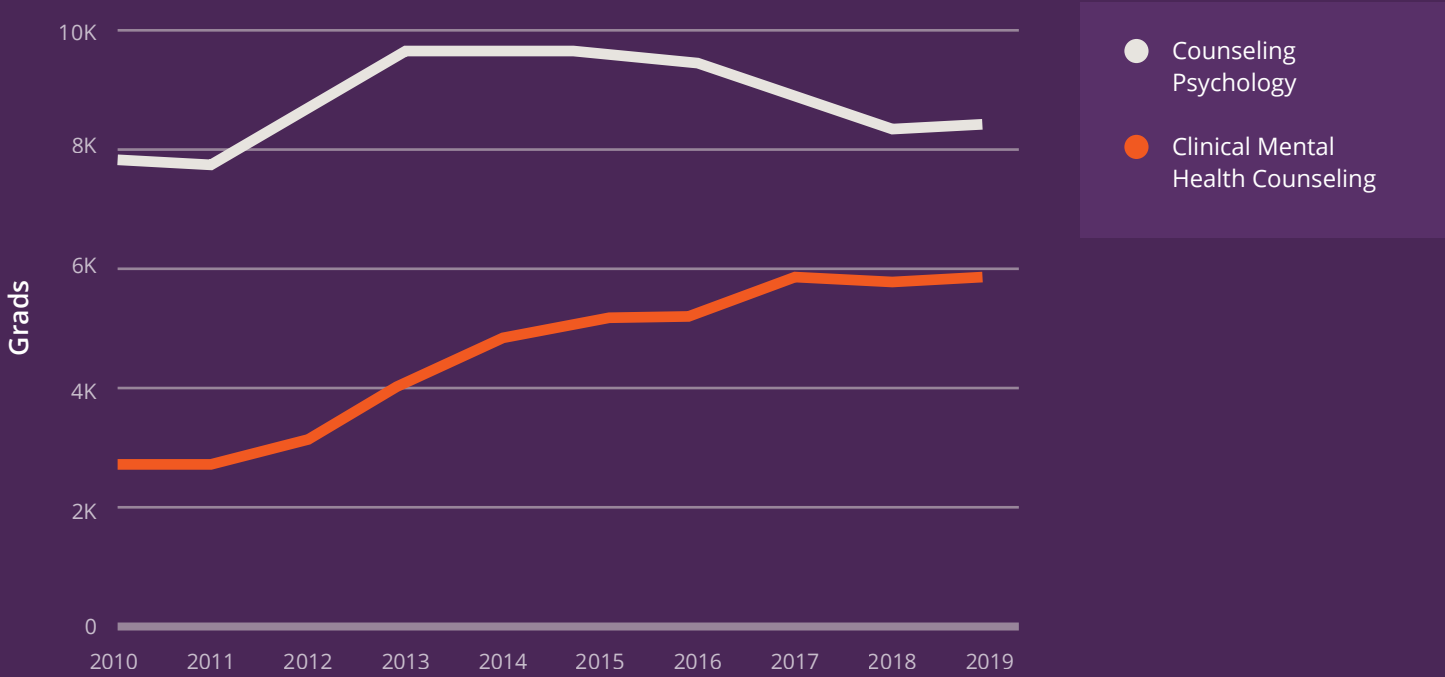
Counseling Psychology

Accounting for 28% of all master’s-level psychology graduates, counseling psychology is the largest of all graduate psychology degrees. However, this program is likely shrinking partly due to an increase

in clinical mental health counseling.

Nevertheless, universities can use it as the anchor program of a broader counseling suite, hosting degrees such as clinical mental health counseling, marriage and family therapy counseling, and substance abuse/addiction counseling.

Counseling Psychology vs Clinical Mental Health Counseling



Suited to Sports Enthusiasts



Sport and Fitness Administration/Management

Reputation seems to be key in attracting students to this degree as some of the biggest programs in this field are at schools with renowned athletics programs.

Reclassifying to STEM



Architecture



Architectural and Building Sciences/Technology



Economics



Econometrics and Quantitative Economics



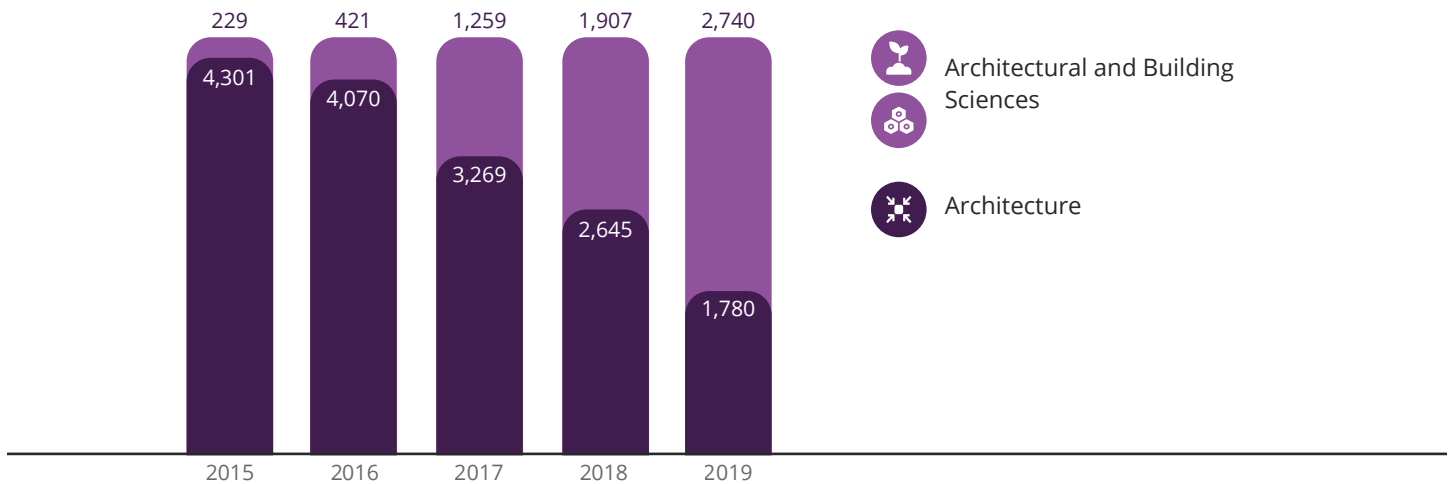
Finance

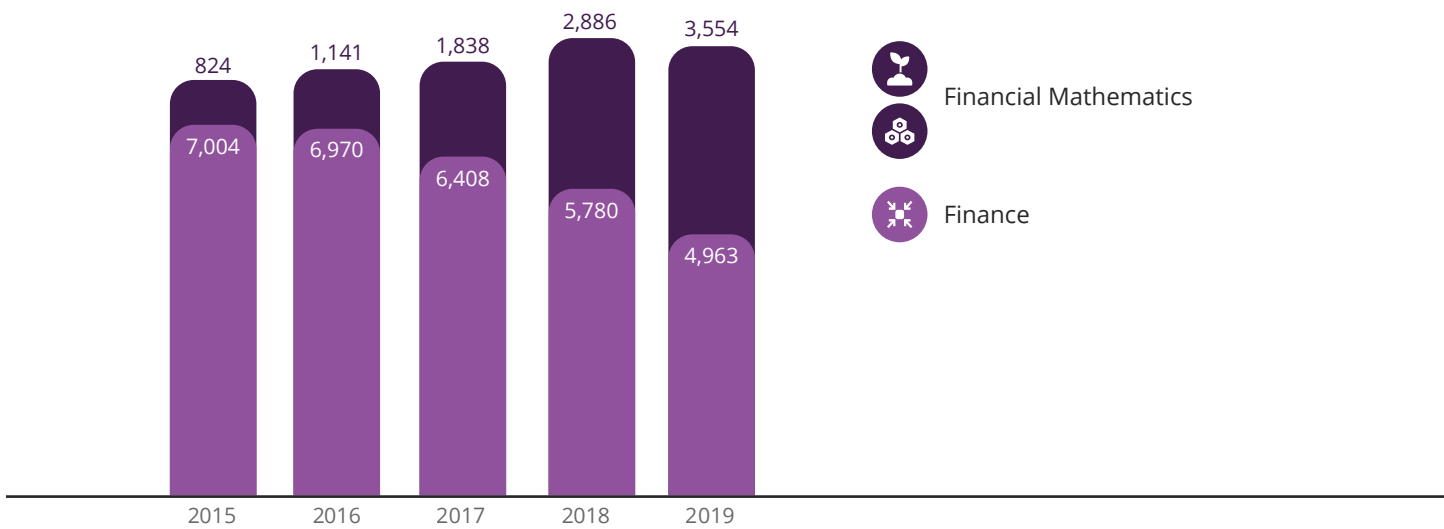
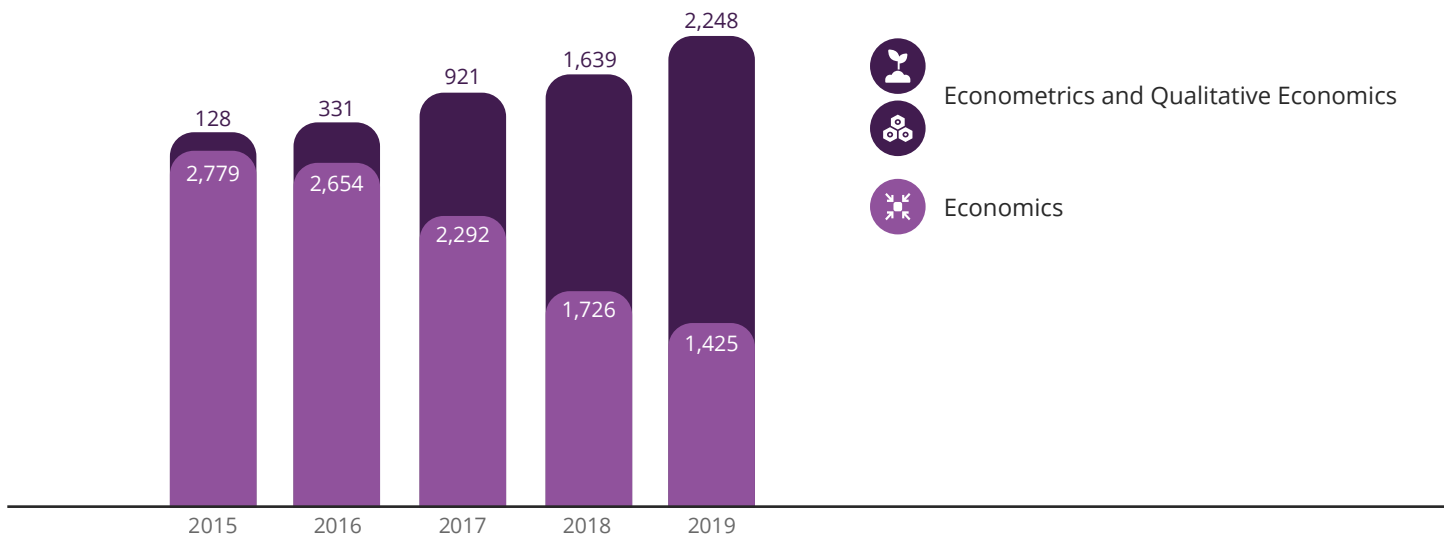


Financial Mathematics

Declines in some programs match up directly with growth in others as a result of universities reclassifying them into

STEM programs. These programs are good examples of this trend.





High Online Presence, Versatile Applications



Applied Behavior Analysis

This program is noteworthy for two reasons. Firstly, it is highly available online compared to other psychology degrees. Forty-eight percent of applied behavior analysis programs were online compared to 39%

of general psychology degrees and 33% of counseling psychology degrees. Secondly, this course of study applies to a variety of subfields in psychology, such as special education, social work, counseling, and autism therapy.

Ambiguous Declines



Criminal Justice/Law Enforcement Administration

The decline of this program may be largely due to ambiguous CIP codes. Criminal justice/safety studies (CIP 43.0104) is a similar program with a comparable number of graduates each year. Combined, the two programs' yearly decline is modest (-1% vs. -3%).

While this discipline's decline is currently slight, it could steepen in coming years due to increased dialogue about shifting some social services from law enforcement to other public workers.



Conclusion

This report features several opportunities to expand graduate program portfolios and highlights some programs that may be at risk. Bear in mind that this data is a snapshot in time. Programs that have performed well in the past may offer diminishing returns in the future, while other niche markets (e.g., epigenetics or artificial intelligence) may see increased demand in the future due to emerging trends.

Utilizing This Analysis

The information and insights in this report should be considered within the context of a university's unique portfolio. What may be a powerful opportunity for one school may not be viable for another and regional needs and differences may also impact the success of a program. For example, a new, singular health degree may not perform well at a university known for its business degrees. Furthermore, new programs have the best chance to succeed when added to a suite of degrees centered around a large anchor program (e.g., business administration or nursing).

We're Here to Help

If your university needs support with program selection, Wiley Education Services can provide your school with in-depth and up-to-date analysis. We can assess your institutional profile, identify the programs with the most potential, and help you bring them to market. By zeroing in on the right programs for your university, we can help ensure that you invest your resources wisely and that your educational offerings are aligned with your learners' needs and market trends. Whether you are thinking about taking existing programs online, expanding your range of programs, or launching entirely new ones, Wiley can help.

Resources

National Center for Education Statistics. (n.d.). Integrated Postsecondary Education Data System [Data set]. Available from <https://nces.ed.gov/ipeds/use-the-data>

About Carnegie Classification. Retrieved February 6, 2021 from <http://carnegieclassifications.iu.edu/>

National Student Clearinghouse Research Center. (2020). (rep.). Current Term Enrollment Estimates, Fall 2020. Retrieved from https://nscresearchcenter.org/wp-content/uploads/CTEE_Report_Fall_2020.pdf

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