



INDIANA COMMISSION *for*
HIGHER EDUCATION

Early College Credit

Dual credit, AP & the broader landscape of earning
college credits in high school

January 2019

EARLY COLLEGE CREDIT OVERVIEW

More Hoosiers than ever are earning college credit while in high school

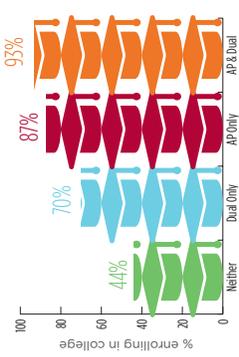
DUAL CREDIT & AP

Through Advanced Placement (AP) and/or dual credit courses, nearly two-thirds of all Hoosier high school graduates earn college credit while in high school. Recent data indicate that students who earn these credits outperform their peers when it comes to college enrollment, success and on-time graduation.

SUCCESS

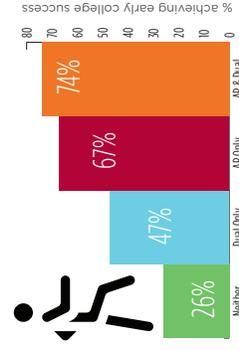
COLLEGE ENROLLMENT

Students who earn college credit in high school are more likely to go to college.



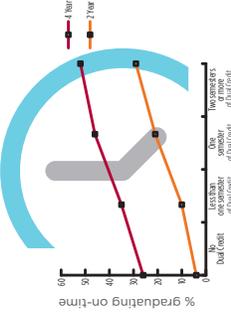
PROGRESS

Students who earn college credit in high school are more likely to succeed in college.**



ON-TIME GRADUATION

Dual credit earners are more likely to graduate on time or early.



In 2015 the Indiana Commission for Higher Education passed a resolution to close the state's achievement gap for low-income and minority students by 2025.

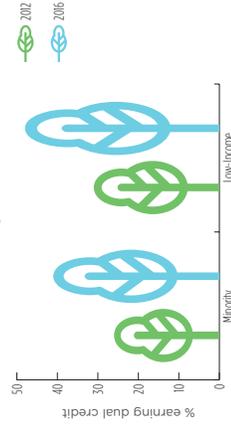
According to recent data, dual credit participation and exposure to college coursework in high school play a crucial role in closing these gaps. Dual credit offers low-income* students the opportunity to earn college credit in high school at no cost.

Since 2012, dual credit earning rates have increased by double digits for students of all racial, ethnic and socioeconomic backgrounds.

EQUITY

GROWTH

Low-income and minority students are earning dual credit.



Earning college credit while in high school offers Hoosier students significant cost saving opportunities, and more students are taking advantage than ever.

In total, the Indiana Commission for Higher Education estimates dual credit has the potential to save Hoosier students a total of \$69 million in tuition costs, which is equivalent to roughly \$1,600 per student over the course of his or her postsecondary education.

Additionally, dual credit has the potential to save the state of Indiana over \$62 million.

SAVINGS

LOW-INCOME STUDENTS

Earning college credit while in high school can save low-income students an average of \$18.7 million.



STUDENTS STATEWIDE

Dual credit saves Hoosier students up to \$69 million—an average of \$1,600 per student over the course of their postsecondary education.



STATE

Dual credit has the potential to save the State of Indiana over \$62 million each year.



Sources: Indiana Commission for Higher Education (ICHE); Indiana Department of Education (IDOE); National Student Clearinghouse (NSC)

*Yearly college success = no remedial classes required, persisted to second year, and completed all coursework attempted.

**Yearly college success = no remedial classes required, persisted to second year, and earned high pass or high pass/low pass grade.

†Based on 2012-2013 data. For more information, visit www.in.gov/education.

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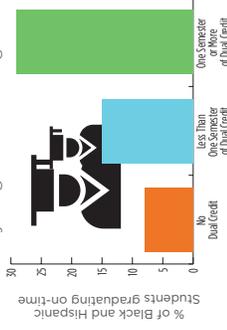
¶Based on 2012-2013 data. For more information, visit www.in.gov/education.

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§Based on 2012-2013 data. For more information, visit www.in.gov/education.

GRADUATION

Black and Hispanic students who take dual credit courses in high school are more likely to graduate college on time.



Sources: Indiana Commission for Higher Education (ICHE); Indiana Department of Education (IDOE); National Student Clearinghouse (NSC)

*Yearly college success = no remedial classes required, persisted to second year, and completed all coursework attempted.

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BACKGROUND: What is Dual Credit?

Dual credit courses offer high school students the opportunity to earn both high school and college credits in the same course. Indiana law requires each Indiana high school to offer a minimum of two dual credit courses – as well as two Advanced Placement (AP) courses – to expand opportunities for students to gain college-level experience while still in high school. Dual credit courses are taught at a high school by high school faculty through a formal agreement between the high school and the participating college or university. Students can also earn high school and college credit through taking courses on the college campus.

Dual credit is offered by both public and independent (private, regionally accredited) colleges and universities. For Indiana public colleges, the state subsidizes certain types of dual credit identified as priority liberal arts (referred to as “high priority,” “priority liberal arts” or just “priority”) or career and technical (referred to as “technical” or “CTE”). These are often grouped together as Technical & High Priority (T+HP). Almost all priority and a few technical dual credit courses are included in the state’s Core Transfer Library, which allows for a high level of transferability among all public and participating independent institutions. Most dual credit students earn T+HP dual credit, but some also earn non-T+HP dual credit. This report looks at all dual credit, but frequently focuses on T+HP dual credit.

Examples of T+HP dual credit courses include:

- High Priority: English, Math, Science, History, and World Languages
- Technical: Construction Trades, Health Sciences, Information Technology, and Manufacturing

Priority dual credit courses meet the general education or free elective requirements of undergraduate degree programs across the state. Technical dual credit courses all apply toward meeting the requirements of certificate or degree programs offered at colleges and universities. All T+HP courses are offered at no cost to qualified lower-income students and are offered to all other students at a maximum rate per credit hour of \$25 (Ivy Tech waives tuition for all students). The state also subsidizes the cost of AP exams in math, science, and English for all 11th and 12th graders, with additional AP subject exams available to qualified lower-income students at no cost.

Student eligibility to enroll in a dual credit course is determined by any minimum preparation and/or other entry requirements established by the awarding college. High schools or colleges also may limit the number of credits a student can earn. Additionally, under Indiana law, a student must achieve at least the equivalent of a 2.0 on a 4.0 grading scale (a letter grade of “C” or better) to enroll in subsequent related dual credit coursework in the same subject area.

Additionally, some specialized Early College High Schools use dual credit courses to enable students to earn certain postsecondary credentials along with their high school diplomas. Early College High Schools are intensive, accelerated programs that collapse earning a high school diploma and one of the following into four high school years:

- The Statewide Transfer General Education Core Certificate (STGEC – 30 hours of general education coursework)
- A technical certificate approved by the Indiana Commission for Higher Education
- An associate degree approved by the Indiana Commission for Higher Education
- Up to two years of academic credit toward a bachelor’s degree

For more information, see www.doe.in.gov/ccr/dual-credit

BACKGROUND: The Broader Landscape

While dual credit may be the best-known form of earning college credit while in high school, it does not tell the complete picture of college credit-taking among high school students. Several common ways of earning college-level credit while in high school are outlined below.

- **Dual Credit:** Taking college-level classes while in high school and earning credit toward high school graduation requirements AND college requirements. The instructor and course materials are approved by the institution awarding the college credit. This report focuses on dual credit.
 - Indiana subsidizes two types of dual credit: **Priority** and **Technical** (see preceding page for details)
- **Advanced Placement (AP):** Taking college-level classes while in high school and earning credit toward high school graduation requirements. College credits are earned if a college accepts the student's score on an end-of-term exam. This report provides some information on AP. Additional information can be found via The College Board.
- **Early College High Schools:** Intensive, accelerated programs that use dual credit to award both a high school diploma and a college degree or certificate. This report includes a special two-page section on graduates of endorsed Early College High Schools.
- **Dual Enrollment:** Enrolling in college-level classes while in high school and ONLY earning college credit from those classes. Due to the relatively small size of dual enrollments, this study includes in this category both high school-sanctioned dual enrollment as well as high school students who enroll in college courses on their own (outside of high school hours). This report discusses dual enrollment only briefly, in the following paragraph and in Figure 1.

- **Figure 1: Dual Enrollment.**
The overwhelming majority of dual enrollment students (84%) also earned dual credit. On top of dual credit, dual enrollment adds at most 1 percentage point to the estimated percent of high school graduates who earned college credit while in high school. Dual enrollment is not included in any analysis after this page.

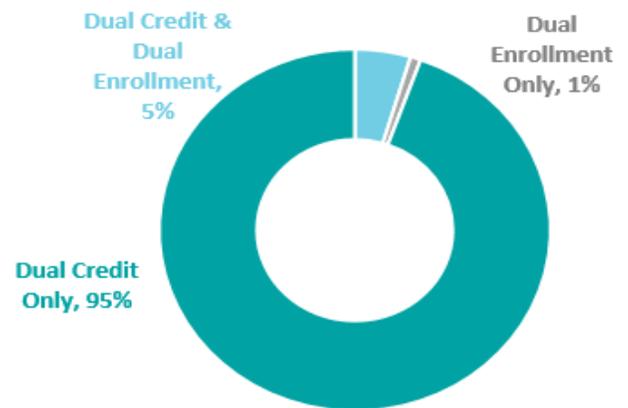


Figure 1: Students Participating in Concurrent Enrollment (concurrently enrolled in both high school and college) by Type (Cohort 2016)

- 2016 Indiana High School Graduating Cohort
 - **Total high school graduates:** 72,292
 - Number and % of 2016 graduates (students may be in multiple groups):
 - **Dual credit earners:** 41,894; or 58%
 - **Dual enrollment earners:** 2,311; or 3%
 - **Combined: Dual credit and/or dual enrollment:** 42,255; or 58%
 - **AP credit earners:** 12,838; or 18%
 - **Combined: Dual credit and/or AP:** 44,824; or 62%

INTRODUCTION

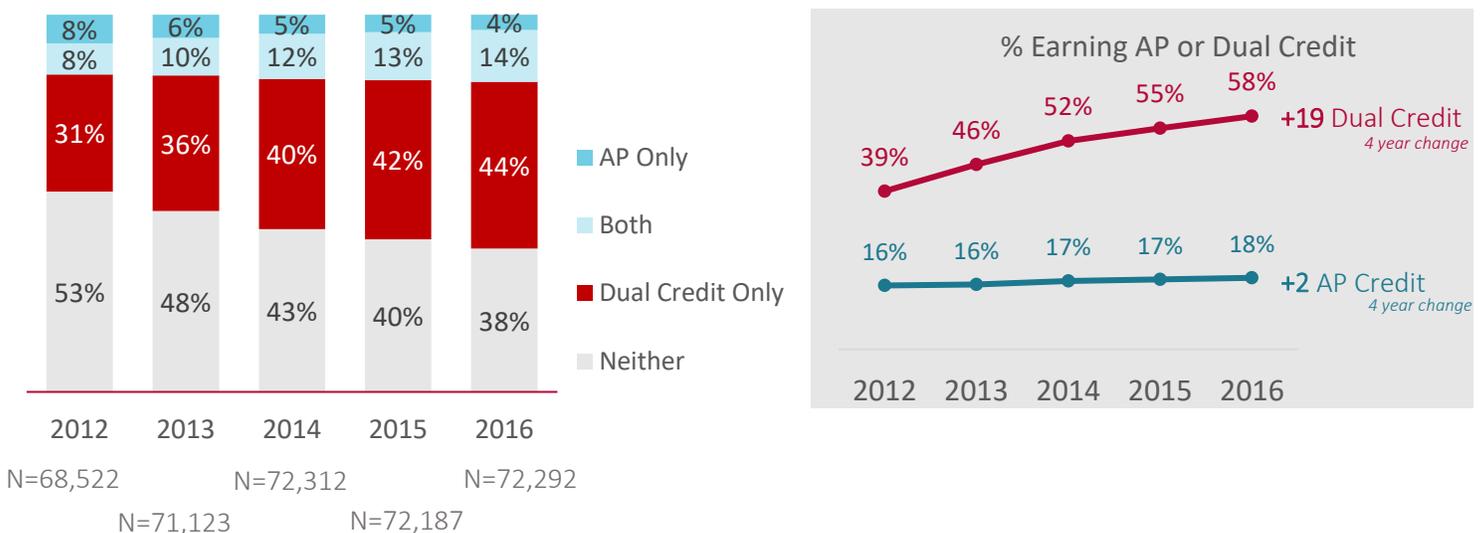
The Commission's 2016 and 2017 dual credit studies confirmed that more students are earning college-level credit while in high school and that dual credit students demonstrate positive postsecondary outcomes. The Commission's 2017 report examined the linkage between dual credit and degree completion for the first time and also took a closer look at the characteristics and performance of high school graduates by the type of dual credit awarded. This year's study focuses on those who graduated high school in 2016. It provides updated data for topics examined in prior reports and also sheds light on pressing questions including credential earning of high school students, time to degree, and cost savings of dual credit. The study also provides new information on Early College High Schools. New questions addressed include:

- How many students are earning college credentials while in high school?
- To what extent is dual credit associated with decreased time to degree and is the effect weaker or stronger for certain types of students or by the amount of dual credit earned?
- What is the cost savings opportunity to both students and the state for technical and high priority dual credit participation? What roles do students, parents, counselors, and institutions play in cost savings?

Dual Credit Is Widespread and Continues to Grow across the State

The number of Hoosiers earning pre-college credit continues to increase. **Statewide, 62% (44,824 students) of 2016 high school graduates earned Advanced Placement (AP) exam credit and/or dual credit awarded by an Indiana public college**, representing an increase of two percentage points from the previous year and a 15 percentage point increase over 2012 graduates. And, while Indiana has seen recent gains in the total number of high school students taking and passing an AP exam (now 12,838 students), **dual credit continues to account for most pre-college credit completion of high school graduates (41,894 students)**, growing at a faster pace than AP (see Figure 2).

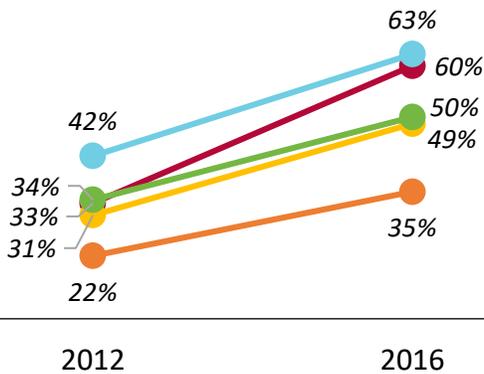
Figure 2: High School Graduates by Pre-College Credit Type



DUAL CREDIT PARTICIPATION AND OPPORTUNITY GAPS

Opportunities to earn dual credit while in high school have expanded to all types of students – not just those coming from the most affluent backgrounds. Since 2012, dual credit-earning rates have increased by double digits for students of all racial/ethnic backgrounds and socioeconomic statuses. Gaps in dual credit-earning among student groups still exist though, indicating that further work must be done to fully close opportunity gaps. See Figure 4.

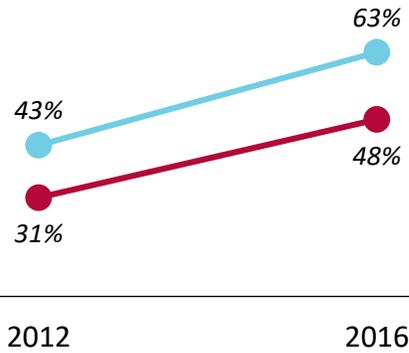
- Asian
- Black
- Hispanic
- Other
- White



Figures 4a & 4b:

Change in students earning dual credit by select demographic groups

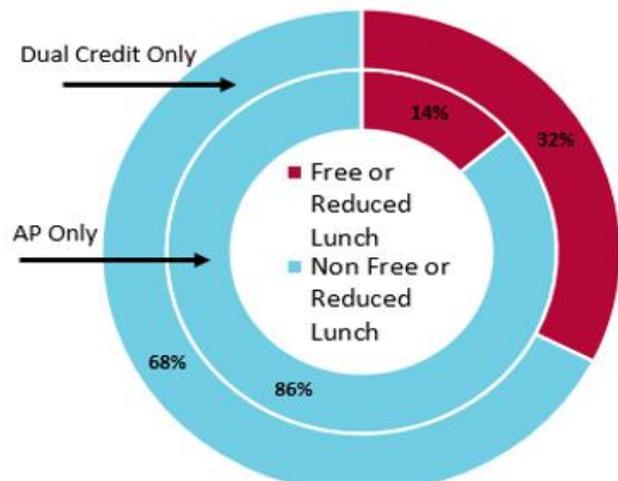
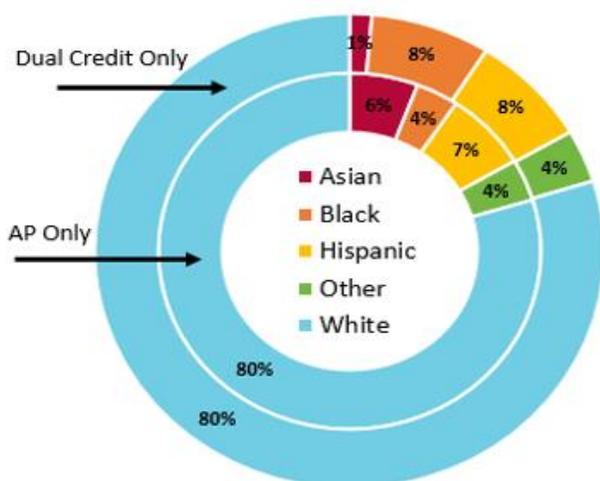
- Free or Reduced Lunch
- Non Free or Reduced Lunch



Dual credit programs in Indiana are expanding opportunities for a wider range of high school students to experience college-level coursework. In contrast to AP credit-only students, dual credit-only students are more likely to be of an at-risk minority population and/or low-income. These data do not include students who earned both dual credit and AP. See Figure 5.

In 2016, 11% of all Indiana high school graduates were Black and 8% were Hispanic. Roughly 16% of dual credit-only graduates were Black or Hispanic compared to only 11% of AP-only graduates. Data suggest that dual credit may help narrow the pre-college credit opportunity gap for Black students especially: Black students represented 8% of the dual credit-only population compared to only 4% of the AP-only population.

Compared to AP credit-only earners, dual credit-only students were over twice as likely to participate in the Free or Reduced Lunch program; nearly one third (32%) of dual credit-only students participated in the Free or Reduced Lunch program their senior year compared to only 14% of AP-only students.



Figures 5a & 5b: Select demographic profiles of pre-college credit earners by pre-college credit type (2016 Cohort)

DUAL CREDIT-TAKING PATTERNS

Students are Earning More Dual Credit Than Ever Before

In each of the past four years, Indiana has increased both the number of dual credit earners and the average number of dual credits that these students earn. Students in the 2016 high school cohort earned over a half a million credit hours through dual credit partnerships between Indiana high schools and Indiana public institutions (Figure 6). On average, 2016 dual credit students earned about 12 credit hours prior to graduation, up more than 2 credit hours since 2014 and nearly 5 credit hours since 2012.

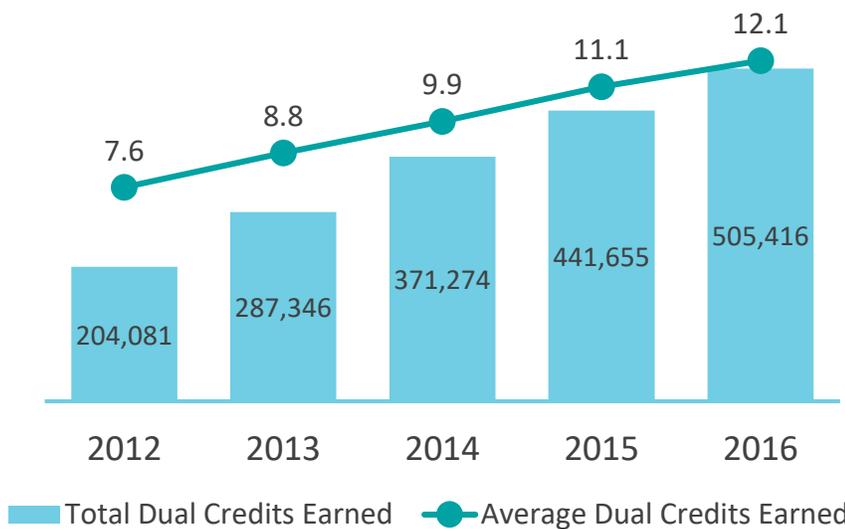


Figure 6: Total Dual Credit Hours Earned and Average Dual Credit Hours Earned (2012-2016 Cohorts)

Earning a Semester or More of Credit Is Not Uncommon

About 42% of dual credit students who graduated high school in 2016 earned the equivalent of at least one semester of college credit (more than 12 credits), including about 12% who earned two or more semesters (more than 23 credits). See Figure 7. A more detailed breakdown of the number of dual credits earned by 2016 high school graduates is provided in the Appendix.

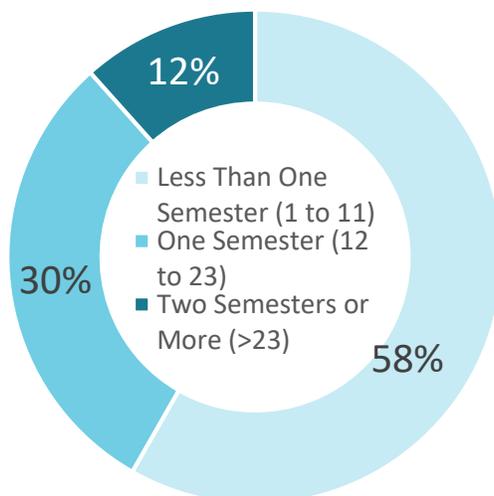


Figure 7: Share of Dual Credit Earners by Number of Dual Credits Earned (2016 cohort)

Most students who take or earn dual credit do so during their junior and/or senior years of high school. About half of dual credit students who graduated from high school in 2016 took and earned dual credit courses during just a single year of high school (see Figures 8 and 9).

Figure 8: Class Year in Which Credit Was Earned (Among dual credit students in 2016 cohort)

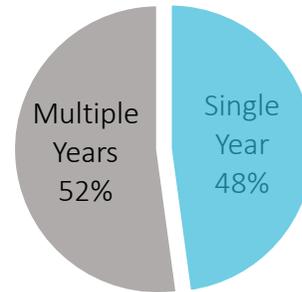
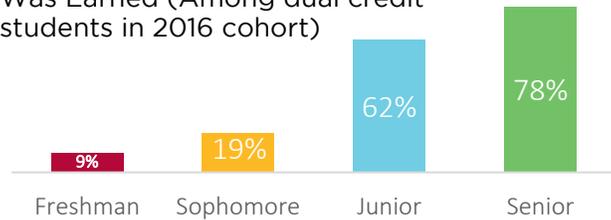


Figure 9: Share of Dual Credit Students Earning All Dual Credit During a Single Year or Multiple Years (2016 cohort)

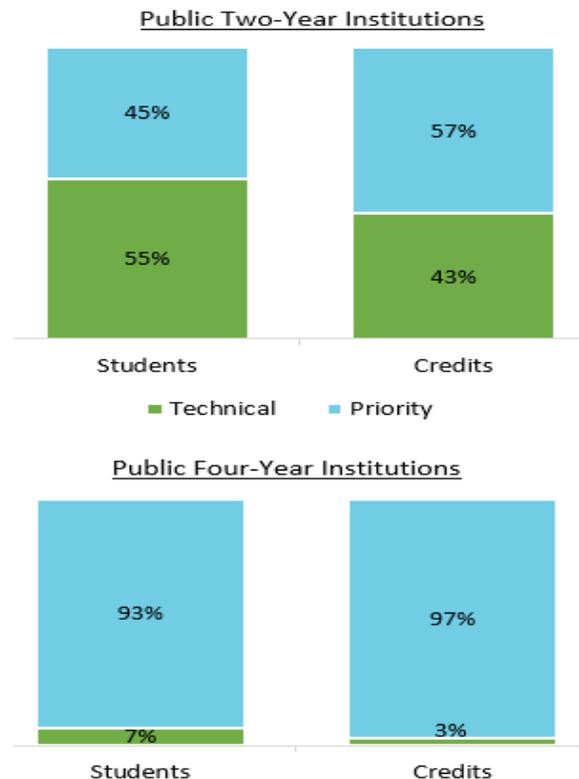
Most Dual Credit Is Conferred by Two-Year Colleges

Indiana’s public two-year colleges continue to be the top providers of dual credit statewide, with Ivy Tech Community College serving over half of all dual credit earners in the 2016 high school cohort. In other words, 29,806 students who graduated from an Indiana high school in 2016 earned dual credit from Ivy Tech Community College during their high school career (53% of graduates). Vincennes University served 13% of such students. The Indiana University and Purdue University systems served a combined 27% of dual credit earners in the 2016 graduating class.

Students earning dual credit from two-year institutions were more likely to earn technical dual credit. However, priority dual credit still made up the largest share of total hours conferred at two-year-institutions. This suggests that when students earn priority dual credit, they are taking multiple courses. Dual credit awarded by four-year institutions falls almost exclusively under the priority category (see Figure 10).

Figure 10: Public Institution Awarding Dual Credit & Technical/Priority Share Among Technical/Priority Earners (2016 cohort)

Institution	Total Students		Total Credits	
	Count	%	Count	%
IU-Bloomington	5,159	9%	36,064	7%
IU-East	646	1%	4,652	1%
IU-Kokomo	1,012	2%	6,810	1%
IU-Northwest	970	2%	7,427	1%
IUPUI	69	0%	403	0%
IU-South Bend	1,496	3%	10,735	2%
IU-Southeast	335	1%	2,469	0%
IU SYSTEM	9,687	17%	68,560	14%
PU-Northwest	2,934	5%	34,139	7%
IPFW	2,653	5%	20,305	4%
PU-West Lafayette	321	1%	1,012	0%
PU-Polytechnic	36	0%	156	0%
PU SYSTEM	5,944	11%	55,612	11%
Ball State University	794	1%	6,978	1%
Indiana State University	943	2%	6,269	1%
University of Southern Indiana	1,371	2%	10,186	2%
Ivy Tech Community College	29,806	53%	283,007	56%
Vincennes University	7,217	13%	74,564	15%



*Students are counted multiple times in Figure 10 tables and charts if the student earned dual credit from multiple institutions and/or the student earned both technical and priority dual credit.

Technical & High Priority Dual Credit Is The Most Popular Form

Dual credit courses on the technical and high priority dual credit course lists (T+HP) are the most popular among high school graduates earning dual credit (see Figure 11). Refer to the BACKGROUND section to learn more about T+HP dual credit.

- Roughly 65% of the 2016 high school cohort exclusively attempted and earned T+HP dual credit, with 30% earning a combination of T+HP dual credit and non-T+HP dual credit.
- Only 5% of students attempted and earned dual credit exclusively outside of T+HP dual credit lists.
- Since 2014, there has been a growth in the percentage of dual credit earners solely attempting and earning T+HP dual credit.

Among T+HP dual credit earners, high-priority dual credit is slightly more popular and may be gaining more popularity.

- Over 40% of 2016 high school graduates with dual credit earned priority dual credit only, with an additional 22% earning both priority and technical dual credit. See Figure 12.
- Examining trends in T+HP type by high school cohort is difficult as students can earn dual credit any time they are in high school and the Commission did not collect technical and high priority dual credit separately until the 2016 high school cohort's junior year (fiscal year 2015). However, trends in T+HP dual credit earners by type and fiscal year show that priority dual credit may be becoming more popular. Between fiscal years 2015 and 2017, the percentage of students earning only technical dual credit declined by 4 percentage points while the percentage of students earning only priority or both technical and priority credit increased by 2 percentage points each (see Figure 13).

Figure 11: Student Participation by Dual Credit Type (2012-2016 Cohorts)

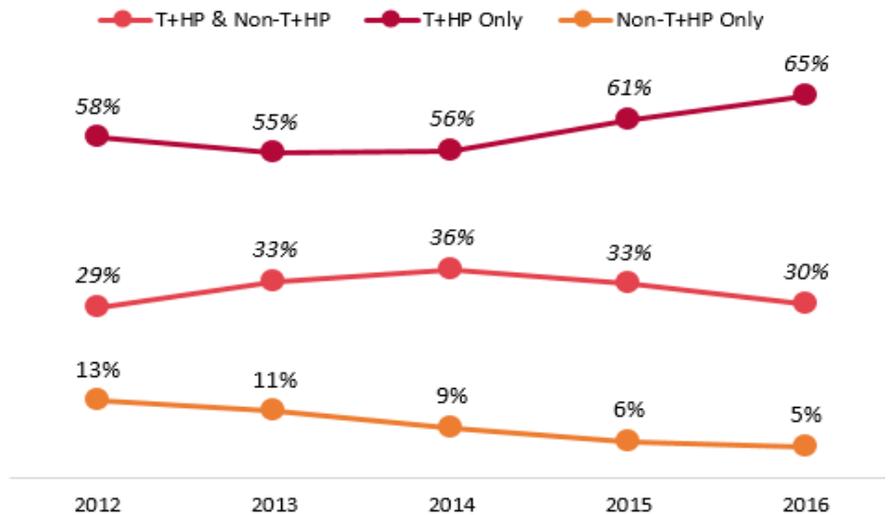


Figure 12: T+HP Dual Credit Earners By Type

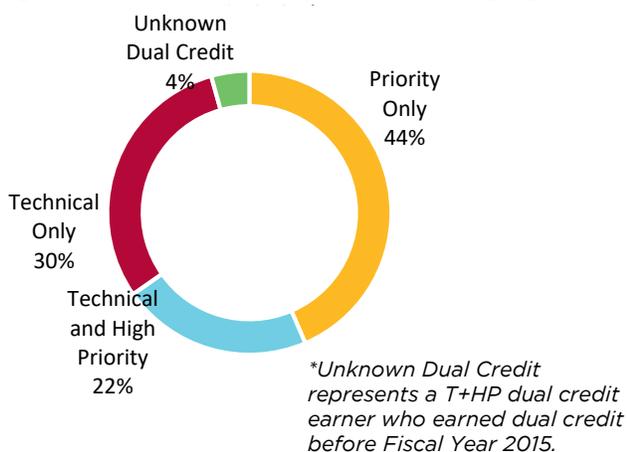
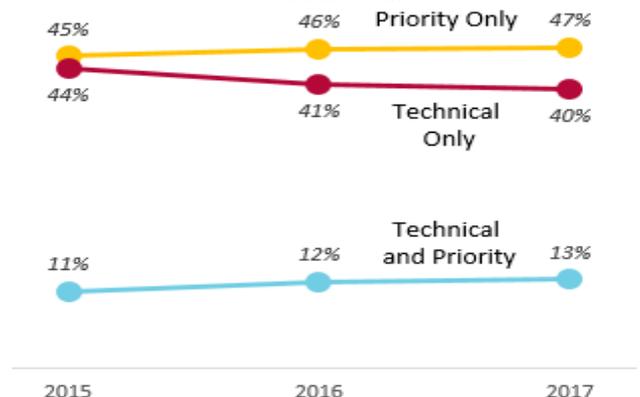


Figure 13: T+HP Dual Credit Earners By Type and Fiscal Year



Different Characteristics, Different Pathways: Technical & High Priority Dual Credit

Although we do not know which specific technical or priority dual credit courses students are taking, or their reasons for taking them, the **available data point to notable differences between technical-only earners and priority-only earners in terms of student characteristics and postsecondary pathways.**

- **Higher percentages of technical-only dual credit students are low-income and higher percentages identify as underrepresented minorities** – bearing similarities to the demographics of other students who attend two-year public colleges (see Figures 14 & 15).¹

Figure 14: Dual Credit Earners by Race/Ethnicity

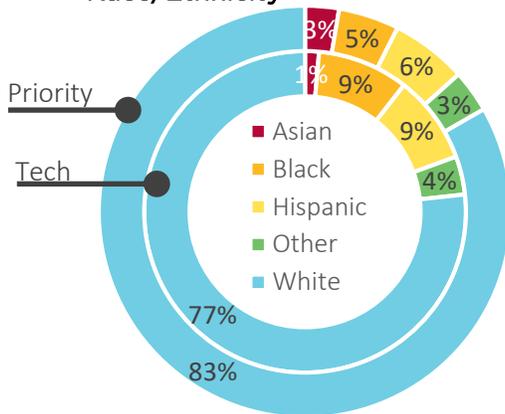
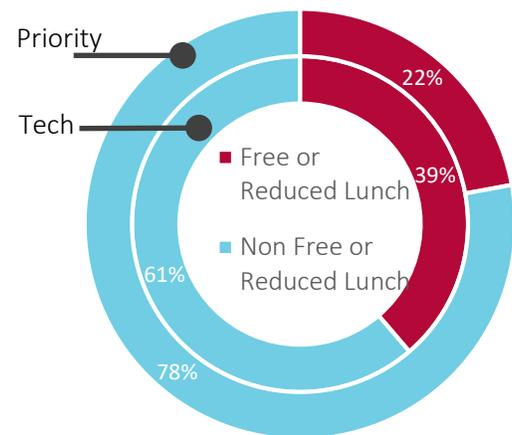


Figure 15: Dual Credit Earners by Socioeconomic Status



*Figures 14 & 15 represent students who earned only priority or only technical dual credit

- **Technical-only earners** have a higher likelihood of pursuing certain types of sub-baccalaureate credentials at two-year public colleges compared to their priority-only peers.
- **Technical-only students are more likely to choose programs in trade-related fields**, again reflecting a connection to two-year institutions, which are also the state’s largest providers of technical dual credit. Notably, however, we see greater similarities between technical and priority students in other areas of study (see Figures 16 and 17).

Figure 16: Dual Credit IN Public College Enrollees by Initial Degree Level

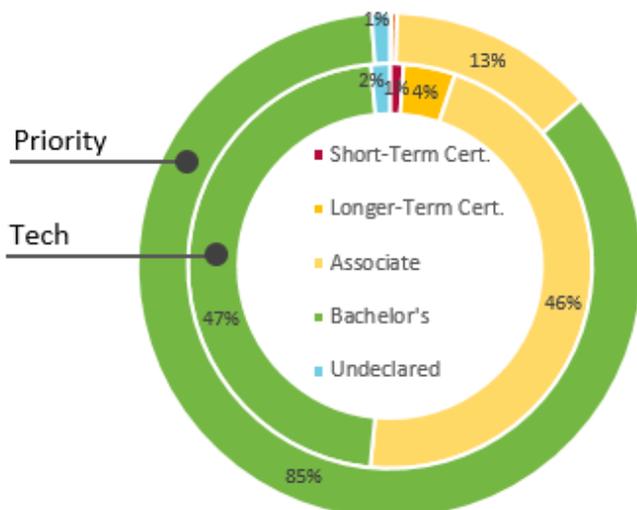
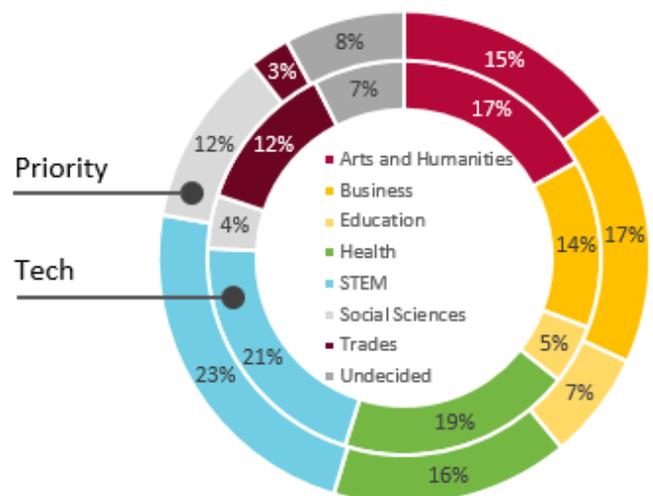


Figure 17: Dual Credit IN Public College Enrollees by Initial Program Area



¹ Figures 15-19 reference the 2016 cohort

Priority-only dual credit students are higher academic achievers compared to their technical-only peers. Priority and technical-only dual credit students differ across various high school measures related to college success, providing further context for the postsecondary credentials and programs that students ultimately choose to pursue. Compared to technical-only students, students who earn only priority dual credit are:

- about four times as likely to take an AP exam (see Figure 18),
- over five times as likely to earn an honors diploma (see Figure 19).

Figure 18: Dual Credit Earners by **AP Status**

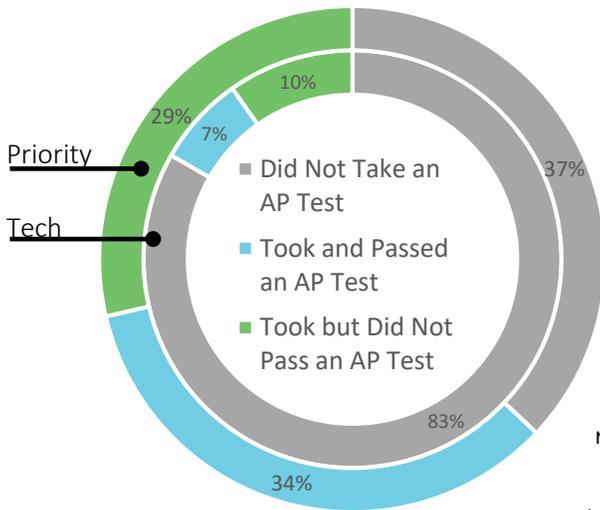
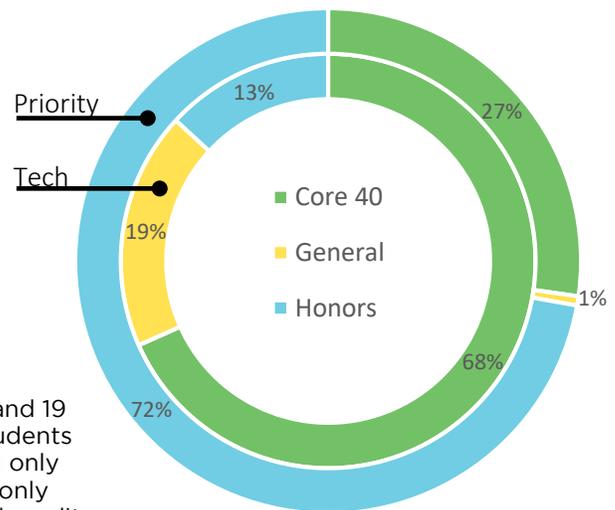


Figure 19: Dual Credit Earners by **Diploma Type**



*Figures 18 and 19 represent students who earned only priority or only technical dual credit

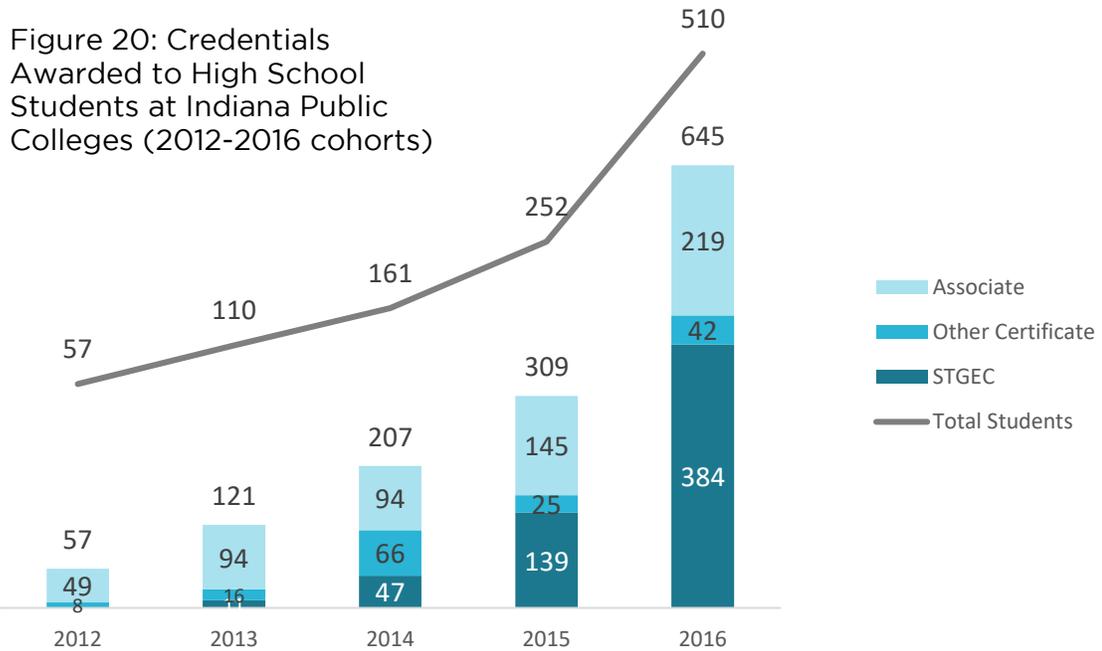
High School Students Earning College Degrees and Certificates

Through a variety of opportunities for earning college credit while in high school, more students are earning college credentials before graduating from high school. Over 600 college credentials were conferred to roughly 500 students who graduated high school in 2016, double the numbers from the 2015 high school cohort. The majority of the credentials were for the Statewide Transfer General Education Core Certificate² (384 or 60%). Another third of the credentials (219 or 34%) were associate degrees and another 6% represented other longer-term or shorter-term certificates (see Figure 20).

² Since 2012, the Statewide Transfer General Education Core Certificate (STGEC) has enabled students who satisfactorily complete an approved program of general education in any public institution to transfer that coursework to any other state educational institution as a block of 30 credit hours toward general education core requirements.

Roughly 50% of the credits earned toward these credentials were earned through the state's technical and high priority dual credit funding formula, saving both the student and the state an average of \$4,000-\$5,000 in tuition fees per credential. This estimated cost savings to students may be conservative considering that some students may have earned these credentials through Early College High School programs. Early College High Schools generally absorb the majority of course costs rather than transferring those expenses to the student or their families.

For more information, see this report's sections on Potential Cost Savings of Dual Credit and on Early College High Schools.



COLLEGE GOING AND PERFORMANCE

As highlighted in the 2016 and 2017 reports, dual credit students overall demonstrate higher rates of college success. Indeed, numerous studies nationwide indicate that participation in dual credit programs is positively associated with higher rates of college enrollment, credit accumulation, and degree attainment.³ Moreover, the Commission’s data show that, despite performance and outcome differences by type of credit earned, dual credit students in general continue to outperform their non-pre-college credit peers, often by significant margins. Data also show that Early College High Schools may play a crucial role in closing postsecondary achievement gaps.

Dual Credit Students Outperform Peers without Pre-College Credit

Dual Credit earners continue to outperform students with neither AP nor dual credit in terms of college-going, readiness, and first-year performance rates. Dual credit students who also passed an AP exam maintain the highest levels of achievement among all of the comparison groups.

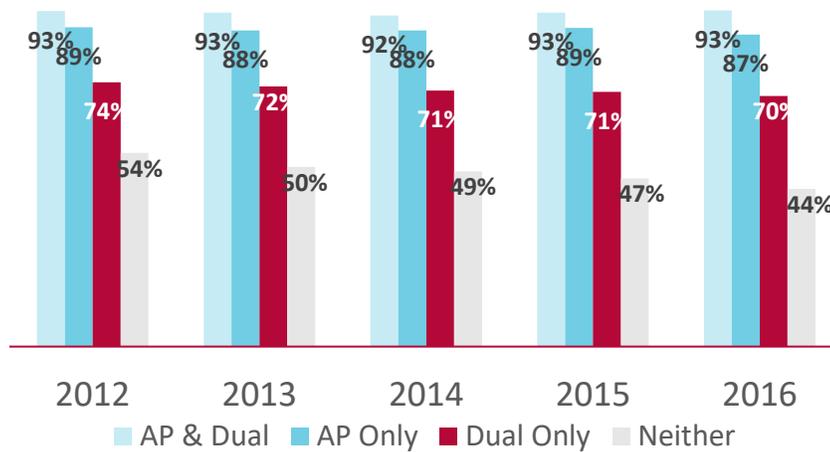


Figure 21: College Going: High School Graduates Enrolling in College by High School Cohort

- Nearly three-quarters (70%) of dual credit-only earners enrolled in college, compared to less than half (44%) of students with no AP exam or dual credit. In contrast, AP students’ college going rates exceed those of dual credit students by over 15 percentage points (see Figure 21).
- Nearly one half (47%) of dual credit-only students enrolling in Indiana publics met all three areas of early success in college –no remediation, persistence to second year and completing all credits attempted, compared to about a fourth (26%) of students with no pre-college credit, and about two-thirds (67%) of AP only students. See Figure 22.

Figure 22: Early Success in College Performance: High School Graduates meeting all three areas of early success in college – no remediation, persistence to second year, and completing all credits attempted (2015 cohort)

	AP & Dual	AP Only	Dual Only	Neither
Public 2-Year	41%	25%	25%	12%
Public 4-Year	76%	71%	55%	40%
Public Average	74%	67%	47%	26%

³ See, for example, Institute of Education Sciences. (2017). Dual enrollment programs. *What Works Clearinghouse Intervention Report*. Washington, DC: U.S. Department of Education. Retrieved from <https://ies.ed.gov/ncee/wvc/InterventionReport/671>; Shapiro, D., Dunder, A., Wakhungu, P.K., Yuan, X., Nathan, A, & Hwang, Y. (2016). *Time to degree: A national view of the time enrolled and elapsed for associate and bachelor’s degree earners (Signature Report No. 11)*. Herndon, VA: National Student Clearinghouse Research Center. Retrieved from <https://nscresearchcenter.org/signaturereport11/>

- Dual credit students tend to have higher first-year GPAs and are more likely to persist than non-credit students, with about 43% of dual credit-only students having earned a 3.0 or above and over three-quarters (77%) having persisted to their sophomore year. In comparison, less than one-third (27%) of non-credit students earned a 3.0 or higher, and less than two-thirds (59%) persisted. AP students, in contrast, were over twice as likely to have earned a 3.0 or higher compared to non-credit students, and over 80% of them persisted (see Figures 23 and 24).

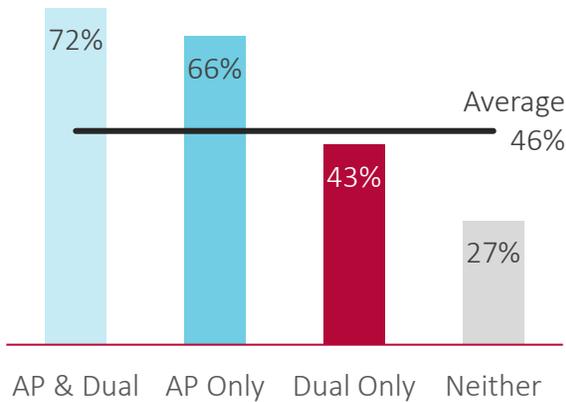


Figure 23: **Freshman GPA:** Indiana Public Enrollees Earning a 3.0 or Above During their First Year of College (2016 cohort)

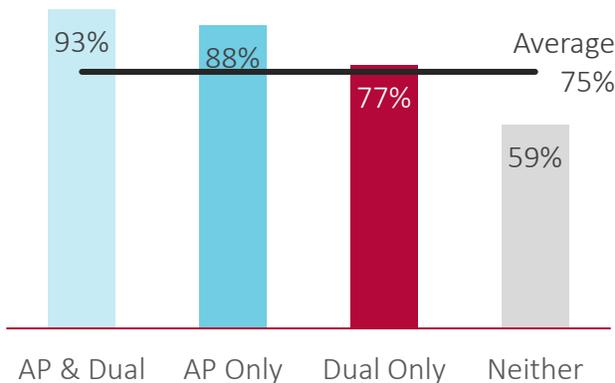


Figure 24: **Persistence:** Indiana Public Enrollees Persisting to Sophomore Year (2015 cohort)

Priority Dual Credit Associated with Stronger Postsecondary Outcomes

Technical-only and priority-only earners have marked disparities in college readiness and freshman year outcomes. As previously noted, students earning only technical dual credit tend to have different characteristics, different college enrollment patterns, and lower levels of academic preparation in high school. Unsurprisingly, similar patterns emerge in students' postsecondary outcomes in terms of college-going, remediation, and freshman GPA.

- AP-only students still tend to outperform dual credit-only students overall, but disparities between priority dual credit and AP students are much less pronounced.
- Similarly, differences fade away for the relatively small group of students who earned both technical and priority dual credit.

As shown in Figures 25-27, the data indicate that:

- Priority dual credit and AP students have almost identical college-going rates (84% compared to 87%). In contrast, only about half (49%) of technical-only dual credit students enroll in college (see Figure 25).
- Most AP and priority dual credit students perform well in their first couple years as reflected in the early success in college measure (no remediation, persistence to second year, and completing all coursework attempted) —67% and 58% success rates respectively, compared to about 33% of technical-only dual credit students (see Figure 26). This again reflects the characteristics, achievement levels, and college pathways of technical-only dual credit students.
- In contrast to other measures, fewer priority dual credit students earn GPAs of 3.0 or above during their freshman year compared to AP students (49% compared to 65%), suggesting that while AP and priority dual credit students are equally as likely to enroll in college, AP students may be better prepared academically. In comparison, less than one-third (28%) of technical-only dual credit students earned a GPA of 3.0 or higher (see Figure 27).

Figure 25: Pre-College Credit Earners Enrolling in College (2016 Cohort)

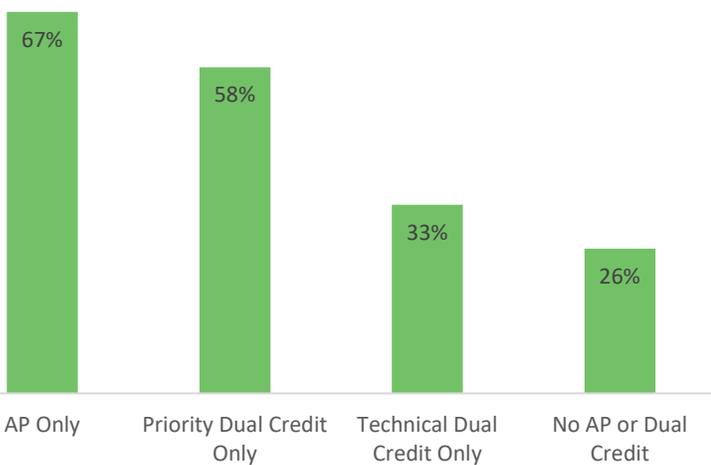
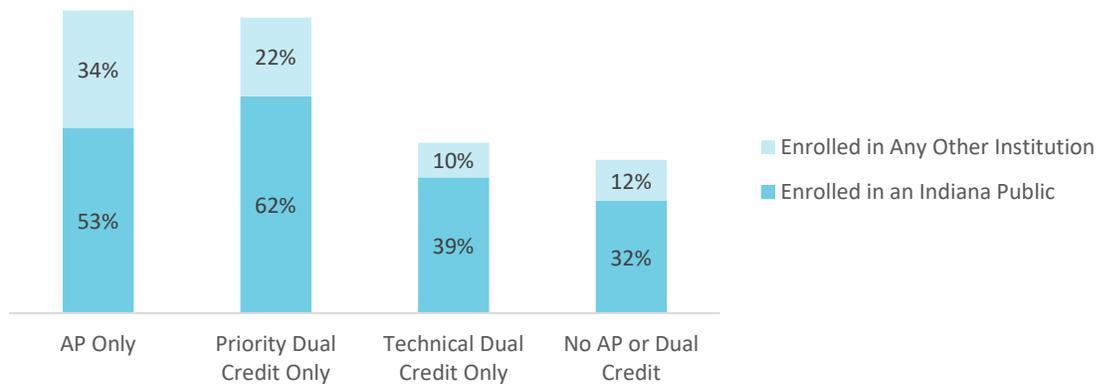


Figure 26: Pre-College Credit Earners Meeting the Early Success in College Measure (2015 cohort)

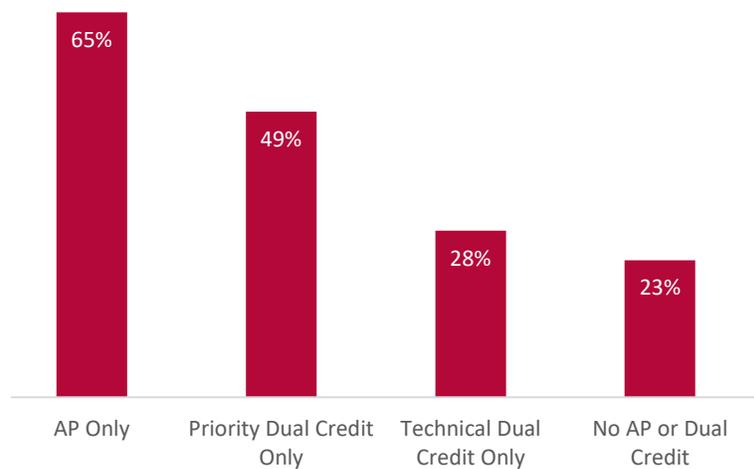


Figure 27: Pre-College Credit Earners Freshman GPAs of 3.0 or Higher (2016 cohort)

The Broader Landscape: Early College High Schools

As mentioned in the BACKGROUND section of this report, Early College High Schools are intensive, accelerated programs that enable students to earn postsecondary credentials alongside their high school diplomas. Early College High Schools offer more than just opportunities for high school students to earn college-level credit and postsecondary credentials. Early College High Schools provide a support system and create a college-going culture with a particular focus on serving first generation and other underrepresented student groups. Below are the eight core principles that serve as a framework for Early College High School models:

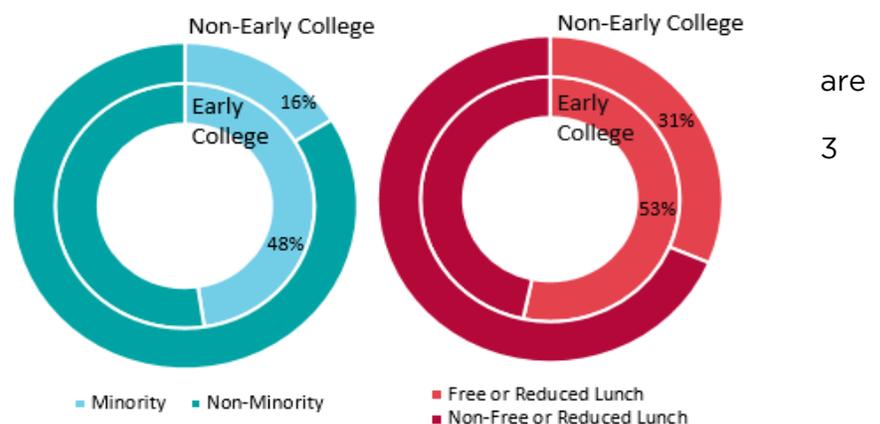
1. **Targeted Student Population:** Underserved students such as first-generation, low-income, and students of color
2. **Curriculum & Plan of Study:** From college-preparedness to career-ready
3. **College-Going Culture:** An environment that builds the expectation of postsecondary attainment
4. **Rigorous Instruction:** Challenge and high expectations in every class
5. **Supports for Student Success:** Academic, social, and emotional supports
6. **Collaboration & Partnerships:** Higher education, family, community, and industry partnerships
7. **Leadership & Staffing:** Defined roles and responsibilities
8. **Data Collection, Analysis, and Use:** Continual assessment and improvement of program elements

The Indiana Commission for Higher Education does not directly collect data on Early College high schools; however, the Commission often partners with the Center of Excellence in Leadership of Learning (CELL) to analyze the impact of Early College programs that have earned the distinction of fully Endorsed Early College High Schools. Since 2003 when CELL began the Early College initiative in Indiana, 23 schools have earned the distinction of being named fully Endorsed Early College High School sites.⁴

Data for 2011-2014 graduates⁵ of fully endorsed Early College High Schools reflect the volume of low-income and minority students that Early Colleges serve and that the outcomes of Early College graduates often exceed the general population and their peers not attending Early Colleges. This was especially likely to be the case for at-risk students.

Figure 28: Demographic profile of graduates (2011-2014 Cohorts)

Compared to Non-Early College graduates, Early College graduates 1.7 times as likely to participate in Free or Reduced Lunch and nearly times as likely to be a minority student (Black or Hispanic). See Figure 28.

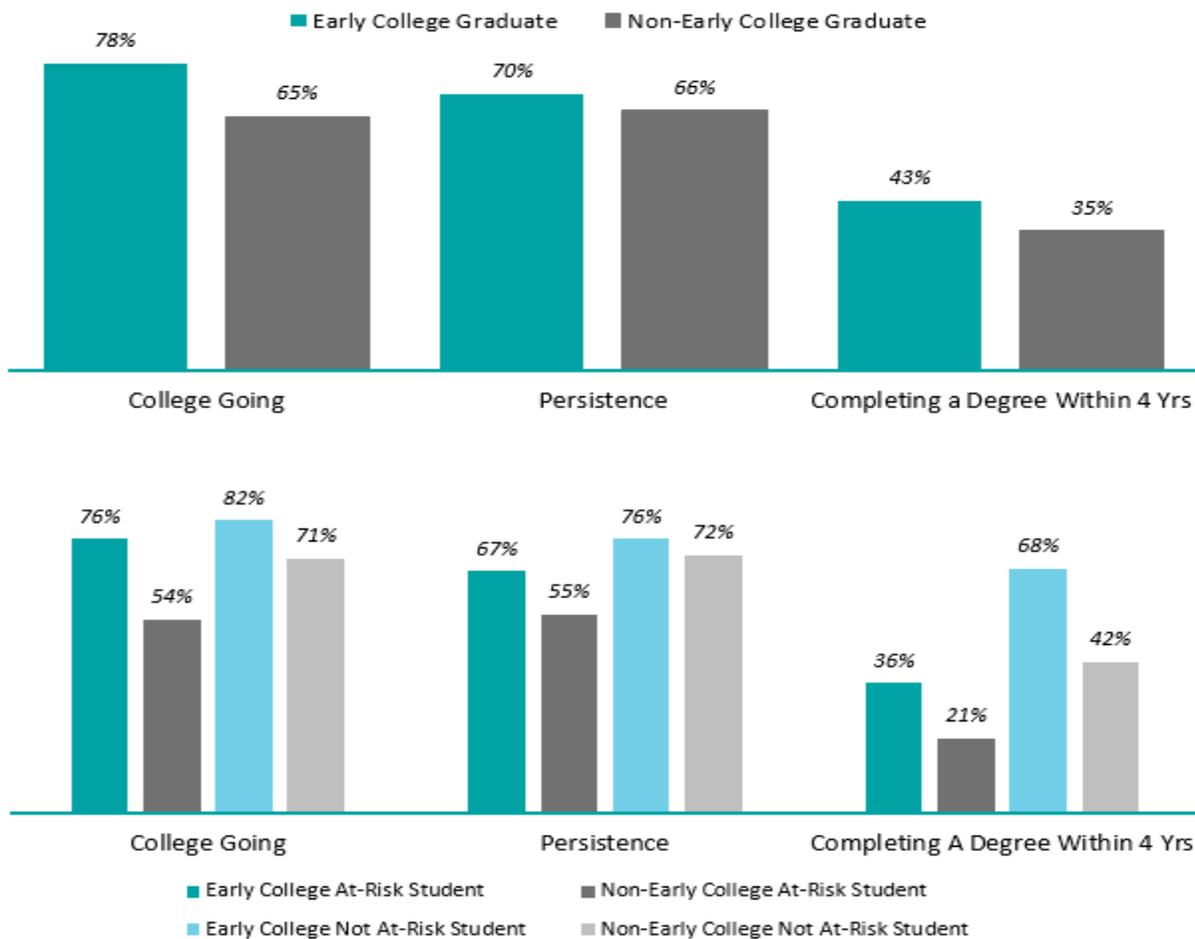


⁴ For additional information visit <http://cell.uindy.edu/our-work/early-college-high-school/echs-in-indiana/>.

⁵ Data for "Completing A Degree Within 4 Yrs" statistics include data for 2011-2013 graduates only. All other statistics include 2011-2014 graduates.

Overall, Early College graduates generally performed better than non-Early College graduates in terms of college going, college persistence, and degree completion. This was especially likely to be the case for at-risk students (minority students and/or students participating in Free or Reduced Lunch); the success rates of at-risk students differed by at least 10 percentage points based on Early College graduate status. See Figure 29.

Figure 29: Success outcomes of Early College graduates compared to Non-Early College graduates enrolling in Indiana public colleges within one year of high school graduation compared to Non-Early College graduates



Causation between endorsed Early College participation and college success outcomes cannot be determined from these data cuts alone as Early College and non-Early College students likely differ in a lot of ways aside from having a direct pathway to credential while in high school. However, the correlation between endorsed Early College participation and college access and success, especially for low-income and minority students, is significant to note. Because of the role Early Colleges play in the college access and success pipeline for the State, the Commission will continue to partner with the Center of Excellence in Leadership and Learning (CELL) to analyze the outcomes of graduates of endorsed Early College High Schools.

TIME TO DEGREE

The impact of dual credit varies from student to student – depending on courses taken, institutions’ policies, and each level of preparation and academic choices – but available data suggest that dual credit may be positively associated with pursuing advanced major-level coursework in the freshman year, continued persistence toward degree, higher levels of credit taking and earning, and accelerated time to degree.

Data for this section examine Indiana high school graduates enrolling in Indiana public colleges within one year of high school graduation pursuing a bachelor’s degree (4-year institutions) or a longer-term certificate or associate degree (2-year institutions). In order to more closely examine the effect of dual credit, data for this section focus on students who earned no dual credit or only dual credit (AP earners are excluded). Overall breakouts of the data (by initial degree level pursued) include additional cuts of the data by the amount of dual credit earned. Due to small sample sizes, further breakouts of the data by academic preparedness and demographic groups collapse data for students earning one semester or two semesters or more of dual credit into one category: one semester or more.

Dual Credit Holders May Be More Likely To Enter Into Higher-Level Courses

Students who enter college having earned higher levels of dual credit are less likely to enroll in gateway courses in their freshman year, possibly enabling students to forgo general education requirements and pursue more advanced-level major coursework earlier than their peers without dual credit (see Figure 30).

- Statewide, less than 70% of the students with at least one semester of dual credit under their belt enrolled in gateway courses in their first year compared to 83% of non-dual credit earners.
- Students earning less than one semester of dual credit were just slightly less likely than their peers with no dual credit to enroll in a gateway math or English course, suggesting that the likelihood of forgoing general education requirements in both math and English may be the most significant for students earning at least one semester of dual credit.
- The negative association between taking gateway courses and the amount of dual credit earned was apparent for both bachelor’s as well as longer-term certificate or associate degree seekers.

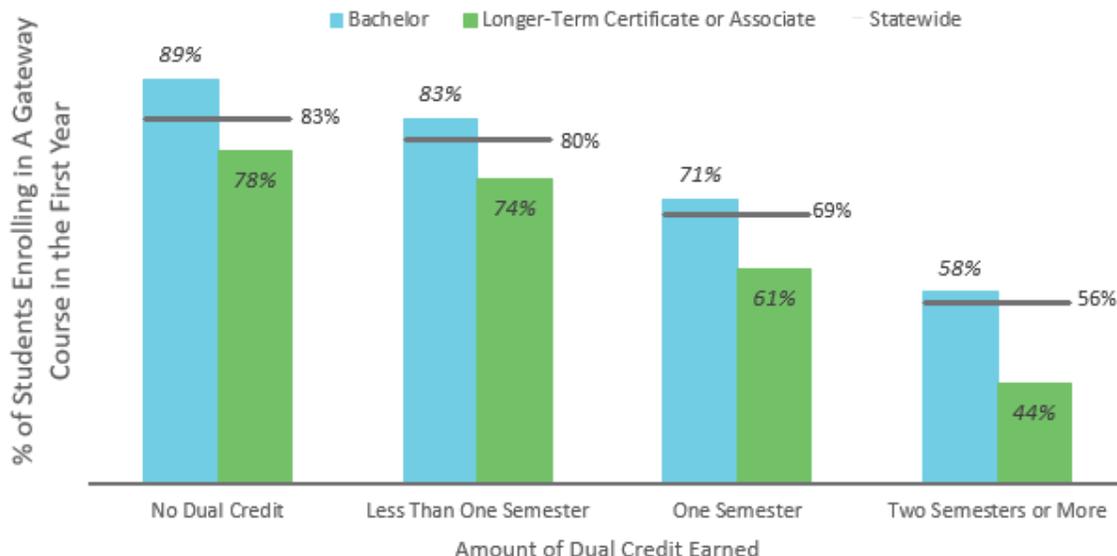
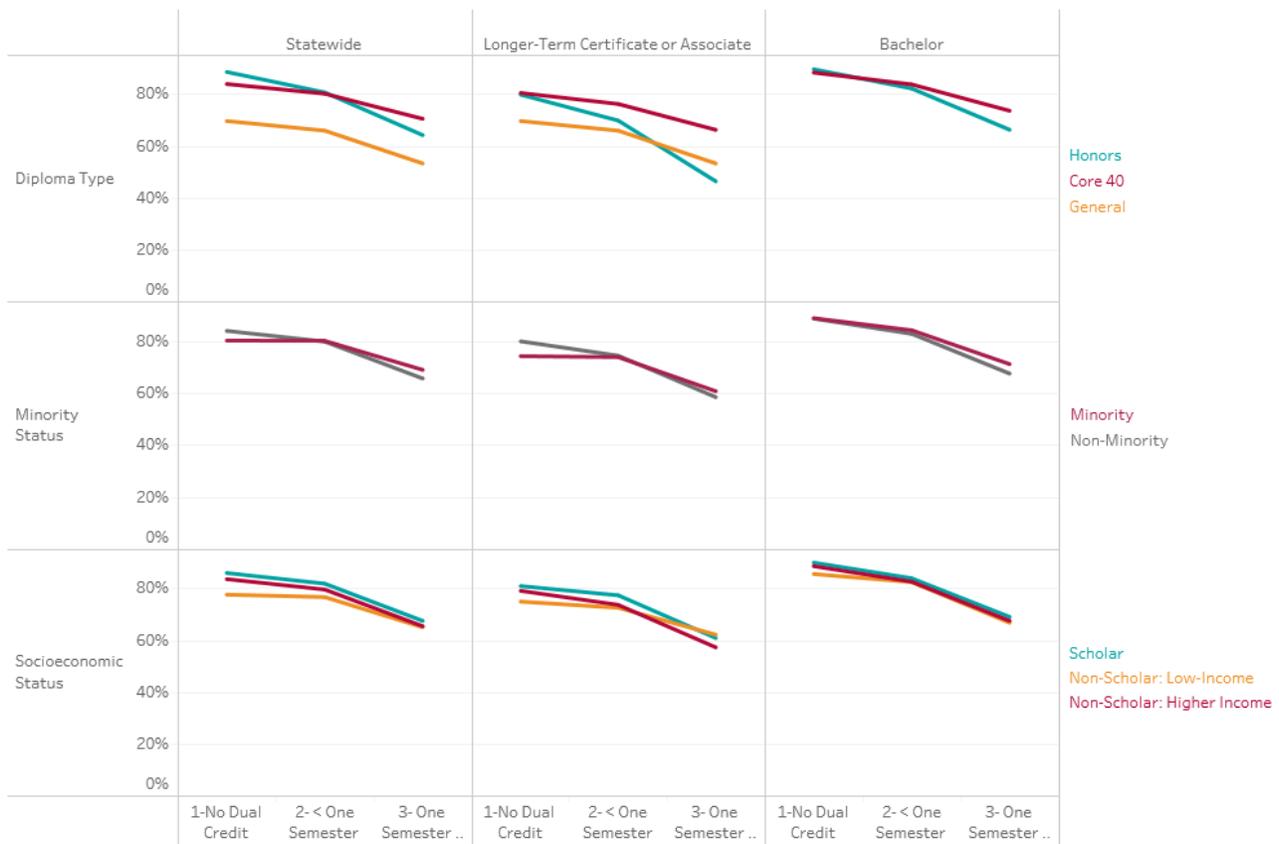


Figure 30: Students enrolling in a gateway course in the first year by initial degree level pursued and amount of dual credit earned (Cohorts 2014-2016)

- Crosstabulations of the data within academic preparedness and student demographic groups suggest that the benefits of dual credit on first year gateway course taking were not necessarily limited to the most affluent or most academically prepared students. Across all diploma types and minority and socioeconomic statuses, students who earned dual credit and larger volumes of dual credit typically were less likely to enroll in gateway courses in their first year compared to their peers not earning dual credit. See Figure 31.
 - While this general pattern was apparent across all the data subgroups, an interesting trend appeared by diploma type earned. While increased dual credit participation was less likely to lead to gateway course enrollment for both Honors and Core 40 earners, the gap in gateway enrollment rates for the groups tended to increase as the amount of dual credit participation increased. The growing gap in gateway course enrollment between Honors and Core 40 recipients by the volume of dual credits earned may allude to the full academic preparedness profile that is considered when deciding whether dual credit courses are accepted for credit, including the rigor of a student's high school coursework and the grade point averages earned by students in dual credit courses.

Figure 31: Students **enrolling in a gateway course in the first year** by initial degree level pursued, amount of dual credit earned, and academic preparedness/demographic factors (Cohorts 2014-2016)



Dual Credit Is Positively Associated With Continued Persistence

A key factor influencing degree completion and time to degree is whether students stay continuously enrolled in higher education as they pursue their first credential. Data show that non-dual credit earners are the most likely to stop out throughout their path to a credential.

Conversely, students who earn dual credit and larger amounts of dual credit are the most likely to demonstrate continued enrollment or persistence toward a degree (see Figure 32).

- Statewide, over thirty percent (31%) of non-dual credit earners stopped out without earning a credential in the second year and nearly half (45%) and just over half (51%) of non-dual credit earners stopped out without earning a credential in their third and fourth year. This compares to at most a 35% chance of stop out without obtaining a credential within the four years of initial enrollment for students earning less than a semester of dual credit and under a quarter of a chance of stop out for students earning at least one semester of dual credit.
- Stop out rates were higher for students initially pursuing sub-baccalaureate credentials compared to baccalaureate degrees; however, the same trend was apparent in the data: students earning dual credit were less likely to stop out compared to their peers not earning dual credit and stop out rates were the least likely for students earning at least one semester of dual credit.

Figure 32: Students **stopping out without earning a credential** by college year, initial degree level pursued, and amount of dual credit earned (Cohorts 2012 and 2013)

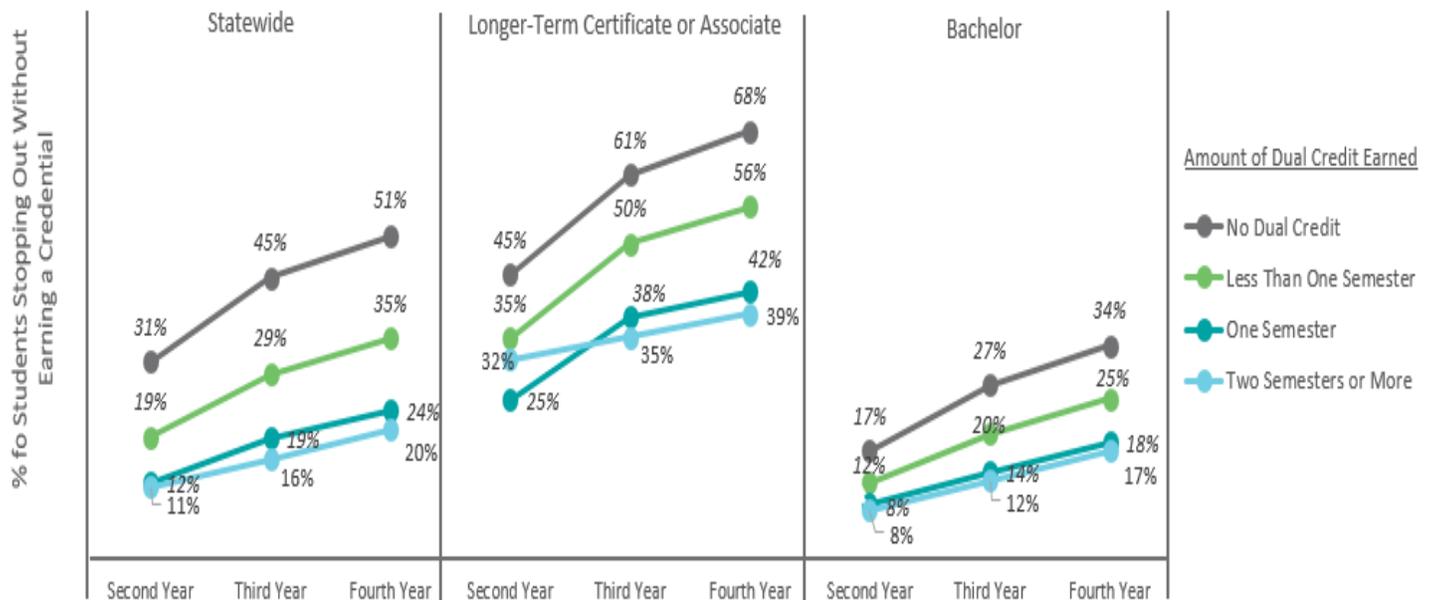
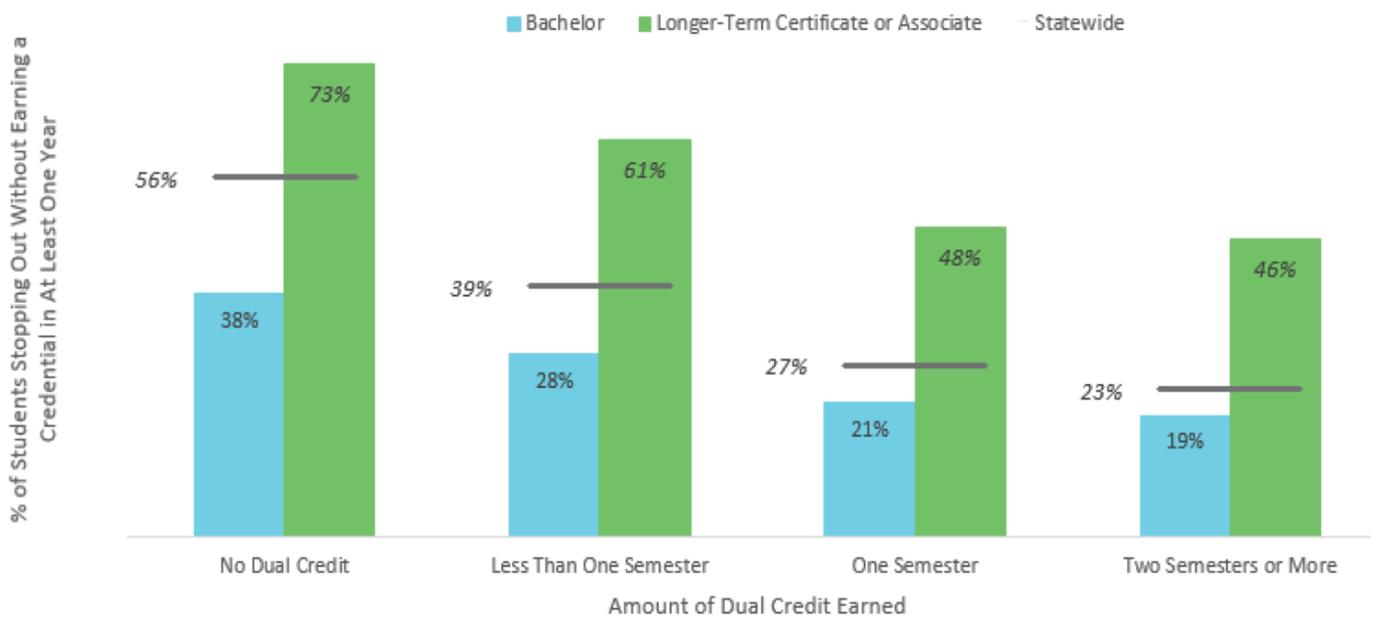


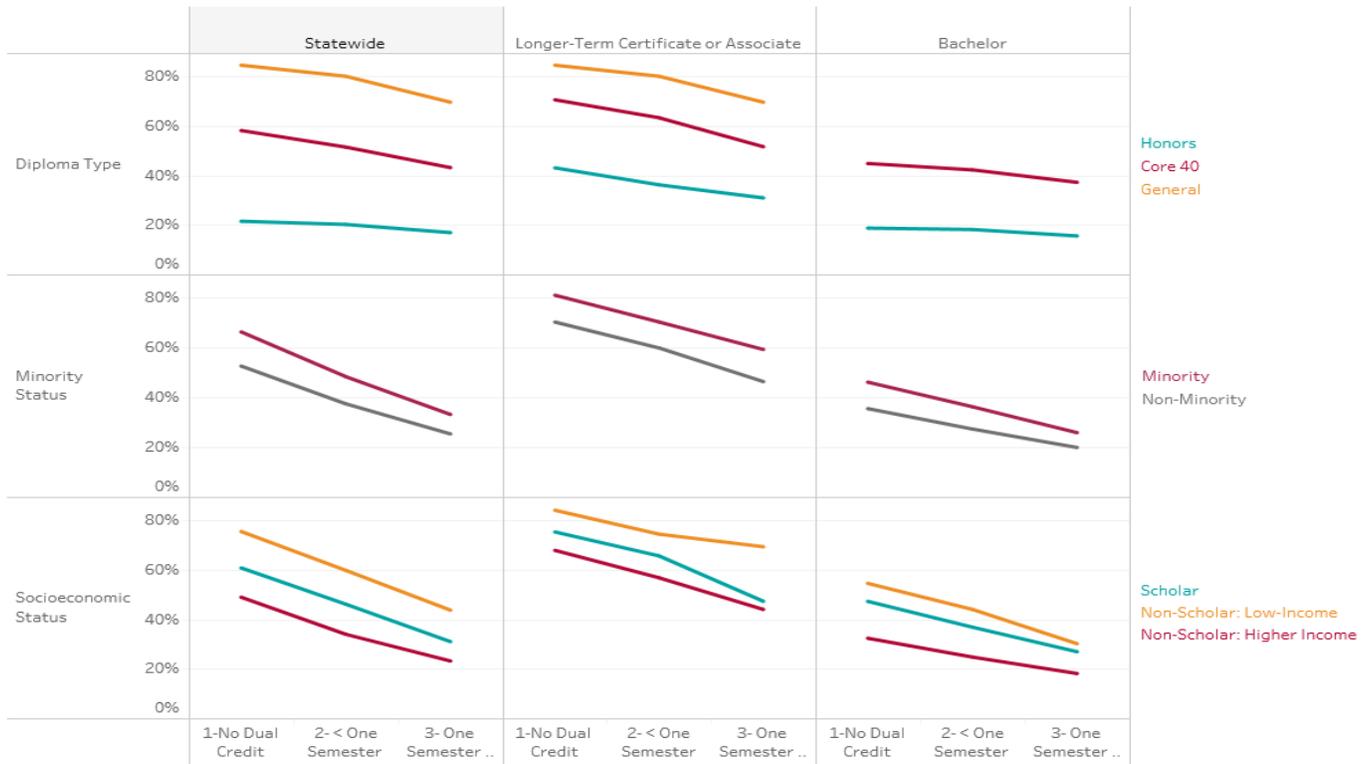
Figure 33 smooths the data and records the percentage of students who stopped out without obtaining a credential in at least one year within four years of initial enrollment. For initial longer-term certificate or associate degree seekers, nearly three-quarters of non-dual credit earners stopped out in at least one year in their pursuit of a credential compared to 61% of students earning less than one semester of dual credit and less than half (46-48%) of students earning at least one semester of dual credit. For bachelor’s degree seekers, there was a 38% chance of stop out in at least one year for those not earning dual credit prior to high school graduation compared to 28% of students earning less than one semester of dual credit and less than a quarter of students earning one semester or more.

Figure 33: Students **stopping out without earning a credential in at least one year within the four years of initial enrollment** by initial degree level pursued and amount of dual credit earned (Cohorts 2012 and 2013)



The negative correlation between higher levels of dual credit participation and the likelihood of stop out without a credential were apparent across all subgroups examined, but the negative trend seemed especially apparent by minority and socioeconomic status. This suggests that dual credit participation and exposure to college coursework in high school may play a crucial role in closing achievement gaps. The large gaps in the stop out rate by diploma type highlight the importance of academic preparation in high school for postsecondary attainment success (see Figure 34).

Figure 34: Students stopping out without earning a credential in at least one year within the four years of initial enrollment by initial degree level pursued, amount of dual credit earned, and Academic Preparedness/Demographic Factors (Cohorts 2012 and 2013)



Dual Credit Is Not Necessarily a Credit Cushion For Students

Some have argued that students might unwisely use dual credit as a “cushion” so that they can take less-strenuous courseloads while in college. This cushion, it is claimed, means students do not end up graduating from college any earlier than they would without dual credit. Though the effect of dual credit earned on college credits attempted may vary from student to student (intended major, financial circumstances, etc.), high-level data show that students with higher levels of dual credit do not necessarily rely on dual credit as a cushion. In fact, the data at the sub-baccalaureate level suggest that exposure to dual credit coursework prior to high school graduation may instill a habit of credit-taking throughout their college career and a greater likelihood of enrolling at full-time or on-time status (see Figure 35).

- Overall, dual credit earners attempted an on-time course load (15 or More Credits) at least 46% of the time compared to 39% of time for non-dual credit earners.
- The effect of dual credit on credits attempted in fall/spring semesters differed by the student’s initial degree level pursued.
 - Initial bachelor’s degree seekers who earned dual credit were about as likely as their peers who did not earn dual credit to attempt an on-time course load when enrolled (52-53% dual credit earners compared to 49% of non-dual credit earners).
 - Dual credit earners initially pursuing longer-term certificates or associate degrees were more likely than non-dual credit earners to attempt more credits throughout their undergraduate career. Longer-term and associate students earning the highest levels of dual credit attempted at least a full-time course load nearly 75% of the time (41% + 32% = 73%) compared to non-dual credit students who only completed at least a full-time course load 58% of the time.

Figure 35: Typical **Credits attempted per semester** (fall/spring) by initial degree level pursued and amount of dual credit earned (Cohorts 2012-2016)

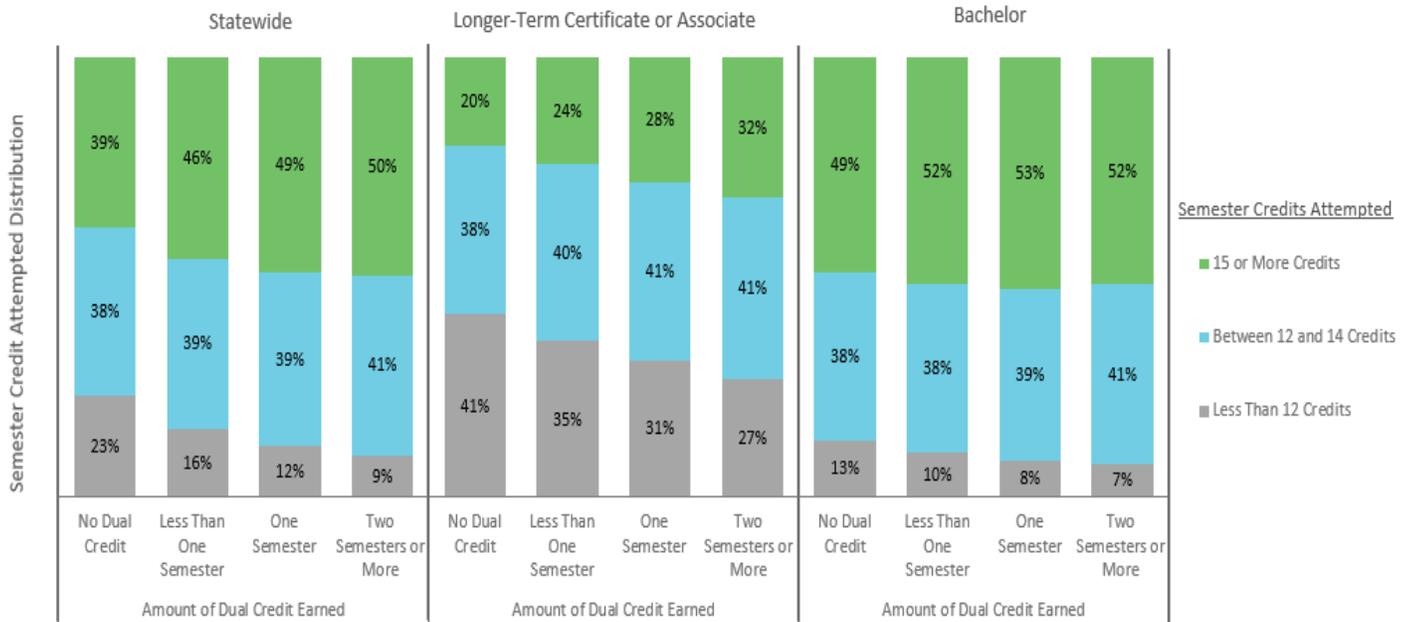
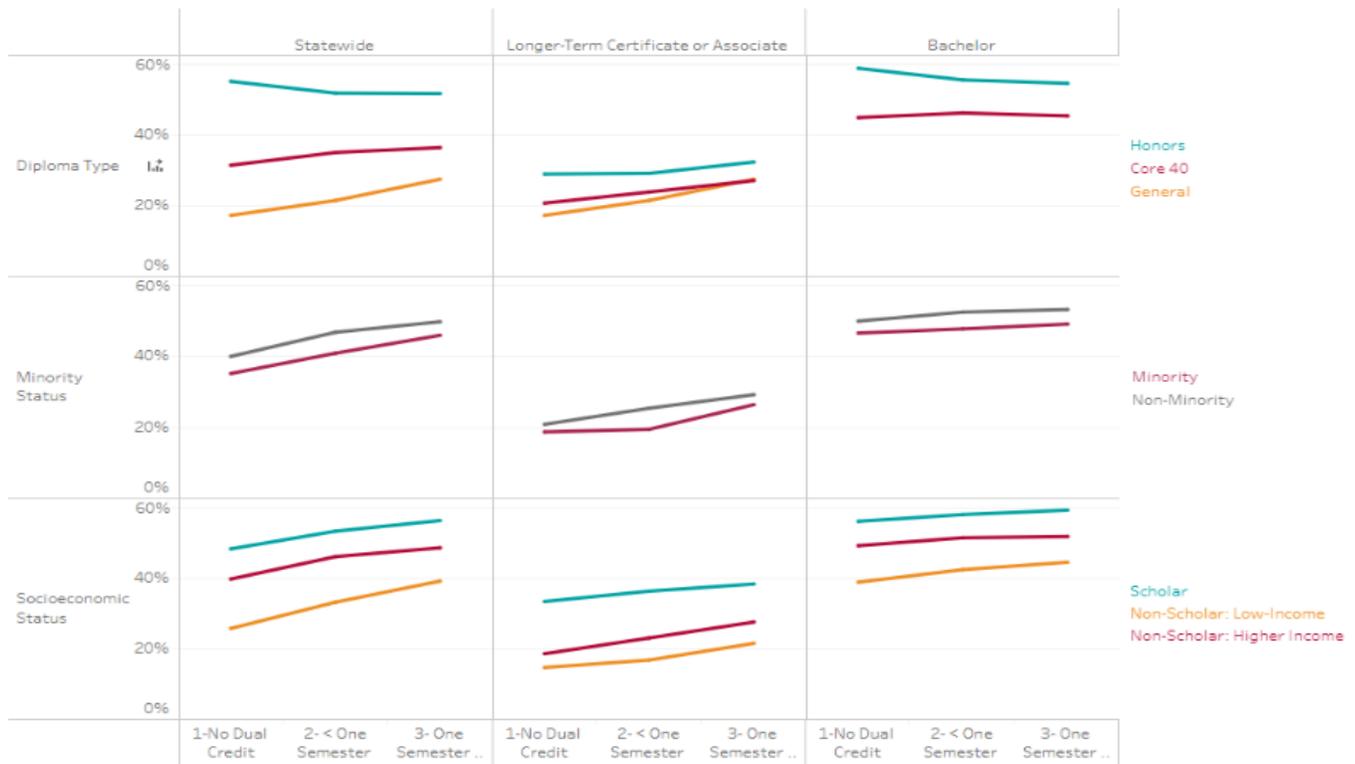


Figure 36 plots the percentage of the time that students attempted at least 15 or more credits in a semester by the amount of dual credit earned within academic preparedness and student demographic groups. Trends in the likelihood of 15+ credit taking in the fall/spring semesters may shed light on how the amount of dual credit earned influences credit taking behavior for students facing different circumstances.

- For longer-term certificate seekers, across all diploma types and minority and socioeconomic statuses, students who earned larger amounts of dual credit tended to be more likely to enroll in an on-time course load compared to their peers who did not earn dual credit. There was a slight trend in the data suggesting that the achievement gap in 15+ credit taking was slightly widened for minority and non-Scholar, low-income students when earning less than one semester of dual credit; however, the gap was either closed or reduced for students who earned one semester or more of dual credit.
- For bachelor's degree seekers, contrary to the relatively flat trend for students overall, minority and low-income students (Scholars and Non-Scholar: low-income) tended to be more likely to attempt 15 or more credits when earning up to one semester or more of dual credit. Interestingly, students who earned an Honors diploma were slightly less likely to attempt 15+ credits as levels of dual credit earned increased, a trend that did not reflect that of other subgroups examined. This suggests that the tendency to use dual credit as a cushion or an accelerator may be influenced by other factors which may require further research.

Figure 36: Students **attempting at least 15 credit hours** in fall/spring semesters by initial degree level pursued, amount of dual credit earned, and academic preparedness/demographic factors



Dual Credit Earners Tend to Be More Likely To Earn The Credits They Attempt

Available data suggest that students who graduate high school with dual credit and go straight to college are – once they reach college – more likely to complete a larger percentage of the credits that they attempt. This apparent higher completion rate potentially can decrease time to a college degree.

Figure 37 plots the percentage of credits earned out of credits attempted by the amount of dual credit earned and initial degree level pursued. Data include credits attempted and earned as of the end of term in the fall and spring semesters in the first two years of initial enrollment for initial longer-term certificate and associate degree seekers and the first four years of initial enrollment for initial bachelor’s degree seekers.

- Statewide, students earning dual credit completed at least 89% of the credits they attempted compared to 83% for students not earning dual credit.
- There was a positive relationship between the amount of dual credit earned and the percentage of credits earned for students seeking both bachelor’s and longer-term certificates or associates; however, the positive effect seemed to be slightly stronger at the sub-baccalaureate level.

Plots of the trend within academic preparedness groups show the slight positive trend reflected across all diploma type groups and minority and socioeconomic statuses. Across all diploma types and minority and socioeconomic statuses, students who earned dual credit and larger volumes of dual credit tended to complete a larger proportion of the credits that they attempted (see Figure 38).

Figure 37: Percentage of **credits earned out of attempted** in fall/spring semesters by initial degree level pursued and amount of dual credit earned (Cohorts 2012-2016)

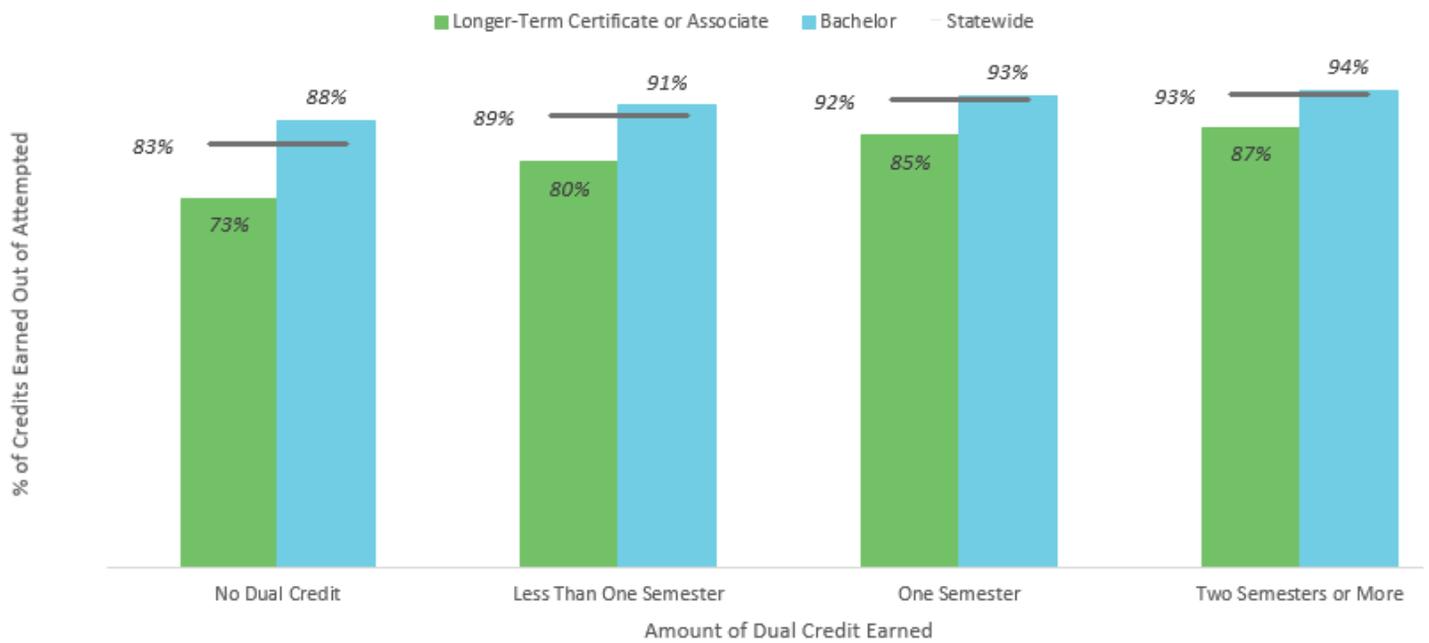
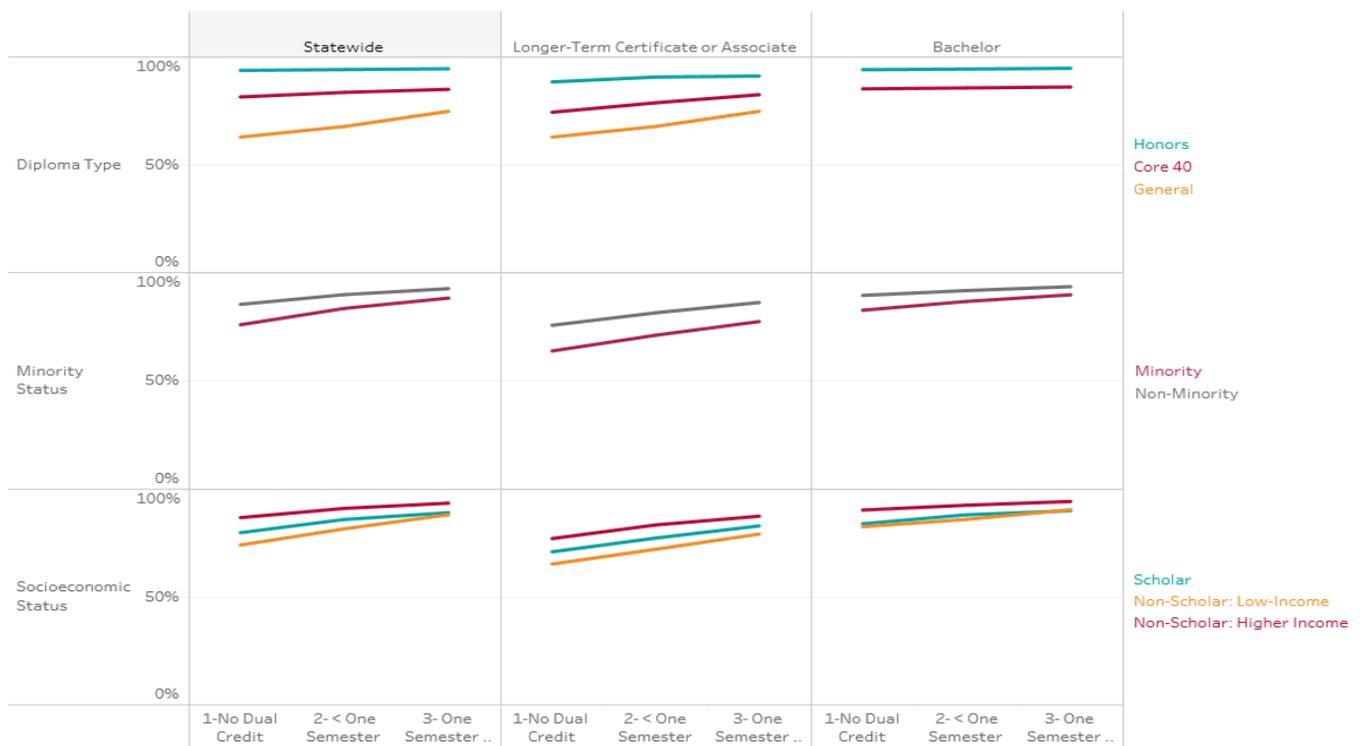


Figure 38: Percentage of **credits earned out of attempted** in fall/spring semesters by initial degree level pursued, amount of dual credit earned, and academic preparedness/demographic factors

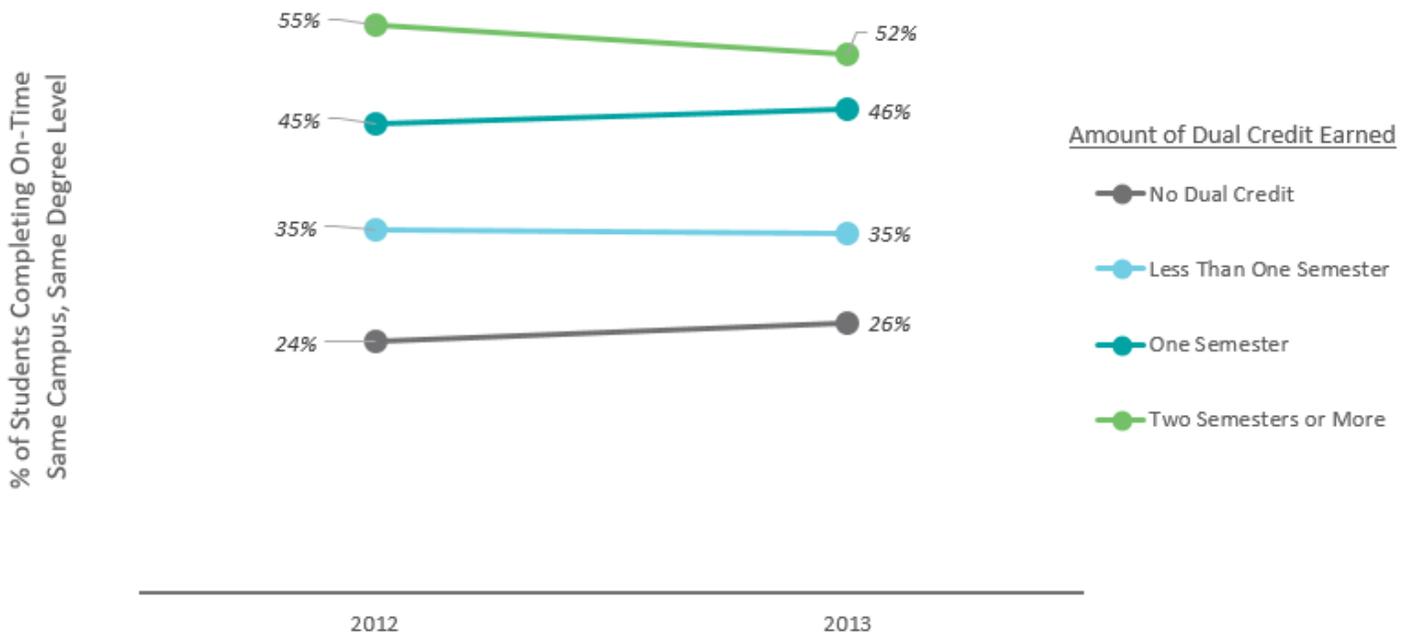


Dual Credit Holders Are More Likely To Graduate On Time or Early

Though we cannot conclude with certainty that dual credit shortens a student’s time to degree, data do show that dual credit holders are more likely to graduate on time and are also more likely than their peers to graduate at least one semester early. Figures 39 and 40 display trends in on-time completion rates by the amount of dual credit earned for bachelor’s and longer-term or associate degree seekers, respectively.

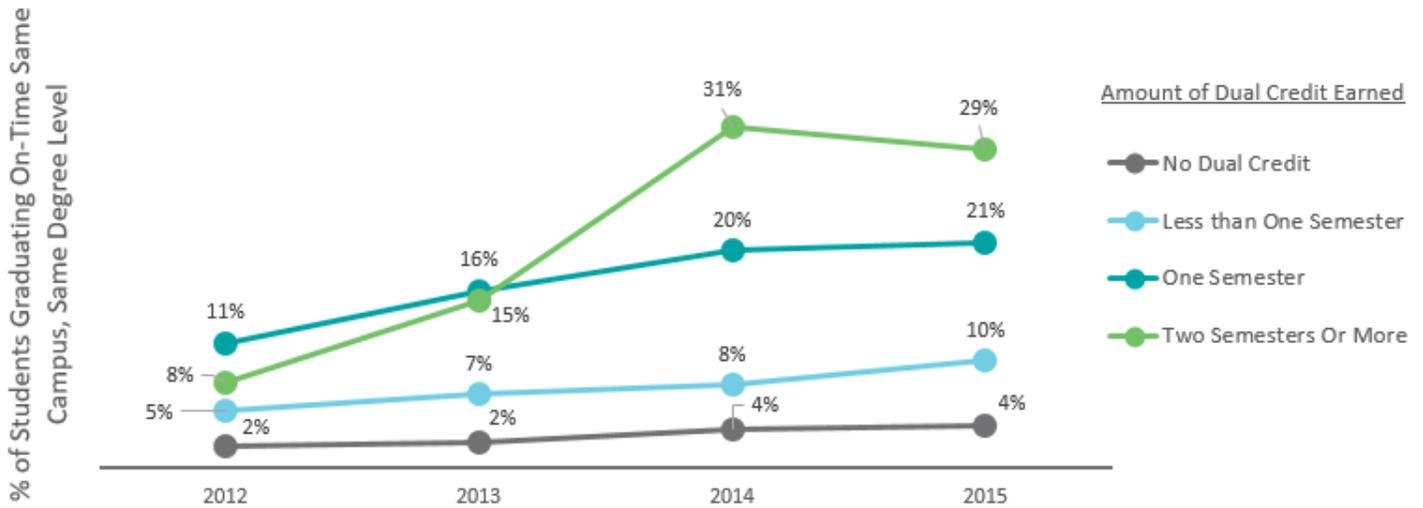
- For 2013 high school graduates who sought bachelor’s degrees from four-year institutions, 26% of students who earned no dual credit completed at the same campus and degree level within four years compared to 35% of students earning less than one semester of dual credit and at least 46% of students earning at least one semester of dual credit. On-time completion rates remained similar for bachelor’s degree seekers at all dual credit levels for both the 2012 and 2013 high school cohorts.

Figure 39: Bachelor’s-seekers **completing on-time, same campus and degree level** by high school graduation year and amount of dual credit earned



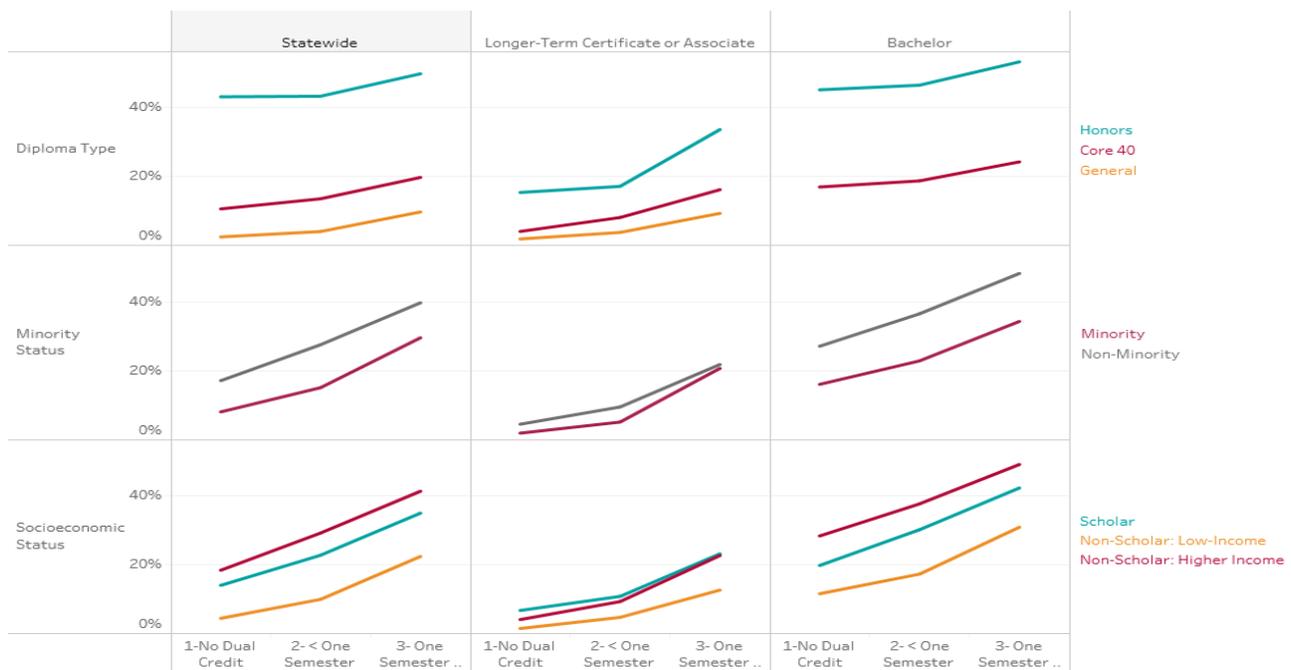
- For 2015 high school graduates who sought longer-term certificate or associate degrees, only 4% of students who earned no dual credit completed at the same campus and degree level within 2 years compared to 10% of students earning less than one semester of dual credit, and at least 20% of students earning more than one semester of dual credit. Since 2012, on-time completion rates have increased for longer-term certificate and associate seekers across all levels of dual credit earned. However, the increase was the largest among students earning two semesters or more of dual credit, nearly doubling between 2013 and 2014 alone. This may coincide with the ramp up of statewide transfer general education core certificate production among high school graduates which could be increasing the rate at which students can earn associate degrees or other certificates after graduating high school.

Figure 40: Certificate or associate seekers **completing on-time, same campus and degree level** by high school graduation year and amount of dual credit earned



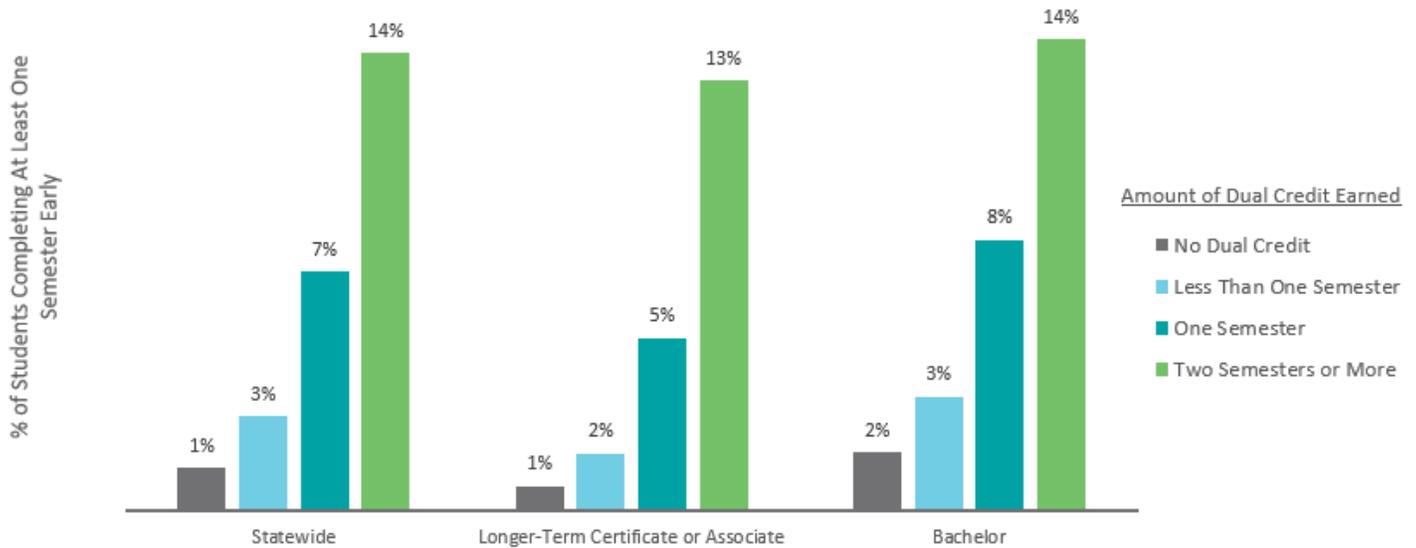
- Earning dual credit and larger amounts of dual credit generally translated to higher rates of on-time graduation across all student subgroups. However, gaps in on-time completion rates seemed to increase for non-Scholar, low-income students compared to their Scholar and non-Scholar, Higher Income peers as the amount of dual credit increased. This pattern was reflected among bachelor's seekers and especially longer-term certificate and associate seekers. At the subbaccalaureate level, there was also a tendency for the gap in on-time completion rates to increase for Core 40 students compared to their Honors peers as the amount of dual credit increased (see Figure 41).

Figure 41: Students **completing on-time, same campus and degree level** by initial degree level pursued, amount of dual credit earned, and academic preparedness/demographic factors



Students entering college with dual credit were more likely to graduate early compared to their peers, providing evidence of a possible accelerating effect for some students. Not surprisingly, the percentage of students most likely to graduate at least one semester early were also those earning at least one semester of dual credit and the most likely for those earning two semesters or more of dual credit (see Figure 42).

Figure 42: Students **completing at least one semester early** by initial degree pursued and amount of dual credit earned (Bachelor's: 2012 and 2013 HS grads; Associate & LT Cert. 2014-2015 HS grads)



POTENTIAL COST SAVINGS OF DUAL CREDIT

State and Institutional Finance Policies for Technical and High Priority Dual Credit

Per state statute, Indiana's public colleges can charge high school students no more than \$25 per credit hour for technical and high priority dual credit courses. Students who qualify for the Free or Reduced Lunch program are not charged for courses by any Indiana public institution. For the rest of dual credit students, most public institutions do charge the \$25 per credit hour tuition rate for technical and high priority dual credit courses. Ivy Tech Community College waives the \$25 per credit hour tuition rate for all high school students regardless of whether they participate in the Free or Reduced Lunch program.

Indiana public colleges receive state funding to help cover the costs of technical and high priority dual credit supervision. In each year of the biennium, the institutions receive an appropriation based on \$50 per technical and high priority dual credit conferred two fiscal years prior to the development of the budget. For example, for the 2017-19 biennium, Indiana's public institutions received funding in fiscal years 2018 and 2019 based on \$50 for each credit hour of technical and high priority dual credit delivered on campuses in fiscal year 2015, two years prior to the development of the 2017-19 budget (fiscal year 2017).

An Exploration of the Potential Up-Front Cost Savings (2016 High School Cohort)

While the actual cost savings of dual credit depends on a number of factors such as students' college going decisions, students' academic choices, institutional policies toward credit acceptance, etc. - an exercise of comparing the cost of taking technical and high priority dual credit to the cost of taking and delivering courses for degree-seeking undergraduates show that current state and institutional finance policies for technical and high priority dual credit have the potential to save students and the state millions of dollars in up-front costs (see Figure 43).

High school graduates in 2016 earned just under half a million credit hours (428,909) of technical and/or high priority dual credit at Indiana public colleges.

When comparing the cost to the student for these dual credit courses to the equivalent full tuition and fee costs for degree-seeking undergraduates, state and institutional policies on dual credit have the potential to save students an upwards of \$69 million dollars.

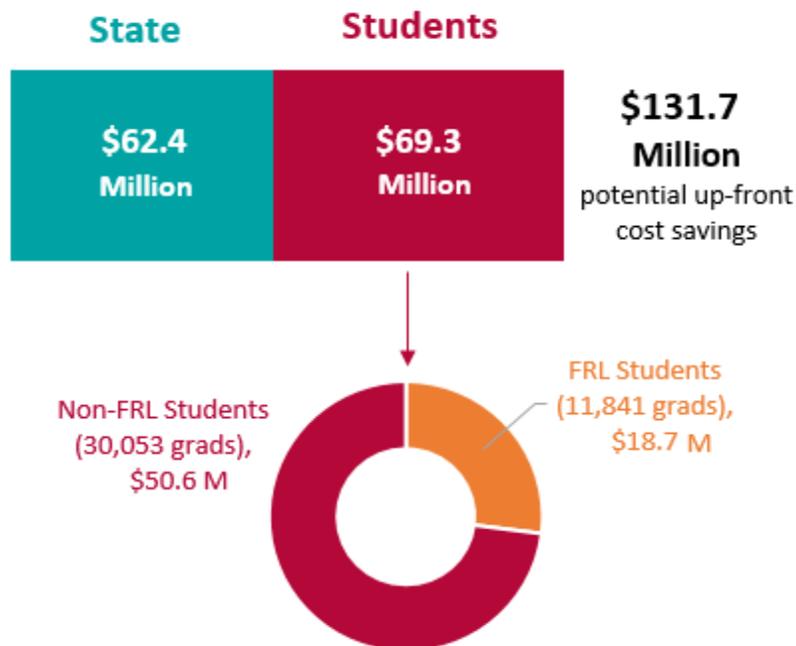


Figure 43: Estimated potential up-front cost savings for technical and high priority dual credit (2016 cohort)

This includes an estimated potential savings of \$18.7 million to nearly 12,000 low-income students across the state who received exposure to college coursework while in high school at zero cost to their families.

When comparing the cost to the state of the \$50 per credit hour dual credit appropriation to the full appropriation per undergraduate credit hour at Indiana public institutions, the policy has the potential to save the State of Indiana an estimated \$62 million dollars when using 2016 high school graduates as an example.

Institutional Investment for Technical and High Priority Dual Credit

The potential cost savings of technical and high priority dual credit is influenced not only by the state’s dual credit policy and appropriations, but also by commitments and additional investments by Indiana’s public institutions. Indiana’s public institutions invested an estimated \$7.4 million for the 2016 cohort by absorbing \$2.7 million in costs for tuition waivers for students participating in Free or Reduced Lunch and an extra \$4.7 million in additional tuition waivers from Ivy Tech for their policy to cover student costs regardless of a student’s Free or Reduced Lunch participation status (see Figure 44).

Institution Investment for the 2016 High School Cohort

\$2.7 Million tuition waivers for Free/Reduced Lunch Students

+ \$4.7 Million additional tuition waivers (Ivy Tech Community College)

\$7.4 Million total investment by IN Public Institutions

Figure 44: Estimated tuition waiver investment by institutions for technical and high priority dual credit (2016 cohort)

This commitment comes at a time when the growth in dual credit production far exceeded the assumed technical and high priority dual credit hours used for appropriation levels. In fiscal years 2015 and 2016, the two years the 2016 high school cohort was most likely to have completed dual credit coursework, T+HP dual credit production exceeded the assumed amount for appropriation by nearly 200,000 credit hours. The 2016 high school cohort participation in dual credit can span multiple fiscal years, so the absorbed costs cannot be specifically calculated. However, estimates show institutions may have absorbed additional costs of over \$10 million in fiscal years 2015 and 2016 from dual credit growth far exceeding the assumed amount for appropriation levels (see Figure 45).

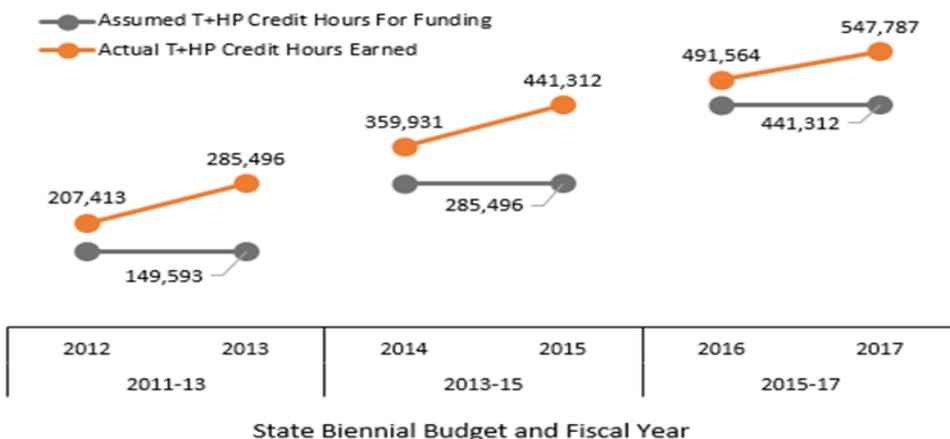


Figure 45: Actual technical and high priority dual credit hours earned compared to assumed levels for budget appropriation by biennium and fiscal year

Maximizing the Transferability of Dual Credit and of Cost Savings

Dual Credit Crosswalks

The Indiana Commission for Higher Education and the Indiana Department of Education (IDOE) have developed crosswalks for T+HP dual credit to assist schools, parents, and students with opportunities to earn dual credit and to maximize the transferability of dual credit courses between institutions. For both high priority and technical dual credit, these crosswalks map course equivalencies between postsecondary institutions. In the case of technical dual credit, these crosswalks also map correlations between specific dual credit coursework and certain focused degree pathways.

Indiana's public two-year institutions conferred nearly three quarters (70%) of the T+HP dual credit volume of Indiana's high school graduate pipeline matriculating to Indiana public colleges. However, Indiana's public four-year institutions made up the overwhelming majority (82%) of T+HP dual credit received for transfer (see Figure 46). Given that the majority of students matriculate to institutions where they did not earn dual credit and students can earn dual credit from multiple institutions, these crosswalks play a crucial role in cost savings.

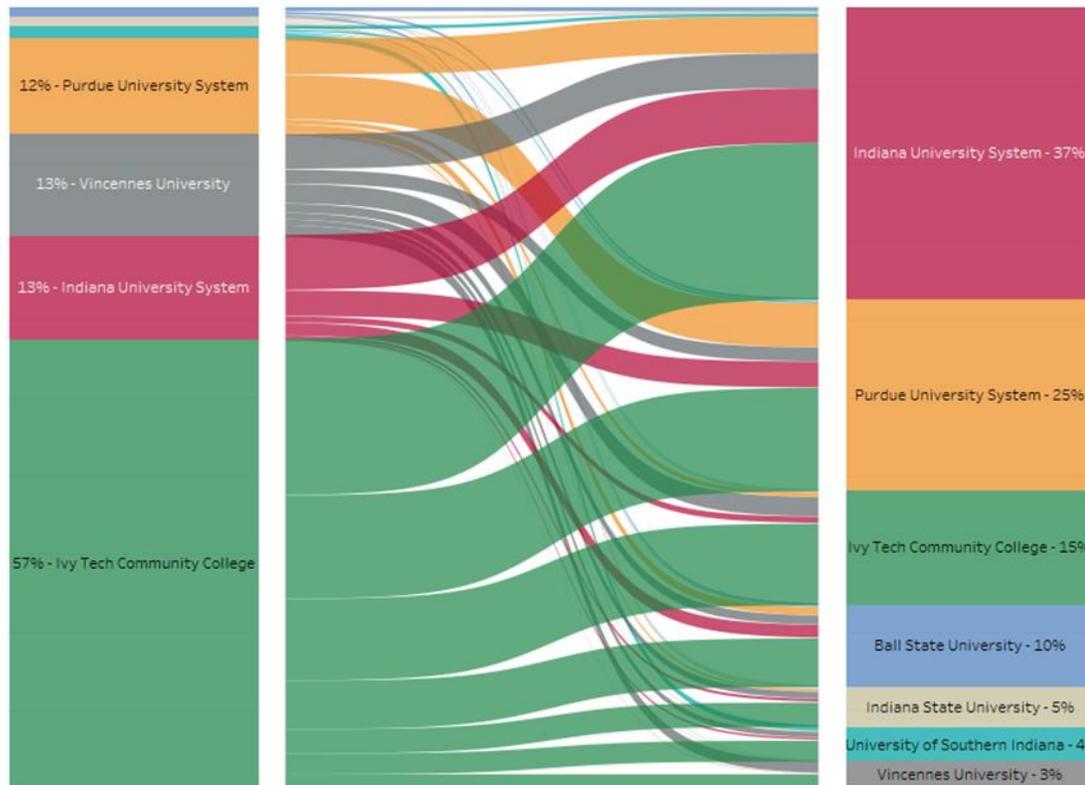


Figure 46: Technical and high priority dual credit volume share by the student's dual credit system (left) and the student's system of college matriculation (right)

Since Indiana's two-year institutions cover portions (if not all) of the cost of T+HP dual credit regardless of the student's Free or Reduced lunch participation status, one can imagine the opportunity of additional cost savings as students earn and transfer credit through such dual credit pathways. When examining cost savings from the lens of only those taking T+HP dual credit at Indiana public colleges and who matriculated to Indiana public colleges within 1 year of high school graduation, these dual credit pathways could be saving students an additional \$83 per T+HP dual credit hour earned on the average and up to an additional \$346 per T+HP dual credit hour earned on the high end. If students earn an average of 12 credit hours of T+HP dual credit, that additional savings could translate to \$996 on average and up to \$4,152 at the maximum.

Indiana E-Transcript

In addition to developing dual credit crosswalks, IDOE and ICHE partner to administer Indiana's E-Transcript initiative each year. During the 2013 legislative session, the General Assembly enacted Indiana's E-Transcript into law which allows students attending accredited schools to request that their transcript be transmitted electronically. This initiative enables students to send high school transcriptions electronically to ANY school worldwide, and it is free to students.

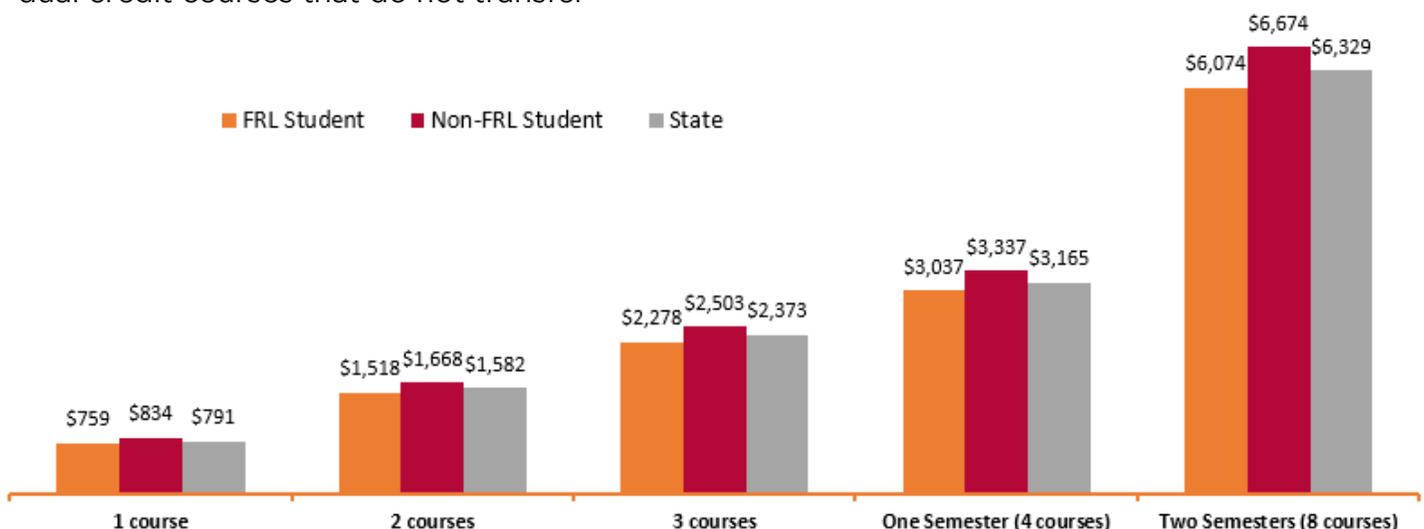
Indiana's E-Transcript initiative plays a crucial role in maximizing cost savings associated with dual credit as these courses are transcribed to a student's academic record; transcripts must be requested and sent in order to transfer dual credit between institutions. The initiative has been implemented for high school transcriptions and ICHE and IDOE are in the late stages of implementing it for college transcriptions.

Responsibility of Students, Advisors, Parents, and Institutions

While one can examine these pathways and initiatives from the lens of cost savings opportunity, all of this also alludes to the responsibility of advisors, parents, and institutions to utilize and adhere to these initiatives when advising students and considering dual credit for successful transfer. If students take dual credit courses that do not align with their plans after high school or receiving institutions do not accept dual credit courses for transfer as outlined in the dual credit crosswalks, these dual credit courses could rack up additional costs to the student and the state. Likewise, while Indiana's E-Transcript initiative eases the process of requesting and sending transcripts and is free to students, if students do not ultimately request these transcripts or advisors do not make students and parents aware of these opportunities, cost savings to the student and the state may not reach its full potential.

Figure 47 displays the average assumed cost to the student and the state for dual credit courses that are not transferred successfully or transcripts failing to be sent. This should challenge advisors, parents, and institutions to keep the cost savings factor in mind when advising students and making decisions on whether to accept dual credit transfer toward a degree.

Figure 47: Estimated average cost to the student and the state for dual credit courses that do not transfer



Another consideration for students, parents, and advisors is whether students are able to commit to and complete college coursework while in high school. These courses and grades do become a part of a student's academic record and can potentially impact students' college grade point averages (GPAs) and eligibility for financial aid. These grade point average also may factor into the transferability of dual credit courses; college advisors likely consider the grade point averages earned in dual credit courses when deciding whether those courses are accepted for credit. While the data show that students overall perform fairly well in dual credit courses, the likelihood of success greatly depends upon the rigor of coursework the student has already been exposed to at the high school level (see Figures 48 and 49).

Figure 48 Cumulative college GPA of high school students taking college-level courses by the amount of dual credit earned (2016 cohort)

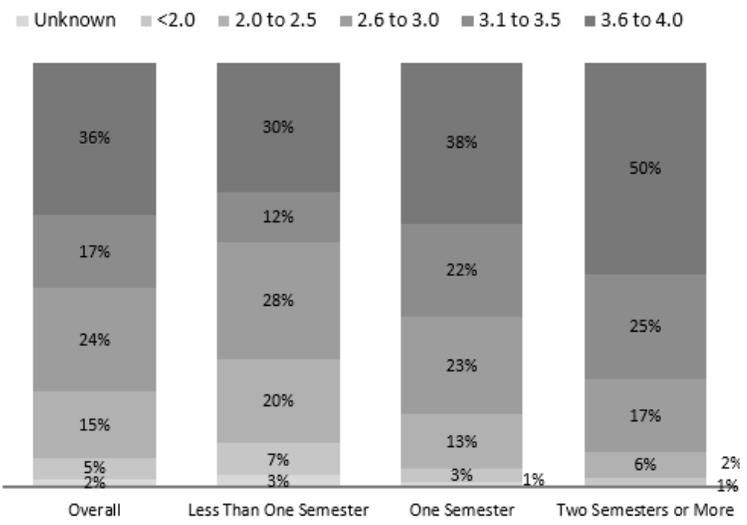
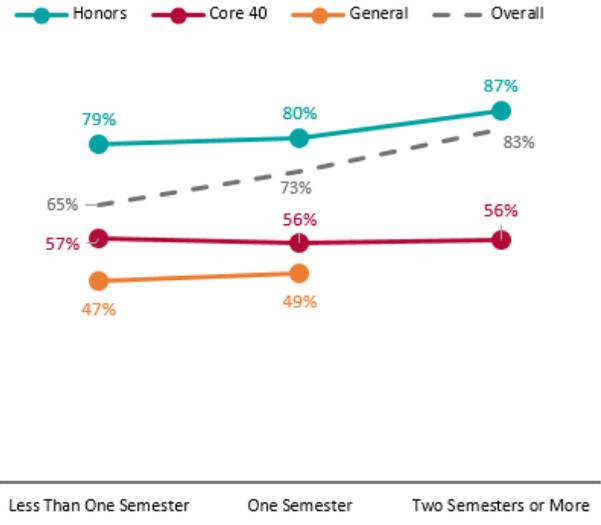


Figure 49 High school students earning at least a 3.0 cumulative GPA in college-level courses by the amount of dual credit earned and high school diploma type (2016 cohort)



CONCLUSION

Dual credit continues to provide an increasing number of Indiana high school students with opportunities to earn college-level coursework. Available data show that dual credit is expanding this opportunity to a wider range of Hoosier students, including low-income and minority students. While notable differences exist by the type of dual credit earned and by endorsed Early College High School status, data suggest that students who participate in dual credit generally demonstrate more positive postsecondary outcomes including higher rates of college going, second year persistence, and first year grade point averages.

Students who earn dual credit tend to be more likely to persist toward a degree, take and earn more credits throughout their undergraduate career (especially at the subbaccalaurate level), and are more likely to graduate on-time or early. The amount of dual credits a student earns seems to have an effect on these outcomes, and as the more dual credits a student earns, the better they perform on these metrics. The effects of dual credit on time to degree appeared to be the strongest for students earning at least one semester of dual credit. And, these positive effects were not necessarily limited to the most affluent or most academically prepared students. Initial data suggest that earning dual credit may have positive effects for many types of students including minority students, low-income students (21st Century Scholars and low-income, non-21st Century Scholars), and students receiving the state's Core 40 high school diploma.

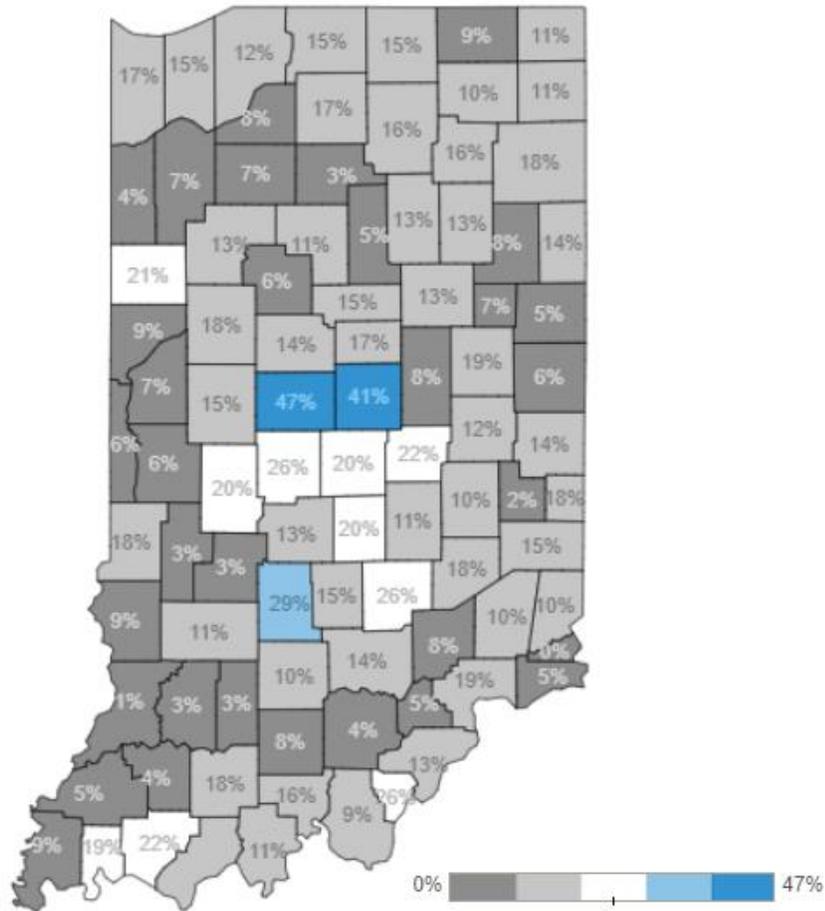
Given these early positive findings on the effects of dual credit on postsecondary access and success, focus may need to shift to understanding the transferability of dual credit courses. Another key focus for practitioners may be how dual credit is promoted to students and ultimately accepted for credit toward a college credential. In recent years, Indiana has enacted a number of policies and initiatives that have greatly expanded access to college-level coursework for Hoosier high school students. However, the full benefits of dual credit in terms of time to degree and cost savings depend on students choosing the right dual credit courses for their intended postsecondary plans. The full benefits also depend on these dual courses being accepted by the colleges students enroll in and count toward their degrees. As pointed out in other studies across the nation, if students are not adequately advised, they might end up taking courses that do not count toward their college degree and not save them the time or money they had expected.⁶ While initial data in this study show positive effects of dual credit for even the least academically prepared students, dual credit should not be advertised as the sole pathway to postsecondary success. For example, double-digit differences in on-time completion rates between Academic Honors and Core 40 diploma earners tend to exist regardless of the amount of dual credit students earn.

With an eye on maintaining quality and maximizing return on investment of dual credit to the student and to the state, the Commission plans to focus the fourth version of this on exploring the transferability of dual credit at the course-level and on the performance of dual credit students in subsequent courses. The intent of such analyses will be to help students and families decide which courses best align with their postsecondary goals.

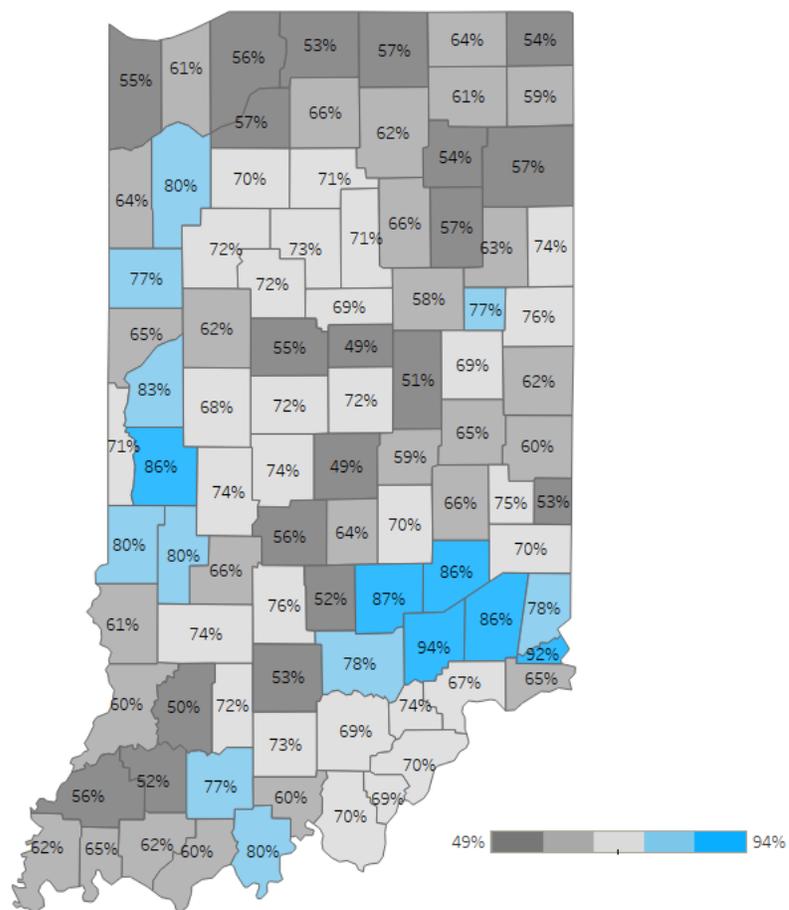
⁶ The University of Texas System Dual Credit Study: Dual Credit and Success in College.
<https://www.utsystem.edu/documents/docs/ut-system-reports/2018/dual-credit-and-success-college>

APPENDIX

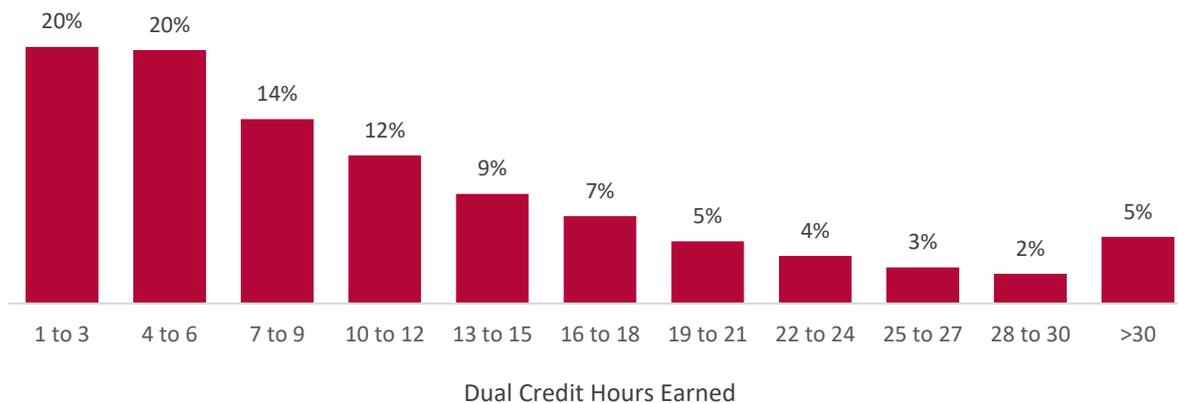
APPENDIX A: Share of High School Graduates Earning AP Credit by County (2016 HS Graduates)



APPENDIX B: Share of High School Graduates Earning AP and/or Dual Credit by County (2016 HS Graduates)



APPENDIX C: Share of Dual Credit Earners by Number of Credits Earned (2016 HS Graduates)



ABOUT THE DATA

Dual credit calculations presented in the Commission's College Readiness Reports and this supplemental study only include credit hours awarded by Indiana public colleges. "Earned" status does not necessarily reflect receipt of a grade of "C" or better, the typical minimum required for college transfer and/or graduation.

"Pre-college" credit refers to Advanced Placement (AP) exam credit and/or dual credit awarded by Indiana public colleges. Other types of credit, such as non-public dual credit, ACE, CLEP, and DSST test credits, are not included. Data presented for this report are for students graduating from Indiana high schools unless otherwise noted.

College performance and time to degree measures are limited to students who enrolled in Indiana publics the year following high school graduation.

GENERAL NOTES AND SOURCES

Sources: Indiana Commission for Higher Education (CHE); Independent Colleges of Indiana (ICI); Indiana Department of Education (IDOE); National Student Clearinghouse (NSC); Center for Excellence in Leadership of Learning (CELL)

High School Graduates: Count of Indiana high school graduates and associated disaggregations are based on the total count of graduates reported on the IDOE-GR reports. Graduate counts are not IDOE cohort graduate counts and thus may not match cohort graduate counts and associated disaggregations reported in other places, such as IDOE Compass. SOURCE: IDOE

PRE-COLLEGE PARTICIPATION

Advanced Placement (AP) Exam Credit: Refers to students who sat for and/or passed (received a score of 3 or higher) at least one AP exam. SOURCE: IDOE

Dual Credit: Refers to students who earned credit hours from Indiana public colleges that were recognized by both the high school and the postsecondary institution, regardless of whether the course is being taught on or off campus. Dual credit hours awarded in terms that students were reported as high school students within the four calendar years up to and including the student's high school graduation year were considered in the analysis. SOURCE: CHE

Pre-College Credit: Refers to students earning AP exam credit and/or dual credit according to definitions above. SOURCE: CHE, IDOE

Dual Enrollment: Refers to credit hours earned from Indiana public colleges that were recognized by the postsecondary institution only. Dual enrollment credit hours were estimated by subtracting total dual credit hours earned from total credit hours earned. Credit hours awarded in terms that students were reported as high school students within the four calendar years up to and including the student's high school graduation year were considered in the analysis. SOURCE: CHE

DUAL CREDIT TAKING PATTERNS

Class Year of Dual Credit Earned: Refers to earning dual credit in the postsecondary academic year associated with students' expected freshman, sophomore, junior, or senior year in high school. For the 2016 cohort, students' expected freshman, sophomore, junior, and senior years refer to the academic years of 2012-13, 2013-14, 2014-15, and 2015-16 respectively. As students can earn dual credit in multiple years (see below), these categories are NOT mutually exclusive. SOURCE: CHE

Dual Credit Earned in Multiple/Single Years: Refers to whether students earned credit in only one or multiple postsecondary academic years associated with the student's expected class year (see above). SOURCE: CHE

Public Institution Awarding Dual Credit: Refers to the public postsecondary institution where students earned dual credit. Dual credit hours awarded in terms that students were reported as high school students within the four calendar years up to and including the student's high school graduation year were considered in the analysis. As students can earn dual credit from multiple institutions, students are counted multiple times in total student counts. SOURCE: CHE

Technical/Priority Dual Credit (T+HP): Refers to credit hours earned from Indiana public colleges that are recognized by both the high school and postsecondary institution, taken at the high school or a learning center (off campus), and that meet the definition of priority liberal arts (priority) or CTE (technical), as defined by the Indiana Commission for Higher Education (<https://transferin.net/earned-credits/ways-to-earn-credit/dual-credit-programs/>). Dual credit hours awarded in terms that students were reported as high school students within the four calendar years up to and including the student's high school graduation year were considered in the analysis. Note: 2016-17 analyses around T+HP dual credit hours may slightly undercount T+HP dual credit participation due to a slight reporting discrepancy by the University of Southern Indiana. SOURCE: CHE

Non-Technical/Priority Dual Credit (Non-T+HP): Refers to credit hours earned from Indiana public colleges that are recognized by both the high school and postsecondary institution, taken on the college campus or taken off campus, and fall outside of the definition of priority liberal arts (priority) or CTE (technical), as defined by the Indiana Commission for Higher Education (<https://transferin.net/earned-credits/ways-to-earn-credit/dual-credit-programs/>). Non-T+HP dual credit hours were estimated by subtracting total technical and priority dual credit hours earned from total dual credit hours earned. Dual credit hours awarded in terms that students were reported as high school students within the four calendar years up to and including the student's high school graduation year were considered in the analysis. SOURCE: CHE

Technical Dual Credit: Refers to credit hours earned from Indiana public colleges that are recognized by both the high school and postsecondary institution, taken at the high school or a learning center (off campus), and that meet the definition of CTE (technical), as defined by the Indiana Commission for Higher Education (<https://transferin.net/earned-credits/ways-to-earn-credit/dual-credit-programs/>). Examples of technical or CTE dual credit include construction trades, automotive services, manufacturing, and culinary arts. Dual credit hours awarded in terms that students were reported as high school students within the four calendar years up to and including the student's high school graduation year were considered in the analysis. Breakouts of exclusively technical dual credit earned are only available for fiscal years 2015 and after. SOURCE: CHE

Priority Dual Credit: Refers to credit hours earned from Indiana public colleges that are recognized by both the high school and postsecondary institution, taken at the high school or a learning center (off campus), and that meet the definition of priority liberal arts (priority), as defined by the Indiana Commission for Higher Education (<https://transferin.net/earned-credits/ways-to-earn-credit/dual-credit-programs/>). Examples of priority dual credit include advanced English, Math, Science, History, and World Languages. Dual credit hours awarded in terms that students were reported as high school students within the four calendar years up to and including the student's high school graduation year were considered in the analysis. Breakouts of exclusively priority dual credit earned are only available for fiscal years 2015 and after. SOURCE: CHE

Credential Earning of High School Students: Represent students reported as earning a credential at an Indiana public college before high school graduation. Before high school graduation is defined as the student either 1) having a degree or certificate recorded in degree submissions through September of their high school graduation year or 2) having an STGEC completion recorded in enrollment submissions in at least one term as a high school student for postsecondary academic years prior to and including their high school graduation year. STGEC refers to the Statewide Transfer General Education Core Certificate.

COLLEGE GOING AND PERFORMANCE

College Going: Represents students reported as enrolled in postsecondary education, regardless of institution type, within the year following high school graduation (e.g., for 2016 high school graduates, postsecondary enrollment is counted for the 2016-2017 school year). A student is considered enrolled only if: a) s/he was enrolled as a degree or certificate-seeking undergraduate student and b) s/he was enrolled for the equivalent of at least one semester during the school year. SOURCES: CHE, ICI, NSC

Early Success in College Performance: Represents students enrolling in an Indiana public institution within the year following high school graduation who meet all three indicators of 1) no remedial coursework, 2) persistence to second year, and 3) completing all credits attempted. SOURCE: CHE

Freshman GPA: Represents students enrolling in an Indiana public institution within the year following high school graduation who earn at least a 3.0 cumulative grade point average distribution for the latest term of enrollment at an Indiana public college in the year following high school graduation. Students with an unknown GPA are excluded from calculations. SOURCE: CHE

Persistence: Represents students enrolling in an Indiana public institution within the year following high school graduation and who continued enrollment into the fall semester of the second year at any Indiana public college. SOURCE: CHE

Complete A Degree Within 4 Years: Represents a subset of students enrolling in Indiana public institutions within the year following high school graduation who complete a credential within four years. The subset of students examined represent students initially seeking a bachelor's degree at four-year Indiana public institutions or an associate degree or longer-term certificate at two-year Indiana public institutions. Successful completion of a credential within four years represents students who complete any degree within 100% time for initial bachelor's degree seekers or completed within 200% for initial associate or longer-term certificate seekers at any public institution in Indiana, or at a private or for-profit college/university in Indiana or elsewhere in the United States, provided that the college or university participates in the National Student Clearinghouse. SOURCE: CHE, ICI, NSC

Early College High Schools: Outcomes of endorsed early college graduates represent outcomes for a subset of Early College graduates who could be matched to ICHE's data submission system. SOURCE: CELL, CHE

TIME TO DEGREE

Time To Degree Outcome Population: Data in the "Time to Degree" section represent Indiana high school graduates enrolling in Indiana public colleges within one year of high school graduation initially pursuing a bachelor's degree (four-year public institutions) or a longer-term certificate or associate degree (two-year public institutions). Outcomes in the section also focus on students who earned no dual credit or only dual credit (AP earners are excluded).

Gateway Course Enrollment: Represent students in the time to degree outcome subset population who enroll in gateway courses (math or English) in their first year. Gateway courses are typically entry college-level, non-remedial math or English courses that are required for the completion of the major/degree. Typically, gateway courses are the first courses that are required toward the major/degree. SOURCE: CHE

Stopping Out Without Earning A Credential: Represents students in the time to degree outcome subset population who are not enrolled in any Indiana public college and have not received a credential from their Indiana public college system of initial enrollment. Enrollment in any Indiana public college is examined uniquely to the student's second, third, and fourth year (not cumulative). Completion of a credential from the student's initial system of enrollment is examined cumulatively; in other words, if a student earned a credential at the Indiana public college system of initial enrollment in their third year, the student is also considered as having earned a credential in their fourth year. SOURCE: CHE

Semester Credits Attempted Distribution: Represents the percentage of the time students in the time to degree outcome subset population attempt less than 12 credit hours, between 12 and 14 credit hours, and at least 15 credit hours in fall and spring terms. End of term credits attempted were examined for the analysis. Credit taking behavior in fall/spring terms at Indiana public colleges were examined within the first two academic years of initial enrollment for initial associate or longer-term certificate seekers and within the first four academic years of initial enrollment for initial bachelor's degree seekers. Summer terms were excluded from the analysis as students are less likely to attempt a full-time course load during summer terms. SOURCE: CHE

Semester Credits Attempted Distribution: Represents the percentage of the time students in the time to degree outcome subset population attempt less than 12 credit hours, between 12 and 14 credit hours, and at least 15 credit hours in fall and spring terms. End of term credits attempted were examined for the analysis. Credit taking behavior in fall/spring terms at Indiana public colleges were examined within the first two academic years of initial enrollment for initial associate or longer-term certificate seekers and within the first four academic years for initial bachelor's degree seekers. Summer terms were excluded from the analysis as students are less likely to attempt a full-time course load during summer terms. SOURCE: CHE

Credits Earned Out of Attempted: Represents the ratio of credits earned to credits attempted in fall/spring terms outlined in "semester credits attempted distribution" section (see above). SOURCE: CHE

Completing On-Time, Same Campus and Degree Level: Represents students in the time to degree outcome subset population who complete, within 100% time (4 years for a bachelor's, 2 years for a longer-term certificate or associate) a degree at the same level initially sought at the same college/university system at which they initially enrolled. SOURCE: CHE

Completing At Least One Semester Early: Represents students in the time to degree outcome subset population who complete, at least one semester early a degree at the same level initially sought and at the same college/university system at which they initially enrolled. At least one semester early is defined as by the end of the fall semester of the academic year associated with the student's expected on-time graduation date. For example, for an initial bachelor's degree seeker in the fall 2013 cohort, in order to be considered as completing a semester early, the student would need to complete a bachelor's degree at the same institutional system by the end of the fall 2016 term. SOURCE: CHE

COST SAVINGS OF T+HP DUAL CREDIT

Potential Up-Front Cost Savings of T+HP Dual Credit to Students: Potential cost savings to 2016 high school graduates represents the number of T+HP dual credit hours earned multiplied by the difference in tuition and fees per credit hour in the 2015-16 academic year and the cost to the student for taking dual credit based on two factors: the student's free/reduced lunch status in their senior year and whether the dual credit was earned at Ivy Tech Community College. For credit hours earned by free/reduced lunch students or credit hours earned at Ivy Tech Community College, the assumed cost of T+HP credit to the student was assumed to be \$0 per credit hour. For credit hours associated with non-free/reduced lunch students at public institutions outside of Ivy Tech, the assumed cost of T+HP credit to the student was assumed to be \$25 per credit hour. Tuition and fees per credit hour represent the 2015-16 tuition and fee rate for resident undergraduates divided by 30. Tuition and fee rates at the institution that the T+HP dual credit was conferred were applied for the estimates. SOURCE: IDOE, CHE

Potential Up-Front Cost Savings of T+HP Dual Credit to the State: Potential cost savings to the State of Indiana for 2016 high school graduates represents the number of T+HP dual credit hours earned multiplied by the difference in operating appropriation per undergraduate credit hour in the 2015-16 academic year and the \$50 per credit hour T+HP appropriation level. Operating appropriation per credit hour represents the 2015-16 appropriation per resident FTE rate divided by 30. The operating appropriation per credit hour rates at the institution that the T+HP dual credit was conferred were applied for the estimates. SOURCE: CHE

Institution Investment for T+HP Dual Credit: Potential institutional investment for T+HP for 2016 high school graduates represent the number of T+HP dual credit hours earned at Ivy Tech Community College or for non-free/reduced lunch students multiplied by \$25. SOURCE: CHE

Estimated \$10 Million+ Absorbed Cost For Dual Credit Surge (FY 2015 & FY 2016): Represents \$50 multiplied by the difference in the actual T+HP credit hours earned less the amount of dual credit hours assumed for funding levels in fiscal years 2015 and 2016. SOURCE: CHE

Dual Credit Crosswalks: Represents the number/share of T+HP dual credit earned by a 2016 student's dual credit system compared to the student's system of college matriculation within one year of high school graduation. Data represent T+HP credit volume for 2016 high school graduates who earned T+HP dual credit at an Indiana public institution and also enrolled in an Indiana public institution within one year of high school graduation. SOURCE: CHE

Estimated Additional Cost Savings For Dual Credit Pathways: Average additional \$83 per T+HP dual credit hour conferred statistic represents the per credit hour savings difference when applying the 2015-16 tuition and fee rate of the student's institution of college matriculation compared to the 2015-16 tuition and fee rate of the student's dual credit institution. Data are for 2016 high school graduates who earned T+HP dual credit at an Indiana public institution and also enrolled in an Indiana public institution within one year of high school graduation. The high end estimate of \$346 per credit hour represents a dual credit pathway from Ivy Tech Community College (\$0 dual credit cost) to IU Bloomington (\$346 tuition and fee per credit hour cost in 2015-16). SOURCE: CHE

Estimated Average Assumed Cost to the Student and the State For Courses That Are Not Transferred Successfully or Transcripts Failing to Be Sent: Assumed cost to the student represents the 2015-16 statewide average tuition and fee rate per credit hour for resident undergraduate students plus the number of T+HP dual credit hours earned multiplied by the cost to the student for T+HP dual credit hours earned. For FRL students, the cost is assumed to be \$0. For Non-FRL students, the cost is assumed to be \$25. Assumed cost to the state represents the 2015-16 statewide appropriation per undergraduate per resident undergraduate per credit hour plus the number of T+HP dual credit hours earned multiplied by the \$50 per T+HP dual credit hour appropriation. SOURCE: CHE

College GPA Distribution of High School Students: Represents the college cumulative GPA reported in the last term for students reported as high school students within the four calendar years up to and including the student's high school graduation year. If a student earned dual credit from multiple institutions, multiple GPA records are recorded for the student in the calculations. Students with unknown GPAs are excluded in percentage of students with at least a 3.0 GPA calculations. SOURCE: CHE

OTHER DATA NOTES (Disaggregation Categories)

County: Represents the county location of the student's high school of graduation. SOURCE: IDOE

Diploma Status: Represents high school diploma type received upon high school graduation. Honors represents students who received an Academic Honors Diploma, an Academic and Technical Honors Diploma, or an International Baccalaureate Diploma. Core 40 represents students who received a Core 40 Diploma or a Technical Honors Diploma. SOURCE: IDOE

Race/Ethnicity: Represents race/ethnicity as reported by IDOE. Groups include five mutually exclusive race/ethnicity categories: Asian, Black, Hispanic, Other, and White. The "Other" race/ethnicity category includes undeclared, Native/American/Alaskan Native, Two or More Races, and Native Hawaiian groups. The "Minority" roll-up includes students who were reported as Black or Hispanic. SOURCE: IDOE

Free/Reduced Lunch Status: Represents enrollment status in the Federal Free and Reduced Price School Meals program during a student's senior year in high school. SOURCE: IDOE

Socioeconomic Status: For time to degree section indicators, this report defines low-income in one of two ways: whether the student is an enrolled and affirmed 21st Century Scholar (in which they had to have been Free or Reduced Lunch-eligible in 7th or 8th grade) or whether the student qualified for Free or Reduced Lunch during their senior year of high school. Low-income data for time to degree metrics are broken into 21st Century Scholars and non-21st Century Scholars groups. Non-Scholar: Higher Income represents students who were not enrolled and affirmed 21st Century Scholars or who were not Free or Reduced Lunch-eligible during their senior year. SOURCE: IDOE, ICHE