

Wyoming Statewide Longitudinal Education Data System



Wyoming Student Transfer Success

November 12, 2024

Abstract

A collaborative team of researchers from Wyoming's Statewide Longitudinal Education Data System (SLEDs) examined rates of successful completion of a bachelor's degree for students who started their education at the University of Wyoming compared to students who transferred from another institution, primarily those who transferred from a Wyoming community college.

Graduation rates varied by age and enrollment status (full-time or part-time), with higher rates of graduation observed for students aged 17-24 years and those enrolled full-time. Graduation rates were lower for students who transferred from a Wyoming community college when compared to students who started their education at the University of Wyoming, higher for students who had previously completed an associate's degree at a Wyoming community college than those without an associate's degree, and higher for students who transferred from a Wyoming community college when compared to students who transferred from another institution.

Most credits from Wyoming community colleges transferred as direct equivalents to courses at the University of Wyoming. The next most prevalent courses from Wyoming community colleges transferred as elective credits that meet general education and graduation requirements. A small number of courses transfer students had taken were remedial/developmental or career and technical/workforce and did not transfer as credit. A higher proportion of Wyoming community college credits transferred as direct equivalent credits than credits transferred from other institutions, which more commonly transferred as graduation elective credits.

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1 Introduction

The Education Attainment Council identified student transfer success as part of then-Governor Matt Mead's ENDOW (Economically Needed Diversity Options for Wyoming) initiative to diversify Wyoming's economy by providing an educated and trained workforce. The SLEDs Executive Board requested this study as one of the initial research projects of the SLEDs grant and approved the Data Sharing Agreement in 2024.

The impetus for this study was a concern that Wyoming community college undergraduate transfer students encounter challenges progressing toward a bachelor's degree. Previous research in other communities demonstrated mixed findings: some studies suggested that students who transferred from community colleges had lower graduation rates than students who began their education at a four-year university (Monaghan and Attewell 2015), but other studies found similar graduation rates between the two student populations (Xu et al. 2018). For community college transfer students who did experience lower graduation rates, the lower rates were often associated with factors such as work commitments, education intent, or transfer credit loss (Lichtenberger and Dietrich 2017, Monaghan and Attewell 2015, Glass and Harrington 2002). Students who transferred may also have experienced transfer shock, which may have affected their performance in the first year at a new institution (Jaggars, Riviera, and Buelow 2023). These may have lowered students' chances of credential completion and increased the time to completion and costs for students, their families, and taxpayers. This study will inform the University of Wyoming (UW), Wyoming community colleges (WyCCs), legislature, and other stakeholders about student transfer success, broadening the understanding of the impact transferring has on the success of students' collegiate journeys.

This study explored the success of students who transferred from a WyCC to UW. The primary measure of success was graduation from UW within four years of the transfer term. Data was evaluated for students who transferred from Summer 2014 through Spring 2020 to measure those who graduated by Spring 2024.

Two questions guided the research team's evaluation of student transfer success for students transferring from a WyCC to UW:

1. How successful are students transferring from WyCCs to UW?
2. Do transferred credits and electives apply toward degrees?

UW and the WyCCs independently analyze student transfer success for their institutions. SLEDs adds value to these independent efforts by deepening research by looking longitudinally and in new ways at data from all WyCCs and UW, measuring "success" for transfer students in three comparison groups in terms of graduation rates, and providing new insights to better understand the effectiveness of transfers over the past decade and plan for the future.

1.1 Key Terms

Transfer Term: The first non-summer semester in which a student transferred to UW.

Transfer Equivalent Term: For transfer students, this is the first non-summer semester in which a student transferred with 60-89.9 credits. For students who started at UW, this is the first non-summer semester in which a student started the semester with 60-89.9 credits.

Transfer Equivalent Students: Students who transferred for the first time to UW and UW students with a similar range of earned credit hours (60-89.9 credits) in the same transfer equivalent term.

Graduation: For this study, graduation means a student received a bachelor's degree from UW within four years of the transfer term or transfer equivalent term.

Graduation Rate: For this study, graduation rate means the percentage of students who graduated with a bachelor's degree from UW within four years of the transfer term or transfer equivalent term.

Transferable Credits - Direct Equivalent: Completed credits from courses that are the same as courses offered at UW (e.g., ENGL1010 at UW is the same as ENGL1010 at all WyCCs).

Transferable Credits - Graduation Elective: Completed credits from courses that are transferred to meet general education and/or graduation elective requirements at UW (e.g., ENGL1020 is available at the WyCCs but transfers to UW as ELEC1000 because that course is not offered by UW).

Career and Technical / Workforce Credits: Completed credits from WyCC career and technical or workforce-specific courses. Except for the Bachelor of Applied Science degree, these credits do not transfer to UW (e.g., Certified Nursing Assistant, Welding).

Developmental / Remedial Credits: Completed credits from WyCC courses below the 1000-level that are taken to prepare a student for college-level coursework do not transfer as credit to UW (e.g., MATH 0930).

Other Credits: Completed credits from courses that do not transfer to UW and cannot be identified as one of the other credit categories.

Wyoming Community Colleges (WyCC): Community colleges in the state of Wyoming: Casper College, Central Wyoming College, Eastern Wyoming College, Laramie County Community College, Northwest College, Northern Wyoming Community College District (consists of Sheridan College and Gillette College), and Western Wyoming Community College.

Wyoming Community College Transfer Student: For this research, a student is defined as a WyCC transfer student if either of the following was true:

- a) The most recent institution the student attended was a WyCC or
- b) The majority of the student's transfer credits prior to transfer to UW came from a WyCC.

1.2 Data Sources

The research workgroup used data from the Wyoming Statewide Longitudinal Education Data System (SLEDs) for this research. UW extracted data from its Banner Operational Data Store, and the WyCCs extracted data from the Wyoming Community College Commission's Data Management and Reporting System (DMARS). DMARS maintains data from all of Wyoming's community colleges.

1.3 Study Sample

The study sample for this research consisted of undergraduate students who met the following criteria:

- a) Enrolled, earned more than zero credits, and were seeking a bachelor's degree for the first time at UW from Summer 2014 through Spring 2020 and
- b) Either:
 - i) Transferred to UW from Summer 2014 through Spring 2020 or
 - ii) Started at UW and achieved 60-89.9 credits (represents junior standing) for the first time from Summer 2014 through Spring 2020

The population size for this study was 7,393 transfer students and 6,978 students who started at UW. Students were excluded if they did not have records of transfer courses or if their age or enrollment status during the transfer term could not be identified.

1.4 Considerations and Assumptions

The following considerations and assumptions relate to the research and highlight areas in which further development of SLEDs data will allow for greater depth of research in the future.

1. There may be a time limit for how long a transfer credit is eligible for transfer. However, this varies by institution, program of study, course, and department and cannot be identified using SLEDs data. Due to this variability, this study did not account for transfer credit time limits.
2. It was not possible to track courses and credits that count toward a UW program of study through the existing SLEDs data. This could be accomplished using a degree audit system but would be cumbersome and require significant additional resources. As an alternative, this study tracked course-taking trends and general transferability of courses to UW.
3. This study was limited to undergraduate students seeking a bachelor's degree. Undergraduate students admitted into the Pharmacy program were not included in this study because they will earn a graduate degree upon completion.

4. Data entry methods may have changed for some data fields over the course of the ten-year study period. To the extent possible, the research team corrected these, but some discrepancies may still exist, such as changes in the types of courses submitted for transfer credit over time.
5. The number of credits in this research did not account for courses that were repeated. Credits were only included for successful course completion, meaning that failing and unsatisfactory grades were excluded.
6. At the time of this analysis, information up to Spring 2024 was included in SLEDS, so four-year graduation rates could not be evaluated for students who transferred after Spring 2020.
7. Factors such as socioeconomic and demographic factors, education intentions, and time-to-graduation were not included in this research but may also impact the graduation rates of transfer students.

2 Success of Wyoming Community College Transfer Students

The first question guiding this study was: How successful are students transferring from the Wyoming community colleges to the University of Wyoming?

For this study, student transfer success was defined as “completing a bachelor’s degree within four years of transferring to UW.” Three comparisons were evaluated:

1. Students who transferred from a WyCC to UW in a specified year were compared to students who started their education at UW and had a similar range of earned credit hours as the transfer students during the same specified year.
2. Students who earned an associate’s degree at a WyCC prior to transferring to UW were compared to WyCC students who transferred without an associate’s degree.
3. Students who transferred to UW from a WyCC were compared to students who transferred to UW from any other institution.

2.1 Wyoming Community College Transfer Students Compared to Students Who Started at the University of Wyoming

This section compared graduation rates within 4 years of the transfer equivalent term for two populations of transfer equivalent students:

1. Students who transferred 60-89.9 credits from a WyCC to UW (Transferred to UW from WyCC, 2,827 students) and
2. Students who started at UW and started the semester with 60-89.9 credits (Started at UW, 6,978 students).

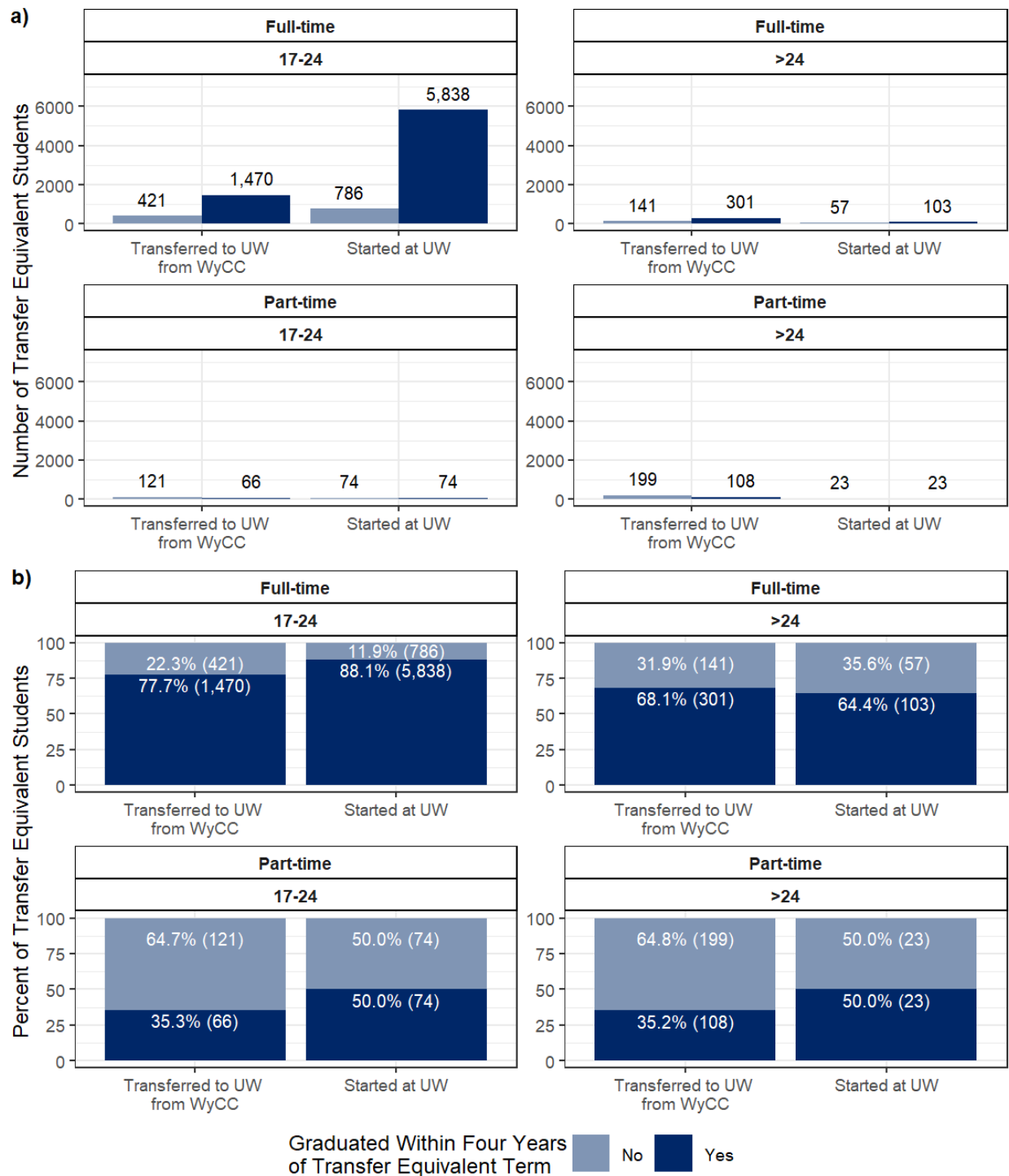
Age and enrollment status were based on the transfer equivalent term, defined as the first semester in which a student either transferred or started the semester with 60-89.9 credits from Summer 2014 through Spring 2020. This credit range was chosen because it is the credit range for a junior-level student at UW.

A majority of students in both populations were 17-24 years of age and taking courses full-time during the transfer equivalent term: 94.9% of students who started at UW and 66.9% of students who transferred to UW from a WyCC (Figure 2.1.1.a.). Full-time and part-time enrollment statuses and traditional and non-traditional ages were differentiated because these characteristics tend to affect graduation rates. Full-time students often graduate at higher rates than part-time students because they are taking more credits per semester, so students finish their academic programs more quickly. Students older than 24 years of age are more likely to have jobs or caregiving responsibilities than 17-24-year-old students, which may affect how quickly they graduate.

Graduation rates within four years of the transfer equivalent term varied by the age and enrollment status of students:

- Graduation rates were higher for students who were both 17-24 years of age and enrolled full-time and lower for other combinations of age and enrollment status (Figure 2.1.1.b.).
- Graduation rates were often higher for students who started at UW compared to those who transferred to UW from a WyCC. The exception was transfer students greater than 24 years of age and enrolled full-time, who had a slightly higher graduation rate than those who started at UW.
- The population sizes for students who were older than 24 years or were enrolled part-time were low, so changes in the numbers of graduates in these populations more greatly impacted the graduation rate.

Figure 2.1.1. a) Number of students and b) Percent of students who graduated within four years of the transfer equivalent term for students who transferred to UW from a WyCC compared to students who started at UW by age and enrollment status.



Figures 2.1.2. and 2.1.3. depict information for full-time students who were ages 17-24. The other categories of age and enrollment status did not have large enough sample sizes to permit evaluation by year. Among full-time students ages 17-24, the number of students increased slightly from 2014-15 to 2019-20, but graduation rates remained consistent for both students who started at UW and those who transferred from a WyCC. The graduation rate for students who started at UW was higher than for those who transferred from a WyCC in all study years.

Figure 2.1.2. Number of transfer equivalent students who graduated within four years of the transfer equivalent term for full-time students aged 17-24 who transferred to UW from WyCC compared to students who started at UW.

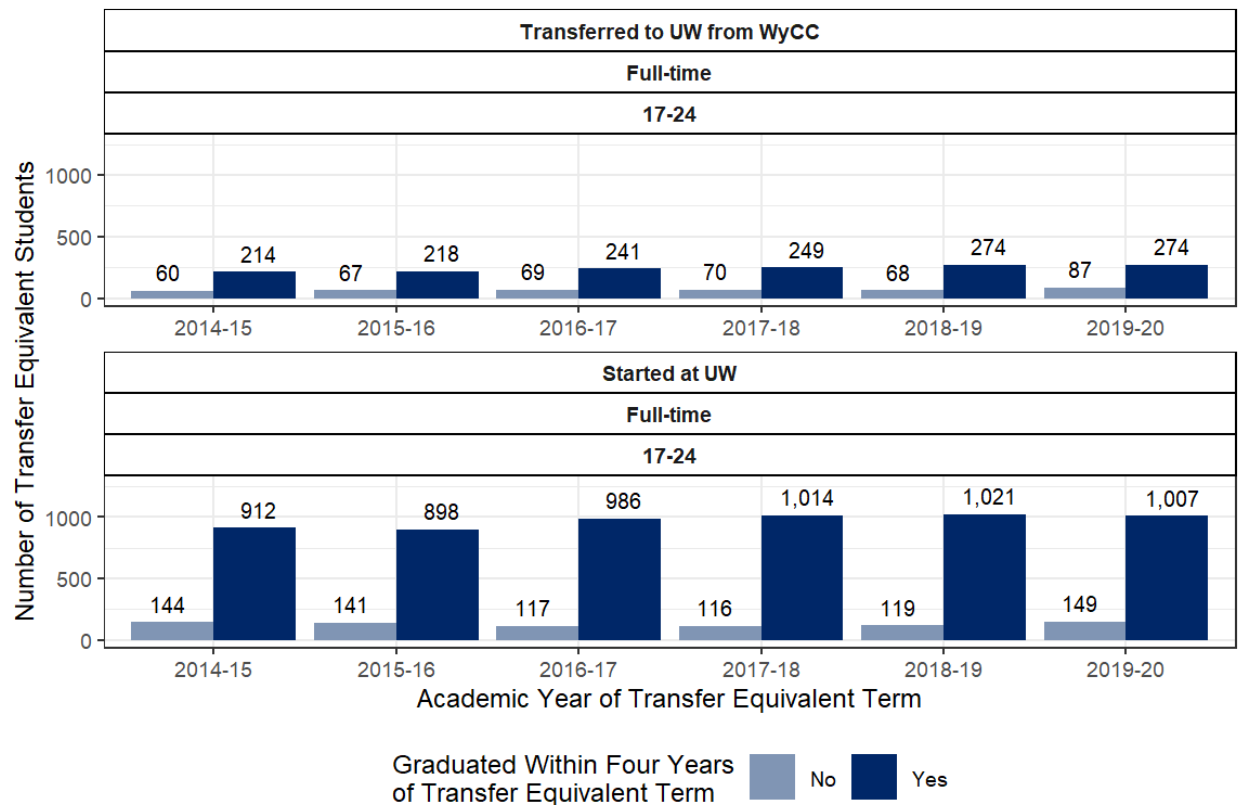
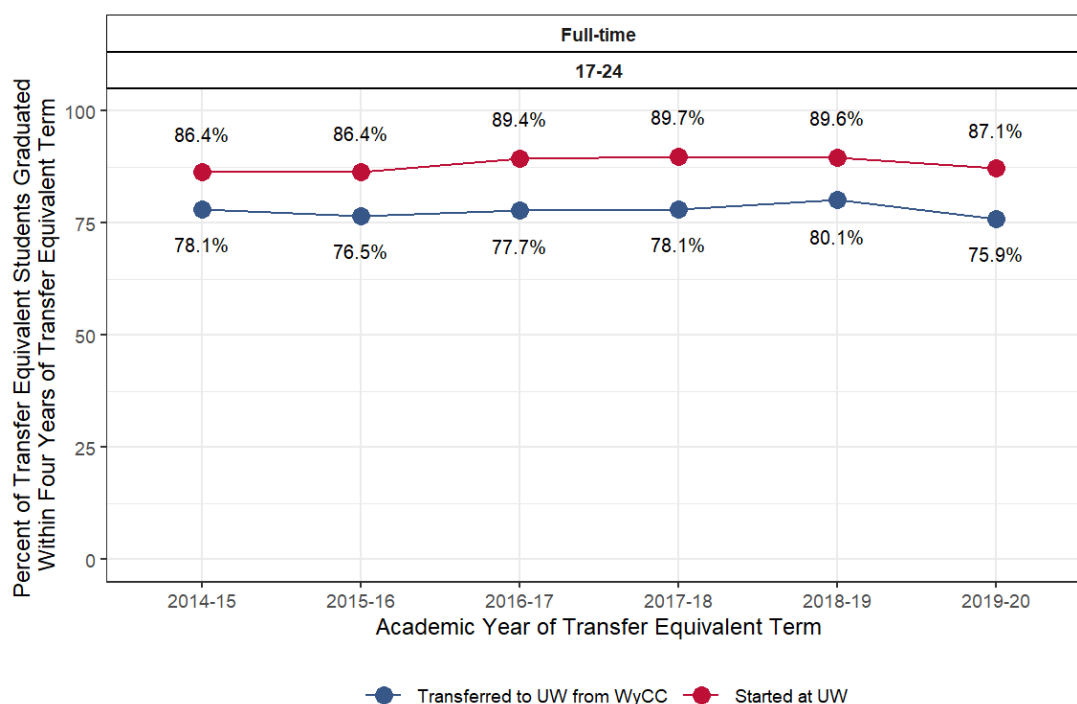


Figure 2.1.3. Graduation rate within four years of the transfer equivalent term for full-time students aged 17-24 who transferred to UW from WyCC compared to those who started at UW by year.



2.2 Wyoming Community College Students With and Without an Associate's Degree Prior to Transfer to the University of Wyoming

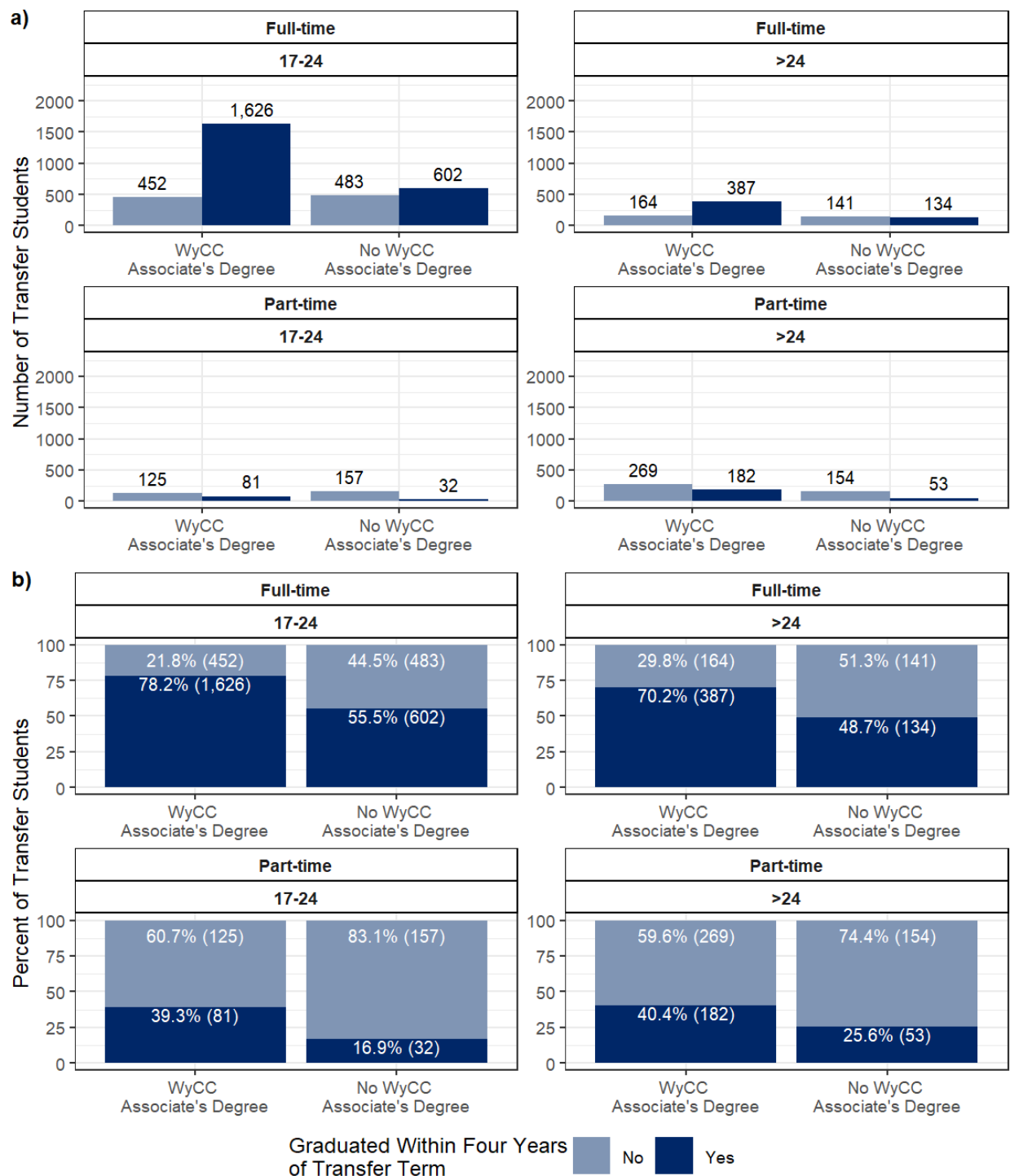
This section compares graduation rates within four years of the transfer term for two populations of students who transferred with any number of credits from a WyCC into UW (Transferred to UW from WyCC):

1. Students who earned an associate's degree from a WyCC prior to transferring to UW (WyCC Associate's Degree, 3,286 students) and
2. Students who did not earn an associate's degree from a WyCC prior to transferring to UW (No WyCC Associate's Degree, 1,756 students).

Age and enrollment status are based on the first semester a student transferred (the transfer equivalent term) from Summer 2014 through Spring 2020.

Figure 2.2.1.a. shows the number of students who transferred from a WyCC to UW with and without an associate's degree. The majority (62.7%) of WyCC transfer students were 17-24 years old and enrolled full-time. For each combination of age and enrollment status, graduation rates were higher for students who transferred to UW from a WyCC with an associate's degree when compared to those who transferred from a WyCC without an associate's degree (Figure 2.2.1.b.). Graduation rates were also higher for students who were both 17-24 years of age and enrolled full-time and lower for other combinations of these factors (Figure 2.2.1.b.). Students who transferred with an associate's degree transferred with a higher number of credits (78.9 credits) on average than those without an associate's degree (57.3 credits).

Figure 2.2.1. a) Number of students and b) Percent of students who graduated within four years of the transfer equivalent term who transferred to UW from WyCC for students with a WyCC associate's degree compared to those without a WyCC associate's degree by age and enrollment status.



The number of students from 2014-15 to 2019-20 and their graduation statuses were evaluated by year for full-time students aged 17-24 (Figure 2.2.2.). The other categories of age and enrollment status did not have large enough sample sizes to permit evaluation by year. The graduation rate for students who transferred from a WyCC with an associate's degree was higher than that for students who transferred without an associate's degree in all study years, but the graduation rate of students without an associate's degree increases over time (Figure 2.2.3.).

Figure 2.2.2. Number of transfer equivalent students who graduated within four years of the transfer term for full-time students aged 17-24 who transferred to UW from a WyCC with an associate's degree from a WyCC compared to students who transferred to UW from a WyCC without an associate's degree by year.

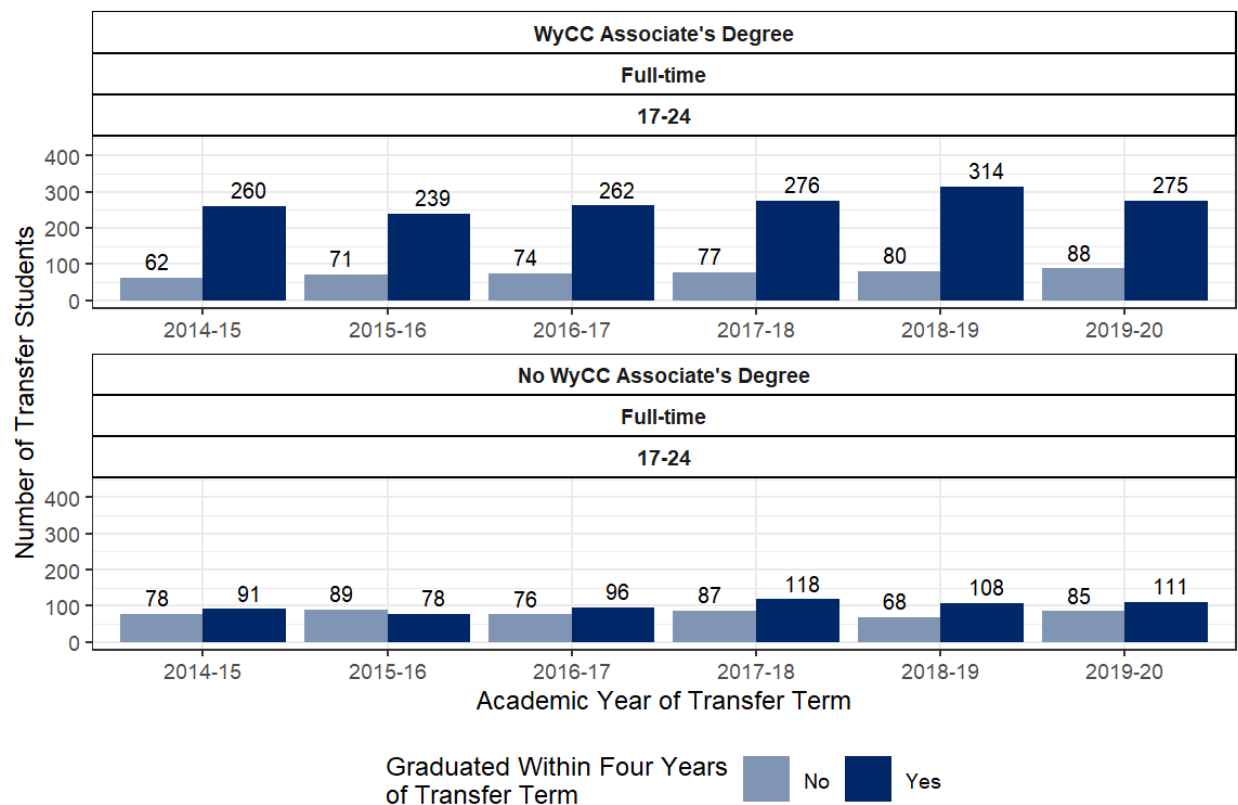
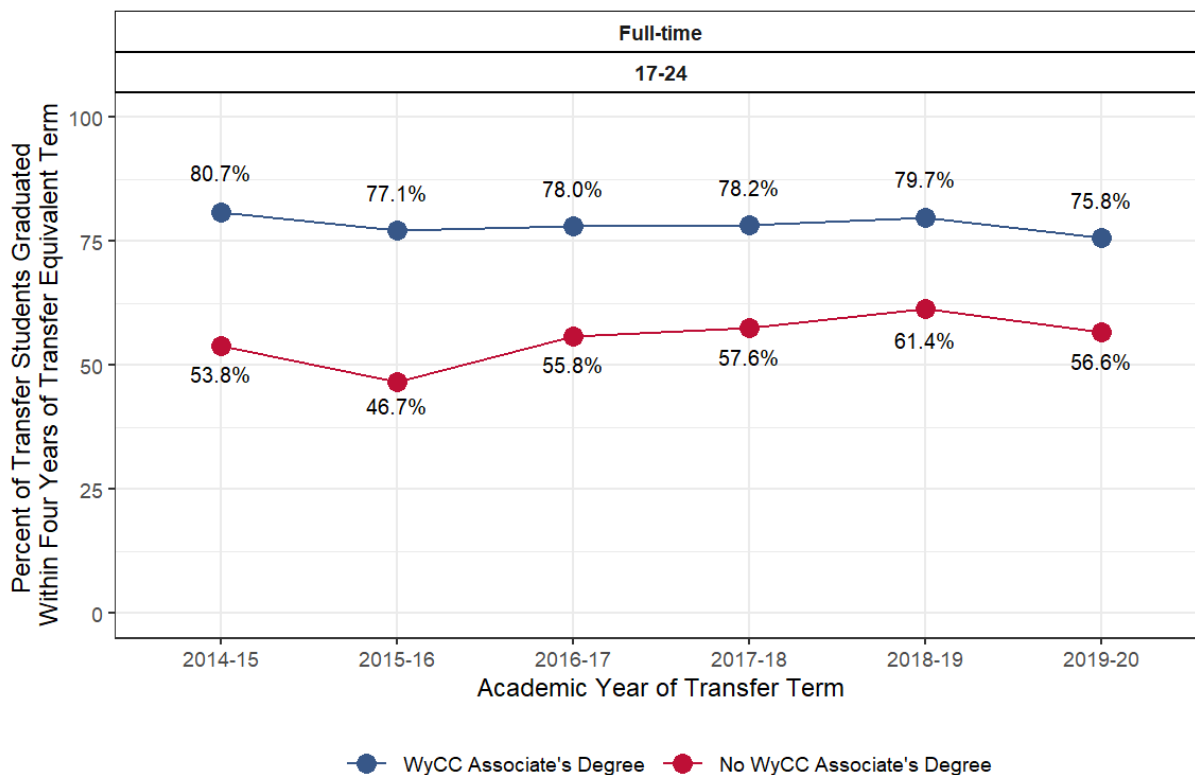


Figure 2.2.3. Graduation rate within four years of the transfer term for full-time students ages 17-24 who transferred to UW from WyCC with an associate's degree from a WyCC compared to those who transferred to UW from a WyCC without an associate's degree by year.



2.3 Wyoming Community College Transfer Students Compared to Other Students Who Transfer to the University of Wyoming

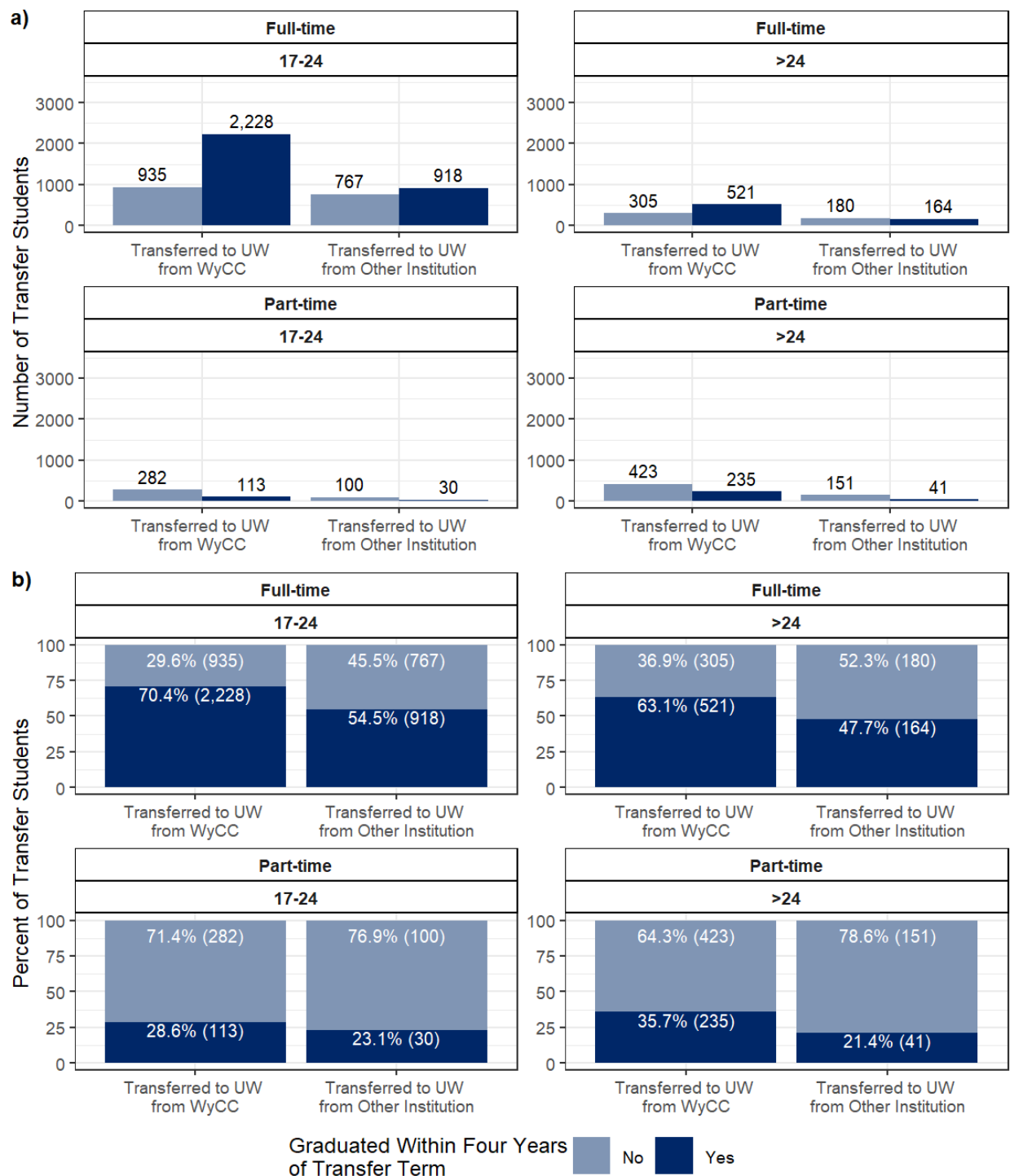
This section compares graduation rates within four years of the transfer term for two populations of students:

1. Students who transferred with any number of credits from a Wyoming Community College (WyCC) into the University of Wyoming (Transferred to UW from WyCC, 5,042 students) and
2. Students who transferred with any number of credits from another institution into the University of Wyoming (Transferred to UW from Other, 2,351 students).

Age and enrollment status are based on the first semester a student transferred (the transfer equivalent term) from Summer 2014 through Spring 2020.

Figure 2.3.1.a. shows the number of students who transferred to UW from a WyCC or another institution. The majority (65.6%) of transfer students from any institution were 17-24 years old and enrolled full-time. For all combinations of age and enrollment status, graduation rates were higher for students who transferred to UW from a WyCC compared to those who transferred from another institution (Figure 2.3.1.b.). Graduation rates were also higher for students 17-24 years of age and enrolled full-time and lower for other combinations of these factors.

Figure 2.3.1. a) Number of students and b) Percent of students who graduated within four years of the transfer equivalent term for students who transferred to UW from a WyCC compared to those who transferred to UW from a different institution by age and enrollment status.



The number of students and their graduation statuses were evaluated across the study period for full-time students ages 17-24 (Figure 2.3.2.). The other categories of age and enrollment status did not have large enough sample sizes to permit evaluation by year. The graduation rate for students who transferred from a WyCC was higher than for those who transferred from another institution in all study years (Figure 2.3.3.).

Figure 2.3.2. Number of transfer equivalent students who graduated within four years of the transfer term for full-time students aged 17-24 who transferred to UW from WyCC compared to those who transferred to UW from a different institution by year.

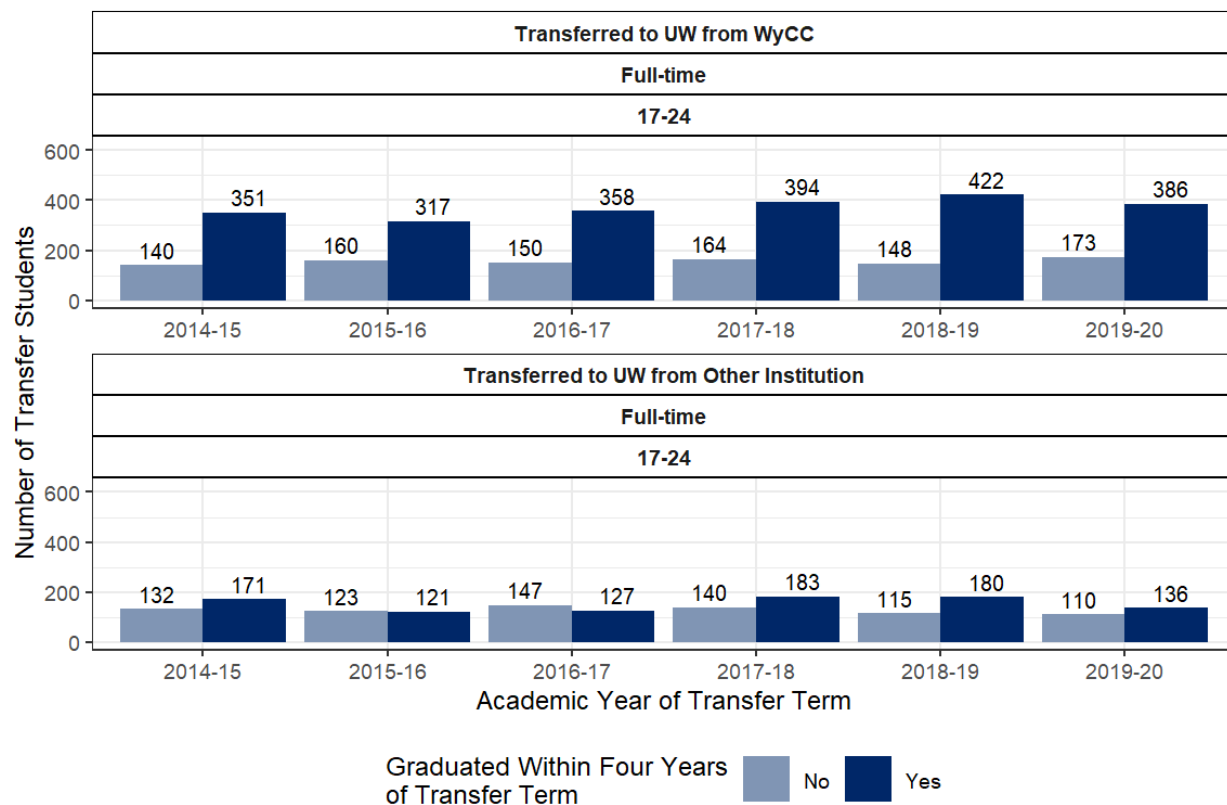
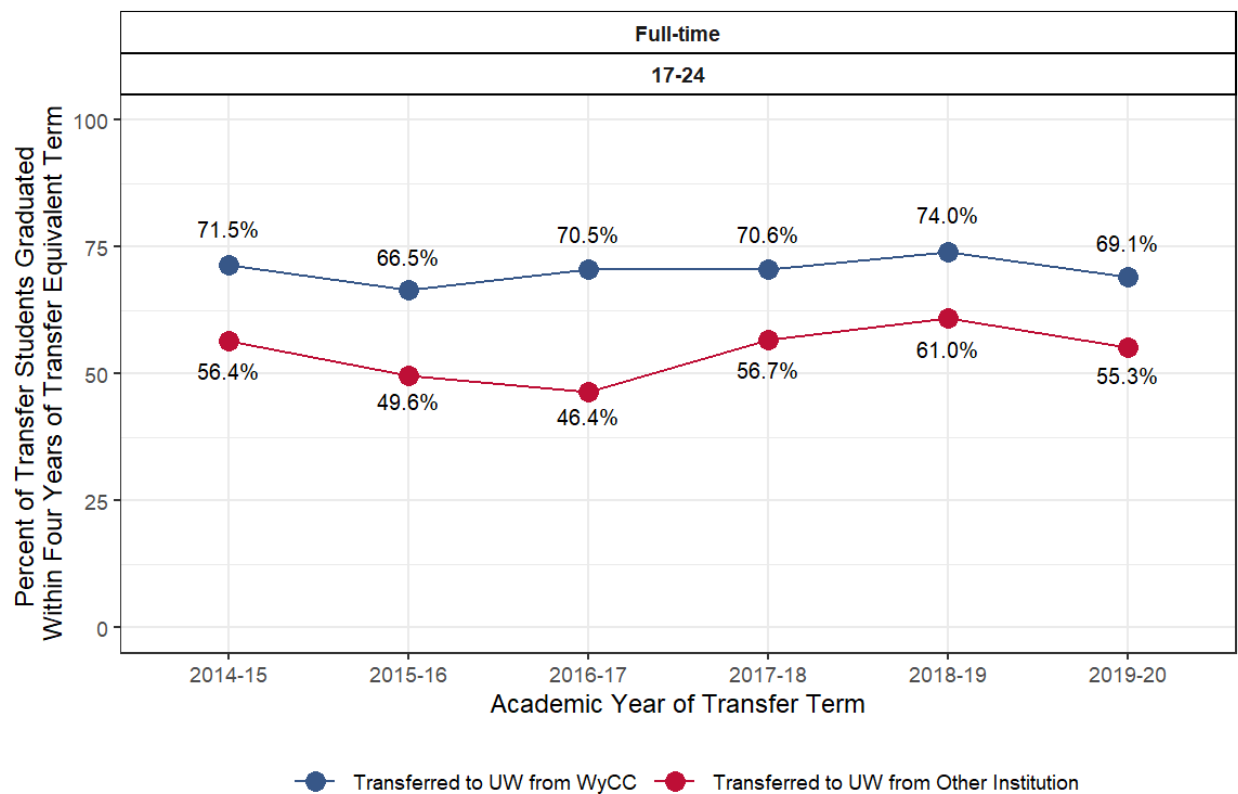


Figure 2.3.3. Graduation rate within four years of the transfer term for full-time students ages 17-24 who transferred to UW from a WyCC compared to those who transferred to UW from a different institution by year.



3 Transfer Course Trends

The second question guiding this study is: Do transferred credits and electives apply toward degrees?

It is not possible to track courses and credits that count toward a University of Wyoming program of study through the existing SLEDs implementation. This could be accomplished using a degree audit system but would be cumbersome and require significant additional resources.

As an alternative, this study evaluates the transfer courses of students who transferred to UW to examine course-taking trends and the general transferability of courses. Courses were included if they were taken by a student who transferred to UW from Summer 2014 to Spring 2020. Transfer courses taken after the transfer term or where the student failed or withdrew from the course were excluded from the analysis.

3.1 Credit Types

Courses that UW evaluated for transfer credit primarily fell into four credit categories (Figures 3.1.1. And 3.1.2.):

1. Transferable direct equivalent courses: These courses transfer as the same courses offered at UW (e.g., ENGL1010 at UW is the same as ENGL1010 at all WyCCs). They accounted for 67.5% of evaluated credits from WyCC students and 44.8% from students from other institutions.
2. Transferable graduation elective courses: These courses transfer to meet general education and/or graduation elective requirements at UW. They accounted for 27.5% of evaluated credits from WyCC students and 50.1% from students from other institutions.
3. Developmental/remedial courses (WyCC): These courses provide below-college-level skills to prepare students for college-level coursework and do not transfer as credit to UW. They accounted for 3.6% of credits evaluated by UW for WyCC transfer students. UW cannot identify remedial or developmental credits for students transferring from other institutions due to different course numbering standards.
4. Career and technical/workforce/other courses: These courses are specific to career and technical or workforce credential programs or do not fit in other categories; they typically do not transfer as credit to UW. These courses accounted for 1.4% of credits evaluated by UW for WyCC transfer students and 5.1% for students from other transfer institutions.

Figure 3.1.1. The proportion of evaluated credits for students who transferred to UW from a WyCC or other transfer institution from Summer 2014 to Spring 2020 by credit type.

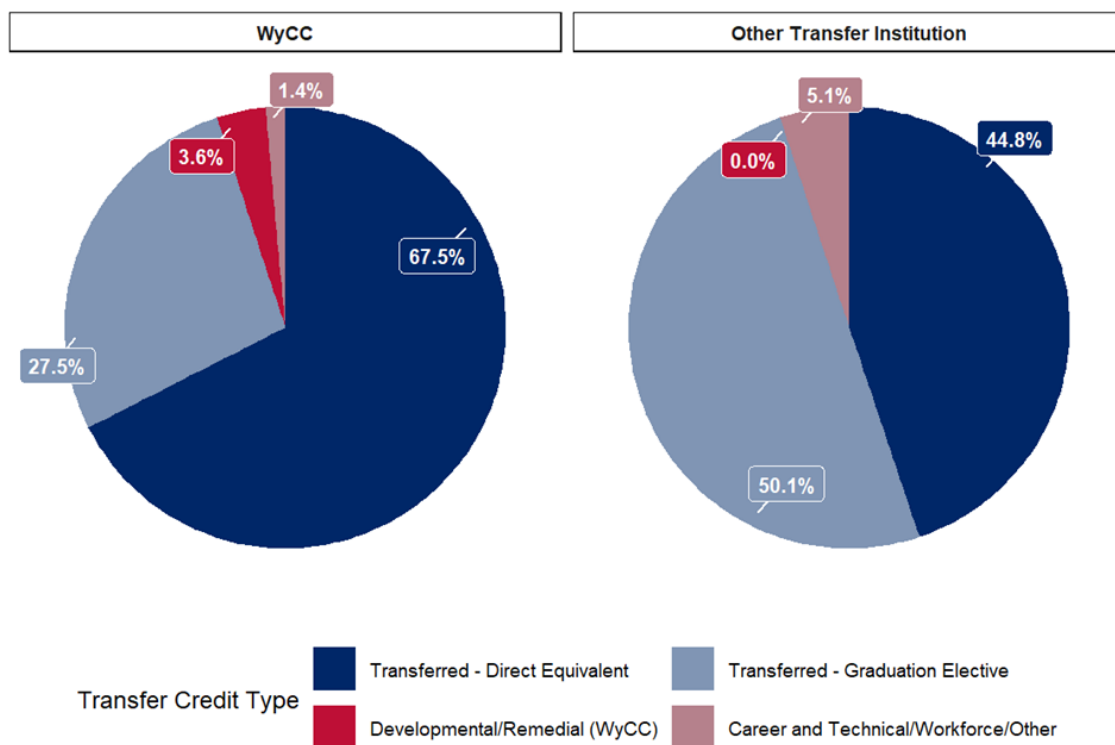
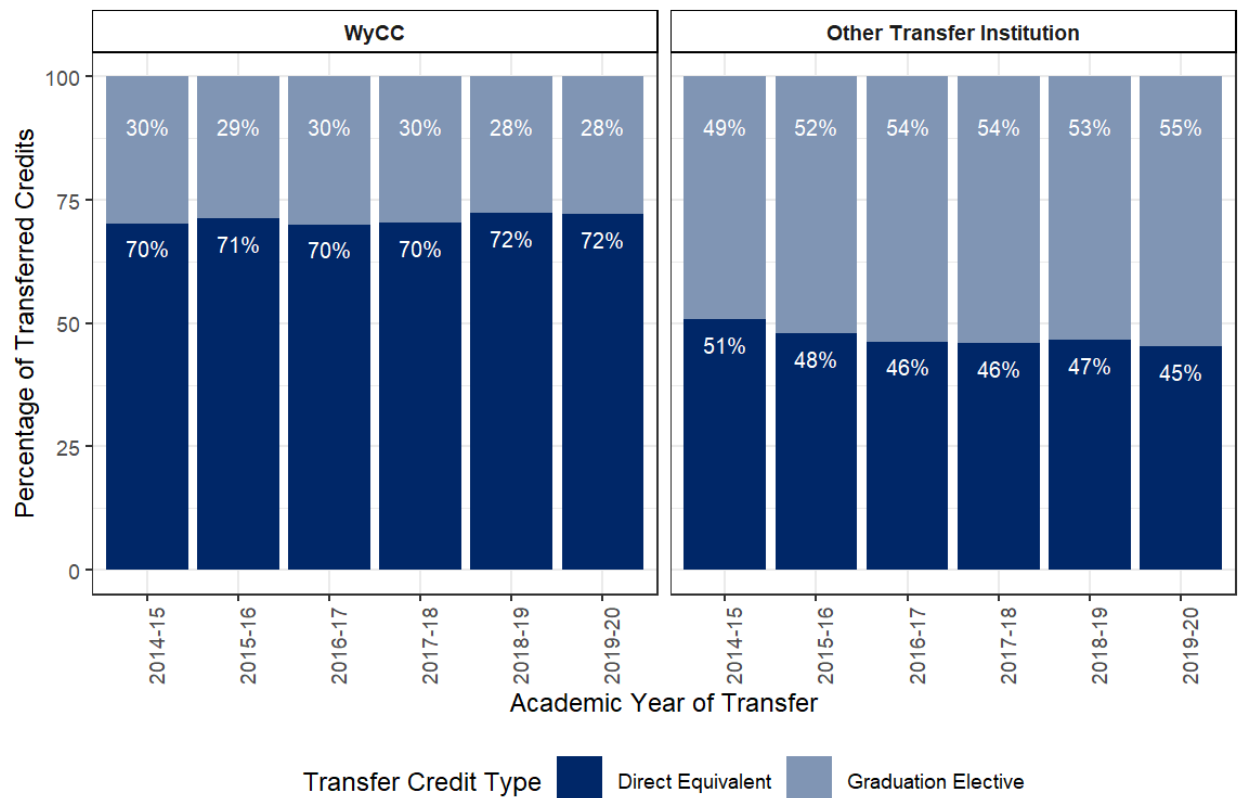
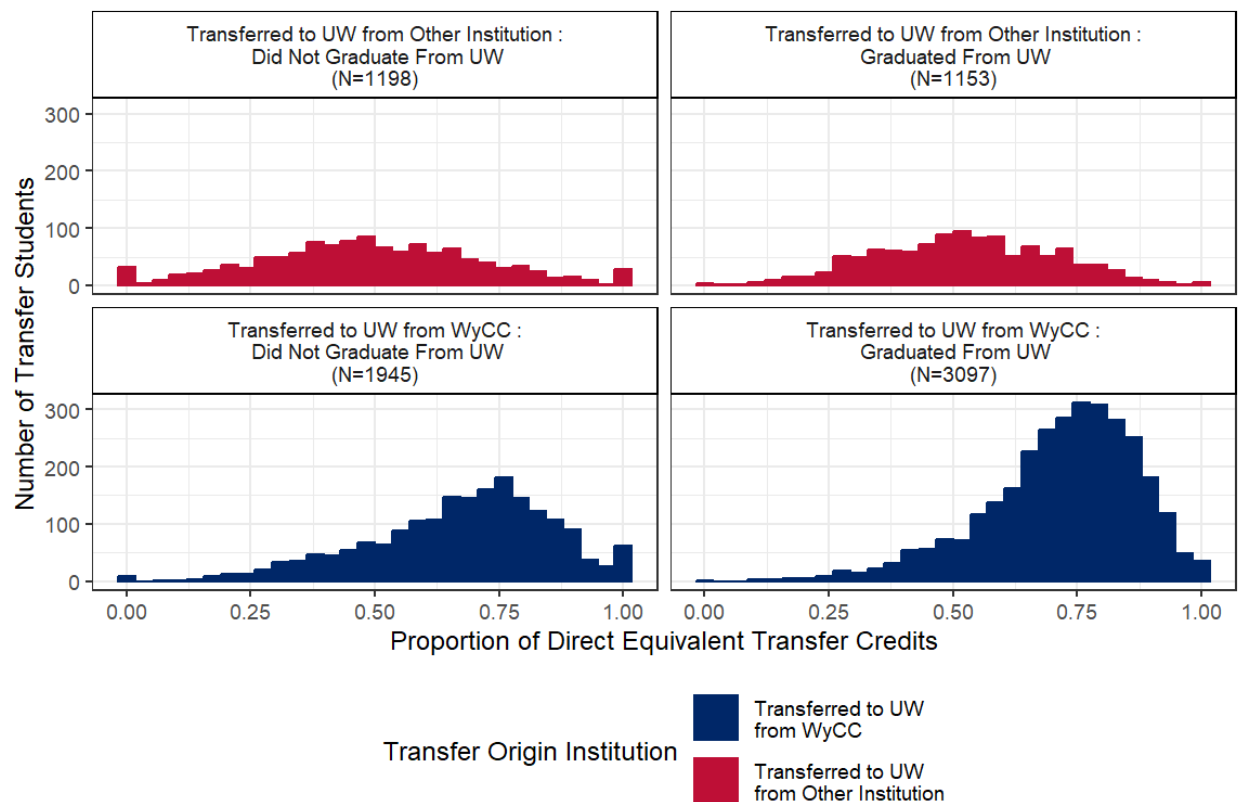


Figure 3.1.2. The proportion of transferred credits for students who transferred to UW from a WyCC or other transfer institution from Summer 2014 to Spring 2020 by credit type and year.



For each transfer student, the proportion of credits that transferred as direct equivalent was calculated (Figure 3.1.3.). The distribution of this proportion was typically higher for students who transferred from a WyCC to UW than those who transferred from another type of institution. This distribution did not appear to be related to a student's graduation status within each institution type.

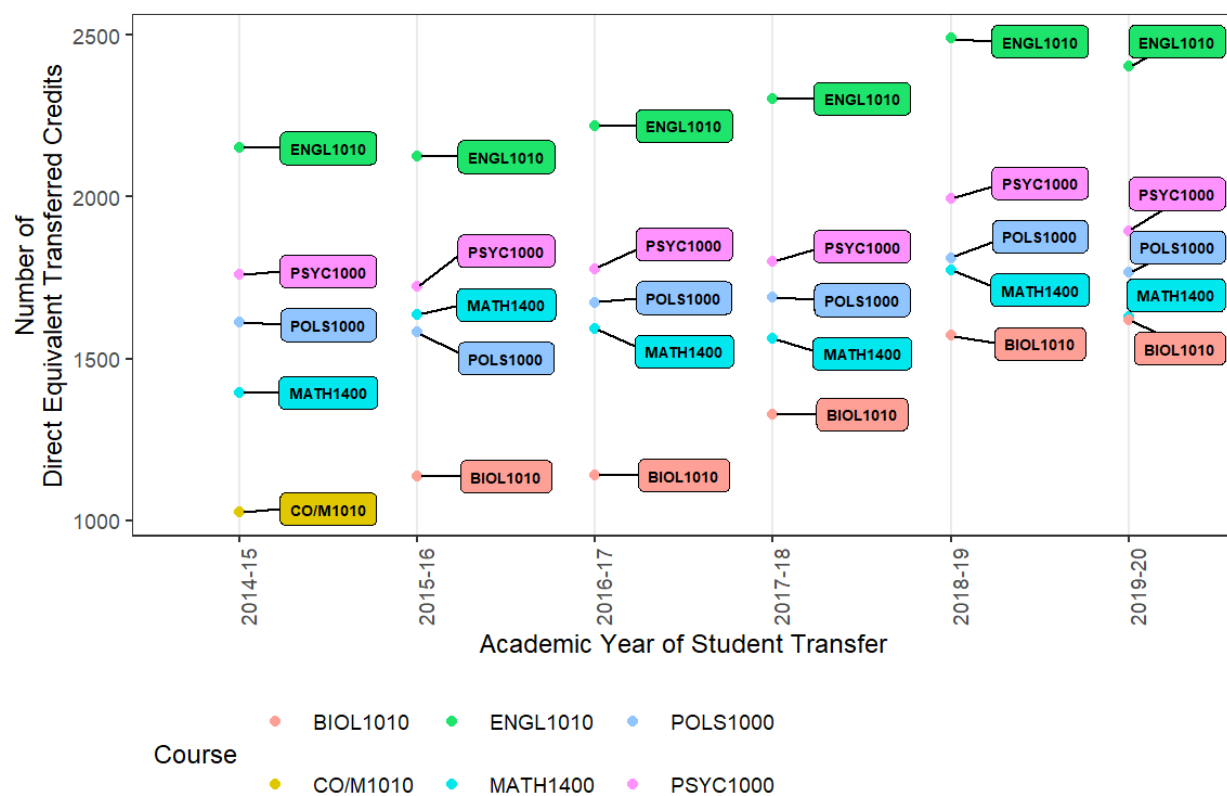
Figure 3.1.3. The proportion of credits that transferred as direct equivalent for students who transferred to UW from a WyCC compared to those from a different institution by graduation status four years after the transfer term.



3.2 Transferable Credits - Direct Equivalent

Five courses consistently represented the largest number of direct equivalent transfer credits in each academic year of the study. English Composition I (ENGL1010) was the source of the largest number of direct equivalent transfer credits each year, followed by General Psychology (PSYC1000). American and Wyoming Government (POLS1000), College Algebra (MATH1400), and General Biology I (BIOL1010), although the ranking of these courses varied across the study years. The one exception to this trend was the inclusion of Introduction to Public Speaking (CO/M1010) in the 2014-15 academic year, which in future years was transferred as graduation elective credit due to changes in course articulation between UW and the WyCCs.

Figure 3.2.1. The five most common courses (by total number of credits) transferred to UW as direct equivalent transfer credits from a WyCC each year.

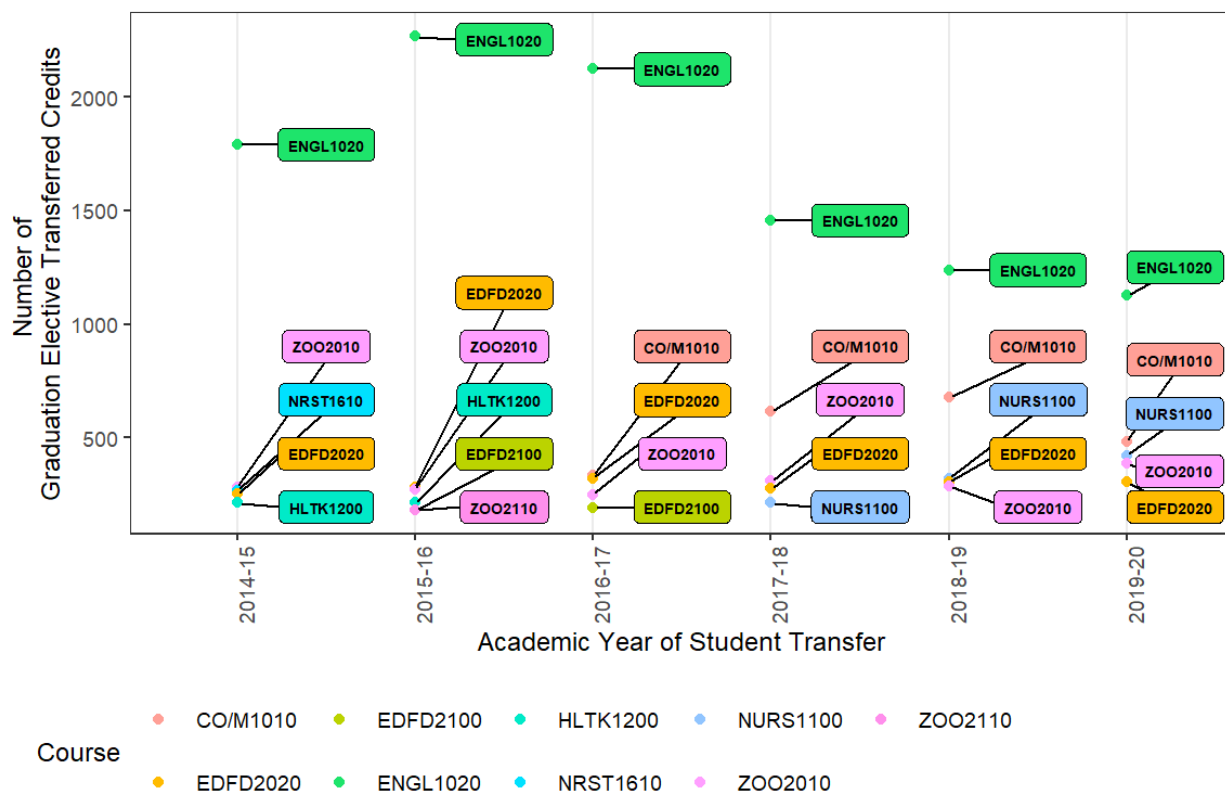


Course	Course Title
BIOL1010	General Biology I
CO/M1010	Introduction to Public Speaking
ENGL1010	English Composition I
MATH1400	College Algebra
POLS1000	American & Wyoming Government
PSYC1000	General Psychology

3.3 Transferable Credits - Graduation Elective

Credits from WyCC courses transferred to meet general education or graduation elective requirements at UW are considered transferable graduation elective courses. Of these courses transferred in each academic year, one course consistently represented the largest number of graduation elective transfer credits in each academic year of the study: English Composition II (ENGL1020). The number of ENGL1020 credits transferred declined over the study period due to the declining number of students taking the course at WyCCs. The next largest contributors of graduation elective transfer credits in each year were not as consistent, but common courses included Human Anatomy and Physiology I (ZOO2010), nursing (NRST, NURS courses), Foundations of Education (EDFD2020), and Introduction to Public Speaking (CO/M1010) (Figure 3.3.1).

Figure 3.3.1. The five most common courses (by total number of credits) transferred to UW as graduation elective transfer credits from WyCCs each year.



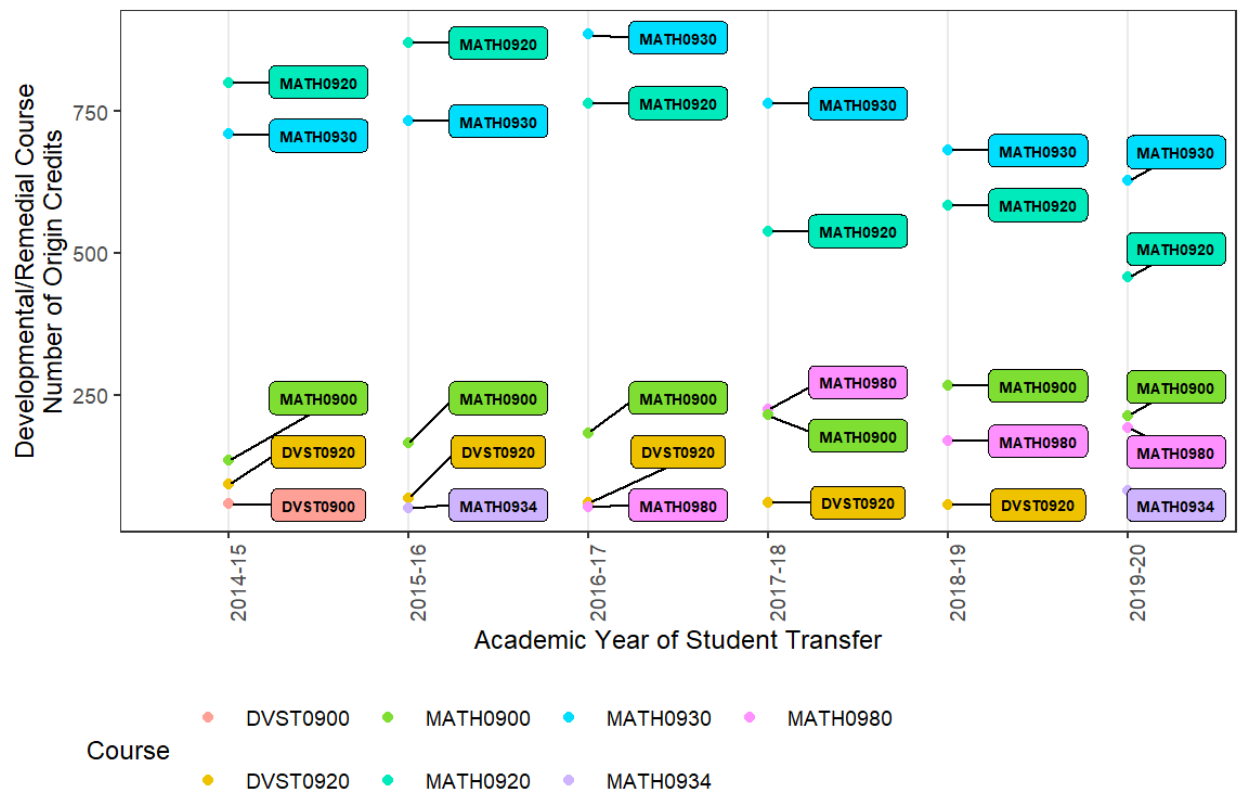
Course	Course Title
CO/M1010	Public Speaking
EDFD2020	Foundations of Education
EDFD2100	Educational Psychology
ENGL1020	English Composition II
HLTK1200	Medical Terminology
NRST1610	Nursing I
NURS1100	Professional Nursing Care In Health Promotion
ZOO2010	Human Anatomy & Physiology I
ZOO2110	Human Physiology

3.4 Developmental/Remedial Courses

Developmental/remedial courses are pre-college-level courses that focus on fundamentals of math or English and are designed to prepare students for college-level coursework. A majority of the courses that did not result in transfer credit when transferred from a WyCC to UW throughout the study period were developmental or remedial courses.

The most prevalent courses in this category were Pre-Algebra (MATH0900), Elementary Algebra (MATH0920), and Intermediate Algebra (MATH0930), which are standard courses offered across the WyCCs. The additional most common courses in this category are often unique to individual institutions and not offered by all WyCCs (Figure 3.4.1).

Figure 3.4.1. The five most common developmental/remedial courses (by total number of credits at the institution of origin) that transferred with zero credit to UW from WyCCs each year.



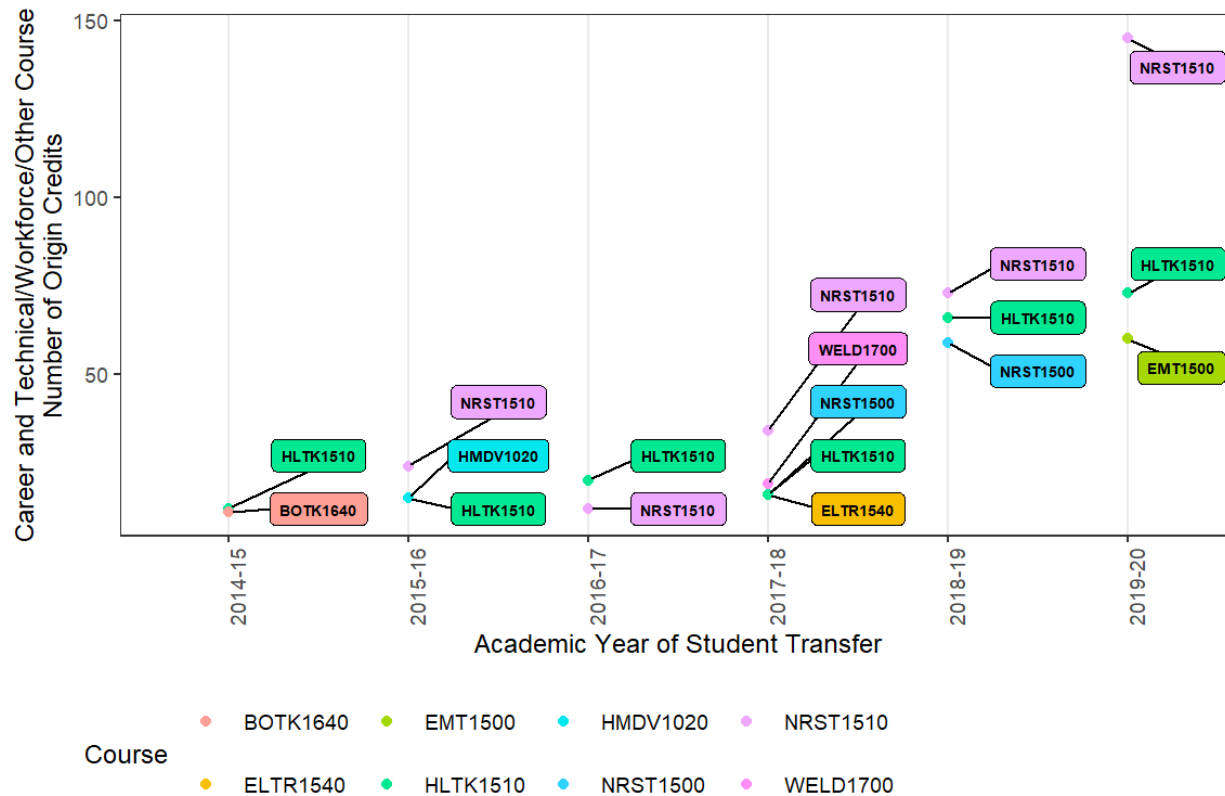
Course	Course Title
DVST0900	College Prep Math
DVST0920	Introductory Algebra
MATH0900	Pre-Algebra
MATH0920	Elementary Algebra
MATH0930	Intermediate Algebra
MATH0934	Elementary & Intermediate Algebra
MATH0980	Integrated College Algebra I

3.5 Career and Technical / Workforce / Other Courses

The last set of courses that did not result in transfer credit when students transferred from a WyCC to UW throughout the study period were primarily related to career and technical/workforce development programs. These courses did not have a corresponding program at UW and represented the smallest number of credits evaluated for students transferring to UW from a WyCC. The maximum number of credits represented by these courses was 150 credits in a single year compared to a maximum of approximately 2,000 credits per course in a single year for transferable direct equivalent or graduation elective transfers.

These courses represented a variety of subjects such as certified nursing assistant, EMT, welding, keyboarding, and electrical (Figure 3.5.1). Only the top three courses with more than 10 credits per year are presented for each year due to a large number of courses with low credits.

Figure 3.5.1. The three most common career and technical/workforce/other courses (by total number of credits) that transferred with zero credit to UW from WyCCs each year.



Course	Course Title
BOTK1640	Keyboarding Applications I
ELTR1540	Heavy Duty Electrical Systems
EMT 1500	Emergency Medical Technician
HLTK1510	Nurse Assistant
HMDV1020	Generation Next
NRST1500	Nursing Assistant
NRST1510	Nursing Assistant
WELD1700	General Welding

4 Summary

This study identified varying graduation rates between three comparison groups with different transfer characteristics. Graduation rates also varied by age and full-time/part-time enrollment status. Since most students were ages 17-24 years and enrolled full-time in the transfer term or transfer equivalent term, this study focused on these students.

1. **Wyoming Community College Transfer Students Compared to Students Who Started at the University of Wyoming:** Graduation rates for students who started at UW were higher than those of students who transferred from a WyCC within each age and enrollment status grouping, except for full-time students older than 24 where students transferring from a WyCC to UW had a slightly higher rate. Graduation rates were also consistently higher among full-time students ages 17-24 and lower for part-time students or students older than 24. Lower graduation rates for students transferring from a WyCC to UW may be due in part to transfer shock, which refers to the temporary decrease in grade point average that transfer students may experience during the first or second semester at the new institution. Though the grade point average often recovers in subsequent semesters, transfer students may take longer to graduate than those who start at the same institution (Thurmond 2007).
2. **Wyoming Community College Students With and Without an Associate's Degree Prior to Transfer to the University of Wyoming:** Students who transferred with an associate's degree from a WyCC prior to transfer had higher graduation rates than those who transferred from WyCC without an associate's degree, and students who graduated with an associate's degree typically transferred in with more credits.
3. **Wyoming Community College Transfer Students Compared to Other Students Who Transfer to the University of Wyoming:** The age and enrollment status of students who

transferred from WyCCs were more similar to those who transferred from other institutions than students who started at UW. Within groups of students with similar ages and enrollment statuses, graduation rates were higher for students who transferred from a WyCC than those who transferred from another institution.

The success of students who transferred from a WyCC may be due to the fact that a higher percentage of credits transferred from WyCCs transferred as direct equivalent credits when compared to credits transferred from other institutions. When students transferred from a WyCC, they transferred with a higher percentage of direct equivalent transfer credits, and these credits may more directly satisfy graduation requirements than graduation elective credits. UW and the WyCCs have worked together over the years to determine common course numbering so that courses will transfer more seamlessly. When comparing WyCC to other institutions, the percentage of transfer credits as direct equivalents did not appear to be associated with whether a student had graduated from UW four years after the transfer term.

Most credits transferred to UW from a WyCC came from a few common courses. The most common courses that transferred as direct equivalents were consistent in all study years: English I, General Psychology, American and Wyoming Government, and College Algebra. Of courses that transferred as graduation elective credits, English II accounted for the highest number of credits transferred in each study year. A decline in the prevalence of English II was observed over the study period and was associated with a decline in the number of students taking this course at the WyCCs.

The majority of courses that did not transfer with any credit were developmental/remedial English or math courses. Though these courses did not count for credit at UW, they may have satisfied prerequisites for credit courses. Most of the remaining courses that did not transfer for credit were career and technical or workforce courses associated with specialized programs at a WyCC that did not exist at UW.

5 Future Considerations

Suggestions to improve or expand future research on this topic include:

- Explore differences in the number of credits students have completed at graduation and the length of time to graduation for students starting at UW compared to those transferring from a WyCC to further explain the graduation rates observed in this report.
- Use statistical analyses and regression-based methods to determine the primary drivers of graduation success. The inclusion of other socioeconomic and demographic factors and education intentions may further inform this research.
- Examine the success of transfer students and course transfer patterns from each WyCC to provide more detailed information on transfer success in the future (given agreement from the participating higher education agencies).
- As the data system continues to be built out, standardize additional data elements across the WyCCs and UW to be able to conduct more comparable and accurate analysis of various factors.

Allow for the ability to analyze repeat grades, and consider current data and data captured at distinct timeframes.

- Identify higher education institutions to which WyCC students transfer beyond UW, and the success of these students, by using National Student Clearinghouse data.
- Investigate whether certain courses have an impact on graduation success upon transferring to UW.
- Consider how transfer students may be affected by dual and concurrent credits. Does dual and concurrent enrollment affect the likelihood of graduation, time to graduation, or credits earned by graduation?
- Evaluate the prevalence, severity, and impact of transfer shock.

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Table 7.1: Revision History

Revision Number	Revision Date	Summary of Changes	Changes Marked

Table 7.2: Approvals

Name	Date Approved