# TRANSFER STUDENT SUCCESS

## A Profile of Transfer Student Success at the University of Calgary

April 5, 2018

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# Acknowledgements

# Executive Summary

This report summarizes the findings from a transfer student success research study conducted with the financial support of the Alberta Council on Admissions and Transfer (ACAT) and the institutional support of the University of Calgary (UCalgary). A second study, called "*Transfer Student Success, A Profile of Transfer Student Success at the Northern Alberta Institute of Technology*" and a separate report called "*Literature Review: Transfer Student Success at the University of Calgary and the Northern Alberta Institute of Technology*" serve as companion pieces. The two research studies represent separate case analyses of two very different institutions; therefore, any direct comparisons of the data are not recommended.

The UCalgary research examined two primary questions, 'How successful are transfer students at UCalgary?' and 'Are transfer students successful in comparison to direct entry students?' Definitions of success included finding evidence transfer students achieved overall grade point averages (GPA) of 2.00 or higher at end of year one; that they graduated; or that they finished studies at UCalgary with overall grade point averages of 2.00 or higher (i.e., left in good standing at last point of registration). The analysis also included identifying withdrawal, graduation and completion rates.

To address these questions, the researchers identified two primary control groups across three fall admission cohorts (Fall 2008-09, Fall 2009-10, and Fall 2010-11) for which UCalgary provided at least six years of anonymized enrolment data. The data set excluded other entering cohorts (e.g., January, May). The student cohorts included transfer students who had studied in a previous post-secondary institution and direct entry students who had been admitted to degree programs based on prior high school results only. The research focus was further narrowed to those UCalgary students with previous exposure to the Alberta education system either through high school or at the post-secondary level even if they had studied at institutions in another province. The study excluded all other students. This approach facilitated a focused analysis of the success of Alberta educated transfer students as compared to Alberta educated high school students. The underlying assumption for this approach was that transfer students with previous exposure to the Alberta system (whether through high school or post-secondary studies) provide a stronger control group and basis of comparison to Alberta direct entry students which represent the bulk of UCalgary's enrolled class in any given year. As a caution, it would be problematic to extrapolate the findings to represent the entirety of the UCalgary student body's experience as the University draws students from a broad range of backgrounds and geographical locations.

The overall faculty profile analysis of the above data set included undergraduate students pursuing baccalaureate programs in the faculties of Arts, Science, Kinesiology, and Nursing, and the Haskayne School of Business, the Schulich School of Engineering, and the Cumming School of Medicine. The Werklund School of Education students were included; however, they were assigned to their primary home faculty to avoid double counting. All other faculties were excluded either because they were at the graduate level, a professional program, continuing education, or located fully outside of Canada (e.g., Graduate Studies, Veterinary Medicine, Medicine, Law, Social Work, Werklund School of Education – After Degree, the Nursing program in Doha, Open Studies, and the International Foundations Program for English Language Training). The faculty specific analysis focused primarily on the Faculty of Arts and the Faculty of Science given the small cohort sizes within the other academic areas, a situation which impeded meaningful analysis.

The researchers first identified the overall institutional context and UCalgary's admissions, grading, and graduation policies. As the University uses a 4.00 grading scale supported by a contextually situated approach to calculating term and cumulative averages and is further guided by specific graduation

policies, it became critical to understand the context further before finalizing the data fields used for this analysis. To support this process, the next step involved determining the specific fields that would be most beneficial and accessible for addressing the two research questions. While Appendix A provides a detailed summary of the data points used to support this research, examples include date of entry, admit faculty, admit program, faculty at last point of graduation, grade point averages (GPAs) at the end of year one and at last point of registration/graduation, academic standing at last point of registration, and date of graduation. Prior to passing the data sets to the researchers, UCalgary masked the personal identifying data for each student to preserve student privacy and anonymity in accordance with Alberta privacy regulations.

As the methodology for this study involved a quantitative analysis of the student data for each of the student cohorts to facilitate the comparison between transfer and direct entry students, average GPAs, graduation rates, and completion rates served as the primary indicators of success both overall and for the two largest faculties - Arts and Science. The examination of the data set revealed a transfer student profile(s) for UCalgary informed by specific metrics each of which facilitated further comparisons. These included enrolment size and status, gender, citizenship, types of prior post-secondary experiences, and the amount of transfer credit awarded. To extend the analysis of success, completion and graduation rates were explored across other dimensions such as gender and source of prior post-secondary studies.

The UCalgary transfer student profile emerged as predominantly female Canadian citizens; however, the transfer students were proportionally more diverse than direct entry students as measured by citizenship. Transfer students successfully achieved average GPAs well beyond 2.00; furthermore, evidence indicates their performance often exceeded or was at the same level as direct entry students. Transfer students graduated at rates that often met or exceeded direct entry students and usually completed their programs at a faster rate versus direct entry students which speaks to the impact of the transfer process. As the UCalgary research and findings were based on a quantitative analysis of an initial set of student data, the reasons for these findings were not apparent.

At the institutional level, future research is suggested such as surveying students and examining other inputs including admit averages and personal circumstances to determine other quantitative and qualitative factors influencing the transfer student experience in Alberta. At the provincial level, conducting studies of other institutions across Alberta would enhance an understanding of whether these findings are typical in the Alberta context. It would also allow both institutions and the province to begin to benchmark transfer student success against other jurisdictions beyond the provincial borders. Table 1 provides examples of the metrics and dimensions used for this study to explore the success of transfer students versus direct entry students. In all cases, these metrics individually and collective represent opportunities to extend the provincial research on transfer student success and establish baseline data to inform an understanding of the transfer student profiles beyond UCalgary and across the province. As each institution tends to be unique with policies and practices shaped by institutional context, any future research would need to be carried out in such a way as to preserve the diversity that exists within the province.

*Table 1: High Level Summary of Findings Representing Areas for Future Provincial Research*

| Metrics | Findings |
|---|---|
| Gender, Citizenship | The UCalgary student characteristics for both transfer and direct entry cohorts:<br>• Largely female<br>• Primarily Canadian citizens<br><br>UCalgary characteristics unique to cohort:<br>• Proportionally more diverse student body in the transfer student cohort (as measured by immigration status) |
| Completion Rates | • Transfer students graduated within three years and earlier than direct entry students, suggesting that UCalgary's transfer credit practices result in expected outcomes. |
| Graduation Rates | • Transfer students graduated at a higher rate than direct entry students; however, overall numbers for both declined. |
| Eligible to Continue; Did not Graduate | • Transfer students were eligible to continue at the same or higher rates than direct entry students but chose not to persist. |
| Ineligible to Continue | • Transfer students remained ineligible at the same or lower rate than direct entry students. |
| GPA Performance | UCalgary student characteristics for both transfer and direct entry cohorts:<br>• Transfer students performed as successfully as direct entry students<br>• Transfer students' average GPAs subsequently moved to the same level as direct entry students by the end of the last known registration period.<br>• Both cohorts average GPAs improve over time.<br><br>UCalgary characteristics unique to cohort:<br>• Transfer students typically finished their first year with lower average GPAs than direct entry students.<br>• Transfer students who persisted to graduation achieved even higher average GPAs. |
| GPA and Graduation | • Both cohorts performed at higher performance levels as measured by average GPA at the end of first year and at the point of graduation compared to the entire pool<br>• Direct entry students tended to improve the most. |
| Source of Prior Post-Secondary Studies and Graduation | • Alberta transfer students graduated at a similar rate to the overall pool of transfer students examined in study.<br>• Graduation rates were higher for university transfers whether from within Alberta or outside of Alberta in each of the Fall cohort groups; however, the rates declined over the three Fall cohort groups.<br>• Those who previously studied at college experienced variable graduation rates depending on the Fall cohort group although declines occurred for the Alberta college student cohort. |
| Transfer Credit Awarded, Graduation | • Transfer students averaged more than 40 units in transfer credit (~6 courses).<br>• Direct entry students received an average of 18 units. |
| Source of Prior Post-Secondary Studies, Graduation and GPA | • Out-of-Province transfer students who graduated maintained higher average GPAs versus in-province students.<br>• Average GPAs rose after first year for each of the student cohorts, suggesting performance improvements occurred once beyond first year.<br>• Graduation rates fluctuated by source of prior post-secondary studies. |

| Metrics | Findings |
|---|---|
| Gender and Graduation | • Female transfer students consistently graduated at a somewhat higher rate proportionally in comparison to direct entry female students for most of the Fall cohorts studied.<br>• Males graduated at similar rates between the two cohorts; however, both female transfers and direct entry students graduated at a higher rate than male students.<br>• Potential exists to validate if this is occurring across the province in future research and, if so, to examine why males experience difficulty persisting to graduation. |
| Gender, Faculty, Remained in Admit Faculty, Graduated, and Graduation Rates | • Female and male transfer students graduated at higher rates than direct entry students for most (but not all) faculties.<br>• Transfer students in select faculties experienced graduation rate declines in select gender cohorts (Arts for females; Science for males).<br>• Future research is needed to validate is this is occurring across the province and, if yes, to explore what is impeding persistence to graduation. |
| Gender and Ineligible to Continue | • More males versus females were ineligible to continue and did not complete across both cohorts. |
| Gender and Eligibility to Continue | • More female transfer students versus female direct entry students appeared to be eligible to continue; however, did not. Ability to persist appeared to be an issue for female transfer students.<br>• More male transfers were eligible and yet did not complete. |
| Arts Faculty, Remained in Admit Faculty, Graduated, and Completion Rates | • More direct entry students in both Arts and Science took beyond four years to graduate.<br>• Transfer students finished earlier than direct entry students and had a higher completion rate in most years. |
| Arts Faculty, Remained in Admit Faculty, Graduated, and Ineligible to Continue | • Transfer students experienced lower rates of 'ineligible to complete' versus direct entry students. |

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# University of Calgary

## Institutional Background[1]

The University of Calgary (UCalgary) enrolls approximately 34,000 students of which 27,000 are undergraduates and 7,000 are graduates. Its vision is to be "*recognized as one of Canada's top five research universities, grounded in innovative teaching and learning, and integrated with the community of Calgary.*" Focusing on the student experience is embedded in the UCalgary strategic plan which emphasizes developing connections for students to the institution by ensuring access to experiences across the curricular and co-curricular spectrum and creating an environment of inclusivity that prepares them for the future.[2] UCalgary students study in 250+ programs in 14 faculties across five campuses including one in Qatar. These faculties include Arts, Cumming School of Medicine, Haskayne School of Business, Kinesiology, Qatar, Nursing, Schulich School of Engineering, Science, Social Work, Werklund School of Education, Environmental Design, Veterinary Medicine, Law, and Graduate Studies.[3]

This research examined the success of transfer versus high school direct entry students who studied in an undergraduate program. Open Studies, Law, Graduate Studies, Environmental Design and the MD program in the Cummings School of Medicine, were excluded. Taking this approach ensured a focused examination of the undergraduate transfer students who studied within credit bearing studies at the UCalgary.

## Grading Scale and Course/Credit Context

UCalgary employs a 4-point grading scale, a context which informed the performance analysis (Table 2)[4]. The data set included the 'First Maxi Term GPA' and the 'Last Maxi Term GPA' for each student which supported the various analyses related to success and performance. These GPA calculations represent the cumulative grade point averages at the end of the first term of study and at the point of last registration. While there were faculty differences at UCalgary with respect to calculating graduation GPAs, this complexity was not included to facilitate a broader methodology for determining success.[5]

The data file included a field category called 'Last Term Standing' which captures when students receive one of the following: Good Standing, Graduated, Probationary,[6] and Required to Withdraw. This information underpinned the graduation and completion analyses.

*Table 2: University of Calgary Grading Scale*

| Grade | Grade Point Value |
|-------|-------------------|
| A+    | 4                 |
| A     | 4                 |
| A-    | 3.7               |
| B+    | 3.3               |
| B     | 3                 |
| B-    | 2.7               |
| C+    | 2.3               |
| C     | 2                 |
| C-    | 1.7               |
| *D+   | 1.3               |
| *D    | 1                 |
| EW    | 0                 |
| F     | 0                 |
| **I   | 0                 |

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[1] For more details, visit http://www.ucalgary.ca/about/our-story/facts-and-figures

[2] Eyes High Strategy 2017-22, http://www.ucalgary.ca/sites/default/files/ucgy/groups/Marketing/17-UNV-016-Eyes%20High%20strategy%20document-digital-FINAL.pdf

[3] http://contacts.ucalgary.ca/directory/faculties

[4] http://www.ucalgary.ca/pubs/calendar/archives/2016/f-2.html

[5] For example, a Faculty practice might include using an average that excludes "*lower grades in repeated courses and/or grades in courses that are extra to the degree* (http://www.ucalgary.ca/pubs/calendar/archives/2016/f-5.html).

[6] http://www.ucalgary.ca/pubs/calendar/archives/2016/f-7.html

# Research Approach

## Methodology

The methodology for this study involved a quantitative analysis of student data over three fall cohorts – Fall 2008-09, Fall 2009-10, and Fall 2010-11. UCalgary staff provided at least six years of transfer and direct entry student data for each of these cohorts; the data excluded other entering classes (e.g., January, May). The quantitative analysis of the data for each of the success metrics involved the following:

- Average GPA calculation: for each cohort examined (i.e., transfer versus direct entry), the average GPAs were calculated at two points – at the end of first year (using the First Term Maxi GPA) and at the point of last registration or graduation (using the Last Term Maxi GPA). Two sets of calculations occurred: average GPAs for all students with grades regardless of exit reason and average GPAs for only those that graduated. Students with GPAs of zero were included in the calculations. For each calculation, the average GPA was derived by totaling up GPAs in the respective cohort and dividing the sum by the total number of students in that cohort.
- Completion Timing: for these calculations, the number of students that completed within three years, four years, between four to six years, and beyond six years were calculated for each Fall cohort beginning with their respective entry point.
- Graduation rates: calculating graduation rates was based on the total graduated divided by the total number of students initially registered in the fall cohort for each of the transfer and direct entry student cohorts.

Appendix A summarizes the student data fields along with associated definitions that undergirded the UCalgary quantitative analyses.

UCalgary registrarial staff supported this research by managing the Research Ethics Board approval process and providing information and interpretations regarding institutional context and coding structure for data in the student information system. Prior to passing the data sets to the researchers, UCalgary masked the personal identifying data for each student to preserve student privacy and anonymity in accordance with Alberta privacy regulations. The staff also analyzed the data to ensure that the correct cohorts of students were provided to the researchers, an exercise which involved a great deal of effort.

To facilitate Ethics Board approval, UCalgary coordinated the Ethics approval with both the Northern Alberta Institute of Technology (NAIT) and the researchers. The rationale for this approach was to support both this study and a separate NAIT study called '*Transfer Student Success: A Profile of Transfer Student Success at the Northern Alberta Institute of Technology*'. As with the UCalgary study, the NAIT research was completed with the support of ACAT funding. The two institutions' results are contained in distinct reports and should not be compared to one another given their very different contexts. Furthermore, these two ACAT projects were not intended to result in a comparative analysis between institutions but rather to function as case studies of different institutions.

## Considerations and Limitations

The study included undergraduate transfer and direct entry students admitted and enrolled in baccalaureate programs who had previous exposure to the Alberta system whether at the high school or post-secondary level. Students who transferred between faculties at UCalgary were included if they

began their studies in the fall of one of the following three cohorts: Fall 2008-09, Fall 2009-10, and Fall 2010-11. The data set did not include other students who had transferred in and out of UCalgary unless they were identified as a fall admit as of September in one of these fall cohorts. As mentioned, students entering in other entry points were not included. Therefore, the findings should not be extrapolated to represent the entirety of UCalgary. This intentional approach facilitated identifying specific control groups for both transfer and direct entry students to support the research study.

As the study was a quantitative analysis of a limited data set from a historical period, it was not possible to identify the reasons for several of the findings (e.g., why an enrolment decline occurred in a particular cohort, why females or males persisted or not, etc.). Therefore, further study is needed of both a qualitative and quantitative nature to understand the range of factors impacting transfer student success both at the individual institution level and at Alberta institutions across the province. This study represents an initial foray.

## Definitions Used in Study

**Average GPA:** refers to a calculated average used in this study to establish evidence of performance success. It is based on the number of students in a cohort and specific grade point average calculations for each student provided by UCalgary.

**Credits:** see Units

**Direct Entry Student Cohort:** refers to a student who entered the institution with a basis of admission of Alberta high school. For UCalgary, that did not include mature students. The students included comprised the undergraduate entering class to degree programs only for the three fall cohorts. Direct entry students with transfer credit were also included in this cohort.

**Fall Cohort Group:** refers to one of the three groups of student candidates included in this study; namely, Fall 2008-09; Fall 2009-10; Fall 2010-11.

**First Maxi Term GPA:** refers to the cumulative grade point averages achieved by students by the end of the first and second term of their studies.

**Full-time**: refers to "*students in a degree program who [were] registered in three or more courses or 9 units each Fall or Winter Term*."[7] The researchers were provided a data file that identified students as 'Full-time' or 'Part-time' with no information provided regarding the number of enrolled credits in any given term. As a result, if a student with a disability maintained a lower course load and yet remained classified as a full-time student, that information was masked to preserve privacy.

**Grade Point Average (GPA):** refers to the grade a student received for completing an array of courses at the institution. At UCalgary, grades are weighted to the value of the courses which are expressed in 'units' as opposed to credits.

**Last Maxi Term GPA:** refers to the cumulative grade point averages achieved by students for their entire studies at UCalgary as of the last point of registration.

**Part-Time Student:** refers to students in a degree program registered in no more than two courses or 6 units each Fall or Winter Term. The researchers were provided a data file that identified students as 'Full-time' or 'Part-time'; the number of enrolled credits in any given term was not provided.

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[7] http://www.ucalgary.ca/pubs/calendar/current/glossary-of-terms.html

**Primary Academic Plan Description:** refers to a student's program of study.

**Six Sector Model:** The Alberta system categorizes institutions according to a six sector model which includes the Comprehensive Academic and Research Institutes of which UCalgary is a member, Baccalaureate and Applied Studies Institutions, Polytechnical Institutions, Comprehensive Community Institutions, Independent Academic Institutions, and Specialized Arts and Culture Institutions.[8] The data provided for the research did not specify the names or categories of Alberta institutions students previously studied at prior to entering UCalgary.

**Successful Student:** success in the context of this study refers to a student that has achieved any of the following:

- Cumulative 2.00 GPA
  - Specifically, the students were considered successful if they provided demonstrable evidence of academic achievement in a credit bearing program by having a term grade point average that qualified them for graduation at either the point of graduation or at last point of registration. To avoid the challenges of faculty-specific differences and to accommodate UCalgary's context for grading practices, the 'First Term Maxi Grade' and the 'Last Term Maxi Grades' underpinned the performance analysis in this research.

- Graduation
  - As graduation criteria and expected overall grade point average can sometimes vary by program and credential, that graduation occurred was considered an indicator of success for this study as it indicates that a transfer student (and a high school student) met the expected outcomes to receive a credential from UCalgary.

- In Good Standing (or 'Eligible to Graduate')

  - Any student where their last term GPA was 2.00 or higher were considered successful. Those on academic probation were not included in this category.

**Transfer Credit:** refers to courses completed at other post-secondary institutions and accepted for credit towards a degree program at UCalgary.**[9]**

**Transfer Student Cohort:** for UCalgary, a transfer student is anyone that previously attended any post-secondary institution.**[10]** It does not include students granted transfer credit for workplace learning. The study included the undergraduate entering transfer student class for three fall cohorts to degree programs only including those that transferred between faculties at UCalgary; post-secondary undergraduate transfer students with and without transfer credit were included. Having noted this, select cohorts were excluded to ensure an Alberta focus. The cohort group was further refined as select programs and student types were excluded in the study (e.g., Open Studies, students who had never studied in the Alberta system prior to entering UCalgary, etc.). More details regarding the cohorts included and excluded are provided in the section called 'Research Data Set'.

**Units:** Units at UCalgary refer to a "…*value, or weighting, assigned to a course counting towards a degree or diploma. The term "credit" is also used. In 2007 the University of Calgary implemented a new computer system where the "unit" became the primary measurement of course weighting. Previously, courses were known as Full, Half, Quarter and Eighth Courses. Generally, these were converted as a full*

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[8] http://advancededucation.alberta.ca/post-secondary/institutions/public/types/
[9] http://www.ucalgary.ca/pubs/calendar/current/glossary-of-terms.html
[10] http://www.ucalgary.ca/pubs/calendar/current/glossary-of-terms.html

*course = 6 units, a half course = 3 units, a quarter course = 1.5 units and an eighth course = 0.75 units. Most degree programs require 120 units (20 full courses or FCE)."*

For the purposes of this study, 'units' and 'credits' are used interchangeably in this report.

**Unsuccessful Student:** refers to any student that did not achieve a 2.00 or was ineligible for any reason (e.g., required to withdraw).

# Overall University of Calgary Student Cohort Profile

## Alberta Focus

The data set included learners with previous exposure to the Alberta system prior to entering undergraduate studies at the University whether attained by attending an Alberta high school, an Alberta post-secondary institution, or both. All other students were excluded from the UCalgary analysis. This approach facilitated an analysis of the success of Alberta educated transfer students as compared to Alberta educated high school students. The underlying assumption for this approach was that transfer students who have previously experienced the Alberta system (whether through high school or post-secondary studies) provide a stronger control group and basis of comparison to Alberta high school direct entry students. The opportunity for this analysis became possible due to UCalgary's historical approach to capturing student information through the application and admissions process.

## The Research Data Set

The underlying data set included three Fall cohorts of undergraduate student data: Fall 2008-09, Fall 2009-10, and Fall 2010-11 respectively which allowed a sufficiently robust and stable data set for examining trends. The timing beginning with the Fall 2008-09 cohort further ensured at least six years of data for each student from the point of entry, facilitating a more nuanced analysis of success using completion rates and grade data at both the end of the first term and the end of the final term.

> The study examined three Fall cohorts and ensured a six-year time horizon for each to facilitate assessment of success and completion rates.

Table 3 summarizes the student sub-cohorts included in the study. Given the Project Team's early decision to avoid focusing on student cohorts with less than 10 students to preserve privacy, the sub-cohorts were collapsed at times into three broad categories for more detailed analysis.[11]

1. *Direct entry[12] Alberta high school students*

   This student cohort included any Alberta high school students that entered directly into UCalgary. A small subset of these students studied alternative curriculums while in high school which resulted in awarding of transfer credit (Fall 2008-09 cohort = 67; Fall 2009-10 cohort = 82, Fall 2010-11 cohort = 53; see Table 2). This typically results from pursuing enhanced educational experiences while seeking a high school diploma such as International Baccalaureate or dual credit curriculums.[13] As these students are traditionally considered high school students as opposed to transfer students, they were captured under the overall direct entry cohort. Although the study provides initial indicators, a future research opportunity exists to examine the success of these students more closely.

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[11] Cohort data findings below 10 were considered sensitive. In those situations, the students were either excluded, masked, or combined with other cohorts in subsequent analyses as appropriate to ensure anonymity and appropriate aggregation of the data findings.

[12] Direct entry in this context refers to those students who went from an Alberta high school directly into UCalgary.

[13] In Alberta, dual credit is specifically defined as "*programming that is authorized and funded by Alberta Education in which grade 10, 11, or 12 students can earn both high school credits and credits that count toward a post-secondary certificate, diploma, or degree, including a journeyperson certificate*" (Alberta Education. (2018). Alberta Dual Credit. Retrieved from https://education.alberta.ca/dual-credit/alberta-dual-credit/).

2. Alberta transfer students (regardless of amount transferred, if any)

   This student cohort encompassed transfer students who studied at either or both an Alberta college and an Alberta university. A small subset of these students also attended another out-of-province post-secondary institution prior to entering UCalgary (Table 4).

3. *Non*-Alberta university and college transfer students (regardless of amount transferred, if any)

   This group included students that began their education within the Alberta high school system, left Alberta to study post-secondary in another province, and subsequently returned to UCalgary. Given their previous exposure to the Alberta system through high school, they were included in the study. A very small subset of this group attended more than one post-secondary institution prior to UCalgary (Table 4).

Students who studied at more than one institution whether in Alberta or in another province prior to entering UCalgary represented approximately 5 to 6.5% of UCalgary's entering class in any given year in the fall cohorts examined for this study (Table 4).

Table 5 identifies the undergraduate student cohorts excluded from the research. The out-of-province high school student category represents the largest cohort in the "Other" category in this grouping. For UCalgary, these cohorts represent an area of future research focused exclusively on understanding and contrasting the success of out-of-province students.

*Table 3: Cohorts included in Study*

| Cohorts | Sub-Cohorts – Institutional Type Prior to entering UCalgary | Total Students | | | Comments |
| | | Fall 2008-09 | Fall 2009-10 | Fall 2010-11 | |
|---|---|---|---|---|---|
| Direct Entry Alberta High School Students | Attended Alberta High School | 2753 | 2934 | 2843 | Both Sub-Cohorts included in overall Direct Entry Student Cohort |
| | Attended Alberta High School and received Transfer Credit | 67 | 82 | 53 | |
| | **Cohort Sub-Totals** | **2820** | **3016** | **2896** | |
| Alberta Educated College and University Transfers | Attended AB College | 197 | 231 | 342 | Students attended either an AB or out-of-province high school. Some students may have also attended an out-of-province post-secondary institution. |
| | Attended AB University | 573 | 621 | 534 | |
| | Attended both AB College & AB University | 94 | 118 | 105 | |
| | **Cohort Sub-Totals** | **864** | **970** | **981** | |
| Out-of-Province Transfers (College + University) with Alberta High School | Attended AB High School & *Non*-AB College | 4 | 6 | 11 | Given the small numbers, these sub-cohorts were sometimes collapsed into one out-of-province student cohort in all subsequent analysis. Those who attended only non-Alberta high school and post-secondary studies were not included in the study. |
| | Attended AB High School & *Non*-AB university | 75 | 78 | 91 | |
| | Attended AB High School & both *Non*-AB college and *Non*-AB university | 2 | 4 | 2 | |
| | **Cohort Sub-Totals** | **81** | **88** | **104** | |
| **Column Totals** | | **3765** | **4074** | **3981** | |

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Table 4: Students who Studied at more than One Post-Secondary Institution

| Cohorts | Institutional Type Prior to entering UCalgary | Total Students | | | Comments |
|---|---|---|---|---|---|
| | | Fall 2008-09 | Fall 2009-10 | Fall 2010-11 | |
| Alberta College and Alberta University Transfers | Attended both AB College & **_Non_**-AB Post-Secondary Institution | 22 out of 197 | 23 out of 231 | 45 out of 342 | Students could have attended either an Alberta or out-of-province high school |
| | Attended both AB University & **_Non_**-AB Post-Secondary Institution | 79 out of 573 | 134 out of 621 | 87 out of 534 | |
| | Attended both AB College, AB University | 94 | 118 | 105 | |
| | **Sub Cohort Totals** | **195** | **275** | **237** | |
| Out-of-Province College and University | Attended an AB high school and both a Non-AB College and Non-AB University | 2 | 4 | 2 | Those who attended only non-Alberta high school and post-secondary were not included in the study. |
| Total students who studied at more than one post-secondary institution | **Total included in Study** | **197** | **279** | **239** | |
| | **Total NOT included in Study** | **25** | **38** | **33** | |
| | **% Students entering UCalgary each Year** | **222/ 4453 = 5%** | **317/ 4854 = 6.5%** | **272/ 4703 = 6%** | **As compared to the total entering in Fall** |

Table 5: Student Cohorts Excluded from Study

| Overall Cohort | Institutional Type Prior to entering UCalgary | Total Students | | | Comments |
|---|---|---|---|---|---|
| | | Fall 2008-09 | Fall 2009-10 | Fall 2010-11 | |
| Other Students | Attended Non-AB High School | 433 | 448 | 480 | These students had no experience studying in the Alberta system prior to entering UCalgary; therefore, they were excluded from the study. |
| | Attended Non-AB College & Non-AB High School | 40 | 52 | 52 | |
| | Attended Non-AB University & Non-AB High School | 190 | 233 | 157 | |
| | Attended Non-AB College, Non-AB University & Non-AB High School | 25 | 38 | 33 | |
| Total Students | **Excluded from Study** | **688 (15%)** | **771 (16%)** | **722 (15%)** | |
| | **Included in Study** | **3765 (85%)** | **4074 (84%)** | **3981 (85%)** | |
| | **Entering each Year** | **4453 (100%)** | **4854 (100%)** | **4703 (100%)** | |

# University of Calgary Findings

## Enrolment Status Profile

Figure 1 and Table 6 separate enrolment data between full-time and part-time status for each of the cohorts included in the study.[14] As mentioned earlier in the report, 'full-time' refers to "*students in a degree program who [were] registered in three or more courses or 9 units each Fall or Winter Term*."[15]

With respect to full-time status, several students transferred into UCalgary from other Alberta post-secondary institutions (Table 6); as a group, they consistently captured 22% to 24% of the overall full-time students in each of Fall 2008-09, 2009-10, and 2010-11 cohorts. In contrast, full-time direct entry students made up anywhere from 74% to 76% in any given year and out-of-province transfer students pursuing full-time studies comprised approximately 2% in each of the groupings. The data illustrate the relatively low part-time student numbers; however, one finding remains evident in the Table and the supporting Figure: transfer students captured a larger share of the part-time class in each of the Fall cohorts studied.

Sufficiently robust full-time student enrolments existed to support the focused analyses on success metrics later in the report. Where appropriate, the findings merged the out-of-province transfers with the overall transfer student cohort group to mitigate the small data sets. However, the study excluded part-time students from further analyses given the small 'n' counts.

*Figure 1: Overview of Entering Student Cohorts at the University of Calgary*
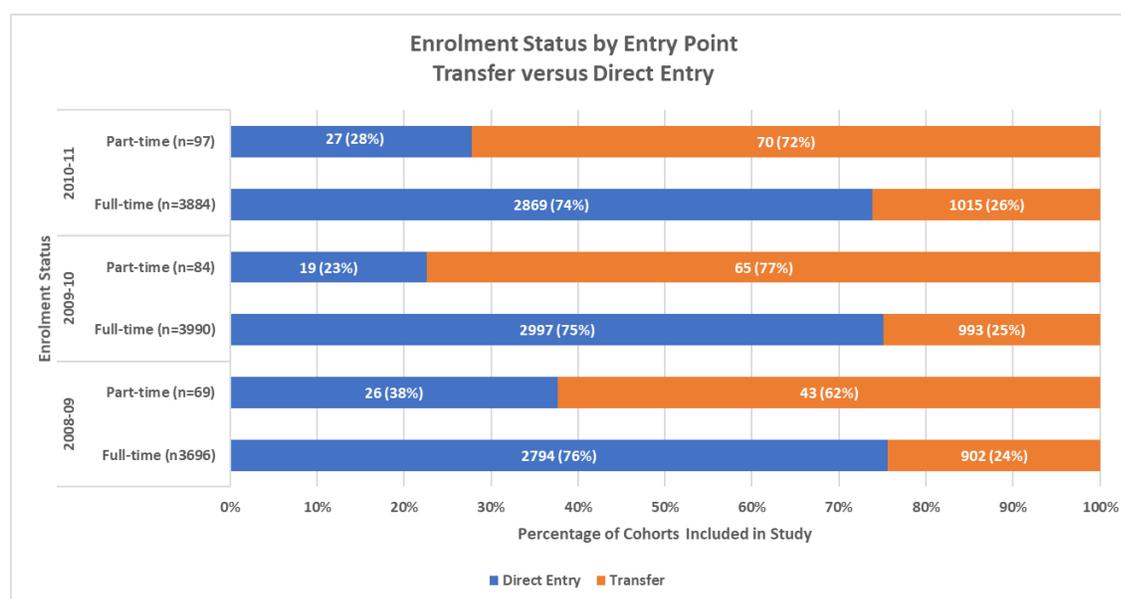


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*Table 6: Cohorts by Enrolment Status – Full-time versus Part-time*

| Student Cohort | 2008-09 | | 2009-10 | | 2010-11 | |
|---|---|---|---|---|---|---|
| Enrolment Status | Full-time | Part-time | Full-time | Part-time | Full-time | Part-time |
| **Direct Entry** | **2794 (76%)** | **26 (38%)** | **2997 (75%)** | **19 (23%)** | **2869 (74%)** | **27 (28%)** |
| Attended Alberta college | 194 | 3 | 220 | 11 | 322 | 20 |
| Attended Alberta university | 546 | 27 | 587 | 34 | 503 | 31 |
| Attended both Alberta college and university | 85 | 9 | 103 | 15 | 92 | 13 |
| **Alberta Transfer Students** | **825 (22%)** | **39 (57%)** | **910 (23%)** | **60 (71%)** | **917 (24%)** | **64 (66%)** |
| Attended non-Alberta college | 4 | | 6 | | 11 | |
| Attended non-Alberta university | 71 | 4 | 74 | 4 | 85 | 6 |
| Attended both non-Alberta college and university | 2 | | 3 | 1 | 2 | |
| **Out-of-Province Transfer Students** | **77 (2%)** | **4 (6%)** | **83 (2%)** | **5 (6%)** | **98 (2.5%)** | **6 (6%)** |
| Column totals | 3696 (100%) | 69 (100%) | 3990 (100%) | 84 (100%) | 3884 (100%) | 97 (100%) |

Figure 2 provides a more nuanced overview of the Alberta post-secondary transfers, illustrating the different types of transfer students who entered UCalgary directly from other institutions. While the overall numbers of Alberta transfer students increased slightly, the nature of the group changed.

o Alberta college transfers represented the second largest cohort of Alberta transfer students. Their proportional share of the cohort group increased (from 24% for the Fall 2008-09 and 2009-10 cohorts to 35% for the Fall 2010-11 cohort).
o Conversely, the absolute numbers and the proportion of Alberta university transfer students - the largest pool of transfers - decreased from 66% (546) in the Fall 2008-09 group to 55% (503) in the Fall 2010-11 group.
o The proportion of students who studied in more than one post-secondary institution stayed at around 10%-11% for Alberta post-secondary institutions.
o The percentage of out-of-province university transfer students as a share of all out-of-province transfer students declined from the Fall 2008-09 to the 2010-11 cohort (92%, 89%, 87%). Out-of-province college transfer students represented a small proportion of the out-of-province pool.[16]

Most of the subsequent success analyses combined the data for in- and out-of-province given the low 'n' counts.

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[16] If all out-of-province students included those without prior exposure to the Alberta education system, these results would be much higher.

*Figure 2: Transfer Students – In-Province versus Out-of-Province (Full-time)*
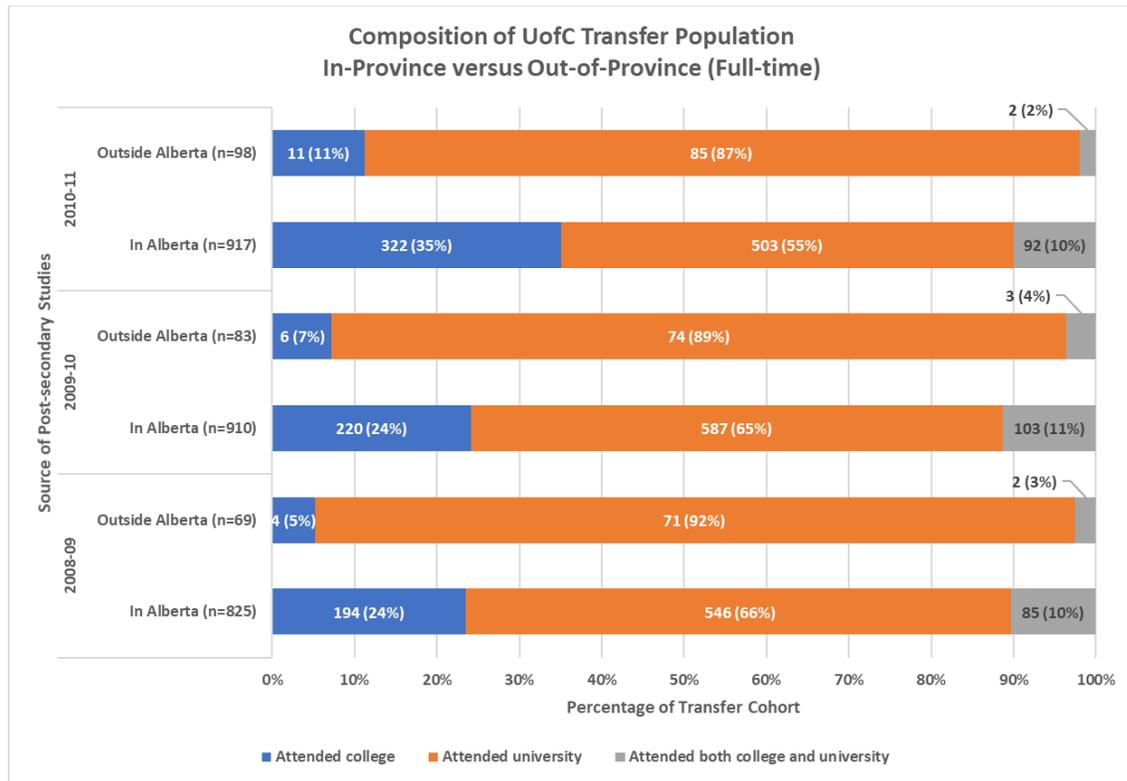
## Faculty Profile

### Faculty and Program Inclusions and Exclusions

The study excluded select faculties and programs, representing decisions made in collaboration with UCalgary registrarial leadership (Table 7). In all cases, the exclusions including the data adjustment for Werklund's concurrent program to mitigate double counting, facilitated focus and comparable control groups for both transfer and direct entry students. All the faculties included in the study offer entry into the first year (or to upper year if students are awarded the equivalent of 30 units or more in transfer credit) and transfer pathway programs. At UCalgary, Arts is sometimes used as a bridge by students (both direct entry and transfer) to prepare for a move into Haskayne or Science after finishing prerequisite preparation or improving grade point averages (personal communications, August 2017).

*Table 7: UCalgary Programs Included and Excluded from the Study*

| Included (Bachelor programs only) | Excluded |
|---|---|
| Faculty of Science<br>Faculty of Arts<br>Faculty of Kinesiology<br>Haskayne School of Business<br>Faculty of Nursing<br>Schulich School of Engineering<br>Cumming School of Medicine – Bachelor of Health Sciences, Bachelor of Community Rehabilitation (Only undergraduate programs were included.)<br>Werklund School of Education (Data adjustments included moving these students into their primary faculty to mitigate double counting; therefore, while included, the data were not separately reflected.) | • Graduate programs<br>• Veterinary Medicine<br>• Medicine - MD<br>• Law<br>• Social Work<br>• Werklund School of Education - After Degree<br>• Nursing (Qatar)[17] - The study excluded the Qatar program as registered students at that campus receive all instruction onsite in Doha; hence, limiting their exposure to the Alberta campus environment.<br>• Open Studies students and students transferring into a UCalgary degree program from Open Studies[18]<br>• International Foundations Program (IFP) for English Language training[19] |

## Faculty Enrolment Profile

Comparing direct entry to transfer students by faculty and by degree illustrates the proportional differences in enrolment between transfer and direct entry (Figure 3 and Tables 8 to 11). The data indicate that a higher proportion of transfer students tended to study in Arts (Figure 3). More direct entry students were proportionally represented in Schulich, Haskayne, and Science. In any of the cohort years examined and across all faculties, the overall split between direct entry and transfer students represented approximately 75% to 25% (Table 8).[20] For example, in the Fall 2008-09 cohort, 2782 direct entry versus 914 transfer students pursued full-time studies at UCalgary.

Table 9 compares direct entry to transfer enrolment by degree in each of the faculties. While larger numbers of transfer students studied in Arts and Sciences degrees, there were proportionally fewer in Science degrees. These findings validated choosing two specific and potentially different faculties when exploring success of transfer versus direct entry students. Figure 4 and Table 10 examined the Fall cohorts by program clusters which are based on CIP codes although with select adjustments made.[21] Tikina's research (2015), a review of the updated CIP codes (2011), and consideration of the context for

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[17] Students studying at the Qatar campus of UCalgary pursue their entire academic program within Qatar and have no exposure to studying within the province (see http://www.ucalgary.ca/about/our-campuses/qatar-campus).
[18] Open Studies students take university credit courses prior to admission to the UCalgary (see http://www.ucalgary.ca/future-students/open-studies)
[19] IFP students pursue linguistic upgrading prior to entry to degree studies http://werklund.ucalgary.ca/ifp/
[20] As a reminder, the study considered direct entry and transfer students with prior exposure to the Alberta system whether in high school or post-secondary; therefore, this split does not reflect a breakdown of the entire class for each Faculty.
[21] UCalgary offers programs such as East Asian Studies, English, and Latin American studies. These were placed in Arts and Sciences rather than into CIP code groupings like Ethnic Studies. There were several students within select degree programs (e.g., Arts) with undeclared majors; these were placed in Arts and Sciences. The Bachelor of Science students in Kinesiology were also placed in Arts and Sciences rather than a separate category under Recreation and Leisure. To the extent possible, an attempt was made to match the program clustering approach used by A. Tikina (2015) and to cluster programs that made logical sense in the context of this study. (CIP Code references: Retrieved from http://www.statcan.gc.ca/pub/12-590-x/12-590-x2012001-eng.pdf)

this study resulted in the program clustering used. This also supported the choice of conducting a closer examination of Arts and Science students.[22]

In each fall cohort group, a select number moved between faculties and ultimately finished in a one different from the initial faculty to which they were admitted (Table 11). Faculty specific findings considered this reality.[23] The small 'n' counts for the other faculties impeded additional detailed analysis.

*Figure 3: Faculty Profiles – Transfer versus Direct Entry (Full-time)*



**Faculty Profile of Student Cohorts**
**Transfer versus Direct Entry (Full-time)**

Legend:
- Cumming School of Medicine (bachelors only)
- Faculty of Arts
- Faculty of Kinesiology
- Faculty of Nursing
- Faculty of Science
- Haskayne School of Business
- Schulich School of Engineering

**2010-11**

Transfer (n=1023): 29 (3%), 543 (53%), 72 (7%), 22 (2%), 188 (18%), 51 (5%), 118 (12%)

Direct Entry (n=2861): 113 (4%), 771 (27%), 95 (3%), 124 (4%), 880 (31%), 422 (15%), 456 (16%)

**2009-10**

Transfer (n=1017): 24 (2%), 497 (49%), 58, 6%, 49 (5%), 207 (20%), 85 (8%), 97 (10%)

Direct Entry (n-2973): 72 (2%), 1018 (34%), 91 (3%), 102 (3%), 830 (28%), 390 (13%), 470 (16%)

**2008-09**

Transfer (n=914): 23 (3%), 488 (53%), 46 (5%), 33 (4%), 146 (16%), 113 (12%), 65 (7%)

Direct Entry (n=2782): 89 (3%), 764 (27%), 76 (3%), 95 (3%), 826 (30%), 420 (15%), 512 (18%)

Percentage of Student Cohort

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[22] Citations are included in the literature review submitted in the report called *A Literature Review: Transfer Student Success at the University of Calgary and the Northern Alberta Institute of Technology*, which supported both the NAIT and UCalgary studies.

[23] The analysis of success for Arts and Science later in the report mitigated the impact by focusing exclusively on those that remained in their home faculties throughout their entire time at UCalgary.

Table 8: Student Cohorts by Faculty (Full-time)

| Faculty | Fall 2008-09 Cohort | | | Fall 2009-10 Cohort | | | Fall 2010-11 Cohort | | |
|---|---|---|---|---|---|---|---|---|---|
| | Direct Entry | Transfer | Faculty Total | Direct Entry | Transfer | Faculty Total | Direct Entry | Transfer | Faculty Total |
| Cumming School of Medicine (bachelors only) | 89 (79%) | 23 (21%) | 112 (100%) | 72 (75%) | 24 (25%) | 96 (100%) | 113 (80%) | 29 (20%) | 142 (100%) |
| Faculty of Arts | 764 (61%) | 488 (39%) | 1252 (100%) | 1018 (67%) | 497 (33%) | 1515 (100%) | 771 (59%) | 543 (41%) | 1314 (100%) |
| Faculty of Kinesiology | 76 (62%) | 46 (38%) | 122 (100%) | 91 (65%) | 49 (35%) | 140 (100%) | 95 (57%) | 72 (43%) | 167 (100%) |
| Faculty of Nursing | 95 (74%) | 33 (26%) | 128 (100%) | 102 (64%) | 58 (36%) | 160 (100%) | 124 (85%) | 22 (15%) | 146 (100%) |
| Faculty of Science | 826 (85%) | 146 (15%) | 972 (100%) | 830 (80%) | 207 (20%) | 1037 (100%) | 880 (82%) | 188 (18%) | 1068 (100%) |
| Haskayne School of Business | 420 (79%) | 113 (21%) | 533 (100%) | 390 (82%) | 85 (18%) | 475 (100%) | 422 (89%) | 51 (11%) | 473 (100%) |
| Schulich School of Engineering | 512 (89%) | 65 (11%) | 577 (100%) | 470 (83%) | 97 (17%) | 567 (100%) | 456 (79%) | 118 (21%) | 574 (100%) |
| Student Cohort Totals | 2782 (75%) | 914 (25%) | 3696 (100%) | 2973 (75%) | 1017 (25%) | 3990 (100%) | 2861 (74%) | 1023 (26%) | 3884 (100%) |

Table 9: Student Cohorts by Faculty and Degree – Direct Entry versus Transfer (Full-time)

| Faculty and Degrees | Fall 2008-09 Cohort | | | Fall 2009-10 Cohort | | | Fall 2010-11 Cohort | | |
|---|---|---|---|---|---|---|---|---|---|
| | Direct Entry | Transfer | Row Total | Direct Entry | Transfer | Row Total | Direct Entry | Transfer | Row Total |
| **Cumming School of Medicine** | **89** | **23** | **112** | **72** | **24** | **96** | **113** | **29** | **142** |
| Bachelor of Community Rehabilitation | 7 | 16 | 23 | 4 | 20 | 24 | 17 | 25 | 42 |
| Bachelor of Health Sciences - Honours | 82 | 7 | 89 | 68 | 4 | 72 | 96 | 4 | 100 |
| **Faculty of Arts** | **764** | **488** | **1252** | **1018** | **497** | **1515** | **771** | **543** | **1314** |
| Bachelor of Arts/Bachelor of Arts – Honours* | 457 | 325 | 782 | 607 | 325 | 932 | 468 | 344 | 812 |
| Bachelor of Communication and Culture/ Bachelor of Communications Studies** | 17 | 42 | 59 | 17 | 43 | 61 | 11 | 40 | 51 |
| Bachelor of Fine Arts/Bachelor of Film Studies/Bachelor of Music* | 54 | 16 | 70 | 64 | 16 | 80 | 61 | 25 | 86 |
| Bachelor of Science | 38 | 18 | 56 | 55 | 20 | 75 | 47 | 21 | 68 |
| No Degree Declared | 198 | 87 | 285 | 274 | 93 | 367 | 184 | 113 | 297 |
| **Faculty of Kinesiology** | **76** | **46** | **122** | **91** | **49** | **140** | **95** | **72** | **167** |
| Bachelor of Kinesiology | 59 | 40 | 99 | 56 | 43 | 99 | 60 | 66 | 126 |
| Bachelor of Science | 17 | 6 | 23 | 35 | 6 | 41 | 35 | 6 | 41 |
| **Faculty of Nursing** | **95** | **33** | **128** | **102** | **58** | **160** | **124** | **22** | **146** |
| Bachelor of Nursing | 95 | 17 | 112 | 102 | 14 | 116 | 124 | 22 | 146 |

| Faculty and Degrees | Fall 2008-09 Cohort | | | Fall 2009-10 Cohort | | | Fall 2010-11 Cohort | | |
|---|---|---|---|---|---|---|---|---|---|
| | Direct Entry | Transfer | Row Total | Direct Entry | Transfer | Row Total | Direct Entry | Transfer | Row Total |
| Bachelor of Nursing (Accelerated) | | 16 | 16 | | 44 | 44 | | | |
| **Faculty of Science** | **826** | **146** | **972** | **830** | **207** | **1037** | **880** | **188** | **1068** |
| Bachelor of Science | 776 | 135 | 911 | 803 | 207 | 1010 | 852 | 188 | 1040 |
| Bachelor of Science - Honours | 18 | | 18 | 27 | | 27 | 28 | | 28 |
| No Degree Declared | 32 | 11 | 43 | | | | | | |
| **Haskayne School of Business** | **420** | **113** | **533** | **390** | **85** | **475** | **422** | **51** | **473** |
| Bachelor of Commerce/Bachelor of Hotel and Resort Management* | 420 | 113 | 533 | 390 | 85 | 475 | 422 | 51 | 473 |
| **Schulich School of Engineering** | **512** | **65** | **577** | **470** | **97** | **567** | **456** | **118** | **574** |
| Bachelor of Science | 512 | 65 | 577 | 470 | 97 | 567 | 456 | 118 | 574 |
| **Student Cohort Totals** | **2782** | **914** | **3696** | **2973** | **1017** | **3990** | **2861** | **1023** | **3884** |

*A finding was considered sensitive if the row or column totals in each Fall cohort year fell below 10. In those instances, the degrees were paired with like degrees. Otherwise, the data in cells below 10 were included.*

*\*\* Information was not provided as to why the transfer student cohort was higher in these degree programs.*

*Figure 4: Program Clusters – Transfer versus Direct Entry*
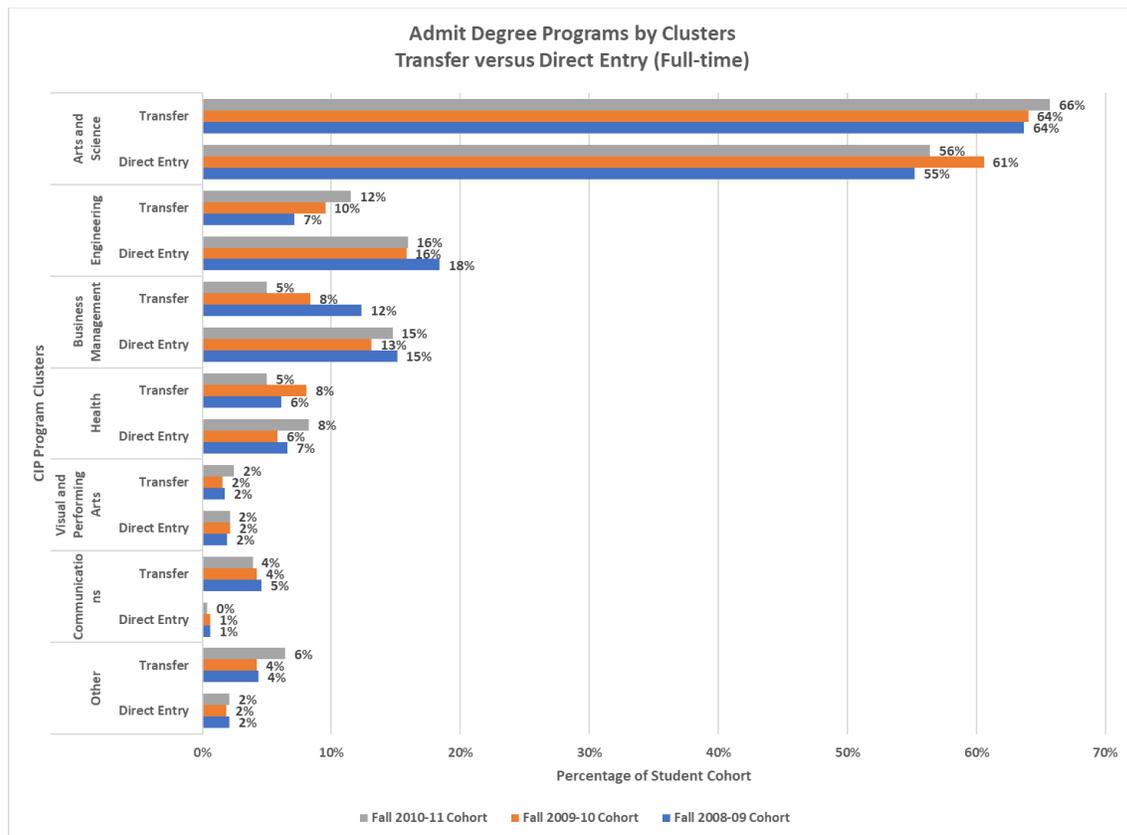
*Table 10: Program Clusters*

| Fall Cohort | 2008-09 | | 2009-10 | | 2010-11 | |
|---|---|---|---|---|---|---|
| Student Cohort | Direct Entry (n=2782) | Transfer (n=914) | Direct Entry (n=2973) | Transfer (n=1017) | Direct Entry (n=2861) | Transfer (n=1023) |
| Arts and Science | 55% | 64% | 61% | 64% | 56% | 66% |
| Engineering | 18% | 7% | 16% | 10% | 16% | 12% |
| Business and Management | 15% | 12% | 13% | 8% | 15% | 5% |
| Health | 7% | 6% | 6% | 8% | 8% | 5% |
| Visual and Performing Arts | 2% | 2% | 2% | 2% | 2% | 2% |
| Communications | 1% | 5% | 1% | 4% | 0% | 4% |
| Other | 2% | 4% | 2% | 4% | 2% | 6% |
| | 100% | 100% | 100% | 100% | 100% | 100% |

| Overall Cohort Group | Faculty Status | Student Cohort | Faculty of Arts | Faculty of Science | All Other Faculties |
|---|---|---|---|---|---|
| **Fall 2008-09 Cohort** | **Remained in Faculty** | Direct Entry | 688 | 618 | 1041 |
| | | Transfer | 463 | 123 | 324 |
| | | Total | 1151 (92%) | 741 (76%) | 1365 (93%) |
| | **Moved to other Faculties by Last Point of Registration** | Direct Entry + Transfer | 101 (8%) | 231 (24%) | 107 (7%) |
| | **Total Students** | Direct Entry + Transfer | 1252 (100%) | 972 (100%) | 1472 (100%) |
| **Fall 2009-10 Cohort** | **Remained in Faculty** | Direct Entry | 900 | 608 | 993 |
| | | Transfer | 456 | 170 | 338 |
| | | Total | 1356 (90%) | 778 (75%) | 1331 (92%) |
| | **Moved to other Faculties by Last Point of Registration** | Direct Entry + Transfer | 159 (10%) | 259 (25%) | 107 (7%) |
| | **Total Students** | Direct Entry + Transfer | 1515 (100%) | 1037 (100%) | 1438 (100%) |
| **Fall 2010-11 Cohort** | **Remained in Faculty** | Direct Entry | 694 | 662 | 1020 |
| | | Transfer | 481 | 157 | 362 |
| | | Total | 1175 (89%) | 819 (77%) | 1382 (92%) |
| | **Moved to other Faculties by Last Point of Registration** | Direct Entry + Transfer | 139 (11%) | 249 (23%) | 120 (8%) |
| | **Total Students** | Direct Entry + Transfer | 1314 (100%) | 1068 (100%) | 1502 (100%) |

## Student Demographic Profile

### Gender Profile

For each of the fall cohorts, females comprised a larger proportion versus males of the overall transfer and direct entry student cohorts. The only exception was for the Fall 2009-10 cohort where a 50% split existed between direct entry and transfer students (Figure 5).[24] Differences existed by faculty when comparing gender within each of the student cohorts (direct entry and transfer) (Table 12). Faculties with primarily female transfer and direct entry students included the bachelor programs in the Cumming School of Medicine, Arts, Kinesiology and Nursing (green shading, Table 12). More male transfer

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[24] A very small number of students did not declare their gender. Any further gender analysis excludes these students as the small 'n' counts render any conclusions unreliable. For this same reason, separate analysis of students who identified as Aboriginal could not occur.

students enrolled in Science although variance existed for direct entry students (pink shading, Table 12). There was variation evident in Haskayne as well.

Sufficiently sized data sets existed to support analysis of success across the gender dimension overall and for Arts and Science.

*Figure 5: Gender Profile – Transfer versus Direct Entry (Full-time)*
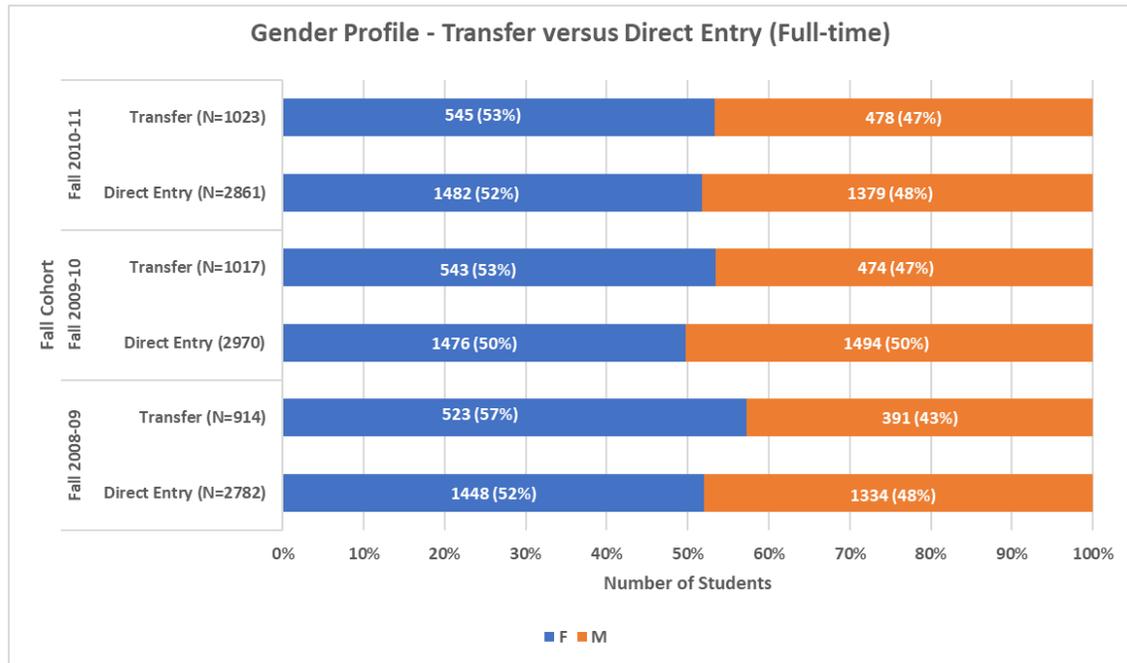


*Table 12: Gender Comparisons by Faculty – Transfer versus Direct Entry (Full-time)*

| Fall Cohort | Fall 2008-09 Cohort | | | | Fall 2009-10 Cohort | | | | | Fall 2010-11 Cohort | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Student Cohort | Direct Entry | | Transfer | | Direct Entry | | | Transfer | | Direct Entry | | Transfer | |
| Gender | F | M | F | M | F | M | Not reported | F | M | F | M | F | M |
| Cumming School of Medicine | 64% | 36% | 78% | 22% | 58% | 40% | 1% | 92% | 8% | 73% | 27% | 86% | 14% |
| Faculty of Arts | 64% | 36% | 63% | 37% | 61% | 39% | 0.1% | 58% | 42% | 63% | 37% | 63% | 37% |
| Faculty of Kinesiology | 74% | 26% | 63% | 37% | 62% | 38% | | 73% | 27% | 55% | 45% | 60% | 40% |
| Faculty of Nursing | 93% | 7% | 91% | 9% | 87% | 13% | | 88% | 12% | 91% | 9% | 86% | 14% |
| Faculty of Science | 50% | 50% | 48% | 52% | 45% | 55% | | 43% | 57% | 52% | 48% | 38% | 62% |
| Haskayne School of Business | 54% | 46% | 51% | 49% | 46% | 54% | 0.3% | 52% | 48% | 46% | 54% | 49% | 51% |
| Schulich School of Engineering | 23% | 77% | 18% | 82% | 25% | 75% | | 11% | 89% | 22% | 78% | 14% | 86% |

*Green shading denotes primarily female; pink shading denotes primarily male. Subsequent success analytics related to gender excluded those students with where gender was unknown. The above chart masks cell specific 'n' counts.*

## Citizenship Profile

UCalgary students examined were primarily Canadian citizens in all the fall cohorts (Figure 6). Proportionally, the transfer student cohort was more diverse in terms of immigration status; however, insufficient counts existed to facilitate analyses of success across this dimension. For that reason, the report provides no further comment regarding status in Canada. This represents an area of future research should the numbers increase.

*Figure 6: Citizenship Profile - Transfer versus Direct Entry (Full-time)*
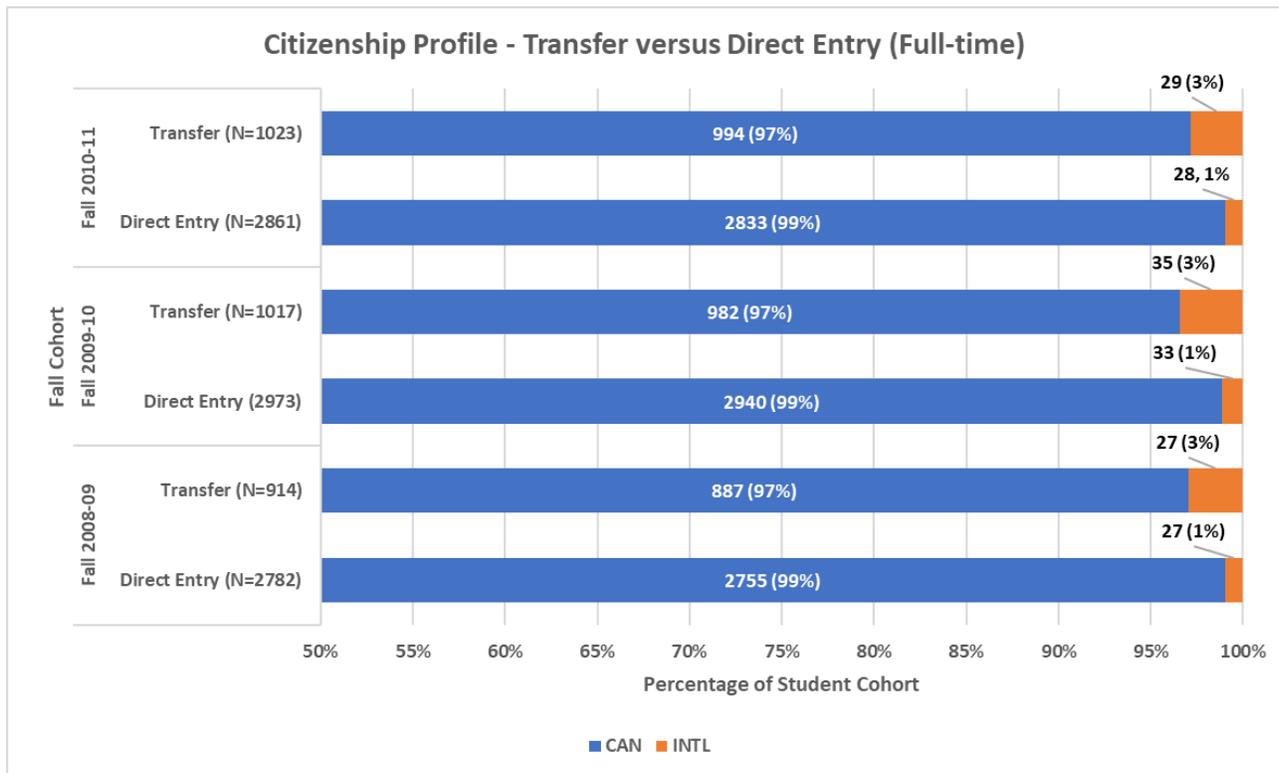


## Transfer Credit Profile – Awarded at Admissions

Not all transfer students received credit from UCalgary for prior post-secondary level studies (Table 13). On a proportional basis, 11%, 10%, and 14% of the Fall 2008-09, 2009-10, and 2011-11 cohorts did not receive credit.

As previously mentioned, the data set included direct entry students who received credit for participating in alternative secondary level programs such as the International Baccalaureate or in Advanced Placement Courses. The analysis below includes these students given the size of the cohort (Fall 2008-09 = 67 students, Fall 2009-10 = 79 students; Fall 2010-11 = 53 students).

Typically, transfer students received more than 40 units in transfer credit through admissions while a subset of direct entry students received only 18 units (Table 13). For transfer students, this equates to 13 or more 3-unit courses, equaling a minimum of a year of study or 33% of a 120-unit (40 course) degree. As such, most appeared to enter UCalgary in second year. Direct entry students tended to receive approximately six 3-unit courses representing 15% of a 120 unit/40 course programs (i.e., slightly more than half of a first term).

*Table 13: Transfer Credit – Transfer versus Direct Entry Students (Full-time)*

| Received Transfer Credit | | No | % | Yes | % | Average Transfer Credits/Units Awarded | Total Students |
|---|---|---|---|---|---|---|---|
| **Fall 2008-09** | Transfer | 96 | 11% | 818 | 89% | 44 credits (7.3 x 3-unit courses) | 914 |
| | Direct Entry | 2715 | 98% | 67 | 2% | 18 (3 3-unit courses) | 2782 |
| | **Total** | **2811** | **76%** | **885** | **24%** | | **3696** |
| **Fall 2009-10** | Transfer | 100 | 10% | 917 | 90% | 43 (7.2 x 3-unit courses) | 1017 |
| | Direct Entry | 2894 | 97% | 79 | 3% | 19 (3.2 3-unit courses) | 2973 |
| | **Total** | **2994** | **75%** | **996** | **25%** | | **3990** |
| **Fall 2010-11** | Transfer | 148 | 14% | 875 | 86% | 41 (6.8 x 3-unit courses) | 1023 |
| | Direct Entry | 2808 | 98% | 53 | 2% | 18 (3 x 3-unit courses) | 2861 |
| | **Total** | **2956** | **76%** | **928** | **24%** | | **3884** |

# Transfer Student Success

## GPA

The average GPA findings indicate both transfer and direct entry students improved their academic standing from end of first year to the last time they were registered at the University (Figure 7, Table 14). Apart from the Fall 2010-11 cohort, transfer students finished their first year with a lower average GPA than direct entry students; however, they achieved the same GPA level as direct entry students by the end of the last known registration period. The Fall 2010-11 cohort exhibited greater variance between transfer and direct entry students; the transfer cohort finished with an average of 2.82, whereas direct entry students finished with an average of 3.03. These data included both students who graduated and those who did not graduate regardless of reason.

Controlling for those who graduated indicates that both groups of students performed at even higher performance levels as measured by average GPA at the end of first year and at point of graduation (Figure 8). The difference between the averages identified for both transfer students and direct entry students in Tables 14 and 15 suggest direct entry students tended to improve the most.

The data suggest transfer students at UCalgary performed as successfully as direct entry students. Furthermore, both cohorts improved over time, with those that persisted to graduation being most successful. Additional research to explore why students in good standing do not appear to persist to graduation is suggested.

*Figure 7: Average GPA Comparison – All Students*
*Transfer versus Direct Entry (Full-time)*
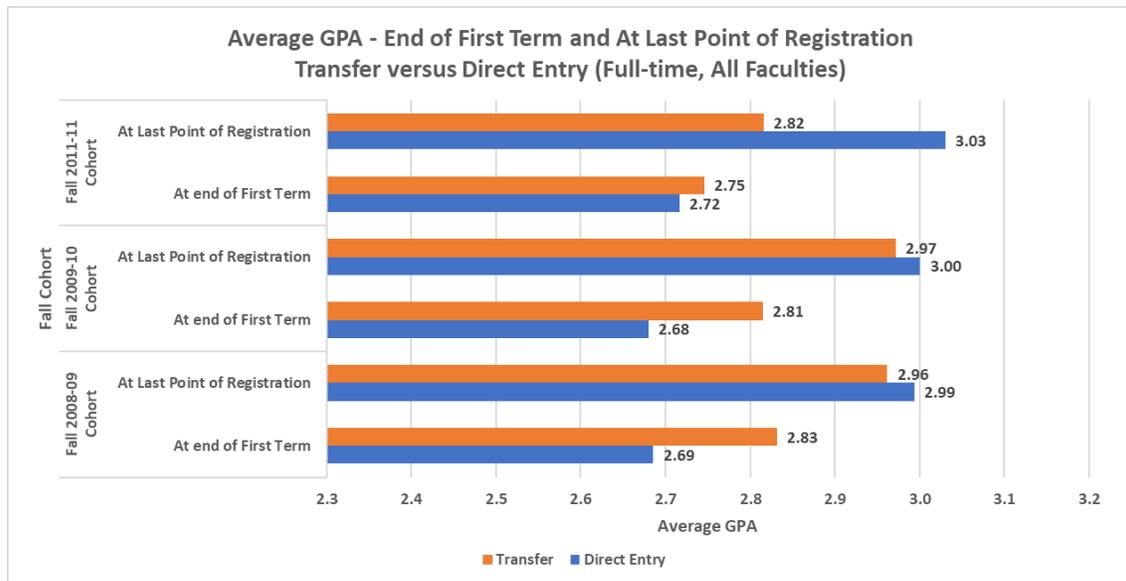
Table 14: Average GPAs – Transfer versus Direct Entry (Full-time)

| Student Cohort | Fall 2008-09 Cohort | | Fall 2009-10 Cohort | | Fall 2010-11 Cohort | |
|---|---|---|---|---|---|---|
| | Direct Entry (n=2782) | Transfer (n=914) | Direct Entry (n=2973) | Transfer (n=1017) | Direct Entry (n=2861) | Transfer (n=1023) |
| First Term GPA - Average | 2.69 | 2.83 | 2.68 | 2.81 | 2.72 | 2.75 |
| Last Term GPA -Average | 2.99 | 2.96 | 3.00 | 2.97 | 3.03 | 2.82 |
| Difference | 0.3 | 0.13 | 0.32 | 0.16 | 0.31 | 0.07 |

Figure 8: Average GPA Comparison – Graduates Only
Transfer versus Direct Entry (Full-time)
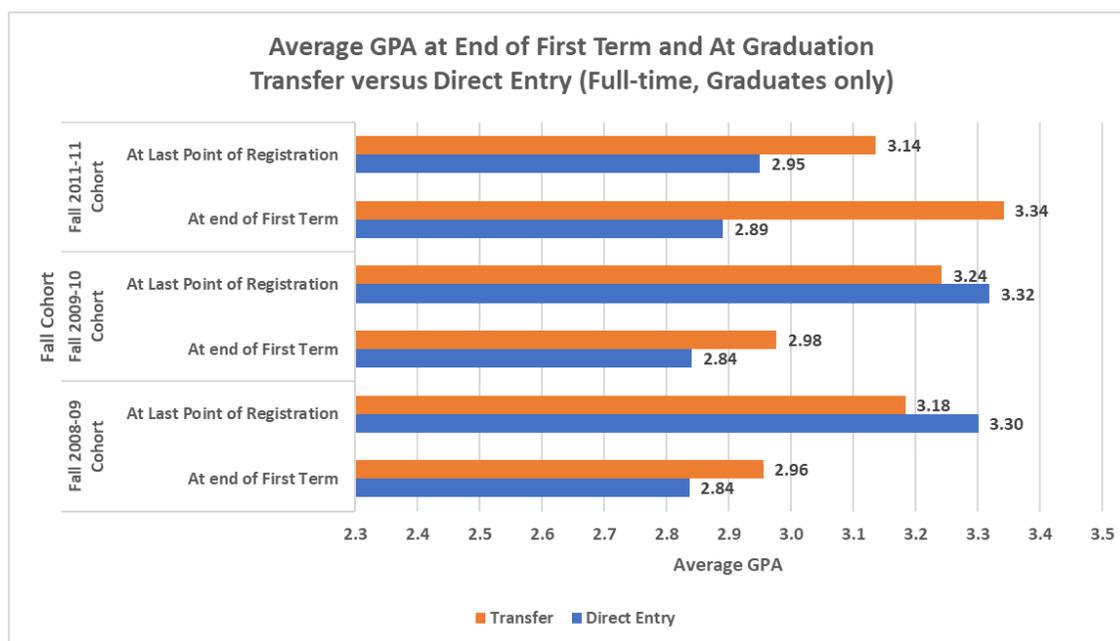


Table 15: Average GPAs - Graduates Only – Transfer versus Direct Entry (Full-time)

| Student Cohort | Fall 2008-09 Cohort | | Fall 2009-10 Cohort | | Fall 2010-11 Cohort | |
|---|---|---|---|---|---|---|
| | Direct Entry (n=2117) | Transfer (n=734) | Direct Entry (n=2215) | Transfer (n=782) | Direct Entry (n=2132) | Transfer (n=714) |
| First Term GPA - Average | 2.84 | 2.96 | 2.84 | 2.98 | 2.89 | 2.95 |
| Last Term GPA -Average | 3.30 | 3.18 | 3.32 | 3.24 | 3.34 | 3.14 |
| Difference | 0.46 | 0.22 | 0.38 | 0.26 | 0.45 | 0.19 |

## Graduation Rates and Degree Completion

Apart from the Fall 2010-11 cohort, transfer students graduated at a proportionally higher rate than direct entry students although the overall numbers for both student cohorts declined (Figure 9). Those that did not graduate were either eligible (referenced as 'Good Standing' at UCalgary) or ineligible to continue. Transfer students were eligible to continue at the same or higher rates than direct entry students (Figure 10). Those that remained ineligible did so at the same or lower rate than direct entry students. A review of completion rates indicate that transfer students graduated earlier than direct

entry students (Figure 11) suggesting that UCalgary's transfer credit practices result in expected outcomes.

The review of graduation and completion rates suggests transfer students were as successful (or more) at reaching degree completion as direct entry students. As with the GPA analysis, further research is suggested to understand the decline in the absolute numbers of graduates, as it may inform programming that supports further persistence to graduation.

As a cautionary reminder, these rates should not be interpreted as reflecting overall institutional indicators. The cohorts examined did not represent all students studying at UCalgary.

*Figure 9: Graduation Rates - Transfer versus Direct Entry (Full-time, All Faculties)*
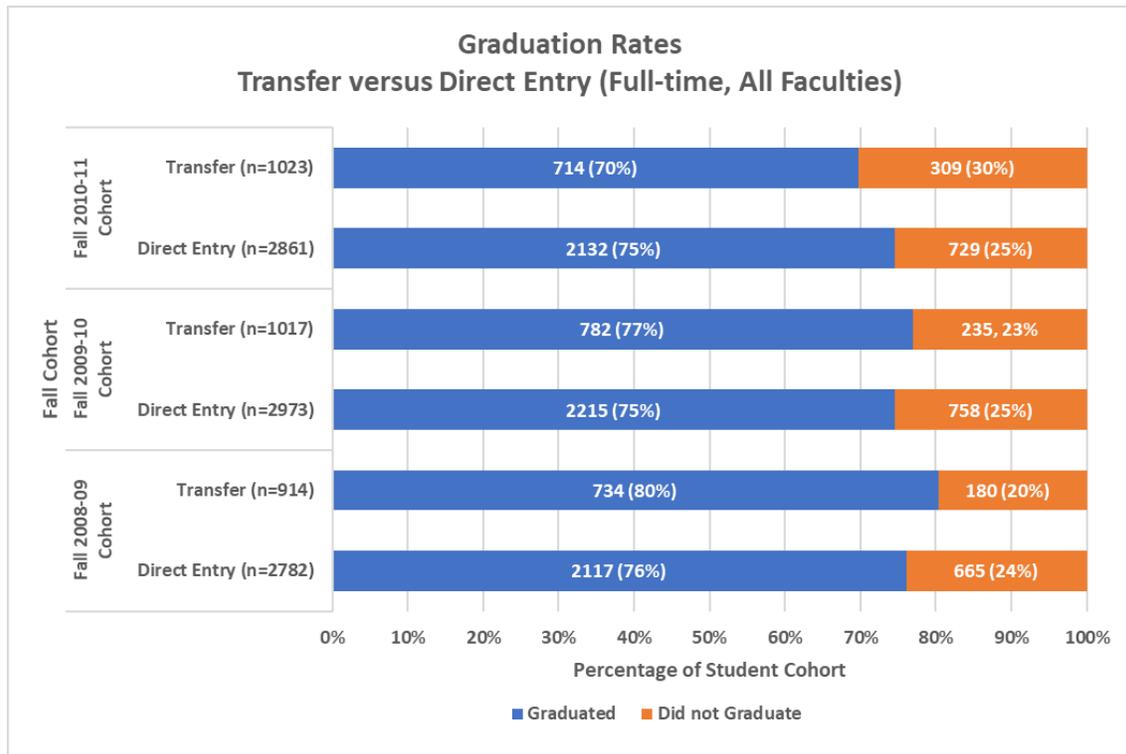
Figure 10: Rates - Graduation, Eligible, and Ineligible to Continue
Transfer versus Direct Entry (Full-time, All Faculties)
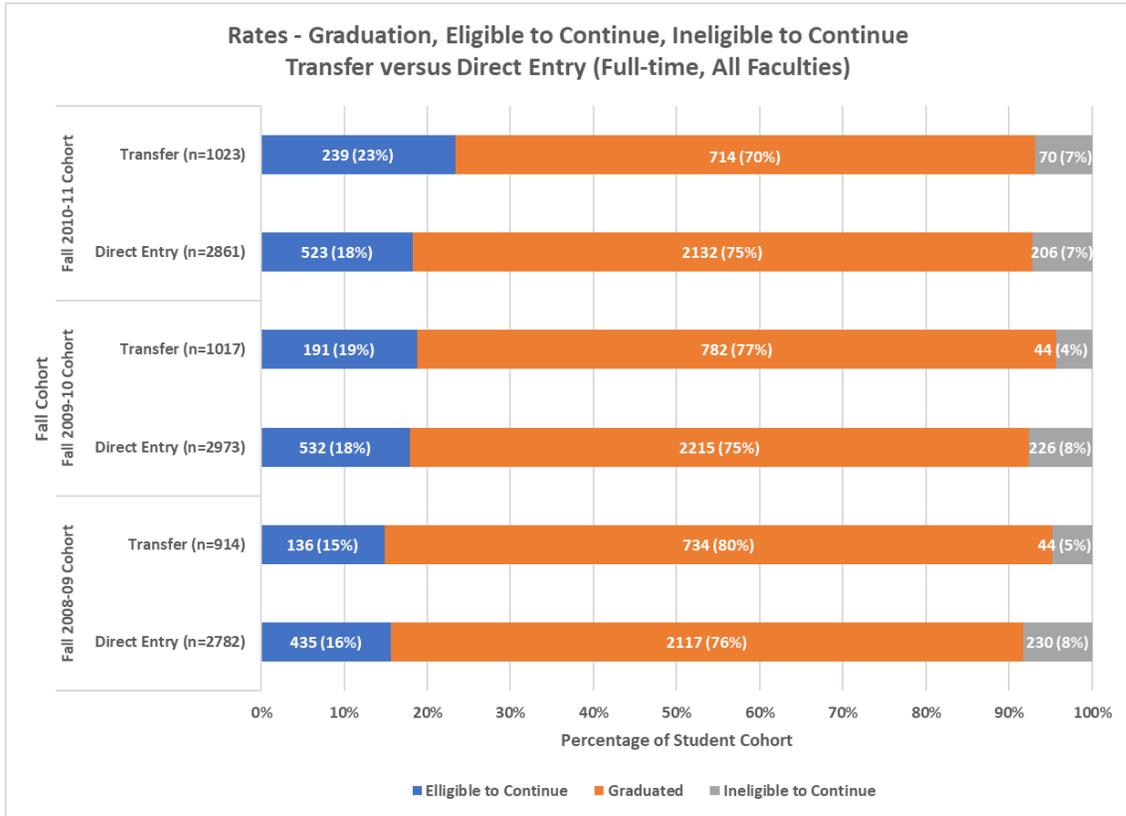


Figure 11: Completion Rates - Full-time, All Faculties
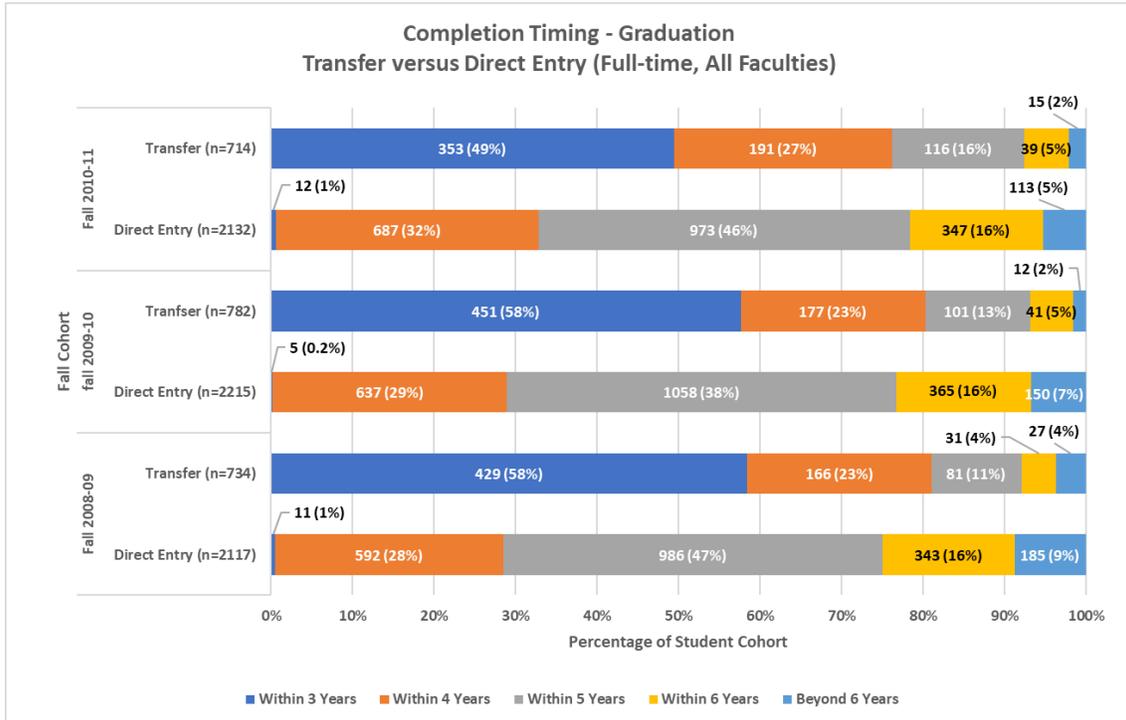
## Source of Prior Post-Secondary Studies and Graduation Rates

Graduation rates for Alberta transfer students were similar to the overall graduation rates for all other transfer students (Figure 12). Rates for out-of-province transfer students ranged from 76% to 78% for the three fall cohort groups. Graduation rates were higher for all university transfers in each of the fall cohorts though these rates declined over the duration studied (Figure 13). College graduation rates varied by fall cohort with the Alberta college student cohort experiencing declines.

Out-of-Province transfer students who graduated maintained higher average GPAs compared to in-province transfer students (Figure 14). Both groups finished year one with lower averages than at graduation. Apart from the Fall 2009-10 cohort group, the average GPA rose after first year for each of the student cohorts, suggesting performance improvements occurred once beyond first year (Table 16).

*Figure 12: Overall Source of Prior Post-Secondary Studies (Full-time, All Faculties)*
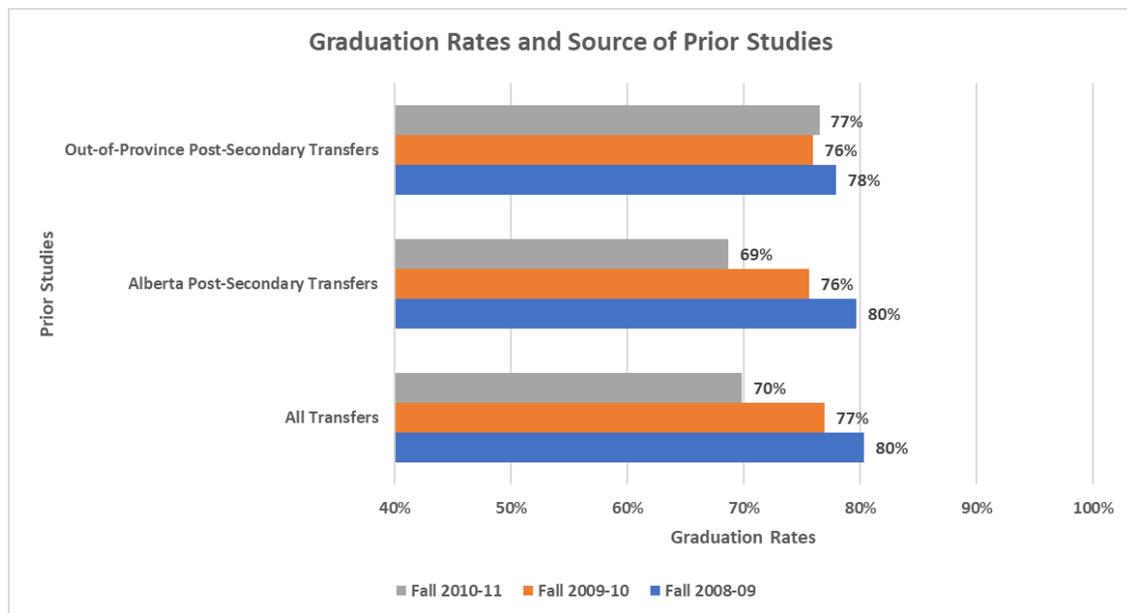
*Figure 13: Graduation Rates by Source of Transfer Credit (Full-time)*

**Graduation Rates by Source of Transfer Credit**
**Transfer Students (Full-time, All Faculties)**

Source of Transfer Credit

- **Two or more Out-of-Province post-secondary institutions**: 100%, 33%, 50%
- **Out-of-Province University**: 76%, 78%, 79%
- **Out-of-Province College**: 73%, 67%, 75%
- **AB College and University**: 68%, 70%, 73%
- **AB University**: 73%, 79%, 83%
- **AB College**: 63%, 77%, 79%

Graduation Rate (0% to 120%)

■ Fall 2010-11 ■ Fall 2009-10 ■ Fall 2008-09
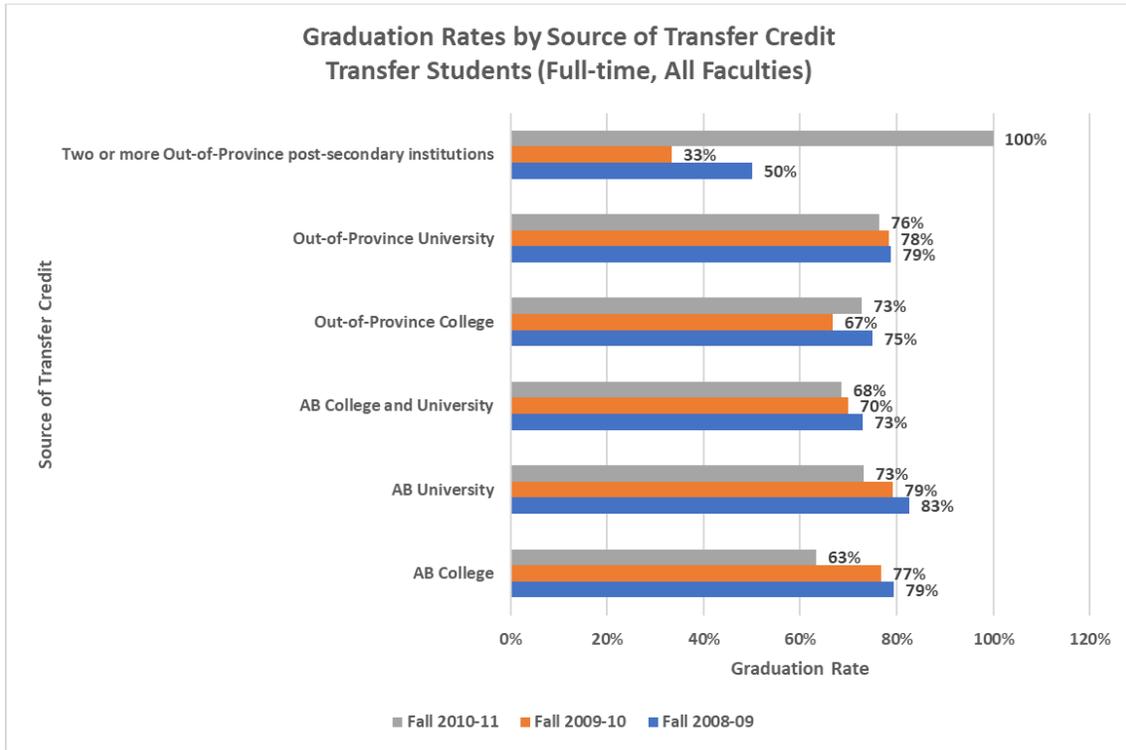
*Figure 14: Average GPA of Transfer Graduates at End of First Term and at Graduation (Full-time)*

**Average GPA at End of First Term and at Graduation**
**Source of Transfer (Full-time, Transfer Graduates)**

Fall Cohort

**Fall 2010-11**
- Last Term GPA - Average: 3.31, 3.11
- First Term GPA - Average: 3.11, 2.93

**Fall 2009-10**
- Last Term GPA - Average: 3.32, 3.25
- First Term GPA - Average: 3.14, 2.97

**Fall 2008-09**
- Last Term GPA - Average: 3.31, 3.18
- First Term GPA - Average: 3.11, 2.95

Average GPA (2.30 to 3.50)

■ Out-of-Province Post-Secondary ■ Alberta Post-Secondary

34

*Table 16: Average GPAs – Source of Transfer Credit (Full-time, Transfer Graduates)*

| Fall Cohort | Fall 2008-09 | | Fall 2009-10 | | Fall 2010-11 | |
|---|---|---|---|---|---|---|
| Student Cohort | Alberta Post-Secondary (n=667) | Out-of-Province Post-Secondary (n=60) | Alberta Post-Secondary (n=706) | Out-of-Province Post-Secondary (n=63) | Alberta Post-Secondary (n=635) | Out-of-Province Post-Secondary (n=75) |
| First Term GPA - Average | 2.95 | 3.11 | 2.97 | 3.14 | 2.93 | 3.11 |
| Last Term GPA - Average | 3.18 | 3.31 | 3.25 | 3.32 | 3.11 | 3.31 |
| Difference | 0.23 | 0.20 | 0.27 | 0.18 | 0.18 | 0.20 |

## Gender and Graduation Rates

Across all faculties, female transfer students consistently graduated at a somewhat higher rate, proportionally speaking, compared to direct entry students, excluding the Fall 2008-09 cohort. For that group, 71% of the transfer students graduated compared to 79% of the direct entry students (Figure 15).[25] However, for this same cohort, 25% of transfer students were eligible to continue in that year versus 16% of the direct entry students. Given the low percentages for students who were ineligible to continue for both transfer and direct entry, the data suggest female transfer students were successful but do not always persist to graduation.

Direct entry and transfer males graduated at a proportionally similar rate across all the Fall cohort groups except for the Fall 2008-09 transfer students (Figure 16). These students graduated at a rate of 78% versus 73% for direct entry students. The number that were ineligible for graduation was somewhat proportionally similar for both direct entry and transfer males; however, they both tracked proportionally higher than females. Those who were eligible to continue but did not complete appear to be proportionally consistent for both direct entry and transfer except for the Fall 2010-11 (transfer = 22%; direct entry = 21%) and the Fall 2009-10 cohorts (transfer = 17%).

Interestingly, both female direct entry and transfer students graduated at a higher rate than males. This was true for every cohort examined and represents an area of future study to understand what issues might be impacting this latter group.

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[25] Includes data for students regardless of whether they changed faculty.

*Figure 15: Success Rates – Females: Graduation, Eligible to Continue, Ineligible to Continue (Full-time)*
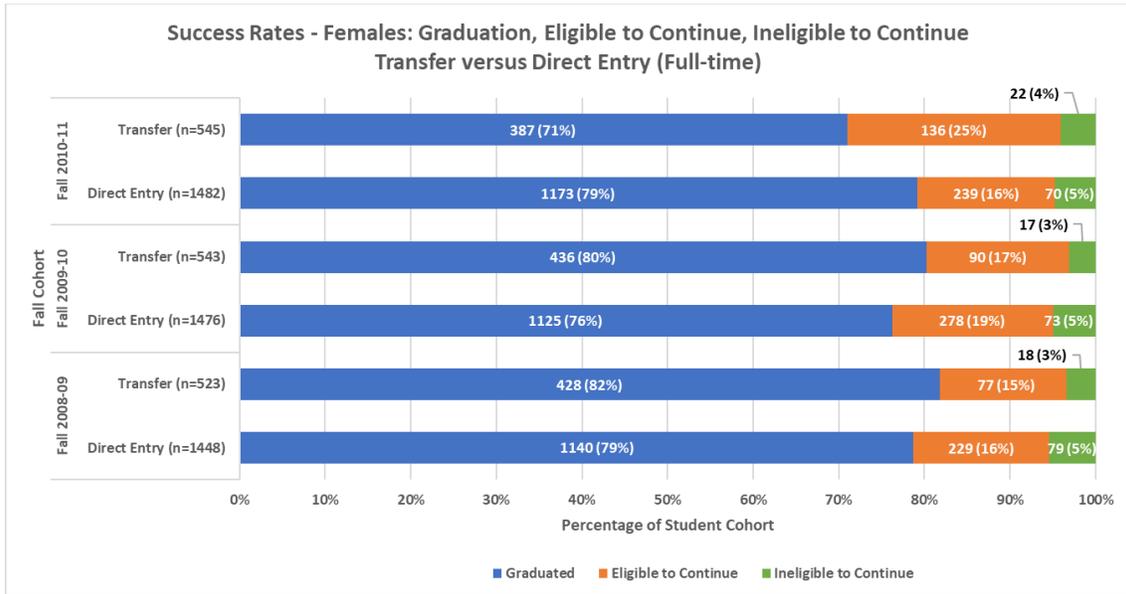


*Figure 16: Success Rates – Males: Graduation, Eligible to Continue, Ineligible to Continue (Full-time)*
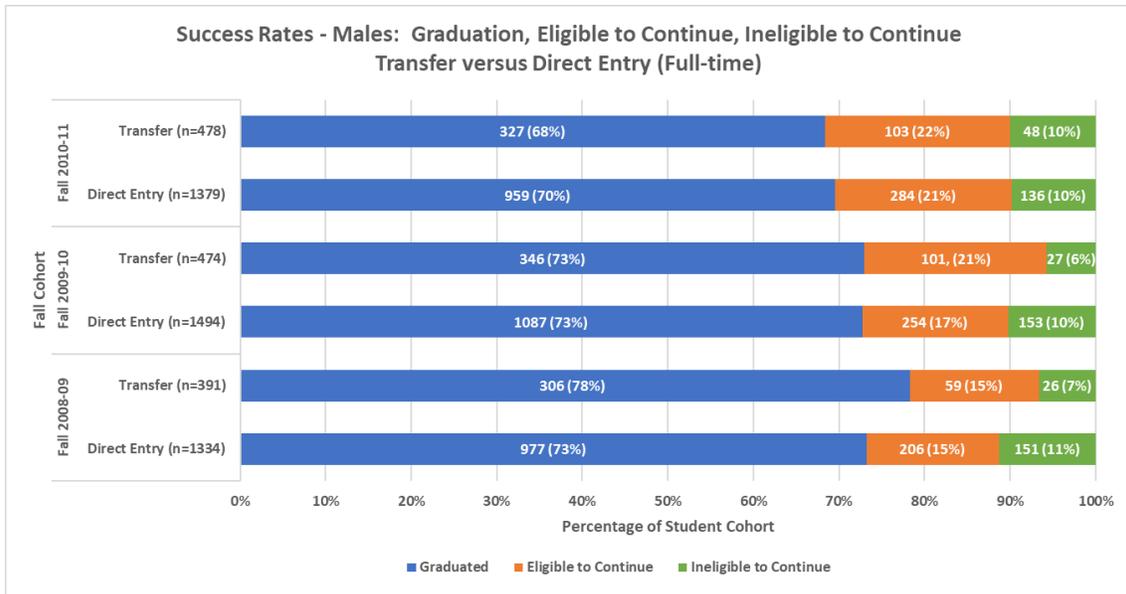
## Faculty Specific Success – Faculties of Arts and Science

### Graduation Rates

Examining success metrics at the faculty level revealed some variances to the overall findings. Figures 17 through 19 compare the success rates for graduation and eligibility to continue (called 'In Good Standing' at UCalgary) for the Faculty of Arts and the Faculty of Science to those who were not eligible to continue for each of the fall cohort groups.[26] The data focused explicitly on students that *remained* in their respective faculties from point of entry to last point of registration and/or graduation which represents a subset of the overall dataset.

The yearly data and percentage changes in enrolment between each fall cohort and the overall changes from Fall 2008-09 to Fall 2010-11 are outlined below for each faculty (Table 17). Overall, UCalgary saw an increase in transfer and direct entry enrolments from Fall 2008-09 to 2009-10 (9% and 7% respectively), declines for both cohorts from Fall 2009-10 to 2010-11 (-2% and -5% respectively), and an overall increase from Fall 2008-09 to 2010-11 of 6% and 1% respectively. Reasons for these fluctuations were not available suggesting UCalgary may wish to conduct further research in this area.

As these data sets do not include all students who entered UCalgary in each of the fall cohort years examined, the findings should not be used as indicators of overall institutional or faculty specific success rates.

*Faculty of Arts* (Figure 17) – Of the total transfer students that remained within the Faculty of Arts from point of admission to last point of registration, the proportion who graduated declined (Fall 2008-09 = 79%; Fall 2009-10-11 = 72%; Fall 2010-11 = 61%). These rates exceeded direct entry students in every fall cohort. The highest graduation rate for direct entry students occurred with the Fall 2010-11 cohort (65%). Apart from the 2010-11 cohort year when both student cohorts experienced the same proportion of ineligible students at 8%, the transfer students' ineligibility percentage tracked lower than direct entry students (2008-09 = 3% for transfer versus 10% for direct entry; 2009-10 = 4% for transfer students versus 10% for direct entry).

The Arts transfer student enrolment declined by -2% from Fall 2008-09 to 2009-10 and increased by 5% from Fall 2009-10 to 2010-11; overall, the Arts transfer enrolments increased by 4% from Fall 2008-09 to 2010-11 (Table 17). For the direct entry cohort, Arts experienced an increase of 31% from Fall 2008-09 to 2009-10, a decrease of -23% from Fall 2009-10 to 2010-11, and an overall increase of 1% from Fall 2008-09 to 2010-11.

Except for the final fall cohort year, a higher proportion of Faculty of Arts transfer students successfully completed their programs as compared to direct entry students.

*Faculty of Science* (Figure 18**)** – Faculty of Science transfer students graduated at a slightly declining rate (Fall 2008-09 = 66%; Fall 2009-10 = 65%; Fall 2010-11 = 62%). Direct entry students graduated at similar rates ranging from 64-65%.  Slightly more notable differences were evident in terms of those eligible to continue but did not proceed to graduation. Direct entry students fell in the 23-25% rate range; transfer students increased on a proportional basis in this category from 25% in the Fall 2008-09 cohort to 31% in Fall 2010-11. Science direct entry students experienced higher ineligibility rates than transfer students in each Fall cohort year.

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[26] The graphs in this section include the data if the row totals ('n' counts) exceeded 10 for each student cohort. Data below 10 was considered sensitive and masked. 'Ineligible to Graduate' includes those on 'Probation' and who were required to withdraw (RTW)

The Faculty of Science transfer cohort experienced the greatest year over year fluctuation in enrolment (Table 17): transfer enrolment increased by 38% from Fall 2008-09 to 2009-10, declined by -8% from Fall 2009-10 to 2010-11, and increased overall by 28% from Fall 2008-09 to 2010-11. Science direct entry enrolments declined by -2% from Fall 2008-09 to 2009-10 and increased by 9% from Fall 2009-10 to 2010-11. They experienced an overall increase of 7% from Fall 2008-09 to 2010-11.

The findings indicate that transfer students did as well as direct entry students in Science but would appear to have had a somewhat greater challenge persisting to graduation. The enrolment fluctuations for Science students were significant although the absolute values were low. As with Arts, a future area of study is to identify the reasons for the lower graduation rates.

_All Other Faculties_ (Figure 19) – Graduation rates for both transfer and direct students in all Fall cohort years graduated at a higher rate than Arts or Science students. Unlike Arts and Science, there were no evident differences in success between transfer and direct entry students. Most persisted to graduation with very small percentages of students leaving while in Good Standing (6-7%).

All other faculties went from a 12% increase in transfer student enrolment from Fall 2008-09 to 2009-10 to a decline of -10% from Fall 2009-10 to 2010-11 and experienced an overall enrolment increase of 1% from Fall 2008-09 to 2010-11. The direct entry enrolments across all the other faculties saw a percentage decrease of -5% from Fall 2008-09 to 2009-10, an increase of 3% from Fall 2009-10 to 2010-11, and an overall decline of -2% from Fall 2008-09 to 2010-11.

_Figure 17: Faculty of Arts – Success Rates at Last Point of Registration: Graduation, Eligible to Continue, Ineligible to Continue Transfer versus Direct Entry (Full-time; Remained in Home Faculty)_
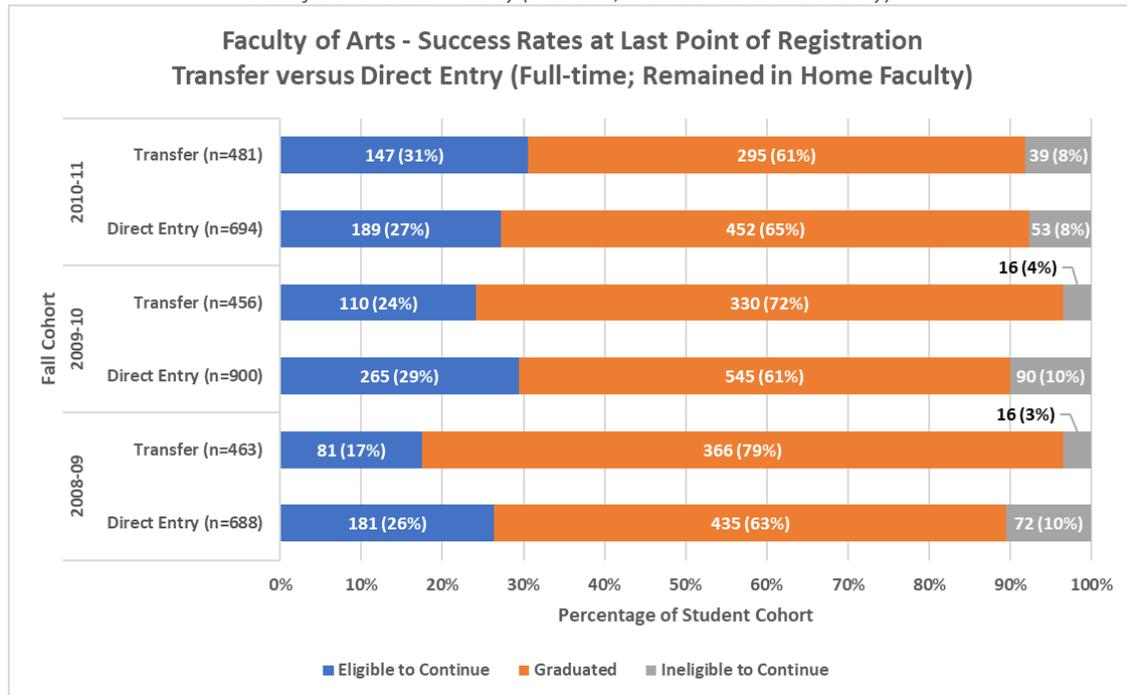
*Figure 18: Faculty of Science – Success Rates at Last Point of Registration: Graduation, Eligible to Continue, Ineligible to Continue*
*Transfer versus Direct Entry (Full-time; Remained in Home Faculty)*
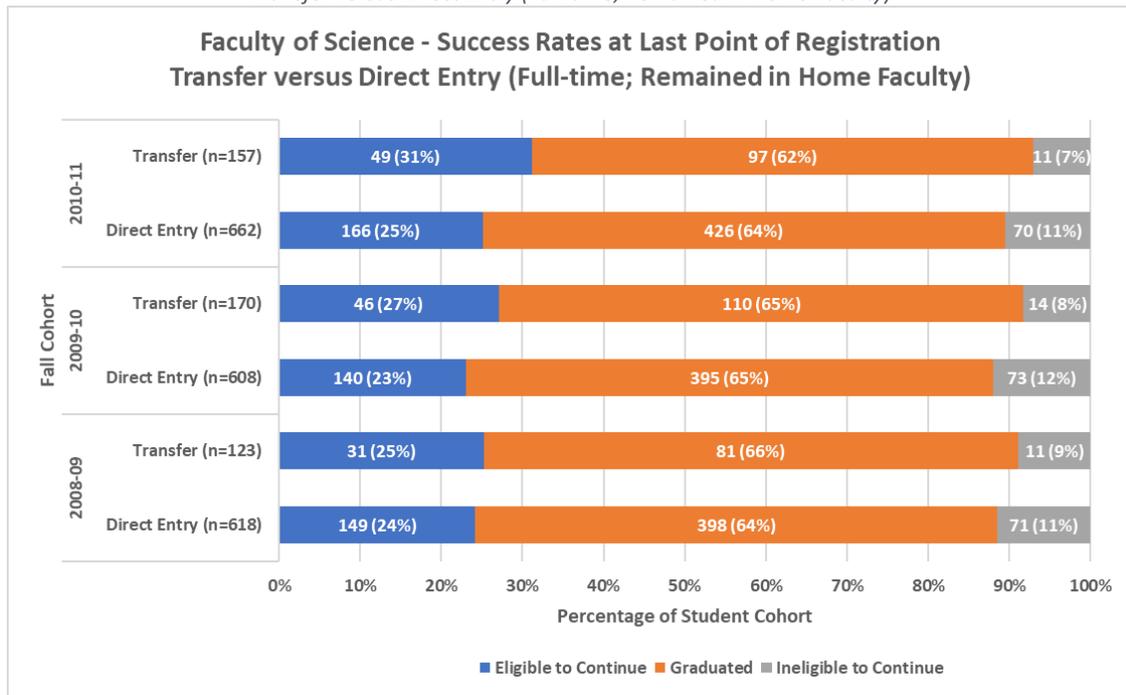


*Figure 19: All Other Faculties – Success Rates at Last Point of Registration:*
*Graduation, Eligible to Continue; Ineligible to Continue*
*Transfer versus Direct Entry (Full-time; Remained in Home Faculty)*
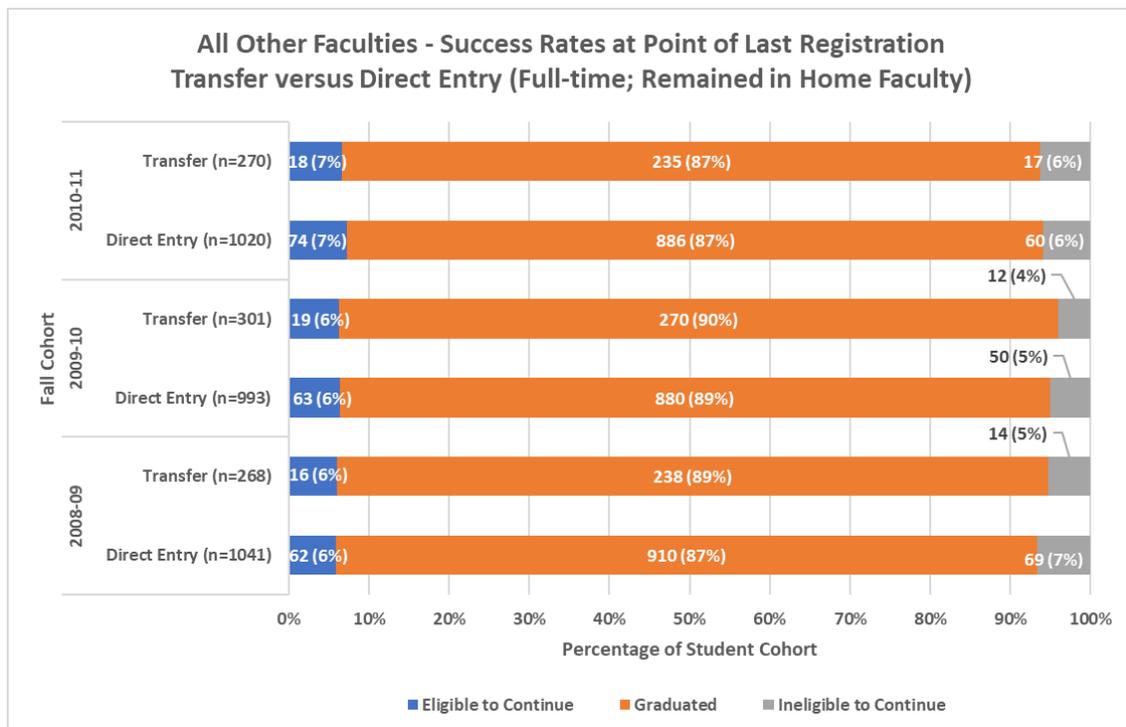
| Faculty | Fall 2008-09 | | % Change 2008-09 to 2009-10 (Fall entry) | | Fall 2009-10 | | % Change 2009-10 to 2010-11 (Fall entry) | | Fall 2010-11 | | % Change 2008-10 to 2010-11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Transfer** | **Direct Entry** | **Transfer** | **Direct Entry** | **Transfer** | **Direct Entry** | **Transfer** | **Direct Entry** | **Transfer** | **Direct Entry** | **Transfer** | **Direct Entry** |
| **Arts** | 463 | 688 | -2% | 31% | 456 | 900 | 5% | -23% | 481 | 694 | 4% | 1% |
| **Science** | 123 | 618 | 38% | -2% | 170 | 608 | -8% | 9% | 157 | 662 | 28% | 7% |
| **All Other Faculties** | 268 | 1041 | 12% | -5% | 301 | 993 | -10% | 3% | 270 | 1020 | 1% | -2% |
| **All Faculties** | 854 | 2347 | 9% | 7% | 927 | 2501 | -2% | -5% | 908 | 2376 | 6% | 1% |

## Completion Rates – Faculties of Arts and Science

As with the overall analysis, analyzing the UCalgary completion rate data based on year four and six appeared initially appropriate; however, interesting findings emerged for transfer students when examining the timing more closely (Figures 20 and 21).[27] Most transfer students in each cohort graduated within three years. In contrast, more direct entry students in both Arts and Science took beyond four years to graduate.

In both faculties, the data indicate that transfer students finished earlier than direct entry students. These results suggest the transfer credit awarding processes for Arts and Science facilitated successful time to completion outcomes.

*Figure 20: Graduation Timing - Faculty of Arts (Full-time; Remained in Home Faculty)*



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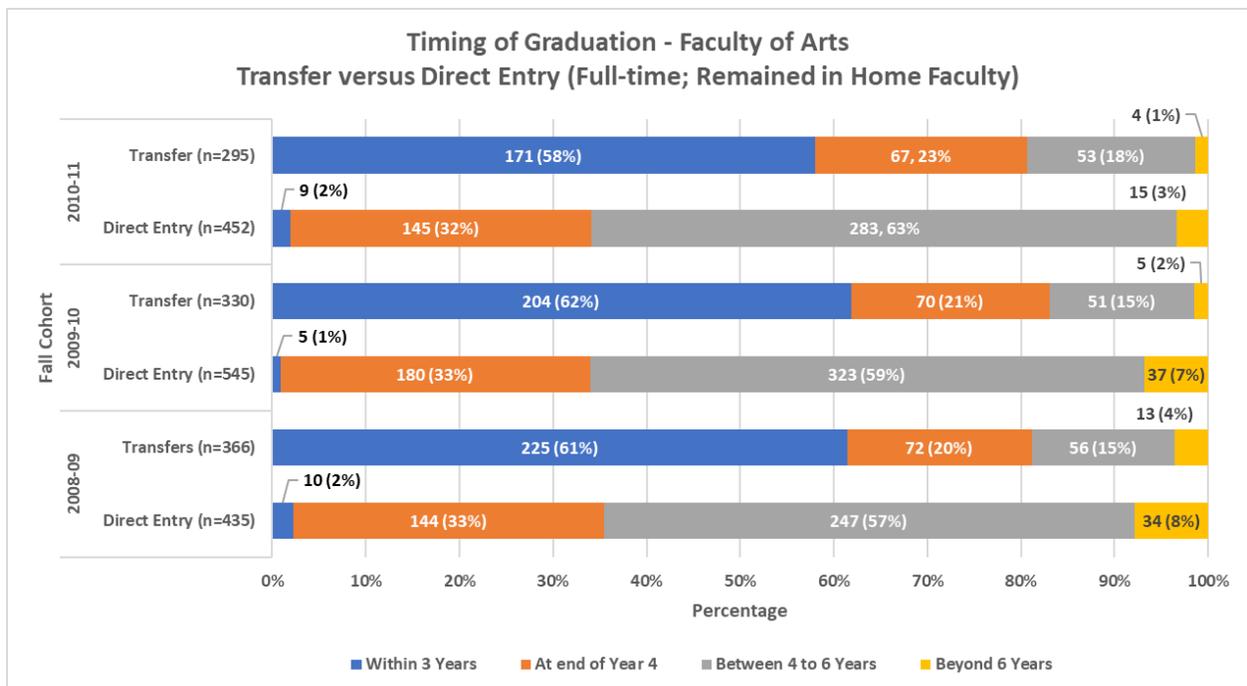
[27] Data below 10 included when overall 'n' counts for student cohort were higher than 10.

*Figure 21: Graduation Timing - Faculty of Science (Full-time, Remained in Home Faculty)*
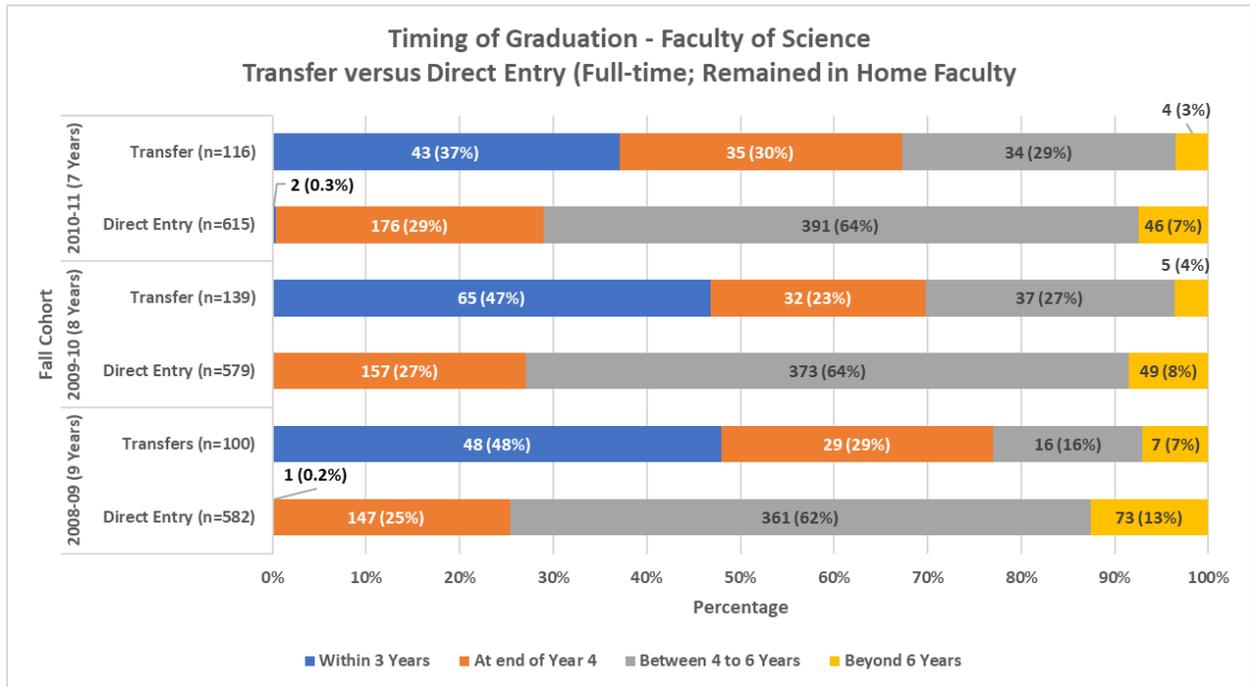
## Gender and Graduation Rates – Faculties of Arts and Science

Female transfer students in all faculties except for Arts graduated at proportionally similar rates to direct entry students (Figure 22, Table 18). Graduation rates for female transfer students in Arts declined overall, from 78% for the Fall 2008-09 cohort to 76% for the Fall 2009-10 cohort and to 63% for the Fall 2010-11 cohort. Information on the reasons for the decline in Fall 2010-11 was not available for the research study. In contrast, direct entry students went from 68% to 75%, and then to 73% for the Fall 2010-11 cohort.

Male transfer students in Arts graduated at a higher rate than direct entry students except for the Fall 2010-11 cohort, where the rate dropped to 63% (Figure 243 Table 18). Science transfer students graduated at a lower rate than direct entry students in each Fall cohort group apart from the Fall 2008-09 cohort, where they tracked higher at 78% versus 69%.

Transfer student success as measured by faculty specific graduation rates (excluding those that switched faculties) indicates that variances can occur when gender is considered. An area of future study includes examining the reasons for the declines in Arts for females as no insights were readily evident from the quantitative research.

*Figure 22: Female Graduation Rates – Faculty of Arts (Full-time, Graduated from Admit Faculty)*
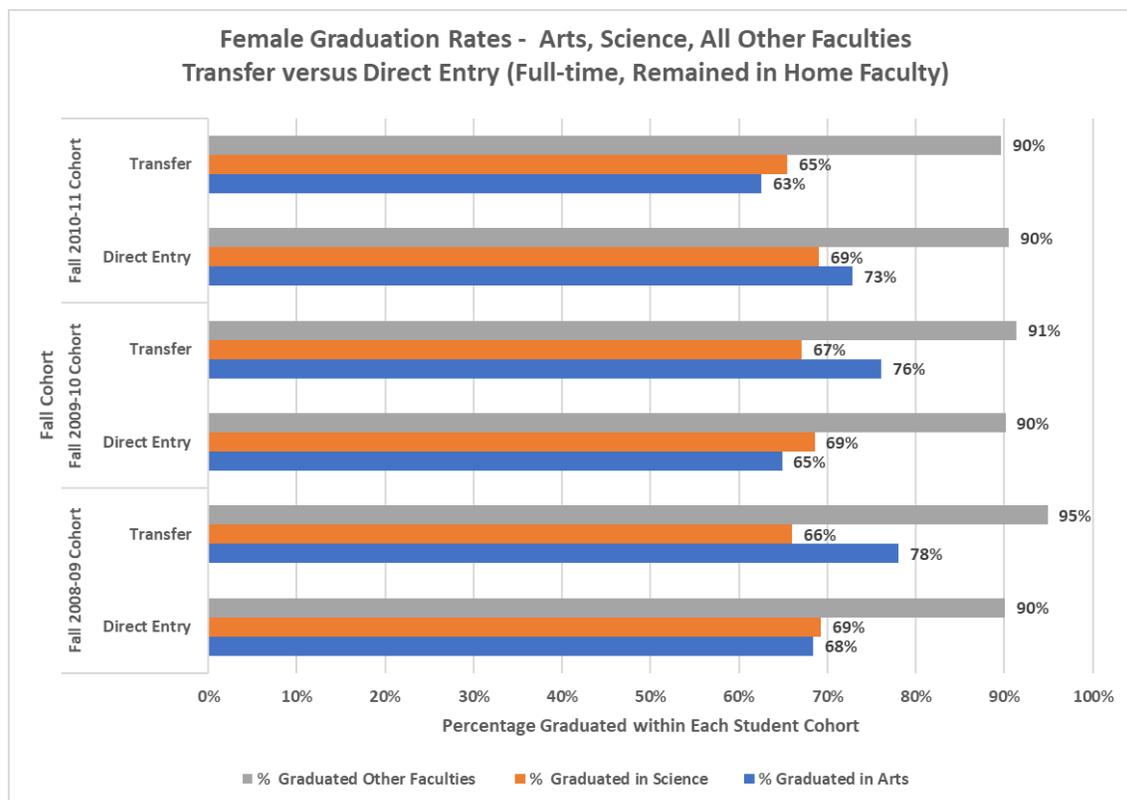
Figure 23: Male Graduation Rates (Full-time, Graduated from Admit Faculty)
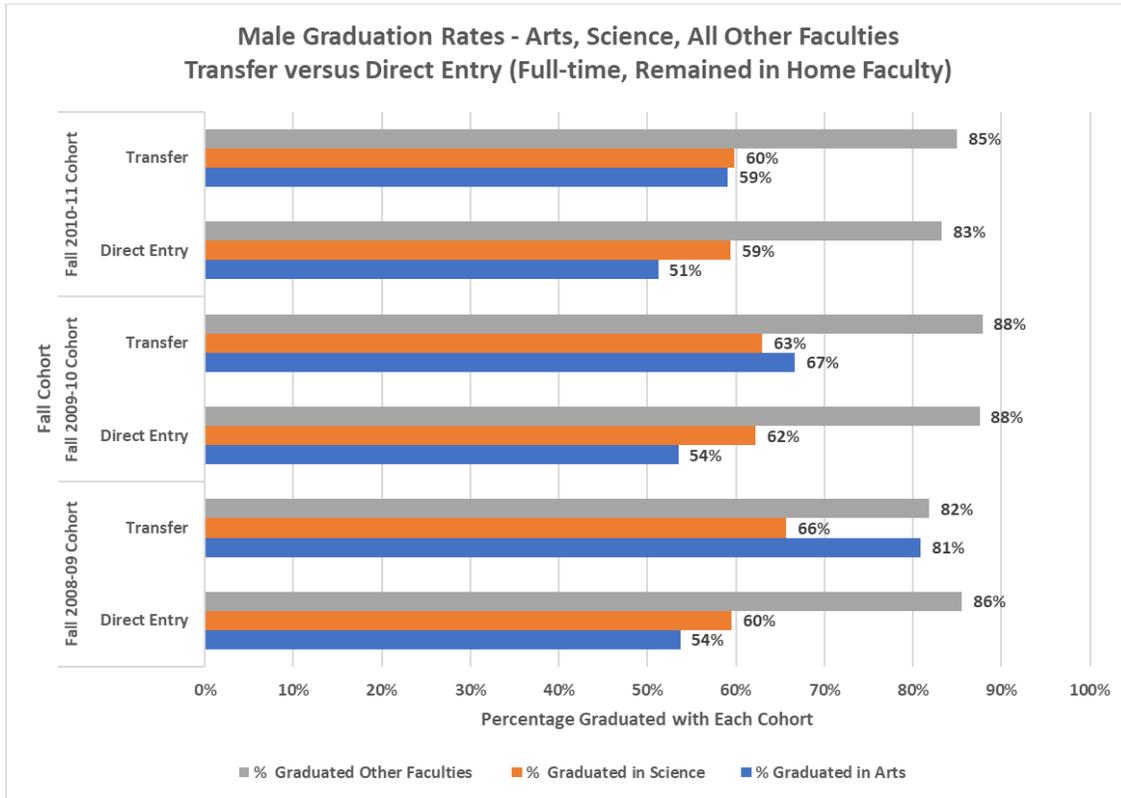
Table 18: Graduation Rates (Full-time, Graduated from Admit Faculty)

| Gender | Fall Cohorts / Student Cohorts | Fall 2008-09 Cohort | | | | Fall 2009-10 Cohort | | | | Fall 2010-11 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Direct Entry | Total Pop'n | Transfer | Total Pop'n | Direct Entry | Total Pop'n | Transfer | Total Pop'n | Direct Entry | Total Pop'n | Transfer | Total Pop'n |
| **Females** | % Graduated in Arts | 68% | 446 | 78% | 296 | 65% | 558 | 76% | 276 | 73% | 446 | 63% | 310 |
| | % Graduated in Science | 69% | 309 | 66% | 53 | 69% | 264 | 67% | 70 | 69% | 339 | 65% | 55 |
| | % Graduated Other Faculties | 90% | 506 | 95% | 138 | 90% | 446 | 91% | 163 | 90% | 484 | 90% | 126 |
| **Males** | % Graduated in Arts | 54% | 242 | 81% | 167 | 54% | 342 | 67% | 180 | 51% | 248 | 59% | 171 |
| | % Graduated in Science | 60% | 309 | 66% | 70 | 62% | 344 | 63% | 100 | 59% | 323 | 60% | 102 |
| | % Graduated Other Faculties | 86% | 575 | 82% | 132 | 88% | 578 | 88% | 140 | 83% | 574 | 85% | 147 |

# Conclusion

The research sought to address the questions, 'Are transfer student successful at UCalgary' and, 'Are transfer students successful in comparison to direct entry students.' Definitions of success for the purposes of this study included finding evidence transfer students achieved average grade point averages (GPA) of 2.00 or higher at end of year one; that they graduated; or that they finished studies at UCalgary with average grade point averages of 2.00 or higher (i.e., left in good standing at last point of registration). The analysis also included identifying withdrawal, graduation and completion rates and comparing transfer student outcomes to direct entry students. The findings for UCalgary across these dimensions suggest the answer to both questions is 'yes' for the most part, although there are variances evident and additional research needed.

The research study sought to explore these questions by conducting a quantitative analysis of two primary control groups enrolled in baccalaureate programs who had been admitted to three fall cohorts: Fall 2008-09, Fall 2009=10, and Fall 2010-11 (other entry points were excluded from the research data set). UCalgary provided six years of anonymized student data to support the study. These cohorts included transfer students who had studied in a previous post-secondary institution and direct entry students who had been admitted to degree programs based on prior high school results only. The research deliberately focused on those students with previous exposure to the Alberta education system either through high school or at the post-secondary level even if they had studied at institutions in another province. All other students were excluded from the UCalgary analysis. This approach facilitated an examination of the success of Alberta educated transfer students as compared to Alberta educated high school students. The underlying assumption for this approach was that transfer students with previous exposure to the Alberta system (whether through high school or post-secondary studies) provide a stronger control group and basis of comparison to Alberta high school direct entry students.

The overall faculty profile analysis included undergraduate students pursuing baccalaureate programs in the faculties of Arts, Science, Kinesiology, and Nursing, and the Haskayne School of Business, the Schulich School of Engineering, and the Cumming School of Medicine. The research included the Werklund School of Education; however, students enrolled in this faculty were assigned to their primary home faculty to avoid double counting. All other faculties were excluded either because they were at the graduate level, a professional program, continuing education, or located fully outside of Canada (e.g., Graduate Studies, Veterinary Medicine, Medicine, Law, Social Work, Werklund School of Education – After Degree, the Nursing program in Doha, Open Studies, and the International Foundations Program for English Language Training). The faculty specific analysis of success focused primarily on the Faculty of Arts and the Faculty of Science as the cohort sizes in the other academic areas were too small in most instances for meaningful study.

The research approach included identifying the overall institutional context and UCalgary's admissions, grading, and graduation policies and practices. The next step involved determining the specific fields that would be most beneficial for addressing the two research questions all of which are specified in Appendix A.

Specific metrics were chosen to inform identification of the typical student profiles evident from the data. These served to inform comparisons between the transfer and direct entry student cohorts and included enrolment size and status, gender, citizenship, types of prior post-secondary experiences, and the amount of transfer credit awarded. Success was examined by comparing average GPAs, completion rates, and graduation rates between direct entry and transfer students overall and for the two largest

faculties - Arts and Science. Completion and graduation rates were explored across other dimensions such as gender and source of prior post-secondary studies (Tables 19 and 20).

The most significant findings suggest transfer students were academically successful but appeared to experience some performance issues in first year. Furthermore, transfer students graduated at higher rates and earlier than direct entry students. This suggests UCalgary's transfer credit awarding practices have achieved successful outcomes in terms of realizing efficiencies in degree completion in relation to these student cohorts. To a lesser extent, there appears to be a persistence to graduation issue that requires further research and a possible need to conduct additional exploration of transfer success from the lens of gender.

Significant opportunities exist to deepen the institutional research related to the success of transfer versus direct entry students with a focus on understanding the reasons behind some of the quantitative findings. Furthermore, conducting research at the provincial level would help to validate the research findings and provide a broader context from which to examine transfer student success. The outcomes of such research would serve to support broader policy development for the province and sharing of best practice amongst institutions. The Tables below provide several suggestions where further system wide research would be useful to deepen an understanding of transfer student success within Alberta and potentially allow for additional comparisons and benchmarking including at the national benchmarking. Having noted this, the intention of this study, the companion research conducted for a separate Alberta institution contained in the report called "*Transfer Student Success, a Profile of Transfer Student Success at the Northern Alberta Institute of Technology*", and the supporting report for the literature review called "*Literature Review: Transfer Student Success and the University of Calgary and the Northern Alberta Institute of Technology*", involved using a case study approach of individual institutions as a beginning research foray into this area for the Alberta community. Neither of the institution's results should be compared. The UCalgary and NAIT studies represent separate, standalone research. Future research will want to consider this case-based approach to honour and reflect the diversity that exists within the province between the different institutional types and credentials.

The researchers extend their gratitude to the UCalgary leadership and the ACAT staff for the support of this study.

*Table 19: Summary of Overall Findings by Metric with Future Research Suggestions*

| Metrics | Findings | Future Transfer Success Research Suggested |
|---|---|---|
| Gender | Females comprised a larger proportion versus males of the overall transfer and direct entry student cohorts. | Potential exists to validate if this is occurring across the province at 'like' institutions. |
| Citizenship | The UCalgary students examined were primarily Canadian citizens in all the Fall cohort years examined. Proportionally, the transfer student cohort was more diverse in terms of immigration status; however, the numbers were insufficient to facilitate analyses of success across this dimension. | This represents a possible area of future research at the institutional level particularly in relation to international transfer students should the numbers increase. |

| Metrics | Findings | Future Transfer Success Research Suggested |
|---|---|---|
| Completion Rates | Transfer students graduated earlier than direct entry students, suggesting that UCalgary's transfer credit practices result in expected outcomes. Most transfer students graduated within three years. | Potential exists to validate if this is occurring across the province. |
| Graduation Rates | Transfer students graduated at a higher rate than direct entry students; however, overall numbers for both declined. | Potential exists to examine reasons for the decline in graduate numbers at the institutional level. |
| Eligible to Continue; Did not Graduate | Transfer students were eligible to continue at the same or higher rates than direct entry students but chose not to persist. | Potential exists to conduct research to identify the reasons for not persisting to graduation.<br><br>Potential exists to examine if this is occurring across the province. |
| Ineligible to Continue | Those that remained ineligible did so at the same or lower rate than direct entry students. | |
| GPA Performance | Transfer students performed as successfully as direct entry students although transfer students typically finished their first year with a lower average GPA than direct entry students. They subsequently had average GPAs comparable to direct entry students by the end of the last known registration period. Both improved over time. Furthermore, those that persisted to graduation were even more successful. | First-year supports and programming for transfer students – to identify best practice examples<br><br>Potential exists to validate if this is occurring across the province. |

*Table 20: Examining the UCalgary Student Cohorts Across Other Dimensions with Future Research Recommendations*

| Metrics | Findings | Future Transfer Success Research Suggested |
|---|---|---|
| GPA and Graduation | When focusing on graduated students only, both transfer and direct entry students performed at higher performance levels as measured by average GPAs at the end of first year and at the point of graduation compared to the entire pool (i.e., those who graduated and those who did not), with direct entry students tending to improve the most. | Potential exists to validate if this is occurring across the province. |
| Transfer Credit Awarded, Graduation | Typically, transfer students received more than 40 credits in transfer credit (~6 courses) through admissions and direct entry students received around 18 credits | Potential exists to validate if this is occurring at 'like' institutions across the province. |
| Source of Prior Post-Secondary Studies and Graduation | Alberta transfer students graduated at a similar rate to the overall pool. Graduation rates were higher for university transfers whether from within Alberta or outside of Alberta in each of the fall cohort groups. However, the rates declined over the three fall cohort groups. College graduation rates vary by fall cohort group although declines occurred for the Alberta college student cohort. | Potential exists to validate if these outcomes are occurring across the province. |

| Metrics | Findings | Future Transfer Success Research Suggested |
|---|---|---|
| Source of Prior Post-Secondary Studies, Graduation and GPA | Out-of-Province transfer students who graduated maintained higher average GPAs versus in-province students. For the most part, the average GPAs rose after first year for each of the student cohorts, suggesting performance improvements occurred once beyond first year. The graduation rates fluctuated by source; however, more study is needed to understand why this is occurring. | Potential exists to conduct research to identify other reasons for why fluctuation by source is occurring (e.g., is it due to transition issues?).<br><br>Potential exists to validate if these outcomes are occurring across the province. |
| Gender and Graduation | Overall, female transfer students consistently graduated at a somewhat higher rate proportionally speaking in comparison to direct entry students for most of the fall cohorts studied.<br><br>Males graduated at similar rates between the two cohorts; however, both female transfers and direct entry students graduated at a higher rate. | Potential exists to research why transfer males are not persisting to graduation to determine what might be impeding successful completion. |
| Gender, Faculty, Remained in Admit Faculty, Graduated, and Graduation Rates | Female and male transfer students graduated at higher rates than direct entry students for most (but not all) faculties. Transfer students in select faculties experienced declines in select gender cohorts (Arts for females; Science for males). | |
| Gender and Eligibility to Continue | More female transfer students versus female direct entry students appeared to be eligible to continue; however, did not.<br><br>More male transfers were eligible and did not complete.<br><br>Ability to persist appeared to be an issue for female transfer students. | Further research on what is impeding persistence to graduation is recommended.<br><br>Potential exists to validate these findings across the province. |
| Gender and Ineligible to Continue | There were more males who were ineligible to continue versus females. | Potential exists to validate these findings across the province and conduct further research on the transfer experience of males. |
| Arts Faculty, Remained in Admit Faculty, Graduated, and Completion Rates | More direct entry students in both Arts and Science took beyond four years to graduate. Transfer students finished earlier than direct entry students and had a higher completion rate in most years. | Potential exists to validate if this is the case across the province particularly among like institutions and credentials (important cost savings benefit). |
| Arts Faculty, Remained in Admit Faculty, Graduated, and Ineligible to Continue | Transfer students experience lower rates of 'ineligible to complete' versus direct entry students. | |

# Appendix A: Data Fields

| Field Name | Description |
| --- | --- |
| UNIQUE ID | Masked Student ID |
| TERM | Fall start term for each cohort examined |
| IMMIGRATION | Current Citizenship Status |
| GENDER | Male, Female, Unknown |
| FACULTY DESCRIPTION | The original Faculty to which the student was admitted |
| DEGREE DESCRIPTION | The credential associated with the program to which the student was originally admitted (e.g., Bachelor of Arts) |
| FIRST TERM LOAD | Indicates whether student was fulltime or part time. |
| LAST FACULTY DESCRIPTION | The last Faculty in which the student registered as of last active status (or at graduation) |
| LAST DEGREE DESCRIPTION | The degree in which a student was registered as the last active registration (or at graduation) |
| CATEGORY | Assigned by UCalgary to facilitate analysis for the research. Allowed categorization analysis for determining population size for the transfer population (e.g., attended college, attended college outside Alberta, etc.). This required extensive file preparation by UCalgary and is not a field that exists in the student information system. |
| TRANSFER CREDIT IND | Indicated whether a student received transfer credit. |
| TRANSFER CREDIT TOTAL | Indicated the total amount of transfer credit awarded a student at the point of admission. |
| ADMIT TYPE | Identified whether a student was admitted based on high school results or transfer |
| FIRST MAXI TERM GPA | GPA calculated for the Fall and Winter terms, for students admitted in the Fall term. |
| LAST MAXI TERM GPA | GPA calculated for all courses taken at UCalgary up to the last point of registration or graduation |
| LAST TERM GPA | The last term for which the Last Maxi Term GPA applied |
| LAST TERM GPA LOAD | The last term when the Last Maxi Term GPA was calculated |
| LAST TERM STANDING | The student's academic status in their last term of study (e.g., In Good Standing, Required to Withdraw, Graduated) |

# Appendix B: Full-time Enrolments by Area of Study (Full-time)

| Faculties and Programs | Fall 2008-09 Cohort | | | Fall 2009-10 Cohort | | | Fall 2010-11 Cohort | | |
|---|---|---|---|---|---|---|---|---|---|
| Primary Academic Plan | Direct Entry | Transfer | Row Totals | Direct Entry | Transfer | Row Totals | Direct Entry | Transfer | Row Totals |
| **Cumming School of Medicine** | **89** | **23** | **112** | **72** | **24** | **96** | **113** | **29** | **142** |
| Bachelor of Community Rehabilitation | 7 | 16 | **23** | 4 | 20 | **24** | 17 | 25 | **42** |
| Bachelor of Health Sciences - Honours | 82 | 7 | **89** | 68 | 4 | **72** | 96 | 4 | **100** |
| Bioinformatics | x | | **xx** | x | | **xx** | x | | **xx** |
| Biomedical Sciences | 56 | 7 | **63** | 52 | 4 | **56** | 72 | 2 | **74** |
| Health and Society | 20 | | **20** | 10 | | **10** | 18 | 2 | **20** |
| Faculty of Arts | **764** | **488** | **1252** | **1018** | **497** | **1515** | **771** | **543** | **1314** |
| Bachelor of Arts | 457 | 324 | **781** | 607 | 324 | **931** | 468 | 343 | **811** |
| Ancient and Medieval History | x | x | **xx** | 7 | 3 | **10** | x | x | **xx** |
| Archaeology | 7 | 7 | **14** | 8 | 4 | **12** | 4 | 10 | **14** |
| Art History | x | x | **xx** | | | | | | |
| Canadian Studies | 7 | 4 | **11** | x | x | **xx** | 8 | 6 | **14** |
| Communications Studies | 31 | 17 | **48** | 30 | 11 | **41** | 15 | 24 | **39** |
| Dance | 19 | 1 | **20** | x | x | **xx** | x | x | **xx** |
| Development Studies | 13 | 19 | **32** | 14 | 13 | **27** | 11 | 13 | **24** |
| East Asia | x | x | **xx** | x | x | **xx** | | | |
| East Asian Language Studies | x | x | **xx** | 17 | 8 | **25** | x | x | **xx** |
| Economics | 49 | 20 | **69** | 69 | 38 | **107** | 31 | 37 | **68** |
| Elementary School Music | | | | | x | **xx** | | | |
| English | 60 | 53 | **113** | 75 | 34 | **109** | 63 | 29 | **92** |
| Film Studies | 13 | 1 | **14** | 9 | 5 | **14** | x | x | **xx** |
| French | 8 | 4 | **12** | 9 | 6 | **15** | x | x | **xx** |
| General Humanities | 18 | 9 | **27** | 10 | 3 | **13** | | | |
| Geography | | x | **xx** | x | x | **xx** | x | x | **xx** |
| German | | x | **xx** | x | | **xx** | x | | **xx** |
| Greek and Roman Studies | x | x | **xx** | x | | **xx** | x | x | **xx** |
| Hist & Philosophy of Science | x | x | **xx** | x | | **xx** | x | x | **xx** |
| History | 17 | 13 | **30** | 31 | 15 | **46** | 26 | 24 | **50** |
| International Indigenous Stud | | x | **xx** | | | | x | | **xx** |
| International Relations | 18 | 10 | **28** | 45 | 16 | **61** | 33 | 16 | **49** |
| Italian Studies | | x | **xx** | x | | **xx** | | | |
| Latin American Studies | | x | **xx** | x | x | **xx** | | x | **xx** |
| Law and Society | 38 | 10 | **48** | 52 | 9 | **61** | 39 | 11 | **50** |
| Linguistics | 8 | 7 | **15** | 5 | 6 | **11** | x | x | **xx** |
| Linguistics and Language | x | x | **xx** | x | x | **xx** | 8 | 5 | **13** |
| Multidisciplinary | 10 | 14 | **24** | 4 | 8 | **12** | 5 | 9 | **14** |

| Faculties and Programs | Fall 2008-09 Cohort | | | | Fall 2009-10 Cohort | | | | Fall 2010-11 Cohort | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary Academic Plan | Direct Entry | Transfer | Row Totals | | Direct Entry | Transfer | Row Totals | | Direct Entry | Transfer | Row Totals |
| Music | 9 | 2 | **11** | | 12 | 2 | **14** | | x | x | **xx** |
| Philosophy | 5 | 8 | **13** | | 7 | 7 | **14** | | 9 | 10 | **19** |
| Political Science | 42 | 17 | **59** | | 45 | 24 | **69** | | 49 | 18 | **67** |
| Psychology | 24 | 34 | **58** | | 52 | 40 | **92** | | 45 | 46 | **91** |
| Religious Studies | x | x | **xx** | | x | x | **xx** | | | x | **xx** |
| Religious Studies & App Ethics | x | x | **xx** | | x | x | **xx** | | | | |
| Russian | x | | **xx** | | x | x | **xx** | | x | | **xx** |
| Science, Technology & Society | x | | **xx** | | x | | **xx** | | x | | **xx** |
| Social & Cultural Anthropology | x | x | **xx** | | 11 | 7 | **18** | | 12 | 6 | **18** |
| Sociology | 15 | 25 | **40** | | 29 | 34 | **63** | | 37 | 39 | **76** |
| Spanish | 5 | 6 | **11** | | x | | **xx** | | x | x | **xx** |
| Urban Studies | 6 | 6 | **12** | | 18 | 15 | **33** | | 23 | 10 | **33** |
| Women's Studies | | x | **xx** | | x | x | **xx** | | | x | **xx** |
| Bachelor of Arts - Honours | | x | **xx** | | | x | **xx** | | | x | **xx** |
| German | | x | **xx** | | | | | | | | |
| History | | | | | | x | **xx** | | | | |
| Political Science | | | | | | | | | | x | **xx** |
| Bachelor of Communication and Culture | 7 | 13 | **20** | | 7 | 6 | **13** | | | x | **xx** |
| Bachelor of Communications Studies | 10 | 29 | **39** | | 11 | 37 | **48** | | 11 | 35 | **46** |
| Bachelor of Film Studies | x | | **xx** | | 8 | 3 | **11** | | 5 | 5 | **10** |
| Bachelor of Fine Arts | 37 | 13 | **50** | | 47 | 13 | **60** | | 44 | 14 | **58** |
| Drama | 18 | 5 | **23** | | 29 | 4 | **33** | | 16 | 8 | **24** |
| Drama Education | | x | **xx** | | | | | | | | |
| Visual Studies | 19 | 7 | **26** | | 18 | 9 | **27** | | 28 | 6 | **34** |
| Bachelor of Music | 11 | 3 | **14** | | x | | **xx** | | 12 | 6 | **18** |
| Not Classified | 11 | 2 | **13** | | x | | **xx** | | 12 | 1 | **13** |
| Performance | | x | **xx** | | | | | | | x | **xx** |
| Bachelor of Science | 38 | 18 | **56** | | 55 | 20 | **75** | | 47 | 21 | **68** |
| Archaeology | x | x | **xx** | | 13 | 4 | **17** | | x | x | **xx** |
| Geography | x | x | **xx** | | x | x | **xx** | | | x | **xx** |
| Multidisciplinary | x | | **xx** | | x | x | **xx** | | x | x | **xx** |
| Primatology | x | | **xx** | | x | x | **xx** | | x | x | **xx** |
| Psychology | 25 | 6 | **31** | | 33 | 10 | **43** | | 37 | 10 | **47** |
| Science, Technology & Society | x | xx | **xx** | | x | x | **xx** | | x | x | **x** |
| No Degree Declared | 198 | 87 | **285** | | 274 | 93 | **367** | | 184 | 113 | **297** |
| Not Declared | 198 | 87 | **285** | | 274 | 93 | **367** | | 184 | 113 | **297** |
| **Faculty of Kinesiology** | **76** | **46** | **122** | | **91** | **49** | **140** | | **95** | **72** | **167** |
| Bachelor of Kinesiology | 59 | 40 | **99** | | 56 | 43 | **99** | | 60 | 66 | **126** |
| Biomechanics | x | xx | **xx** | | x | x | **xx** | | x | | **xx** |

| Faculties and Programs / Primary Academic Plan | Fall 2008-09 Cohort | | | Fall 2009-10 Cohort | | | Fall 2010-11 Cohort | | |
|---|---|---|---|---|---|---|---|---|---|
| | Direct Entry | Transfer | Row Totals | Direct Entry | Transfer | Row Totals | Direct Entry | Transfer | Row Totals |
| Exercise and Health Physiology | 6 | 4 | **10** | x | x | **xx** | 5 | 7 | **12** |
| General | 48 | 29 | **77** | 48 | 35 | **83** | 51 | 49 | **100** |
| Leadership in Pedagogy & Coach | | | | | | | | x | **xx** |
| Mind Sciences in Kinesiology | x | xx | **xx** | x | x | **xx** | | x | **xx** |
| Pedagogy | | xx | **xx** | | x | **xx** | | | |
| Bachelor of Science | 17 | 6 | **23** | 35 | 6 | **41** | 35 | 6 | **41** |
| Biomechanics | x | | **xx** | x | | **xx** | x | | **xx** |
| Exercise and Health Physiology | x | xx | **xx** | 9 | 4 | **13** | x | x | **xx** |
| Kinesiology | 9 | 3 | **12** | 18 | 2 | **20** | 26 | 4 | **30** |
| Mind Sciences in Kinesiology | | | | x | | **x** | x | x | **xx** |
| **Faculty of Nursing** | **95** | **33** | **128** | **102** | **58** | **160** | **124** | **22** | **146** |
| Bachelor of Nursing | 95 | 17 | **112** | 102 | 14 | **116** | 124 | 22 | **146** |
| Not Classified | 95 | 17 | **112** | 102 | 14 | **116** | | | |
| Nursing - Direct Entry | | | | | | | 124 | 7 | **131** |
| Nursing - Transfer | | | | | | | | 15 | **15** |
| Bachelor of Nursing (Accelerated) | | 16 | **16** | | 44 | **44** | | | |
| Not Classified | | 16 | **16** | | 44 | **44** | | | |
| **Faculty of Science** | **826** | **146** | **972** | **830** | **207** | **1037** | **880** | **188** | **1068** |
| Bachelor of Science | 776 | 135 | **911** | 803 | 207 | **1010** | 852 | 188 | 1040 |
| Actuarial Science | 10 | 5 | **15** | 13 | 7 | **20** | 11 | 1 | 12 |
| Applied Mathematics | x | xx | **xx** | x | | **xx** | x | x | xx |
| Applied & Environmental Geology | | | | | | | x | x | xx |
| Astrophysics | 14 | 2 | **16** | 9 | 2 | **11** | 12 | 4 | 16 |
| Biochemistry | | | | | x | **xx** | | x | xx |
| Biological Sciences | 308 | 22 | **330** | 384 | 19 | **403** | 403 | 22 | 425 |
| Chemistry | 76 | 15 | **91** | 73 | 15 | **88** | 67 | 14 | 81 |
| Computer Science | 60 | 14 | **74** | 78 | 25 | **103** | 62 | 24 | 86 |
| Earth Science | x | xx | **xx** | x | x | **xx** | x | x | xx |
| Ecology | | xx | **xx** | | x | **xx** | | | |
| Environmental Science | 23 | 3 | **26** | 22 | 4 | **26** | 19 | 7 | 26 |
| General Mathematics | 11 | 4 | **15** | 15 | 3 | **18** | 14 | 5 | 19 |
| Geology | | xx | **xx** | 26 | 37 | **63** | 35 | 16 | 51 |
| Geophysics | 26 | 3 | **29** | 13 | 1 | **14** | 23 | 8 | 31 |
| Geosciences | x | | **xx** | | | | | | |
| Natural Sciences | 203 | 51 | **254** | 137 | 77 | **214** | 162 | 61 | **223** |
| Physics | 22 | 6 | **28** | 17 | 4 | **21** | 7 | 11 | **18** |
| Pure Mathematics | 16 | 3 | **19** | 11 | 5 | **16** | 23 | 6 | **29** |
| Statistics | x | | **xx** | x | x | **xx** | x | | **xx** |

| Faculties and Programs | Fall 2008-09 Cohort | | | Fall 2009-10 Cohort | | | Fall 2010-11 Cohort | | |
|---|---|---|---|---|---|---|---|---|---|
| Primary Academic Plan | Direct Entry | Transfer | Row Totals | Direct Entry | Transfer | Row Totals | Direct Entry | Transfer | Row Totals |
| Zoology | | xx | xx | | x | xx | | x | xx |
| Bachelor of Science - Honours | 18 | | 18 | 27 | | 27 | 28 | | 28 |
| Neuroscience | 18 | | 18 | 27 | | 27 | 28 | | 28 |
| No Degree Declared | 32 | 11 | 43 | | | | | | |
| Geosciences | 32 | 11 | 43 | | | | | | |
| Haskayne School of Business | 420 | 113 | 533 | 390 | 85 | 475 | 422 | 51 | 473 |
| Bachelor of Commerce | 420 | 104 | 524 | 390 | 75 | 465 | 422 | 45 | 467 |
| Accounting | 113 | 33 | 146 | 106 | 23 | 129 | 145 | 12 | 157 |
| Business Process Management | x | | xx | x | | xx | x | | xx |
| Energy Management | | xx | xx | x | x | xx | x | x | xx |
| Entrepreneurship & Innovation | 17 | 2 | 19 | 27 | 1 | 28 | 22 | 1 | 23 |
| Finance | 78 | 35 | 113 | 59 | 20 | 79 | 66 | 11 | 77 |
| General | 59 | 9 | 68 | 53 | 1 | 54 | 62 | 5 | 67 |
| Human Resources & Org Dynamics | 12 | 4 | 16 | 9 | 2 | 11 | 9 | 2 | 11 |
| International Business | 45 | 8 | 53 | 54 | 6 | 60 | 41 | 3 | 44 |
| Management Information Systems | x | xx | xx | x | x | xx | x | x | xx |
| Marketing | 68 | 7 | 75 | 60 | 11 | 71 | 52 | 5 | 57 |
| Operations Management | x | xx | xx | x | | xx | x | | xx |
| Personal Financial Planning | x | | xx | x | | xx | x | x | xx |
| Petroleum Land Management | | | | | x | xx | | | |
| Risk Management and Insurance | | | | | x | xx | x | | xx |
| Risk Mngt: Insurance & Finance | x | | xx | x | x | xx | x | x | xx |
| Supply Chain Management | | | | x | x | xx | x | | xx |
| Tourism Management & Marketing | x | | xx | x | x | xx | x | | xx |
| Tourism & Hospitality Management | x | | xx | x | x | xx | x | | xx |
| Bachelor of Hotel and Resort Management | | xx | xx | | 10 | 10 | | x | xx |
| Not Classified | | xx | xx | | 10 | 10 | | x | xx |
| Schulich School of Engineering | 512 | 65 | 577 | 470 | 97 | 567 | 456 | 118 | 574 |
| Bachelor of Science | 512 | 65 | 577 | 470 | 97 | 567 | 456 | 118 | 574 |
| Not Classified | 512 | 39 | 551 | 470 | 49 | 519 | 455 | 63 | 518 |
| Chemical Engineering | | xx | xx | | x | xx | x | x | xx |
| Civil Engineering | | xx | xx | | 10 | 10 | | x | xx |
| Computer Engineering | | xx | xx | | x | x | | x | xx |
| Electrical Engineering | | xx | xx | | 15 | 15 | | 18 | 18 |

| Faculties and Programs | Fall 2008-09 Cohort | | | | Fall 2009-10 Cohort | | | | Fall 2010-11 Cohort | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary Academic Plan | Direct Entry | Transfer | Row Totals | | Direct Entry | Transfer | Row Totals | | Direct Entry | Transfer | Row Totals |
| Geomatics Engineering | | xx | xx | | | x | xx | | | x | xx |
| Manufacturing Engineering | | xx | xx | | | | | | | | |
| Mechanical Engineering | | xx | xx | | | x | xx | | | 14 | 14 |
| Oil and Gas Engineering | | xx | xx | | | x | xx | | | x | xx |
| Software Engineering | | xx | xx | | | | | | | x | xx |
| Student Cohort Totals | 2782 | 914 | 3696 | | 2973 | 1017 | 3990 | | 2861 | 1023 | 3884 |

'xx' and 'x' = Data considered sensitive. If row totals lower than 10, the data was masked both in the row total and in the cells. Otherwise, the data was included.