

2018-2019 Program Review Cycle



Instructional Programs

CAN Program Review (Instructional) - Computer Science (Odd Year)

Program Review Narratives

2018-2019

Instructional Program Review (IPR)

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Executive Summary

0. Executive Summary: Changes in high school curriculum have minimal effect on our curriculum. Changes in the curriculum at four-year institutions are reflected in our curriculum. We are in on-going conversations with university faculty in computer science and engineering regarding the lower-division curriculum and requirements for transfer.

Program Context

1. Mission: There have been minor changes in the CIS curriculum this academic year. The Computer Science Degree and its courses are up to date.

The Computer Science (CS) program:

The first two years of the program from 2014 to 2015, we offered mainly day classes on campus.

In 2017 and 2018, we have further expanded to include more online classes and evening classes. This has increased our course enrollment totals.

2013 to 2014: 336

2014 to 2015: 526

2015 to 2016: 532

2016 to 2017: 554

2017 to 2018: 675

We now have a consistent Summer Session program where we offer online and on-campus course.

The fill rates of all the summer classes in 2018 have been high. In general, due to the increase in enrollments each year, we are now employing one full time faculty and five adjunct faculty.

2. Articulation: For the Computer Science Department:

1. Program Context – Community and labor needs: The demand for high quality Computer Science (CS) graduates continues to grow. This year the department has done some research and found that there is a need for an added class: Introduction to Databases: SQL. With the fast paced increase of indefinite retention of data accumulate by Government and private industry. This course will be added as an experimental class in the Fall 2018 semester.
2. Looking back – Curricular changes. There have not been any courses cancelled from the initial courses added to the CS Degree and Certificate programs when they started in 2014. All the courses in our department are required courses, there no optional courses.
3. Looking back – Progress report - The department notes CS program is one of the few programs with an actual increase in enrollment and is fortunate to have hired five talented and experience adjunct faculty to fill the increased demand for each of our offered class as our enrollment grows.
4. Current State of Program – Progress and completion. There has been good success increasing the enrollments. There are more Asian and Hispanic enrolled in the program. There needs to be additional attention to
5. SLO Assessment: All courses are up to date with the required SLO Assessments, conducted in Oct 2018.

6. PLO Assessment: There currently no PLO assessments done. There will be an effort to do so in the 2019 year.
7. Looking forward: There has been a new certificate program added: "Oracle Cloud Database Computing", this should further increase enrollment headcount, starting Spring 2019.
8. Additionally, there has been added a new course: "Intro to Oracle Relational Databases"

3. Community & Labor Needs: For the Computer Science Department

- 1) Meet, every semester, with Canada College Academic counselors Dept. to explain the Computer Science (CS) degree and four CS Certificates. This has lead counselors informing MORE of their student clients that the CS program exists. I believe this has contributed to the steady enrollment increases.
- 2) Increasing the course options: An increase in Online and Evening section offerings has been accomplished. This has allowed different demographics to take class, where otherwise they would be working or occupied during the day. I believe this has contributed to the steady enrollment increases.
- 3) Increase Enrichment activities by way of a Computer Science club. This has been accomplished. Events planned and completed each semester are: Computer Science Museum Visits, Game Tournaments, CS club sponsored speakers, Company Tours, Hackathons, and more.

Looking Back

4. Curricular Changes: Programs developed through grant-funded programs including Math Jam, Physics Jam, tutoring, and Supplemental Instruction have significantly increased enrollment not only in engineering and CIS but in other STEM areas as well. These programs have also led to improved student performance and increased student engagement in academic and professional development activities such as internships, workshops, seminars, conferences, and student clubs.

- We need to continue offering more of the new courses and additional sections for the new Computer Science curriculum to meet the increase in demand.
- Participate in all campus events, like Career Days and Major days and High School feeder events that inform potential students about the new CS degree and certificates
- Promote the Computer Science Club and its associated company tours, speakers, game days and code competitions and create a long term network for CS majors.
- Further and promote an integrated curriculum and set of lectures for all the CS courses
- Hire additional Adjunct CS professors for the growing program
- Continue working with the Articulation officer to keep articulation agreements current
- Insure the availability of CS tutors to increase student success

For the Computer Science Program

With the addition of five Adjunct Faculty for the Computer Science (CS) Program, the number of courses and section has grown. Staffing increases have enabled the CS to offer more evening, Day and online classes.

5A. Progress Report - IPC Feedback: For the Computer Science Program

Total numbers for the program

The Fall semesters have seen an increase in enrollment

FA13 - 130
 FA14 - 165
 FA15 - 181
 FA16 - 173
 FA17 - 219

The Spring semesters have seen a steady increase in enrollment

SP14 - 146
 SP15 - 154
 SP16 - 169
 SP17 - 197
 SP18 - 235

The Summer semester have seen a steady increase in demand

SU13 - 66
 SU14 - 152
 SU15 - 148
 SU16 - 148

SU17 - 174

SU18 - 204

There can be an increase in the offering of courses such as CIS 252 for the summer.

New courses offered for the Summer would see an increase in enrollment for the Summer term.

Gender Enrollment by Academic year

	Female	Male
2013/2014	75	206
2014/2015	108	279
2015/2016	125	286
2016/2017	126	274
2017/2018	136	348

There has been an increase in the enrollment of both genders.

The efforts to attract Females to the Computer Science (CS) program has seen an increase in Females, which is good.

Overall there also has been a sustained increase in the enrollment of Students based on their ethnicity.

Student Age

There is a wide spread for the ages of students in the CS program. There is a steady increase in the number of High School students enrolled. The age ranges from 18-39 have shown a great increase in enrollment.

Under 18

2013/2014	45
2014/2015	54
2015/2016	59
2016/2017	67
2017/2018	85

This can be attributed to the increase in awareness by the High School student word of mouth to other students letting them know that Canada College has a great and very accessible program for them, and the outreach program so high school students are aware of our CS program.

The majority of the student increases are in the 18-39 year range.

Age 18 - 39

2013/2014	223
2014/2015	324
2015/2016	340
2016/2017	331
2017/2018	399

5B. Progress Report - Prior Action Plans: Equity Gap.

Most groups have a greater percentage taking CS courses when compared overall to the Canada College rate.

The only group that is experiencing a small equity gap in 2017-2018 is Hispanics

Female Hispanic Students have an access rate of 3.8% compared to an overall Canada College rate of 18%.

Male Hispanic Students have an access rate of 14.4% compared to an overall Canada College rate of 10%.

There needs to be additional recruitment for this group.

Course Success

Among Asians the course success rates for

Females 78% - This is 11.5% better than Instructional average

Males 76.6% - This is 10.1% better than the Instructional average

Among Hispanics, the course success rates for

Females 55.6% - This is 10.9% lower than the Instructional average

Males 51.5% - This is 15% lower than the Instructional average

There is a need to double the normal follow up with Hispanics and have them participate in supplemental assistance: such as the STEM Tutors for Computer Sciences.

Equity Gap

The Group that is experiencing a decreasing equity gap in 2017-2018 is Hispanics
Female Hispanic Students have an access rate of 27.2% compared to an overall Canada College rate of 60%.
Male Hispanic Student have a access rate of 18.4% compare to an overall Canada College rate of 28%.
The equity gap for females is somewhat larger. There need to be an recruitment effort for both groups.

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Over the last several years, there has been an increasing success rate for Hispanics..

There has been more follow up with Hispanics by having them participate in supplemental assistance: such as the STEM Tutors for Computer Sciences.

6A. Impact of Resource Applications: Our Online class grew fast. The success rate is generally a bit lower in the online classes.

	In Class	On-Line
2014/2015	52%	60%
2015/2016	60%	51%
2016/2017	70%	61%
2017/2018	70%	65%

The success Rate has increased in the last 6 semesters. One reason that rates are similar is the course content is identical for both classes. The main difference is that when a student takes a on-campus class, they receive in class coding practice and this would help account for the increased success

The success rate that we set as our goal is 70%. Having students not procrastinate, and seek additional help when they need it for the complex subjects discussed in Computer Science classes is essential to increase the rates to 70%+.

6B. Impact of Staffing Changes: Course-level student learning outcomes and department-level learning outcomes for computer science courses have been assessed regularly. Most of the course-level SLO assessment results have been satisfactory. A total of 24 individual course SLO assessment results have been reported in Tracdat. Courses (length, depth and order of coverage of topics; methods of delivering content and assessing student learning, etc.)

In 2018 October a comprehensive course and program review and update of all CirrucUNET Data of all courses was done.

Most courses have an update SLO assessment posted in TracDat, as required. It can be difficult with Adjunct Faculty to have them learn and post their course assessments in a timely fashion.

There must be a plan made and put in place to insure training of Adjuncts for posting timely assessments.

Current State of the Program

7. Enrollment Trends: For the Computer Science Program

Total numbers for the program

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There has been an increase in the enrollment of both genders.

The efforts to attract Females to the Computer Science (CS) program has see an increase in Females, which is good.

Over all there also has been a sustained increase in the enrollment of Students based on their ethnicity.

Student Age

There is a wide spread for the ages of students in the CS program. There is a steady increase in the number of High School students enrolled. The age ranges form 18-39 have show a great increase in enrollment.

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8-A. Access & Completion: Equity Gap.

Most groups have a greater percentage taking CS courses when compared overall to the Canada College rate.

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Female Hispanic Students have an access rate of 3.8% compared to an overall Canada College rate of 18%.

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There is a need to double the normal follow up with Hispanics and have them participate in supplemental assistance: such as the STEM Tutors for Computer Sciences.

8-B. Completion - Success Online: Our Online class grew fast. The success rate is generally a bit lower in the online classes.

	In Class	On-Line
2014/2015	52%	60%
2015/2016	60%	51%
2016/2017	70%	61%
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The success Rate has increased in the last 6 semesters. One reason that rates are similar is the course content is identical for both classes. The main difference is that when a student takes a on-campus class, they receive in class coding practice and this would help account for the increased success

The success rate that we set as our goal is 70%. Having students not procrastinate, and seek promptly additional help when they need it for the complex subjects discussed in Computer Science classes is essential to increase the rates to 70%+.

9A. SLO Assessment - Compliance: Course-level student learning outcomes and department-level learning outcomes for engineering courses have been assessed regularly. Most of the course-level SLO assessment results have been satisfactory. A total of 186 individual course SLO assessment results have been reported in Tracdat, and less than 5% of these results did not meet the criterion. Course level SLO assessments that have yielded unsatisfactory results have been used to make changes in specific courses (length, depth and order of coverage of topics; methods of delivering content and assessing student learning, etc.)

In 2018 October a comprehensive course and program review was done in CirricUNET.

Courses have an update SLO assessment posted in TracDat, as required. It can be difficult with Adjunct Faculty to have them learn and post their course assessments in a timely fashion.

There must be a plan made and put in place to insure training of Adjuncts for posting timely assessments.

9B. SLO Assessment - Impact: For CIS, we have implemented additional modalities of delivering content (e.g., videos).

The SLO currently in place reflect the key concepts for each of the computer science course descriptions. To truly measure the rate of a student's successfully learns the course material, the selection of the correct SLO's and corresponding assignments do a good job.

10. PLO Assessment: We have not yet addressing PLO. There is not yet a plan. There will be one developed in 2019.

Looking Ahead

11. Program Planning: Create new course descriptions, get them approved, and scheduled for high demand Computer Science topics for the community.

Program Review Narrative Status: Complete

No Objective were returned for this Program based upon the selected parameters.