# Agenda

## Computer Information Sciences/Computer Applications Advisory Committee

Lake Tahoe Community College

Tuesday March 7, 2017

3:00 – 4:30 PM

Board Room

- Welcome and Introductions
- Program Overview & Biennial Review
- Internship Opportunities
- Promotional Flyers
- Student Learning Outcome Assessments
- General Discussion

# Computer and Information Sciences/Computer Applications Advisory Committee Meeting Minutes March 7th, 2017

## Present

- Amber Tanaka – Director of Education, Barton University (BU)
- Brad Deeds – Dean of Workforce Development and Instruction, Lake Tahoe Community College (LTCC)
- Chris Skelly – Network/Telecomm Systems Administrator ll, South Tahoe Public Utility District (STUPD)
- Dave Burba – Director of Information Technology Services, Lake Tahoe Community College (LTCC)
- Deni Sullivan – IT Specialist, United State Forest Service (USFS)
- Jamie Rhone – Career & Technical Education Specialist, Lake Tahoe Community College (LTCC)
- Jenna Palacio –Work Experience/Internship Coordinator and Adjunct Faculty, Lake Tahoe Community College (LTCC)
- Jeremy Brown – Director of Institutional Effectives, Lake Tahoe Community College (LTCC)
- Kerry David – Board of Trustee, Lake Tahoe Community College (LTCC)
- Laura Salinas – Director of Equity, Lake Tahoe Community College (LTCC)
- Nancy Dalton – Board of Trustee, Lake Tahoe Community College (LTCC)
- Tracy Thomas – Counselor, Lake Tahoe Community College (LTCC)

The meeting was called to order at 3:04 p.m.

## Welcome and Introductions

Introductions were made around the room. Brad Deeds, the new Dean of Workforce Development and Instruction, welcomed the committee members. Career & Technical Education (CTE) Advisory Committee Meetings are invaluable to vocational educational programs. Our goal is to get relevant and exciting opportunities for our CTE programs and create pathways to internships, job placements, etc. We want to be able to serve students for not just one quarter but for as long as needed. We also want to make sure we have recommendations and are offering what student need. Kerry David has been attending the last couple of advisory meetings and he offers support and interest. He is also our longest serving trustee, in his 25th year. Nancy Dalton is the newest member of the Board and we thank you both for coming.

## Program Overview and Biennial Review

Brad reviewed certificate and degree completion data, student enrollments/Full-Time Equivalent Students (FTES), and completion rates for the Computer and Information Sciences (CIS) /Computer Applications (CAO) program. The CIS Degree and Certificate of Achievement was originally designed with a concentration in Web Development. The fourth column on the first page of the Annual Program Review (APR) indicates the amount of full time equivalent students (FTES). The number of hours in an individual course is roughly divided by 525 and the result is what is used for funding. This is not a headcount or student enrollment. The enrollment and headcount are the same; however, the duplicated headcount is the total number of students in all of the courses in a program. In 2011-12, there was a spike just before the repeatability rule came into the college system. Repeatability was implemented to focus the CTE transitional students away from recreational engagement. The internship program, however, can be repeated in CIS-133 and can be repeated for up to 24 units. Students participating in an

Internship – Occupational Work Experience program is a great opportunity for students to learn on the job experience by working at Barton, etc.

**Enrollments have dramatically decreased from roughly $5,000/head in FTES with a total of $50,000 reduction in funding to the college. 2015-16 was the first year the majority of CIS courses were offered in online format only**. This was due to full-time faculty member Mike Spina's reassignment to the Physical Education Department and the retirement of full-time faculty member, Jackie Lou. Two new part-time, online adjuncts were later recruited to teach CIS courses online.

**77.8% of the students are male and 22.2% are female.** We are currently receiving Carl Perkins funding for CTE programs and the new federal law replacing VTEA is Perkins IV 1C. This funding can be requested to target organizations for non-trends, such as women in the Computer Science industry. Code.org®, https://code.org/, is a non-profit dedicated to expanding access to computer science, and increasing participation by women and underrepresented minorities. Code.org's K-5 courses blend online, self-guided, and self-paced tutorials with "unplugged" activities that require no computer at all. Even kindergarten-aged pre-readers can participate. The curriculum is completely free for anyone, anywhere to teach and no knowledge of coding is necessary to use the website. Amber Tanaka, CIS Adjunct Faculty, would like to see more females in the program. Today, more women are encouraged to choose math as a major and the job market is not entirely male dominated. However, there is not a huge push to encourage women in schools to learn coding or Science, Technology, Engineering, and Mathematics or (STEM) curriculum, https://www.ed.gov/Stem. STEM is tailored to the needs of female students and is offered across the country. Using this curriculum would allow us in a smaller community to plan for cohorts of students coming up through the local schools. Bob Grant, South Tahoe High School, was at our last advisory meeting and would like to work with the age groups of 14-16 years. There is also Dual Enrollment opportunities we want to look into. We also need to look into elementary schools. For example, Bijou Elementary added the "Two Way Immersion" program, http://bijou.ltusd.org/two_way_immersion, several years ago. Dual Immersion programs include native English-speaking students and native speakers of a foreign language. The first group is now 14-15 years old from the heritage speaker Spanish classes and they are coming to LTCC as the first group. We want them to be streamlined with our programs. **There is currently 14.8% Latinos and these numbers have been shrinking in the last few years.** Laura Salinas, the director of the Equity program, can work on these numbers.

The Web Development program has been experiencing shrinking enrollments and numerous course cancellations. The curriculum is a bit outdated and makes a great case for revamping. The small amount of students going through the program are doing great curriculum wise and are passing and engaged. However, there needs to be some changes made to the program to bring it to industry standards.

The CAO program also has shrinking enrollments. **FTES have shrunk from 24 students 2011-12 to eight in 2015-16. There is definitely more females than male students enrolled in these courses.** The program was originally created to enhance jobs skills students may already have and those who have not been exposed to Excel before take these courses. We want to make sure we are offering relevant curriculum to the students so we are looking at the entire program and its curriculum. **The median age is 37 years of age and 93.8% is the highest course completion rate**. Categorical funds specifically target populations in areas that will lead to jobs that support a family in related zip codes or telecommute. We've receive some dollars in the equity Student Success and Support Program (SSSSP), http://extranet.cccco.edu/Divisions/StudentServices/StudentEquity.aspx. The goals is to get students into meaningful careers. The ADVANCE block grant money is new funds to us but not to the state. This funding helps individuals whom are non-High School completers, English as Second Language learners, etc. Everything is linked to federal requirements. This aligns with labor education in health and human services and they inform us with the legislation. There is more than 2 million dollars for CTE programs. We need to be flexible and work with students and employers to offer programs that lead to in-demand jobs. We will have to track everything supported by these funds and target key programs at the college. One is Wilderness Education. The USFS is our neighbors and we should be taking advantage of that. Another program we need to revamp is the culinary workforce track. Harrah's/Harveys have 92 chef positions and those are well paying careers. Having on campus a "Hospitality Magnet" program through ADVANCE, providing sound academic preparation for high school and college students, while affording valuable career readiness experiences in the field of hospitality management,

and a "Career Center", where career development and counseling are provided to help students with making career, educational, and life decisions, will connect students with jobs. Internships on campus and the expansion of job placement will come in on the back end.

The data here leaves no doubt there needs to be some change within the CIS program. In 2015, Amber Tanaka was asked to teach here at LTCC. She also agrees the CIS program is outdated, from 2005, and the curriculum must be updated immediately. In addition, we should be looking into adding CIS workshops and courses relevant to today. Programs such as, "Webmaster", "Squarespace", and "Wix" are all cut and dry programs the tech savvy business owner can take all of these courses to improve their businesses. However, many of these programs do not exist anymore.

## Update on Online Delivery

Amber Tanaka gave the members an update on her online courses. There are four areas we need to be concentrating on in the future. The first one is "Cyber Security", https://www.dhs.gov/topic/cybersecurity, in particular, "Hacking" for businesses and "Ransomware" for hospitals needing to fight with Cyber Crime. There are also many related jobs with the government and they even have a $30,000 incentive package for CIS enthusiasts. Amber recently researched California community colleges to see how many offer Cyber Security courses. She audited courses through the California Chancellor's Office and found out there's only one or two colleges that actually have Cyber Security courses in either face-to-face and Distance Education. Sacramento State is a "Cyber Core" college and receives reimbursements from the government. They are just down the hill from us and we can offer the preparation courses. The University Center could be potentially used to host classes from other colleges. There are over 250,000 jobs in the Sacramento region, along, and a student could be making $100,000 grand by the age of 19 or 20 by taking dual enrollment for Cyber Security in High School. Education could be free with a Cyber Core scholarship and students could possibly live here, locally. This would transform our town.

Another area we need to look into is "Industrial Manufacturing". Manufacturing Technology programs focus on applied mathematical and scientific knowledge in advanced manufacturing. Use of PC's communication skills, CNS machine tools, and CAD/CAM software is also focused on.

"Cyber Patriot", http://www.uscyberpatriot.org/i, is a program that allows students to learn ethical hacking through a portal. Students will also have to register with the government. An Art teacher from the local High School has been following the Patriot program and is very excited about it. There are 13 colleges from Sacramento to the Oregon border with workforce dollars to implement individual courses for certificates and degrees. These programs will prepare students to go into the workforce and will give them the tools to be successful. Mentoring from local businesses will be a huge component. "Hackathons", where groups of people get together to solve problems, is also something we should look into. We could provide little rewards such as providing a pizza or having a local business investor meet the students. This will also tie into the local Mountain Lab and local area businesses.

"Tech Maker" will be the internet of things as everything is connected to the web. There are organizations such as "Women Techmakers", https://www.womentechmakers.com/, who support women in the industry.

"G-ware" software connects household items such as sprinklers to your phone, etc. and connects things to the internet. There's a market for that type of knowledge. The "Amazon Dash Buttons" are Wi-Fi connected devices you can place anywhere in the home for easy reordering. You press the button and it shows up at your house. In order to grow any business, you need to know the technology side of it.

"Digital Nomad" or also called "Remote Year" is becoming popular. This is when workers are typically working remotely, generally from foreign countries and co-working spaces, to accomplish tasks and goals that traditionally took place in a single stationary workplace. There's approximately 27,000 applications for only 25 slots. We could set up an equivalent for LTCC students. It wouldn't be limited to just the CIS program and would include

internships. We could set students up with an apartment to study abroad and could be one month here and then somewhere else for another month. In the "Semester at Sea" program, students go all over the world and take their classes on a boat. We could also send faculty there to teach abroad. This would be very exciting for LTCC.

## Internship Opportunities

Jenna Palacio, Internship/Work Experience Adjunct, acknowledged the valuable partnerships in the room and thanked the group for their support of the program. LTCC offers a variety of course codes, including CIS 133 and CIS 134. Work experience is a fantastic program for working students and it serves a variety of ages, demographics, and backgrounds. Jenna has recently placed an intern at Harveys Casino. She has seen a spike in applications.

The Internship program allows students to choose between a six or 12 weeks and they have the option of attending more than one quarter. **Seventy percent of their business partners hire their interns**. The program gives students a competitive edge and it centers around his/hers professional development. There are clear objectives and resume development is focused on. The program enables the student to continually think about his or her own career development. CIS students can do project based internships. There is a vetting process and students have met all of the qualifications before interning. There has been rapid growth over the last two years. Internships are such a meaningful way to work for the business community. Jenna asked the members to reach out to her if they have a project or feel their business is right for the Internship program. To get started all you need to do is send a job description. Internships are an opportunity to grow and are the wave of the future. Chris Skelly has offered internships through STUPD; however, it is tough to do through a public agency because a budget need to be approved ahead of time. He is getting ready to onboard an Engineering program for High School students. Joy Barney, USFS, runs the "Generation Green" program at the High School and students get college credit for dual enrollment.

## Promotional Flyers

The "Pathways to Completion" flyer lets students and counselors know what schedules are coming for CTE programs through the spring of 2017. It also lists the requirements for a particular Certificate of Achievement. We are currently in talks with administration about launching some newer versions of these flyers.

## Student Learning Outcome Assessments

There were three assessment reports completed for Computer and Information Sciences/Computer Applications in 2015-16. Jesse Cecil was not able to be here today but relayed a message, "This year I will have taught CIS 120A, B, and C, the Java programming series as well as 103A, Game Design, and 191AK, Python Programming. The students in these courses are motivated and excited about learning skills that will earn them good money in the future. Many programmers can make $60,000/year as a starting salary. It is a joy to work with them and encourage them on their quest for success. Keep up the good work"

Jackie Lou assessed both CAO 152A "Introduction to Windows for PC" and CAO 153A "Introduction to Word Processing" in the fall of 2015. She is currently retired from LTCC.

Amber Tanka reviewed her assessment of her fall 2015 CIS 100 "Web Publishing Using Authoring Software". Most of the students were not academically prepared and when they find out there is research and writing requirements, they drop out. She uses the "Dreamweaver Adobe" software and teaches the design part. She also focuses on how to work with clients as there is a huge component to that when working on someone's website. Most of the students did not realize all of the work involved and didn't make it past the first week. They only want to learn the design part of it. Amber originally had 12 students on the roster; however, four did not log in at all, three logged in only once, and four dropped out during week six. Three students are on track to finish the

program. We need to follow through with the series to make sure these students finish the program. Unfortunately, many students have financial issues and can't afford the software. It is a $20/month subscription and some students can't even afford the textbooks. It has been a huge struggle to get students to be both prepared financially and academically. It was noted students taking the GIS courses that are cross-listed with CIS will have access to LTCC's software license. Amber also teaches CIS courses through the University of Phoenix and they provide both the textbook and software to students. Very few students drop, as there is a zero cost on their part. We need to aim for zero cost for educational resources as well as textbooks to improve student retention.

## General Discussion

Chris Skelly prefers to hire potential employees with specific certifications from a company that does testing. He does not necessarily require someone with a degree. There are too many avenues to take online courses through various community colleges and to be competitive with others and attract students, there needs to be value in a course. Some students are not comfortable with online courses and there needs to be a face-to-face component with CIS courses. In addition, there needs to be better student support. We need advisors checking in with students to make sure they follow through with their educational goals and to ensure their needs are met. Our online support services are lacking. We need to have growth and vision for students who want to obtain basic job skills and get out of poverty. They need basic office skills and updated technology skills in order to make more than minimum wage. Offering CIS courses through Community Education is not a good option as students cannot get financial aid and use the fee waiver through that program. We will be using the consultant funding to set up the new CIS program and then we will obtain the technical assistance needed to set up various programs. We are looking at a potential launch in the 2017-18 academic year.

## The following handouts were presented as an attachment to the meeting minutes:

- Annual Program Review (2015-16) – Computer and Information Sciences/Computer Applications
- CTE Program Addendum (2015-16) – Computer and Information Sciences/Computer Applications
- Pathways to Completion Flyer (2016-17) – Computer and Information Sciences
- Student Learning Outcome Assessment Summary (2015-16) – Computer and Information Sciences/Computer Applications
- Advisory Committee Minutes (2-17-16) – Computer and Information Sciences/Computer Applications

The meeting adjourned at 4:30 p.m.

Respectively submitted,
Melissa Liggett
Career & Technical Education Technician

# 2015-16 ANNUAL PROGRAM REVIEW

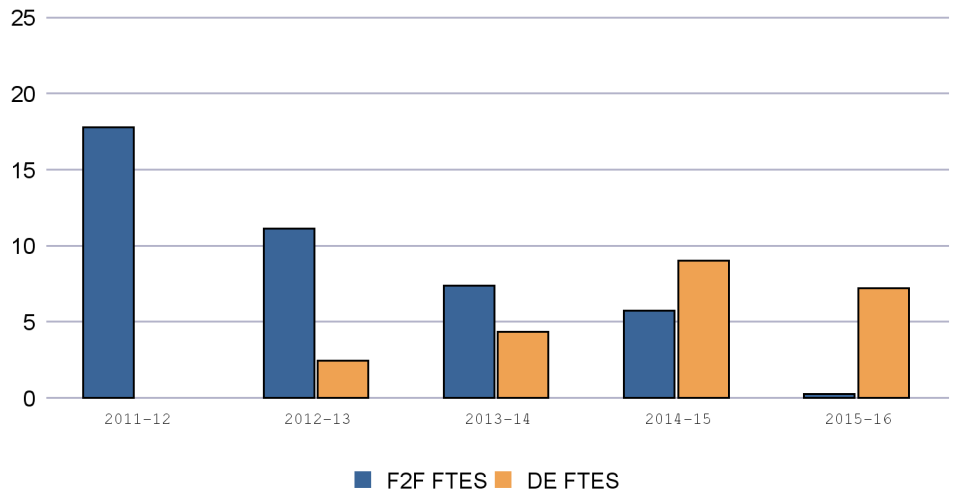
## Web Development, Network, Hardware, and IT

## WEB DEVELOPMENT, NETWORK, HARDWARE, AND IT SUMMARY

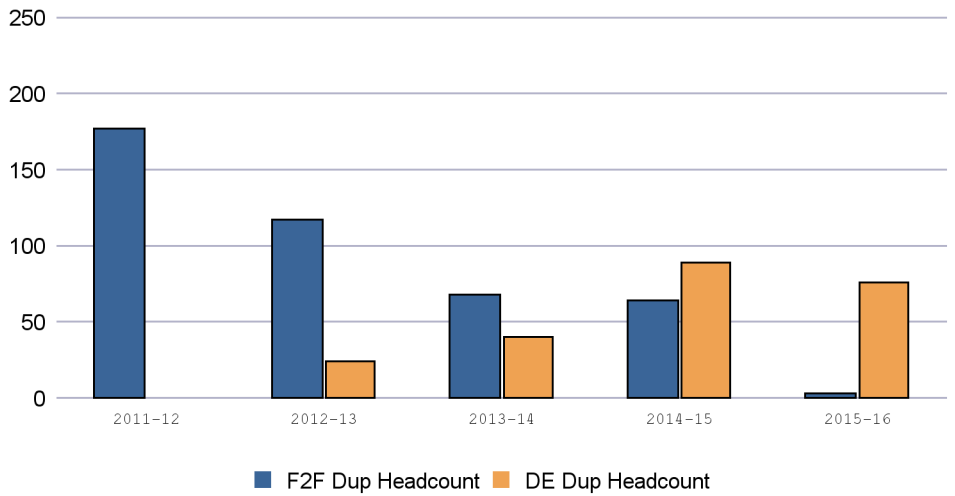
This report contains data from Academic Year (AY) 2011 to 2015. Information on program size based on full-time equivalent students (FTES), Student Success, and Student Achievement are presented below.

| | Total Sections | F2F Sections | Dist Ed Sections | Total FTES | F2F FTES | Dist Ed FTES | Total Duplicated Headcount | F2F Duplicated Headcount | Dist Ed Duplicated Headcount |
|---|---|---|---|---|---|---|---|---|---|
| 2011-12 | **10** | 10 | 0 | **17.78** | 17.78 | 0.00 | **177** | 177 | 0 |
| 2012-13 | **12** | 10 | 2 | **13.58** | 11.14 | 2.45 | **141** | 117 | 24 |
| 2013-14 | **13** | 9 | 4 | **11.71** | 7.38 | 4.33 | **108** | 68 | 40 |
| 2014-15 | **17** | 9 | 8 | **14.74** | 5.73 | 9.00 | **153** | 64 | 89 |
| 2015-16 | **5** | 1 | 4 | **7.49** | 0.27 | 7.22 | **79** | 3 | 76 |
| 4-Yr Chg (11-12 to 15-16) | **-50.0%** | -90.0% | --- | **-57.9%** | -98.5% | --- | **-55.4%** | -98.3% | --- |
| 1-Yr Chg (14-15 to 15-16) | **-70.6%** | -88.9% | -50.0% | **-49.2%** | -95.3% | -19.8% | **-48.4%** | -95.3% | -14.6% |

### RESIDENT FTES




### DUPLICATED HEADCOUNT



# 2015-16 ANNUAL PROGRAM REVIEW

## Web Development, Network, Hardware, and IT

## DEMOGRAPHICS

| | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| Male | 57 | 66.3% | 51 | 68.0% | 44 | 75.9% | 57 | 80.3% | 42 | 77.8% |
| Female | 29 | 33.7% | 24 | 32.0% | 14 | 24.1% | 13 | 18.3% | 12 | 22.2% |
| Unknown | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 1 | 1.4% | 0 | 0.0% |

| | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| African American | 1 | 1.2% | 0 | 0.0% | 2 | 3.4% | 0 | 0.0% | 1 | 1.9% |
| Asian | 5 | 5.8% | 5 | 6.7% | 1 | 1.7% | 5 | 7.0% | 2 | 3.7% |
| Hispanic | 10 | 11.6% | 11 | 14.7% | 9 | 15.5% | 15 | 21.1% | 8 | 14.8% |
| Native Amer/Alaska Native | 1 | 1.2% | 0 | 0.0% | 1 | 1.7% | 1 | 1.4% | 0 | 0.0% |
| White Non-Hispanic | 62 | 72.1% | 54 | 72.0% | 41 | 70.7% | 41 | 57.7% | 32 | 59.3% |
| Two or more races | 4 | 4.7% | 3 | 4.0% | 2 | 3.4% | 5 | 7.0% | 10 | 18.5% |
| Other | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 1 | 1.4% | 0 | 0.0% |
| Unknown | 3 | 3.5% | 2 | 2.7% | 2 | 3.4% | 3 | 4.2% | 1 | 1.9% |

| | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| Age < 25 | 31 | 36.0% | 31 | 41.3% | 22 | 37.9% | 37 | 52.1% | 27 | 50.0% |
| Age 25 - 49 | 30 | 34.9% | 28 | 37.3% | 29 | 50.0% | 25 | 35.2% | 23 | 42.6% |
| Age 50 + | 25 | 29.1% | 16 | 21.3% | 7 | 12.1% | 9 | 12.7% | 4 | 7.4% |

| | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 |
|---|---|---|---|---|---|
| Median Age | 31 | 28 | 27 | 23 | 26 |
| Youngest | 15 | 12 | 13 | 15 | 16 |
| Oldest | 68 | 68 | 67 | 68 | 64 |

# 2015-16 ANNUAL PROGRAM REVIEW

## Web Development, Network, Hardware, and IT

## COURSE SUCCESS

| | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success |
| Male | 107 | 92.5% | 96 | 85.4% | 83 | 77.1% | 122 | 86.1% | 44 | 77.3% |
| Female | 68 | 92.6% | 34 | 91.2% | 19 | 89.5% | 19 | 78.9% | 18 | 100.0% |
| Unknown | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 1 | 100.0% | 0 | 0.0% |

| | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success |
| African American | 2 | 100.0% | 0 | 0.0% | 2 | 50.0% | 0 | 0.0% | 0 | 0.0% |
| Asian | 14 | 100.0% | 6 | 100.0% | 1 | 100.0% | 9 | 100.0% | 2 | 100.0% |
| Hispanic | 18 | 77.8% | 21 | 90.5% | 13 | 92.3% | 35 | 88.6% | 5 | 80.0% |
| Native Amer/Alaska Native | 5 | 80.0% | 0 | 0.0% | 0 | 0.0% | 3 | 100.0% | 0 | 0.0% |
| White Non-Hispanic | 117 | 93.2% | 98 | 85.7% | 82 | 78.0% | 82 | 82.9% | 40 | 80.0% |
| Two or more races | 15 | 100.0% | 3 | 100.0% | 2 | 50.0% | 8 | 75.0% | 14 | 92.9% |
| Other | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 1 | 100.0% | 0 | 0.0% |
| Unknown | 4 | 100.0% | 2 | 50.0% | 2 | 100.0% | 4 | 75.0% | 1 | 100.0% |

| | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success |
| Age < 25 | 54 | 88.9% | 45 | 86.7% | 35 | 88.6% | 86 | 83.7% | 33 | 84.8% |
| Age 25 - 49 | 66 | 92.4% | 51 | 90.2% | 55 | 70.9% | 38 | 86.8% | 25 | 84.0% |
| Age 50 + | 55 | 96.4% | 34 | 82.4% | 12 | 91.7% | 18 | 88.9% | 4 | 75.0% |

*NOTE: Enrollment = duplicated headcount, excluding audits, noncredit, and drops w/ no record.*

# 2015-16 ANNUAL PROGRAM REVIEW

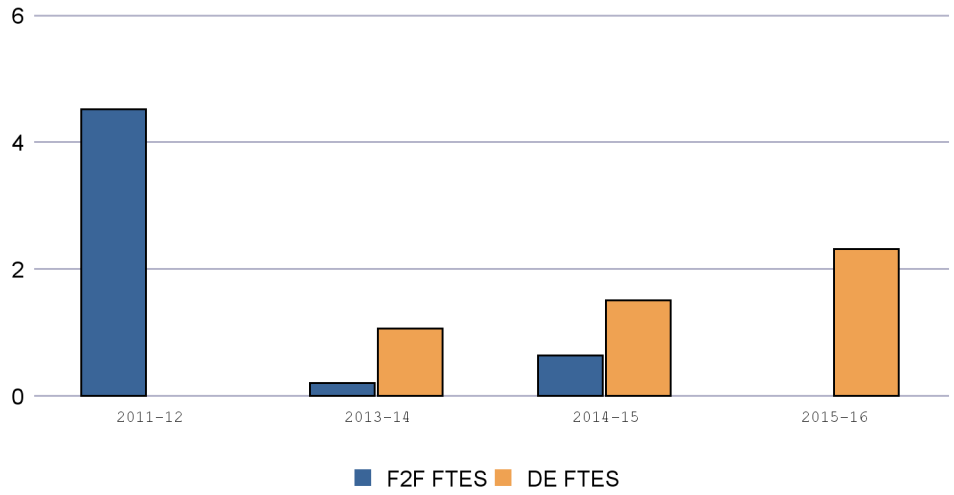
## Computer & Information Science

## COMPUTER & INFORMATION SCIENCE SUMMARY

This report contains data from Academic Year (AY) 2011 to 2015. Information on program size based on full-time equivalent students (FTES), Student Success, and Student Achievement are presented below.

| | Total Sections | F2F Sections | Dist Ed Sections | Total FTES | F2F FTES | Dist Ed FTES | Total Duplicated Headcount | F2F Duplicated Headcount | Dist Ed Duplicated Headcount |
|---|---|---|---|---|---|---|---|---|---|
| 2011-12 | **5** | 5 | 0 | **4.52** | 4.52 | 0.00 | **66** | 66 | 0 |
| 2013-14 | **2** | 1 | 1 | **1.27** | 0.21 | 1.07 | **22** | 10 | 12 |
| 2014-15 | **2** | 1 | 1 | **2.15** | 0.64 | 1.51 | **32** | 14 | 18 |
| 2015-16 | **2** | 0 | 2 | **2.31** | 0.00 | 2.31 | **26** | 0 | 26 |
| 3-Yr Chg (11-12 to 15-16) | **-60.0%** | -100.0% | --- | **-48.9%** | -100.0% | --- | **-60.6%** | -100.0% | --- |
| 1-Yr Chg (14-15 to 15-16) | **0.0%** | -100.0% | 100.0% | **7.4%** | -100.0% | 52.9% | **-18.8%** | -100.0% | 44.4% |

### RESIDENT FTES

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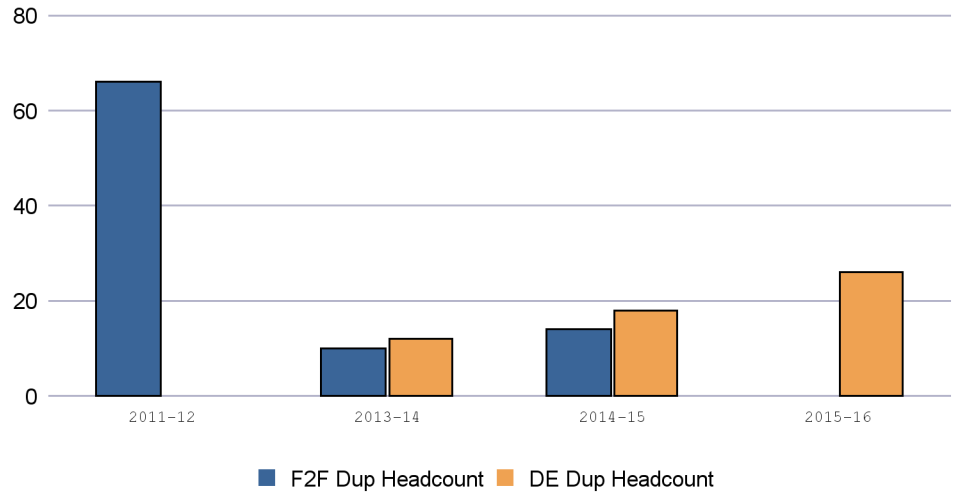


# 2015-16 ANNUAL PROGRAM REVIEW

## Computer & Information Science

## DEMOGRAPHICS

| | 2011-12 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| Male | 37 | 77.1% | 15 | 68.2% | 22 | 68.8% | 16 | 64.0% |
| Female | 11 | 22.9% | 7 | 31.8% | 10 | 31.3% | 9 | 36.0% |
| Unknown | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |

| | 2011-12 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| African American | 0 | 0.0% | 0 | 0.0% | 1 | 3.1% | 1 | 4.0% |
| Asian | 0 | 0.0% | 0 | 0.0% | 1 | 3.1% | 3 | 12.0% |
| Hispanic | 12 | 25.0% | 2 | 9.1% | 8 | 25.0% | 6 | 24.0% |
| Native Amer/Alaska Native | 0 | 0.0% | 1 | 4.5% | 1 | 3.1% | 0 | 0.0% |
| White Non-Hispanic | 31 | 64.6% | 14 | 63.6% | 19 | 59.4% | 14 | 56.0% |
| Two or more races | 3 | 6.3% | 4 | 18.2% | 2 | 6.3% | 1 | 4.0% |
| Unknown | 2 | 4.2% | 1 | 4.5% | 0 | 0.0% | 0 | 0.0% |

| | 2011-12 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| Age < 25 | 14 | 29.2% | 16 | 72.7% | 14 | 43.8% | 11 | 44.0% |
| Age 25 - 49 | 20 | 41.7% | 2 | 9.1% | 10 | 31.3% | 11 | 44.0% |
| Age 50 + | 14 | 29.2% | 4 | 18.2% | 8 | 25.0% | 3 | 12.0% |

| | 2011-12 | 2013-14 | 2014-15 | 2015-16 |
|---|---|---|---|---|
| Median Age | 36 | 22 | 29 | 25 |
| Youngest | 18 | 13 | 14 | 17 |
| Oldest | 68 | 59 | 69 | 66 |

# 2015-16 ANNUAL PROGRAM REVIEW

## Computer & Information Science

## AWARDS

| | Award Type | Award Title | Awards Conferred |
|---|---|---|---|
| **2011-12** | AA Degree | Web Development | 3 |
| | Certificate | Web Development | 8 |
| **2013-14** | AA Degree | Web Development | 5 |
| | Certificate | Web Development | 1 |
| **2014-15** | AA Degree | Web Development | 1 |
| | Certificate | Web Development | 2 |
| **2015-16** | AA Degree | Web Development | 1 |

# 2015-16 ANNUAL PROGRAM REVIEW

## Computer & Information Science

## COURSE SUCCESS

| | 2011-12 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|
| | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success |
| Male | 49 | 91.8% | 15 | 66.7% | 21 | 81.0% | 13 | 92.3% |
| Female | 15 | 100.0% | 7 | 85.7% | 9 | 88.9% | 8 | 100.0% |

| | 2011-12 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|
| | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success |
| African American | 0 | 0.0% | 0 | 0.0% | 1 | 0.0% | 1 | 0.0% |
| Asian | 0 | 0.0% | 0 | 0.0% | 1 | 100.0% | 3 | 100.0% |
| Hispanic | 18 | 94.4% | 2 | 50.0% | 7 | 85.7% | 3 | 100.0% |
| Native Amer/Alaska Native | 0 | 0.0% | 1 | 100.0% | 1 | 100.0% | 0 | 0.0% |
| White Non-Hispanic | 38 | 92.1% | 14 | 64.3% | 18 | 83.3% | 12 | 100.0% |
| Two or more races | 3 | 100.0% | 4 | 100.0% | 2 | 100.0% | 2 | 100.0% |
| Unknown | 5 | 100.0% | 1 | 100.0% | 0 | 0.0% | 0 | 0.0% |

| | 2011-12 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|
| | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success |
| Age < 25 | 15 | 93.3% | 16 | 68.8% | 13 | 84.6% | 7 | 100.0% |
| Age 25 - 49 | 24 | 87.5% | 2 | 50.0% | 10 | 70.0% | 11 | 90.9% |
| Age 50 + | 25 | 100.0% | 4 | 100.0% | 7 | 100.0% | 3 | 100.0% |

*NOTE: Enrollment = duplicated headcount, excluding audits, noncredit, and drops w/ no record.*

# 2015-16 ANNUAL PROGRAM REVIEW

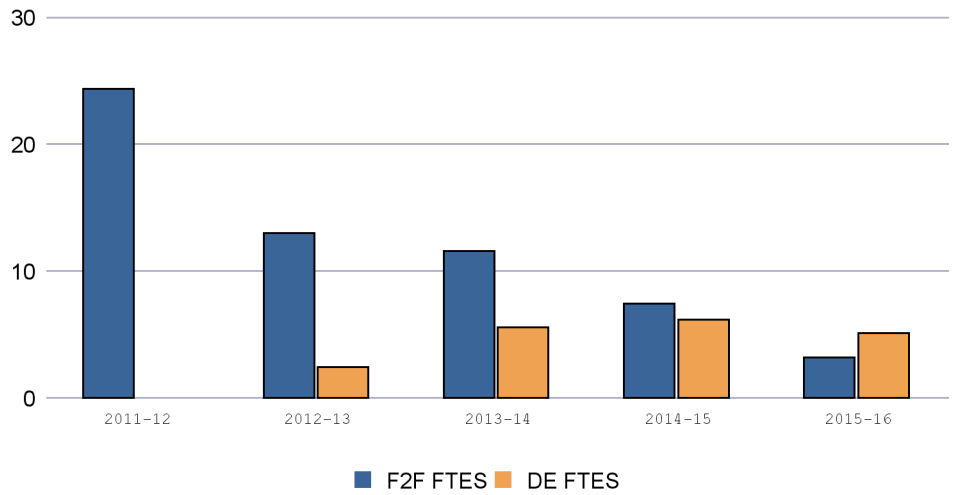
## Computer Applications

## COMPUTER APPLICATIONS SUMMARY

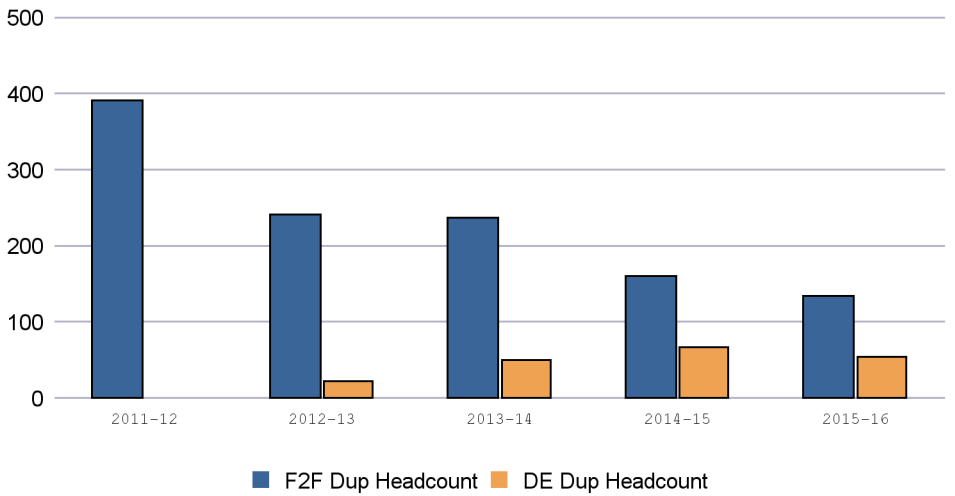
This report contains data from Academic Year (AY) 2011 to 2015. Information on program size based on full-time equivalent students (FTES), Student Success, and Student Achievement are presented below.

| | Total Sections | F2F Sections | Dist Ed Sections | Total FTES | F2F FTES | Dist Ed FTES | Total Duplicated Headcount | F2F Duplicated Headcount | Dist Ed Duplicated Headcount |
|---|---|---|---|---|---|---|---|---|---|
| 2011-12 | **27** | 27 | 0 | **24.37** | 24.37 | 0.00 | **391** | 391 | 0 |
| 2012-13 | **18** | 17 | 1 | **15.44** | 12.99 | 2.45 | **263** | 241 | 22 |
| 2013-14 | **20** | 17 | 3 | **17.13** | 11.57 | 5.56 | **287** | 237 | 50 |
| 2014-15 | **16** | 11 | 5 | **13.64** | 7.46 | 6.18 | **227** | 160 | 67 |
| 2015-16 | **15** | 11 | 4 | **8.30** | 3.21 | 5.09 | **188** | 134 | 54 |
| 4-Yr Chg (11-12 to 15-16) | **-44.4%** | -59.3% | --- | **-65.9%** | -86.8% | --- | **-51.9%** | -65.7% | --- |
| 1-Yr Chg (14-15 to 15-16) | **-6.3%** | 0.0% | -20.0% | **-39.2%** | -57.0% | -17.6% | **-17.2%** | -16.3% | -19.4% |

### RESIDENT FTES




### DUPLICATED HEADCOUNT



# 2015-16 ANNUAL PROGRAM REVIEW

## Computer Applications

## DEMOGRAPHICS

| | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| Male | 96 | 41.2% | 58 | 36.3% | 72 | 36.9% | 55 | 37.9% | 51 | 44.7% |
| Female | 136 | 58.4% | 102 | 63.8% | 122 | 62.6% | 90 | 62.1% | 63 | 55.3% |
| Unknown | 1 | 0.4% | 0 | 0.0% | 1 | 0.5% | 0 | 0.0% | 0 | 0.0% |

| | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| African American | 3 | 1.3% | 3 | 1.9% | 0 | 0.0% | 2 | 1.4% | 1 | 0.9% |
| Asian | 9 | 3.9% | 6 | 3.8% | 5 | 2.6% | 7 | 4.8% | 1 | 0.9% |
| Hispanic | 43 | 18.5% | 33 | 20.6% | 42 | 21.5% | 36 | 24.8% | 27 | 23.7% |
| Native Amer/Alaska Native | 2 | 0.9% | 2 | 1.3% | 3 | 1.5% | 0 | 0.0% | 1 | 0.9% |
| Pacific Islander | 1 | 0.4% | 2 | 1.3% | 1 | 0.5% | 1 | 0.7% | 0 | 0.0% |
| White Non-Hispanic | 165 | 70.8% | 102 | 63.8% | 124 | 63.6% | 89 | 61.4% | 74 | 64.9% |
| Two or more races | 3 | 1.3% | 8 | 5.0% | 14 | 7.2% | 7 | 4.8% | 3 | 2.6% |
| Other | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 1 | 0.9% |
| Unknown | 7 | 3.0% | 4 | 2.5% | 6 | 3.1% | 3 | 2.1% | 6 | 5.3% |

| | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| Age < 25 | 62 | 26.6% | 27 | 16.9% | 43 | 22.1% | 40 | 27.6% | 30 | 26.3% |
| Age 25 - 49 | 83 | 35.6% | 68 | 42.5% | 74 | 37.9% | 59 | 40.7% | 49 | 43.0% |
| Age 50 + | 88 | 37.8% | 65 | 40.6% | 78 | 40.0% | 46 | 31.7% | 35 | 30.7% |

| | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 |
|---|---|---|---|---|---|
| Median Age | 46 | 44 | 41 | 39 | 37 |
| Youngest | 13 | 17 | 16 | 17 | 17 |
| Oldest | 81 | 80 | 84 | 70 | 78 |

# 2015-16 ANNUAL PROGRAM REVIEW

## Computer Applications

## AWARDS

| | Award Type | Award Title | Awards Conferred |
|---|---|---|---|
| **2012-13** | AA Degree | Office Technology | 1 |
| | Certificate | Computer Applications | 2 |
| **2013-14** | AA Degree | Office Technology | 1 |
| **2015-16** | Certificate | Computer Applications | 1 |

# 2015-16 ANNUAL PROGRAM REVIEW

## Computer Applications

## COURSE SUCCESS

| | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success |
| Male | 167 | 86.8% | 99 | 85.9% | 100 | 80.0% | 72 | 73.6% | 73 | 82.2% |
| Female | 211 | 84.8% | 153 | 88.9% | 169 | 78.7% | 128 | 88.3% | 102 | 90.2% |
| Unknown | 1 | 100.0% | 0 | 0.0% | 1 | 100.0% | 0 | 0.0% | 0 | 0.0% |

| | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success |
| African American | 5 | 60.0% | 4 | 50.0% | 0 | 0.0% | 1 | 100.0% | 0 | 0.0% |
| Asian | 13 | 92.3% | 8 | 87.5% | 6 | 100.0% | 16 | 87.5% | 1 | 100.0% |
| Hispanic | 66 | 74.2% | 55 | 89.1% | 54 | 79.6% | 48 | 91.7% | 39 | 79.5% |
| Native Amer/Alaska Native | 3 | 33.3% | 2 | 100.0% | 4 | 75.0% | 0 | 0.0% | 2 | 50.0% |
| Pacific Islander | 2 | 50.0% | 5 | 100.0% | 3 | 66.7% | 1 | 100.0% | 0 | 0.0% |
| White Non-Hispanic | 275 | 89.1% | 157 | 87.9% | 176 | 83.0% | 124 | 81.5% | 117 | 89.7% |
| Two or more races | 2 | 100.0% | 12 | 83.3% | 18 | 38.9% | 8 | 50.0% | 6 | 100.0% |
| Other | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 1 | 100.0% |
| Unknown | 13 | 92.3% | 9 | 88.9% | 9 | 77.8% | 2 | 50.0% | 9 | 77.8% |

| | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success | Enrollment | Success |
| Age < 25 | 77 | 80.5% | 34 | 82.4% | 47 | 85.1% | 46 | 80.4% | 34 | 79.4% |
| Age 25 - 49 | 127 | 85.0% | 105 | 88.6% | 101 | 78.2% | 73 | 76.7% | 76 | 84.2% |
| Age 50 + | 175 | 88.6% | 113 | 88.5% | 122 | 77.9% | 81 | 90.1% | 65 | 93.8% |

*NOTE: Enrollment = duplicated headcount, excluding audits, noncredit, and drops w/ no record.*

ANNUAL PROGRAM

CTE PROGRAM ADDENDUM

# Computer and Information Sciences/Computer Applications

# (2015 - 2016)

For all Career and Technical Education (CTE) Programs, please fill out the following worksheet as part of the required biennial review.

## 1. Purpose of this Program

Significantly Changed Purpose in the Last Two Years | Minor Changes in Purpose in the Last Two Years | No Changes in Purpose in the Last Two Years

☐ ☐ ☑ ☐ ☐

(Description, mission, target population, etc.)

## 2. Demand for this Program

High Demand | Adequate Demand for our students | Low Demand

☐ ☐ ☑ ☐ ☐

(Labor market data, advisory input, etc.)

## 3. Quality of this Program

Highest Quality | Meets Student Needs | Needs Significant Improvement

☐ ☐ ☐ ☐ ☑ ☐

(Core indicators, student outcomes, partnerships, certificates, degrees, articulation, faculty qualifications, diversity, grants, equipment, etc.)

## 4. External Issues

Benefits From and Contributes to External Issues | Complies with External Issues | Not Consistent with External Issues

☐ ☐ ☑ ☐ ☐

(Legislation, CCCCO mandates, VTEA, Tech Prep, CalWORKs, WIA, BOG Career Ladders, etc.)

## 5. Cost of this Program

Income Exceeds Expenditures | Income Covers Expenditures | Expenditures Exceed Income

☐ ☐ ☑ ☐ ☐ ☐

(Enrollment/FTEs generated & in-kind contributions of time/resources minus salaries/equipment/supplies, etc)

## 6. Two-Year Plan

Significant Growth Anticipated | On Track for Next Two Years | Need Significant Changes and/or Increased Resources to Continue

☐ ☑ ☐ ☐ ☐

(Recommendations, project future trends, personnel and equipment needs, etc.)

Last Update:12/16/2016 9:39

# Pathways to Completion – Short-Term Certificate (Computer and Information Sciences)

**Overview:** This short-term departmental certificate in Computer and Information Sciences allows students to pursue multiple Oracle Program certifications. Specifically, completion of this short-term program of study prepares students for examinations leading to Oracle certification in:
•Associate, Java SE 7 Programmer
•Professional, Java SE 7 Programmer

**All courses from the following (12 units):**
CIS 120A Computer Programming I
CIS 120B Computer Programming II
CIS 120C Computer Programming III
For further information about this program, contact the Career and Technical Education department at extension 583 or 723

**CIS 120A:** This is the first course in computer programming for computer science, information systems, science, or engineering majors. The course covers proper programming structure and style. Topics covered include algorithm development, control structures, subprograms and functions, parameter passing, and data types. Students write numerous programs in a high-level programming language.
**Prerequisites:** MAT 154A or MAT 154AA with a grade of "C" or better or appropriate skills. (co-enrollment allowed)

**CIS 120B:** This is a second course in computer programming for computer science, information systems, science, or engineering majors. Topics will build upon those covered in CIS 120A as well as include software engineering principles, development of efficient algorithms, and the design and selection of appropriate classes. Students will study the principles and use of object-oriented programming. **Prerequisites:** CIS 120A with a grade of "C" or better or equivalent.

**CIS: 120C:** This is the third course in computer programming for computer science, information systems, science, or engineering majors. The topics will build upon those covered in CIS 120B. The course covers the principles and use of object-oriented programming. Students will study searching, sorting, and the relative efficiencies algorithms implementing these tasks. Students will study recursively implemented algorithms, lists, stacks, queues, and trees together with further study of abstract data types. **Prerequisites:** CIS 120B with a grade of "C" or better or equivalent.

**Fall 2016**

- CIS 120A-01 Computer Programming I Online! 9/19 – 12/8/16 [4 units]

**Winter 2017**

- CIS 120B-01 Computer Programming ll Online! 1/9 – 3/31/17 [4 units]

**Spring 2017**

- CIS 120C-01 Computer Programming lll Online! 4/10 – 6/29/17 [4 units]

**Catalog: 2016-17**


***LTCC also offers an AA Degree and a Certificate of Achievement in CIS: Web Development!***

LAKE TAHOE COMMUNITY COLLEGE

Last Update: 11/2/2016 10:23

Academic Year 2016-17

# COMPUTER & INFORMATION SCIENCES – WEB DEVELOPMENT

## Pathways to Completion – Certificate of Achievement

| *All REQUIRED COURSES *[27 units] See back page* | **SELECT 1 COURSE *[4 units] See back page* |
|---|---|
| **Summer 2016** | |
| ■ CIS 112-01 Web Publishing Using HTML and CSS*<br>Online! 6/20 – 7/29/16 *[4 units]* | No offerings |
| **Fall 2016** | |
| | ■ ART 111-01 Two-Dimensional Design**<br>MW: 10:00AM - 12:50AM 9/19 – 12/7/16<br><br>■ DMA 121-01 Artistic Concepts for the Web**<br>Online! 9/19 – 12/8/16 *[4 units]* |
| **Winter 2017** | |
| ■ CIS 114-01 Data-Driven Web Sites*<br>Online! 1/9 – 3/31/17 *[4 units]*<br>■ CIS 100-01 Web Publishing Using Authoring Software*<br>Online! 1/9 - 3/31/17 *[4 units]* | ■ DMA 121-01 Artistic Concepts for the Web**<br>Online! 1/9 – 3/31/17 *[4 units]* |
| **Spring 2017** | |
| ■ CIS 115-01 Current Technologies in Web Development*<br>Online! 4/10 – 6/29/17*[4 units]*<br>■ CIS 101-01 Graphics for the Web*<br>Online! 4/10 - 6/29/17*[4 units]* | ■ DMA 121-01 Artistic Concepts for the Web**<br>Online! 4/10 – 6/29/17 *[4 units]* |

*Students are required to meet with a counselor to develop an Educational Plan. All schedules subject to change!*

*Need more units or want hands on experience in this field? See the Work Experience/Internship sections in the quarterly schedule for other opportunities. workexp@ltcc.edu 530-541-4660 ext. 703*

# *COMPUTER & INFORMATION SCIENCES – WEB DEVELOPMENT*

## Certificate of Achievement

**Catalog 2016-17**

The Web Development certificate is designed to prepare students to begin developing web sites as a professional. The curriculum provides a balanced foundation of all aspects of web development. Students will gain basic competencies in web authoring software, web graphics, web animation, HTML, client-side scripting, server-side scripting, and database connectivity. There is emphasis on understanding and practicing the entire web development process, from start to finish.

Student Learning Outcomes for this certificate are:
- Use authoring software to develop and manage a web site.
- Use graphics software to design web page layout and to produce and optimize graphics for the web.
- Use software to produce animation/video for the web.
- Write and interpret HTML code.
- Write, interpret, and apply client-side scripting.
- Write, interpret, and apply server-side scripting.
- Develop data-driven web pages.

**A. REQUIRED COURSES**

31 units distributed as follows:
*1. All courses from the following (27 units):
CIS 100 Web Publishing Using Authoring Software
CIS 101 Graphics for the Web
CIS 102 Animation for the Web
CIS 112 Web Publishing Using HTML and CSS
CIS 113 Client-Side Scripting for the Web
CIS 114 Data-Driven Web Sites
CIS 115 Current Technologies in Web Development

**2. One course from the following (4 units):
ART 111 Two-Dimensional Design
ART 112 Two- and Three-Dimensional Design
DMA 121 Artistic Concepts for the Web

| *Summer 2016* | *Fall 2016* | *Winter 2017* | *Spring 2017* | *Summer 2017* | *Fall 2017* | *Winter 2018* | *Spring 2018* |
|---|---|---|---|---|---|---|---|
| CIS 112-01* | ART 111-01** | CIS 114-01* | CIS 115-01* | ------- | CIS 102-01* | CIS 112-01* | CIS 113-01* |
| | DMA 121-01** | CIS 100-01* | CIS 101-01* | | DMA 121-01** | | |
| | | DMA 121-01** | DMA 121-01** | | | | |
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| Online | | | | | | | |

DID YOU KNOW?

***LTCC also offers an Associate Degree and Certificate of Achievement in Business, a Transfer Degree in Business Administration, and a Short Term Departmental Certificate in Certified Bookkeeper!***

**2015-16 ACADEMIC YEAR**

# STUDENT LEARNING OUTCOME ASSESSMENT SUMMARY

## COMPUTER AND INFORMATION SCIENCES/COMPUTER APPLICATIONS

There were assessment reports completed for Computer and Information Sciences/Computer Applications in 2015-16:

| COURSE CODE AND TITLE | INSTRUCTOR | QUARTER | RESULTS |
|---|---|---|---|
| CIS 100 Web Publishing Using Authoring Software | Amber Tanaka | Fall 2015 | This is the first time I am teaching this course and I am satisfied with student mastery. One thing I will change the next time this course is taught is to have it run the full quarter rather than be a late-start ten week course as some students reported feeling that the extra time would be valuable to complete all of the assignments. |
| CAO 152A Introduction to Windows for PC | Jackie Lou | Fall 2015 | There is nothing that needs to be changed as the handouts and hands-on exercises I have designed for this course have been effective learning resources for the students. The only issue is how long to continue teaching this version of Windows. |
| CAO 153A Introduction to Word Processing | Jackie Lou | Fall 2015 | This introductory Word course focuses on learning basic Word skills and applying those skills to create practical business documents (letters, memos, and reports). There are no changes to recommend except to update class handouts with any software changes if this class is offered again |
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