



2014-15 WORKFORCE PROGRAM REVIEW

PROGRAM NAME: Computer Systems

REPORT PREPARER: CERVANTEZ **PHONE EXT.** 1659

WORKFORCE PROGRAM REVIEW

The timeframe of program review is five years, including the year of the review. Data being reviewed for any item should go back the previous four years, unless not available. Questions regarding forms, calendars & due dates should be addressed to Kathleen Fenton (ext. 3737) or David Liska (ext. 3714) in the Institutional Effectiveness Office.

Are We Doing the Right Things?

This introductory section requires a description of faculty effort in instruction, scholarship, outreach and engagement, and service across the district/campus. It should be a comprehensive and functional depiction which sets the context of the workforce program and should serve as the framework for the rest of the document. Topics presented in this self-definition explanation should appear later in the self-study in greater detail and explanation. This section should also begin to draw alignments with other processes, such as institutional or state initiatives.

This section is not meant to be merely a descriptive narrative of demographics. For example, reporting enrollment figures for the past four years is useful only if they are illustrative of something that is impacting the unit (for example, growth in “service learning courses;” substantial increase or decrease in the number of students with intended award completion; a disruptive technology impacting market demand). This is also not meant to be a statement which establishes the level of quality of the program. It should be focused clearly on what is done in the name of the program.

1. WHAT DOES YOUR WORKFORCE PROGRAM DO?

A. What is the workforce program and its context? Provide evidence to make a case for each assertion made.

Points to consider:

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- Instructional efforts by program faculty
- Related scholarship efforts by program faculty
- Outreach and engagement efforts by program faculty
- Service across the campus by program faculty

Our program includes an AAS (Associate of Applied Science) degree, five certificates, and two marketable skills awards. We have multiple tracks in our AAS degree. They are Computer Support, Database Development, Information Systems, C++ Software Development, and Java Software Development. Our AAS has a group of technical core courses used by all of the degree tracks. After completing the technical core, the students branch into the courses in the track they have chosen.

Our faculty is dedicated to providing instruction as well as facilitation to the students in our program. We have focused on providing courses at the times and delivery format that best meets our student's needs. If a program course has multiple sections, we focus on providing that course at different times, campuses, and delivery methods. If a program course has one section, that course is usually scheduled either at night or online to make the course accessible to both traditional and non-traditional students. While most of our courses are still offered during regular 16-week semesters, we have offered courses in express semesters and during Weekend College.

Our program faculty is engaged in on-going professional development and research in new innovations in teaching and our discipline. Faculty members attend conferences, seminars, workshops, and short courses. Each year several of us refresh skills or gain program related skills through Working Connections which is a week long summer workshop in different technical topics. Outside of organized instructional opportunities, faculty members are engaged in study and research to keep current in our discipline.

Program relevancy and currency is supported through our partnerships with local industry advisors. Our local Advisory Board meets twice a year to review what we are doing, suggest improvements and offer insights into both technical skills and soft skills that employers are seeking from our students. Our program also has worked with the DOL (Department of Labor) grant and NISTGC (The National Information, Security, & Geospatial Technologies Consortium) to identify industry at a national level.

Our program faculty is involved in service across the campus. We have one faculty member who is currently serving on CAB (Curriculum Advisory Board) and three other faculty members who are serving on OAB (Online Advisory Board). Still another faculty member is currently Vice-President of our Faculty Council. Our other faculty members are participating in other committees (such as Technology Committee), working with student orientation events, and participating in campus based events such as Rockin' the Ridge at Preston Ridge Campus.

2. WHY WE DO THE THINGS WE DO: PROGRAM RELATIONSHIP TO THE COLLEGE MISSION, CORE VALUES & STRATEGIC PLAN

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The question of “why we do the things we do?” is one which focuses on the mission of the program, goals and priorities, and the role of the program within the discipline and college. You do not need to repeat the college mission, core values or strategic goals. Provide program-specific evidence of actions that support the case that the program and its faculty contribute to fulfillment of the college mission, core values, and goals.

Poor example: Core values are integrated into program coursework. (Not verifiable).

Good example: Core values are integrated into coursework through written reflections (Verifiable).

Better example: Core values are integrating into coursework through written reflections asking the student to describe how s/he will demonstrate each of the core values in his or her professional life. (Replicable, Verifiable)

- A. Provide program-specific evidence of actions that support the case that the program and its faculty contribute to fulfillment of the college [mission](#).

The Computer Systems program contributes to the college’s mission by offering programs which develop fundamental skills and knowledge of computer applications and software development. This is accomplished through course work and is assessed through capstone courses where students demonstrate the skills and knowledge they have learned. Capstone courses also challenge students’ intellect so they can become workforce ready. This is shown by many of our students being sought out by various local employers.

Our goal as professional educators is to also help students develop professionally. This is promoted through participating in the school’s Cooperative Work Experience program and counseling workshops. We also support student participation in college-wide organizations and events for those with different backgrounds and perspectives. We do this many times by integrating student empowerment programs such as service learning into our course work.

Faculty contributes to the fulfillment of the college mission through student-centered teaching, strengthening student character, and service to the college and community. This service includes representation and leadership positions in organizations such as Faculty Council, Curriculum Advisory Board (CAB), Council of Excellence (COE), and the Online Advisory Board (OAB).

- B. Provide program-specific evidence of actions that support the case that the program and its faculty contribute to fulfillment of the college [core values](#).

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Collin College's Computer Systems program contributes to the college's core values by the faculty promoting student participation in service learning, fostering creativity and innovation by providing open ended student projects, facilitating cooperative workforce learning opportunities, and academic excellence by keeping up with the most current computer applications and software. An overall fundamental component of the program is the development of skill sets as recommended by Advisory Board members for potential employees in the current workforce as well as soft skills including the development of a professional character, business ethics, and personal integrity in students.

C. Provide program-specific evidence that supports how the program supports the college [strategic plan](#).

Strategic Goal #1 – Improves academic success by implementing strategies for completion. The Computer Systems program supports this by providing alternatives for capstone courses while focusing on the students' major. Faculty also works with advisors and meets with students to ensure they are on the right track to complete their academic goals.

Strategic Goal #2 – Provides access to innovative higher education programs that prepare students for constantly changing academic, societal and career workforce opportunities. The Computer Systems program semi-annually reviews course content for updates to curriculum that reflect changes in industry as requested by the program's advisory board. This has led to updating software and software versions, technical knowledge and skills, as well as replacing entire courses with new ones. An example of this is recently recognizing the need for more courses in data analytics, reporting services, and business intelligence to handle Big Data as it is collected from various types of social media.

Strategic Goal #4 – Enhance the College's presence in the community by increasing awareness, cultivating relationships, building partnerships and developing resources to respond to current and future needs. The Computer Systems program continually checks for new partnerships with industry by identifying new Advisory Board members. It also works with the College's COOP department which often leads into employment opportunities for students. The program also works with the College's Department of Labor (DOL) grant which has provided virtual labs for online tutoring and computers for Apple software. Finally, faculty has explored the use of career clusters for the program in order to provide a seamless transition from local ISDs to college.

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3. WHY WE DO THE THINGS WE DO: PROGRAM RELATIONSHIP TO MARKET DEMAND BY EMPLOYERS

Make a case with evidence to show that employers need and hire the program's graduate.

Points to consider:

- How many entry-level jobs are in the DFW Metroplex for people with an associate in a related field? If the majority of related jobs in the DFW Metroplex require a baccalaureate degree, provide evidence that you have a current signed articulation agreement with one or more of Collin's top transfer institutions or that you plan to develop one. Talk with top transfer schools for this program and learn whether Collin students transfer with minimal loss of credits.
- Is this program the top source of entry-level employees in this field for Collin County employers?
- What proportion of the program's graduates has related employment within six months of graduation?
- Are starting salaries of program graduates higher than for people who do not have any college?
- What changes are anticipated in market demand in the next 5 years? Do local job projections in this field show maintenance or growth? How many related job retirements are projected in the Metroplex over the next 5 years?
- Does the program have adequate business/industry partners representative of Collin County or Metroplex job opportunities on its Advisory Committee? Do these partners attend the two Advisory Committee members each year?
- Do program graduates exceed local demand, is the program able to meet local demand or does demand exceed the number of program graduates?
- If there are a great many more related jobs in the Metroplex than the program is graduating, how does the program plan to recruit more students to meet this demand? What other local sources are available for employers to get trained employees? Are there lessons to be learned by these program competitors?

The Computer Systems program has one AAS degree with five tracks and five certificates. The multiple tracks are in Computer Support, Database Development, Information Systems, C++ Software Development, and Java Software Development. The Certificates are in the same areas.



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Local job demand in the Computer Information Systems (CIS) area is stated in a 2013-2018 InterLink report projecting high skill, high demand occupations identified by North Central Texas Regional Employees. It lists 5 related areas in Information Technology. These occupations are:"

- Computer & Information Systems Managers
- * Computer Software Developers
- Computer Support Specialists
- * Computer Systems Analysts
- Database Administrator

Those occupations preceded by an * are occupations whose knowledge skills and abilities are evolving into new areas, one of them being identified as Data Mining Technicians/Data Scientists. Interlink also identifies these occupations requiring 4 years of education as minimum for entry level. Wages range from \$20 - \$40 per hour. <http://www.interlink-ntx.org/pdfs/targetedlist.pdf> Wage and employment data for computer systems related jobs in Dallas/Fort Worth area can be found in the Career Coach section of the Collin College

Website. <https://collin.emsicareercoach.com/#action=loadOccupationData&Search=computer+systems&Featured=&CourseSearchSort=&CourseLength=&CourseLocation=&CourseCategory=&WageLimit=0&OccSearchSort=&EdLevel=all&Clusters=&OccID=15-1121.00>

Demand for those seeking employment in Computer and Information Systems Management is projected to grow (from 2012 – 2022) 15%, faster than the average for all occupations. Demand for computer and information systems managers will increase as firms continue to expand their use of wireless and mobile networks. Also, a number of jobs in this occupation are expected to be created in the healthcare industry, which is aggressively implementing information technology. <http://www.bls.gov/ooh/management/computer-and-information-systems-managers.htm#tab-6>

According to the Occupational Outlook Handbook, in May 2012, the median annual wage for Computer and Information Systems (CIS) managers was approximately \$120,000 annually. Along with that, the median annual wages for CIS managers in five industries in which most of these managers worked range from \$133,000 -

\$100,000. <http://www.bls.gov/ooh/management/computer-and-information-systems-managers.htm#tab-5> Degrees

required for CIS managers and related area are found at the link:
<http://www.bls.gov/ooh/management/computer-and-information-systems-managers.htm>

According to a 2012 copy of ComputerWorld, future trends in IT jobs point to software developers, database

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administrators, and IT managers. The following link (go to the link and then scroll down) shows a job growth forecast in these and related areas from 2012 - 2020. <http://www.computerworld.com/article/2502348/it-management/it-jobs-will-grow-22--through-2020--says-u-s-.html>

A 2015 Forecast Survey done by Computerworld lists and describes 10 hottest IT skills for 2015. Among them are: #3, Help Desk/Tech Support with 30% survey respondents saying they plan to hire within 12 months; #6, Database Administrators with 26% survey respondents saying they plan to hire within 12 months; #7, Business Intelligence/Analytics with 24% survey respondents saying they plan to hire within 12 months; and #10, Big Data with 20% survey respondents saying they plan to hire within 12 months.

<http://www.computerworld.com/article/2844020/10-hottest-it-skills-for-2015.html>

4. WHY DO WE DO THE THINGS WE DO: PROGRAM RELATIONSHIP TO MARKET DEMAND BY STUDENTS

Make a case with evidence to show that students want the Degree or Certificate using the enrollment history. Include any plan for increasing program enrollment.

Points to consider:

- Number of students who declared their intent to earn an AAS or certificate in each of the last 4 years?
- Is enrollment declining, flat, growing, or not exhibiting a stable pattern?
- Is this number sufficient to allow the required courses in the program to be offered at least once within a 2-year cycle?
- What are the implications for the next 5 years if the enrollment pattern for the past 4 years continues?
- Are there any actions taken to identify which students enrolled in program-required courses early in the degree plan intend to complete a certificate, associate degree and/or a baccalaureate in a related field? If yes, is the program actively managed regarding retention and completion? Please briefly describe these management actions. If no, please develop and describe a plan to identify these students as early in the program as is feasible.

Data on the number of students who have declared this program for an AAS or certificate is still being researched at the time of this report. Data on enrollment in courses in this program is available.

http://inside.collin.edu/iro/prgramreview/2014/Measure%206a-b_GradeDist%20by%20Course-FY_ComputerSys.pdf

Totals from this data seem to exhibit a stable pattern for enrollment, course completion rates and student success rates. This number is sufficient to allow the required courses in the program to be offered at least once within a 2-year cycle. However, we do have problems getting some of the advanced courses to make (with an enrollment of 15 students). We need to do a curriculum review to identify when and where in the schedule these advanced courses can be offered (or not) in order to get them to make.

Identifying our students early in their academic path is also an issue that we need to address. Having the data available early in the program through a generated report from the college-wide system already in use would allow us to target and support our students in completing the program.

Are We Doing Things Right?

This section is a data-driven analysis of the strengths and challenges of the unit. It includes such topics as instructional productivity, faculty recruitment and retention, student retention and graduation rates as well as the discussion of student learning outcomes assessment. External judgments of quality such as external accreditation, faculty awards and student awards may also be discussed in this section. Other issues important to the unit also belong here as appropriate.

The assessment of student learning outcomes is an essential part of this section in how it relates to decisions about curriculum. Measures of learning outcomes may include but should not be limited to student survey data. Student learning outcomes should primarily focus on direct measures in which students demonstrate their learning. Examples of direct measures include papers, presentations, and direct application of skills. The narrative should include the ways in which student learning outcomes have been measured, what the data showed, and any action taken as a result of the data analysis. For example, to assess writing skill within the program, a program compares samples of student writing from an introductory course with a written assignment from a capstone assignment. The evaluation indicates significant progress in writing skills over the course of the program, with the average score increasing from 80.5 to 92 over the degree plan coursework. If students showed no change in writing ability then this example would also include the changes implemented in an effort to improve the student writing outcome. A

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program's analysis might indicate the process for assessing student learning needs attention. Perhaps the rubric, measure or assignment used to assess the program learning outcomes is not well aligned. For instance, the outcome says "the student will apply program methodology to analysis of a situation" but the means of assessment emphasizes students' recognition of key terms and their definitions. How the program will take action to address the misalignment should be included in the last two sections of this document.

5. WHY WE DO THE THINGS WE DO: DOES THE PROGRAM CURRICULUM LEAD TO COMPLETION?

Make a case with evidence to show the program offers a clear pathway to completion. Include any plan for raising the number of completers.

Points to consider:

- Number of students who completed the award in each of the last 4 years? If the number of graduates does not average 5 or more per year, include a plan to increase completers.
- Address the percentage of students who are completing your workforce certificate or degree prior to transfer out.
- At what point(s) are a substantive percentage of students dropping out of the program? Look at the Program-based course performance of the technical courses to see enrollment flow through the program curriculum.
- Are program drop-outs changing to another Collin program or leaving the institution?
- Are there any unaddressed curricular barriers to completion? Review the course enrollment, course retention rate, course success rate, and periodic scheduling to identify barriers to program completion.

We are meeting the requirements for completers as required by the THECB. The following link identifies our completions by program and award type:

http://inside.collin.edu/iro/prgramreview/2014/Measure%202a-1_Completions%20by%20Prog-CIPCode-AwardType-FY.pdf

Looking at the course enrollment in the program, our enrollment is low especially in the advanced courses. Also, some courses don't make with a minimum of 15 students that is required for a class to make. As seen in the following link, our retention rates have remained stable over the last 5 years but our success rates are low.

http://inside.collin.edu/iro/prgramreview/2014/Measure%206a-b_GradeDist%20by%20Course-FY_ComputerSys.pdf

Strategies we are considering/working on to improve the number of students enrolled in our program and to improve the success rate include the following:

- 1) Reviewing and revamping the program curriculum. We plan to retain student options through their course choice but to

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- remove the tracks. Currently students have a hard time following them when trying to decide what to take. We plan on working on this during Spring 2015 so we can present the changes to the Curriculum Advisory Board (CAB) in Fall 2015.
- 2) Work with Institutional Effectiveness to identify the students who have declared our program as a major. Being able to identify our students so we can better support them in meeting their academic goals will help our success rates.
 - 3) Develop a brochure for our program to have available when advising our students or marketing our program.

6. HOW WELL DO WE DO CURRICULUM THINGS AND WHO THINKS SO?

A. Show evidence that the THECB standards listed below have been met. For any standard not met, describe the plan for bringing the program into compliance.

1. **Credit Hour Standard: There are no more than 60 credit hours in the program plan.**

Number of semester credit hours (SCH) in the program plan: 60 hours.

If there are more than 60 SCH in the plan, show revised degree and certificate plans. Work with the program's curriculum coordinator to bring the revised program plans to the Curriculum Advisory Board (CAB).

2. **Completers Standard: Average 25 completers over the last five years or five completers per year.**

Number of completers: 61 for AAS and Certificates.

If below the state standard, attach a plan for raising the number of completers by addressing barriers to completion and/or by increasing the number of student enrolled in the program. Definition of completer—Student has met the requirements for a degree or certificate (Level I or II)

3. **Licensure Standard: 90% of first time test takers pass the Licensure exam.**

If applicable, include the licensure pass rate: N/A

For any pass rate below state standard, attach a plan for raising the pass rate.

4. **Retention Standard: 78% of census day students should earn a grade in the class.**

Include the retention rate: _____

If the retention rate is below 78%, include a plan for raising it.

Retention rates from Fall 2010 to Spring 2014 range from 88% to 92%



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Lowest semester - Fall 2010 – Retention rate was 88%

Highest semester – Spring 2014 – Retention rate was 92%

http://inside.collin.edu/iro/prgramreview/2014/Measure%206a-b_GradeDist%20by%20Course-FY_ComputerSys.pdf

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B. Make a case that the program curriculum is current.

Points to consider:

- How does the program curriculum compare to similar programs at peer schools?
- Is the program curriculum in line with any professional association standards or guidelines that may exist?
- If the program curriculum differs significantly from these benchmarks, explain how the Collin College curriculum benefits students and other college constituents.

C. Make a case with the Advisory Minutes that the Advisory Committee has employers who are active members that are representative of Collin County employers.

1. How many employers does your Advisory Committee have? 12
2. How many employers attended the last two meetings? 6
3. Include any resources they contribute to the program (time, equipment, supplies, money, co-op spots) in the Partnership Table in section 8. DOL grant provided support by providing tutors and student support in job skills.
4. Briefly summarize the curriculum recommendations made by the Advisory Committee over the last four years.
Programming courses (C++ and Java) became tracks under Computer Systems
Create Computer Science Facebook to advertise
Developed Help Desk track
Update Employer Satisfaction form (to help track students after they graduate)
Add Advanced Java (INEW 2338) to schedule
Use MySQL database tool more widely in classes
Consolidate ITSE 1301 Web Design Tools-Graphics and ITSE 2313 Web Authoring-Dreamweaver
C++ has 25% of market, Java has 25% of market, and C# has 6% of market.
Delete VB.NET
Develop new Business Analytics Certificate

D. For any required program courses with enrollment below 15, explain a plan to grow enrollment or revise the curriculum.

We plan to rework the curriculum, possibly eliminating the multiple tracks, to make it easier for students to register. We also will review the required and optional courses for the curriculum and decide when (what semester) and how many times a year each class should be offered. This may require removing any outdated courses and/or merging courses as recommended by our Advisory Board. Finally, we plan to

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advertise and promote the program by creating a brochure and increasing the program's visibility through new student orientation programs, the program's website, and our Facebook.

- E. Make the case with evidence that the required courses in the program are offered in sequencing or at intervals appropriate to enable students to complete "on time" if a student was enrolled full-time and followed the degree plan.

As described above, when we review and rework the curriculum required courses and optional ones will be offered in sequence or at intervals that will allow students to follow the program and complete "on time." Also, there are usually enough alternative or substitute courses available so students can complete "on time." We have also created alternative capstone courses (in addition to COOP and the INEW 2330 projects course).

- F. Make a case with evidence that students are satisfied with the program.

Student satisfaction with the program is based on the students reaching their personal goals. If the students' goals are the completion of the program then they are satisfied since our completion rates range from 88% to 92%. (See grade distribution link in 6A #4)

- G. Make a case with evidence that the program is well managed.

Points to consider:

Definitions of data elements can be found on CougarWeb under Institutional Effectiveness>Program Review>Institutional Research Files for Program Review (in the right-hand column)

- Student/Faculty Ratios
- Average Class Size
- Unduplicated, actual, annual enrollment data
- Grade Distributions
- Contact Hours Taught by Full-Time and Part-Time Faculty
- Identify all courses that have a success rate below 75%. If any of these courses are core courses, visit with the discipline lead to determine that the content of the course is appropriate to the workforce program outcomes. Using assessment evidence and instructor observations, *identify the student learning outcomes that are the greatest challenges for students* in courses with low success rates. Explain what instructional and other intervention might improve the rate for each identified course.
- How well are the general education requirements integrated with the technical coursework?
- Student satisfaction: Do you collect any evidence of student satisfaction with the program? What kinds of complaints are made to the dean by program students?

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The program is well managed. We identify industry trends and keep up with technological changes to keep our curriculum current and relevant to employers. Some basic statistics to support this are:

- Student to full-time faculty ratio for 2014 is 6.3:1 (Fall) and 5.9:1 (Spring).
- Unduplicated enrollment for 2013 is 1,383 for Fall and 1,409 in 2014 for Spring. This enrollment figure includes BCIS 1305 which is used in multiple degrees for Business majors.
- Most current contact hour information from Fall 2014 is: 70% for full-time faculty; 30% for part-time faculty.
- Success rate varies by course.

7. HOW WELL DO WE COMMUNICATE AND WHO THINKS SO?

Make a case that the program literature and electronic sites are current, provide an accurate representation, and support the program's recruitment plan, retention plan and completion plan.

Points to consider:

- Ask students and your Advisory Board members to give you feedback on your website and literature; incorporate their suggestions as appropriate.

- Provide program website URL: <http://www.collin.edu/academics/programs/computersystems.aspx>
- Describe the process used to keep all program literature (course descriptions, degree plans, catalog entries, etc.) and electronic sites updated and aligned with district-wide college literature and sites.
There is a set process for degree updates, course description updates (WECM descriptions), and changes in course outcomes. All curriculum changes go through the Curriculum Advisory Board. After approval of any changes, catalog and website updates are completed through the Curriculum office.
- Provide the review date (after the close of the last full academic year) in the Program Literature Review Table below that shows the elements of information listed on the website and in brochures were checked and updated for accuracy and are available to the public.
Elements include, but are not limited to, current academic calendars, grading policies, course syllabi, program handouts, program tuition costs and additional fees, description of articulation agreements, availability of courses and awards, and local job demand in related fields.

Program Literature Review

Catalog Verification	Occurs after any curriculum update for next catalog	Spring 2014
Syllabus Depot-SCANS syllabi	SCANS updated Spring 2014, not yet added to Syllabus Depot	Fall 2014
Master Calendar Review	Institutional review and approval of master calendar	Spring 2014
Website Accuracy	After curriculum update, after 60 hour change	Spring 2014
Full-time Faculty Credentials	During Spring 2014 for SACS visit	Fall 2014
Part-time Faculty Credentials	During Spring 2014 for SACS visit	Fall 2014
Individual Syllabi – HB2504	Beginning of each semester	Fall 2014

8. HOW WELL ARE WE LEVERAGING PARTNERSHIP RESOURCES AND BUILDING RELATIONSHIPS, AND HOW DO WE KNOW?

Make a case that the program enlists university/business and industry partnerships to advance the program outcomes; complete the Partnerships Resources Table below.

Points to consider:

Examples of partnership resources include co-op or internship sites; visiting class presenters; tours of facilities; facility use; equipment donors; dedicated program scholarship donors; mentors, recruitment, graduate employment, and Advisory Committee members.

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Partnership Resources

University/Business & Industry	Partnership Type	Estimated Market Value, if any
Mr. Prabu V. Ayyagari Executive Project Manager IBM Corporation	Advisory Board member	
Kim Turner-Bailey Web Designer	Former Advisory Board member	
Dr. Ann Beheler NISGTC (The National Information, Security, & Geospatial Technologies Consortium).	Grant and Consortium	Provided tutors and student support for job skills.
Ms. Ruby Bohannon Learning & Development Consultant H.D. Vest Financial Services (a non-banking subsidiary of Wells Fargo)	Former Advisory Board member	
Joanne Brown McKinney High School	Advisory Board member	
Mr. Mark W. Casey, PMP, APMC Project Manager, CEMC IT Trinity Industries, Inc.	Former Advisory Board member	
Mr. Jorge Castro Principal Systems Engineer Raytheon	Advisory Board member	
Dr. Wes Cunningham, Ed.D. Director of Career & Technical Education Principal - Frisco ISD CTE Center	Former Advisory Board member	
Mr. John Duncan SBC Global	Advisory Board member	
Mr. Chuck Easttom Chuck Easttom Consulting	Advisory Board member	
Ms. Kathy Fant McKinney High School	Advisory Board member	
Mr. Nathan Fish Hewlett-Packard	Advisory Board member	

Primary self-study questions were adapted from Academic Program Review "Structuring the Six Self Study Questions", Michigan State University, 2008.

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Ms Cynthia Foster Gunter ISD	Former Advisory Board member	
Mr. Thomas Goodwin Sorgeti, USA	Former Advisory Board member	
Mr. Norris Lauer Test Engineer, OpTek	Advisory Board member	
Mr. Robert Manning Application Development Specialist HCSC, Financial and HR Systems	Advisory Board member	
Russ McClelland Perot Systems	Former Advisory Board member	
Glen McCleeme L.R. Kimball	Advisory Board member	
Brett McCormick Software Engineer Bottle Rocket, Inc.	Advisory Board member	
Dr. Tom Perkins Principal Systems Engineer, Raytheon	Advisory Board member	
Ms. Karen Ritchee Sr. Business Systems Analyst Sales/Marketing CRM and North America IT (NAIT) Communications Alcatel-Lucent	Former Advisory Board member	
Vyneta Ryan Senior Analyst, E-Commerce PFSweb	Former Advisory Board member	
Jonathan Stober Internet Systems Specialist Web Services Collin College	Former Advisory Board member	
Rick Tett Sr Consultant, Microsoft MCTS	Former Advisory Board member	
Cassandra Toler N. Garland High School	Advisory Board member	

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We have a range of industry contacts in both the community and in the region. The NISGTC and Department of Labor (DOL) grant have provided excellent collaboration with resources and support for our students. However, while we do have industry representation across our tracks with members of our Advisory Board, our Advisory Board attendance is light and not evenly distributed in expertise in our meetings

9. DO WE SUPPORT THE PROGRAM WELL WITH FACILITIES, EQUIPMENT, AND THEIR MAINTENANCE AND REPLACEMENT, AND WHO THINKS SO?

Make a case with evidence that current program facilities, equipment, maintenance and replacement plans are adequate and will advance the program over the next five years. Complete the Resource Tables below *as support for* your narrative.

Points to consider:

- The useful life of structures and equipment, Special structural requirements, and
- Anticipated technology changes impacting equipment sooner than usual.
- If you plan to include new or renovated facilities or replacement of equipment in your program improvement plan in Sections 13 & 14 , be sure to justify the need in this section with qualitative and/or quantitative data evidence of the need

The program is well supported by the College and while the equipment/computer requirements will change over the next 5 years, there is a computer replacement schedule which will keep the computer equipment current for any anticipated changes in technology. Budget is sufficient for current and anticipated program needs for the next 5 years.

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Program Facilities

Room/Office Location and Designation	Size	Type	Special Characteristics (i.e. permanent like ventilator hood)	Meets current needs: Y or N	Will meet needs for next five years: Y or N	Describe additional needs for any "N" answer in columns 5 or 6.
H122 (PRC)		Lab	Windows Computer Lab			All computer labs are scheduled to be updated on a 3 to 4 year cycle.
H123 (PRC)		Lab	Windows Computer Lab			All computer labs are scheduled to be updated on a 3 to 4 year cycle.
H124 (PRC)		Lab	Windows Computer Lab			All computer labs are scheduled to be updated on a 3 to 4 year cycle.
D138 (PRC)		Lab	Mac Computer Lab			All computer labs are scheduled to be updated on a 3 to 4 year cycle.
H129 (PRC)		Classroom				
J129 (SCC)		Lab	Windows Computer Lab			All computer labs are scheduled to be updated on a 3 to 4 year cycle.
J121 (SCC)		Lab	Mac Computer Lab			Scheduled to be updated in Fall 2015
J131 (SCC)		Classroom				
Current Equipment Item or Budget Amount			Meets current needs: Y or N	Will meet needs for next five years: Y or N	For any no in columns 2 or 3, justify needed equipment or budget change	
All lab computers are updated and maintained by the College.			Y	Y	All computer labs are scheduled to be updated on a 3 to 4 year cycle.	

Financial Resources

Source of Funds (i.e. college budget, grant, etc.)	Meets current needs: Y or N	Will meet needs for next five years: Y or N	For any no in columns 2 or 3, explain why	For any no in columns 2 or 3, identify expected source of additional funds
College budget	Y	Y		
DOL grant	Y	Y		

10. WHAT DIFFERENCE WILL IT MAKE IF WE DON'T CONTINUE TO DO THE THINGS WE'VE BEEN DOING?

Discuss and analyze the intellectual and scholarly value of the program, its activities and functions, and the extent to which those activities are still appropriate.

Points to consider:

- What are the implications for the college should the program cease to engage in some particular areas?
- What are the contributions the program makes to support institutional initiatives and how would that change if the program changed?

Since we are a community college one of our missions is to serve the community. As a workforce program we are charged to provide training and skills to students so they can become valued employees or self-employees in the community. Our program does this. Without our program we would not be providing database developers or administrators, information system analysts or managers, or software developers.

- Our program contributes to our college mission, core values, and strategic goals.
- Our program provides skilled workers for our area of North Texas.
- Our program engages students in critical thinking, solving problems, and being able to apply learned concepts in a real-time situation.

11. GIVEN OUR PRESENT STATUS, HOW DO WE INTEND TO CHANGE IN WAYS THAT HELP US ADVANCE?

The discussion about change should be grounded in interpretation of the data used as the basis for analysis in the preceding sections. Issues in this section should have been discussed and referenced earlier in the program review report. There should be no surprises here! Reasons for targeted changes should be clearly linked to something such as a strategic plan, accreditation-identified issue, changing discipline standards, state initiatives, retention rates, transfer data, employer data, etc. For example, a program might have identified issues related to demand for a course and the

program's ability to handle projected capacity as well as student performance in the course. The discussion of change about this issue should be framed in terms of program priorities as they related to college priorities and it should address how the intended changes will assist the program/college to move forward.

Use the Institutional and Unit Data and Resources to respond to the following questions:

A. Strengths: What strengths can this program build on in the near future?

- Local demand for workforce programs in information technology (IT) areas such as software development, database development, and information systems.
- Faculty who stay current in their discipline and are active in college service.
- Faculty who support the college's core values by participating in service learning, cooperative workforce learning opportunities, and advising opportunities to keep students on the right track to complete their academic goals.
- Steady enrollment in the program.
- Partnership with local industry through the Advisory Board and also with the DOL/NISGTC.
- Institutional support and facilities

B. Weaknesses: What program weaknesses must be addressed in the near future?

We need to increase our enrollment. We need to look at our degrees, certificates, and marketable skills to make sure the courses are still relevant and needed in today's industry. We plan to remove the tracks and give the students more options in their choice of courses. This will help students to register by making it more user- friendly. We also need to advertise the program more by creating a brochure and distributing it at the various student orientation events.

Students need to get the courses they need when they need them. We need to look at the curriculum (courses) within our degrees, certificates, and marketable skills. We need to identify what courses are still needed, when and where our courses (especially advanced courses) are offered, and make sure their sequence matches the degree plans so that students can graduate "on time."

We need to increase our low success rates. We need to work with Institutional Effectiveness to devise a way we can identify our students early in the program so we can follow them more closely so they can graduate "on time."

Finally, we need to increase the number and level of attendance of our industry committee members at our Advisory Board meetings.

C. What are the perceived consequences if the weakness(es) is(are) not addressed?

If we don't revamp our program it will remain complicated for the students trying to register, and thus deter students from registering. If we don't advertise the program, students will not know about it and this will also keep them from registering. Finally, if we don't increase our enrollment in our classes, especially the advanced classes, the classes won't make.

If we don't analyze our curriculum (courses), our students will be impacted because they won't be able to get the classes they need when they need them. This may cause them to not graduate "on time."

Working with Institutional Effectiveness will enable us to identify our students. If we can do that we can follow them through their time at the college and better support them in meeting their goals. This could increase our student success rates.

If we don't increase the number and level of attendance of our industry committee members at our Advisory Board meetings, we will not have accurate input, causing our students to miss valuable information and skills needed by potential employers.

D. Threats and Opportunities: Describe any forecasted trends or changes in the following areas that may impact the way this program functions five to ten years from now:

- Legal
- Educational
- Environmental
- Political
- Technological
- Social
- Demographic
- Economic
- Cultural

Trends or changes that affect our program can occur in almost all these areas. Technological changes are a given and those changes affect education. This impacts our program directly which creates the critical need to review the curriculum quite often. Due to the Internet the environment has changed and as students are born into a world of computers and connectivity their world and culture have changed. The Internet of Things focuses on technology convergence with single devices doing multiple functions. Social media has brought much data and industry has learned that it can benefit greatly if that data can be monitored and managed. This has affected the economy and how businesses relate to each other. Demographics are used every day to increase sales, promote businesses, and, unfortunately, pry into consumers' privacy. All this indirectly impacts our program which, again, creates the critical need to review the curriculum quite often. All this being said, there is no way to know exactly where the program will be five to ten years from now-we can only be very observant to the technological, economic, and social changes around us and try to keep up!

12. HOW WILL WE EVALUATE OUR SUCCESS?

This section of the Program Review Report should provide the framework for the action plan the program intends to use to measure progress with particular focus on the changes discussed in the preceding section. It should set measurable priorities which clearly align with college metrics, particularly student learning outcomes. This discussion links back to intended change strategies and what those strategies are meant to accomplish and moves forward into the metrics and measurements which will be used to determine the extent to which the change was successful. Inclusion of incremental steps and a timeline over the next four years will help to shape realistic goals. Complete the attached Continuous Improvement Plan (CIP) form that follows. This CIP will be implemented next academic year. Include the data summary and findings on which the improvement action is based.

Date: 9/10/14 **Name of Administrative or Educational Unit:** Computer Systems AAS & Cert
Contact Name: Glen Grimes **Contact email:** GGrimes@collin.edu **Contact phone:** _____ **Office Location:** _____

Mission:

Computer Systems is an exciting field that presents many opportunities for a student who is proficient in both applications and software development. The rapid spread of computers and information technology has generated a need for highly trained workers to design and develop new information systems that use these technologies to meet the needs of the business organization. The skills acquired in this program will enable the student to solve problems that are encountered when working in this ever-changing and growing field. These skills include planning and developing new computer systems while applying the resources of existing systems to additional operations.

PART I: Might not change from year to year

A. Outcomes(s) Results expected in this department/program	B. Measure(s) The instrument or process used to measure results	C. Target(s) The level of success expected
1. Apply information technology concepts to a variety of business environments.	Coop—Employer feedback survey re: INEW 2330—Project	Above Average rating Average of 4 rating on a 4 point scale
2. Demonstrate the ability to work in a team environment.	INEW 2330—Project Teamwork Rubric	Average of 3 rating on a 4 point scale
3. Demonstrate professional and effective documentation and communication skills.	Coop—Employer feedback survey re: INEW 2330—Project Instructor rubric rating for INEW 2330—Project	Above Average rating Average of 4 rating on a 4 point scale

A. Outcomes(s) Results expected in this department/program	B. Measure(s) The instrument or process used to measure results	C. Target(s) The level of success expected
4. Computer Support Track: Apply common business productivity software to business functions.	Coop-Employer feedback survey re: INEW 2330-Project Instructor rubric rating for INEW 2330-Project ITSC 2339-Project	Above Average rating Average of 3 rating on a 4 point scale
4. Information Systems Track: Apply common business productivity software to business functions.	Coop—Employer feedback survey re: INEW 2330—Project & BCIS 2390—Project Instructor rubric rating for INEW 2330—Project & BCIS 2390-Project	Satisfactory rating Average of 3 rating on a 4 point scale For both projects
4. Database Development Track: Design, implement and use relational databases.	Coop—Employer feedback survey re: INEW 2330—Project Instructor rubric rating for INEW 2330—Project	Satisfactory rating Average of 3 rating on a 4 point scale
4. Software Development Track: Apply industry accepted coding practice and standards using an Object-oriented programming language.	Coop—Employer feedback survey re: INEW 2330-- Project Instructor rubric rating for INEW 2330—Project	Above Average rating Average of 4 rating on a 4 point scale
5. Software Development Track: Demonstrate the ability to read Uniform Modeling Language (UMLat industry standards	Coop—Employer feedback INEW 2330—Project Instructor rubric rating for INEW 2330—Project	Satisfactory rating Average of 4 rating on a 4 point scale

PART II: For academic year _____ (enter year i.e. 2011-12)

From Part I

<p>A. Outcomes(s)</p> <p>Results expected in this department/program</p>	<p>D. Action Plan Years 5 & 2</p> <p>Based on analysis of previous assessment, create an action plan and include it here in the row of the outcomes(s) it addresses.</p>	<p>E. Implement Action Plan Years 1 & 3</p> <p>Implement the action plan and collect data</p>	<p>F. Data Results Summary Years 2 & 4</p> <p>Summarize the data collected</p>	<p>G. Findings Years 2 & 4</p> <p>What does data say about outcome?</p>
<p>Apply information technology concepts to a variety of business environments.</p>	<p>Review goals for integration of technology concepts into the specific business objectives.</p> <p>Include a research section in initial planning of project.</p>		<p>COOP: Satisfactory</p> <p>INEW 2330: 3 out of 4</p>	<p>COOP: Partially Met</p> <p>Students did not make own judgements/decisions on what is needed in a business environment.</p> <p>INEW 2330: Partially Met</p> <p>Students tried to apply technology concepts that they knew without researching other options for various business environments.</p>
<p>Demonstrate the ability to work in a team environment.</p>			<p>INEW 2330: 3 out of 4</p>	<p>INEW 2330: Met</p>
<p>Demonstrate professional and effective documentation and communication skills.</p>	<p>Discuss with supervisor opportunities for possible leadership, management, and initial decision making in COOP learning experience.</p> <p>Review goals for</p>		<p>COOP: Satisfactory</p>	<p>COOP: Partially Met</p> <p>Students completed tasks that they were given; however, could have shown more leadership, better management, and initiative</p>

A. Outcomes(s) Results expected in this department/program	D. Action Plan Years 5 & 2 Based on analysis of previous assessment, create an action plan and include it here in the row of the outcomes(s) it addresses.	E. Implement Action Plan Years 1 & 3 Implement the action plan and collect data	F. Data Results Summary Years 2 & 4 Summarize the data collected	G. Findings Years 2 & 4 What does data say about outcome?
	<p>opportunities to display communication skills, decision making, and assumption of more responsibility.</p> <p>Increase opportunities for leadership, management, and initial decision making in INEW 2330 class by providing a team environment when possible with leadership and management positions where initial decision making is required.</p>		INEW 2330: 4 out of 4	<p>in task completion.</p> <p>INEW 2330: Exceeds expectations</p> <p>Students submitted user documentation to client.</p>
Computer Support Track: Install, configure and troubleshoot basic networks and personal computer hardware and software.			COOP: Satisfactory INEW 2330: 3 out of 4 ITSC 2339: 3 out of 4	COOP: Met INEW 2330: Met ITSC 2339: Met
Information Systems Track: Apply common business productivity software to business functions.	Include a research section in initial planning of project.		COOP: Satisfactory INEW 2330: 3 out of 4	COOP: Met INEW 2330: Partially Met Students tried to apply

<p>A. Outcomes(s)</p> <p>Results expected in this department/program</p>	<p>D. Action Plan Years 5 & 2</p> <p>Based on analysis of previous assessment, create an action plan and include it here in the row of the outcomes(s) it addresses.</p>	<p>E. Implement Action Plan Years 1 & 3</p> <p>Implement the action plan and collect data</p>	<p>F. Data Results Summary Years 2 & 4</p> <p>Summarize the data collected</p>	<p>G. Findings Years 2 & 4</p> <p>What does data say about outcome?</p>
			<p>BCIS 2390: 3 out of 4</p>	<p>software applications that they knew without researching other options for various software requirements.</p> <p>BCIS 2390: Met</p>
<p>Database Development Track: Design, implement and use relational databases.</p>	<p>Review goals for opportunities to analyze business objectives and match them with database requirements.</p>		<p>COOP: Satisfactory</p> <p>INEW 2330: 3 out of 4</p>	<p>COOP: Partially Met</p> <p>Students could improve on analytical skills.</p> <p>INEW 2330: Met</p>
<p>Software Development Track: Apply industry accepted coding practice and standards using an object-oriented programming language.</p>	<p>Include a research section in initial planning of project.</p>		<p>COOP: Satisfactory</p> <p>INEW 2330: 3 out of 4</p>	<p>COOP: Met</p> <p>INEW 2330: Partially Met</p> <p>Students tried to apply object-oriented programming that they knew instead of researching other options for various business environments.</p>

A. Outcomes(s) Results expected in this department/program	D. Action Plan Years 5 & 2 Based on analysis of previous assessment, create an action plan and include it here in the row of the outcomes(s) it addresses.	E. Implement Action Plan Years 1 & 3 Implement the action plan and collect data	F. Data Results Summary Years 2 & 4 Summarize the data collected	G. Findings Years 2 & 4 What does data say about outcome?
Software Development Track: Demonstrate the ability to lead Uniform Modeling Language (UML) at industry standards.			COOP: Satisfactory INEW 2330: 4 out of 4	COOP: Met INEW 2330: Exceeds requirements Students submitted user documents to client.

13. HOW DO OUR IMPROVEMENT PLANS IMPACT THE PROGRAM BUDGET?

A. Within the program's base budget, what are the plans to do one or more of the following within the next five years? Check all that apply.

- | | |
|---|---|
| <input checked="" type="checkbox"/> Increase and retain enrollment | <input type="checkbox"/> Increase transfers to related baccalaureate institutions |
| <input checked="" type="checkbox"/> Increase completers | <input checked="" type="checkbox"/> Increase effectiveness and/or efficiency |
| <input type="checkbox"/> Develop resources | <input checked="" type="checkbox"/> Improve student performance levels |
| <input type="checkbox"/> Update facilities | <input type="checkbox"/> Expand services |
| <input type="checkbox"/> Expand curricular opportunities | <input type="checkbox"/> Transform services |
| <input type="checkbox"/> Partner to increase post-graduation employment opportunities | <input type="checkbox"/> Anything else? Briefly describe
Enter response here. |

- B. What additional resources beyond the program's base budget are needed to implement your Continuous Improvement Plan? Briefly describe what resources you will develop to secure these funds.

None

WHAT HAPPENS NEXT? THE PROGRAM REVIEW REPORT PATHWAY

Completed Program Review Reports should be submitted for evaluation by the appropriate deans and Program Review Steering Committees. Following approval by the Steering Committee, Program Review Reports will be evaluated by the Leadership Team who will approve the reports for posting on the intranet. At any point prior to Intranet posting, reports may be sent back for additional development. Program responses to the Program Review Steering Committee recommendations received within 30 days will be posted with the Program Review Report at the request of the deans.

Leadership Team members will work with program supervisors to incorporate Program Review findings into program planning and program activity changes during the next five years.