

12/12/2012



California Community Colleges

APPLICATION FOR APPROVAL—NEW CREDIT PROGRAM

<p>Database Management Certificate PROPOSED PROGRAM TITLE</p> <p>Cypress College COLLEGE</p> <p>North Orange County CC District DISTRICT</p> <p>Fall 2014 PROJECTED PROGRAM START DATE</p> <p>GOAL(S) OF PROGRAM (CHECK ALL THAT APPLY):</p> <p><input checked="" type="checkbox"/> CAREER TECHNICAL EDUCATION (CTE) <input type="checkbox"/> TRANSFER <input type="checkbox"/> OTHER</p> <p>TYPE OF PROGRAM (CHECK ALL THAT APPLY):</p> <p><input type="checkbox"/> A.A. DEGREE <input type="checkbox"/> A.S. DEGREE <input checked="" type="checkbox"/> CERTIFICATE OF ACHIEVEMENT: <input type="radio"/> 18+ semester (or 27+ quarter) units <input checked="" type="checkbox"/> 12-18 semester (or 18-27 quarter) units</p>	<p>Dr. Joyce Carrigan CONTACT PERSON</p> <p>Dean of Fine Arts TITLE</p> <p>(714) 484-7142 PHONE NUMBER</p> <p>Jcarrigan@cypresscollege.edu E-MAIL ADDRESS</p>
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PLANNING SUMMARY

Recommended T.O.P. Code	070710	Estimated FTE Faculty Workload	.8 FTEF
Units for Degree Major or Area of Emphasis	0	Number of New Faculty Positions	0
Total Units for Degree		Est. Cost, New Equipment	\$0 (Existing)
Required Units-Certificate	12	Cost of New/Remodeled Facility	\$0 (Existing)
Projected Annual Completers	10	Est. Cost, Library Acquisitions	\$0 (Existing)
Projected Net Annual Labor Demand (CTE)	79	When will this program undergo review as part of college's Program Evaluation Plan?	Month/Semester: Fall Year: 2014

DEVELOPMENT CRITERIA NARRATIVE & DOCUMENTATION

Attach a document that describes the development of the proposed program, addressing the five criteria as listed below. **Number** the sections of the narrative to match the lists below. If appropriate, you may note that a section is "not applicable" but **do not re-number** the sections. Provide documentation in the form of attachments as indicated.

Criteria A. Appropriateness to Mission

1. Statement of Program Goals and Objectives
2. Catalog Description
3. Program Requirements
4. Background and Rationale

Criteria B. Need

5. Enrollment and Completer Projections
6. Place of Program in Curriculum/Similar Programs
7. Similar Programs at Other Colleges in Service Area
8. Labor Market Information & Analysis (CTE only)
9. Employer Survey (CTE only)
10. Explanation of Employer Relationship (CTE only)
11. List of Members of Advisory Committee (CTE only)
12. Recommendations of Advisory Committee (CTE only)

Attachment: Labor / Job Market Data (CTE only)

Attachment: Employer Survey (CTE only)

Attachment: Minutes of Key Meetings

Criteria C. Curriculum Standards

13. Display of Proposed Sequence
 14. Transfer Applicability (if applicable)
- Attachment:** Outlines of Record for Required Courses
Attachment: Transfer Documentation (if applicable)

Criteria D. Adequate Resources

15. Library and/or Learning Resources Plan
16. Facilities and Equipment Plan
17. Financial Support Plan
18. Faculty Qualifications and Availability

Criteria E. Compliance

19. Based on model curriculum (if applicable)
20. Licensing or Accreditation Standards
21. Student Selection and Fees

REQUIRED SIGNATURES

Proposed Program Title: **Database Management Certificate**

College: Cypress College

LIBRARY AND LEARNING RESOURCES

Library and learning resources needed to fulfill the objectives of the program are currently available or are adequately budgeted for.

DATE SIGNATURE, CHIEF LIBRARIAN/LEARNING RESOURCES MANAGER Eldon Young, Dean
TYPED OR PRINTED NAME

CAREER TECHNICAL EDUCATION ONLY:

Program fulfills the requirements of employers in the occupation, provides students with appropriate occupational competencies, and meets any relevant professional or licensing standards.

DATE SIGNATURE, ADMINISTRATOR OF CTE Dr. Steve Donley
TYPED OR PRINTED NAME

DATE SIGNATURE, CHAIR, CTE ADVISORY COMMITTEE Jesse Saldana Chair
TYPED OR PRINTED NAME

Program was recommended for approval by Regional Occupational Consortium on _____ (date).

DATE SIGNATURE, CHAIR, REGIONAL CONSORTIUM TYPED OR PRINTED NAME

LOCAL CURRICULUM APPROVAL

Program and courses within the program have been approved by the curriculum committee and instructional administration, and satisfy all applicable requirements of Title 5 regulations.

DATE SIGNATURE, CHAIR, CURRICULUM COMMITTEE Mark Majarian
TYPED OR PRINTED NAME

DATE SIGNATURE, ARTICULATION OFFICER Stacey Howard
TYPED OR PRINTED NAME

DATE SIGNATURE, CHIEF INSTRUCTIONAL OFFICER Dr. Santanu Bandyopadhyay
TYPED OR PRINTED NAME

DATE SIGNATURE, PRESIDENT, ACADEMIC SENATE Gary Zager
TYPED OR PRINTED NAME

COLLEGE PRESIDENT

All provisions of Title 5, Chapter 6 have been considered. The college is prepared to support establishment and maintenance of the proposed instructional program.

DATE SIGNATURE, PRESIDENT OF THE COLLEGE Dr. Robert Simpson
TYPED OR PRINTED NAME

DISTRICT APPROVAL

On _____ (date), the governing board of the North Orange County Community College District approved the instructional program attached to this application.

DATE SIGNATURE, SUPERINTENDENT/CHANCELLOR OF DISTRICT Dr. Ned Doffoney
TYPED OR PRINTED NAME

Cypress College
Request to Add New Option or Certificate
Within Existing Program to Inventory

Database Management Certificate

Criteria A. Appropriateness to Mission

1. Statement of Goals and Objectives

Database Management Certificate is designed for individuals who are seeking to obtain an expertise in database application or database administrator. This certificate is designed to develop a working knowledge of what is required to be successful in the business using Oracle and Microsoft Access. The curriculum consists of beginning and advanced Access plus Oracle SQL courses. Included are general uses of creating, analyzing tables, queries, reports and design Access macros for business environment.

Program Objectives and goals:

- Design and program a database system.
- Demonstrate how to use the common database applications software commands.
- Create and edit common data files found in business.
- Use the inquiry capability.
- Create a number of different reports.
- Apply the use of electronic databases to solve a variety of different business and personal filing problems.
- Plan and create the design for an effective database.
- Demonstrate alternate database design strategies.
- Use SQL to perform complex database operations and queries.
- Design and create multi-table queries.
- Create and use links between Access and non-access applications.
- Plan and create applications in the Access macro language.
- Creating Modules and VBA.
- Control data/user access.
- Describe the features and syntax of Oracle QL.
- Handle runtime errors.
- Control transactions.
- Conditionally control code flow (loops, control structures, and explicit cursors.)
- Retrieve, insert, update, and delete data.
- Use basic SQL* Plus commands.
- Create and maintain database objects.
- Describe relational database concepts.

2. Catalog Description

This program is designed to develop a working knowledge of what is required to be successful in business using Access and Oracle programs. To earn a certificate, complete the required courses as listed with a minimum grade of “C”. At least 50% of all course work must be completed at Cypress College.

3. Program requirements

Required courses are listed in suggested sequence:

Course#	Title	Units
CIS 111	Computer Information Systems	3
CIS 142	Database – Access for Windows Database	3
CIS 242	– Advanced MS Access	3
CIS 236	Intro to Oracle -- SQL & PL/SQL	3
Total Units Required		12

4. Background and Rationale

With input from our CIS Advisory Committee and CIS Department’s research, we identified the need to extend our vocational programs to a broader base of knowledge and competency in the area of Database Management Application and/or Database Administrator. Results from our annual advisory committee meeting indicate that there are huge demands for Big Data in the computer industry. After acquiring this certificate, students will be able to find entry level positions in the Database Management or Database Administrator field in smaller companies. When our students gain more working experience, they can obtain similar positions in larger companies with better pay.

Criteria B. Need

5. Enrollment and Completer Projections

Generally, the Computer Information Systems (CIS) program averages 3,900 enrollments and generates 420 FTES annually. For the CIS program the annual number of degree and certificate completers (awards) at Cypress College has been as follows: 2007-2008 = 33; 2008-2009 = 30; 2009-2010 = 82 and 2010-2012 = 56. Fall 2011 Student Success (70.5%) and Retention (79.7%) rate have improved slightly over the past several years.

Following table shows the number of sections and enrollment figures for the required courses in order to obtain the Database Management Certificate. CIS 142 and CIS 242 have not been offered for the past three years due to a severe budget cut. However, the enrollment for CIS 236 has increased over the years.

	Fall 2010	Spring 2011	Fall 2011	Spring 2012
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	# of Sections	Enrollment	# of Sections	Enrollment	# of Sections	Enrollment	# of Sections	Enrollment
CIS 111	10	692	11	724	10	697	10	681
CIS 142	Haven't offered due to budget cut							
CIS 242	Haven't offered due to budget cut							
CIS 236	1	14	1	22	1	20	1	29

We project that there will be at least 10 annual completers of the Database Management Certificate. With economy improvement and increase funding, we expect to offer one section of CIS 142 in Spring 2014 and both CIS 142 and CIS 242 during Fall 2014 semester. It should also be noted that the years ahead are favorable for continued enrollment and job growth and the demand for training in new technology is going to be strong with healthy profit margins.

6. Place of Certificate in the Curriculum

With many companies using Microsoft Access or Oracle for repository of data, we expect students will enroll in the Access, Advanced Access classes and increase enrollment in the Oracle class. In general, applicants with a college degree and certification will have the best opportunities. The certificate program will require 12 units of course offerings related to Database Management Certificate program. This program has included CIS 111 which requires a general knowledge of computer terminologies and computer applications. In addition, CIS 142 (Access for Windows), CIS 242 – (Advanced Access) and CIS 236 (Oracle SQL) are included in the certificate so our students are well prepared for both Access and Oracle fields.

7. Similar Programs at Other Colleges in Service Area

Currently, only Fullerton College offers similar program within our service areas. However, Fullerton College only requires students to take 8 units to obtain Database Applications Certificate. As a result, we don't anticipate approval of this certificate will negatively impact any other programs or colleges within commuting distance of Cypress College. Furthermore, our distance education course offerings in this technology field have attracted students from the areas in which similar programs are not available at their local colleges and universities.

8. Labor Market Need and Job Availability

According to the State of California Employment Development, Labor Market Information Division (<http://www.bls.gov/ooh/computer-and-information-technology/database-administrators.htm>), students who complete the Database Management Certification could be placed under the category of "Database Administrators".

The following excerpt was quoted from Bureau of Labor Statistics, Occupational Outlook Handbook:

"Employment of database administrators (DBAs) is projected to grow 31 percent from 2010 to 2020, much faster than the average for all occupations. Rapid growth in data collection by businesses will

contribute to the growth of this occupation. Database administrators will be needed to organize and present data in a way that makes it easy for analysts and other stakeholders to understand. Additional job growth will occur as database security needs grow and as DBAs are called on to implement information security measures. Employment growth for database administrators is expected in healthcare industries because, as the use of electronic medical records increases, more databases will be needed to keep track of patient information. Job prospects should be favorable. Database administrators are in high demand, and firms sometimes have difficulty finding qualified workers. Applicants who have experience with new technology and a bachelor’s degree should have the best prospects.”

In accordance with Bureau of Labor Statistics, overall employment of Database Administrators is projected to increase by 31% from 2010 to 2020 (much faster than the average for all occupations). Job prospects should be favorable. Projected net annual labor demand of 79 was computed by adding the net replacements for Los Angeles and Orange Counties and dividing by 10 years.

Database Administrator Estimated Employment and Projected Growth					
Geographic Area (Estimated Year – Projected Year)	Estimated Employment	Projected Employed	Numeric Change	Percent Change	Additional Openings Due to Net Replacement
California (2010-2020)	11,200	14,800	3,600	32.1%	3,790
Los Angeles County (2010-2020)	2,360	2,960	600	25.4%	640
Orange County (2008-2018)	1,270	1,410	140	11%	150

Years 2008-2018 figures were used for Orange County Estimated Employment and Projected Growth because the data for years 2010-2020 could not be located. These findings are based on Los Angeles, Long Beach, Glendale, Santa Ana, Irvine and Anaheim Areas. The number will be greater if other cities are included in study. Job outlook are projected to grow by 32% from 2010 to 2020, faster than the average for all occupations.

Annual Wages for 2012	Low (25th percentile)	Medium (50th percentile)	High (75th percentile)
California	\$59,631	\$80,523	\$109,731
Hourly Wages for 2012	Low (25th percentile)	Medium (50th percentile)	High (75th percentile)
California	\$28.67	\$38.72	\$52.76

<http://www.labormarketinfo.edd.ca.gov/ocguides/Detail.aspx?Soccode=151141&Geography=0601000000>

**Database Administrators
2012 Wages**

Geography	Median Hourly	Median Annually
California	\$38.72	\$80,523
Los Angeles County	\$37.48	\$77,956
Orange County	\$36.37	\$75,637

<http://www.labormarketinfo.edd.ca.gov/aspxdotnet/SupportPage/AllOESWage.aspx?soccode=151141>

Computer and Information Technology >

Database Administrators

Summary | What They Do | Work Environment | How to Become One | Pay | Job Outlook

Summary

Quick Facts: Database Administrators	
2010 Median Pay ?	\$73,490 per year \$35.33 per hour
Entry-Level Education ?	Bachelor's degree
Work Experience in a Related Occupation ?	1 to 5 years
On-the-job Training ?	None
Number of Jobs, 2010 ?	110,800
Job Outlook, 2010-20 ?	31% (Much faster than average)
Employment Change, 2010-20 ?	33,900

The CIS Advisory Committee is responsible for guiding the changes in the Computer Information Systems curriculum. The CIS discipline frequently revises the curriculum to keep pace with evolving industry standards, job placement skill demands, and student needs. The CIS Advisory Committee is comprised of representatives from local information technology businesses and industries, CIS full-time and part-time faculty, graduates employed in the computer field, and Cypress College administrators. Committee members are selected from a wide range of companies, covering the spectrum of small to medium, located in the Orange, Riverside, San Diego and Los Angeles County regions. They believe employment is expected to grow much faster than the average, and job prospects should be excellent. As a result, the demand for this certificate will increase as firms continue to invest in new technologies. The Advisory Committee members believe that the students will complete the proposed certificate and then begin their careers as entry level in various Database Management/Database Administrators areas. In conversation with department faculty and advisory representatives, it is reported that numerous current and prospective students and incumbent workers have also expressed their desire for the certificate. According to wwwSimplyHired.com, the average starting salary for an Oracle database administrator is \$49,000; however, that number is expected to grow and senior positions earn more.

9. Employer Survey

In order to gather job market data specific to Database Management Certificate and an analysis of the demand related to the above mentioned specialty in the business community, an employer survey was carefully designed to measure the current and future trends of employment and the skills needed to acquire employment. The survey was conducted during October and November 2012. The survey was distributed to faculty and computer application professionals working in the surrounding business community from various entities within the North Orange County Community College District (NOCCCD) area. The topics covered in this survey were also discussed at the Cypress College CIS Advisory Committee meeting on Tuesday, April 17, 2012. The CIS Advisory Committee serves as a resource and provides critical review and feedback. The members are welcome to share the findings of the study. A total of 15 responses were received from business community members working in the Information Technology areas.

**Database Management Certificate
 Survey Questions and Results**

1. The number of job openings in Database Management positions, and related fields will _____ in the next decade.
 Increase – (14) -- 93% Decrease - (0) -- 0% No opinion – (1) -- 7%
2. If you are or were to be responsible for the hiring decision, would a certificate in Database Management provide assistance to you in making that employment decision?
 Yes – (15) -- 100% No – (0) - 0% No opinion – (0) -- 0%
3. Would obtaining a certificate in Database Management give an applicant for a position in the field, an advantage in job placement or promotion?
 Yes – (15) – 100% No – (0) – 0% No opinion – (0) – 0%
4. Would you encourage existing entry-level employees with no previous education to complete such a certificate?
 Yes – (14) -- 93% No – (0) -- 0% No opinion – (1) -- 7%
5. Would obtaining such a certificate affect the pay rate or job status of the employee?
 Yes – (15) -- 100% No -- (0) -- 0% No Difference – (0) -- 0%
6. Do you support the continued education of your personnel through release time or reimbursement programs?
 Yes – (15) – 100% No – (0) – 0% Don't know – (0) – 0%
7. Based on your experience, do the courses described on the attached Summary of Courses represent the skills needed in the future?
 Yes – (15) – 100% No – (0) – 0% Don't know – (0) – 0%
8. Based on your experience, how many openings will you have in your company in the next full year Next five years?

One Year: 5 or less	(10) – 67%	Five Years: 5 or less	(6) – 40%
6 to 10:	(0) – 0%	6 to 10:	(2) – 13%
10 to 20:	(2) – 13%	10 to 20:	(1) – 7%
more than 20:	(3) – 20%	more than 20:	(6) – 40%

10. Explanation of Employer Relationship - No specific employer relationship exists, except membership participation on the Advisory Committee.

11. List of Advisory Committee – The committee is made up of employers, discipline faculty, entrepreneurs, and others qualified to provide guidance in developing and reviewing the program and who will hire completers of the program.

Advisory Membership List

Brad Rippe
Academic Computing Tech Office
Fullerton College
321 E. Chapman Avenue
Fullerton, CA 92832

Mike Kavanaugh
Academic Computing Tech Office
Cypress College
9200 Valley View
Cypress, CA 90630

Bob Hughes
North Orange County Community College
District
Information Services
1830 W. Romneya Drive
Anaheim, CA 92801

Mr. Carl Anderson
33 Via Adrian
San Clemente CA 92673

Mr. David Dellinger
9332 Hazelbrook
Huntington Beach CA 92646

Mr. Dick Dostourian
10781 Via Jacara
Stanton CA 90680

Mr. Paul Hamblin
Cypress College Academic Computing

Mr. Henry Hua
Cypress College

Mr. Patrick Selitrennikoff
Siemens PLM Software
10824 Hope Street
Cypress CA 90630

Mr. Dan Stadler
Business Detail
8140 Dracaena Drive
Buena Park CA 90620

Mr. Ron Von Soosten
245 North Paseo Campo
Anaheim Hills CA 92807

Mr. Jerry Zhou
Siemens PLM Software
8 Risero Drive
Mission Viejo CA 92692

12. Recommendation of Advisory Committee

The minutes of the Advisory Committee Meeting are included as a separate attachment to this application.

The Advisory Committee meets annually to discuss the trends, employment needs, evolving technologies and other facets of the information technology. Our Program Advisory Committee is responsible for guiding the changes in the CIS curricula that provide us with advice related to aspects and directions in the world of information processing. The CIS discipline frequently revises its curriculum to keep its students' skills current because of the continuous and rapid change of the

computer-based environment. The CIS Advisory Committee is composed of local business information services professionals, CIS full-time and part-time faculty, CIS graduates employed in the computer field, and IT professionals employed by the NOCCCD, and the college administrators. The Advisory Committee evaluates specific employer needs, identifies the skill sets needed by entry-level employees, the income potential, and plans out the sequence of courses that comprise our certificates. We apply their advice toward determining priorities and directions for our program and course development. The members of the committee believe that the students are able to complete our proposed certificates and then begin their careers in the area specified in the certificate.

Criteria C. Curriculum Standards

13. Display of Proposed Sequence – The proposed sequence of courses is set forth as follows:

Required courses are listed in suggested sequence:

Course#	Title	Units
CIS 111	Computer Information Systems	3
CIS 142	Database – Access for windows Database	3
CIS 242	– Advanced MS access	3
CIS 236	Intro to ORACLE-SQL & PL/SQL	3
Total Units Required		12

14. Transfer Documentation

This program is not designed for transfer preparation but some coursework may be transferrable. Transferability of coursework is determined by the individual four-year university or college. Students are advised to consult with a counselor.

Course#	Title	Transfer	AS Degree
CIS 111	Computer Information Systems	UC/CSU	Yes
CIS 142	Database – Access for Windows	CSU	Yes
CIS 242	Database – Advanced MS Access	CSU	No
CIS 236	Intro to Oracle – SQL & PL/SQL	CSU	No

Criteria D. Adequate Resources

15. Library and/or Learning Resources Plan – Library and learning resources are existing.

16. Facilities and Equipment Plan – Facilities and equipment are existing.

17. Financial Support Plan – Financial support is existing and will support this option.

18. Faculty Qualifications and Availability

Faculty qualifications fall within existing defined faculty service areas, and both full-time and adjunct faculty are available to support this option. All full- and part-time faculty teaching in this

program meet the STATE minimum qualifications and have knowledge and expertise in this program area.

Criteria E. Compliance

- 19. Based on model curriculum** – This program is not based on model curriculum
- 20. Licensing or Accreditation Standards** – There is no licensing requirements for occupations within this and related fields
- 21. Student Selection and Fees** – There are no special student selection requirements or program fees beyond those identified in California Education Code Sec. 76300, although at the course level a material fee may be collected for select courses. This program complies with California Code of regulations, Title 5, Sections 55201 and 58106.

**ADVISORY COMMITTEE MINUTES
CYPRESS COLLEGE – CIS DEPARTMENT**

NOCCCD - CYPRESS COLLEGE

***CIS DEPARTMENT - 2012 ADVISORY COMMITTEE MEETING
Minutes***

I. Introductions

Date and Time: Tuesday, April 17, 2012, 12:15 p.m.

Place: Cypress College Complex, Room 405

Present: Jesse Saldana, Department Coordinator
Conrad Yanez
Maurice Kwon
Susana Jianto, Business/CIS
Brad Rippe, NOCCCD
Patrick Selitrennikoff, CIS/Siemens
Dan Stadler, Business Details
Jerry Zhou, CIS/Siemens
Penn Wu

Brief Walk-In: Dave Wassenaar, Business Dean

II. 2011-2012 Changes:

- 1) **Revised Course curriculum for:
CIS111, CIS211, CIS217, CIS 218, CIS241, CIS223, and CIS219**
The course curriculums for the listed CIS classes were revised during the year. New rules require that any course curriculum that is over five years old must be reviewed and updated. The proposal to create TBA open labs was rejected by the state so an assigned priority lab time was implemented and students must log eighteen hours of lab time during the semester.
- 2) **Implemented Office 2010 and Visual Studio 2010**
These updated packages were implemented as planned.
- 3) **Started work on new certificates for state approval for the following certificate programs:**
 - A. Visual Basic Programming
 - B. Visual C Programming
 - C. Java Programming
 - D. Database Management
 - E. Microsoft Excel

The VB Programming, Visual C Programming and JAVA Programming certificate programs have been reviewed and updated for state approval. Certificate programs must now include twelve units and those with only nine units are being updated. The database certification program is being revised to include SQL programming and will be implemented using Microsoft Access. A certificate program in Microsoft Excel is being added.

- 4) **Added desktop videos to enhance online classes**
Susana Jianto has taken the lead on implementing online help videos that demonstrate lesson areas that may be problematic especially to those students in the distance learning environment. She has implemented approximately four to five of the planned fourteen help videos.
- 5) **Update SLO for CIS111 course. Courses are updated every 3 years**
The SLO (Student Learning Outcomes) for CIS courses have been updated. It is required that they be updated every three years.
- 6) **Added student tutoring for CIS courses.**
A student tutoring program was started using Perkins Grant funds. Dan Stadler has started the program and there are plans to add another tutor in the future.

III. Proposed 2012-2013 Changes:

- 1) **Revise course curriculum for:
CIS110, CIS132, CIS226, CIS234, CIS264**
The course curriculums for these five classes will be reviewed and revised as needed.
- 2) **Continue to add more desktop videos to enhance online classes.**
Development of desktop help videos to enhance the online class instruction will continue. The projected implementation of the remaining nine to ten videos is planned.
- 3) **Complete new certificates for state approval:**
 - A. **Visual Basic Programming**
 - B. **Visual C Programming**
 - C. **Java Programming**
 - D. **Database Management**
 - E. **Microsoft Excel**

Completion of the certificates for state approval for the five certificate programs listed will be completed. An appeal to the attendees to enlist their help and provide suggestions was made. Further details and requirements will follow.

- 4) **Add mobile application course to JAVA certificate. Emphasis on Android, Apple or Windows 7 (8) is to be determined.**
Courses to develop applications for the mobile device environment will be added to the JAVA certificate program curriculum. A course addressing general mobile device application development will be added, in addition to a new course with emphasis on application development for the Android, Apple or Windows environments. These courses are being added in an attempt to provide education in the skill areas that are being sought by employers in the field.

IV. Open Discussion

1) What type of degree (and) or certification would you look for when you hire? Are you hiring this year?

As has been the trend during the last couple of years, very little hiring is taking place. Patrick Selitrennikoff said that Siemens Corporation, specifically, is not currently hiring. A bachelor's degree is still the main educational requirement, although a shortage of skills in the areas of security and mobile application development seems to offer some opportunities for well qualified people with in knowledge in those disciplines. Certifications that are currently being sought within industry are the CISSP certification and certifications in Solaris and/or Linux. Companies are migrating toward Solaris and Linux and individuals with certifications in these disciplines will generally have the in-depth knowledge to understand the operating systems and the ability to diagnose security issues and implement the safeguards needed to harden these systems against hacking and malware. Windows certifications are in less demand today for two reasons, there is an overabundance of Window certifications in the marketplace and the certification process has lost some its appeal in industry.

2) Are soft skills important criteria in your hiring decision?

Discussions from recent conferences have highlighted a need for employees to possess what is termed "soft skills". These skills include things that are generally considered good business place work habits and etiquette such as discipline, timeliness, promptness, cooperation, ability to collaborate and work in a team environment, an ability to communicate effectively with all levels of staff and clients (where necessary). These are behaviors and skills that are assumed and often taken for granted but are frequently not present in many instances and should probably be addressed in the certificate and degree programs.

3) What kind of candidate qualifications are your companies looking for?

A bachelor's degree remains the primary qualification. And as noted in the discussion of soft skills, self-discipline and an ability to work in team environment are also important qualities. Since most companies only hire those with a bachelor's degree, the emphasis for Cypress College, in addition to teaching technical skills, is to get the students to transfer to a four-year college.

4) Would you be a resource for our Internship Program?

Siemens Corporation has started accepting interns again, however, not in the local area. Typically interns are employed to clean up and maintain existing code.

5) Identify new certificates/Courses for the future

It was noted that the forensics classes have been moved into the CIS program and it is hoped that a certificate program in forensics will be developed in the future.

6) Identify new hardware and software for the future

The proposed courses for mobile device development can be implemented in a virtual, emulated environment rather requiring the need for physical devices of the various formats of Android, Apple, and Windows. The importance of the Linux environment was reiterated and should be considered as new course or certificate curriculum.

7) Other

Students should receive instruction on how "navigate the waters" in achieving the technical skills needed in today's job market and working toward successfully completing their bachelor's degree. It was suggested that Cypress College should undertake an effort to get the word out to local businesses that the school has these certificate

programs and can provide technically skilled individuals to the local job market. Cypress College CIS representatives should continue to attend conferences and meetings among local businesses and industry to stay abreast of CIS trend and learn the requirements of business and industry with regard to programming languages, operating systems and other core CIS infrastructure. In addition to technical skills, such as coding, students need exposure to project management essentials in order to provide them with a real-world view of how their technical skills will be used and integrated in the job environment. Students should be given exposure to some of the major government regulations that affect CIS in business and industry such as HIPAA and Sarbanes-Oxley. Since the Health Care Industry employs a large number of IT professionals, it would be beneficial for Cypress College to focus on the issues and needs of health care and further integrate these IT issues into the CIS curriculum where possible.

V. Adjournment

Jesse Saldana closed the meeting by reminding committee members to contribute their input by completing the survey as soon as possible. The meeting was adjourned at 1:15p.m.

Dave Wassenaar, Division Dean
Business & CIS Division

Prepared by: Mickie Alfaro