10/17/2012

California Community Colleges

APPLICATION FOR APPROVAL—NEW CREDIT PROGRAM

Java Programming Certificate   **Joyce Carrigan**
PROPOSED PROGRAM TITLE   CONTACT PERSON
Cypress College   Dean of Fine Arts
COLLEGE   TITLE
North Orange County CC District   (714) 484-7142
DISTRICT   PHONE NUMBER
Fall 2012   Jcarrican@cypresscollege.edu
PROJECTED PROGRAM START DATE   E-MAIL ADDRESS

GOAL(S) OF PROGRAM (CHECK ALL THAT APPLY):

☒ CAREER TECHNICAL EDUCATION (CTE)   ☐ TRANSFER   ☐ OTHER

TYPE OF PROGRAM (CHECK ALL THAT APPLY):

☐ A.A. DEGREE   ☐ A.S. DEGREE   X CERTIFICATE OF ACHIEVEMENT: ◯ 18+ semester (or 27+ quarter) units

☒ 12-18 semester (or 18-27 quarter) units

PLANNING SUMMARY

Recommended T.O.P. Code	070710	Estimated FTE Faculty Workload	.8 FTEF
Units for Degree Major or Area of Emphasis	12	Number of New Faculty Positions	0
Total Units for Degree	12	Est. Cost, New Equipment	$0 (Existing)
Required Units-Certificate	12	Cost of New/Remodeled Facility	$0 (Existing)
Projected Annual Completers	15	Est. Cost, Library Acquisitions	$0 (Existing)
Projected Net Annual Labor Demand (CTE)	2,430	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: Computer Software and Application Certificate   College: <u>Cypress College</u>

LIBRARY AND LEARNING RESOURCES

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

		Eldon Young, Dean
DATE	SIGNATURE, CHIEF LIBRARIAN/LEARNING RESOURCES MANAGER	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.

		Joyce Carrigan
DATE	SIGNATURE, ADMINISTRATOR OF CTE	TYPED OR PRINTED NAME
		Jesse Saldana Chair
DATE	SIGNATURE, CHAIR, CTE ADVISORY COMMITTEE	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.

		Mark Majarian
DATE	SIGNATURE, CHAIR, CURRICULUM COMMITTEE	TYPED OR PRINTED NAME
		Stacey Howard
DATE	SIGNATURE, ARTICULATION OFFICER	TYPED OR PRINTED NAME
		Dr. Santanu Bandyopadhyay
DATE	SIGNATURE, CHIEF INSTRUCTIONAL OFFICER	TYPED OR PRINTED NAME
		Gary Zager
DATE	SIGNATURE, PRESIDENT, ACADEMIC SENATE	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.

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

DISTRICT APPROVAL

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

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

Cypress College
Cypress College **Request to Add New Option or Certificate** **Within Existing Program to Inventory** **<u>Java Programming Certificate</u>** **October 2012**

Criteria A. Appropriateness to Mission

1. Statement of Goals and Objectives

The Java Programing Certificate is designed for individuals who are seeking to obtain an expertise in Java programming. This program is designed to develop a working knowledge of what is required to be successful in business computer programming using Java. The curriculum consists of beginning and advanced Java courses. Included is general use of problem solving tools such as pseudocode, flowcharts and structure charts. Java is also used to develop web and mobile applications.

<u>Program Objectives and goals</u>:

- Apply the syntax of a programming language.
- Solve problems using a problem-solving tool such as pseudocode, flowcharts, and structure charts.
- Design, code, and test common business programs.
- Apply the skills of programming to an original project.
- Perform Object Oriented analysis and design for a Java program.
- Recognize and use the basic syntax of the Java programming language.
- Create and compile a Java program.
- Create a Java program that uses the Java Libraries.
- Debug a Java program.
- Create a Java program that works with a HTML page.
- Create a stand-alone Java program.
- Evaluate the concepts behind writing Java programs for the Internet
- Use Java to create functional programs.
- Identify and discuss the Java programming environment and programming models.
- Design user interface using Java components arranged in various layouts.
- Draw and paint graphics using Java2D API.
- Throw and catch exceptions and declare your own exception types.
- Create, read, write, and update text and binary files and streams.
- Learn data structures such as linked lists, stacks, queues, trees and hash tables.
- Study algorithms such as searching, sorting, and recursion.
- Enhance applets and applications with multimedia such as animation, audio and video clips.
- Use Java to create web applications.
- Manage concurrent activities by multithreading.
- Implement Java networking applications using sockets and datagrams.
- Access databases with JDBC using SQL.
- Create and maintain web site based on servlet, JSP, and JSF technology.
- Provide and consume web services using JAX-WS.

2. **Catalog Description**

   This certificate is designed to develop a working knowledge of what is required to be successful in business computer programming using Java. A curriculum consisting of: beginning and advanced Java programming courses. To earn a certificate, students must complete the required courses as listed with a minimum grade of "C." At least 50 percent 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 C	Computer Information Systems	3
CIS 211 C	Introduction to Programming	3
CIS 226 C	Java Programming	3
CIS 234 C	Advanced Java Programming	3
Or		
CIS 252 C	Java Web Applications	(3)
Total Units Required		**12**

4. **Background and Rationale**

   With input from our CIS Advisory Committee and CIS Department's research, we identify the need to extend our vocational programs to a broader base of knowledge and competency in the area of Java programming and Java Applications. Java language is also widely used in the mobile industry to develop the Android application. In addition, the Java Certificate helps in acquiring specific skills and tools to attain expertise and in-depth knowledge of web/mobile related programming and application. In order to prepare and/or improve students' employability in the computer industry, Java Programming certificate clearly identifies the goals and objectivities in this fast growing area.

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 Java Programming Certificate. The number of sections and enrollment number had decreased due to budget cut to the community colleges.

	Fall 2010		Spring 2011		Fall 2011		Spring 2012	
	# of Sections	Enrollment	# of Sections	Enrollment	# of Sections	Enrollment	# of Sections	Enrollment
CIS 111	10	692	11	724	10	697	10	681
CIS 211	2	72	3	114	2	82	2	79
CIS 226	1	26	1	27	1	26	1	32
CIS 234	1	8			1	7		
CIS 252			1	1			7	3

We project that there will be at least 15 annual completers of the Java Programming certificate. Since Fall 2009, enrollment has been higher than it has ever been. It is probably a consequence of economy downturn, difficulties of students getting employment and/or into the four-year institutions. This growth is anticipated to continue well into the future as new course offerings are developed, online course offerings grow, and increased outreach is accomplished. 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**

The certificate program will require 12 units of course offerings related to Java Programming and Web Application in order to meet the emerging industry need. Since its inception more than 3 years ago, the program has been successful and well attended by the students. The updated Java Programming certificate includes special topics that require specific knowledge in regards to using the Java Programming Language and the Web Application. In addition, the courses being offered in this certificate guide the students through building of knowledge and applying critical thinking skills to the development of a web application.

7. **Similar Programs at Other Colleges in Service Area**

Java has become a needed skill for creating web and mobile applications in many areas of employment. Currently, only Long Beach City offers similar program within our service areas. 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 Bureau of Labor Statistics (http://www.labormarketinfo.edd.ca.gov/), employment of Java Programming job are expected to increase by 10% from 2008 to 2018. With more and more smart phones and tablets available in the market, demands for Java programming skills are increasing. In general, applicants with a college degree and certification will have the best opportunities. An annual labor demand for Los Angeles and Orange Counties (the areas served by Cypress College) was

derived by totaling the Net Replacements for these two counties and dividing by 10 (representing the 10-year period covered by the EDD projections for 2008-1018).

In Los Angeles and Orange counties, the number is expected to grow during 2008 and 2018.

Computer Programmer 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
Los Angeles County (2008-2018)	91,900	10,7100	15,910	17.4%	1,614
Orange County (2008-2018)	41,320	46,480	5,160	12.5%	726

These findings correlate well with those set forth in U.S. Department of Labor, Occupational Outlook Handbook. Job outlook are projected to grow by 12% from 2010 to 2020, about as fast as the average for all occupations.

Summary

Quick Facts: Computer Programmers	
2010 Median Pay ?	$71,380 per year $34.32 per hour
Entry-Level Education ?	Bachelor's degree
Work Experience in a Related Occupation ?	None
On-the-job Training ?	None
Number of Jobs, 2010 ?	363,100
Job Outlook, 2010-20 ?	12% (About as fast as average)
Employment Change, 2010-20 ?	43,700

Employment projections data for computer programmers, 2010-20

Occupational Title	SOC Code	Employment, 2010	Projected Employment, 2020	Change, 2010-20	
				Percent	Numeric
Computer Programmers	15-1131	363,100	406,800	12	43,700

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

Mobile Application Developer Job Outlook

The mobile device market is growing at breakneck speeds; some experts even compare the mobile movement of the 2010′s to the Internet explosion of the mid 1990′s. This growth is feeding the increased demand for mobile application developers. As smart phones and tablets change the way people communicate, do business, and access news & entertainment, the demand for new and innovative mobile applications will continue as mobile devices become increasingly capable, and an

increasing number of traditional businesses bring their products and services to the mobile market. The rapid growth of mobile is creating numerous job opportunities for mobile application developers.

According to hiring managers and IT recruiters, the demand for mobile application developers still far exceeds the supply. Some of the most popular industries hiring mobile app developers include video game studios, advertising and marketing firms that want to build branded application for clients, media firms that recognize mobile as a powerful content distribution channel, government agencies and financial institutions that want to extend their services online, software development firms, and real estate agencies.

The closest occupation to Mobile Application Developer listed by the US Department of Labor is Software Engineer. Employment for software engineers is expected to increase by 32% from 2008 to 2018, one of the largest increases projected for all occupations – the increase in mobile application development jobs will be significantly higher.

Mobile Application Developer Skills & Responsibilities

Typical day-to-day duties and in-demand skill sets for mobile application developers include:

- Mobile developers are fluent in object-oriented programming languages such as Java, Objective-C, and C++.
- Mobile application developers code, test, debug, monitor and document changes for mobile applications.
- Mobile application developers are proficient in the programming environments for one or more mobile platforms.
- Mobile application developers implement application programming interface (APIs) to support mobile functionality.
- Mobile application developers know the terminology, concepts, and best practices for coding mobile applications.
- Mobile application developers migrate and adapt existing web applications to the leading mobile platforms.
- Mobile application developers work closely with other departments to brainstorm new app deployments.
- Mobile application developers recommend changes and enhancements to existing mobile applications.

Average yearly salaries for mobile application developers and related positions:

- Software Engineer salary: $90,000
- iPhone Application Developer salary: $91,000
- Mobile Software Engineer salary: $94,000
- **Mobile Application Developer salary: $94,000**
- Java Application Developer salary: $96,000
- Android Application Developer salary: $97,000
- Senior Android Developer salary: $107,000
- Senior Mobile Developer salary: $108,000
- Lead Java Developer salary: $110,000
- Javascript Jquery Developer salary: $124,000

9. **Employer Survey**

In order to gather job market data specific to Java Programming 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 acquired employment. The survey was conducted during October and November 2010. 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 5, 2011. 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 programming and web application development areas.

Computer Software & Application Certificate
Survey Questions and Results

1. The number of job openings in office positions using MS Office or related application software positions will _____ in the next decade.
        Increase – (70) -- 91%
        Decrease – (3) -- 4%
        Don't know – (4) -- 5%

2. If you are or were to be responsible for the hiring decision, would a degree/certificate in computer and office applications provide assistance to you in making that employment decision?
        Yes – (71) -- 92.0%
        No – (5) -- 7%
        Don't know – (1) -- 1%

3. Would obtaining a certificate as Computer & Office application give an applicant for a position in the field, an advantage in job placement or promotion?
        Yes – (69) -- 89%
        No – (3) -- 4%
        Don't know – (5) -- 7%

4. Would you encourage existing entry-level employees with no previous education to complete such a certificate?
        Yes – (69) -- 89%
        No – (3) -- 4%
        Don't know – (5) -- 7%

5. Would obtaining such a certificate affect the pay rate or job status of the employee?
        Yes – (41) -- 53%
        No – (16) -- 21%
        Don't know – (20) -- 26%

6. Do you support the continued education of your personnel through release time or reimbursement programs?
        Yes – (58) -- 75%
        No – (11) -- 14%
        Don't know – (8) --11%

7. Based on your experience, do the courses described on the attached Summary of Courses represent the skills needed by an administrative assistant, administrative support, or other office application job position?
        Yes – (72) -- 94%

No – (1) -- 1%
Don't know –(4) -- 5%
8. Based on your experience, how many openings will you have in your company in the next full year? Next five years?
Next Year – 30 positions from those surveyed
Next five years – 500 positions from those surveyed

10. Explanation of Employer Relationship - No specific relationship anticipated.

11. List of Advisory Committee – See attached list. 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.

12. Recommendation of Advisory Committee

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 in Criteria A, Item 3 – program requirements, above, and as set forth below:

Required courses are listed in suggested sequence:

Course#	Title	Units
CIS 111 C	Computer Information Systems	3
CIS 211 C	Introduction to Programming	3
CIS 226 C	Java Programming	3
CIS 234 C	Advanced Java Programming	3
Or		
CIS 252 C	Java Web Applications	(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.

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 faculties meet the minimum state faculty service area requirements and possess knowledge in the 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, although at the course level a material fee may be collected for select courses.

NOCCCD ~ CYPRESS COLLEGE

CIS DEPARTMENT – 2011 ADVISORY COMMITTEE MEETING
Minutes

I.   Introductions

Date and Time: **Tuesday, April 5, 2011, 12:15 p.m.**

Place: **Cypress College Complex, Room 405**

Present: **Jesse Saldana, Department Coordinator**
Carl D. Anderson, CIS/Boeing
David Dellinger, Self -Employed
Pat Dellinger, Business/CIS
Henry Hua, Business/CIS
Bob Hughes, NOCCCD
Mike Kavanaugh, Cypress College Academic Computing
Paul Hamblin, Cypress College Academic Computing
Richard McKnight, Business/CIS
Susana Jianto, Business/CIS
Brad Rippe, NOCCCD
Patrick Selitrennikoff, CIS/Siemens
Dan Stadler, Business Details
Ron Von Soosten, CIS Retired
Jerry Zhou, CIS/Siemens

Brief Walk-In: **Dave Wassenaar, Business Dean**

II.   2010-2011 Changes:

A.   Java and Oracle Software was installed on new virtual server for student use.

The new virtual server is a substantial improvement and is a sufficient server to support. Java and Oracle, as well as other applications. Initial starter problems are resolved.

B.   Completed work for Accreditation Visit.

SLO reports were completed last year identifying criteria for student success in classes.

C.   Student Learning Objectives (SLO) for all classes input to Tract System.

Susana Jianto has set up this system of collecting SLO data for individual students for various classes into one location of status overview for each student.

D.   Added one more Hybrid class: we now have two CIS 111 and one CIS 211 Hybrid classes.

1.   Hybrid classes are versatile and seem to work well, especially for advanced students and as distance courses commencing with one initial on-campus meeting.
2.   They are a "win-win" situation with the freedom online courses provide together with opportunities for student and instructor to confer on a one-on-one basis when needed.
3.   They are adjustable in providing instructors with the option of setting up class meetings during the semester in accordance with instructor criteria and student needs.
4.   They provide students with the option of seeing their instructor on a regular basis if they are having problems (example: scheduled class meetings once a week, etc.).
5.   Students enrolled in hybrid classes have the further option of receiving help from other staff members at night in the campus lab throughout the semester (except Java).
6.   Susana Jianto and other instructors will start hybrid courses for beginning classes.

III.   Proposed 2011-2012 Changes:

A.   Implement Office 2010 and Visual Studio 2010 for use starting Fall 2011.

1.   Postponing this implementation for a year was a good idea, since most students still   have 2007. By this Fall, over half will have 2011, making it a good time to implement.
2.   Mike Kavanaugh and staff will implement the software.

B.   Add desktop videos to enhance online classes.

1.   Review of online class material reveals a need to develop certain online features, and for Blackboard (Power Point mentioned), especially for advanced students.
2.   Jesse and Susana recently attended a class on how to develop desktop video for online lectures and video presentations and screening to improve online courses.
3.   Online classes need to be improved in order to encompass success for a wide variety of students who enroll in them and in compliance with state requirements.

C.   New certificates for State Approval (Need your Help):

1.   State regulations are getting very strict on results for certificate completion, measuring for graduation, degrees and transfers, requiring compliance with strict regulations.
2.   An AA Degree in Business that includes a CIS course has been added; adding an AA Degree for information systems is planned also.
3.   Jesse attended a recent conference giving updates on state standards, and there is a need for new updated certificates.
4.   The following certificates are currently offered:

   1) Visual Basic Programming
   2) Visual C Programming
   3) Java Programming

5.   Jesse obtained input surveys from the market in the community and turned them in to the state for approval for certificates which are permanent on student transcripts, but they are local and do not meet statewide standards.
6.   Information Systems was added to the 9-unit certificates to make them 12 units.

7.   Jesse distributed to committee members the survey and requested members to complete them to assist in the revision of certificates to meet state standards.
8.   The following committee members indicated they would send the completed
      survey online: Carl D. Anderson   Patrick Selitrennikoff
                            Henry Hua   Dan Stadler
                            Brad Rippe   Jerry Zhou

IV.   Open Discussion

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

Like last year, hiring is a big issue. Not many companies are hiring, and require a Bachelor's Degree for a limited number of openings.   Some employers are looking for workers with certain skills, not necessarily a degree. Examples are web design, an AA Degree, or a certificate. Because full-time employment opportunities are scarce, free-lance work and part-time employment are options. Jobs are often divided amongst several different employees on different days of the week. Providing certificates that are sufficient to qualify students for employment is crucial. Smaller companies with less stringent criteria may be a possible avenue for obtaining initial employment and accumulating job experience.

B.   What kind of candidate qualifications are your companies looking for?

The goal is to provide the certificates and training that will qualify students for employment. Part-time employment often leads to full-time employment. Certificates are crucial to show skills in specific areas for employment. A program that identifies and rates qualified students according to capabilities and competence for specific job skills was suggested.

C.   Would you be a resource for our Internship Program?

Jesse mentioned the possibility of establishing an internship at Cypress College for students to acquire practical experience under the direction of Mike. This has previously worked well; however, no funds are currently available for such a program, not even for volunteers. Many hospitals that place students in health information management internships are not currently entertaining placements. Identifying qualified students on a list of internees as a privilege to represent the school for student placements was suggested, which would require instructor supervision. Chamber of Commerce was mentioned as a possibility for internships.

D.   Identify new certificates for the future.

Certificates offered that are now state sanctioned include Visual Basic C, Java, Oracle, and Cisco. Current AS Degree qualifying units are Computer Applications, Computer Information Systems, and Computer Programming. Jesse expressed the need to update certificates to qualify students for entry- level positions. Adding a certificate for mobile applications was discussed at length. (See **F**. below.)

E.   Identify new hardware and software for the future.

Ideas for acquiring iPads, iPhones and similar hardware was discussed. Funding possibilities would be considered by the Dean Student experience with use of new a hardware technology was discussed. Microsoft Connect was mentioned in comparison to Apple software. Even with Windows capabilities on Macs, few students have Apple computers, which may limit use of Apple products. On-campus computers and staff support is not Mac-based. Funding is the major issue with new hardware.

F. Other.

Numerous websites, like elance.com, provide a forum where programmers bid on projects that free-lancers post. A work portfolio demonstrates qualifications in an instant and is more advantageous than a certificate for posting these web application projects, such as art design, gaming and mobile applications. Oracle and Cisco offer classes for this purpose. Very few students have the level of skill and training to pursue these complex tasks. Implementing application opportunities for Java and Visual C students to compile a portfolio to demonstrate their acquired skills was suggested. Jerry described how his Java class assignments and extra credit projects provide sufficient skills for advanced students to construct mobile applications independently, using one textbook for all classes, but it does not contain DROID. Ali Moady's web design class and the mobile gaming component of advanced class certificates were also mentioned: C Sharp, C++, Advanced Java. Creating a new certificate for mobile applications was discussed. Modifying the current Advanced Java certificate to include mobile applications was considered the more expedient route, possibly by next Fall or Spring.

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 1:15 p.m.

Recorded by:

_____
Leonor Bravo
Cypress College Court Reporting student

cc: Board of Trustees
        B. Simpson
        S. Donley

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