Cerro Coso Community College
Spring 2015

## Data Analyst I Certificate of Achievement

Title of proposed program: Data Analyst I Certificate of Achievement
Contact Person:  Dr. Corey J. Marvin
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Projected start date: Fall 2015
Type of change requested: Add new Major or Area of Emphasis
Projected annual completers:  20
Units for degree major or area of emphasis: 12
Total units for certificate: 12

### Item 1.  Program Goals and Objectives

The purpose of the Data Analyst I certificate is to prepare students for entry level-positions in data collection, data processing, and data analysis and to provide a foundation for future training in data science and big data analysis.  Courses in the program provide students with the skills to work with others to manage large projects; design and manipulate databases with SQL and database management systems; write computer programs to access and manipulate data files and databases; and work with electronic spreadsheets and database management systems to create models and analyze results.

### Program Learning Outcomes
Upon successful completion of the program, the student will be able to:

1. Manage multiple components, timelines, technology, and people related to data analysis projects.
2. Design, create, query, and manage databases for analytic processing using SQL and DBMS applications.
3. Write computer programs to access and manipulate data files and databases.
4. Analyze data using forecasting, optimization, and changing scenarios and prepare reports using spreadsheets, word processing, and database management programs.

### Item 2.  Catalog Description

The purpose of this certificate is to prepare students for positions in data collection, data processing, and data analysis and to provide a foundation for future training in data science and big

data analysis. Courses in the program provide students with the skills to work with others to manage large projects; design and manipulate databases with SQL and database management systems; write computer programs to access and manipulate data files and databases; and work with electronic spreadsheets and database management systems to create models and analyze results.

Students entering the Data Analyst I Certificate program are expected to have completed BSAD 100 (Introduction to Business) and CSCI 101 (Introduction to Computer Information Systems) or the equivalent.

## Item 3. Program Requirements

**Certificate of Achievement: Data Analyst I**

| Requirement | Dept. Name/# | Name | Units | Sequence |
|---|---|---|---|---|
| Required Core | BSAD C220 | Principles of Project Management | 3.0 | Year 1, Fall |
| | CSCI C270 | Introduction to Database Design and Management | 3.0 | Year 1, Fall |
| | CSCI C251 | Introduction to Programming Concepts and Methodologies | 3.0 | Year 1, Spring |
| | BSAD C222 | Problem Solving, Decision Making, and Computer Applications in Business | 3.0 | Year 1, Spring |

Required Core Total: 12 Units
TOTAL UNITS: 12 UNITS

## Item 4. Master Planning

The Data Analyst I Certificate has the support of the department's service area advisory committees and meets a widely growing need of industry within the service area and the State of California. At this point in time, the certificate is unique and not offered at any Community Colleges within the region. The courses for the program exist currently and no additional expenditure or facilities are required.

## Item 5. Enrollment and Completer Projections

| | | 2013-2014 | | 2014-2015 | |
|---|---|---|---|---|---|
| CB01: Course Department Number | CB02: Course Title | Annual # Sections | Annual Enrollment Total | Annual # Sections | Annual Enrollment Total |
| BSAD C220 | Principles of Project | 1 | 21 | 1 | 17 |

| | Management | | | | |
|---|---|---|---|---|---|
| CSCI C270 | Introduction to Database Design and Management | 1 | 26 | 1 | 17 |
| CSCI C251 | Introduction to Programming Concepts and Methodologies | 1 | 16 | 1 | 10 |
| BSAD C222 | Problem Solving, Decision Making, and Computer Applications in Business | 1 | 8 | 1 | 10 |

**Item 6.  Place of Program in Curriculum/Similar Programs**

The Data Analyst I Certificate program is a new program using existing courses.  The program is related to certificates in Management and Computer Information Systems but does not replace any existing program at Cerro Coso Community College.

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

There are no similar programs at other colleges in the Service Area.

## Computer Information Systems Advisory Committee Meeting
## Minutes
## November 20, 2014

Members Present:

| Name | Title | Company |
|------|-------|---------|
| Chris Harper | IT Infrastructure Manager | AltaOne |
| Tim Dawson | CEO | Approach Robotics |
| Kara Tolbert | Continuing Education Manger | Cerro Coso Community College |
| Valerie Karnes | Professor, CIS | Cerro Coso Community College |
| Frank Timpone | Professor, Business | Cerro Coso Community College |
| Karen O'Connor | Professor, BOT/Department Faculty Chair | Cerro Coso Community College |
| Lori Acton | Council Member | City of Ridgecrest |
| Melissa Olivarez | Operations Coordinator | Continental Labor |
| Daniel Johnson | Network & Controls Supervisor | Coso Operating Company |
| Sean Callahn | IT Director | Jacobs |
| Rich Christensen | Recruiter | Jacobs |
| Eileen Shibley | CEO | Monarch |
| Margaret Porter | Information Specialist | NAVAIR |
| Scott Fairfield | IT Specialist | NAVAIR |
| Linda Homer | Computer Scientist | NAVAIR |
| Kishor Joshi | Manager | Pertexa |
| Katherine Hu | Sr. Chemist/Environmental Lab Director | Searles Valley Mineral |

The meeting was called to order by Valerie Karnes and the members present introduced themselves, who they worked for and their role in the organization. Several members were absent due to travel and/or work schedules. Minutes will be sent out following the meeting.

Minutes of the April 2014 meeting were reviewed and approved.

The committee purpose agenda was reviewed and employers raised the topic of internships/work experience and job shadowing as a need for most of the organizations. Discussion regarding our work experience courses, potential barriers to student completion and issues with security clearances for those working for the base. Advantages and benefits for students and employers in offering internships and work experience were also discussed. Students would benefit from real world experiences, which would enhance their education that could be noted on a resume. In addition, internships/work experiences could result in aiding in completion and job placement. Several attendees noted that they had internships while in school and that they not only enhanced their educational background, but also resulted in placements.

As Cerro Coso Community College work experience courses are not currently being offered, at this point there is no avenue for credit to be offered to students. A suggestion of offering a Work Experience certificate (new certificate) was brought forward as this would not change the current programs at the college, but will offer students a supplemental certificate that would be valued by employers. Valerie will check with the Counseling department and the CTE Dean to inquire about bringing these courses back and in the form of a certificate.

The Committee moved next to the Computer Information Systems program certificates that were brought forward for review.

The Data Analyst Certificate (12 units) certificate proposed the following courses below:

- ✓ BSAD 220 Principles of Project Management (3 units)
- ✓ BSAD 220 Problem Solving, Decision Making, and Computer Applications in Business (3 units)
- ✓ CSCI 251 Introduction to Visual Basic Programming (3 units)
- ✓ CSCI 270 Introduction to Database Design and Management  (3 units)

The purpose of this certificate is to prepare students for positions in data collection, processing, and analysis and to provide a foundation for future training in big data analysis.  The certificate would be offered online and includes four courses and could be completed in one year. The committee reviewed the certificate and liked it. The only suggestion was to have a SQL course. They indicated that there is a need and they would hire these students. One person from China Lake said that it would fit in the Configuration Management/ Data Management group at the base. They said they need an understanding of SQL but not Microsoft specific. They also said that the SQL could be in another course. Valerie will check with Matt Hightower about the content of CSCI C270 (Introduction to Database Design and Management) and inquire if SQL is included in the topics and assignments in this course.

The Information Technology Certificate (13 units) was reviewed next as a basic Information Technology certificate that would serve organizations hiring for various positions as noted in the purpose below. The courses identified for this certificate are:

- ✓ CSCI C101: Introduction to Computer Information Systems (3 units)
- ✓ CSCI C140/141 A+ Essentials  (4 units)
- ✓ CSCI C143: Network + and Fundamentals of Networking (3 units)
- ✓ CSCI C146: Security + Fundamentals (3 units)

The purpose of this certificate is to prepare students for entry-level positions in computer repair, networking, cyber security and general information systems jobs.  The certificate would be offered online and includes four courses (13 units) and can be completed in one year. The committee endorsed

this certificate and said they would hire students with this type of certificate. It was noted that it would be good for students retraining with a desire to go into another field (IT). This proposed certificate would fit the need for students entering the Information Assurance positions (cyber security), basic help desk, entry-level network positions and general computer technicians. NAVAIR requires Security + certification prior to hiring, so this certificate fits their needs. Coso Operating company is currently hiring and A+ is a requirement and the addition of Security + would be a good thing to have for incoming employees. Sean Callahan (Jacobs) said the certificate is "perfect' for what they need at Jacobs.

Discussion regarding the value of hands-on laboratories was discussed and the committee expressed that additional hands-on laboratories would be valuable to the students and the employers. It was suggested that we have students note the hands-on laboratories in their resumes so employers would know that they did labs physically and not virtually. We discussed the optional tutoring sessions that had been proposed through the Annual Unit Plan process as well as the updating of curriculum that Valerie Karnes, Matt Hightower and Chris Harper will be doing in the spring term. They were fully supportive of this as an option.

After the review of the certificate, the committee reviewed the CIS Model Curriculum and the committee supported the degree pathway as well.  Questions arose about the need for an Operating Systems certification. Currently NAVAIR uses SkillPort/SkillSoft which is self paced program for incoming employees. They didn't feel that we needed to add this to either the certificate or the degree program.

The Certification Testing Center at the college was brought up as a service for employers. They stated that this was a crucial service to the employers, students and community. They stated that the college needs to advertise this center more broadly so that potential candidates locally would know that they are able to take their exams on Friday at the college. Perhaps some advertising would be helpful.

Throughout the conversations regarding the CIS certificates and programs, employers noted that the ability of students to be computer literate and have MS Office experience was a basic skill that is required for any employment. Karen shared the Business Office Technology teaches these components and employers stated that the skills are an important basic skill that will lead to employment. Without these basic computer skills and MS Office knowledge, students would not be employable.

The question of CEU requirements for employees to keep their certifications current was raised. There is a need for those holding certifications to take 17 CEU a year (50 units over a three year program). Kara Tolbert from the Office of Continuing Education at the college brought up that the college could offer supplemental not for credit training to meet the needs of employers. She also talked about meeting the needs for customized training. Jacobs Technology and others will meet with Kara separately to discuss specific needs of the employers. Kara also talked about rolling out seminars and

other types of trainings to industry in the valley. There was a lot of interest in these types of professional services to the valley. Many of the employers were not aware that the college had this type of service and/or ability to provide customized education not for credit. Advertisement of these services and offering to the community needs to be expanded.

Karen O'Connor provided an update about the Computer Science AS-T and the challenge with the additional three units that caused the program to be rejected by the state. Employers asked if we can have multiple classes with various units or if there was another "creative" method we can use. Karen stated that we are working with the Science and Math departments to come up with a solution. She inquired about the need for this computer science transfer program and the employers unanimously supported the need for this program in our valley to support the mission of the Naval Air Warfare Center at China Lake, local contractors, new companies bringing up manufacturing and high technological businesses in Ridgecrest. Other businesses in the valley will also need those with computer science skill levels as technology continues to increase. Employers will be submitting letters of support for the continuation of the pursuit of an AS-T in Computer Science so the college can provide evidence to the State of California of the need for this transfer program and their support.

Other needs employers presented included the need for students competent in manufacturing processes including fiberglass, cybernetics, AutoCad, ProEngineering and SolidWorks software packages. Additional needs include students having a combination of computer skills and medical background (Medical Terminology and Physiology) , Chemistry background for laboratory positions at Searles Valley Minerals. Linux (Red Hat Enterprise edition) operating system is an emerging need that needs to be incorporated into our classes in CIS.

The next meeting date will be either in late spring or in the fall depending on the needs of industry and the progression of the new curriculum in the spring term.

**ACTION ITEMS**

- ✓ Valerie Karnes will check with the Counseling department and the CTE Dean to inquire about bringing Work Experiences courses back and explore the possibility of creating an additional certificate that would provide value to the students and employers. It would not impact current programs.
- ✓ Valerie Karnes will check with Matt Hightower about the content of CSCI C270 (Introduction to Database Design and Management) and inquire if SQL is included in the topics and assignments in this course.
- ✓ Valerie Karnes will complete the Advisory Minutes and send out on Monday, November 24, 2014  for review.
- ✓ Kara Tolbert will meet with Sean Callahan to follow up on the CEU needs for Jacobs's employees.

- ✓ Kara Tolbert will contact other employers about their needs for continuing education and community services for employers
- ✓ Employers will send letters of support for the Associate of Science degree for Transfer (AS-T) in Computer Science to Valerie Karnes and Karen O'Connor.