NARRATIVE TEMPLATE for Associate of Science in Computer Information Systems

Item 1. Program Goals and Objectives

The goal for the Computer Information Systems Associate of Science is to provide an opportunity for students to complete an intensive, hands-on program preparing them for Information Systems employment and/or advancement in businesses or organizations that require the skills offered in this degree. The goal of this degree is designed to meet local community needs as addressed in attached advisory board minutes. Preparation for ongoing study of the field is also provided. Our focus is the application of information systems and business skills. Business and information systems disciplines covered include web design, networking, systems analysis, network maintenance, database management, and basic programming.

Upon completion of this program students will be able to:

1. Demonstrate the ability to use technology effectively to communicate and analyze information related to computer information systems.
2. Demonstrate a broad knowledge of computer information systems terminology and practices, including those related to networking and data communications technology.
3. Effectively use word processing, spreadsheet, presentation graphics and database management software in a professional office environment.
4. Design and implement a relational database.
5. Develop solutions to common programming problems using the structured sequential logic of computer programming languages.

Item 2. Catalog Description

The Computer Information Systems Associate of Science will prepare students in a wide range of information systems skills such as web design, systems analysis and design, programming, data communication and networking, communication technologies, and internet protocols. These skills will prepare a student to enter into or advance within career patterns of the computer information systems industry. The goal for the Computer Information Systems Associate in Science is to provide an opportunity for students to complete a short-term, intensive, hands-on program preparing them for employment in the computer information systems field.

Upon completion of this program students will be able to:

1. Demonstrate the ability to use technology effectively to communicate and analyze information related to computer information systems.
2. Demonstrate a broad knowledge of computer information systems terminology and practices, including those related to networking and data communications technology.

3. Effectively use word processing, spreadsheet, presentation graphics and database management software in a professional office environment.
4. Design and implement a relational database.
5. Develop solutions to common programming problems using the structured sequential logic of computer programming languages.

Required Core (28 units)

INFS P100	Introduction to Information Systems	3 Units
INFS P210	Introduction to Systems Analysis and Design	3 Units
INFS P113	Introduction to Programming Concepts Methodologies	3 Units
INFS P220	Data Communications and Networking	3 Units
INFS P180	Management Database Technology	3 Units
INFS P052	Introduction to Web Design	3 Units
INFS P110	Information and Communication Technology Essentials	4 Units
INFS P170	Internet Protocols and Principles	3 Units
BSAD P132	Business Communication	3 Units

General Education: In addition to completing the major requirements, students must also complete one general education pattern.

1. PC General Education Pattern
2. IGETC Pattern
3. CSU General Education Pattern.

Electives as needed to complete the 60 minimum unit to complete the degree.

Item 3. Program Requirements

Associate of Science in Computer Information Systems

Requirements	**Dept. Name/#**	**Name**	**Units**	**Sequence**
Required Core (28 units)	INFS P100	Introduction to Information Systems	3	Yr 1 Fall
	BSAD P132	Business Communication	3	Yr 1 Fall
	INFS P052	Introduction to Web Design	3	Yr 1 Spring
	INFS P220	Data Communications and Networking	3	Yr 1 Spring
	INFS P180	Management Database Technology	3	Yr 1 Spring
	INFS P170	Internet Protocols and Principles	3	Yr 2 Fall
	INFS P113	Introduction to Programming Concepts and Methodologies	3	Yr 2 Fall

	INFS P210	Introduction to Systems Analysis and Design	3	Yr 2 Spring
	INFS P110	Introduction to Systems Information and Communication Technology Essentials	4	Yr 2 Spring

Required Major Total	28 units
Local GE Requirement	33 units
TOTAL UNITS	61 units

General Education: In addition to completing the major requirements, students must also complete one general education pattern.

1. PC General Education Pattern
2. IGETC Pattern
3. CSU General Education Pattern.

The goal of this degree is designed to meet local community needs as addressed in attached advisory board minutes.

Proposed Sequence:
Year 1, Fall = 15 units
Year 1, Spring = 15 units
Year 2, Fall = 15 units
Year 2, Spring = 16 units
TOTAL UNITS: 61 units

Item 4. Master Planning

It is important to offer a local Computer Information Systems Associate of Science to Porterville College students. The local degree will allow those students that do not wish to transfer a viable option to obtain skills that will help them find high-wage employment. The Information Systems program has become increasingly popular with students and there is a definite need for trained individuals in this field.
This program has shown steady growth during the past three years. Between 2011-12, 2013-14, and 2014-15 the Information Systems Program offered an average of 32 sections of classes annually with enrollments ranging from 989-1,192. A total of 19 Associate degrees have been awarded in the three year period 2012-13 through 2014-15. This is an increase over the three previous academic year's total of 13. (2009-10 thru 2011-12). Our Information Systems advisory committee has recommended that the program bolster it's degrees in an attempt to better meet the needs of our transfer students.
The Discipline faculty, Division Chair, and the CTE Dean discussed the need for the Computer Information Systems Associate of Science.

In collaboration with the local advisory board the degree was developed and on February 4, 2016 the Advisory Board approved the Associate of Science in Computer Information Systems.

Item 5. Enrollment and Completer Projections

The Information Systems (INFS) Program at Porterville College is committed to providing students, both transfer and non-transfer level, with a solid understanding of information systems and

technologies and the critical roles they play in our society. We strive to teach our students to think critically, to learn continuously, to grow professionally, and to conduct themselves ethically and responsibly.

This program has shown steady growth during the past three years. Between 2011-12, 2013-14, and 2014-15 the Information Systems Program offered an average of 32 sections of classes annually with enrollments ranging from 989-1,192. A total of 19 Associate degrees have been awarded in the three year period 2012-13 through 2014-15. This is an increase over the three previous academic year's total of 13. (2009-10 thru 2011-12).
EMSI data indicates that top executive occupations are projected to grow within the four-county region by 6.5% 2015-2018. Computer and Information Systems Manager occupations specifically expect a projected five-year growth of 8% regionally,. Average hourly earnings for 2016, top executives are $36.67 regionally.

It is important to offer students the opportunity to have a specific industry focus while meeting the growing industry need. Additionally, it is important to create a degree program that allows students to be counted as completers in the California Community College System.

Item 6. Place of Program in Curriculum/Similar Programs
The Associate of Science in Computer Information Systems will be offered through the Career and Technical Education Division. Currently the program is not directly related to any other programs within the college.

Item 7. Similar Programs at Other Colleges in Service Area
There are Associate of Science in Computer Information Systems or similar programs at College of the Sequoias (33 miles away) and Bakersfield College (50 miles away). Porterville College is the middle point between Bakersfield College and College of The Sequoias.

Information Technology Advisory Committee Meeting

Porterville College Information Systems

Monache High School MTA

Meeting Date February 4, 2016

Attendees:

James Carson	Porterville College
Martha Flores	Community
Mark Johnson	OACYS Technology
Patty Aquino	MTA Counselor
Sam Aunai	Porterville College
Robert Ramirez	New Life Church
Scott Cheney	Sierra View Hospital IT
Nate Wallis	MTA English Teacher
Eric Barba	Monache HS Principal
Gregg Snyder	MTA Coordinator

Discussion item: Community Needs/Student Skills

A lengthy discussion of the needs of the community involved employers from various sectors including churches, IT providers, hospitals, and community volunteer programs.

Robert Ramirez discussed the technology needs of local churches. More and more of these organizations are employing technology as a delivery medium for much of the content that they deliver. These technologies/skills needed included video production, streaming, networking, and equipment maintenance (such as projectors, cameras, microphones, etc). He stressed the need for our programs and the high school and college to cover a wide breadth of technology. He felt that students with exposure to many areas would be beneficial.

Martha Flores explained how technology and local students could make a big difference in organizations that serve underprivileged. These organizations typically do not have large budgets, but can provide valuable internships for area students.

Mark Johnson works for OACYS Technology. OACYS is a local company that offers a wide range of technology services ranging from being an internet service provider, to networking, repair, and even web design. He spoke of the need for generalist skills. Students that are well versed in a variety of technologies are much more valuable to them. He also discussed the need for customer service skills. Many applicants for their positions have high skill levels but limited customer services skills (which are a must for his company).

Scott Cheney works in the IT department at Sierra View District Hospital. They are an organization that encourages internships. They have hired many of their entry level employees through this process. He also stressed the need for customer service skills. Answering phones and staffing the Help Desk are typical entry level duties. He discussed the need for programming experience. An interesting part of his

discussion included the fact that out of every 100 applicants that they receive for advertised positions, only 4 typically get interviews. This underscored the need for job finding skills on our campus."

Discussion Item: Porterville College Curriculum Changes

Jim Carson from Porterville College shared the new Model Curriculum from the state. An interesting discussion ensued regarding the content of the new major. It was unanimous among advisory committee members that the college should pursue the new Model Curriculum degree. While the college should start with the courses that closely align with some of their current classes, others should be added. The classes that the committee felt were important to include were Cybersecurity and Ethical Hacking.

The college also outlined a proposal to reconstruct it's current local degree into a set of core classes and 3 options to the major. These include Web Developer option, Computer Office Applications option, and Computer Information Systems option (generalist degree that was discussed earlier).

The group was concerned with the Web Developer option for a number of reasons including lack of community job demand, low cost alternatives to creating your own websites, history of low enrollment in web design courses, and self-taught people currently flooding the market. After a lengthy discussion, it was decided that the college should move forward with the other two options at this point and keep monitoring the current community climate before moving forward with the Web Developer option.

Copies of the degree proposals were distributed to all committee members (attached).

Next meeting: To be determined.

The group would like to expand it's membership to include other major employers that were not present at this meeting. April or May seemed like possible meeting times for the next meeting.

Porterville College/Monache High School
Technology Advisory Board

James Carson	Porterville College	jcarson@portervillecollege.edu	559-287-2703
Martha Flores	Community	frugalfashion@hotmail.com	559-788-8106
Mark Johnson	OACYS Technology	mark@oacys.com	559-781-4123
Patty Aquino	MTA Counselor	pquino@portervilleschools.org	559-782-7150
Sam Aunai	Porterville College	Sam-aunai@portervillecollege.edu	559-791-2308
Robert Ramirez	New Life Church	robt5188@gmail.com	559-350-5188
Scott Cheney	Sierra View Hospital IT	scheney@sierra-view.com	559-788-6005
Nate Wallis	MTA English Teacher	nwallis@portervilleschools.org	559-786-9224
Eric Barba	Monache HS Principal	ebarba@portervilleschools.org	559-782-7150
Gregg Snyder	MTA Coordinator	gcsnyder@portervilleschools.org	559-359-9111

Model Curriculum Worksheet – Accepted by ICFW 3-31-15

CCC Major or Area of Emphasis: _Information Technology_____

CSU Major or Majors: _Information and Communication Technologies,

_Information Systems, Information Technology_____

Total units___22-23___ *(all units are semester units)*

Degree Type (*indicate one)*: AA-T_____ OR AS-T__ _____ OR MC __X___

Required Core Courses:

__13___units

Title (units)	**C-ID Designation**	**Rationale**
Information & Communication Technology Essentials (4)	ITIS 110	Essential Preparation
Business Information Systems, Computer Information Systems (3)	ITIS 120	Essential Preparation
Introduction to Programming Concepts and Methodologies (3)	ITIS 130 or COMP 112	Essential Preparation
Computer Network Fundamentals (3)	ITIS 150	Essential Preparation

Select __6__ units or __2__ courses from the following:

Introduction to Systems Analysis and Design (3)	ITIS 140	Important Preparation
Routing and Switching Essentials (3)	ITIS 151	Important Preparation
Systems and Network Administration (3)	ITIS 155	Important Preparation
Introduction to Information Systems Security (3)	ITIS 160	Important Preparation
Introduction to Cybersecurity: Ethical Hacking (3)	ITIS 164	Important Preparation
Digital Forensics Fundamentals (3)	ITIS 165	Important Preparation
Introduction to Database Management Systems (3)	ITIS 180	Important Preparation
Business Communication (3)	BUS 115	Important Preparation

Select __3 - 4__ units or __1__ course from the following:

Introduction to Statistics (3)	MATH 110	Also fulfills CSU GE Area B4
Finite Mathematics (3)	MATH 130	Also fulfills CSU GE Area B4
Business Calculus (3)	MATH 140	Also fulfills CSU GE Area B4
Single Variable Calculus I Early Transcendentals (4)	MATH 210	Also fulfills CSU GE Area B4

Computer Information Systems Degree

Porterville College CTE Division

WEB DEVELOPER option

Course Courses – Level I			
Course		**Description**	**Units**
ITIS	120	Business Information Systems	3
ITIS	140	Introduction to Systems Analysis and Design	3
ITIS	130	Introduction to Programming Concepts and Methodologies	3
ITIS	150	Computer Network Fundamentals	3

Course Courses – Level II			
Course		**Description**	**Units**
INFS	P030 (MODIFY)	Management Database Technology	3
INFS	P??? (NEW)	JAVA Programming	3
INFS	P??? (NEW)	Internet Protocols and Principles	3
INFS	P052 (MODIFY)	Intro to Web Design (HTML/CSS & DREAMWEAVER)	3
ART	P107	3-D Design	3
Total			**27 Units**

Computer Information Systems Degree

Porterville College CTE Division

Computer Office Applications option

Course Courses – Level I			
Course		**Description**	**Units**
ITIS	120	Business Information Systems	3
ITIS	140	Introduction to Systems Analysis and Design	3
ITIS	130	Introduction to Programming Concepts and Methodologies	3
ITIS	150	Computer Network Fundamentals	3

Course Courses – Level II			
Course		**Description**	**Units**
INFS	P030 (MODIFY)	Management Database Technology	3
INFS	P010	Introduction to Word Processing/Word	2
INFS	P020	Introduction to Spreadsheets/Excel	2
ACCTG	P110	Financial Accounting	3
BSAD	P132	Business Communication	3
BSAD	P101	Introduction to Business	3
Total			**28 Units**

Computer Information Systems Degree

Porterville College CTE Division

Course Courses – Level I			
Course		**Description**	**Units**
ITIS	120	Business Information Systems	3
ITIS	140	Introduction to Systems Analysis and Design	3
ITIS	130	Introduction to Programming Concepts and Methodologies	3
ITIS	150	Computer Network Fundamentals	3

Course Courses – Level II			
Course		**Description**	**Units**
INFS	P030 (MODIFY)	Management Database Technology	3
ITIS	110	Information & Communication Technology Essentials	3
INFS	P052 (MODIFY)	Intro to Web Design (HTML/CSS & DREAMWEAVER)	3
INFS	P??? (NEW)	Internet Protocols and Principles	3
BSAD	P132	Business Communication	3
Total			**27 Units**

Occupation Overview

EMSI Q2 2016 Data Set

May 2016

Porterville College

100 E. College Avenue
Porterville, California 93257
559.791.2459

Parameters

Occupations

Code	Description
11-3021	Computer and Information Systems Managers
15-1121	Computer Systems Analysts
15-1122	Information Security Analysts
15-1131	Computer Programmers
15-1142	Network and Computer Systems Administrators
15-1143	Computer Network Architects
15-1151	Computer User Support Specialists
15-1152	Computer Network Support Specialists
15-1199	Computer Occupations, All Other
43-9011	Computer Operators

Regions

Code	Description
6029	Kern County, CA
6107	Tulare County, CA

Timeframe

2015 - 2020

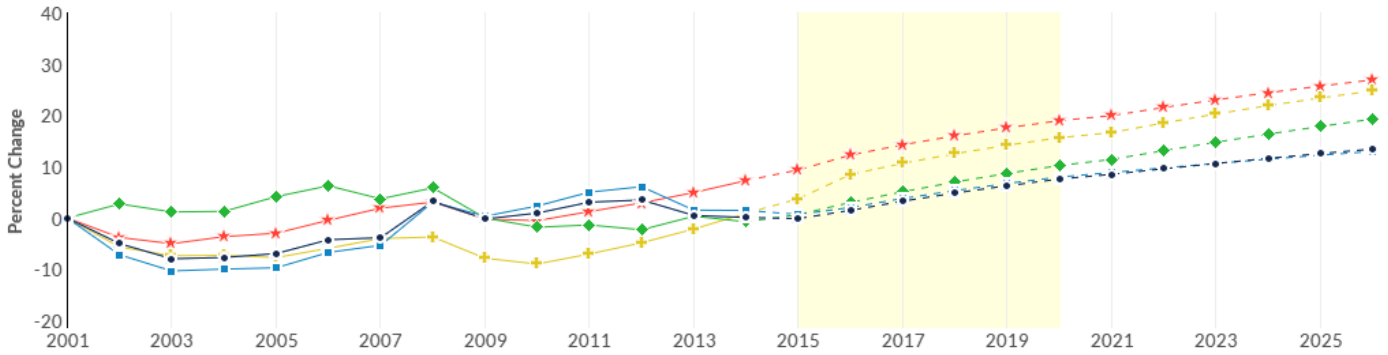
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2016.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors

Occupation Summary for 10 Occupations

5,061	+7.7%	$34.59/hr
Jobs (2016)	% Change (2015-2020)	Median Hourly Earnings
53% below National average	Nation: +8.8%	Nation: $36.80/hr

Regional Trends



	Region	2015 Jobs	2020 Jobs	Change	% Change
●	Region	4,981	5,364	383	7.7%
■	Kern County, CA	3,903	4,186	283	7.3%
▲	Kern and Tulare	4,981	5,364	383	7.7%
◆	Porterville LABOR MKT	1,220	1,336	116	9.5%
+	California	408,073	454,887	46,814	11.5%
★	United States	3,236,656	3,520,582	283,926	8.8%

Regional Breakdown



County	2020 Jobs
Kern County, CA	4,186
Tulare County, CA	1,179

Job Postings Summary

420	4 : 1
Unique Postings (Mar 2016) 1,818 Total Postings	Posting Intensity (Mar 2016) Regional Average: 6 : 1

There were 1,818 total job postings for *10 Occupations* in March 2016, of which 420 were unique. These numbers give us a Posting Intensity of 4-to-1, meaning that for every 4 postings there is 1 unique job posting.

This is lower than the Posting Intensity for all other occupations and companies in the region (6-to-1), indicating that companies may not be trying as hard to hire this position.

Occupation Gender Breakdown



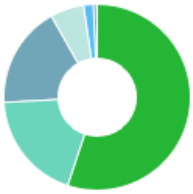
Gender	2016 Jobs	2016 Percent
Males	3,572	70.6%
Females	1,489	29.4%

Occupation Age Breakdown



Age	2016 Jobs	2016 Percent
14-18	15	0.3%
19-24	352	7.0%
25-34	1,355	26.8%
35-44	1,347	26.6%
45-54	1,178	23.3%
55-64	689	13.6%
65+	125	2.5%

Occupation Race/Ethnicity Breakdown



Race/Ethnicity	2016 Jobs	2016 Percent
White	2,789	55.1%
Hispanic or Latino	961	19.0%
Asian	897	17.7%
Black or African American	294	5.8%
Two or More Races	86	1.7%
American Indian or Alaska Native	25	0.5%
Native Hawaiian or Other Pacific Islander	8	0.2%

Occupational Programs

15	108	140
Programs (2014)	Completions (2014)	Openings (2014)

CIP Code	Program	Completions (2014)
11.0701	Computer Science	29
11.0103	Information Technology	28
11.1006	Computer Support Specialist	24
11.0101	Computer and Information Sciences, General	15
11.0801	Web Page, Digital/Multimedia and Information Resources Design	8

Industries Employing 10 Occupations

Industry	Occupation Group Jobs in Industry (2016)	% of Occupation Group in Industry (2016)	% of Total Jobs in Industry (2016)
Federal Government, Civilian, Excluding Postal Service	397	7.8%	4.1%
Corporate, Subsidiary, and Regional Managing Offices	302	6.0%	7.0%
Computer Systems Design Services	297	5.9%	36.4%
Elementary and Secondary Schools (Local Government)	294	5.8%	0.8%
Local Government, Excluding Education and Hospitals	239	4.7%	1.1%

Appendix A - Data Sources and Calculations

Location Quotient
Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region unique in comparison to the national average.

Occupation Data
EMSI occupation employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry.

Completers Data
The completers data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

Institution Data
The institution data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

Industry Data
EMSI industry data have various sources depending on the class of worker. (1) For QCEW Employees, EMSI primarily uses the QCEW (Quarterly Census of Employment and Wages), with supplemental estimates from County Business Patterns and Current Employment Statistics. (2) Non-QCEW employees data are based on a number of sources including QCEW, Current Employment Statistics, County Business Patterns, BEA State and Local Personal Income reports, the National Industry-Occupation Employment Matrix (NIOEM), the American Community Survey, and Railroad Retirement Board statistics. (3) Self-Employed and Extended Proprietor classes of worker data are primarily based on the American Community Survey, Nonemployer Statistics, and BEA State and Local Personal Income Reports. Projections for QCEW and Non-QCEW Employees are informed by NIOEM and long-term industry projections published by individual states.

Staffing Patterns Data
The staffing pattern data in this report are compiled from several sources using a specialized process. For QCEW and Non-QCEW Employees classes of worker, sources include Occupational Employment Statistics, the National Industry-Occupation Employment Matrix, and the American Community Survey. For the Self-Employed and Extended Proprietors classes of worker, the primary source is the American Community Survey, with a small amount of information from Occupational Employment Statistics.

State Data Sources
This report uses state data from the following agencies: California Labor Market Information Department