

**ARTICULATION AGREEMENT  
BETWEEN  
COMMUNITY COLLEGE OF ALLEGHENY COUNTY  
AND  
CALIFORNIA UNIVERSITY OF PENNSYLVANIA**

**THIS AGREEMENT**, dated this 29<sup>th</sup> day of Oct, 2015, is made by and between, Community College of Allegheny County, located in Allegheny County, hereinafter called "CCAC", and California University of Pennsylvania, located at 250 University Avenue, California, Pennsylvania, hereinafter called "CAL U".

CCAC and CAL U acknowledge their shared mission to provide quality higher education programs, which meet the needs of the region and provide a workforce of highly trained residents.

The primary purpose of this agreement is to enhance the transferability of students and their credits between CCAC's Associate of Science Degree Programs in Computer Information Systems, Business Management, and Business University Parallel to CAL U's Global Online Bachelor of Science Degree in Computer Information Systems. The above referenced Associate Degree's will qualify the student for full junior standing upon admission to Cal U. A secondary purpose is to provide faculty and administration of both institutions with more precise guidelines for advising students interested in pursuing a Global Online Bachelor of Science in Computer Information Systems.

This agreement does not exclude students from transferring to majors other than Computer Information Systems. Appendix A, consisting of two (2) pages, attached hereto and incorporated herein, outlines the courses that will be accepted from CCAC. Appendix B, consisting of three (3) pages, attached hereto and incorporated herein, outlines the courses necessary for the Bachelor of Science in Computer Information Systems from CAL U.

**I. MUTUAL TERMS AND CONDITIONS**

- a. *Term of Agreement.* The term of this Agreement shall be five years from the date of execution and will be reviewed annually for accuracy. This Agreement may not exceed a period of five (5) years.
- b. *Termination of Agreement.* Either party may terminate this Agreement for any reason with ninety (90) days' notice. In the event of a substantial breach, either party may terminate this agreement upon the occurrence of the breach by written notice that may be less than 90 days.
- c. *Nondiscrimination.* The parties agree to continue their respective policies of nondiscrimination and related procedures to insure that students enrolled at Cal U are afforded the protections of Title VI of the Civil Rights Act of 1964 in regard to sex, age, race, color, creed, national origin, Title IX of the Education Amendments of 1972 and other applicable laws, as well as the provisions of Section 504 of the


Rehabilitation Act of 1973 (as amended) and the Americans with Disabilities Act (ADA) of 1990.

- d. *Interpretation of the Agreement.* The laws of the Commonwealth of Pennsylvania shall govern this Agreement.
- e. *Modification of Agreement.* This Agreement shall only be modified in writing with the same formality as the original Agreement.
- f. *Relationship of Parties.* The relationship between the parties to this Agreement to each other is that of independent contractors. The relationship of the parties to this contract to each other shall not be construed to constitute a partnership, joint venture or any other relationship, other than that of independent contractors.
- g. *Liability.* Neither of the parties shall assume any liabilities to each other. As to liability to each other or death to persons, or damages to property, the parties do not waive any defense as a result of entering into this contract. This provision shall not be construed to limit the Commonwealth's rights, claims or defenses which arise as a matter of law pursuant to any provisions of this contract. This provision shall not be construed to limit the sovereign immunity of the Commonwealth or of the State System of Higher Education or the University.
- h. *Entire Agreement.* This Agreement represents the entire understanding between the parties. No other prior or contemporaneous oral or written understandings or promises exist in regard to this relationship.

IN WITNESS WHEREOF, the authorized representatives of the parties have executed this Agreement as of the final date indicated below.

Community College of Allegheny College      California University of Pennsylvania:

  
\_\_\_\_\_  
Quintin B. Bullock, President

  
\_\_\_\_\_  
Bruce Barnhart, Acting Provost and Vice President for Academic Affairs

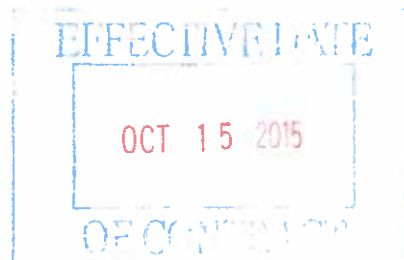
9/29/15  
\_\_\_\_\_  
Date

10-5-15  
\_\_\_\_\_  
Date

Reviewed and approved as to form and legality:

  
\_\_\_\_\_  
University Legal Counsel

October 15, 2015  
\_\_\_\_\_  
Date of final signature



## APPENDIX A

### Community College of Allegheny County

#### *AS in Computer Information Systems*

ACC 104 Financial Accounting (General Elective)  
 ENG 101 English Comp I  
 ECO 103 Intro Microeconomics (General Elective)  
 ENG 102 English Comp 2  
 PSY 101 General Psychology (Social Science Elective)  
 SPH 101 Oral Communication  
 BUS 101 Intro Business (General Elective)  
 MUS 101 Intro Music (Humanities) OR  
     THE 101 Intro Theater OR  
     ART 106 Art Appreciation  
 MAT 111 College Algebra (Math Elective)  
 BUS 122 Business Stats (Math Elective) OR  
     MAT 161 Elem Statistics OR  
     MAT 165 Probability & Statistics I OR  
     MAT 210 Statistics  
 MAT 201 Calculus (Math Elective)  
 CIT 115 Intro Info Tech (CIT Restricted Electives)  
 CIT 111 Inform Systems-JAVA  
 GGY 201 Geology (Science w Lab Elective) OR  
     CHM 151 General Chem I  
 BIO 120 Human Repro-Std  
 BUS 103 Prin Management (General Elective)  
 BUS 104 Prin Marketing (General Elective)  
 CIT 130 Object Oriented Prog (CIT Restricted Elective)  
 BUS 108 Financial Mngt (General Elective)  
 CIT 215 Sys Analysis/Design (CIT Restricted Elective)

### California University of Pennsylvania

#### *BS in Computer Information Systems*

ACC 200 Financial Accounting 3 crs.  
 ENG 101 English Comp I 3 crs.  
 ECO 201 Intro Microeconomics 3 crs.  
 ENG 102 English Comp II 3 crs.  
 PSY 100 General Psychology 3crs.  
 COM 101 Oral Communication 3crs.  
 BUS 100 Introduction Business 3 crs.  
 MUS 100 Intro Music OR  
     THE 100 Intro Theater OR  
     ART 162 Art transfer 3 crs.  
 MAT 181 College Algebra 3 crs.  
 MAT 225 Business Stats OR  
     MAT 215 Statistics OR  
     MAT 215 Statistics OR  
     MAT 215 Statistics 3 crs.  
 MAT 281 Calculus 3 crs.  
 CIS 110 Intro to Info Systems 3 crs.  
 CIS 120 Application Prog I 3 crs.  
 EAS 150 Intro to Geology OR  
     CHE 101 General Chem I 4 crs.  
 BIO 112 Human sex & Society 3 crs.  
 MGT 300 Prin of Management 3 crs.  
 MKT 300 Prin Marketing 3 crs.  
 CIS 220 Application Prog II 3 crs.  
 FIN 301 Financial Management 3 crs.  
 CIS 299 System Analysis I 3 crs.

**TOTAL TRANSFER CREDITS 61 Crs.**

#### *AS in Business Management*

ACC 104 Financial Accounting  
 ENG 101 English Comp I  
 ECO 103 Intro Microeconomics (Business Course)  
 ENG 102 English Comp 2  
 PSY 101 General Psychology (Social Science)  
 SPH 101 Oral Communication  
 BUS 101 Introduction Business  
 MUS 101 Intro Music (Humanities) OR  
     THE 101 Intro Theater OR  
     ART 106 Art Appreciation  
 BUS 122 Business Stats (Math Elective) OR

#### *BS in Computer Information Systems*

ACC 200 Financial Accounting 3 crs.  
 ENG 101 English Comp I 3 crs.  
 ECO 201 Intro Microeconomics 3 crs.  
 ENG 102 English Comp II 3 crs.  
 PSY 100 General Psychology 3crs.  
 COM 101 Oral Communication 3crs.  
 BUS 100 Introduction Business 3 crs.  
 MUS 100 Intro Music OR  
     THE 100 Intro Theater OR  
     ART 162 Art transfer 3 crs.  
 MAT 225 Business Stats OR

MAT 161 Elem Statistics	OR	MAT 215 Statistics	OR
MAT 165 Probability & Statistics I	OR	MAT 215 Statistics	OR
MAT 210 Statistics		MAT 215 Statistics	3crs.
CIT 115 Intro Info Tech (Comp. Tech Elective)		CIS 110 Intro to Info Systems	3 crs
CIT 111 Inform Systems-JAVA(business elective)		CIS 120 Application Prog I	3 crs.
BIO 120 Human Repro-Std		BIO 112 Human sex & Society	3 crs.
GGY 201 Geology (Science Elective)	OR	EAS 150 Intro to Geology	OR
CHM 151 General Chem I		CHE 101 General Chem I	4 crs.
BUS 103 Prin Management		MGT 300 Prin of Management	3 crs.
BUS 104 Prin Marketing		MKT 300 Prin Marketing	3 crs.
BUS 108 Financial Mngt (Business Course)		FIN 301 Financial Management	3 crs.
ECO 102 Intro Macroeconomics		ECO 202 Intro Macroeconomics	3 crs.
ACC 203 Managerial Accting		ACC 321 Managerial Accting	3 crs.
BUS Business Law I		BUS 251 Business law I	3 crs.
Restricted Elective Course		Transfer credit	<u>3 cr.</u>
		<b>TOTAL TRANSFER CREDITS</b>	<b>61 crs.</b>

***AS in Business University Parallel***

ACC 104 Financial Accounting	
ENG 101 English Comp I	
ECO 103 Intro Microeconomics	
ENG 102 English Comp 2	
PSY 101 General Psychology (Social Science Elective)	
SPH 101 Oral Communication	
BUS 101 Intro Business (Social Science Elective)	
MUS 101 Intro Music (Humanities)	OR
THE 101 Intro Theater	OR
ART 106 Art Appreciation	
BUS 122 Business Stats (Math Elective)	OR
MAT 161 Elem Statistics	OR
MAT 165 Probability & Statistics I	OR
MAT 210 Statistics	
MAT 201 Calculus (Math Elective)	
CIT 115 Intro Info Tech (CIT Electives)	
CIT 111 Inform Systems-JAVA(Major Field Elective)	
GGY 201 Geology (Science w Lab Elective)	OR
CHM 151 General Chem I	
BUS 103 Prin Management (Major Field Elective)	
BUS 104 Prin Marketing (Major Field Elective)	
CIT 130 Object Oriented Prog (Major Field Elective)	
BUS 108 Financial Mngt (Major Field Elective)	
CIT 215 System Analysis/Design (Major Field Elect)	
ECO 102 Intro Macroeconomics	
ACC 203 Managerial Accting	

***BS in Computer Information Systems***

ACC 200 Financial Accounting	3 crs.
ENG 101 English Comp I	3 crs.
ECO 201 Intro Microeconomics	3 crs.
ENG 102 English Comp II	3 crs.
PSY 100 General Psychology	3crs.
COM 101 Oral Communication	3crs.
BUS 100 Introduction Business	3 crs.
MUS 100 Intro Music	OR
THE 100 Intro Theater	
ART 162 Art transfer	3 crs.
MAT 225 Business Stats	OR
MAT 215 Statistics	OR
MAT 215 Statistics	OR
MAT 215 Statistics	3crs.
MAT 281 Calculus	3 crs.
CIS 110 Intro to Info Systems	3 crs
CIS 120 Application Prog I	3 crs.
EAS 150 Intro to Geology	OR
CHE 101 General Chem I	4 crs.
MGT 300 Prin of Management	3 crs.
MKT 300 Prin Marketing	3 crs.
CIS 220 Application Prog II	3 crs.
FIN 301 Financial Management	3 crs.
CIS 299 System Analysis I	3 crs
ECO 202 Intro Macroeconomics	3 crs.
ACC 321 Managerial Accting	<u>3 crs.</u>
<b>TOTAL TRANSFER CREDITS</b>	<b>61 crs.</b>

**Residency Policy: To earn a California University of PA degree, 30 of the last 45 credits must be taken from Cal U. In addition, students will take at least 50% of credits required for the Major from a PASSHE university. The degree-granting University may require up to a maximum of 50% of the Major credits. This is in accordance with PASSHE's academic residency policy and related Board of Governors' policies.**

**California University of Pennsylvania**

AS CIT/Bachelor of Science  
 College of Science and Technology  
 Major: Computer Information Systems  
 Major Code: 7489

Credits Required: 120  
 Concentration:  
 Required Minor:  
 Required Minor Code:

General Education (40/41 Credits)	Additional Requirements
<b>Building a Sense of Community (1 credit)</b>	(Not counted toward the General Education requirements)
UNI 100: First Year Seminar <span style="float:right">WAIVE</span>	Special Experience Course (1 course required)
<b>Composition (3 credits)</b>	*CIS 492 Systems Development & Implementation
ENG 101: Composition I <span style="float:right">CCAC</span>	Upper-Division Writing Component Courses (2 courses required)
<b>Public Speaking (3 credits)</b>	*CIS 490 Systems Analysis II
SPH 101 Oral Communications <span style="float:right">CCAC</span>	*CIS 492 Systems Development & Implementation
<b>Mathematics and Quantitative Literacy (3 credits)</b>	Laboratory Course (1 course required)
MAT 201 Calculus I <span style="float:right">CCAC</span>	Any Laboratory Course
<b>Health and Wellness (3 credits)</b>	<b>Program Requirements</b>
BIO 120 Human Reproductive Std <span style="float:right">CCAC</span>	<b>Required Major Courses (58 credits)</b>
<b>Technological Literacy (3 credits)</b>	CIT 130 Object Oriented Prog (3 credits) <span style="float:right">CCAC</span>
CIT 115 Introduction Information Tech <span style="float:right">CCAC</span>	CIT 215 Syst Analysis/Design (3 credits) <span style="float:right">CCAC</span>
<b>Humanities (3 credits)</b>	CIS 321 Data Base Management Systems & Data Base Design (3 credits)
ENG 102 English Composition II <span style="float:right">CCAC</span>	CIS 322 Data Base Application Development (3 credits)
<b>Fine Arts (3 credits)</b>	CIS 330 Web Programming I (3 credits)
MUS 101 OR ART 106 OR THE 101 <span style="float:right">CCAC</span>	CIS 332 Web Programming II (3 credits)
<b>Natural Sciences (3/4 credits)</b>	CIS 341 CISCO CCNA 1 (4 credits)
GGY 201 Geology OR CHM 151 Gen. Chem I <span style="float:right">CCAC</span>	CIS 354 Systems Project Management (3 credits)
<b>Social Sciences (3 credits)</b>	CIS 490 Systems Analysis II (3 credits)
BUS 101 Introduction to Business <span style="float:right">CCAC</span>	CIS 492 Systems Development & Implementation (3 credits)
<b>General Education Options (12 credits)</b>	<b>Coursework Related to the Major (9 credits)</b>
*CIS 352 Global, Economic and Social Ethical Issues in Computing	BUS 122 Bus. Stats OR MAT 161 Elem. Stats OR
CIT 111 Inform Systems-JAVA <span style="float:right">CCAC</span>	MAT 165 Prob & Stats I OR MAT 210 Stats (3 crs.) <span style="float:right">CCAC</span>
*ENG 217 Scientific & Technical Writing	<b>Select two courses from the following:</b>
PSY 101 General Psychology <span style="float:right">CCAC</span>	BUS 108 Financial management <span style="float:right">CCAC</span>
<b>Required Related Courses</b>	MGT 301 Organizational Behavior
ACC104 Financial Accounting (3 credits) <span style="float:right">CCAC</span>	MKT 311 E-Marketing
ECO 103 Intro Microeconomics (3 credits) <span style="float:right">CCAC</span>	<b>Free Electives (12/13 credits)</b>
MAT 195 Discrete Mathematical Structures (3 credits)	MAT 111 College Algebra (3 credits) <span style="float:right">CCAC</span>
BUS 103 Principles of Management (3 credits) <span style="float:right">CCAC</span>	<b>Program Notes:</b>
BUS 104 Principles of Marketing (3 credits) <span style="float:right">CCAC</span>	Note 1 HON 100 Honors & University Orientation can be used in place of UNI 100.
<b>Select twelve credits from the following: <sup>4</sup></b>	Note 2 HON 150 Honors Composition I can be used in place of ENG 101.
Networking: <sup>5</sup>	Note 3 HON 250 Honors Composition II can be used in place of ENG 217.
CIS 342 CISCO CCNA 2	Note 4 Students can choose any course listed; however, choosing all courses from a grouping offers a specialization in a CIS area.
CIS 343 CISCO CCNA 3	Note 5 Upon completion of CIS 344, student will be prepared to take certification exam.
CIS 344 CISCO CCNA 4	Note 6 A maximum of three credits can be used from Internship toward the program.
Programming:	*Pending Gen Ed Approval
CIS 302 Visual Programming	
CIS 304 COBOL	
<b>Business Analytics:</b>	
CIS 325 Decision Support Systems	
CIS 401: Concepts in Enterprise Resource	
<b>Others:</b>	
CIS 419 Internship <sup>6</sup>	
CIS 474 Special Topics in Information Systems	

### Suggested Eight-Semester Course Sequence

#### Semester 1 (16 Credits)

CIS 110: Introduction to Information Systems (3 credits)  
CIS 120: Application Programming I (3 credits)  
ENG 101: English Composition I (3 credits)  
MAT 281: Calculus I (3 credits)  
PSY 100: General Psychology (3 credits)  
UNI 100: First Year Seminar (1 credits)

#### Semester 3 (16 Credits)

ACC 200: Financial Accounting (3 credits)  
CIS 341: CISCO CCNA 1 (4 credits)  
MAT 215: Statistics OR MAT 225: Business Statistics (3 credits)  
Public Speaking course (3 credits)  
Any General Education course (3 credits)

#### Semester 5 (15 Credits)

CIS 321: Data Base Management Systems and  
CIS 330: Web Programming I (3 credits)  
Data Base Design (3 credits)  
CIS 354: Systems Project Management (3 credits)  
MGT 300: Principles of Management (3 credits)  
Any CIS Elective course (3 credits)

#### Semester 7 (15 Credits)

CIS 490: Systems Analysis II (3 credits)  
Any CIS Elective course (3 credits)  
Any General Education course (3 credits)  
Any Related Elective course (3 credits)  
Free Elective course (3 credits)

#### Semester 2 (15 Credits)

BUS 100: Introduction to Business (3 credits)  
CIS 220: Application Programming II (3 credits)  
ENG 217: Scientific & Technical Writing (3 credits)  
MAT 195: Discrete Mathematical Structures (3 credits)  
Any General Education course (3 credits)

#### Semester 4 (15 Credits)

CIS 299: Systems Analysis I (3 credits)  
CIS 352: Global, Economic and Social Ethical Issues in Computing (3 credits)  
ECO 201: Introductory Microeconomics (3 credits)  
Any General Education course (3 credits)  
Free Elective course (3 credits)

#### Semester 6 (15 Credits)

CIS 322: Data Base Application Development (3 credits)  
CIS 332: Web Programming II (3 credits)  
MKT 300: Principles of Marketing (3 credits)  
Any CIS Elective course (3 credits)  
Any Related Elective course (3 credits)

#### Semester 8 (13 Credits)

CIS 492: Systems Development & Implementation (3 credits)  
Any CIS Elective course (3 credits)  
Two Free Elective courses (7 credits)



**California University of Pennsylvania**

AS Bus. Mgt/Bachelor of Science  
 College of Science and Technology  
 Major: Computer Information Systems  
 Major Code: 7489

Credits Required: 120  
 Concentration:  
 Required Minor:  
 Required Minor Code:

General Education (40/41 Credits)		Additional Requirements
<b>Building a Sense of Community (1 credit)</b>		(Not counted toward the General Education requirements)
UNI 100: First Year Seminar	WAIVE	Special Experience Course (1 course required)
<b>Composition (3 credits)</b>		*CIS 492 Systems Development & Implementation
ENG 101: Composition I	CCAC	Upper-Division Writing Component Courses (2 courses required)
<b>Public Speaking (3 credits)</b>		*CIS 490 Systems Analysis II
SPH 101 Oral Communications	CCAC	*CIS 492 Systems Development & Implementation
<b>Mathematics and Quantitative Literacy (3 credits)</b>		Laboratory Course (1 course required)
MAT 281 Calculus I		Any Laboratory Course
<b>Health and Wellness (3 credits)</b>		<b>Program Requirements</b>
BIO 120 Human Reproductive Studies	CCAC	<b>Required Major Courses (58 credits)</b>
<b>Technological Literacy (3 credits)</b>		CIS 220 Application Programming II (3 credits)
CIT 115 Introduction Information Tech	CCAC	CIS 299 Systems Analysis I (3 credits)
<b>Humanities (3 credits)</b>		CIS 321 Data Base Management Systems & Data Base Design (3 credits)
ENG 102 English Composition II	CCAC	CIS 322 Data Base Application Development (3 credits)
<b>Fine Arts (3 credits)</b>		CIS 330 Web Programming I (3 credits)
ART 106 OR THE 101 OR MUS 101	CCAC	CIS 332 Web Programming II (3 credits)
<b>Natural Sciences (3/4 credits)</b>		CIS 341 CISCO CCNA 1 (4 credits)
GGY 201 Geology OR CHM Gen. Chem I	CCAC	CIS 354 Systems Project Management (3 credits)
<b>Social Sciences (3 credits)</b>		CIS 490 Systems Analysis II (3 credits)
*BUS 101 Introduction to Business	CCAC	CIS 492 Systems Development & Implementation (3 credits)
<b>General Education Options (12 credits)</b>		<b>Coursework Related to the Major (9 credits)</b>
*CIS 352 Global, Economic and Social Ethical Issues in Computing		BUS 122 Bus. Stats OR MAT 161 Elem. Stats OR
CIT 111 Inform Systems-JAVA	CCAC	MAT 165 Prob & Stats I OR MAT 210 Stats (3 crs.) CCAC
*ENG 217 Scientific & Technical Writing		<b>Select two courses from the following:</b>
PSY 101 General Psychology	CCAC	BUS 108 Financial Management CCAC
<b>Required Related Courses</b>		MGT 301 Organizational Behavior
ACC104 Financial Accounting (3 credits) CCAC		MKT 311 E-Marketing
ECO 103 Intro Microeconomics (3 credits) CCAC		<b>Free Electives (12/13 credits) 12 credits CCAC</b>
MAT 195 Discrete Mathematical Structures (3 credits) CCAC		ACC 203, ECO 102, BUS 251, Any Restricted Elective
BUS 103 Principles of Management(3 credits) CCAC		Transfer
BUS 104 Principles of Marketing (3 credits) CCAC		<b>Program Notes:</b>
<b>Select twelve credits from the following: <sup>4</sup></b>		Note 1 HON 100 Honors & University Orientation can be used in place of UNI 100.
Networking: <sup>5</sup>		Note 2 HON 150 Honors Composition I can be used in place of ENG 101.
CIS 342 CISCO CCNA 2		Note 3 HON 250 Honors Composition II can be used in place of ENG 217.
CIS 343 CISCO CCNA 3		Note 4 Students can choose any course listed; however, choosing all courses from a grouping offers a specialization in a CIS area.
CIS 344 CISCO CCNA 4		Note 5 Upon completion of CIS 344, student will be prepared to take certification exam.
Programming:		Note 6 A maximum of three credits can be used from Internship toward the program.
CIS 302 Visual Programming		*Pending Gen Ed Approval
CIS 304 COBOL		
Business Analytics:		
CIS 325 Decision Support Systems		
CIS 401: Concepts in Enterprise Resource		
Others:		
CIS 419 Internship <sup>6</sup>		
CIS 474 Special Topics in Information Systems		

### Suggested Eight-Semester Course Sequence

#### Semester 1 (16 Credits)

CIS 110: Introduction to Information Systems (3 credits)  
CIS 120: Application Programming I (3 credits)  
ENG 101: English Composition I (3 credits)  
MAT 281: Calculus I (3 credits)  
PSY 100: General Psychology (3 credits)  
UNI 100: First Year Seminar (1 credits)

#### Semester 3 (16 Credits)

ACC 200: Financial Accounting (3 credits)  
CIS 341: CISCO CCNA 1 (4 credits)  
MAT 215: Statistics OR MAT 225: Business Statistics (3 credits)  
Public Speaking course (3 credits)  
Any General Education course (3 credits)

#### Semester 5 (15 Credits)

CIS 321: Data Base Management Systems and  
CIS 330: Web Programming I (3 credits)  
Data Base Design (3 credits)  
CIS 354: Systems Project Management (3 credits)  
MGT 300: Principles of Management (3 credits)  
Any CIS Elective course (3 credits)

#### Semester 7 (15 Credits)

CIS 490: Systems Analysis II (3 credits)  
Any CIS Elective course (3 credits)  
Any General Education course (3 credits)  
Any Related Elective course (3 credits)  
Free Elective course (3 credits)

#### Semester 2 (15 Credits)

BUS 100: Introduction to Business (3 credits)  
CIS 220: Application Programming II (3 credits)  
ENG 217: Scientific & Technical Writing (3 credits)  
MAT 195: Discrete Mathematical Structures (3 credits)  
Any General Education course (3 credits)

#### Semester 4 (15 Credits)

CIS 299: Systems Analysis I (3 credits)  
CIS 352: Global, Economic and Social Ethical Issues in Computing (3 credits)  
ECO 201: Introductory Microeconomics (3 credits)  
Any General Education course (3 credits)  
Free Elective course (3 credits)

#### Semester 6 (15 Credits)

CIS 322: Data Base Application Development (3 credits)  
CIS 332: Web Programming II (3 credits)  
MKT 300: Principles of Marketing (3 credits)  
Any CIS Elective course (3 credits)  
Any Related Elective course (3 credits)

#### Semester 8 (13 Credits)

CIS 492: Systems Development & Implementation (3 credits)  
Any CIS Elective course (3 credits)  
Two Free Elective courses (7 credits)

**California University of Pennsylvania**

AS Bus. Parallel/Bachelor of Science  
 College of Science and Technology  
 Major: Computer Information Systems  
 Major Code: 7489

Credits Required: 120  
 Concentration:  
 Required Minor:  
 Required Minor Code:

General Education (40/41 Credits)		Additional Requirements
<b>Building a Sense of Community (1 credit)</b>		(Not counted toward the General Education requirements)
UNI 100: First Year Seminar	WAIVE	Special Experience Course (1 course required)
<b>Composition (3 credits)</b>		*CIS 492 Systems Development & Implementation
ENG 101: Composition I	CCAC	Upper-Division Writing Component Courses (2 courses required)
<b>Public Speaking (3 credits)</b>		*CIS 490 Systems Analysis II
SPH 101 Oral Communications	CCAC	*CIS 492 Systems Development & Implementation
<b>Mathematics and Quantitative Literacy (3 credits)</b>		Laboratory Course (1 course required)
MAT 201 Calculus I	CCAC	Any Laboratory Course
<b>Health and Wellness (3 credits)</b>		<b>Program Requirements</b>
Any Health & Wellness Course		<b>Required Major Courses (58 credits)</b>
<b>Technological Literacy (3 credits)</b>		CIT 130 Object Oriented Prog (Maj. Field Elect) 3crs. CCAC
CIT 115 Introduction Information Tech	CCAC	CIT 215 Syst. Analysis/Design (Maj. Field Elect) 3crs. CCAC
<b>Humanities (3 credits)</b>		CIS 321 Data Base Management Systems & Data Base Design (3 credits)
ENG 102 English Composition II	CCAC	CIS 322 Data Base Application Development (3 credits)
<b>Fine Arts (3 credits)</b>		CIS 330 Web Programming I (3 credits)
ART 106 OR THE 101 OR MUS 101	CCAC	CIS 332 Web Programming II (3 credits)
<b>Natural Sciences (3/4 credits)</b>		CIS 341 CISCO CCNA 1 (4 credits)
GGY 201 Geology OR CHM Gen. Chem I	CCAC	CIS 354 Systems Project Management (3 credits)
<b>Social Sciences (3 credits)</b>		CIS 490 Systems Analysis II (3 credits)
*BUS 101 Introduction to Business	CCAC	CIS 492 Systems Development & Implementation (3 credits)
<b>General Education Options (12 credits)</b>		<b>Coursework Related to the Major (9 credits)</b>
*CIS 352 Global, Economic and Social Ethical Issues in Computing		BUS 122 Bus. Stats OR MAT 161 Elem. Stats OR
CIT 111 Inform Systems-JAVA	CCAC	MAT 165 Prob & Stats I OR MAT 210 Stats (3 crs.) CCAC
*ENG 217 Scientific & Technical Writing		<b>Select two courses from the following:</b>
PSY 101 General Psychology	CCAC	BUS 108 Financial Management CCAC
<b>Required Related Courses</b>		MGT 301 Organizational Behavior
ACC104 Financial Accounting (3 credits) CCAC		MKT 311 E-Marketing
ECO 103 Intro Microeconomics (3 credits) CCAC		<b>Free Electives (12/13 credits) 6 credits CCAC</b>
MAT 195 Discrete Mathematical Structures (3 credits)		ACC 203, ECO 102 Transfer
BUS 103 Principles of Management (3 credits) CCAC		<b>Program Notes:</b>
BUS 104 Principles of Marketing (3 credits) CCAC		Note 1 HON 100 Honors & University Orientation can be used in place of UNI 100.
<b>Select twelve credits from the following: <sup>4</sup></b>		Note 2 HON 150 Honors Composition I can be used in place of ENG 101.
Networking: <sup>5</sup>		Note 3 HON 250 Honors Composition II can be used in place of ENG 217.
CIS 342 CISCO CCNA 2		Note 4 Students can choose any course listed; however, choosing all courses from a grouping offers a specialization in a CIS area.
CIS 343 CISCO CCNA 3		Note 5 Upon completion of CIS 344, student will be prepared to take certification exam.
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Programming:		*Pending Gen Ed Approval
CIS 302 Visual Programming		
CIS 304 COBOL		
Business Analytics:		
CIS 325 Decision Support Systems		
CIS 401: Concepts in Enterprise Resource		
Others:		
CIS 419 Internship <sup>6</sup>		
CIS 474 Special Topics in Information Systems		

### Suggested Eight-Semester Course Sequence

#### Semester 1 (16 Credits)

CIS 110: Introduction to Information Systems (3 credits)  
CIS 120: Application Programming I (3 credits)  
ENG 101: English Composition I (3 credits)  
MAT 281: Calculus I (3 credits)  
PSY 100: General Psychology (3 credits)  
UNI 100: First Year Seminar (1 credits)

#### Semester 3 (16 Credits)

ACC 200: Financial Accounting (3 credits)  
CIS 341: CISCO CCNA 1 (4 credits)  
MAT 215: Statistics OR MAT 225: Business Statistics (3 credits)  
Public Speaking course (3 credits)  
Any General Education course (3 credits)

#### Semester 5 (15 Credits)

CIS 321: Data Base Management Systems and  
CIS 330: Web Programming I (3 credits)  
Data Base Design (3 credits)  
CIS 354: Systems Project Management (3 credits)  
MGT 300: Principles of Management (3 credits)  
Any CIS Elective course (3 credits)

#### Semester 7 (15 Credits)

CIS 490: Systems Analysis II (3 credits)  
Any CIS Elective course (3 credits)  
Any General Education course (3 credits)  
Any Related Elective course (3 credits)  
Free Elective course (3 credits)

#### Semester 2 (15 Credits)

BUS 100: Introduction to Business (3 credits)  
CIS 220: Application Programming II (3 credits)  
ENG 217: Scientific & Technical Writing (3 credits)  
MAT 195: Discrete Mathematical Structures (3 credits)  
Any General Education course (3 credits)

#### Semester 4 (15 Credits)

CIS 299: Systems Analysis I (3 credits)  
CIS 352: Global, Economic and Social Ethical Issues in Computing (3 credits)  
ECO 201: Introductory Microeconomics (3 credits)  
Any General Education course (3 credits)  
Free Elective course (3 credits)

#### Semester 6 (15 Credits)

CIS 322: Data Base Application Development (3 credits)  
CIS 332: Web Programming II (3 credits)  
MKT 300: Principles of Marketing (3 credits)  
Any CIS Elective course (3 credits)  
Any Related Elective course (3 credits)

#### Semester 8 (13 Credits)

CIS 492: Systems Development & Implementation (3 credits)  
Any CIS Elective course (3 credits)  
Two Free Elective courses (7 credits)