Berkeley City College

English for Speakers of Other Languages: Advanced

Overview

College	BCC - Liberal Arts and Social Sciences
Originator	Gabrielle Winer
Award Type	Certificate of Proficiency

Codes and Dates

Curriculum Committee Approval Date	9/07/2017
Top Code	4930.80 - English as Second Language General
CIP Code	32.0108: Developmental/Remedial English.

Description

The Advanced Certificate of Proficiency in ESOL verifies that a student has successfully completed a minimum of 12 units and a maximum of 17 units in one of the following patterns: 1) three ESOL core classes (Reading and Writing, Listening and Speaking, and Grammar) at the advanced level; 2) two ESOL core classes at the advanced level, and either an ESOL elective or any college-credit class from any other discipline. Students interested in completing this certificate should consult with the ESOL program chair and a counselor.

Career Opportunities

This certificate will help prepare students for vocational programs and job advancement.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. write clear and effective, well organized, well developed, well edited, and logically sound sentences, paragraphs, and essays, citing sources appropriately
2. apply active reading strategies in order to comprehend, critically analyze, and explain ideas in texts
3. express ideas fluently, accurately, and appropriately in spoken American English; demonstrate comprehension of and respond appropriately to spoken American English; and demonstrate knowledge of and use of American cultural conventions in oral communications
4. use grammatical structures to accurately and effectively express ideas in English

Degree Requirements:

Choose two or three of the following core courses (8-14 units to tal): **Credit Hours:** (0 Required)

ESOL 050A	Advanced Listening and Speaking	4
ESOL 052A	Advanced Reading and Writing	6
ESOL 274A	Grammar 4	4

If you have only taken two of the above courses, the remaining course required for this certificate can be any of the following E SOL electives (2-5 units): **Credit Hours:** (0 Required)

ESOL 268	Pronunciation 4	3
ESOL 280	English through Topics in Business	2
ESOL 281	English through Topics in U.S. Culture	2

ESOL 282	English through Topics in U.S. History and Government	2
ESOL 294	Vocabulary 4	3

or any college-level class offered at Berkeley City College (2-5 units)

Total Units **Credit Hours:** (12 - 17 Required)

Total: 12.00 - 17.00

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Berkeley City College

English for Speakers of Other Languages: Advanced

Overview

College	BCC - Liberal Arts and Social Sciences
Originator	Gabrielle Winer
Award Type	Certificate of Proficiency

Codes and Dates

Curriculum Committee Approval Date	9/07/2017
Top Code	4930.80 - English as Second Language General
CIP Code	32.0108: Developmental/Remedial English.

Description

The Advanced Certificate of Proficiency in ESOL verifies that a student has successfully completed a minimum of 12 units and a maximum of 17 units in one of the following patterns: 1) three ESOL core classes (Reading and Writing, Listening and Speaking, and Grammar) at the advanced level; 2) two ESOL core classes at the advanced level, and either an ESOL elective or any college-credit class from any other discipline. Students interested in completing this certificate should consult with the ESOL program chair and a counselor.

Career Opportunities

This certificate will help prepare students for vocational programs and job advancement.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. write clear and effective, well organized, well developed, well edited, and logically sound sentences, paragraphs, and essays, citing sources appropriately
2. apply active reading strategies in order to comprehend, critically analyze, and explain ideas in texts
3. express ideas fluently, accurately, and appropriately in spoken American English; demonstrate comprehension of and respond appropriately to spoken American English; and demonstrate knowledge of and use of American cultural conventions in oral communications
4. use grammatical structures to accurately and effectively express ideas in English

Degree Requirements:

Choose two or three of the following core courses (8-14 units to tal): **Credit Hours:** (0 Required)

ESOL 050A	Advanced Listening and Speaking	4
ESOL 052A	Advanced Reading and Writing	6
ESOL 274A	Grammar 4	4

If you have only taken two of the above courses, the remaining course required for this certificate can be any of the following E SOL electives (2-5 units): **Credit Hours:** (0 Required)

ESOL 268	Pronunciation 4	3
ESOL 280	English through Topics in Business	2
ESOL 281	English through Topics in U.S. Culture	2

ESOL 282	English through Topics in U.S. History and Government	2
ESOL 294	Vocabulary 4	3

or any college-level class offered at Berkeley City College (2-5 units)

Total Units **Credit Hours:** (12 - 17 Required)

Total: 12.00 - 17.00

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Berkeley City College

English for Speakers of Other Languages: High Intermediate

Overview

College	BCC - Liberal Arts and Social Sciences
Originator	Gabrielle Winer
Award Type	Certificate of Proficiency

Description

The High Intermediate Certificate of Proficiency in ESOL verifies that a student has successfully completed a minimum of 12 units and a maximum of 17 units in one of the following patterns: 1) three ESOL core classes (Reading and Writing, Listening and Speaking, and Grammar) at the High Intermediate level; 2) two ESOL core classes at the High Intermediate level, and either an ESOL elective or any college-credit class from any other discipline. Students interested in completing this certificate should consult with the ESOL program chair and a counselor.

Career Opportunities

This certificate will help prepare students for vocational programs and job advancement.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. write clear and effective, well organized, well developed, well edited, and logically sound sentences, paragraphs, and essays, citing sources appropriately
2. apply active reading strategies in order to comprehend, critically analyze, and explain ideas in texts
3. express ideas fluently, accurately, and appropriately in spoken American English; demonstrate comprehension of and respond appropriately to spoken American English; and demonstrate knowledge of and use of American cultural conventions in oral communications
4. use grammatical structures to accurately and effectively express ideas in English

Degree Requirements:

Choose two or three of the following core courses (8-14 units to tal): **Credit Hours:** (0 Required)

ESOL 253A	Reading and Writing 3	6
ESOL 263A	Listening and Speaking 3	4
ESOL 273A	Grammar 3	4

either another ESL core class/elective at or above the same level, or any college-credit class fr om any other discipline.

If you have only taken two of the above courses, the remaining course required for this certificate can be any of the following E SOL electives (2-5 units): **Credit Hours:** (0 Required)

ESOL 267	Pronunciation 3	3
ESOL 280	English through Topics in Business	2
ESOL 281	English through Topics in U.S. Culture	2
ESOL 282	English through Topics in U.S. History and Government	2
ESOL 293	Vocabulary 3	3

or any course numbered 1-249 taught in English (2-5 units)

Total Units **Credit Hours:** (12 - 17 Required)

Total: 12.00 - 17.00

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College of Alameda

Athletic Trainer Aide

Overview

College	COA - Division II
Originator	Linda Thompson
Award Type	Certificate of Achievement

Description

The Athletic Trainer Aide functions as an aide in a clinical setting; or in a high school, college or professional athletic training center. The Aide assists the Certified Athletic Trainer or other healthcare professionals in the prevention, care, and rehabilitation of athletic injuries. This will include assisting in the assessment and documentation of athletic injuries, acute and chronic injury management, treatment protocols, principles of conditioning, and return to competitive activity. In addition, effective communications skills with athletes/patients, as well as medical professionals are required.

Career Opportunities

Students earning an Athletic Trainer Aide Certificate of Achievement typically work as an aide in a clinical setting; or in a high school athletic program, college athletic program, or professional athletic training center. The Athletic Trainer Aide will assist the Certified Athletic Trainer or other healthcare professionals in the prevention, care, and rehabilitation of athletic injuries. This will include assisting in the assessment and documentation of athletic injuries, acute and chronic injury management, treatment protocols, principles of conditioning, and return to competitive activity. In addition, effective communications skills with athletes/patients as well as medical professionals are required.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Upon successful completion of this program, students will be able to: 1. Prepare for entry-level opportunities in athletic training through the development of specific educational competencies and clinical proficiencies. 2. Prepare to become proficient and capable health care professionals in future employment in athletic training or other allied health settings, as well as receive an certificate of completion. 3. Develop their skills in a college athletic program, a high school athletic program or a clinical setting with a variety of physically-active individuals. 4. Embrace the college's Mission to serve the educational needs of its diverse community by providing comprehensive and flexible programs and resources that empower students to achieve their goals.

Degree Requirements:

Credit Hours: (22 Required)

KIN 150	Introduction to Kinesiology	3
KIN 134	Care and Prevention of Athletic Injuries	3
BIOL 002	Human Anatomy	5
BIOL 004	Human Physiology	5
HLTED 009	First Aid and Safety	2
KIN 054A	Cross Fitness I - Fundamentals	1
KIN 058A	Fitness Center Strength Training I-Fundamentals	0.5
KIN 054B	Cross Fitness II - Beginning	1

KIN 058B	Fitness Center Strength Training II-Beginning	0.5
COPED 451	Occupational Work Experience	1 - 4

Total: 22

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Laney College

Associate In Arts Degree In Global Studies For Transfer

Overview

College	Laney - Humanities, Social Sciences
Originator	Felipe Wilson
Award Type	AA-T Degree

Codes and Dates

Curriculum Committee Approval Date	9/01/2017
Top Code	2210.00 - International Relations and Affairs
CIP Code	45.0901: International Relations and Affairs.

Description

Top Code: 2210.20 does not exist in META; must be added.; CIP does not exist

The Global Studies program emphasizes an interdisciplinary approach to the study of globalization and contemporary global issues. Students will study the interactions between states, societies, and cultures and will analyze the historical origins of these interactions. Through this program students will develop a deeper understanding of the interconnectedness of global and local events that shape the world we live in. Students will critically evaluate global changes and their consequences and will learn how to apply their knowledge to become agents of change. Courses throughout the program will highlight and feature topics related to social and environmental justice in particular, and more broadly to the advances and challenges posed by globalization.

The Associate in Arts in Global Studies for Transfer Degree is designed to prepare students for a seamless transfer with junior status and priority admission to their local CSU campus to a program or major in Global Studies or similar major for completion of a baccalaureate degree. Students are required to complete: A minimum of 18 semester units in the major with a grade of C or better while maintaining a minimum grade point average (GPA) of at least 2.0 in all CSU transferable coursework. The Associate Arts in Global Studies for Transfer Degree will also assist Global Studies major students to transfer to a U.C. or other baccalaureate institutions. Students are advised to consult with a counselor to verify transfer requirements.

Career Opportunities

Students completing the program will have career opportunities in the following fields: education (particularly with regards to international/global politics); working within government agencies and international organizations that focus on global issues; working within the non-profit sector or with a humanitarian organization; international law and business, advocacy and civic engagement work.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Demonstrate knowledge of theories and concepts within global studies and the ability communicate them with accuracy, clarity and cultural sensitivity.
2. Develop an interdisciplinary training and ability to synthesize information.
3. Investigate and analyze global events.
4. Design a plan for social activism and civic engagement regarding a global issue.

Degree Requirements:

Required Core Courses (6 units) **Credit Hours:** (0 Required)

POSCI 019	Introduction to Global Studies	3
POSCI 020	Global Issues	3

List A: Select 5 courses from each of the following 4 areas (15 units) **Credit Hours:** (0 Required)

Culture and Society (choose one from the following - 3 units) **Credit Hours:** (0 Required)

ANTHR 003	Introduction to Social and Cultural Anthropology	3
HIST 003B	Modern World History: 1500-Present	3

Geography (choose one from the following - 3 units) **Credit Hours:** (0 Required)

GEOG 001	Physical Geography	3
GEOG 002	Cultural Geography	3
GEOG 003	World Regional Geography	3

Economics (choose one from the following - 3 units) **Credit Hours:** (0 Required)

ECON 001	Principles of Economics (Macro-Economics)	3
ECON 002	Principles of Economics (Micro-Economics)	3

Politics (choose one from the following - 3 units) **Credit Hours:** (0 Required)

POSCI 002	Comparative Government	3
POSCI 003	International Relations	3

Total Major Units **Credit Hours:** (0 Required)

21

IGETC or CSU GE-Breadth Education Pattern (37-39 units) **Credit Hours:** (0 Required)

37 - 39

CSU Transferable General Elective Courses to meet 60 units **Credit Hours:**

Total units **Credit Hours:** (60 Required)

60

Total: 60

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Laney College

CIS/Computer Programming

Overview

College	Laney - Mathematics and Sciences
Originator	Kim Bridges
Award Type	A.S. Degree

Codes and Dates

State Approval Date	7/04/2016
Curriculum Committee Approval Date	5/12/2017
Board of Trustees Date	1/27/2015
Current Effective Date	8/22/2016
Program Control Number	35120
Top Code	0707.10 - Computer Programming/Programmer, General*
CIP Code	11.0201: Computer Programming/Programmer, General.

Description

The major in Computer Programming prepares students for careers as software developers. The program provides the analytical, methodological, and language skills required within the computer industry, and serves as a partial foundation for continued education at four-year institutions.

Career Opportunities

Computer programming continues to be an excellent career, with openings in all industries. Job titles include: Computer Programmer, Programmer/Analyst, Software Developer, Computer Systems Analyst, Computer Applications Developer, Computer Applications Engineer, Computer Language Coder, Computer Systems Consultant, Software Architect, Software Engineer

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Computer Software Development: Demonstrate the ability to apply data requirements, algorithmic principles, and software development practice in the modeling and design of computer-based systems in a way that proves comprehension of the tradeoffs involved in design choices.
2. Programming Skills: Demonstrate the ability to analyze a problem, using algorithms to create computer systems and appropriate problem solving using a programming language.
3. Solve Business Problems with Computers: Interpret and analyze a business information problem and design, code, compile, test and debug a program solution in C++ using proper program syntax balancing efficiency and maintainability, and manage project tasks required for completion of a computer system development project.

Degree Requirements:

Introduction to Computer Science (5 units)		**Credit Hours:** (0 Required)
CIS 005	Introduction to Computer Science	5
Introductory Programming (Choose one of the following) (5 units)		**Credit Hours:** (0 Required)
CIS 006 or	Introduction to Computer Programming	5
CIS 061	Structure and Interpretation of Computer Programs	5

Take one of these introductory programming courses. Students planning to transfer to a Computer Science program, especially at UC Berkeley, s

Programming Fundamentals (Choose one of the following) (4 units)		**Credit Hours:** (0 Required)
CIS 025 or	Object Oriented Programming Using C++	4
CIS 036A	Java Programming Language I	4
Advanced Programming (Choose one of the following) (4 units)		**Credit Hours:** (0 Required)
CIS 025B or	C++ Programming Language II	4
CIS 036B or	Java Programming Language II	4
CIS 020	Microcomputer Assembly Language	4
Electives (minimum 7 units)		**Credit Hours:** (0 Required)
BUS 001A	Financial Accounting	4
BUS 001B	Managerial Accounting	4
BUS 005	Human Relations in Business	3
BUS 020	General Accounting	3
BUS 024	Computerized Accounting Principles	3
CIS 006	Introduction to Computer Programming	5
CIS 020	Microcomputer Assembly Language	4
CIS 025	Object Oriented Programming Using C++	4

CIS 025B	C++ Programming Language II	4
CIS 027	Data Structures and Algorithms	4
CIS 036A	Java Programming Language I	4
CIS 036B	Java Programming Language II	4
CIS 061	Structure and Interpretation of Computer Programs	5
CIS 062	Introduction to Systems Analysis and Design	3
CIS 081	Systems Analysis with UML	3
CIS 098	Database Programming with SQL	4
CIS 099	Database Administration with SQL	4
ECON 002	Principles of Economics (Micro-Economics)	3
MATH 003A	Calculus I	5
MATH 011	Discrete Mathematics	4
MATH 013	Introduction to Statistics	4

Select programming-related electives to bring the total to 25 units.

Total Major Units (25 units) **Credit Hours:** (0 Required)

25

General Education and Electives **Credit Hours:** (0 Required)

35

Total Units **Credit Hours:** (60 Required)

60

Total: 60

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Laney College

Computer Programming With C++

Overview

College	Laney - Mathematics and Sciences
Originator	Kim Bridges
Award Type	Certificate of Achievement

Codes and Dates

State Approval Date	9/04/2016
Curriculum Committee Approval Date	5/12/2017
Board of Trustees Date	12/10/2013
Current Effective Date	8/22/2016
Program Control Number	35236
Top Code	0707.10 - Computer Programming/Programmer, General*
CIP Code	11.0201: Computer Programming/Programmer, General.

Description

The certificate in Computer Programming with C++ prepares students for careers as software developers. The program provides the analytical, methodological, and language skills required within the computer industry, and serves as a partial foundation for continued education at four-year institutions. It provides a "merit badge" certification of a skill set needed in a vital career field. See a counselor for more information.

Career Opportunities

Computer programming continues to be an excellent career, with openings in all industries. Job titles include: Computer Programmer, Programmer/Analyst, Software Developer, Computer Systems Analyst, Computer Applications Developer, Computer Applications Engineer, Computer Language Coder, Computer Systems Consultant, Software Architect, Software Engineer.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Computer Software Development: Demonstrate the ability to apply data requirements, algorithmic principles, and software development practice in the modeling and design of computer-based systems in a way that proves comprehension of the tradeoffs involved in design choices.
2. Programming Skills: Analyze a problem, using algorithms to create computer systems and appropriate problem solving using a programming language.
3. Solve Business Problems with Computers: Interpret and analyze a business information problem and design, code, compile, test and debug a program solution in C++ using proper program syntax balancing efficiency and maintainability, and manage project tasks required for completion of a computer system development project.

Degree Requirements:

Core Requirements		**Credit Hours:** (13 Required)
CIS 006 or	Introduction to Computer Programming	5
CIS 061	Structure and Interpretation of Computer Programs *	5
CIS 025	Object Oriented Programming Using C++	4
CIS 025B	C++ Programming Language II	4

Choose at least 3 units from the following.		**Credit Hours:** (3 - 4 Required)
BUS 001A	Financial Accounting *	4
BUS 005	Human Relations in Business *	3
BUS 020	General Accounting *	3
BUS 024	Computerized Accounting Principles *	3
CIS 020	Microcomputer Assembly Language	4
CIS 027	Data Structures and Algorithms	4
CIS 036A	Java Programming Language I	4
CIS 036B	Java Programming Language II	4
CIS 062	Introduction to Systems Analysis and Design	3
CIS 081	Systems Analysis with UML	3
CIS 098	Database Programming with SQL	4
CIS 099	Database Administration with SQL	4
ECON 002	Principles of Economics (Micro-Economics)	3
MATH 011	Discrete Mathematics **	4
MATH 013	Introduction to Statistics **	4

Many programming jobs involve financial systems, an introductory accounting or micro-economics course is useful to a programming career so can be us

Total: 16.00 - 17.00

*: Students planning to transfer to a Computer Science program, especially at UC Berkeley, should choose CIS 61
*: Finance courses mentioned
**: Mathematics courses mentioned above

Laney College

Computer Programming With Java

Overview

College	Laney - Mathematics and Sciences
Originator	Kim Bridges
Award Type	Certificate of Achievement

Codes and Dates

State Approval Date	9/04/2016
Curriculum Committee Approval Date	5/12/2017
Board of Trustees Date	12/10/2013
Current Effective Date	8/22/2016
Program Control Number	35235
Top Code	0707.10 - Computer Programming/Programmer, General*
CIP Code	11.0201: Computer Programming/Programmer, General.

Description

The certificate in Computer Programming with Java prepares students for careers as software developers. The program provides the analytical, methodological, and language skills required within the computer industry, and serves as a partial foundation for continued education at four-year institutions. It provides a "merit badge" certification of a skill set needed in a vital career field. See a counselor for more information.

Career Opportunities

Computer programming continues to be an excellent career, with openings in all industries. Job titles include: Computer Programmer, Programmer/Analyst, Software Developer, Computer Systems Analyst, Computer Applications Developer, Computer Applications Engineer, Computer Language Coder, Computer Systems Consultant, Software Architect, Software Engineer.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Computer Software Development: Demonstrate the ability to apply data requirements, algorithmic principles, and software development practice in the modeling and design of computer-based systems in a way that proves comprehension of the tradeoffs involved in design choices.
2. Programming Skills: Analyze a problem, using algorithms to create computer systems and appropriate problem solving using a programming language.
3. Solve Business Problems with Computers: Interpret and analyze a business information problem and design, code, compile, test and debug a program solution in Java using proper program syntax balancing efficiency and maintainability, and manage project tasks required for completion of a computer system development project.

Degree Requirements:

Required Courses		**Credit Hours:** (13 Required)
CIS 006 or	Introduction to Computer Programming	5
CIS 061	Structure and Interpretation of Computer Programs *	5
CIS 036A	Java Programming Language I	4
CIS 036B	Java Programming Language II	4

Choose at least 3 units from the following list.		**Credit Hours:** (3 - 4 Required)
BUS 001A	Financial Accounting *	4
BUS 005	Human Relations in Business *	3
BUS 020	General Accounting *	3
BUS 024	Computerized Accounting Principles *	3
CIS 020	Microcomputer Assembly Language	4
CIS 025	Object Oriented Programming Using C++	4
CIS 025B	C++ Programming Language II	4
CIS 027	Data Structures and Algorithms	4
CIS 062	Introduction to Systems Analysis and Design	3
CIS 081	Systems Analysis with UML	3
CIS 098	Database Programming with SQL	4
CIS 099	Database Administration with SQL	4
ECON 002	Principles of Economics (Micro-Economics) *	3
MATH 011	Discrete Mathematics **	4
MATH 013	Introduction to Statistics **	4

Complete at least 3 units. Any programming course, including those listed above, is acceptable if not duplicative of courses counted for the certificate in a

Total: 16.00 - 17.00

*: *Students planning to transfer to a Computer Science program, especially at UC Berkeley, should choose CIS 61
*: Finance courses mentioned
**: Mathematics courses mentioned

Laney College

Computer Systems Analysis

Overview

College	Laney - Mathematics and Sciences
Originator	Kim Bridges
Award Type	Certificate of Achievement

Codes and Dates

State Approval Date	9/24/2016
Curriculum Committee Approval Date	5/12/2017
Board of Trustees Date	10/06/2015
Current Effective Date	8/22/2016
Program Control Number	35261
Top Code	0701.00 - Computer Systems Analysis
CIP Code	11.0101: Computer and Information Sciences, General.

Description

The certificate in Computer Systems Analysis prepares students for careers as Systems Analysts, or as software developers with duties in analysis and design. The program provides the analytical, methodological, and language skills required within the computer industry, and serves as a partial foundation for continued education at four-year institutions. It provides a "merit badge" certification of a skill set needed in a vital career field. See a counselor for more information.

Career Opportunities

There are numerous opportunities for workers with these skills as Systems Analysts doing this work exclusively. These are also career-enhancing skills for programmers, software engineers, and computer systems developers.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Explain the purpose of systems analysis and design, life cycle of systems design, iterative, and waterfall development processes, object oriented analysis and design.
2. Gather data to identify client requirements and interpret and evaluate requirements for completeness, relevance, accuracy, and consistency. Clearly define problems, opportunities, or mandates that initiate projects, write clear and concise business requirements documents and convert them into technical specifications.
3. Use UML in requirements, analysis, design, and documentation phases of software. Use a methodology for analyzing a business situation (a problem or opportunity), modeling it using Use Case & Class Diagrams, and specifying requirements for a system that enables a productive change in a way the business is conducted.
4. Design high-level logical system characteristics (user interface design, design of data and information requirements), and prototype system artifacts to implement a solution.
5. Analyze and articulate economic, ethical, cultural, and legal issues and their feasibilities among alternative solutions.
6. Communicate effectively with various organizational stakeholders to collect information using a variety of techniques and to convey proposed solution characteristics to them.

Degree Requirements:

Core Requirements		**Credit Hours:** (11 Required)
CIS 006 or	Introduction to Computer Programming	5
CIS 061	Structure and Interpretation of Computer Programs *	5
CIS 062	Introduction to Systems Analysis and Design	3
CIS 081	Systems Analysis with UML	3

Choose 2 courses from the following		**Credit Hours:** (7 - 8 Required)
BNK/F 056	Bank Management *	3
BUS 001A	Financial Accounting *	4
BUS 001B	Managerial Accounting *	4
BUS 005	Human Relations in Business	3
BUS 010	Introduction to Business	3
BUS 020	General Accounting *	3
BUS 024	Computerized Accounting Principles *	3
BUS 076	E-Commerce/Entrepreneurship	3
COMM 020	Interpersonal Communication Skills	3
CIS 025	Object Oriented Programming Using C++	4
CIS 036A	Java Programming Language I	4
ECON 002	Principles of Economics (Micro-Economics) *	3
ENGL 005	Critical Thinking in Reading and Writing	3
GRART 115	Web Site Design	3
M/SVN 082	Essentials of Managerial Communications	3
MATH 013	Introduction to Statistics *	4
PHIL 010	Logic	3

Systems analysts must understand the business that they are analyzing, so courses emphasizing business and organization are encouraged. Since man

Total: 18.00 - 19.00

*: Students planning to transfer to a Computer Science program, especially at UC Berkeley, should choose CIS 61
*: Finance courses mentioned
*: Analysis courses mentioned

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Laney College

Database Management With SQL

Overview

College	Laney - Mathematics and Sciences
Originator	Kim Bridges
Award Type	Certificate of Achievement

Codes and Dates

State Approval Date	9/24/2016
Curriculum Committee Approval Date	5/01/2015
Board of Trustees Date	10/06/2015
Current Effective Date	8/22/2016
Program Control Number	35260
Top Code	0707.20 - Data Modeling/Warehousing and Database Administrati
CIP Code	11.0802: Data Modeling/Warehousing and Database Administratic

Description

The certificate in Database Management with SQL prepares students for careers as Database Administrators, or as software developers with skills in database programming. The program provides the analytical, methodological, and language skills required within the computer industry, and serves as a partial foundation for continued education at four-year institutions. It provides a “merit badge” certification of a skill set needed in a vital career field. See a counselor for more information.

Career Opportunities

Virtually every computer programming shop requires database expertise. This Certificate provides a highly desirable skill for the computer programmer, or can be the basis for employment as Database Administrator (DBA).

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Develop Data Models such as Class Diagrams or Entity Relationship Diagrams (ERDs) from business processes to support database analysis and design.
2. Create and modify a database and its tables using Structured Query Language’s Data Definition Language (SQL-DDL) features.
3. Write programs that store and modify data in database tables using Structured Query Language’s Data Manipulation Language (SQL-DML) features.

Degree Requirements:

Core Requirements **Credit Hours:** (13 Required)

CIS 006 or	Introduction to Computer Programming	5
CIS 061	Structure and Interpretation of Computer Programs *	5
CIS 098	Database Programming with SQL	4
CIS 099	Database Administration with SQL	4

Choose 1 course from the following **Credit Hours:** (3 - 4 Required)

BUS 001A	Financial Accounting	4
BUS 005	Human Relations in Business	3
BUS 020	General Accounting	3
BUS 024	Computerized Accounting Principles	3
CIS 020	Microcomputer Assembly Language	4

CIS 025	Object Oriented Programming Using C++	4
CIS 025B	C++ Programming Language II	4
CIS 027	Data Structures and Algorithms	4
CIS 036A	Java Programming Language I	4
CIS 036B	Java Programming Language II	4
CIS 062	Introduction to Systems Analysis and Design	3
CIS 081	Systems Analysis with UML	3
ECON 002	Principles of Economics (Micro-Economics)	3
MATH 011	Discrete Mathematics	4
MATH 013	Introduction to Statistics	4

Since many programming jobs involve financial systems, an introductory accounting or micro-economics course (such as BUS 1A, BUS 20, or ECON 2) is useful to a programming career so can be used as an elective. Computer Science majors often require higher mathematics, so an advanced mathematics course can be used as an elective (such as MATH 3A, 11, or 13).

Total: 16.00 - 17.00

*: *If transferring, CIS 61 is the preferred course, consult with a counselor for more information.

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