NORCO COLLEGE
CURRICULUM COMMITTEE MINUTES
March 22, 2016 - 2:00 pm
ST 107

Brian Johnson chaired the meeting.
Members Present:

Brian Johnson……………………..Math and Sciences
Rex Beck…………………………..Business, Engineering & Information Technologies
Nicole Capps………………..……Communications
Dr. Kevin Fleming…………………Dean of Instruction, Career & Technical Education
Nicholas Franco……………………Social and Behavioral Sciences
Dr. Diane Dieckmeyer…………….Vice President of Academic Affairs
Mitzi Sloniger………………..…….Communications
Vivian Harris……………………….Library
Dr. Monica Gutierrez………………Math and Sciences
Dr. Teresa Friedrich Finnern…….Math and Sciences
Diane Palmer………………………Arts, Humanities and World Languages
Dr. Carol Farrar……………………Dean of Instruction
Ladylyn Dominquez……………….Social and Behavioral Sciences
Musa Rasheed…......……………..ASNC

Members Absent: NONE

Guests: Kim Kamerin ----- Arts, Humanities and World Languages

Committee Support:
Nicole C. Ramirez………..………..Office of the Dean of Instruction

A. Meeting called to order at 2:05pm

B. Motion to approve March 22, 2016 agenda – MSC: R. Beck/M. Gutierrez. Add new discussion item #2 – Units and Residency. Committee approves.

C. Motion to approve March 8, 2016 minutes – MSC: R. Beck/M. Gutierrez Committee approves.

D. Norco Action Items: Norco College Approval Items for 03/22/16

   1. New Courses: NONE
   2. New Stand Alone Courses:
   This course offers students an accelerated pathway to meeting the reading   competency graduation requirement:

   a)   ~~REA-90 Accelerated College Reading (MNR)~~ Per Mitzi Sloniger, this
        is Not a Norco course. Removed from agenda.

   3.   Course Inclusions: NONE

4. **Distance Education: Hybrid (already approved for Online)**

   a) ~~ACC-66 Non-Profit and Governmental Accounting (NR)~~ Remove from agenda. Too many errors. This still is not fixed.

5. **Major Course Modification:**

The following courses are being modified to change the title from "Experimental Drawing," to update course description, SLO's, course content, MOI, MOE, sample assignments and course materials:

   a) ART-19   Experimental Methods and Materials (NR) Motion to approve D. Palmer/V. Harris Remove the word "attendance" from the sentence under the Methods of Evaluation section. **Approved with corrections**

The following courses are being modified to change the title from "Design and Color," to update course description, SLO's, course content, MOI, MOE, sample assignments and course materials:

   b) ART-23   Color Theory and Design   (MNR) Motion to approve M. Sloniger/ T. Friedrich Finnern **Approved**

The following course is being modified to update the course description, SLOs, course content, MOI, MOE, sample assignments and course materials:

   c) RLE-80   Real Estate Principles   (MNR) Motion to approve M. Sloniger/ M. Gutierrez **Approved**

The following course is being modified to update the links to the GESLOs and course materials:

   d) SOC-1H   Honors Introduction to Sociology (NR)   Motion to approve N. Franco/ T. Friedrich Finnern **Approved**

The following course is being modified to update the links to the GESLOs, course content, MOI, MOE, and course materials:

e) SOC-15   Women in American Society   (NR) Motion to approve N. Capps/ V. Harris **Approved**

6. **Course Exclusions:**

These courses has not been offered in many years and there are no plans to offer them in the future:

a) CHE-2B Introductory Chemistry, II   (N) <mark>Motion to DENY</mark>   T. Friedrich Finnern/ V. Harris **Approved**

7. **Course Deletions:**

The following courses have not been offered in years or have never been offered:

a) **CIS-43   Survey of Media Art for Game Design/Animation   (N) Motion to approve R. Beck/ T. Friedrich Finnern **Approved****

b) **GAM-45   Materials and Lighting   (N) Motion to approve N. Franco/ T. Friedrich Finnern **Approved****

8. **New State Approved Certificates/Degrees:**

   a) **Kinesiology for Transfer   (N)   Motion to approve T. Friedrich Finnern/ V. Harris **Approved****

9. **New Locally Approved Certificate: NONE**

10. **Modifications to State/Locally Approved Certificates/Degrees:**

    a) **Audio Production   (N) Motion to approve D. Palmer/ T. Friedrich Finnern **Approved****

    b) **Computerized Numerical Control Operator   (N) Motion to approve V. Harris/ M. Gutierrez **Approved****

    c) **Drafting Technology   (N) Motion to approve M. Gutierrez/ M. Sloniger **Approved****

    d) **Industrial Automation (revision)   (N)   Motion to approve M. Gutierrez/ R. Beck **Approved****

    e) **Performance   (N)   Motion to approve V. Harris/R. Beck **Approved****

    f) **Supply Chain Technology   (N)   Motion to approve R. Beck/V. Harris **Approved****

11. **Deletion of Certificate/Degrees:**

    a) **Business Administration: Marketing Concentration (N)   Motion to approve V. Harris/R. Beck **Approved****

    b) **Game Art Core   (N)   Motion to approve V. Harris/R. Beck **Approved****

    c) **Game Art: 3D Animation (N)   Motion to approve V. Harris/R. Beck **Approved****

E: Information Items:

Course	Title	Location	Comment
1. New Courses: None			
2. New Stand Alone Courses: None			
3. Course Inclusions:			

Course	Title	Location	Comment
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Course	Title	Location	Comment
The following courses will expand the course offerings for the MVC Administration of Justice program:			
ADJ-8	Juvenile Law and Procedures	M	
ADJ-12	Introduction to Criminalistics	M	
ADJ-13	Criminal Investigation	M	
ADJ-20	Introduction to Corrections	M	
4. Distance Education:			
BUS-15	Street Law: An Introduction to Law and Legal Issues	R	Hybrid
MAG-73	Quality Inspection and Test	R	Hybrid and Online
MAG-74	Statistical Process Control	R	Hybrid and Online
MAG-75	Quality Auditing	R	Hybrid and Online
MAG-77	Problem Solving and Improvement	R	Hybrid and Online
5. Major Course Modifications:			
The following course is being modified to update the course description, SLOs, course content to be C-ID compliant:			
ADJ-12	Introduction to Criminalistics	MR	
The following course is being modified to change the units from 2 to 3 and to change lecture hours from 36 to 54:			
BUS-14	Social Media and Online Marketing for Entrepreneurs	R	
The following course is being modified to change the laboratory hours from 12 to 8 hours, to update the course description and SLOs:			
FIT-E3D	Emergency Medical Technician Continuing Education	M	
The following course is being modified to correct the units from 1 to 1.5, update SLOs, sample assignments, course materials and course content:			
FIT-S3A	Introduction to Fire Academy and Physical Conditioning for Fire Academy Students	M	
The following course is being modified to update the corequisite, course description and entry skills:			
FTV-51A	Film, Television and Video Laboratory I	R	
The following course is being modified to change the title from "ICD-9 Coding /Ambulatory" and to update the course description, course content, SLOs, MOI, sample assignments and course materials:			
MDA-63	Diagnostic Coding/Ambulatory	M	Cross listed with CIS-59
The following course is being modified to change the title from "ICD-9 Coding /Hospital," to change the prerequisite wording and to update the course content, SLOs, MOI, sample assignments and course materials:			
MDA-64	Diagnostic Coding/Hospital	M	
The following courses are being modified to update the course description, SLOs, course content, MOI, MOE, sample assignments, and course materials:			
MUS-8A	Music Technology I	R	
MUS-8B	Music Technology II	R	
The following courses are being modified to update the SLOs, course content, MOI, MOE, sample assignments, and course materials:			

Course	Title	Location	Comment
MUS-9	MIDI/Digital Audio Composition and Film Scoring	R	
MUS-10	MIDI/Digital Audio Music Production	R	
6. Course Exclusions:			
The following course has never been offered at MVC:			
PHO-12	Photojournalism	M	
7. Course Deletions:			
The following courses have not been offered in years or have never been offered:			
ADJ-A33A	Public Safety Seminar	M	
ADJ-A33B	Public Safety Seminar	M	
ADJ-A33C	Public Safety Seminar	M	
ADJ-A33E	Public Safety Seminar	M	
ADJ-A36A	Inland Boating Enforcement	M	
ADJ-A37A	Latent Fingerprint Retrieval	M	
ADJ-A45A	Digital Photography for Law Enforcement	M	
ADJ-A50A	Rave and Rave Drugs	M	
ADJ-A57A	Casino-Related Crime Investigation	M	
ADJ-C3B	Advanced Corrections Perishable Skills Training	M	
ADJ-C3C	Advanced Corrections Training	M	
ADJ-C4A	Advanced Corrections Training for Supervisors	M	
ADJ-C5A	Basic Writing Skills for Corrections	M	
ADJ-C6A	Corrections Training Officer	M	
ADJ-C7A	Writing Skills for Correctional Deputy (Advanced)	M	
ADJ-C12A	First Aid/CPR Instructor Course	M	
ADJ-C13A	Stun-Tech R.E.A.C.T. Belt Training	M	
ADJ-C18A	Basic Inmate Classification	M	
ADJ-C19	Corrections Mental Health	M	
ADJ-C20A	Leadership Enhancement	M	
ADJ-C21A	Corrections Training Officer Update	M	
ADJ-R5A	Straight Stick Baton Update for Reserves	M	

Course	Title	Location	Comment
ADJ-R6A	Oleoresin Capsicum for Reserves	M	
ADJ-T5A	Techniques of Accident Investigation Training	M	
ADJ-T15A	Cardiopulmonary Resuscitation Refresher Course	M	
ADJ-T17A	Communications Supervisors Training	M	
ADJ-T18A	Spanish Language for Public Safety Officers	M	
ADJ-T26A	Civil Disturbance Training (CHP)	M	
ADJ-T31A	Motor Vehicle Inspections- Basic	M	
ADJ-T35A	Speed Determination from Crush Analysis	M	
ADJ-T36A	Reconstruction of Automobile Collisions- Involving Pedestrians, or Bikes	M	
ADJ-T42A	Safety Services Program Update	M	
ADJ-T44A	Workplace Violence Prevention Instructor Training	M	
ADJ-T46A	EEO Counselor/Investigator Recertification	M	
ADJ-T47A	Enhanced Officer Safety Training	M	
ADJ-T53A	Preliminary Alcohol Screening PAS Device Coordinator	M	
ADJ-T61A	Communications Training Specialist	M	
ADJ-T65A	National Highway Traffic Safety Administration NHTSA C Standardized Child Safety Training	M	
ADJ-T70A	CHP-Explorer Academy Level III	M	
ADJ-T72A	Radioactive Materials Response and Enforcement Training	M	
ADJ-T73A	General Hazardous Materials Inspection and Compliance Training Course	M	
ADJ-T75A	SMPV Commercial Enforcement Training	M	
ADJ-W3A	Domestic Terrorism. Threats, and Sabotage	M	
ADJ-Y1B	Explorer Academy-Advanced	M	
ADJ-Y5A	Public Safety High School Internship Academy Part 1	M	
ADJ-Y5B	Public Safety High School Internship Academy Part 2	M	

8. New State Approved Certificates/Degrees: None

Course	Title	Location	Comment
9. New Locally Approved Certificate: None			
10. Modification to State/Locally Approved Certificate/Degrees:			
Relational Database Management Technology			R
11. Deletion of Certificate/Degrees: None			
12. Modification to Discipline Name			

F.   Discussion / Information items:

1. Extra Graduation requirements.   Brian Johnson provided an update from the recent Math and Science department meeting regarding the suggestion to put in the extra graduation requirement into a new area. Kinesiology faculty are not in favor of making any changes. Brian didn't have the proposal ready as an action item for this meeting. Moreno Valley has approved it and RCC hasn't yet. The department representatives have been invited to our committee meetings to present their case. Brian Johnson proposed   to place this topic as a 'discussion item' for the April 26th meeting and invited the departments to present their position. Then the topic will be made as an action item at the May 26th meeting to be voted on.

2. Extra Institutional Learning. Rex Beck spoke about a proposal to offer extra institutional learning which would codify their ability to comply or accept recommendations for college credit for individuals with professional certifications who have passed the process through proctored examinations. The last conversation   was that it was urged for them to run this proposal through the CTA. After consideration, Rex decided that 'it won't be a broad use to a lot of students' and will be offering credit by exam. He requested that this proposal to be canceled. Committee agreed.

G.   Announcements: NONE

H.   Other Business-Open Hearing: Rex Beck talked about when he was reviewing business courses for CID's, he noticed other colleges that have both a course objective that are enormous but then a smaller SLO section and thought it was unbalanced. Rex didn't know that was the common way to do it. In his recent training, he learned that one is a federal mandate (Course objectives –Title V) and the SLO's is an accreditation mandate (ACCJC), and asked for documentation from the training session he attended. He feels like it might be a future issue that we might have to change our course outlines to include the course objectives. Brian will take it to district curriculum for future discussion.

Next Meeting: April 26, 2016. * Room ST 107

Associate in Science Degree in Kinesiology for Transfer   **College: Norco**

This degree is designed to facilitate the student's passage from Norco College to the University System with an Associate Degree in Kinesiology. This degree will satisfy the lower division requirements for the eventual conferral of the Bachelor's Degree in Kinesiology. With this degree the student will be prepared for transfer to the university upper division level.

Program Learning Outcomes
Upon successful completion of this program, students should be able to:
- Identify and investigate career pathways in the discipline of Kinesiology.
- Utilize fitness principles and training guidelines to plan and practice an individualized cardiorespiratory endurance, strength training, and flexibility program
- Demonstrate an understanding of basic anatomical and physiological principles.

Required Courses (21-23 units)		Units
KIN-10	Introduction to Kinesiology	3
AMY-2A	Anatomy and Physiology I	4
AMY-2B	Anatomy and Physiology II	4
Movement-Based Courses	Choose 1 course from each area below	3
List A	Choose from the list below	7-9

Movement-Based Courses (minimum 3 units)		3

Select a maximum of one (1) course from each area below:

Combatives		
KIN-A40	Karate, Beginning	1
KIN-A41	Karate, Intermediate	1

Fitness		
KIN-A46	Hatha Yoga, Beginning	1
KIN-A47	Hatha Yoga, Intermediate	1
KIN-A75A	Walking for Fitness: Beginning	1
KIN-A75B	Walking for Fitness: Intermediate	1
KIN-A77A	Jogging for Fitness, Beginning	1
KIN-A77B	Jogging for Fitness, Intermediate	1
KIN-A81A	Physical Fitness, Beginning	1
KIN-A81B	Physical Fitness, Intermediate	1
KIN-A83	Kickboxing Aerobics	1

Team Sports		
KIN-A55	Slow Pitch Softball	1
KIN-A64	Soccer	1

List A: Select two courses from the following (7-9 units)

BIO-17	Human Biology	4
CHE-1A	General Chemistry, I	5
KIN-30	First Aid and CPR	3
MAT-12/12H	Statistics/Honors Statistics	4
PHY-4A	Mechanics	4

Total Units: 21-23

Associate in Science for Transfer Degree
The Associate in Science in Kinesiology for Transfer degree will be awarded upon completion of 60 California State University (CSU) transferable units including the above major requirements and the Intersegmental General Education Transfer Curriculum (IGETC) or California State University General Education (CSUGE) requirements with a minimum grade point average of 2.0. All courses in the major must be completed with a grade of "C" or better.

Program Outline of Record
Degree/Certificate Modification

MUSIC INDUSTRY STUDIES

AUDIO PRODUCTION (N)NAS684/NAS684B/NAS684C/NCE684

The Audio Production program is designed to provide students with the knowledge and skills necessary for an entry-level job in the ~~video games industry or~~ recording industry. Students will gain foundational skills in ~~both~~ the creative and technical side of ~~game and~~ multimedia audio design ~~as well as an overview of the game industry~~. Courses cover fundamental skills in music, computer programming, recording, ~~game development~~ and sound design. Upon program completion, students will be prepared to enter the field as a sound designer, audio director, folio artist, audio programmer or producer. Classes are taught in state-of-the-art facilities with the latest versions of industry-standard software packages.

Certificate Program

Program Learning Outcomes

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

- Understand the basic elements of game development and design including group working processes, game strategy, theory and gameplay.
- Diagram and describe the major elements of video games from its beginning through the present.
- Create multi-track MIDI and audio recordings utilizing basic and advanced editing techniques in Pro Tools.
- Create an industry-standard portfolio containing audio samples from class projects.
- Demonstrate professional communication skills effectively with colleagues in an industry production project.

Required Courses (28 units)		Units
COM-9	Interpersonal Communication	3
MIS-3	Digital Audio Production 1	4
MIS-4	Digital Audio Production 2	4
MUS-65	Basic Musicianship	2
~~In addition, choose and complete courses from~~		
~~one emphasis below:~~		~~12-15~~

~~Game Audio Emphasis (12 units)~~		
~~GAM 35~~	~~Introduction to Simulation and Game Development~~	~~3~~
~~GAM/CIS 44~~	~~Portfolio Productions~~	~~2~~
~~GAM 50~~	~~Introduction to Game Programming~~	~~3~~
~~GAM 79D~~	~~Studio Game Production: Audio~~	~~4~~
~~MUC 5~~	~~Sound Design I~~	~~3~~
~~MUC 8~~	~~Composing Music for Video Games~~	~~3~~

~~Recording Emphasis (15 units)~~		
MIS-1A	Beginning Performance Techniques for Studio Recording	2
MIS-1B	Intermediate Performance Techniques for Studio Recording	2
MIS-1C	Advanced Performance Techniques for Studio Recording	2
MIS-12	Live Sound Reinforcement	3
MIS-13	Recording Studio Workshop I	3
MUS-93	The Business of Music	3

Associate of Science Degree

The Associate of Science Degree in Audio Production ~~Game Audio~~ will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

PERFORMANCE (N)NAA645/NAA645B/NAA645C/NCE645

The *Commercial Music: Performance* certificate is a program designed to provide students with the knowledge and skills necessary for studio recording and live performance in the commercial music industry. Courses allow students to become proficient on an instrument or voice, gain experience as an ensemble member, study the fundamentals of music including sight-reading and piano skills, become familiar with music technology and record in a state-of-the-art recording studio. Classes are taught utilizing industry-standard software and equipment in state-of-the-art facilities. The program prepares students for a wide variety of careers as instrumentalists and vocalists in studio or live performance settings.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Understand and employ fundamentals of music and musicianship such as melody, harmony, chord structure, rhythm, key signatures, phrasing, sight-singing and scalar patterns.
- Identify and discuss the origins of commercial music and explain how it relates to society today.
- Create and manipulate vocal or instrumental technique in a studio and live performance setting such as fingerings, dynamics, diction, breathing, rhythm, phrasing and vowel or finger placement.
- Memorize and recall standard commercial music literature in a live ensemble performance.

Required Courses (34-36 units)	Units
MIS-1A Beginning Performance Techniques for Studio Recording	2
MIS-1B Intermediate Performance Techniques for Studio Recording	2
MIS-1C Advanced Performance Techniques for Studio Recording	2
MIS-7 Introduction to Music Technology	3
MUS-3 Fundamentals of Music	4
MUS-32A Class Piano I	1
MUS-38 Beginning Applied Music Training (take 4 times/2 units)	8
MUS-65 Basic Musicianship	2
Electives (choose from the lists below)	10-12

Select 6-8 units from the following:	
MIS-3 Digital Audio Production 1	4
MUS-4 Music Theory I	4
MUS-5 Music Theory II	4
MUS-19 Music Appreciation	3
MUS-23 History of Rock and Roll	3
MUS-93 The Business of Music	3

Select 4 units from the following:	
MIS-10A Norco Choir I	2
MIS-10B Norco Choir II	2
MIS-11A Studio Arts Ensemble I	2
MIS-11B Studio Arts Ensemble II	2

Associate of Arts Degree
The Associate of Arts Degree in Commercial Music: Performance will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

Computer Numerical Control Programming NAS655/NCE655   College: Norco

This program prepares individuals for an entry level career in computer numerical control programming. Computer control programmers and operators use computer numerically controlled (CNC) machines to cut and shape precision products, such as automobile, aviation, and machine parts. CNC machines operate by reading the code included in a computer-controlled module, which drives the machine tool and performs the functions of forming and shaping a part formerly done by machine operators. CNC machines include machining tools such as lathes, multi-axis spindles, milling machines, laser cutting machines, and wire electrical discharge machines. CNC machines cut away material from a solid block of metal or plastic—known as a workpiece—to form a finished part. Computer control programmers and operators normally produce large quantities of one part, although they may produce small batches or one-of-a-kind items. They use their knowledge of the working properties of metals and their skill with CNC programming to design and carry out the operations needed to make machined products that meet precise specifications.

CNC programmers—also referred to as *numerical tool and process control programmers*—develop the programs that run the machine tools. They review three-dimensional computer aided/automated design (CAD) blueprints of the part and determine the sequence of events that will be needed to make the part. This may involve calculating where to cut or bore into the workpiece, how fast to feed the metal into the machine, and how much metal to remove.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
- Create a steam or stirling engine based on blueprints that involves parts using both the mill and the lathe.
- Create five-axis part drawing files using Computer Aided Manufacturing program such as Mastercam, numerical code files and Solid Works.
- Compose written assignments on occupation safety in general industry.
- Solve mathematical formulas by using unknowns and apply this knowledge to solve problems for the industry.
- Establish a systematic approach to recognizing the essential information given on a blueprint.

In addition to achieving the program learning outcomes for the Computer Numerical Control programming certificate, students who complete the Associate in Science Degree in Computer Numerical Control Programming (CNC) technology will demonstrate proficiency in general education student learning outcomes and proficiency in subject matter student learning outcomes.

Required Courses (27-28 units)		Units
ENE-30	Computer Aided Drafting (CAD)	3
ENE-42	SolidWorks I	3
ENE-51	Blueprint Reading	2
ENE-52	Geometric Dimensioning and Tolerancing	2
ENE-60	Math for Engineering Technology	3
Or		
MAT-36	Trigonometry	4
MAN-35	Computer Aided Manufacturing-Mastercam	5
MAN-55	Occupational Safety and Health Administration (OSHA) Standards for General Industry	2
MAN-56	CNC Machine Set-up and Operation	4
MAN-57	CNC Program Writing	3

Associate in Science Degree
The Associate in Science Degree in Computer Numerical Control Programming will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

Drafting Technology

NAS/NCE 539   **College: Norco**

This program prepares individuals to apply technical skills and advanced computer software and hardware to the creation of graphic representations and simulation in support of drafting and engineering design problems typical of industry. This includes instruction in engineering graphics, computer-aided drafting (CAD), two-dimensional and three-dimensional engineering design, solids modeling, rapid prototyping and engineering animation. Students completing this certificate will be qualified for an entry level drafting or mechanical design position.

Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- An ability to apply and integrate computer technology in the design process, exhibiting skills necessary for entry-level employment, as a designer in the drafting industry;
- Knowledge of engineering drawing skills and practice in the solution of industry related design projects;

Required Courses (25-27 units)		**Units**
ENE-21	Drafting	3
ENE-22	Engineering Drawing	3
ENE-28	Technical Design	3
ENE-30	Computer Aided Drafting (CAD)	3
ENE-42	SolidWorks I	3
ENE-51	Blueprint Reading	2
ENE-52	Geometric Dimensioning & Tolerancing	2
ENE-60	Math for Engineering Technology	3
	or	
MAT-36	Trigonometry	4
Electives (Choose from list below)		3-4

Electives (3-4 units)		**Units**
ARE-24	Architectural Drafting	3
ENE-23	Descriptive Geometry	3
ENE-26	Civil Engineering Drafting	3
ENE-27/ELE-27	Technical Communications	3
ENE-42B	SolidWorks II	3
MAN-56	CNC Machine Set-Up and Operation	4
~~WEL34~~	~~Metal Joining Process~~	~~2~~

Associate in Science Degree
The Associate in Science Degree in Drafting Technology will be
awarded upon completion of the degree requirements, including
general education and other graduation requirements as described in
the college catalog.

Total Units   **25 - 27**

Industrial Automation   **College: Norco**

Businesses and other organizations depend on complex electronic equipment for a variety of functions. Industrial controls automatically monitor and direct production processes on the factory floor. Transmitters and antennae provide communication links for many organizations. Industry needs well-trained technicians with the knowledge of how to design, repair and implement new equipment. The Industrial Automation program teaches how to use Electronics, Programmable Logic Control and Fluid Power systems to create and program new machinery used in industry. This certificate prepares students for employment as an automated systems technician, maintenance mechanic, general maintenance worker, or electro-mechanical technicians.

Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Demonstrate the installation maintenance and troubleshooting of Programmable Logic Control systems (PLCs) or Variable Frequency Drives (VFD) PLC modules.
- Set-up and operate fluid powered valves, cylinders, controls filters, and actuators.
- Establish a systematic approach to recognizing the essential information given on a blueprint.
- Solve formulas by using unknowns and apply this knowledge to solve problems encountered in technological areas and various fields of engineering.
- Write descriptive and operational instructions for nontechnical users of technical information, including occupational safety concerns.

Required Courses (28-29 units)		Units
ELE-11	DC Electronics	4
ELE-13	AC Electronics	4
ELE-74	Industrial Wiring and Controls	4
ELE/ENE-27	Technical Communications	3
ENE-51	Blueprint Reading	2
MAN-55	Occupational Safety and Health Administration	2
MAN-60	Hydraulic and Pneumatic Systems	3
MAN/ELE-64	Programmable Logic Controllers	3
ENE-60	Math for Engineering Technology	3
or		
MAT-36	Trigonometry	4

Total Units: 28-29

Supply Chain Technology

Supply Chain Technology is a rapidly-emerging discipline that supports the automated warehousing industry. This program provides students with the skills and hands-on training needed to install, operate, support, upgrade or maintain the software, hardware, automated equipment and systems that support the supply chain. This includes complex conveyer systems, robotics, sensors, optics, mechanical drive systems and programmable logic controllers. Upon completion, students are prepared to successfully enter the field as Electro-Mechanical Technicians, Automated System Technicians, Industrial Machinery Mechanics, or Supply Chain Technicians.

Program Learning Outcomes
Upon successful completion of this program, students should be able to:

- Demonstrate troubleshooting procedures to diagnose and repair hydraulic and pneumatic systems used in automated processes and robotic assemblies.
- Discuss and demonstrate occupational safety and technical communications related to working in a distribution center.
- Demonstrate the installation, maintenance and troubleshooting of Programmable Logic Controllers systems (PLCs) and PLC modules.
- Establish a systematic approach to recognizing the essential information given on a blueprint.
- Solve arithmetic problems and formulas using unknowns that are typical to solving problems in engineering and industrial settings.

<u>Required Courses</u>

Course	Title	Units
SCT-1	Introduction to Automated Warehousing	3.0
ELE-73/MAN-73	Electric Motors for Electricians	4.0
ELE-74/MAN-74	Industrial Electrical Automation	4.0
ENE-27/ELE-27	Technical Communications	3.0
ENE-51	Blueprint Reading	2.0
ENE-60 Or MAT-36	Math for Engineering Technology Trigonometry	3.0 4.0
MAN-55	OSHA Standards for General Industry	2.0
MAN-60	Hydraulic and Pneumatic Systems	3.0
ELE-64/MAN-64	Programmable Logic Controllers	3.0
ELE-26	Microprocessors/Microcontrollers	4.0
	Total	31-32

Associate of Science Degree
The Associate of Science Degree in Supply Chain Technology will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

Program Outline of Record
Degree/Certificate Modification

RELATIONAL DATABASE MANAGEMENT TECHNOLOGY (R)   **CE816 College: Riverside City**

Provides the skills necessary to present a view of data as a collection of rows and columns and manage these relational databases based on a variety of data models.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
- Present the data to the user as a set of relations.
- Provide relational operators to manipulate the data in tabular form.
- Use a modeling language to define the schema of each database hosted in the DBMS, according to the DBMS data model.
- Optimize data structures (fields, records, files and objects) to deal with very large amounts of data stored on a permanent data storage device.
- Create a database query language and report writer to allow users to interactively interrogate the database, analyze its data and update it according to the users privileges on data.
- Develop a transaction mechanism, that would guarantee the ACID properties, in order to ensure data integrity, despite concurrent user accesses and faults.

Required Courses (12 units)		Units
CIS/CSC-28A	MS Access Programming	3
CIS/CSC-61	Introduction to Database Theory	3
CIS/CSC-62	Microsoft Access DBMS: Comprehensive	3
CIS/CSC-63	Introduction to Structured Query Language (SQL)	3
CIS/CAT-91	Microsoft Project	3