IX. CATALOG RIGHTS

Graduation requirements apply to students who are enrolled for any term (summer, fall, winter, spring) indicated by this catalog ~ Summer 2019 through Spring 2020. Students who enrolled prior to this current year and who have maintained continuous enrollment have the option of meeting the current requirements or those in effect at the time their continuous enrollment began. Continuous enrollment is defined as attendance of one term during each academic year.

ASSOCIATE OF ARTS

ADMINISTRATION AND INFORMATION SYSTEMS

NAA494 /NAA494B/NAA494C

Administration/Information Systems entails the study of theories, procedures and practices and the acquisition of skills necessary to function productively and effectively in an administrative work environment. Career paths chosen by students pursuing undergraduate studies in Administration/Information Systems typically include managerial positions in business and the public sector, administrative support positions, customer service, sales, accounting/bookkeeping and public relations.

Students completing associate degrees in Administration/Information Systems may obtain entry-level positions in the above career fields or may choose to transfer to a four-year college or university to pursue a bachelor's degree in business, accounting, public administration, management information systems or related fields.

Program Learning Outcomes:

Students possessing an Associate Degree in Administration/ Information Systems can be expected to demonstrate achievement of the following learning outcomes:

1. Categorize basic administrative terms, theories and principles.
2. Demonstrate basic understanding of economic systems; i.e., the manner in which goods are produced and distributed in a society and the means by which economic growth is achieved and sustained.
3. Understand and apply fundamental management principles, such as profit/loss, balancing accounts, conflict resolution, effective customer relations and time management.
4. Perform functions such as preparation of memoranda, utilization of spreadsheets, adherence to schedules and responding effectively to changes in the work environment.
5. Implement the fundamental concepts from courses in business, public administration, economics and/or information systems.
6. Locate, process, and utilize information effectively.

The student must successfully complete 18 units of study with a grade of "C" or better or a "P" if the course is taken on a "pass-no pass" basis.

INCLUDED DISCIPLINES AND COURSES:

Required Courses (nine units, selected from the following):

Accounting (ACC): 1A
Business Administration (BUS): 3, 10, 10H **18A
Computer Applications and Office Technology (CAT): 3
Computer Information Systems (CIS): 1A, 3
Economics (ECO): 7, 7H, 8, 8H
Political Science (POL): 8

Elective Courses (9 additional units, selected from the following):

Accounting (ACC): 1A, 1B, 38
Business Administration (BUS): 3, 10, 10H, **18A, **18B, 20, 22, 80
Communication Studies (COM): 1, 1H, 6, 9, 9H, 12, 13
Computer Applications and Office Technology (CAT): 3, 31
Computer Information Systems (CIS): 1A, 1B, 2, 3, 5
Computer Science (CSC): 2, 5
Economics (ECO): 4, 6, 7, 7H, 8, 8H
Library (LIB): 1
Management (MAG): 44
Marketing (MKT): 20
Political Science (POL): 6, 8

A course may only be counted once.
****Credit limitation:** UC will accept a maximum of one course for transfer.

COMMUNICATION, MEDIA, AND LANGUAGES

NAA495 /NAA495B/NAA495C

Communications is the study of how humans construct meanings through interactions. Courses in this area may focus on the knowledge and skills needed to communicate effectively in oral, written, or visual forms; on the study of language and culture; and/or on a critical understanding of the structures and patterns of different kinds of communication as they affect individuals and society. Studies in *Communication, Media, and Languages* is designed for students interested in pursuing further studies in English, Journalism, Mass Communication, Media Studies, Communication Studies, and World Languages at four-year colleges and universities. It may be useful for students interested in pursuing careers in communications, graphic design, journalism, law, marketing, public relations, radio and television, translating, and writing, among others.

Program Learning Outcomes:

Students possessing an associate degree in Communication, Media and Languages can be expected to demonstrate achievement of the following learning outcomes:

1. Analyze college level texts to understand and apply themes and evidence in appropriate communication formats.
2. Evaluate purpose and audience to create well-developed, supported, and stylistically fluent responses in written or verbal form.
3. Evaluate and apply appropriate evidence in support of arguments made in different forms of communication.
4. Recognize and understand the role of nonverbal, verbal, interpersonal, visual, mass media, and cultural indicators inherent in different communication mediums.
5. Understand how socioeconomic and cultural factors work in constructing knowledge in different forms of communication.
6. Use a variety of research methods to collect and evaluate sources and evidence to apply in various forms of communication.

The student must successfully complete 18 units of study across three disciplines; nine units must be taken in a single discipline with a grade of "C" or better or a "P" if the course is taken on a "pass-no pass" basis.

INCLUDED DISCIPLINES AND COURSES:
Anthropology (ANT): 8
Applied Digital Media (ADM): 1
Arabic (ARA): 1, 2, 3, 8, 11
American Sign Language (ASL): 1, 2, 3, 4, 5, 10, 11, 12, 13, 14, 20, 22
Chinese (CHI): 1, 2, 11
Communication Studies (COM): 1, 1H, 2, 3, 5, 6, 7, 9, 9H, 11, 12, 13, 19
English (ENG): 1A, 1AH, 1B, 1BH, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 20, 23, 25, 30, 34, 35, 38, 39, 40, 41, 44, 45, 48, 49
Film Studies (FST): 1, 1H, 2, 3, 4, 5, 6, 7, 8
Film, Television and Video (FTV): 12, 44A, 44B, 44C, 44D, 45A, 45B, 45C, 45D, 65
French (FRE): 1, 2, 3, 4, 8, 11
German (GER): 1, 2, 3, 11
Italian (ITA): 1, 2, 3, 11
Japanese (JPN): 1, 2, 3, 4, 11
Journalism (JOU): 1, 2, 7, 12, 20A, 20B, 20C, 20D, 52A, 52B, 52C, 52D
Korean (KOR): 1, 2, 11
Latin (LAT): 1, 2
Library (LIB): 1
Photography (PHO): 12
Portuguese (POR): 1, 2
Reading (REA) : 4
Russian (RUS): 1, 2, 3, 11
Spanish (SPA): 1, 1A, 1B, 1H, 2, 2H, 3, 3N, 4, 8, 11, 12, 13, 51, 52, 53

FINE AND APPLIED ARTS

NAA496 /NAA496B/NAA496C

The Associate Degree in Fine and Applied Arts offers a rich variety of courses to acquaint students with the creation of and performance in the arts from a global perspective. The courses in this area examine the nature of the fine and applied arts through analysis, synthesis, composition, performance and technical development. Students will develop techniques appropriate to the art form, engage in the production and performance of the arts, examine aesthetic valuing, and participate in creative expression.
This area of emphasis is designed for students interested in exploring a variety of art forms including digital media, creative writing, dance, film, graphic design, music, photography, communication studies, television, theatre, video and the visual arts.

Program Learning Outcomes:
Students possessing an Associate of Arts Degree in Fine and Applied Arts can be expected to demonstrate achievement of the following program learning outcomes:

1. Demonstrate basic knowledge and skills (technique) in one discipline of the fine and applied arts. These include fundamentals of the field in terms of practice, history, analysis and their applications and technical ability in one discipline to create, sustain, and evolve a personal vision and/or purpose.
2. Develop a personal vision and/or purpose—sometimes called "artistic voice"—that is evident in terms of work produced and manifested in a portfolio, performance, exhibition, or other presentation.
3. Generate and apply original ideas and methods to discover, create and communicate specific artistic content.
4. Demonstrate conceptual acuity, clarity, imagination, and technical ability to combine, integrate, and synthesize elements into works in ways that enhance their communicative powers.

The student must successfully complete 18 units of study across a maximum of three disciplines with nine units from a single discipline with a grade of "C" or better or a "P" if the course is taken on a "pass-no pass" basis.

INCLUDED DISCIPLINES AND COURSES:
Applied Digital Media (ADM): 1, 2C, 30, 67, 68A, 68B, 70, 71A, 71B, 74A, 74B, 77A, 77B, 80, 200
Art (ART): 1, 1H, 2, 2H, 5, 6, 6H, 7, 8, 9, 10, 12, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25A, 25B, 26, 27, 28A, 28B, 30A, 30B, 34, 35A, 35B, 36A, 36B, 38, 39, 40A, 40B, 41A, 41B, 42A, 42B, 43A, 43B, 44A, 44B, 44C, 45, 46, 47, 48A, 48B, 49A, 49B, 200
Communication Studies (COM): 1, 1H, 2, 3, 7, 11, 19
Dance (DAN): 6, 6H, 7, 8, 9, D9, D10, D11, D12, D13, D14, D15, D16, D17, D18, D19, D20, D21, D22, D23, D24, D25, D29, D30, D31, D32, D33, D34, D37, D38, D39, D43, D44, D45, D46, D47, D48, D49, D50, D51, D60
English (ENG): 11, 12, 13, 17A, 17B, 17C, 38, 39, 49
Film, Television, and Video (FTV): 38A, 38B, 41, 42, 43, 44A, 44B, 44C, 44D, 45A, 45B, 45C, 45D, 46, 48, 51A, 51B, 51C, 51D, 52, 53, 64A, 65, 66, 67, 68, 70, 71A, 72
Music (MUS): 3, 4, 5, 6, 8A, 8B, 9, 10, 19, 19H, 22, 23, 25, 26 27, 28, 29, 30, 31, 32A, 32B, 32C, 32D, 33, 35, 36, 37, 38, 39, 41, 42, 43A, 43B, 43C, 44, 48, 49, 50, 51, 52, 53, 54, 55, 57, 58, 61, 65, 68, 69, 70, 73, 77, 81, 82, 83, 84, 87, 89, 89H, 92, 93, 94, P12, P36, P44, P84
Photography (PHO): 8, 9, 10, 17, 20, 200
Theatre Studies (THE): 2, 3, 4, 5, 6, 25, 26, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 41, 44, 46, 48, 49, 54

HUMANITIES, PHILOSOPHY, AND ARTS

NAA497 /NAA497B/NAA497C

Humanities, Philosophy, and Arts examines human values and experience within a wide range of cultures, across the globe, and over the course of history. Students will study, interpret, and evaluate classic works in architecture, art, literature, music, philosophy, religion, rhetoric and the theater, and they will encounter questions to which there are multiple plausible answers. The study of language, philosophy, and rhetoric provides crucial tools for understanding and interpreting human knowledge and experience. Students pursuing the program in the *Humanities, Philosophy, and Arts* will enhance their skills in critical thinking and both oral and written communication. The *Humanities, Philosophy, and Arts* program prepares students for further study in the arts, history, humanities, literature, philosophy, communication studies and/or world languages at a four-year baccalaureate institution and provides an excellent foundation for students interested in administration, communications, law, public service, and teaching.

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

1. Interpret key philosophical, religious and literary texts, as well as creative works, in historical and cultural contexts and express that interpretation persuasively in oral and/or written form.
2. Analyze the role and use of language, rhetoric and/or the arts in informing and contextualizing human experience.

3. Analyze the role and use of the arts (literature, music, theatre, dance, and the fine arts) as a reflection of the culture in which it appears.
4. Evaluate the role of individual human agency in history.
5. Research and write critical interpretive essays demonstrating a high skill level.

The student must successfully complete 18 units of study across three disciplines; nine units must be taken in a single discipline. Up to three units may be taken in a studio course. The 18 units must be completed with a grade of "C" or better or a "P" if the course is taken on a "pass-no pass" basis.

INCLUDED DISCIPLINES AND COURSES:
American Sign Language (ASL): 1, 2, 3, 4, 5, 10, 11, 12, 13, 14, 20, 22
Anthropology (ANT): 7, 8
Arabic (ARA): 1, 2, 3, 8, 11
Architecture (ARE): 36
Art (ART): 1, 1H, 2, 2H, 5, 6, 6H, 7, 8, 9, 10, 12
Chinese (CHI): 1, 2, 11
Communication Studies (COM): 1, 1H, 2, 3, 5, 7, 9, 9H, 11, 12, 13, 19
Dance (DAN): 6, 6H
English (ENG): 1B, 1BH, 6, 7, 8, 9, 10, 14, 15, 16, 18, 20, 23, 25, 30, 34, 35, 40, 41, 44, 45, 48
Film, Television and Video (FTV): 12, 65
Film Studies (FST): 1, 1H, 2, 3, 4, 5, 6, 7, 8
French (FRE): 1, 2, 3, 4, 8, 11
Game Development (GAM): 21
German (GER): 1, 2, 3, 11
History (HIS): 1, 2, 2H, 4, 5, 6, 6H, 7, 7H, 14, 15, 21, 22, 25, 26, 28, 29, 31, 32, 34, 35
Humanities (HUM): 4, 4H, 5, 5H, 8, 9, 10, 10H, 11, 16, 18, 23, 35
Italian (ITA): 1, 2, 3, 11
Japanese (JPN): 1, 2, 3, 4, 11
Korean (KOR): 1, 2, 11
Latin (LAT): 1, 2
Library (LIB): 1
Music (MUS): 19, 19H, 20, 21, 22, 25, 26, 89, 89H, 93
Philosophy (PHI): 10, 10H, 12, 13, 14, 15, 19, 22, 32, 33, 35
Political Science (POL): 11
Portuguese (POR): 1, 2
Russian (RUS): 1, 2, 3, 11
Spanish (SPA): 1, 1A, 1B, 1H, 2, 2H, 3, 3N, 4, 8, 11, 12, 13, 51, 52, 53
Theatre (THE): 3, 29

Applicable studio courses include (Note that some classes are less than three units.):
Art (ART): 15, 16, 17, 18, 20, 21, 22, 23, 24, 25A, 25B, 26, 27, 28A, 28B, 30A, 30B, 34, 35A, 35B, 36A, 36B, 38, 39, 40A, 40B, 41A, 41B, 42A, 42B, 43A, 43B, 44A, 44B, 44C, 45, 46, 47, 48A, 48B, 49A, 49B, 200
Dance (DAN): 7, 8, 9, D9, D10, D11, D12, D13, D14, D15, D16, D17, D18, D19, D20, D21, D22, D23, D24, D25, D29, D30, D31, D32, D33, D34, D37, D38, D39, D43, D44, D45, D46, D47, D48, D49, D50, D51, D60
English (ENG): 11, 12, 17A, 17B, 17C, 38
Music (MUS): 8A, 8B, 9, 10, 12, 28, 29, 30, 31, 32A, 32B, 32C, 32D, 33, 35, 36, 37, 38, 39, 41, 42, 43A, 43B, 43C, 44, 48, 49, 50, 51, 52, 53, 54, 55, 57, 58, 61, 65, 68, 69, 70, 71, 73, 77,78, 79, 81, 82, 83, 84, 92, 94, P12, P36, P44, P84
Theatre (THE): 2, 4, 5, 6, 25, 26, 30, 32, 33, 34, 35, 36, 37, 38, 41, 54

KINESIOLOGY, HEALTH AND WELLNESS

NAA498 /NAA498B/NAA498C

Kinesiology, Health and Wellness is a collection of courses that emphasize the principles for the growth and development of a healthy lifestyle. Students will acquire the knowledge, understanding of these principles to integrate and promote personal, individual or group behavior conducive to the maintenance or restoration of mental and physical wellness. This emphasis will provide students with an understanding and problem solving strategies of physical skills and their development related to physical activity, exercise and sport. This area of emphasis is designed for students interested in making positive life choices and in the study of health, nutrition, and wellness; physical education/kinesiology; athletic training; sport performance, officiating and coaching; career planning and life management; and the biology, anatomy and physiology of the human body.

Students who work closely with their counselor may use this emphasis area to prepare to transfer to four year institutions in majors such as Health Science, Nutrition, Physical Education/Kinesiology, Exercise Science, and Recreation and Leisure Studies. Some careers such as Athletic Trainer, Physical Therapist, Exercise Physiologist, Sport Nutritionist, and Physical Education and Health Education teachers may require education beyond the Bachelor's Degree.

Program Learning Outcomes:
Upon completion of this emphasis area, the student will be able to:
1. Analyze understanding of the impact life choices have on overall human health and apply this knowledge to maintain healthful living appropriate to the situation.
2. Recognize the positive impact of physical activity in fostering optimal health and apply this knowledge to lifestyle choices.
3. Identify and interpret the role of individual decision-making processes to the development of strategies concerning personal health and wellness.

The student must successfully complete 18 units of study with a grade of "C" or better or a "P" if the course is taken on a "pass-no pass" basis.

INCLUDED DISCIPLINES AND COURSES:
Required Courses (take three units in each of the two disciplines):
Health Science (HES): 1 Health Science, BIO-35
Kinesiology/academic courses (KIN): 4, 6, 10, 12, 16, 17, 18, 23, 24, 25, 26, 27, 28, 29, 30, 33, 34, 35, 36, 38
Elective Courses (12 additional units, selected from the following):
Biology (BIO): BIO-4 (Formerly BIO-17), 16 (Formerly BIO-30), 18 (Formerly BIO-34), 45 (Formerly AMY-10), 50A (Formerly AMY-2A), 50B (Formerly AMY-2B)
Early Childhood Education (EAR): 26
Guidance (GUI): 45, 46, 47, 48
Kinesiology/academic courses (KIN): 4, 6, 10, 12, 16, 17, 18, 23, 24, 25, 26, 27, 28, 29, 30, 33, 34, 35, 36, 38
Kinesiology/activity courses (KIN): A03, A04, A07, A11, A12, A13, A20, A21, A28, A29, A30, A31A, A31B, A31C, A40, A41, A43, A44, A46, A47, A54A, A54B, A55, A57A, A57B, A57C, A64, A67, A68, A69, A71, A75A, A75B, A77A, A77B, A77C, A80, A81A, A81B, A81C, A83, A86, A87, A88, A89A, A89B, A89C, A90A, A90B, A90C

Kinesiology/varsity courses (KIN): V01, V02, V04, V05, V06, V07, V08, V09, V10, V11, V12, V14, V18, V19, V20, V21, V22, V23, V24, V25, V26, V27, V33, V34, V50, V51, V52, V53, V60, V61, V70, V78, V82, V92, V94, V95

A course may only be counted once except for varsity courses.

SOCIAL AND BEHAVIORAL STUDIES

NAA499 /NAA499B/NAA499C

Social and Behavioral Studies is a collection of academic disciplines dedicated to the scholarly study of the human experience. As a comprehensive and multidisciplinary area of study, Social and Behavioral Studies will afford the student an opportunity to explore and examine the nature and multitude of interactive relationships amongst and between individuals and between the individual and their social environment; ranging from the development of the individual, to the nuances of interpersonal interaction, to the dynamic structures of national and global communities. Ultimately, the student of Social and Behavioral Studies will gain a heightened awareness of the nature of their individuality, attain a greater understanding and appreciation of the complexities and diversity of the world in which they live and, become better equipped to succeed in an increasingly diverse and complex society.

Career paths typically chosen by undergraduate students emphasizing Social and Behavioral Studies include: Law Enforcement, Law, Human Relations, Human Resources, Social Work, Professional Childcare and Public Service Agencies, Teaching across the educational and academic spectrum, Consultation in the public and private sectors, Governmental Advisors, Speechwriting, and both domestic and international business professions.

Program Learning Outcomes:

Upon completion of this area of emphasis, the successful student should be able to:

1. Demonstrate a knowledge and understanding that the development, maintenance, and adaptation of the individual self and the personality is a product of the interaction between the individual and their social environment.
2. Demonstrate a breadth of knowledge of the social and cultural environments at the local, regional and global levels.
3. Demonstrate a working knowledge of the many facets and intricacies of social interaction from the intrapersonal, to the interpersonal to the societal levels.
4. Demonstrate an ability to apply the theories and principles of human development, human interaction, cultural diversity, and global awareness to their everyday lives.

The student must successfully complete 18 units of study across a minimum of three disciplines listed below with a grade of "C" or better or a "P" if the course is taken on a "pass-no pass" basis.

INCLUDED DISCIPLINES AND COURSES:

Administration of Justice/Justice Studies (ADJ): 1, 2, 3, 4, 5, 8, 9, 13, 14, 15, 30
Administration of Justice/Law Enforcement (ADJ): 6, 16, 18, 20, 21, 22, 23, 25
Anthropology (ANT): 1, 1H, 2, 2H, 3, 4, 5, 6, 7, 8, 10
Communication Studies (COM): 1, 1H, 2, 3, 5, 6, 9, 9H, 12, 13
Early Childhood Education (EAR): 19, 20, 25, 28, 33, 40, 42, 43, 47
Economics (ECO): 4, 5, 6, 7, 7H, 8, 8H, 9, 9H, 10
Geography (GEG): 2, 3, 4, 6
Guidance (GUI): 47, 48
History (HIS): 1, 2, 2H, 4, 5, 6, 6H, 7, 7H, 21, 22, 35
Human Services (HMS): 4, 5, 6, 7, 8, 13, 14, 16, 18, 19
Library Science (LIB): 1
Political Science (POL): 1, 1H, 2, 2H, 3, 4, 4H, 5, 6, 7ABCD, 8, 10A, 10B, 10C, 10D, 11, 12, 13, 14
Psychology (PSY): 1, 1H, 2, 8, 9, 33, 35, 48, 50
Sociology (SOC): 1, 1H, 2, 3, 10, 12, 15, 20, 22, 25, 48

ASSOCIATE OF SCIENCE

CAREER AND TECHNICAL EDUCATION PROGRAMS

The Associate of Science Degree in Career and Technical Education Programs will be awarded upon completion of the requirements for the certificate or program of 18 units or more with a grade of "C" or better or a "P" if the course is taken on a "pass/nopass" basis plus completion of the graduation requirements as described in the catalog, as well as electives, totaling 60 units of college work as required for the associate degree. Specific requirements for each program are listed in this catalog.

MATH AND SCIENCE

NAS493 /NAS493B/NAS493C

These courses emphasize the natural sciences, which examine the physical universe, its life forms, and its natural phenomena. Courses in Math emphasize mathematical, analytical, and reasoning skills beyond the level of intermediate algebra. Courses in science emphasize an understanding of the process of science and the scientific method. All courses emphasize the use of mathematics and science as investigative tools, the role of mathematics and science as part of human civilization and society, and the inherent value of both inductive and deductive reasoning as part of the human experience.

This area of emphasis is designed for general education students, as well as students interested in mathematics or sciences as a possible career path, with career opportunities included in mathematics, chemistry, physics, biology, ecological/earth sciences, geology, engineering, computer science, electronics, oceanography, microbiology, kinesiology/ exercise science and the medical sciences.

Program Learning Outcomes:

Students possessing an Associate Degree in Math and Science can be expected to demonstrate achievement of the following learning outcomes:

1. Apply the basic operations of mathematics on the set of real and complex numbers, expressions, and equations
2. Apply the principles of the scientific method, including the use of inductive and deductive reasoning to pose, test, and accept or reject hypotheses.
3. Recognize and determine the role of mathematics and the sciences as investigative and reasoning tools of human societies.

The student must successfully complete 18 units of study with a grade of "C" or better or a "P" if the course is taken on a "pass-no pass" basis.

INCLUDED DISCIPLINES AND COURSES:

Required Courses (Take one course in each of the three categories, including one course with a lab):

Mathematics (MAT): 1A, 5, 10, 11, 12, 12H, 25

ADMINISTRATION OF JUSTICE (CSUGE) NAS642 (IGETC) NAS643

This degree is designed to facilitate the student's passage from Norco College to the California State University system with an Associate in Science in Administration of Justice for Transfer degree. This degree will satisfy the lower division requirements for the eventual conferral of the Bachelor's Degree in Criminal Justice at a CSU. With this degree the student will be prepared to enter the American Justice system as an entry level professional in numerous areas.

Program Learning Outcomes

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

- Demonstrate an applicable knowledge of the many facets of the American Justice System and the interrelationship of functions among them.
- Demonstrate a working knowledge of the theory and practice of law enforcement, community policing, criminal law, judicial procedure, criminal investigation, and corrections within the American Justice System.
- Demonstrate the ability to interact with the public and members of the American Justice System in a manner to reflect professionalism in speaking, reading, writing, and the ability to compile, integrate, and disseminate diverse information.

Required Courses (18-19 Units)		Units
ADJ-1*	Introduction to the Administration of Justice	3
ADJ-3*	Concepts of Criminal Law	3
List A	Choose from the list below	6
List B	Choose from the list below	6-7

List A Choose two courses from the following (6 Units)		Units
ADJ-2	Principles and Procedures of the Justice System	3
ADJ-4	Legal Aspects of Evidence	3
ADJ-5	Community Relations	3
ADJ-8	Juvenile Law and Procedures	3
ADJ-12	Introduction to Criminalistics	3
ADJ-13	Criminal Investigation	3
ADJ-20	Introduction to Corrections	3

List B Choose two courses from the following (6-7 Units)		Units
Any LIST A course not already used		
ADJ-9*	Law in American Society	3
ADJ-14	Advanced Criminal Investigation	3
ADJ-200	Work Experience	3
MAT-12*/12H*	Statistics/Honors	4
OR		
PSY/SOC-48*	Statistics for the Behavioral Sciences	3
POL-1*/1H*	American Politics/Honors	3
PSY-1*/1H	General Psychology/Honors	3
SOC-1*/1H*	Introduction to Sociology/Honors	3
SOC-2*	American Social Problems	3
SOC-20*	Introduction to Criminology	3
SOC-50*	Introduction to Social Research Methods	3

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Science for Transfer Degree

The Associate in Science in Administration of Justice for Transfer degree will be awarded upon completion of coursework totaling 60 California State University (CSU) transferable units including the 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.

ANTHROPOLOGY (CSUGE) NAA616 (IGETC) NAA618

The Associate in Arts in Anthropology for Transfer Degree is designed to prepare the student for transfer to institutions of higher education and specifically intended to satisfy the lower division requirements for the Baccalaureate Degree in Anthropology at a California State University. It will also provide the student with a sufficient academic basis from which to pursue a career in the social science professions. The student will be afforded the opportunity to study the nature of human diversity from a genetic, archeological, linguistic and cultural basis. The breadth of Anthropology will be examined to include the historical and contemporary theory and research as the basis from which to gain an in-depth awareness and understanding of humans and the world in which we live.

Program Learning Outcomes

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

- Apply the holistic and comparative perspective inherent in anthropological knowledge to real world problems
- Use information resources and technology to research current issues in all four subfields of anthropology
- Synthesize and integrate theoretical perspectives specific to anthropology and general to the social and natural sciences

Required Core Courses (18-19 units)		Units
ANT-1*/1H*	Physical Anthropology/Honors	3
ANT-2*/2H*	Cultural Anthropology /Honors	3
ANT-6*	Introduction to Archaeology	3
Group A	Choose 6-7 units from below	6-7
Group B	Choose 3 units from below	3

Electives Group A (6-7 units)		Units
ANT-3*	Prehistoric Cultures	3
GEG-1*/1H*	Physical Geography /Honors	3
GEG-2*	Human Geography	3
MAT-12*/12H*	Statistics/Honors Statistics	4

Electives Group B (3 units)		Units
ANT-4*	Native American Cultures	3
ANT-5*	Cultures of Ancient Mexico	3
ANT-7*	Anthropology of Religion	3
ANT-8*	Language and Culture	3
ANT-10	Forensic Anthropology	3

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Arts for Transfer Degree
The Associate in Arts in Anthropology 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.

ART HISTORY (CSUGE) NAA742 (IGETC) NAA743

The Associate in Arts in Art History for Transfer degree is designed to facilitate the student's passage from Norco College to the California State University System with an emphasis in art history. This degree is intended to satisfy the lower division requirements for the Baccalaureate Degree in Studio Art, Art History track at a California State University. It will also provide the student with a sufficient academic basis from which to pursue a career in the studio art professions.

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

- Identify, describe, analyze, and discuss the stylistic characteristics of a wide variety of countries, regions, and periods of European and non-European artworks.
- Formulate and synthesize observations and evaluations regarding the historical, social, and political context in which various forms of art were created in both written and oral form.
- Apply various methodologies for interpreting a range of art forms to evaluate and analyze the ideas and philosophies expressed and explored within the art works.
- Critique, compare, and contrast various key artists, artworks, and styles across a wide span of time using appropriate art terminology.
- Recognize distinctive iconography from a mixture of different geographical areas and relate these manifestations to local, social, cosmological, and political institutions.

Required Courses: (18-20 units)		Units
ART-1*	History of Western Art: Prehistoric, Ancient and Medieval3	
ART-2*/2H*	History of Western Art: Renaissance through Contemporary/Honors History of Western Art: Renaissance through Contemporary	3
ART-17	Beginning Drawing	3
Electives	Choose from List A	3
Electives	Choose from List B	3
Electives	Choose from List C	3-5

List A: Choose 3 units from the following:		Units
ART-5*	History of Non-Western Art	3
ART-9*	African Art History	3
ART-12*	Asian Art History	3
ART-13*	Pre-Columbian Art History	3
ART-14*	Latin American Art: Colonial to the Present	3

List B: Choose 3 units from the following:		Units
ART-18	Intermediate Drawing	3
ART-20	Beginning Sculpture	3
ART-22	Basic Design	3
ART-23	Color Theory and Design	3
ART-24	Three Dimensional Design	3
ART-26	Beginning Painting	3
ART-36A	Computer Art-Introduction	3
ART-40A	Figure Drawing-Introduction	3

List C: Choose 3-5 units from the following:		Units
Any course from List A or List B not already used above		
ART-7*	Women Artists in History	3
ART-10*	Modern and Contemporary Art History	3
FRE-1*	French 1	5
FRE-2*	French 2	5
SPA-1*	Spanish 1	5
SPA-2*	Spanish 2	5
SPA-3*	Spanish 3	5
SPA-4*	Spanish 4	5

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Arts for Transfer Degree
The Associate in Arts in Art History 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 "P") or better.

Total Units: 18-20

BIOLOGY (CSUGE) NAS767 (IGETC) NAS768

The Associate in Science in Biology for Transfer Degree introduces the concepts and principles upon which biologic knowledge is based including the biochemistry, structure and function, ecology and evolution of organisms, from the levels of cells through the biosphere. Students will develop skills for critical/analytical thinking, perceptive reading/observation and interpretation. The Associate in Science in Biology for Transfer degree provides students with a core curriculum that will prepare them with the knowledge and skills required to earn a baccalaureate degree in biology. The intent of this degree is to assist students in seamlessly transferring to a California State University.

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

- Be able to identify and explain fundamental biological concepts and principles on the molecular, cellular, organismal, population, ecological, environmental and evolutionary levels.
- Apply knowledge of biological concepts to formulate questions and hypotheses for research and demonstrate ability to find, read, understand, and critically evaluate scientific papers.
- Develop experimental skills and techniques used in laboratory and field research and use the scientific method to develop hypotheses, design and execute experiments.

Required Courses (32 units)		Units
BIO-60 (Formerly BIO-11*)	Introduction to Molecular and Cellular Biology	5
BIO-61* (Formerly BIO-12*)	Introduction to Organismal and Population Biology	5
CHE-1A*	General Chemistry I	5
CHE-1B*	General Chemistry II	5
MAT-1A*	Calculus I	4
PHY-2A*	General Physics I	4
and		
PHY-2B*	General Physics II	4
OR		
PHY-4A*	Mechanics	4
and		
PHY-4B*	Electricity & Magnetism	4

*Courses may also be used to fulfill general education requirements for the CSUGE for STEM or IGETC for STEM pattern, please confer with a counselor.

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

BUSINESS ADMINISTRATION (CSUGE) NAS626 (IGETC) NAS628

This degree is designed to facilitate the student's passage from Norco College to the California State University (CSU) System with an Associate in Science in Business Administration for Transfer degree. This degree will satisfy the lower division requirements for the eventual conferral of the Bachelor's Degree in Business Administration at a CSU. With this degree the student will be prepared for transfer to the university upper division level. Additionally, the intent of an associate degree for transfer is to assist students in seamlessly transferring to a CSU.

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

- Demonstrate use of technology and application software to analyze and solve business decisions.
- Demonstrate mathematical and accounting procedures used for business specific calculations and decisions.
- Demonstrate the application of economic and business theories to develop effective business processes.

Required Courses (24-26 units)		Units
ACC-1A	Principles of Accounting I	3
ACC-1B	Principles of Accounting II	3
BUS-18A	Business Law I	3
ECO-7*/7H*	Principles of Macroeconomics/Honors Principle of Macroeconomics	3
ECO-8*/8H*	Principles of Microeconomics/Honors Principle of Microeconomics	3
List A	Select from the list below	3-4
List B	Select from the list below	6-7

List A Select one course from the following (3-4 units)		Units
MAT-4*	Finite Mathematics	3
MAT-5*	Calculus for Business and Life Science	4
MAT-12*/12H*	Statistics/Honors Statistics	4

List B Select two courses from the following (6-7 units)		Units
Any course from List A not used above		3-4
CIS-1A	Introduction to Computer Information Systems	3
BUS-10/10H	Introduction to Business/Honors	3
or BUS-24	Business Communication	3

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Science for Transfer Degree
The Associate in Science in Business Administration for Transfer degree will be awarded upon completion of 60 semester CSU-transferable units; the California State University-General Education-Breadth pattern (CSU GE-Breadth) or the Intersegmental General Education Transfer Curriculum (IGETC) pattern; a minimum of 18 semester or 27 quarter units in the major or area of emphasis as determined by the community college district; obtainment of a minimum grade point average (GPA) of 2.0; earn a grade of C or better in all courses required for the major or area of emphasis.

CHEMISTRY (IGETC) NAS769

The Associate in Science in Chemistry for Transfer Degree introduces the concepts and principles upon which chemical knowledge is based, including chemical structures and nomenclature, stoichiometry and solving of chemical equations, the thermodynamics of chemical reactions, and theories of chemical bonding. Students will develop skills for critical/analytical thinking, perceptive reading/observation and interpretation. The Associate in Science in Chemistry for Transfer degree provides students with a core curriculum that will prepare them with the knowledge and skills required to earn a baccalaureate degree in chemistry.

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

- Master content in inorganic and organic chemistry by describing chemical and physical structures and nomenclature, stoichiometry and solving of chemical equations, and analyzing and describing the nature of chemical reactions and energy.
- Measure and characterize properties of matter using a variety of research-level chemical instrumentation, laboratory techniques, statistical and computational methods
- Display effective cooperation with others on projects and clearly communicate experimental results through oral and written means.
- Demonstrate professional integrity, safety, and environmental stewardship.

Required Courses (36 Units)		Units
CHE-1A*	General Chemistry I	5
CHE-1B*	General Chemistry II	5
CHE-12A*	Organic Chemistry I	5
CHE-12B*	Organic Chemistry II	5
PHY-4A*	Mechanics	4
PHY-4B*	Electricity and Magnetism	4
MAT-1A*	Calculus I	4
MAT-1B*	Calculus II	4

*Courses may also be used to fulfill general education requirements for the IGETC for STEM pattern, please confer with a counselor.

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

CHILD AND ADOLESCENT DEVELOPMENT
(CSUGE) NAA885
(IGETC) NAA886

PROGRAM PREREQUISITE: None.
The Associate in Arts in Child and Adolescent Development for Transfer degree is a 60-unit degree program that provides lower-division preparation for students planning to transfer to a CSU for a Bachelor's degree in Child and Adolescent Development, Child Development, Child, Adolescent & Family Studies, Human Development or other related majors. The intention of this degree is to prepare students to transfer and complete degrees and professional programs in the fields of K-12 teaching, clinical social work, clinical psychology, school psychology, school counseling, college teaching, public policy, and/or developmental research. In this major, students will explore theories and concepts about bio-physical, socio-emotional, and cognitive developmental milestones from conception through adolescence; individual and cultural differences; and common variations in development. In this broad, interdisciplinary curriculum, students will develop critical thinking, writing, and oral presentation skills in preparation to be professionals working with children and families.

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

- Compare and contrast typical and atypical development of children and adolescents in the biophysical, cognitive, and psychosocial domains.
- Relate developmental theory to the observation and assessment of children and teaching practices.
- Identify the correct ECE observation method for gathering authentic assessments on children.
- Understand and apply Developmentally Appropriate Practice in the creation of curriculum and the use of specific teaching strategies to enhance learning.
- Evaluate the role that context (i.e., family, peers, schools, communities, cultures, diversity) and individual experience plays in development.
- Describe the scientific approach to research in the social and behavioral sciences.
- Describe and defend current guidelines for the ethical treatment of children and adolescents.
- Apply basic research methods, including research design, qualitative and quantitative analysis, and the interpretation of data.
- Demonstrate effective written communication skills using APA format.

Required Courses (18-20 units)		Units
EAR-20*	Child Growth and Development	3
PSY-1*/1H*	General Psychology/Honors	3
MAT-12*/12H*	Statistics/Honors	4
OR		
PSY-48*/SOC-48*	Statistics for the Behavioral Sciences	3
List A	Select from the list below	3
List B	Select from the list below	6-7

LIST A Select one course from the following (3 units)		Units
ANT-2*/2H*	Cultural Anthropology/Honors	3
	Introduction to Social Psychology	3
EAR-42 *	Child, Family, and Community	3
SOC-1*/1H*	Introduction to Sociology/Honors	3
SOC-10*	Race and Ethnic Relations	3
SOC-12*	Marriage and Family Relations	3

LIST B Select two courses course from the following (6-7 units)		
BIO-1*/1H*	General Biology/Honors	4
OR		
BIO-10*	Life Science Principles	3
EAR-24	Introduction to Curriculum	3
EAR-28	Principles and Practices of Teaching Young Children	3
PSY-9*	Developmental Psychology	3

*Courses may also be used to fulfill general education requirements for the CSU GE or IGETC pattern, please confer with a counselor.

Associate in Arts for Transfer Degree
The Associate in Arts in Child and Adolescent Development for Transfer degree will be awarded upon completion of coursework totaling 60 California State University (CSU) transferable units including the 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.

Total Units: 18-20

COMMUNICATION STUDIES
(CSUGE) NAA587
(IGETC) NAA588

The Associate in Arts in Communication Studies for Transfer degree provides opportunity for students to transfer to a CSU with junior standing. The degree encourages students to examine and evaluate human communication across and within various contexts for the purpose of increasing competence.

Program Learning Outcomes

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

- Apply and analyze rhetorical principles for a variety of purposes adapting to audience and context.
- Understand the theoretical and practical relationships between and among symbols, culture and gender to competently create, interpret and/or evaluate messages.

Required Courses (18-19 units)		Units
COM-1*/1H*	Public Speaking/Honors	3
COM-9*/9H*	Interpersonal Communication/ Honors	3
Electives from Group A		3
Electives from Group B		6
Electives from Group C		3-4

Electives Group A (3 units)		Units
COM-3*	Argumentation and Debate	3
COM-6*	Dynamics of Small Group Communication	3

Electives Group B (6 units)		Units
Any course not applied in group A		
COM-2*	Persuasion in Rhetorical Perspective	3
COM-7*	Oral Interpretation of Literature	3
COM-12*	Intercultural Communication	3
COM-20*	Introduction to Communication Theory	3
JOU-7*	Mass Communications	3

Electives Group C (3-4 units)		Units
Any course not applied in group A or B above		
COM-11*	Storytelling	3
COM-13*	Gender and Communication	3
ANT-2*/2H*	Cultural Anthropology/Honors	3
ENG-1B*/1BH*	Critical Thinking and Writing/Honors	4
MAT-12*/12H*	Statistics/Honors Statistics	4
PSY-1*/1H*	General Psychology/Honors	3
SOC-1*/1H*	Introduction to Sociology/Honors	3

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Arts for Transfer Degree

The Associate in Arts in Communication Studies for Transfer degree awarded upon completion of 60 semester CSU-transferable units; the California State University-General Education-Breadth pattern (CSU GE-Breadth) or the Intersegmental General Education Transfer Curriculum (IGETC) pattern; a minimum of 18 semester or 27 quarter units in the major or area of emphasis as determined by the community college district; obtainment of a minimum grade point average (GPA) of 2.0; earn a grade of "C" or better in all courses required for the major or area of emphasis.

COMPUTER SCIENCE (IGETC) NAS650

The Associate in Science in Computer Science for Transfer degree provides a solid preparation for transfer majors in computer science including an emphasis on object oriented programming logic in C++, computer architecture, calculus and calculus based physics. The intent of this degree is to assist students in seamlessly transferring to a CSU. With this degree the student will be prepared for transfer to the university upper division level in preparation for the eventual conferral of the Bachelor's Degree in Computer Science. The degree aligns with the approved Transfer Model Curriculum (TMC) in Computer Science.

Program Learning Outcomes

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

- Write programs utilizing the following data structures: arrays, records, strings, linked lists, stacks, queues, and hash tables.
- Write and execute programs in assembly language illustrating typical mathematical and business applications.
- Demonstrate different traversal methods of trees and graphs.

Required Courses (29 units)		Units
CSC/CIS-5	Programming Concepts and Methodology I: C++	4
CSC/CIS-7	Discrete Structures	3
CSC/CIS-11	Computer Architecture and Organization: Assembly	3
CSC/CIS-17A	Programming Concepts and Methodology II: C++	3
MAT-1A*	Calculus I	4
MAT-1B*	Calculus II	4
PHY-4A*	Mechanics	4
PHY-4B*	Electricity and Magnetism	4

*Courses may also be used to fulfill general education requirements for the IGETC pattern, please confer with a counselor.

Associate in Science for Transfer Degree

The Associate in Science in Computer Science 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) 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.

EARLY CHILDHOOD EDUCATION (CSUGE) NAS529 (IGETC) NAS530

This program focuses on the theory and practice of early childhood care and education for children from birth to age eight for occupational preparation. The course of study will include the basic principles of educational and developmental psychology; the art of observing, teaching and guiding young children; planning and administration of developmentally appropriate inclusive educational activities; school safety and health issues; and the social and emotional foundations of early care and education. Students completing this program will have the potential of obtaining occupations in educational settings such as infant/toddler caregivers; preschool teachers; family home childcare providers; master teachers, site supervisors, program directors, child life specialists, and social services workers.

Program Learning Outcomes

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

- Develop, implement, and evaluate developmentally appropriate thematic and emergent curriculum for children who are typical and atypical in the areas of physical, cognitive, language, creative and social/emotional growth.
- Develop and apply appropriate practices and effective techniques that respect the cultural diversity of young children and their families.
- Integrate an educational philosophy into classroom practices that reflects a personal belief supportive of theoretical principles regarding how and why young children should receive early educational experiences.
- Develop and implement a system of ongoing observational practices that contributes toward the creation of learning environments conducive to the emergence of curriculum that adapts to the evolving needs of children.

Required Courses (25 units)		Units
EAR-19	Observation and Assessment In Early Childhood Education	3
EAR-20*	Child Growth and Development	3
EAR-24	Introduction to Curriculum	3
EAR-25	Teaching in a Diverse Society	3
EAR-26	Health, Safety and Nutrition	3
EAR-28	Principles and Practices of Teaching Young Children	3
EAR-30	Practicum in Early Childhood Education	4
EAR-42*	Child, Family, and Community	3

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Science for Transfer Degree

The Associate in Science in Early Childhood Education 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.

ENGLISH

(CSUGE) NAA648
(IGETC) NAA649

The Associate in Arts in English for Transfer degree is a curricular pattern designed specifically to transfer students as English majors with junior status to the CSU system. Though the Associate in Arts in English for Transfer also provides broad general preparation for English majors entering any four-year university, students must consult the specific requirements of any non-CSU campus to which they are applying. Students earning the Associate in Arts in English for Transfer will analyze, interpret, and synthesize diverse texts in order to construct well-supported academic arguments and literary analyses, and they will encounter interpretive questions to which there are multiple plausible answers. Students earning this degree will also have exposure to a variety of literary genres and periods and will be able to illustrate a basic understanding of the ways that literature can embody cultural, intellectual, and artistic trends.

Program Learning Outcomes

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

- Read a variety of literary texts (fiction, poetry, drama, literary non-fiction) with understanding and insight.
- Demonstrate critical thinking skills about literary texts, including the ability to construct and test interpretive hypotheses, analyze rival hypotheses, and recognize interpretive problems to which literary texts give rise.
- Write analytical or argumentative essays on literary texts that demonstrate effective stylistic, organizational, and rhetorical control, support claims with sound textual evidence, and employ correct MLA citation methods.
- Demonstrate an awareness of the relationship between literature and culture, including a recognition of literature as a product of as well as a contribution to human history.

Required Courses (19 units)		Units
ENG-1B*/1BH*	Critical Thinking and Writing/Honors	4
List A	Choose from the list below	6
List B	Choose from the list below	6
List C	Choose from the list below	3

List A Choose two courses from the following (6 units):		Units
ENG-6*	British Literature I: Anglo-Saxon through Eighteenth Century	3
ENG-7*	British Literature II: Romanticism through Modernism/Post-Modernism	3
ENG-14*	American Literature I: Pre-Contact through Civil War	3
ENG-15*	American Literature II: 1860 to the Present	3
ENG-40*	World Literature I: From Ancient Literatures to the Seventeenth Century	3
ENG-41*	World Literature II: Seventeenth Century Through the Present	3

List B Choose two courses from the following (6 units)		Units
Any course from List A not already used		
ENG/HUM-8*	Introduction to Mythology	3
ENG-11*	Creative Writing	3
ENG-44*	Poetry from the Twentieth Century to the Present	3

List C Choose one course from the following (3 units)		Units
Any course from List A and List B not already used		
ENG-9*	Introduction to Shakespeare	3
ENG-10	Special Studies in Literature	3
ENG-20*	Survey of African American Literature	3
ENG/HUM-23*	The Bible as Literature	3
ENG-30*	Children's Literature	3
ENG-35*	Images of Women in Literature	3
ENG-45*	Modern Drama	3
ENG-48*	Short Story and Novel from the Twentieth Century to the Present	3
COM-7*	Oral Interpretation of Literature	3
THE-3*	Introduction to Theater	3

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Arts for Transfer Degree
The Associate in Arts in English 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.

ENVIRONMENTAL SCIENCE (IGETC) NAS893

The Associate in Science in Environmental Science for Transfer Degree (AS-T in Environmental Science) introduces the concepts and principles upon which environmental knowledge is based including the biological, chemical, and physical concepts underlying scientific theory and application to environmental issues. Students will develop skills for critical/analytical thinking, perceptive reading/observation and interpretation to apply to environmental concerns affecting our everyday lives. The AS-T in Environmental Science provides students with a core curriculum to develop key skills for applying biological, physical, and chemical principles to the study of the environment and the developing solutions to environmental problems.

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

- Examine the impact of humankind on the environment from scientific, sociological, political, and economic viewpoints both locally and globally.
- Apply concepts and implement skills learned in the sciences, mathematics, and humanities to real-world environmental issues.
- Demonstrate an ability to examine scientific evidence demonstrating how human activities affect many ecosystems and recommend alternatives to present practices.

Required Courses (40-41 Units)		Units
BIO-60* (Formerly BIO-11)	Introduction to Molecular and Cellular Biology	5
CHE-1A*	General Chemistry I	5
BIO-61* (Formerly BIO-12)	Introduction to Organismal and Population Biology	5
OR		
CHE-1B*	General Chemistry II	5

List A (14-15 Units)		Units
BIO-19* (Formerly BIO-36)	Environmental Science	3
GEG-1*/1H*	Physical Geography/Honors	3
AND		
GEG-1L*	Physical Geography Laboratory	1
MAT-12*/12H*	Statistics/Honors	4
OR		
PSY/SOC-48*	Statistics for the Behavioral Sciences	3
MAT-1A*	Calculus I	4

List B (11 Units)		Units
ECO-8*/8H*	Principles of Microeconomics/Honors	3
PHY-2A*+2B*	General Physics I and II	8
OR		
PHY-4A*+4B*	Mechanics AND Electricity & Magnetism	8

*Courses may also be used to fulfill general education requirements for the IGETC for STEM pattern, please confer with a counselor.

Associate in Science for Transfer Degree
The Associate in Science in Environmental Science 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) for STEM requirements and with a minimum grade point average of 2.0. All courses in the major must be completed with a grade of "C" or better.

Total Units: 40-41

HISTORY (CSUGE) NAA744 (IGETC) NAA745

The Associate in Arts in History for Transfer Degree is designed to prepare the student for transfer to institutions of higher education and specifically intended to satisfy the lower division requirements for the Baccalaureate in Arts in History at a California State University. This degree is designed to prepare students to transfer seamlessly to a CSU.

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

- Describe, interpret, and evaluate a variety of sources of historical information.
- Demonstrate an understanding of the nature of historical processes.
- Describe and analyze economic, intellectual, political and social developments in history.
- Evaluate the role of individuals, institutions, and cultures in view of historical events in a global context.

Required Courses (18 units)		Units
HIS-6*/6H*	Political and Social History of the United States/Honors	3
HIS-7*/7H*	Political and Social History of the United States/Honors	3
HIS-1*	History of World Civilizations I	3
HIS-2*	History of World Civilizations II	3
List A	Choose from the list below	3
List B	Choose from the list below	3

List A Select one course from the following (3 units)		
COM-12*	Intercultural Communication	3
ENG-20*	Survey of African American Literature	3
HIS-14*	African American History I	3
HIS-25*	History of Mexico	3
HIS-31*	Introduction to Chicana/o Studies	3
HIS-34*	History of Women in America	3
POL-4*/4H*	Introduction to World Politics/Honor	3
SOC-10*	Race and Ethnic Relations	3

List B Select one course from the following (3 units)

ECO-7*/7H*	Principles of Macroeconomics/Honors	3
GEG-2*	Human Geography	3
HIS-26*	History of California	3
HUM-4*/4H*	Arts and Ideas: Ancient World through the Late Medieval Period/Honors	3
HUM-5/5H*	Arts and Ideas: Renaissance through the Modern Era/Honors	3
POL-1*/1H*	American Politics/Honors	3
POL-2*	Comparative Politics	3
SOC-1*/1H*	Introduction to Sociology/Honors	3

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

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

KINESIOLOGY (CSUGE) NAA890 (IGETC) NAA891

This degree is designed to facilitate the student's passage from Norco College to the California State University System with an Associate in Arts in Kinesiology for Transfer Degree. 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 (20-23 units)		Units
KIN-10*	Introduction to Kinesiology	3
BIO-50A*	(Formerly AMY-2A) Anatomy and Physiology I	4
BIO-50B*	(Formerly AMY-2B) Anatomy and Physiology II	4

Movement-Based Courses

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 (6-9 units)

BIO-4*	(Formerly 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
OR		
PSY/SOC-48*	Statistics for the Behavioral Sciences	3
PHY-2A*	General Physics I	4
OR		
PHY-4A*	Mechanics	4

*Courses may also be used to fulfill general education requirements for the CSU GE or IGETC pattern, please confer with a counselor.

Total Units: 20-23

The Associate in Arts 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 "P") or better.

MATHEMATICS (CSUGE) NAS719 (IGETC) NAS720

The Associate in Science Degree in Mathematics for Transfer is designed to prepare the student for transfer to institutions of higher education and specifically intended to satisfy the lower division requirements for the Baccalaureate Degree in Mathematics at a California State University (but does not guarantee acceptance to a particular campus or major). It will also provide the student with a sufficient academic basis from which to pursue a career in mathematics, statistics, actuarial science, and education.

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

- Reason mathematically both abstractly and computationally.
- Create and analyze mathematical models.

Required Courses (19-20 units)		Units
MAT-1A*	Calculus I	4
MAT-1B*	Calculus II	4
MAT-1C*	Calculus III	4
Choose 2 courses from the following with at least 1 course from Group A		7-8

Group A		Units
MAT-2*	Differential Equations	4
MAT-3*	Linear Algebra	3

Group B		Units
PHY-4A*	Mechanics	4
CSC/CIS-5	Fundamentals of Programming Logic using C++	4

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Science for Transfer Degree
The Associate in Science in Mathematics 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) 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.

MUSIC (CSUGE) NAA704 (IGETC) NAA705

The Associate in Arts in Music for Transfer Degree is designed to prepare the student for transfer to four-year institutions of higher education and is specifically intended to satisfy the lower division requirements for the Baccalaureate in Arts in Music at the California State University. This degree is designed to prepare students to demonstrate competence and discipline in the study of music theory, music analysis, music composition, and musicianship skills, and demonstrate proficiency in ensemble skills and solo performance skills. Completion of this curriculum will demonstrate commitment to the serious study of Music in practice and in theory and provide comprehensive preparation for upper division work.

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

- Demonstrate ensemble specific performance practices and professional standards of conduct expected of ensemble participants.
- Perform solo literature with an accompanist (if appropriate) using stylistically accurate rhythm, pitch, diction (or articulation) and musical expression.
- Demonstrate the ability to "audiate" a musical score by sight reading and performing complex rhythms and by sightsinging chromatic, modulating, and post-tonal melodies.
- Demonstrate the ability to recognize patterns and musical function by aurally identifying and transcribing scales, modes, post-tonal melodies, and complex harmonic progressions.
- Analyze chromatic harmonic progressions that include modulation using 20th century techniques.
- Write, analyze, and compose music using 20th century techniques, such as: tone row, set theory, augmented sixth chords, pandiatonicism and polytonalism.
- Demonstrate keyboard proficiency at the level required to perform theoretical concepts studied in music theory courses.

Required Courses (24 Units)		Units
MUS-3	Fundamentals of Music	4
MUS-4	Music Theory I	4
MUS-5	Music Theory II	4
MUS-6	Music Theory III	4
Applied Music: 1 unit per semester for a total of 4 semesters from the following:		4
MUS-87	Applied Music Training (1 unit per semester for a total of 4 units)	4
Ensemble: 1 unit per semester for a total of semesters from among the following:		4
MUS-31	College Choir,	1
MUS-70	Guitar Lab Ensemble,	1
MUS-P70	Guitar Lab Ensemble II,	1
MUS-71	College Chorus,	1
MUS-85	Summer Chamber Ensembles,	1

*Course may also be used to fulfill general education requirements for the CSU GE or IGETC pattern, please confer with a counselor.

Associate in Arts for Transfer Degree
The Associate in Arts in Music for Transfer degree will be awarded upon completion of coursework totaling 60 California State University (CSU) transferable units including the 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.

Total Units: 24

NOTES:
Students in the Associate in Arts in Music for Transfer degree should be encouraged to study the courses below as additional preparations for upper-division music study:

MUS-32A,	Class Piano I,	1
MUS-32B,	Class Piano II,	1
MUS-32C,	Class Piano III,	1
MUS-32D,	Class Piano IV,	1
MUS-53,	Keyboard Proficiency,	1

PHILOSOPHY (CSUGE) NAA715 (IGETC) NAA717

The Associate in Arts in Philosophy for Transfer degree is designed to prepare the student for transfer to four-year institutions of higher education and specifically intended to satisfy the lower division requirements for the Baccalaureate in Arts in Philosophy at the California State University. This degree is designed to prepare students to critically analyze the work of major figures in philosophy, evaluate topics in the key areas of philosophy, clearly express philosophical ideas both in writing and orally, and demonstrate an understanding of these ideas through their application to specific philosophical problems.

Program Learning Outcomes

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

- Analyze and critically evaluate the work of major figures in philosophy
- Compare and contrast different philosophical views across historical periods and contexts of human experience
- Evaluate the most important topics in key areas of philosophy: theory of knowledge, metaphysics, ethics
- Demonstrate the ability to apply philosophical ideas to philosophical problems
- Express philosophical ideas and defend them in argument, both in writing and orally

Required Courses (18 units)		Units
PHI/MAT-32*	Introduction to Symbolic Logic	3
PHI-10*/10H*	Introduction to Philosophy/Honors	3
or		
PHI-12*	Introduction to Ethics: Contemporary Moral Issues	3
List A	Choose from the list below	3
List B	Choose from the list below	6
List C	Choose from the list below	3

List A Take 3 units from the following:

Any course from the above required courses that has not been used

or		
PHI-33*	Introduction to Social and Political Philosophy	3
PHI/HUM 35*	Philosophy of Religion	3

List B Take 6 units from the following:

Any course from List A that has not been used

or		
PHI-11*	Critical Thinking	3

List C Take 3 units from the following:

Any course from List A or B that has not been used or

PHI-15*	Bio-Medical Ethics	3
HIS-1*	History of World Civilizations I	3
HIS-2*	History of World Civilizations II	3
HUM-4*/4H*	Arts and Ideas: Ancient World through the Late Medieval Period/Honors	3
HUM-5*/5H*	Arts and Ideas: The Renaissance through the Modern Era/Honors	3
HUM-10*/10H*	World Religions/Honors	3

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Arts for Transfer Degree

The Associate in Arts in Philosophy for Transfer degree will be awarded upon completion of 60 California State University (CSU) transferable units including a minimum of 18 semester units or 27 quarter units in the major as determined by the community college district and the Intersegmental General Education Transfer Curriculum (IGETC) or California State University General Education (CSUGE) requirements and with a minimum grade point average of 2.0. All courses in the major must be completed with a grade of "C" or better.

PHYSICS (CSUGE) NAS638 (IGETC) NAS640

The Associate in Science in Physics for Transfer degree provides a foundation in physics and mathematics for students planning to transfer into a baccalaureate program in Physics. Successful completion of the transfer degree in Physics guarantees student acceptance to a local California State University to pursue a baccalaureate degree in Physics.

Program Learning Outcomes

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

- Apply appropriate physical laws and mathematical techniques to analyze various physical situations
- Perform various scientific experiments and to analyze data to check agreement with theoretical predictions

Required Courses (24 units)		Units
PHY-4A*	Mechanics	4
PHY-4B*	Electricity and Magnetism	4
PHY-4C*	Heat, Light and Waves	4
MAT-1A*	Calculus I	4
MAT-1B*	Calculus II	4
MAT-1C*	Calculus III	4

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Science for Transfer Degree

The Associate in Science in Physics for Transfer degree will be awarded upon completion of coursework totaling 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.

POLITICAL SCIENCE (CSUGE) NAA754 (IGETC) NAA755

The Associate in Arts in Political Science for Transfer degree is a curricular pattern designed specifically to transfer students as Political Science majors with junior status to the CSU system. Though the Associate in Arts in Political Science for Transfer also provides broad general preparation for Political Science majors entering any four-year university, students must consult the specific requirements of any non-CSU campus to which they are applying. Students earning the Associate in Arts in Political Science for

Transfer will be provided with a deep appreciation of the social, economic and cultural dimensions of politics and encouraged to approach all political issues and ideas critically.

Program Learning Outcomes

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

- Describe, explain, and evaluate American political institutions, political systems, policies and processes.
- Identify and analyze the major current global and domestic political theories and ideologies.
- Objectively explain critical issues in American, Comparative and World politics and be able to use theories and debates to argue convincingly in defense of a position, selecting examples to illustrate points and organizing these appropriately.
- Employ a variety of current social scientific methodologies in the research, analysis and evaluation of data.
- Demonstrate critical thinking ability including the understanding of alternative explanations and the forming of conclusions from the data presented.

Required Courses (18-19 units)		Units
POL-1*/1H*	American Politics/Honors	3
LIST A	Choose from the list below	9-10
LIST B	Choose from the list below	6

LIST A Choose three courses from the following (9-10 units)		
POL-2*	Comparative Politics	3
POL-4/4H*	Introduction to World Politics/Honors	3
POL-11*	Political Theory	3
MAT-12*/12H*	Statistics/Honors Statistics	4

LIST B Choose two courses from the following (6 units)		
Any course from List A not already used or		
POL-5*	Law and Politics	3
POL-13*	Introduction to American Foreign Policy	3
ECO-7*/7H*	Principles of Macroeconomics/Honors	3
HIS-7*/7H*	Political and Social History of the US/Honors	3

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Arts for Transfer Degree

The Associate in Arts in Political Science 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 and with a minimum grade point average of 2.0. All courses in the major must be completed with a grade of "C" or better.

PSYCHOLOGY

(CSUGE) NAA566
(IGETC) NAA568

The Associate in Arts in Psychology for Transfer degree is designed to prepare students who wish to transfer for the purposes of pursuing studies in psychology. Specifically, this degree allows students to complete various lower division courses in preparation for obtaining a baccalaureate degree in psychology at a California State University.

Program Learning Outcomes

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

- Understand and describe key concepts, principles, and applications in the field of psychology and its content domains.
- Apply information literacy and use scientific reasoning to interpret, design, and conduct basic psychological research and understand psychological phenomena.
- Use APA style to communicate the results of research in written reports and oral presentations.

Required Courses (19-20 units)		Units
PSY-1*/1H*	General Psychology/Honors	3
PSY-2*	Biological Psychology	3
PSY-9*	Developmental Psychology	3
PSY-50*	Research Methods in Psychology	4
PSY-48*/SOC-48*	Statistics for the Behavioral Sciences	3
OR		
MAT-12*/12H*	Statistics/Honors	4

List A	Choose from the list below	3
List A (3 units)		Units
PSY-8*	Introduction to Social Psychology	3
PSY-33*	Theories of Personality	3
PSY-35*	Abnormal Psychology	3

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Arts for Transfer Degree

The Associate in Arts in Psychology for Transfer degree will be awarded upon completion of coursework totaling 60 California State University (CSU) transferable units including the 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.

Total Units: 19-20

SOCIOLOGY

(CSUGE) NAA695
(IGETC) NAA696

The Associate in Arts in Sociology for Transfer degree is designed to prepare the student for transfer to four-year institutions of higher education and specifically intended to satisfy the lower division requirements for the Baccalaureate Degree in Sociology at a California State University. It will also provide the student with a sufficient academic basis from which to pursue a career in the social science professions. The student will be afforded the opportunity to study the nature of the human affinity for aggregation and the complexities of societal organization. The breadth of Sociology will be examined to include the historical and contemporary theory and research as the basis from which to gain an in-depth awareness and understanding of the world in which we live.

Program Learning Outcomes

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

- Demonstrate an awareness and understanding of the historical and contemporary theoretical frameworks that form the basis of Sociological study.
- Demonstrate the utility of past and present sociological research and the research methodologies that form the basis of sociological inquiry.
- Demonstrate the ability to be academically proficient in at least two specific areas of sociological emphasis, i.e., Marriage and Family, Race/Ethnicity, Culture, Crime and Deviance, Social Problems.
- Demonstrate an understanding of the basic principles for at least one of the social sciences beyond Sociology, i.e., Anthropology or Psychology.

Required Courses (18-19 units)		Units
SOC-1*/1H*	Introduction to Sociology/Honors	3
Electives from Group A		6-7
Electives from Group B		6
Electives from Group C		3

Electives Group A (6-7 units)		Units
MAT-12*/12H*	Statistics/Honors	4
SOC-2*	American Social Problems	3
SOC-50*	Introduction to Social Research Methods	3

Electives Group B (6 units)		Units
SOC-10*	Race and Ethnic Relations	3
SOC-12*	Marriage Family Relations	3
SOC-20*	Introduction to Criminology	3

Electives Group C (3 units)		Units
SOC-3*	Social Inequality	3
SOC-15*	Women in American Society	3
ANT-2*/2H*	Cultural Anthropology/Honors	3
PSY-1*/1H*	General Psychology/Honors	3
PSY-8*	Introduction to Social Psychology	3

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Arts for Transfer Degree

The Associate in Arts in Sociology 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.

SPANISH (CSUGE) NAA707 (IGETC) NAA708

The Associate in Arts in Spanish for Transfer provides transfer majors with a strong foundation not only in the four basic language skills (listening comprehension, reading comprehension, speaking and writing), but also in the civilization and culture of Spain and Latin America. The degree emphasizes the acquisition of communicative competence and the development of intercultural awareness, appreciation and understanding. Additionally, the Spanish courses align well with preparation for transfer majors in related fields such as liberal arts, language arts and linguistics, and complement majors in international relations, political science, business, education, sociology and other areas of study at UC, CSU, and private colleges and universities.

Program Learning Outcomes

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

- Demonstrate critical thinking skills in Spanish by interpreting and articulating ideas, questions, opinions and information at the high-intermediate level, both orally and in writing.
- Analyze the practices, products and perspectives of the Spanish-speaking countries and peoples throughout the world through a comparison of Hispanic cultures and their own.

Required Courses (20 units)		Units
SPA 1*	Spanish 1	5
SPA 2*	Spanish 2	5
SPA 3*	Spanish 3	5
SPA 4*	Spanish 4	5

List A: Select a minimum of one course (3 units)		Units
SPA 8*	Intermediate Conversation	3
SPA 11*	Spanish Culture and Civilization	3
SPA 12*	Latin American Culture and Civilization	3

Total Units		23

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Arts for Transfer Degree

The Associate in Arts in Spanish for Transfer degree will be awarded upon completion of coursework totaling 60 California State University (CSU) transferable units including the 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 btetter.

**Note 2: If a student places out of any course and is not awarded units for that course, the student will have to take additional units to compensate for the course /units needed to reach at least 18 total units in the major (per Title 5 regulations). Appropriate course substitutions may be from the List A or the courses listed below. Any other course substitution must be approved by the Spanish department.

*** Note 3: If a student took the AP Spanish Literature and Culture exam and obtained the score of 3, 4, or 5, 3 units of credit can be applied under List A.

ANT-2/2H	Introduction to Cultural Anthropology/Honors	CSU Area D
ANT-5	Cultures of Ancient Mexico	CSU Area D
ANT-8	Language and Culture	CSU Area D
ART-13	Pre-Columbian Art History	CSU Area C1
ART-14	Latin American Art: Colonial to the Present	CSU Area C1
COM-12	Intercultural Communication	CSU Area D
GEG-2	Human Geography	CSU Area D
HIS-25	History of Mexico	CSU Area C2 or D
HIS-31	Introduction to Chicano/a Studies	CSU Area C2 or D
SOC-1/1H	Introduction to Sociology/ Honors	CSU Area D
SOC-10	Race and Ethnic Relations	CSU Area D

STUDIO ARTS

(CSUGE) NAA693
(IGETC) NAA694

The Associate in Arts in Studio Arts for Transfer provides a solid preparation for transfer majors in the various areas of studio art, including design, drawing, and painting. This Studio Arts degree has an emphasis in Art History. Additionally, the studio courses align well with preparation for transfer majors in related fields such as sculpture, photography, and other areas of study at UC, CSU, and private colleges and universities.

Program Learning Outcomes

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

- Demonstrate proficient technical and creative skills with a variety of art materials.
- Understand works of art and design and the artistic contributions of diverse peoples through critical discussion and written assignments.
- Demonstrate, through the analysis of aesthetic and cultural values, an understanding of the contribution of art and design to human experience.

Required Courses (24 units)		Units
ART-2*/2H*	History of Western Art: Renaissance through Contemporary/Honors	3
ART-17	Beginning Drawing	3
ART-22	Basic Design	3
ART-24	Three Dimensional Design	3
Electives	Choose from List A	3
Electives	Choose from List B	9

List A: Select 1 course (3 units)		Units
ART-1*	History of Western Art: Prehistoric, Ancient, and Medieval	3
ART-5*	History of Non-Western Art	3
ART-9*	African Art History	3

List B: Select 3 courses (9 units)		Units
ART-20	Beginning Sculpture	3
ART-23	Color Theory and Design	3
ART-26	Beginning Painting	3
ART-36A	Computer Art-Introduction	3
or one of the following:		
ART-18	Intermediate Drawing	3
ART-40A	Figure Drawing-Introduction	3

*Courses may also be used to fulfill general education requirements for the CSUGE or IGETC pattern, please confer with a counselor.

Associate in Arts for Transfer Degree

The Associate in Arts in Studio Arts for Transfer degree will be awarded upon completion of coursework totaling 60 California State University (CSU) transferable units including the 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.

PROGRAMS AND CERTIFICATES
R=Riverside; M=Moreno Valley; N=Norco

ACCOUNTING

See BUSINESS ADMINISTRATION

ADMINISTRATION OF JUSTICE

The following certificate may lead to employment competency, but does not lead to an Associate of Science Degree:

CRIME SCENE INVESTIGATION (NR) NCE619

This certificate is designed to offer a basic pattern of coursework that will prepare the participant to enter the professional field of crime scene investigation and forensic science at the assistant level. The successful participant will gain sufficient skills and understanding of the criminal investigative procedure to assist professional Forensic Identification Technicians, within the criminal justice system, to properly gather, analyze, prepare, and present crime scene evidence.

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

- Demonstrate an advanced knowledge of the principle components of criminal law and the criminal justice system.
- Demonstrate an advanced knowledge of the procedures and process of collecting, preserving, and cataloging physical evidence from a crime scene.
- Demonstrate an advanced ability to use computer technology to report the collection, preservation, and presentation of crime scene evidence.

Required Courses (15 units)		Units
ADJ-2	Principles and Procedures of the Justice System	3
ADJ-3	Concepts of Criminal Law	3
ADJ-13	Criminal Investigation	3
ADJ-14	Advanced Criminal Investigation	3
ANT-10	Forensic Anthropology	3

ARCHITECTURE

The following certificate may lead to employment competency, but does not lead to an Associate of Science Degree:

ARCHITECTURAL GRAPHICS (N) NCE787

The Architectural Graphics certificate prepares students with technical communication skills, and the knowledge and craft of two dimensional drafting solutions for architecturally related industry applications. Students learn to present graphic solutions, provide design refinements, modifications, and delineations of working technical drawings using current Computer-Aided Drafting CAD methods and techniques with an understanding of industry standards. Certificate completers are able to secure drafting technician positions in areas related to architecture, environmental design, and to assist in the development of architectural construction documents for light frame structures, under the supervision of a professional.

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

- Complete a set of residential working drawings, which may include first floor drawings, second floor drawings, foundation drawings, elevations, cross-sections, framing, electrical drawings, and structural detail.
- Demonstrate an ability to apply and integrate computer technology into the design process to achieve a desired result.

Required Courses (9 units)		Units
ARE-24	Architectural Drafting	3
ENE-21	Drafting	3
ENE-30	Computer-Aided Drafting (CAD)	3

AUDIO PRODUCTION

See MUSIC INDUSTRY STUDIES

BUSINESS ADMINISTRATION

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

- Use technology to analyze business decisions and to enhance business communications.
- Apply basic business and accounting calculations and analyses.
- Have an understanding of legal practices relating to business.
- Apply sound management practices.

Major Core Requirements:

Required Courses (18 units)		Units
ACC-1A	Principles of Accounting I	3
BUS-10	Introduction to Business	3
BUS-18A	Business Law I	3
BUS-20	Business Mathematics	3
BUS-22	Management Communications	3
or BUS-24	Business Communication	3
CIS-1A	Introduction to Computer Information Systems	3
or		
BUS/CIS/ CAT-3	Computer Applications for Business	3

Major Concentration Requirements (12 units)

(In addition to Business Administration Major Core Requirements of 18 units noted above choose another 12 units selected from list below.)

Accounting	12
General Business	12
Logistics Management	12
Management	12
Real Estate	12

NOTE: Students must complete all Business Administration Major Core Requirements and must complete Major Concentration Requirements (total of 30 units) in order to receive the certificate in the concentration area of their choice.

Associate of Science Degree

The Associate of Science Degree in Business Administration with a Major Concentration will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

ACCOUNTING CONCENTRATION (MNR)

NAS523/NAS523B/NAS523C/NCE523

This program prepares individuals to practice the profession of accounting and to perform related business functions. This includes instruction in accounting principles and theory, financial accounting, managerial accounting, cost accounting, budget control, tax accounting, legal aspects of accounting, reporting procedures, statement analysis, planning and consulting, business information systems, accounting research methods, professional standards and ethics, and applications to specific for-profit, public, and non-profit organizations.

Program Learning Outcomes

In addition to outcomes for the Businesses Administration certificate, on successful completion of the Accounting concentration, students should be able to accomplish at least three of the following eight tasks:

- Apply accounting principles related to a variety of accounting specialties, such as payroll accounting, cost accounting, income tax accounting, and computerized accounting.
- Analyze and solve accounting issues and problems for a variety of business entities.
- Analyze and interpret data and reports for a variety of business entities.
- Develop and apply principles of moral judgment and ethical behavior to business situations.

Business Administration Major Core Requirements 18

Required for this concentration		3
ACC-1B	Principles of Accounting II	3
and		
Select another 9 units from the following:		9
ACC-61	Cost Accounting	3
ACC-62	Payroll Accounting	3
ACC-63	Income Tax Accounting	3
ACC-65	Computerized Accounting	3
ACC-66	Non-Profit and Governmental Accounting	3
ACC-200	Accounting Work Experience	1-2-3-4
BUS/ MAG-47	Applied Business and Management Ethics	3

BUSINESS INFORMATION WORKER (NR)

NCE522/NAS522

The Business Information Worker Certificate of Achievement is designed to prepare students for entry-level and administrative support in a variety of fields and businesses.

Certificate Program

Program Learning Outcomes

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

- Demonstrate computer literacy with respect to computer hardware and software applications.
- Apply standard rules of business conduct and customer service.
- Develop specialized keyboarding skills at an employable level of accuracy and speed.
- Use word processing, spreadsheet, presentation graphics, and scheduling software to perform business and office tasks.
- Apply oral and written communication skills in various business and office environments.
- Design, modify, query, and manipulate lists (database and information in workbooks) using common formulas, data and what if scenario tools to organize and convey information.

Required Courses (19 units)		Units
CAT-1A	Business Etiquette	1
CAT/CIS/BUS-3	Computer Applications for Business	3
CAT-31	Business Communications	3
CAT-51	Intermediate Typewriting/Document Formatting	3
CAT/CIS-90	Microsoft Outlook	3
CAT 93	Computers for Beginners	3
CAT/CIS-98A	Introduction to Excel	1.5
CAT/CIS-98B	Advanced Excel	1.5

Associate in Science Degree

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

GENERAL BUSINESS CONCENTRATION (MNR)

NAS524/NAS524B/NAS524C/NCE524

This program focuses on the general study of business, including domestic, international and electronic, and the important ways in which business impacts our daily lives. The program will prepare individuals to apply business principles and techniques in various career settings and to gain an understanding of business situations that affect their personal and working lives. This includes the buying, selling and production of goods and services, understanding business organizations, general management, and employee motivation strategies, basic accounting principles, the economy, and marketing.

Program Learning Outcomes

In addition to outcomes for the Businesses Administration certificate, on successful completion of the General Business concentration, students should be able to accomplish four of the following seven tasks:

- Explain the managerial applications of accounting reports and ratios to the business enterprise.
- Analyze the law as it pertains to business organizations and to determine the legal management of the various forms of law.
- Analyze the business elements that comprise the logistics function.
- Develop and apply principles of moral judgment and ethical behavior to business situations.
- Anticipate and pose problems relative to understanding and supervising personnel.
- Identify and analyze human relations techniques appropriate to a managerial role.
- Explain and develop the marketing mix, including an analysis of the marketing mix variables—product, place, price, and promotion.

Business Administration Major Core Requirements		**18**
Select another 12 units from the following:		12
ACC-1B	Principles of Accounting II	3
or		
ACC-38	Managerial Accounting	3
BUS-18B	Business Law II	3
BUS-40	International Business-Principles	3
BUS/ MAG-47	Applied Business and Management Ethics	3
BUS-80	Principles of Logistics	3
BUS-200	Business Administration Work Experience	1-2-3-4
MAG-51	Elements of Supervision	3
MAG-53	Human Relations	3
MKT-20	Principles of Marketing	3

LOGISTICS MANAGEMENT CONCENTRATION (N)
NAS580/NAS580B/NAS580C/NCE580

This program prepares students for entry into or career growth within the logistics industry, and ongoing study of the field. The focus is on integrated logistics, a necessity for management of effective and efficient supply chains. Logistics disciplines covered include warehousing, transportation, service contracting, purchasing, global logistics, etc

Program Learning Outcomes

In addition to outcomes from the core Business Administration courses, and upon successful completion of the Logistics concentration, students should be able to do four to five of the following eight things:

- Compare roles and objectives of the logistics disciplines
- Understand how logistics functions can interact to efficiently use total personnel, facilities and equipment.
- Contribute knowledge needed by multidisciplinary teams to effectively integrate and exceed end user (customer) expectations
- Analyze, prepare, file and process claims when unavoidable freight disputes arise
- Explain how the overall flow of goods, services and information can be optimized to satisfy customer and business goals
- Identify 3rd party logistics provider and client needs in negotiations, bidding and contracts, as well as legal and regulatory constraints to integrated logistics
- Describe roles and value added by global logistics intermediaries

Business Administration Major Core Requirements		18
Required for this concentration		3
BUS-80	Principles of Logistics	3
and		
Select another 9 units from the following:		9
BUS-82	Freight Claims	1.5
BUS-83	Contracts	1.5
BUS-85	Warehouse Management	3
BUS-86	Transportation and Traffic Management	3
BUS-87	Purchasing and Supply Management	3
BUS-90	International Logistics	3

Note: Students may petition to have elective credit applied toward this Certificate Concentration for military training, extra-institutional learning, and transfer or articulated courses in logistics disciplines. Students must complete at least 9 units at Norco College from the above list 12 unit Concentration for such credit to apply.

Associate in Science Degree

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

MANAGEMENT CONCENTRATION (MNR)
NAS521/NAS521B/NAS521C/NCE521

This program generally prepares individuals to plan, organize, direct, and control the functions and processes of a firm or organization with an emphasis on people as the most important asset of a business. This program will prepare individuals seeking management positions to be better candidates for promotion, and those already in management positions to improve their management skills and effectiveness. This includes instruction in management practice and theory, human resources management and behavior, interpersonal communications in a business setting, marketing management, and business decision making.

Program Learning Outcomes

In addition to outcomes for the Businesses Administration certificate, on successful completion of the Management concentration, students should be able to:

- Apply sound management practices.
- Analyze and apply appropriate managerial practices in one or more areas of ethics, human resources, quality management, operations, motivation, etc.

Business Administration Major Core Requirements 18

Required for this concentration		3
MAG-44	Principles of Management	3
and		
Select another 9 units from the following:		9
MAG-46	Contemporary Quality Systems Management	3
MAG/ BUS-47	Applied Business and Management Ethics	3
MAG-53	Human Relations	3
MAG-56	Human Resources Management	3
MAG-60	Introduction to Hospitality Management	3
MAG-200	Management Work Experience	1-2-3-4
BUS-48	International Management	3

REAL ESTATE CONCENTRATION (MNR)
NAS527/NAS527B/NAS527C/NCE527

This program prepares individuals to develop, buy, sell, appraise, and manage real property. This includes instruction in land use development policy, real estate law, real estate marketing procedures, agency management, brokerage, property inspection and appraisal, real estate investing, leased and rental properties, commercial real estate, and property management.

Program Learning Outcomes

In addition to outcomes for the Businesses Administration certificate, on successful completion of the Real Estate concentration, the student should be able to do the following:

- Demonstrate the ability to analyze ethical and procedural problems that arise in residential real estate sales transactions from the prospective of buyers, sellers, brokers, appraisers, lenders, and escrow officers.
- Discuss and evaluate real estate marketing and sales techniques.
- Discuss and calculate real estate taxes and solve basic real estate mathematics problems.
- Explain and evaluate methods of financing real estate purchases and securing loans with real estate.
- Demonstrate the ability to analyze the factors that affect real estate values.
- Discuss and evaluate real estate markets and trends.

Business Administration Major Core Requirements 18

Select another 12 units from the following:		12
RLE-80	Real Estate Principles	3
RLE-81	Real Estate Practices	3
RLE-82	Legal Aspects of Real Estate	3
RLE-83	Real Estate Finance	3
RLE-84	Real Estate Appraisal	3
RLE-85	Real Estate Economics	3
RLE-86	Escrow Procedures I	3
RLE-200	Real Estate Work Experience	1-2-3-4

The following certificates may lead to employment competency, but do not lead to an Associate of Science Degree:

ENTREPRENEURSHIP: GETTING STARTED (N) NCE861

This certificate includes courses intended to help students who are interested in pursuing entrepreneurship to develop new ideas, recognize and take advantage of opportunities, as a foundation for creating a new business.

Program Learning Outcomes

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

- Demonstrate an understanding of the entrepreneurial process, from idea generation to commercialization.
- Analyze and evaluate potential business ideas for marketability and success.
- Create and evaluate a comprehensive business plan.
- Outline and construct steps needed to create an effective social marketing campaign for a small business.

Required Courses (10 units)		Units
BUS-12	Opportunity Analysis for Entrepreneurs	2
BUS-13	Developing a Successful Business Plan/Models	2
BUS-14	Social Media and Electronic Marketing for Entrepreneurs	3
BUS-30	Entrepreneurship and Small Business Management	3

ENTREPRENEURSHIP: LEGAL AND FINANCE (N)
NCE864

This certificate includes courses intended to help students who are interested in pursuing entrepreneurship to develop skills in financing, legal issues, and applied accounting and bookkeeping for the small business.

Certificate Program
Program Learning Outcomes

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

- Demonstrate an understanding of the entrepreneurial process, from idea generation to commercialization.
- Demonstrate the ability to apply accounting and bookkeeping for small business principles to a potential business.
- Analyze and evaluate various funding sources for small businesses.
- Outline and evaluate the legal steps and issues necessary for opening a small business.

Required Courses (10 units)		Units
ACC-55	Applied Accounting/Bookkeeping	3
BUS-30	Entrepreneurship and Small Business Management	3
BUS-31	Financing Your Business	2
BUS-33	Business Structure and Legal Issues	2

REAL ESTATE SALESPERSON AND TRANSACTION (N)
NCE854

This program prepares students to buy, sell and lease, and to represent others to buy, sell and lease residential and commercial real estate property. Prepares students to qualify for the California Real Estate Salesperson license and to successfully take the

California Real Estate Salesperson exam. Instruction includes analysis of ethical and procedural real estate problems/types of real estate property ownership and leases; sales contracts and associated documents; required disclosures; land use policy; real estate marketing; real estate financing; and state and federal statutes, regulations and court cases affecting California real estate sales and leases.

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

- Demonstrate the ability to analyze ethical and procedural problems that arise in real estate transactions.
- Discuss and evaluate real estate marketing and sales techniques.
- Explain and evaluate methods of financing and evaluating real estate.
- Demonstrate the ability to analyze state and federal statutes, regulations, and court cases affecting real estate sales.

Required Courses (9 units)		Units
RLE-80	Real Estate Principles	3
RLE-81	Real Estate Practices	3

Select 3 units from the following:

ACC-1A	Principles of Accounting I	3
BUS-18A	Business Law I	3
RLE-82	Legal Aspects of Real Estate	3
RLE-83	Real Estate Finance	3
RLE-85	Real Estate Economics	3

REGISTERED INDIVIDUAL AND SMALL BUSINESS INCOME TAX PREPARER (N) NCE858

U.S. and California income tax principles and tax return preparation as it relates to individuals, sole proprietorships, and other business entities. This course is certified by the California Tax Education Council (CTEC) as fulfilling the 60-hour qualifying education requirement imposed by the State of California for becoming a Registered Tax Preparer.

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

- Prepared federal and state income tax returns for individuals, sole proprietorships, and other business entities.
- Conduct tax research on client issues using both manual and computerized methods.
- Evaluate and propose strategies that minimize income tax obligations.

Required Courses (4 units)		Units
ACC-67	U.S. and California Income Tax Preparation	4

SMALL BUSINESS ACCOUNTING (MNR) NCE859

Upon completion of this certificate, students will be trained and able to perform the basic duties and responsibilities required of an entry level accounting clerk or bookkeeper utilizing accounting software.

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

- Perform a variety of accounting skills such as journalizing, posting, double entry accounting, record adjusting and closing entries and prepare financial statements.
- Use accounting software to prepare financial statements and to analyze and solve problems.
- Recognize the role of ethics in accounting.

Required Courses (6 units)		Units
ACC-65	Computerized Accounting	3

and one of the following:

ACC-1A	Principles of Accounting	3
ACC/CAT-55	Applied Accounting/Bookkeeping	3

SMALL BUSINESS PAYROLL ACCOUNTING (MNR) NCE860

Upon completion of this certificate, students will be trained and able to perform the basic duties and responsibilities required of an entry level payroll accounting clerk.

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

- Analyze, synthesize, and evaluate payroll principles as defined by Social Security Act and understand laws relating to the payment of wages and salaries.
- Analyze and solve problems associated with the calculation and reporting of payroll.
- Accurately apply accounting principles to computerized and manual payroll systems.

Required Courses (6 units)		Units
ACC-62	Payroll Accounting	3

and one of the following:

ACC-1A	Principles of Accounting	3
ACC/CAT-55	Applied Accounting/Bookkeeping	3

BIOLOGY

CALIFORNIA NATURALIST CERTIFICATE NCE894

The California Naturalist Certificate is an introduction to California's unique ecology and stewardship of California's natural communities with certification from the UC ANR California Naturalist program and training in Project Learning Tree. The UC ANR California Naturalist program uses a science curriculum, hands-on learning, problem-solving, citizen science, and community service to encourage engagement with nature and conservation of local resources.

Program Learning Outcomes

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

- Integrate knowledge about the interconnectedness of abiotic, biotic and cultural factors and their influence on the natural history of California. • Develop and implement a naturalist project, which may include nature interpretation for public presentation, collaboration with community organizations, collaborative conservation, and/or citizen science.

Required Courses (3 Units)		Units
BIO-21	California Naturalist	3

Total Units: 3

COMPUTER INFORMATION SYSTEMS

This program focuses on computers, computing problems and solutions, and design of computers systems and user interfaces from a scientific perspective. This includes instruction in their principles of computation science, and computing theory; computer hardware design; computer development and programming; and application to a variety of end-use situations.

COMPUTER PROGRAMMING (MNR)

NAS728/NAS728B/NAS728C/NCE728

This program focuses on the general writing and implementation of generic and customized programs to drive operating systems that generally prepare individuals to apply the methods and procedures of software design and programming to software installation and maintenance. This includes instruction in software design; low and high level languages and program writing; program customization and linking; prototype testing; troubleshooting; and related aspects of operating systems and networks.

Certificate Program

Program Learning Outcomes

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

- Design structured programs using C++, Javascript, or Java.
- Design and use object oriented programs in one of these languages C++, Java or PHP.
- Design and use advanced programming techniques in C++ or Java.

Required Courses (26.5 units)		Units
CIS-1A	Introduction to Computer Information Systems	3
CIS/CSC-2	Fundamentals of Systems Analysis	3
CIS/CSC-5	Programming Concepts and Methodology I: C++	4
CIS-21	Introduction to Operating Systems	3
CIS-72A	Introduction to Web Page Creation	1.5
Electives	From Group 1	6
Electives	From Group 2	6

Electives - Group 1 (6 units)

CIS/CSC-12	PHP Dynamic Web Site Programming	3
CIS/CSC-14A	Web Programming: JavaScript	3
CIS-14B	Web Programming: Active Server Pages	3
CIS/CSC-17A	Programming Concepts and Methodology II: C++	3
CIS/CSC-18A	Java Programming: Objects	3

Electives - Group 2 (6 units)

CIS/CSC-11	Computer Architecture and Organization: Assembly	3
CIS-17B	C++ Programming: Advanced Objects	3
CIS-17C	C++ Programming: Data Structures	3
CIS-18B	Java Programming: Advanced Objects	3
CIS-18C	Java Programming: Data Structures	3

Associate of Science Degree

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

GRAPHIC DESIGN (N)

NAS647/NAS647B/NAS647C/NCE647

This program is designed for students who wish to pursue training in desktop publishing. Training will focus on using a computer to design page layouts, develop presentations, and create advertising campaigns. Students will learn to design, integrate, and format all forms of digital images into printable media.

Certificate Program

Program Learning Outcomes

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

- Design and create images used for printed media in advertising web design.
- Understand and apply the techniques used to create and modify artwork using a vector-based program or bit-mapped program.
- Integrate text and graphics in a document layout program to create professional-quality, full-color documents.
- Format and combine text, numerical data, photographs, charts, and other visual graphic elements to produce publication- ready material.
- Demonstrate the knowledge of workflow process in the creation of printed media in advertising.
- Demonstrate the knowledge of design principles in advertising and layout design, type, and lettering applications.
- Incorporate two dimensional design visual media of printed media in advertising.

Required Courses (26 units)		Units
CIS-66	Web Development I	3
or		
CIS-72A	Introduction to Web Page Production	1.5
and		
CIS-72B	Intermediate Web Page Creation Using Cascading Style Sheets (CSS)	1.5

CIS/CAT-78A	Introduction to Adobe Photoshop	3
CIS-78B	Advanced Adobe Photoshop	3
CIS/CAT-79	Introduction to Adobe Illustrator	3
CIS-81	Introduction Adobe InDesign	3
CIS-59/ ADM-62	Typography and Graphic Design	3
ART-22	Basic Design	3
ART-39	Design and Graphics	3
GAM/CIS-44	Portfolio Production	2

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

C++ PROGRAMMING (NR) **NCE803**
Create structured and Object code in C++ for business, gaming, mathematical and scientific problems by identifying the information input requirements, synthesizing the algorithmic steps needed to transform the data input into the required output information, and organizing the output format to facilitate user communication.

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

- Create structured and Object code in C++ for business, gaming, mathematical and scientific problems by identifying the information input requirements, synthesizing the algorithmic steps needed to transform the data input into the required output information, and organizing the output format to facilitate user communication.
- Using C++ libraries create and run C++ programs that incorporate the following:
  - Multiprocessors
  - Multimedia
  - ODBC
  - SQL
  - Establish client/server relationship
- OR Using C++ libraries create and run C++ programs that incorporate data structures.

Required Courses (13 units)		Units
CIS/CSC-5	Programming Concepts and Methodology I: C++	4
CIS/CSC-17A	Programming Concepts and Methodology II: C++	3
CIS -17B	C++ Programming: Advanced Objects	3
CIS -17C	C++ Programming: Data Structures	3

FULL STACK WEB DEVELOPMENT **NCE889**
The Full Stack Web Development Certificate of Proficiency is designed to prepare students for employment as a Full Stack Web Developer in nine weeks.

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

- Use fundamental web-media languages/software tools to construct both static and dynamic web pages and to authenticate users and interface with a database.
- Use web development tools to expand the functionality of websites and web apps and to shorten the project development time.
- Develop a personally-selected web-app and develop a description of its functionality in oral and written communication.

Required Course (8 units)		Units
CIS-77	Full Stack Web Development	8

Total Units: 8

JAVA PROGRAMMING (NR) **NCE809**
Completion of this certificate provides the student with skills a new programmer would need to obtain employment programming Java applications.

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

- Create structured and Object code in Java for business, gaming, mathematical and scientific problems by identifying the information input requirements, synthesizing the algorithmic steps needed to transform the data input into the required output information, and organizing the output format to facilitate user communication.
- Using Java libraries create and run Java programs that incorporate the following:
  - Multiprocessors
  - Multimedia
  - JDBC
  - SQL
  - Establish client/server relationship.
- Using Java libraries create and run Java programs that incorporate data structures.

Required Courses (13 units)		Units
CIS/CSC-5	Programming Concepts and Methodology I: C++	4
CIS/CSC-18A	Java Programming: Objects	3
CIS-18B	Java Programming: Advanced Objects	3
CIS-18C	Java Programming: Data Structures	3

CONSTRUCTION TECHNOLOGY

This program prepares individuals with the technical knowledge and skills in the area of building construction. This includes instruction enabling students to better understand and interpret construction codes, as well as clarifying processes and materials used in construction; and the basic physical laws which are used to formulate the prescriptive code regulations. Management and inspection skills are also examined.

CONSTRUCTION TECHNOLOGY (N)
NAS532/NAS532B/NAS532C/NCE532

Certificate Program

Program Learning Outcomes

Graduates will be able to identify and describe the materials and methods currently being employed in today's construction industry. Graduates will be able to interpret the major construction codes currently adopted by the state, county, and city which regulate construction installations. Graduates will be able to evaluate the basic concepts of engineering and soil design as they relate to structures.

Program Learning Outcomes

In addition to achieving the program learning outcomes for the construction technology certificate program, students who complete the Associate of Science Degree in Construction Technology will demonstrate proficiency in general education student learning outcomes and proficiency in subject matter student learning outcomes.

Required Courses (30 units)		Units
CON-63A	Uniform Building Codes and Ordinances	3
CON-64	Office Procedure and Field Inspection	3
CON-65	Plumbing Code	3
CON-66	National Electrical Code	3
CON-67	Mechanical Codes	3
CON-68	Simplified Engineering for Building Inspectors	3
CON-70	Fundamentals of Soil Technology	3
CON-71	Energy Conservation Standards	1.5
CON-72	California State Accessibility Standards	1.5
Electives (Choose from list below)		6

Electives (6 units)		
CON-60	Introduction to Construction	3
CON-61	Materials of Construction	3
CON-62	Blueprint Reading	3
CON-63BCD	Analysis of Revisions to the Uniform Building Code	3-3-3
CON-73	Project Planning for Site Construction	3
CON-200	Construction Work Experience	1-2-3-4

Associate of Science Degree

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

DRAFTING TECHNOLOGY

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.

DRAFTING TECHNOLOGY (N)
NAS539/NAS539B/NAS539C/NCE539

Certificate Program

Program Learning Outcomes

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

- 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.

Program Learning Outcomes

In addition to achieving the program learning outcomes for the drafting technology certificate program, students who complete the Associate of Science Degree in Drafting Technology will demonstrate proficiency in general education student learning outcomes and proficiency in subject matter student learning outcomes.

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

Electives (3-4 units)		
DFT/ARE-24	Architectural Drafting	3
DFT/ENE-23	Descriptive Geometry	3
DFT/ELE/ ENE-27	Technical Communications	3
DFT/ENE-42B	SolidWorks II	3
MAN-56 CNC	Machine Set-Up and Operation	4

Associate of Science Degree

The Associate of 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.

EARLY CHILDHOOD EDUCATION

EARLY CHILDHOOD EDUCATION (MNR)
NAS544/NAS544B/NAS544C/NCE544

The Early Childhood Education program provides an educational and practical foundation for students interested in working with children from infancy through third grade. In addition to theoretical principles, the curriculum offers practical skills and on-site training that will prepare students for employment in the field of Early Childhood Education. The program leads to certificates in Early Childhood Education and/or an Associate of Science Degree. The EAR courses will also fulfill the required child development coursework for the state issued Child Development Permit. Information regarding this permit and/or the Early Childhood Education Certificates are available from the Early Childhood Education Department.

Certificate Program

Program Learning Outcomes

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

- Develop, implement, and evaluate developmentally appropriate thematic and emergent curriculum for children who are typical and atypical in the areas of physical, cognitive, language, creative and social/emotional growth.
- Develop and apply appropriate practices and effective techniques that respect the cultural diversity of young children and their families.
- Integrate an educational philosophy into classroom practices that reflects a personal belief supportive of theoretical principles regarding how and why young children should receive early educational experiences.
- Develop and implement a system of ongoing observational practices that contributes toward the creation of learning environments conducive to the emergence of curriculum that adapts to the evolving needs of children.

Required Courses (31 units)		Units
EAR-19	Observation and Assessment in Early Childhood Education	3
EAR-20	Child Growth and Development	3
EAR-24	Introduction to Curriculum	3
EAR-25	Teaching in a Diverse Society	3
EAR-26	Health, Safety and Nutrition	3
EAR-28	Principles and Practices of Teaching Young Children	3
EAR-30	Practicum in Early Childhood Education	4
EAR-42	Child, Family, and Community	3
Electives (Choose from list below)		6

Electives (6 units)		
EAR-23	Family Home Child Care Program	3
EAR-33	Infant and Toddler Development	3
EAR-34	Infant and Toddler Care and Education	3
EAR-37	School Age Child Care	3
EAR-38	Adult Supervision and Mentoring in ECE	3
EAR-40	Introduction to Children with Special Needs	3
EAR-41	Internship in Early Intervention/ Special Education	4
EAR-43	Children with Challenging Behaviors	3
EAR-44	Administration I: Programs in Early Childhood Education	3
EAR-45	Administration II: Personnel and Leadership in Early Childhood Education	3
EAR-46	Curriculum and Strategies for Children with Special Needs	3
EAR-47	Childhood Stress and Trauma	3
EAR-52	Parenting: Parents as Teachers	1
EAR-53	Parenting: Guiding Young Children-Approaches to Discipline	2
EAR-54	Parenting: Contemporary Parenting Issues	1
EAR-55	Parenting: Common Problems in Infancy and Childhood	1
ART-3	Art for Teachers	3
EDU-1	Introduction to Elementary Classroom Teaching	4
ENG-30	Children's Literature	3
KIN-6	Introduction to Physical Education for Preschool and Elementary Children	3
KIN-30	First Aid and CPR	3
MUS-1	Teaching Music to Young Children	3

Child Development Permit

Upon completion of the requirements for the certificate program and 16 units of special courses in general education, the student has fulfilled the course requirements for the Child Development Permit, teacher level. See the State guidelines for experience qualifications and additional levels. For child development interactive video information, see http://www.rcc.edu/departments/earlychildhoodstudies/Pages/Child-Development-Permit.aspx

For students interested in transferring to a California State University, please see the requirements for the Associate in Science in Early Childhood Education for Transfer degree in Section IV of this catalog.

Associate of Science Degree

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

EARLY CHILDHOOD INTERVENTION ASSISTANT (MNR)
NAS601/NAS601B/NAS601C/NCE601

This certificate is appropriate for students interested in working as an assistant or a paraprofessional in early intervention, early childhood special education, and community child development programs serving children with special needs. In addition to theoretical principles, the curriculum offers practical skills and on- site training that will prepare students for employment in the field of Early Childhood Intervention. The program leads to a certificate in Early Childhood Intervention and/or an Associate of Science Degree. The program will also fulfill the required child development coursework for the state issued Child Development Permit. Information regarding this permit and/or the Early Childhood Intervention Certificate is available from the Early Childhood Education Department.

Upon completion of the requirements for the certificate program and 16 units of special courses in general education, the student has fulfilled the course requirements for the Child Development Permit, Teacher Level. See the state guidelines for experience qualifications and additional levels. For interactive video information about the Child Development Permit, see www.rcc.edu/departments/earlychildhoodstudies/Pages/Child- Development-Permit.aspx

Certificate Program

Program Learning Outcomes

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

- Demonstrate an understanding of family function and structure, along with familial need for information and support that respects and values diverse cultures, values, beliefs and behaviors.
- Demonstrate basic knowledge of laws and regulations pertaining to and protecting children with disabilities and their families. Understand and identify the process of accessing community agencies, referral systems and procedures for specialized support, specialized documents, resources and placement options.
- Describe the typical child development milestones of children birth to adolescence and identify the strengths and special needs of the child in the context of his/her family, early childhood classroom, or early intervention setting.
- Describe the developmental assessment process and outline its role in identifying, planning and intervening for a child with special needs and his/her family, including the process of curriculum development.
- Demonstrate an understanding of the purpose and intent of an inclusive environment that supports the whole child while meeting the individual needs of children with disabilities.

Required Courses (34 units)		Units
EAR-19	Observation and Assessment in Early Childhood Education	3
EAR-20	Child Growth and Development	3
EAR-24	Introduction to Curriculum	3
EAR-28	Principles and Practices of Teaching Young Children	3
EAR-40	Introduction to Children with Special Needs	3
EAR-41	Internship in Early Intervention/Special Education	4
EAR-42	Child, Family, and Community	3
EAR-43	Children with Challenging Behaviors	3
EAR-46	Curriculum and Strategies for Children with Special Needs	3
Electives (Choose from list below)		6

Electives (6 units)		
EAR-26	Health, Safety and Nutrition	3
EAR-33	Infant and Toddler Development	3
EAR-34	Infant and Toddler Care and Education	3
EAR-38	Adult Supervision and Mentoring in ECE	3
EAR-44	Administration I: Programs in Early Childhood Education	3
EAR-47	Childhood Stress and Trauma	3

Associate of Science Degree

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

The following certificates may lead to employment competency, but do not lead to an Associate of Science Degree:

EARLY CHILDHOOD EDUCATION ASSISTANT TEACHER (MNR) NCE795

This certificate enables the holder to care for and assist in the development and the instruction of children in a child development program while under supervision. Students select two classes out of EAR 20, 24, 28, and 42 to meet the requirements for this certificate.

Certificate Program

Program Learning Outcomes

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

- Demonstrate an understanding of the theoretical perspectives in human development and education.
- Appraise the role of the child as an active learner.
- Integrate child growth and development into practical and meaningful applications.

Required Courses (6 units)		Units
Complete two courses from the list below:		
EAR-20	Child Growth and Development	3
EAR-24	Introduction to Curriculum	3
EAR-28	Principles and Practices of Teaching Young Children	3
EAR-42	Child, Family, and Community	3

EARLY CHILDHOOD EDUCATION/TWELVE CORE UNITS (MNR) NCE797

This certificate prepares the holder to provide service in the care, development, and instruction of children in a child development program. The 12 core units include EAR 20, 24, 28, and 42 and form the foundation upon which further early childhood coursework is built.

Certificate Program

Program Learning Outcomes

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

- Demonstrate an understanding of the theoretical perspectives in human development and education.
- Appraise the role of the child as an active learner.
- Integrate child growth and development into practical and meaningful applications.

Required Courses (12 units)		Units
EAR-20	Child Growth and Development	3
EAR-24	Introduction to Curriculum	3
EAR-28	Principles and Practices of Teaching Young Children	3
EAR-42	Child, Family, and Community	3

ELECTRICIAN/ELECTRONICS

DIGITAL ELECTRONICS (N)
NAS656/NAS656B/NAS656C/NCE656

The Digital Electronics Program first prepares students with the fundamental theories of DC and AC electronic components, circuits & behaviors. It then grows to emphasize digital integrated circuit logic, analysis, design, mapping and simplification, and then culminates in microcontroller construction and programming. Printed Circuit Board (PCB) design will follow from schematic capture and circuit simulations. Students will learn to communicate, verbally and graphically, to a wide range of audiences, using various media and delivery methods. Completers of this program may qualify for a certificate, an Associate of Science Degree, or an entry level position in the Digital Electronics Industry, as knowledgeable and productive employees.

Certificate Program

Program Learning Outcomes

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

- Fluently read and write electronic symbols of schematics, and develop schematic diagrams to guide the simulation, construction, maintenance, troubleshooting or repair of DC, AC, microcontrollers and digital circuits.
- Explain the operation of electronic components and predict their behavior in given circuit designs, and calculate solutions to complex networks, and justify the formulas and calculations.
- Capture a schematic of a mixed-signals circuit, using the appropriate electronics computer-aided-design (CAD) software, and simulate the behavior of it, and then create a PCB design for that circuit. Then, after fabrication of a Printed Circuit Board (PCB), "stuff" and solder components to it, test and contrast with simulation predictions.
- Fluently read and write Boolean Algebra logic equations, symbols, truth-tables and circuits, then synthesize logic forms, simplify to lowest terms, and implement circuits using only NAND or NOR logic gates.
- Design, program, compile, install, wire, test, verify and explain the proper operation of a microcontroller with respect to given specifications, then explain the purpose and methods whereby a microcontroller may perform math, logic or conversions between analog and digital forms.

Required Courses (29 units)		Units
ELC/ELE-11	DC (Direct Current) Electronics	4
ELC/ELE-13	AC (Alternating Current) Electronics	4
ELE-25	Digital Techniques	4
ELE-26	Microcontrollers	3
ENE/ELE-27	Technical Communications	3
ELE-28	MultiSim CAD PCB Design/Fab	3
Electives	Choose from the list below	7

Electives (7 units)

ELE-10	Survey of Electronics	4
ELE-23	Electronic Devices and Circuits	4
ELE/MAN-61	Robotics for Manufacturing	3
ELE/MAN-63	LabView Visual Programming for Automated Systems	3
ELE/MAN-64	Programmable Logic Controllers	3
ELC/ELE-91	Fundamentals of Solar Energy	3
ELE-200	Electronics, Work-Experience	1-4
MAN-55	Occupational Safety and Health Administration (OSHA) for General Industry	1

Associate of Science Degree

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

ELECTRICIAN (N) NAS766/NAS766B/NAS766C/NCE766

This program prepares students to become an entry-level electrician trainee and along with California State requirements prepares for careers as an electrician, electrical apprentice, electrician's helper, industrial electrician, journeyman electrician, and residential electrician. Courses are aligned with California State standards to prepare students to earn their Electrician Training card (www.dir.ca.gov/dlse/ecu/electricaltrainee.htm).

Certificate Program

Program Learning Outcomes

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

- Demonstrate the installation maintenance and troubleshooting of electrical devises (switches, sensors, motor, controllers, and lights).
- Explain how the electrical grid works, from generation to the end user.
- Solve electrical design criteria by using formula, and tables for proper electrical installation.
- Demonstrate electrical raceway sizing and installation, meeting NEC requirements for sizing, location requirements, distances, supports and bending.
- Demonstrate quantitative analysis of electrical circuits for blueprints.
- Demonstrate electrical wiring of circuits or devices to meet the standards and requirement of the NEC.

Required Courses (31-32 units):		Units
ELC/ELE-71	Residential Electrical Wiring	4
ELC/ELE/MAN-72	Commercial and Industrial Electrical Wiring	4
ELC/ELE/MAN-73	Electric Motors and Transformers	4
ELC/ELE/MAN-74	Industrial Wiring and Controls	4
ELC/ELE-75	Solid State Devices and Lighting Controls	3
ELC/ELE-76	Low Voltage Wiring and Alternate Energy Generation	3
ELC/ELE/MAN-77	Electrical Theory for Electricians	3

ENE-62	Math for Automated Systems	3
or		
MAT-36	Trigonometry	4
CON-66	National Electrical Code	3

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

ELECTRICIAN APPRENTICESHIP (N)

NAS485/NAS485B/NAS485C/NCE485

A five-year apprenticeship program, consisting of full time, on-the-job employment plus related classroom instruction. Completers of this program may qualify for certificate, Associate of Science Degree, and/or a Journey person trade certificate. Students who wish to obtain an Associate in Arts Degree may do so by fulfilling the general graduation requirements in addition to the completion of the apprenticeship courses.

Applicants for Riverside/San Bernardino/Mono/Inyo counties should be directed to the Riverside and San Bernardino Joint Electrical Apprenticeship Training. Committees, 1855 Business Center Drive, San Bernardino, CA 92408. Telephone: (909) 890-1703.

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

- Apply a working knowledge of math formulas and complex solution methods related to the electrical trades, along with blueprint symbols and drawings of wiring diagrams with common schematic symbols, including troubleshooting of common system faults, detection and repair, while properly applying OSHA construction site safety standards to all practices.
- Properly apply all pertinent National Electric Code (NEC) to all workplace practices involving DC, AC single and poly-phase systems, utilizing proper grounding, bonding, lightning protection, wire sizing, conduit fill, overload protection, layout, connections, installations, troubleshooting, fault isolation, repairs or modifications.
- Demonstrate appropriate leadership and expertise in applying special control and monitoring functions related to layout, installation, testing, and troubleshooting of digital and analog systems involving such ancillary equipment as CATV, CCTV, telephone circuits, Programmable Logic Controllers (PLCs), sensors, actuators, low-voltage and high-voltage, transformation, interfacing, hardware, setup, and programming services needed to comply with all NFPA-70E (NEC) and OSHA regulations for safety and fitness.

Required Courses (35 units)		Units
ELE-400	Introduction to the Electrical Trades and Construction Safety	3.5
ELE-406	Grounding Systems, Advanced Blueprints and Specifications, Motor Design and Installation, and National Electric Code	3.5
ELE-407	Motor Control Principles, Generators and Power Supplies, with National Electric Code (NEC)	3.5
ELE-408	Transformer Theory, Leadership, Management, and Test Equipment	3.5
ELE-409	Electrician Specialty Systems	3.5
ELE-401	Introduction to Electrical Theory, Basic Math Concepts, and the National Electric Code	3.5
ELE-402	Advanced DC Circuit Concepts, Introduction to 3-Phase AC Circuits, Test Equipment, and National Electric Code Applications	3.5
ELE-403	AC Circuit Concepts, Applied Electronics, and National Electric Code Applications	3.5
ELE-404	Digital Logic Circuits, Conductor Characteristics, Applications, and National Electric Code (NEC)	3.5
ELE-405	Electrician Blueprint Reading with Code Applications for National Electrical Code (NEC)	3.5

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

SOUND AND COMMUNICATION SYSTEMS INSTALLER APPRENTICESHIP NAS644/NCE644

The new 37 unit Sound & Communication Systems Installer Apprenticeship certificate and AS degree will create a three-year apprenticeship program with the International Brotherhood of Electrical Workers (IBEW). Norco College will become the Lead Education Agency for the program.

The goal of the Sound & Communication Systems Installer Apprenticeship Program at Norco College is to provide electrical apprentices with the up-to-date knowledge and technical skills to complete the California state requirements to begin a career as a licensed journeyman, a craftsperson recognized for his or her knowledge and ability in the selected trade. The program will allow students to work in the trade while taking courses. The students will be earning a wage while on the job. As they progress through the apprenticeship they will increase their skill set.

- Analysis a circuit of electrical device(s) with the appropriate meters or testing equipment so that troubleshooting of common system faults can be detected and repair.
- Demonstrate electrical wiring of circuits or devices to meet the standards and requirement of the NEC
- Residents within Riverside/San Bernardino/ Mono/Inyo counties will be able to jointly apply to the Riverside and San Bernardino Joint Electrical Apprenticeship Training Committees via the International Brotherhood of Electrical Workers. Applicants must submit proof of high school diploma or GED, be at least 18 years of age, and official unopened transcripts showing successful completion of one year of high school or College Algebra 1 or higher. The applicant will then complete a written aptitude test and oral interview to be placed on the eligibility list.

Required Major Total: (37 units)		Units
ELE-420	Intro to Sound/Communication	3.5
ELE-421	Electrical Theory and Practices DC	3.5
ELE-422	Electrical Theory and Practices AC	3.5
ELE-423	Semiconductor Electronics	3.5
ELE-424	Intro to Digital Electronics and Signaling Devices	3.5
ELE-425	Management/Alarms/Codes/Circuits	3.5
ELE-499	Work Experience in Electricians Apprenticeship	1-4

The following certificates may lead to employment competency, but do not lead to an Associate of Science Degree:

GREEN TECHNICIAN (N) **NCE856**

Renewable energy and related sustainability concepts; DC and AC electrical theory; and solar power systems. Design, installation, and maintenance issues along with OSHA safety are included.

Certificate Program

Program Learning Outcomes

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

- Draw and identify all the primary components of a typical, 4-KW, utility-interactive, photo voltaic (PV) system and explain how each part operates in this grid-tied configuration.
- Solve basic, direct current, electronic problems involving resistance, current, voltage, and power, as applied to both simple and complex combinations of series and/or parallel circuit components, comprised of resistors, capacitors and coils, in a given network configuration.
- Explain the basic principles of sinusoidal sources of Alternating Current (AC) and solve AC network circuit problems involving resistors, capacitors, inductors and/or transformers.
- Utilize OSHA standards and regulations to supplement an ongoing safety and health program.
- Thoroughly explain the typical maintenance requirements for the PV array and other components, including inverters and batteries of a stand-alone system, to keep a 5-KW, off-grid power installation safe and operating at high-efficiency.

Required Courses (12 units)		Units
ELE-91	Fundamentals of Solar Energy	3
ELE/MAN-55	Occupational Safety and Health Administration (OSHA) Standards for General Industry	1
ELC/ELE/ MAN-77	Electrical Theory for Electricians	3
or		
ELE-11	DC Electronics	4
and		
ELE-13	AC Electronics	4

ENGINEERING TECHNOLOGY

PRE-ENGINEERING (N) **NAS763**
(CSUGE) NAS764/(IGETC) NAS765

This program is designed to prepare students for a possible major in an Engineering related field. Possible university engineering majors include: Civil Engineering, Computer Engineering and Mechanical Engineering.

Program Learning Outcomes

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

- Demonstrate the standard methods of mathematical analysis including trigonometry and analytic geometry, differential and integral calculus, and the solutions to differential equations.
- Demonstrate a working knowledge of the theories and principles of physics.
- Conduct experiments and analyze and interpret data collected.

Required Courses (24-26 units)		Units
MAT-1A	Calculus I	4
MAT-1B	Calculus II	4
PHY-4A	Mechanics	4
Choose one of the following:		
PHY-4B	Electricity and Magnetism	4
or		
PHY-4C	Heat, Light and Waves	4
Electives	Choose from the list below	8-10

Elective Courses (8-10 units)		
CHE-1A	General Chemistry, I	5
CHE-1B	General Chemistry, II	5
MAT-1C	Calculus III	4
PHY-4B	Electricity and Magnetism (if not used above)	4
or		
PHY-4C	Heat, Light and Waves (if not used above)	4

Associate of Science Degree

The Associate of Science Degree in Pre-Engineering will be awarded upon completion of the degree requirements including Intersegmental General Education Transfer Curriculum (IGETC) or California State University General Education (CSUGE) or RCCD General Education requirements.

ENGINEERING GRAPHICS (N) **NCE796**

Certificate Program

Program Learning Outcomes

Students will demonstrate proficiency sufficient to apply for and obtain entry-level employment in the field of engineering by completing a portfolio, which may include sketches, Computer Aided Drafting (CAD), 3-D models, and rapid prototyping.

Required Courses (9 units)		Units
ENE-21	Drafting	3
ENE-22	Engineering Drawing	3
ENE-30	Computer-Aided Drafting(CAD)	3

3D MECHANICAL DRAFTING (N) NCE863

This certificate includes courses intended to help students qualify for an entry level CAD operator/drafter or help someone, already in industry, to update their skills. Students can expect an entry level position as a CAD operator, mechanical drafter, engineering assistant and engineering technician.

Certificate Program

Program Learning Outcomes

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

- Demonstrate an understanding of 3D mechanical modeling so as to be able to capture design intent in a 3D model.
- Map out the most efficient path in 3D model creation.
- Reverse engineer existing parts and recreate them as 3D computer models.

Required Courses (9 units)		Units
ENE-21	Drafting	3
ENE-42	SolidWorks I	3
ENE-42B	SolidWorks II	3

GAME DEVELOPMENT

GAME ART: CHARACTER MODELING (N)
NAS687/NAS687B/NAS687C/NCE687

Students completing the Game Art: Character Modeling program will possess advanced knowledge of digital modeling as well as applied skills in rigging and materials. Students will gain skills in figure drawing and the application into a game environment. The final course of this program is a capstone project where students work in an interdisciplinary team with students from the other tracks of the game development programs to create a complete, original game ready to publish. Students will complete the program with a polished portfolio. Students will complete the program with a polished portfolio and be prepared to enter the workforce as a character modeler, environment modeler, lighting artist, or 3D artist.

Certificate Program

Program Learning Outcomes

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

- Understand and utilize the production pipeline and workflow between Maya and ZBrush for modeling characters for use in Game, Animation and Simulation.
- Analyze and construct bipedal, quadruped and anthropomorphic character models for use in Game, Animation and Simulation.
- Utilize the industry standard techniques of Maya and ZBrush to create both low poly and high poly models for use in Game, Animation and Simulation.
- Produce industry quality character models that demonstrate a thorough understanding of anatomy and proportion as well as proper topology flow as it pertains to modeling characters for use in Game, Animation and Simulation.
- Analyze, differentiate, and construct character models that demonstrate an understanding of standard industry artistic styles such as hyper-realism, cartoony and stylized design.
- Demonstrate mastery of interdisciplinary communication and team skills while working with colleagues in an industry standard production project.
- Create an industry standard portfolio and demo reel containing 3D character models developed in class projects.

Required Courses (44 units)		Units
GAM-21	History of Video Games	3
GAM-32	Designing Game Characters	3
GAM-33	Advanced Digital Sculpting	3
GAM-35	Introduction to Simulation and Game Development	3
GAM-41	Game Asset and Engine Integration	3
GAM/CIS-44	Portfolio Production	2
GAM-70	Game Development Basics	2
GAM-71	Perspective for Game and Animation	3
GAM-72	Anatomy for Game Art	3
GAM-73	Storyboarding for Games	3
GAM-79B	Game Studio: Character Modeling	4
GAM-80	Digital Drawing for Game Art	4
GAM-81	3D Modeling and Texturing	4
GAM-82	Game Rigging and Animation	4

Associate of Science Degree

The Associate of Science Degree in Game Art: Character Modeling will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

GAME ART: ENVIRONMENTS AND VEHICLES (N)
NAS688/NAS688B/NAS688C/NCE688

Students completing the program will be well qualified to create large scale models including environments, props, and vehicles, as well as indoor and specialized enclosures in video game worlds. The final course of this program is a capstone project where students work in an interdisciplinary team with students from the other tracks of the game development programs to create a complete, original game ready to publish. Students will complete the program with a polished portfolio and be prepared to enter the field as a 3-D environments artist, prop modeler, level builder or junior modeler. 3D character models developed in class projects.

Certificate Program

Program Learning Outcomes

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

- Employ the proper use of industry standard terminology to describe geometry and scenes in a 3D environment.
- Utilize both polygonal and nurbs modeling to create 3D hard surface and organic objects for use in game,

animation and simulation environments.
- Create digital vehicles, terrains and environments to scale according to a specific art style direction containing aspects of realism, futuristic and fantasy based design and function.
- Demonstrate mastery of interdisciplinary communication and team skills while working with colleagues in an industry standard production project.
- Create an industry standard portfolio and demo reel containing 3D environments and vehicle models developed in class projects.

Required Courses (38 units)		Units
GAM-21	History of Video Games	3
GAM-35	Introduction to Simulation and Game Development	3
GAM-41	Game Asset and Engine Integration	3
GAM/CIS-44	Portfolio Production	2
GAM-46	Environment and Vehicle Modeling	3
GAM-70	Game Development Basics	2
GAM-71	Perspective for Game and Animation	3
GAM-73	Storyboarding for Games	3
GAM-79C	Game Studio: Environments and Vehicles	4
GAM-80	Digital Drawing for Game Art	4
GAM-81	3D Modeling and Texturing	4
GAM-82	Game Rigging and Animation	4

Associate of Science Degree
The Associate of Science Degree in Game Art: Environments and Vehicles will be awarded upon completion of the degree requirements, including general education and other graduation requirements as described in the college catalog.

GAME DESIGN (N) NAS685/NAS685B/NAS685C/NCE685
Students completing the Game Design program will be well qualified in the game design process, including game design documentation, standard game design techniques and tools for rapid prototyping including both non-digital and digital methods. Students will be prepared to enter the field as an independent designer, assistant producer, or junior level designer. The final course of this program is a capstone project where students work in an interdisciplinary team with students from the other tracks of the game development programs to create a complete, original game ready to publish. Students will complete the program with a polished portfolio and be prepared to enter the workforce.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
- Apply the principles of theoretically sound game design including gameplay, core mechanics, game balancing, and iterative rapid prototyping to produce both non-digital and digital original games.
- Contribute to a comprehensive game design document which facilitates team management including communication, milestones/deadlines and responsiveness.
- Develop content that contributes to a milestone based studio pipeline.
- Demonstrate mastery of interdisciplinary communication and team skills while working with colleagues on an industry standard production project.
- Create an industry standard portfolio utilizing games and class projects.

Required Courses (33 units)		Units
GAM-21	History of Video Games	3
GAM-22	Game Design Principles	4
GAM-23	Digital Game Design	4
GAM-24	Video Game Prototyping	4
GAM-35	Introduction to Simulation and Game Development	3
GAM-42	Photoshop for Game Art and Animation	3
GAM/CIS-44	Portfolio Production	2
GAM-50	Introduction to Game Programming	3
GAM-79E	Game Studio: Game Design Capstone	4

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

GAME PROGRAMMING (N)
NAS691/NAS691B/NAS691C/NCE691
Students completing the Game Programming Certificate or A.S. degree will be well qualified in the process of designing and coding programming logic for games including coding game rules, mechanics and simulations, to create complete modules and game experiences. The final course of this program is a capstone project where students work in an interdisciplinary team with students from the other tracks of the game development programs to create a complete, original game which is ready to publish. Students will complete the program with a polished portfolio and be prepared to enter the workforce as an independent game developer specializing in game programming.

Certificate Program
Program Learning Outcomes
Upon successful completion of this program, students should be able to:
- Assemble multimedia assets into a single project and provide meaning and structure to those assets through programmatic solutions.
- Construct complex systems to facilitate game rules, mechanics, and simulations.
- Build games or applications driven by mathematics and physics concepts in an architecturally sound software design.
- Apply concepts and techniques in game programming to create complete modules and game experiences at an advanced level.
- Create an industry-standard portfolio containing code samples from class projects.
- Demonstrate professional communication skills effectively with colleagues on an industry production project.

Required Courses (37-38 units)		Units
GAM-24	Video Game Prototyping	4
GAM-35	Introduction to Simulation and Game Development	3
GAM/CIS-44	Portfolio Production	2
GAM-50	Introduction to Game Programming	3
GAM-51	Game Mechanics and Simulation	3
GAM-52	Game Engine Scripting I	3
GAM-53	Game Engine Scripting II	3
GAM-79F	Game Studio Production: Game Programming	4
MAT-35	Intermediate Algebra	5
Electives	Choose from list below	7-8

Electives (7-8 units)		
GAM-21	History of Video Games	3
GAM-22	Game Design Principles	4
GAM-80	Digital Drawing for Game Art	4
GAM-81	3D Modeling and Texturing	4

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

GENERAL BUSINESS

See BUSINESS ADMINISTRATION

LOGISTICS MANAGEMENT

This program prepares individuals to manage business logistics functions, ranging from acquisitions to receiving and handling, through internal allocation of resources to operations units, and delivery to the final customer. This includes instruction in the domestic and international aspects of logistics contracts and purchasing, computerized logistics systems, inventory control, warehousing, transportation, and freight claims. Emphasis is placed on the efficient and effective integration of all logistics activities.

LOGISTICS MANAGEMENT (N)
NAS579/NAS579B/NAS579C/NCE579
This program prepares students for entry into or career growth within the logistics industry, and ongoing study of the field. The focus is integrated logistics, a necessity for management of effective and efficient supply chains. Logistics disciplines covered include warehousing, transportation, service contracting, purchasing, global logistics, etc.

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

- Compare roles and objectives of the logistics disciplines.
- Understand how logistics functions can interact to efficiently use total personnel, facilities and equipment;
- Contribute knowledge needed by multidisciplinary teams to effectively integrate and exceed end user (customer) expectations.
- Analyze, prepare, file and process claims when unavoidable freight disputes arise.
- Explain how the overall flow of goods, services and information can be optimized to satisfy customer and business goals.
- Identify 3rd party logistics provider and client needs in negotiations, bidding and contracts, as well as legal and regulatory constraints to integrated logistics.
- Describe roles and value added by global logistics intermediaries.

Required Courses (18 units)		Units
BUS-80	Principles of Logistics	3
BUS-82	Freight Claims	1.5
BUS-83	Contracts	1.5
BUS-85	Warehouse Management	3
BUS-86	Transportation and Traffic Management	3
BUS-87	Purchasing and Supply Management	3
BUS-90	International Logistics	3

Note: Students may petition to have elective credit applied toward this Certificate for military training, extra-institutional learning, and transfer or articulated courses in logistics disciplines. Students must complete at least 9 units at Norco College from the above list for such credit to apply

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

Program Learning Outcomes
In addition to achieving the program learning outcome for the logistics management certificate program, students who complete the Associate of Science Degree in Logistics Management will demonstrate proficiency in general education student learning outcomes and proficiency in subject matter student learning outcomes.

MANAGEMENT

See BUSINESS ADMINISTRATION

MANUFACTURING TECHNOLOGY

This program prepares individuals to apply basic engineering principles and technical skills to the identification and resolution of production problems in the manufacture of products. This includes instruction in machine operations, production line operations, engineering analysis, systems analysis, instrumentation, physical controls, automation, computer-aided manufacturing (CAM), manufacturing planning, quality control, and informational infrastructure.

FACILITY MAINTENANCE (N)

NCE771/NAS771

The Associate in Science in Facility Maintenance program prepares students for jobs such as entry-level facility maintenance technician, field service technician, industrial maintenance technician, maintenance mechanic, or maintenance repair mechanic.

Students will gain skills in: safety standards, technical math, blueprint reading, troubleshooting, preventative maintenance, drive components, lubrication, bearings, wiring methods, hydraulics, pneumatics, basic electricity, technical communication and more. Students will learn and apply maintenance methods to repair and maintain commercial or industrial facilities, including the machinery in buildings, plants, and factory settings.

Program Learning Outcomes

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

- Demonstrate knowledge of maintenance techniques.
- Apply maintenance fundamentals to simulated and actual workplace applications.
- Recognize, identify, and describe the functions of hand and power tools.
- Troubleshoot and repair a given, complex configuration of maintenance equipment and create a thorough report, including necessary interactions with tools and safety standards.

Required Courses (24-25 units)		Units
MAN-55	Occupational Safety and Health Administration (OSHA) Standards for General Industry	2
ELE/MAN-69	Fundamentals of Tooling and Test Equipment	2
ELE/MAN-68	Fundamentals of Maintenance	3
ELE/ENE-27	Technical Communications	3
ENE-51	Blueprint Reading	2
ELE/MAN-77	Electrical Theory	3
MAN-60	Hydraulic and Pneumatics Systems	3
ELE/CON-66	National Electrical Code	3
ENE-60	Math for Engineering Technology	3
or		
MAT-36	Trigonometry	4

None of the courses in the area of emphasis require a prerequisite course.
*Total Major Units: 24-25 Units
*General Education Requirements: 35-36 Units
Total A.S. Degree Units: 60 Units

Note: Students must complete all Facility Maintenance Major Core Requirements and must complete Major Concentration Requirements (total of 30 units) in order to receive the certificate in the concentration area of their choice.

Associate of Science Degree

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

INDUSTRIAL AUTOMATION (N)

NAS737/NAS737B/NAS737C/NCE737

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, Microprocessors, Microcontrollers, 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, or general maintenance worker.

Certificate Program

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) and PLC modules.
- Set-up and operate fluid powered valves, cylinders, controls filters, and actuators.
- Solve formulas by using unknowns and apply this knowledge to solve problems encountered in technological areas and various fields of engineering.

Required Courses (23-24 units)		Units
ELE-10	Survey of Electronics	4
ELE/ENE-27	Technical Communications	3
ELE-74	Industrial Wiring and Controls	4
ELE/MAN-64	Programmable Logic Controllers	3
ENE-51	Blueprint Reading	2
ELE/MAN-55	Occupational Safety and Health Administration (OSHA) Standards for General Industry	1
MAN-60	Hydraulics and Pneumatic Systems	3
ENE-62	Math for Automation	3
or		
MAT-36	Trigonometry	4

Associate of Science Degree

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

Program Learning Outcomes

In addition to achieving the program learning outcomes for the Industrial Automation certificate program, students who complete the Associate of Science Degree in Industrial Automation will demonstrate proficiency in general education student learning outcomes and proficiency in subject matter student learning outcomes.

COMPUTER NUMERICAL CONTROL PROGRAMMING (N) NAS655/NAS655B/NAS655C/NCE655

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 of 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 (26-27 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	1
MAN-56	CNC Machine Set-up and Operation	4
MAN-57	CNC Program Writing	3

Associate of Science Degree

The Associate of 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.

The following certificate may lead to employment competency, but does not lead to an Associate of Science Degree:

COMPUTER NUMERICAL CONTROL (CNC) OPERATOR (N) NCE799

This certificate is designed to provide entry-level skills to operate a Computer Numerical Control (CNC) lathe or milling type machine tool. Upon completion, students could secure employment as a CNC Operator.

Certificate Program

Program Learning Outcomes

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

- Demonstrate sufficient proficiency to apply for and obtain entry-level employment in the field of computer numerical control technology.
- Create parts specified by the National Institute of Metalworking Skills (NIMs).
- Create a portfolio which may include portable document files (PDF) printouts of CNC programs created during the program's courses.
- Solve formulas by using unknowns and apply this knowledge to solve problems encountered in technology areas and various fields of machining.
- Establish a systematic approach to recognize the essential information given on a blueprint.

Required Courses (17 units)		Units
ENE-42	Solid Works I	3
ENE-51	Blueprint Reading	2
MAN-36	General machine shop and theory of machining	4
MAN-55/ELE-55	Occupational Safety and Health Administration (OSHA) Standards for General Industry	1
MAN-56	CNC Machine Set-up and Operation	4
MAN-57	CNC Program Writing	3

CONVENTIONAL MACHINE OPERATOR (N) NCE865

This certificate is designed to prepare students with basic entry-level machine operator skills, safety knowledge, theory, and quality control skills in manufacturing processes. Students obtaining this certificate will qualify for the first level certification in National Industry Metal Skills (NIMS). This certificate prepares students for employment as Conventional Machinists, Machine Operators, and/or Machine Tool Cutting Setters.

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

- Demonstrate aptitude in safely setting up and operating the lathe, mill, drill press, saw and grinder.
- Demonstrate use of gages (gage blocks and pins), calculate angles for work setup, utilize the proper precision measuring tools when machining.
- Create parts specified by the National Institute of Metalworking Skills (NIMs) using conventional machining.
- Establish a systematic approach to recognize the essential information given on a blueprint

Required Courses (10 units)		Units
ENE-42	SolidWorks I	3
ENE-51	Blueprint reading	2
MAN-36	General machine shop and theory of machining	4
MAN-55/ELE-55	OSHA Standards for General Industry	1

MUSIC

MUSIC **NAA564, NAA564B, NAA564C**
PROGRAM PREREQUISITE: None.
SHORT DESCRIPTION of PROGRAM
The Associate in Arts in Music Degree is designed to prepare the student for the rigors of becoming a music major at four year institutions of higher education and is specifically intended to satisfy many of the lower division requirements for the Baccalaureate in Arts in Music at the California State University and University of California. This degree is designed to prepare students to demonstrate competence and discipline in the study of music theory, music analysis, music composition, and musicianship skills, and demonstrate proficiency in ensemble skills and solo performance skills. Completion of this curriculum will demonstrate commitment to the serious study of Music in practice and in theory and provide comprehensive preparation for upper division work.

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

- Demonstrate ensemble specific performance practices and professional standards of conduct expected of ensemble participants.
- Perform solo literature with an accompanist (if appropriate) using stylistically accurate rhythm, pitch, diction (or articulation) and musical expression.
- Demonstrate the ability to "audiate" a musical score by sight reading and performing complex rhythms and by sightsinging chromatic, modulating, and post-tonal melodies.
- Demonstrate the ability to recognize patterns and musical function by aurally identifying and transcribing scales, modes, post-tonal melodies, and complex harmonic progressions.
- Analyze chromatic harmonic progressions that include modulation using 20th century techniques.
- Write, analyze, and compose music using 20th century techniques, such as: tone row, set theory, augmented sixth chords, pandiatonicism and polytonalism.
- Demonstrate keyboard proficiency at the level required to perform theoretical concepts studied in music theory courses.

Required Courses		Units
MUSIC THEORY (16 units)		
MUS 3	Music Fundamentals	4
MUS 4	Music Theory I	4
MUS 5	Music Theory II	4
MUS 6	Music Theory III	4
APPLIED MUSIC (10-12 units; 4 semesters of study from the following)		
MUS 38	Beginning Applied Music I	2
MUS 78	Beginning Applied Music II	2
MUS 39	Intermediate Applied Music I	3
MUS 79	Intermediate Applied Music I	3
OR		
MUS 39 2x	Intermediate Applied Music I	3(6)
MUS 79 2x	Intermediate Applied Music II	3(6)
MUSIC ENSEMBLES (8 units from the following over 4 semesters)		
MUS 41	Chamber Choir	2
MUS 81	Consort Singers	2
MUS 77	Guitar Ensemble	2
MIS 11a	Studio Arts Ensemble I	2
MIS 11b	Studio Arts Ensemble II	2

Total Units: 34-36

Recommended Courses:
Keyboard Proficiency - Most 4-year institutions require that lower-division students pass a keyboard proficiency exam. The following courses are recommended to prepare students for the the exam (4 units from the following):

MUS 32a	Class Piano I	1
MUS 32b	Class Piano I	1
MUS 32c	Class Piano I	1
MUS 32d	Class Piano I	1
MUS 53	Keyboard Profiency	1

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

MUSIC INDUSTRY STUDIES: AUDIO PRODUCTION

NAS684/NAS684B/NAS684C/NCE684

PROGRAM PREREQUISITE: None

The Music Industry Studies certificate in Audio Production is designed to provide students with the knowledge and skills necessary for producing popular music, and engineering in the recording studio as well as for live sound. Courses allow students to become proficient on a DAW (Digital Audio Workstation); gain experience recording and producing music on digital and analog devices; and record and mix in a state-of-the-art multi-track digital 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 music producers or audio engineers in studio and/or live performance settings.

Program Learning Outcomes

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

- Demonstrate an understanding of musicianship and music theory.
- Employ music technology to create and refine musical product.
- Sensitively enhance multitrack recordings and live performances as a mixing engineer.
- Collaborate effectively with peers to create new musical works that exhibit quality and craftsmanship.
- Demonstrate a fundamental understanding of intellectual property law as it applies to music.

Required Courses		Units
Core (13 units)		
MIS-1A	Studio Techniques	2
MIS-1B	Studio Techniques	2
MIS-1C	Studio Techniques	2
MUS-3	Fundamentals	4
MUS-93	Business of Music	3
Electives (21-23 units)		
MIS-2	Songwriting	2
MIS-3	Digital Audio Production	1-4
MIS-4	Digital Audio Production	2-4
MIS-7	Intro to Music Technology	3
MIS-12	Live Sound	3
MIS-13	Studio Recording Workshop	3
AND		
4-6 units from the following:		
Elective Courses		Units
COM-9	Interpersonal Communication	3
MUS-4	Music Theory	4
MUS-23	History of Rock and Roll	3
MUS-32A	Class Piano	2
MUS-32B	Class Piano	2
MUS-32C	Class Piano	2
MUS-38	Beginning Applied Music	2
MUS-39	Applied Music	1-3
MIS-200	Work Experience	1-4

Total Units: 34-37 units

Associate of Science Degree

The Associate of Science Degree in Music Industry Studies: Audio Production 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 Music Industry Studies Performance Certificate is 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 digital and analog music technology, and record and mix in a state-of-the-art multi-track digital recording studio. Classes are taught utilizing industry-standard software and equipment in state-of-the-art facilities. The program prepares students for a variety of careers as instrumentalists and vocalists in studio and/or live performance settings.

Certificate Program

Program Learning Outcomes

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

- Demonstrate an understanding of musicianship and music theory.
- Employ music technology to create and refine musical product.
- Sensitively interpret and communicate musical literature as a performer or studio musician.
- Collaborate effectively with peers to create new musical works exhibiting quality and craftsmanship.
- Demonstrate a fundamental understanding of intellectual property law as it applies to music.

Required Courses (33 units)		Units
MIS-1A	Studio Techniques	2
MIS-1B	Studio Techniques	2
MIS-1C	Studio Techniques	2
MUS-3	Fundamentals	4
MUS-93	Business of Music	3
MUS-39	Applied Music II (2x)	3
MUS-79	Applied Music II (2x)	3
(4 semesters of study)		
MUS 41	Chamber Singers (4x)	2
or		
MUS 41	Chamber Singers (2x)	2
And		
MIS 81	Consort Singers (2x)	2
or		
MIS-11A	Studio Arts Ensemble (2x)	2
MIS-11B	Studio Arts Ensemble (2x)	2
(4 semesters of study for 8 units total)		
AND		
3-4 units from the following:		

Elective Courses		Units
MIS-3	Digital Audio Production	1-4
MIS-7	Intro to Music Technology	3
MUS-4	Music Theory	4
MUS-23	History of Rock and Roll	3
MUS-32A	Class Piano	2
MUS-32B	Class Piano	2
MUS-32C	Class Piano	

Total Units: 36-37 units

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

REAL ESTATE
See BUSINESS ADMINISTRATION

RETAIL MANAGEMENT/WAFC

This program prepares individuals to perform operations associated with retail sales in a variety of settings. This includes instruction in over-the-counter and other direct sales operations in business settings, basic bookkeeping principles, customer service, team/ staff leadership and supervision, floor management, and applicable technical skills.

RETAIL MANAGEMENT/WAFC (NR) (WESTERN ASSOCIATION OF FOOD CHAINS)
NAS536/NAS536B/NAS53 6C/NCE536

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

- Use Generally Accepted Accounting Principles or International Accounting Standards guidelines to review and interpret financial documents.
- Calculate pricing models for mark-ups, profit margins for perishable and lost goods, discounts, and sinking funds.
- Prepare and deliver effective oral and written communications through multiple modes in multiple situations.
- Create and use basic word processing documents, spread sheets and visual (Power Point) presentations.
- Create and present a research paper on selected topics.
- Effectively apply basic management principles to actual and role-played work situations.
- Analyze and assess the legal and productivity implications of work conflicts.
- Effectively communicate in small groups.
- Analyze the effectiveness of marketing decisions and use marketing principles to assess market potential.

Required Courses (30 units)		Units
ACC-1A	Principles of Accounting I	3
or		
ACC/CAT-55	Applied Accounting/Bookkeeping	3
BUS-20	Business Mathematics	3
BUS-22	Management Communications	3
or		
BUS-24	Business Communication	3
CIS-1A	Introduction to Computer Information Systems	3
or		
CIS/CAT/ BUS-3	Computer Applications for Business	3
COM-1/1H	Public Speaking	3
or		
COM-9/9H	Interpersonal Communication	3
or		
MAG-57	Oral Communications	3
MAG-56	Human Resources Management	3
MAG-44	Principles of Management	3
or		
MAG-51	Elements of Supervision	3
MAG-53	Human Relations	3
MKT-20	Principles of Marketing	3
MKT-42	Retail Management	3

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

SIMULATION AND GAME DEVELOPMENT
See GAME DEVELOPMENT

SUPPLY CHAIN AUTOMATION (N) NAS408/NAS408B/ NAS408C/NCE408

Supply Chain Automation 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 automated material handling equipment and systems that support the supply chain. This includes complex conveyer systems, robotics, sensors, optics, mechanical drive systems and programmable logic controllers. This certificate prepares students for employment as an electro-mechanical technicians, maintenance mechanic, maintenance technicians, or supply chain technicians.

Certificate Program

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.
- Demonstrate the installation, maintenance and troubleshooting of Programmable Logic Controllers systems (PLCS) and PLC modules.
- Solve arithmetic problems and formulas using unknowns that are typical to solving problems in engineering and industrial setting.

Required Courses (32-33 Units)		Units
SCT/SCA-1	Introduction to Automated Warehousing	3
ELC/ELE-73/MAN-73	Electric Motors and Transformers	4
ELC/ELE-74/MAN-74	Industrial Wiring and Controls	4
ELC/ELE/ELC-77	Electrical Theory for Electricians	3
DFT/ENE-27/ELE-27	Technical Communications	3
DFT/ENE-51	Blueprint Reading	2
ENE-62	Math for Automated Systems	3
or		
MAT-36	Trigonometry	4
MAN-55/ELE-55	OSHA Standards for General Industry	1
MAN-60	Hydraulic and Pneumatic Systems	3
ELE-64/MAN-64	Programmable Logic Controllers	3
ELE-26	Microcontrollers	3

Associate of Science Degree

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