



NORCO COLLEGE

2015-2016
CATALOG ADDENDUM

Norco College
2001 Third Street
Norco, California 92860-2600
(951) 372-7000
www.norcocollege.edu

Norco College

2015-2016 Catalog Addendum



This addendum to the 2015-2016 Norco College Catalog contains changes that offer new educational opportunities for students. These updates were approved after the 2015-2016 Catalog went to press.

Although every effort has been made to ensure accuracy of the information, students and others who use the catalog and addendum should consult with a counselor, dean, department chair or program director for any additions, deletion or changes.

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NEW STATE APPROVED DEGREES

Business Administration for Transfer

(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 from the following (3-4 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 from the following (6-7 units):

Any course from List A not used above		3-4
CIS-1A	Introduction to Computer Information Systems	3
BUS-10	Introduction to Business	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. (Students completing this degree are not required to fulfill the RCCD graduation requirements found in section VII. Additional degree requirements: Health Education and Self Development)

Electrician

NAS766/NAS766B/NAS766C/ NCE766

This program prepares residents 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 (<http://www.dir.ca.gov/dlse/ecu/electricaltrainee.htm>).

Certificate program

Program Learning Outcomes

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

- Plan, construct and explain safe and proper electrical circuits, using industry standard components, according to supplies blueprints and verbal instructions, while following National Electrical Code (NEC) and OSHA rule.
- Describe the general principles of direct or alternating current pertaining to a DC motor, AC motor, or Generator.
- Demonstrate bandaging and splinting techniques for the care of wounds, burns, sprains, dislocations and emergency rescue moves only when necessary.
- Troubleshoot and repair a given, complex configuration of electrical and electronic circuit combinations and create a written report of everything that was done to affect repairs, including necessary interactions with programmable devices.

Required Courses (29-30 units):		Units
ELE/MAN-77	Survey of Electrical Trades	4
MAN-55	Occupational Safety and Health Administration (OSHA) Standards for General Industry	2
CON-60	Introduction to Construction	3
CON-62	Blueprint reading	3
CON-66	National Electrical Code	3
KIN-30	First Aid and CPR	3
In addition, choose and complete courses from one emphasis below:		11-12

Residential Construction Emphasis (12 units)

ELE-71	Residential Wiring for Electricians	4
ELE/MAN-73	Electric Motors for Electricians	4
ELE-75	Electronics for Electricians	4

Industrial Plant Emphasis (11 units)

ELE/MAN-64	Programmable Logic Controllers	3
ELE/MAN-72	Commercial and Industrial Electrical	4
ELE/MAN-74	Industrial Electrical Automation	4

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

NAS485/NAS485B/NAS485C/NCE485

A five-year apprenticeship program, consisting of fulltime, on the job employment plus related classroom instruction. Completers of this program may qualify for certificate, Associates 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-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
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

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.

Supply Chain Technology

NAS408/NAS408B/NAS408C/NCE408

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

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

Required Courses (31 units)		Units
SCT-1	Introduction to Automated Warehousing	3
ELE-26	Microprocessors and Microcontrollers	4
ELE 27/ENE-27	Technical Communications	3
ELE/MAN-64	Programmable Logic Controllers	3
ELE/MAN-73	Electric Motors for Electricians	4
ELE/MAN-74	Industrial Electrical Automation	4
ENE-51	Blueprint Reading	2
ENE-60	Math for Engineering Technology	3
MAN-55	OSHA Standards for General Industry	2
MAN-60	Hydraulic and Pneumatic Systems	3

Associate of Science Degree

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

NEW LOCALLY APPROVED CERTIFICATE

3D Mechanical Drafting

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

The above certificate may lead to employment competency, but does not lead to an Associate of Science degree.

CHANGE TO THE MATHEMATICS COMPETENCY REQUIREMENT

Students must demonstrate minimum proficiency in mathematics by successful completion of a mathematics course with a “C” or higher selected from MAT 1-36 (excluding MAT-32) or MAT-53 or the equivalent [CLEP, AP/IB Exams, Credit by Exam, other pathways such as Completion Counts, courses from other colleges/universities, placement above Math 35, or Early Assessment Test (EAP for CSU, MCAP)].