

RANCHO SANTIAGO COMMUNITY COLLEGE DISTRICT



Santiago Canyon College
8045 E. Chapman Ave.
Orange, CA 92869



Santa Ana College
1530 W. 17th Street
Santa Ana, CA 92706

ARTICULATION AGREEMENT

College: <u>Santa Ana College</u> Contact: <u>Jeff Ash/ Don Mahany/ John Kalko</u> Phone: <u>(714) 564-6402</u> FAX #: <u>(714) 564-6850</u>	Secondary Partner: <u>North Orange County NOCROP</u> Address: _____ Contact: <u>Thanh Nguyen / Dee Niedringhaus</u> Phone: <u>(714) 502-5874</u> FAX #: _____
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RSCCD Course

High School / ROP Course

Fire Technology 101

Fire Science 101

Articulation Agreement Effective Dates

20012 - 2013	2013 - 2014	2014 - 2015
<p>Signature, RSCCD Instructor <i>Jeff Ash</i> _____ Jeff Ash Print Name <u>8/31/2012</u> Date</p>	<p>Signature, RSCCD Instructor _____ _____ Print Name _____ Date</p>	<p>Signature, RSCCD Instructor _____ _____ Print Name _____ Date</p>
<p>Signature, RSCCD Division Dean <i>Simon B. Hoffman</i> _____ Simon B. Hoffman Print Name <u>9/11/12</u> Date</p>	<p>Signature, RSCCD Division Dean _____ _____ Print Name _____ Date</p>	<p>Signature, RSCCD Division Dean _____ _____ Print Name _____ Date</p>
<p>Signature, HS/ROP Instructor <i>Thanh Nguyen</i> _____ Thanh Nguyen Print Name <u>8/31/12</u> Date</p>	<p>Signature, HS/ROP Instructor _____ _____ Print Name _____ Date</p>	<p>Signature, HS/ROP Instructor _____ _____ Print Name _____ Date</p>
<p>Signature, HS/ROP Administrator <i>Dee Niedringhaus</i> _____ Dee Niedringhaus Print Name <u>9/5/12</u> Date</p>	<p>Signature, HS/ROP Administrator _____ _____ Print Name _____ Date</p>	<p>Signature, HS/ROP Administrator _____ _____ Print Name _____ Date</p>

NAME OF STATEWIDE ACADEMIC SENATE TEMPLATE FOLLOWS:

#	TITLE:
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College Course Title Fire Protection Organization Course #: Fire Technology 101	HS/ROP Course Title Fire Science Course # Fire Technology 101 & 102
General Course Description <p>Survey of career opportunities in fire service and related fields, history of fire protection; fire loss analysis; public, quasi-public and private fire protection services; specific fire protection functions; fire chemistry and physics.</p>	General Course Description <p>This course is designed to give students interested in a career in the Fire Service an opportunity to identify those qualifications and requirements for the position of Firefighter. Focus is on a variety of fire service related subjects, including a history of fire service, fire department organizations, fire behavior, firefighting tactics and strategies, hazardous materials, fire safety, tools, and equipment, fire prevention, fire protection systems, codes and standards, fire service occupations, and related subjects</p>
College Units: 3 units	HS/ROP Hours: 185 Hours
College Prerequisite(s): None	HS/ROP Prerequisite(s):
College Advisories/Recommendations:	HS/ROP Advisories/Recommendations: Age – 16 years or older

REQUIRED CONTENT FOR ARTICULATION

FIRE SERVICE HISTORY - 3 Lec Origins of the fire service, technological development in fire suppression equipment and techniques, notable historical figures.
CAREER OPPORTUNITIES IN FIRE PROTECTION - 3 Lec Course overview, history of fire service, development of paid fire department, development of insurance companies, modern methods of prevention and control, fire protection and defense. Careers in: fire protection, public education, sprinkler installation, private and public fire service firefighting, fire apparatus operation, paramedic service.
FIRE SAFETY FOR PEOPLE AND PROPERTY - 3 Lec Life and property loss; fundamental building design, life safety codes, hazards occupancies, types of

occupancies, industrial fire protection, public education and community relations.

CHARACTERISTICS AND BEHAVIOR OF FIRE - 3 Lec

Unpredictability of fire, sources of ignition, explosions, products of combustion.

FIRE HAZARDS OF MATERIALS - 3 Lec

Types of combustibles, solids, liquids, hazardous materials, flammable gases fire fighting and control.

INVESTIGATING THE FIRE LOSS PROBLEM - 3 Lec

Need for investigation, recording the fire problem, analyzing fire losses.

FIRE SAFE BUILDING DESIGN CONSTRUCTION - 3 Lec

Fundamentals of fire safety design, building and site planning for fire safety, exposure protection, confinement of smoke and fire.

MID TERM - 3 Lec

Evaluate the learning process for above topics.

FIRE PROTECTION SYSTEMS AND EQUIPMENT - 3 Lec

Water as an extinguishing agent, sprinkler systems, foam extinguishing system carbon dioxide systems, dry chemical systems, extinguishing systems for combustible metal, portable fire extinguishers.

ALARM DETECTION SYSTEMS AND DEVICES - 3 Lec

Public fire service communications, automatic and manual protective signaling devices, fire detection mechanisms and devices.

MUTUAL FIRE DEFENSES - 3 Lec

Evaluation and planning of public fire protection, master planning for fire protection, water for fire protection, water distribution systems.

FIRE DEPARTMENT ORGANIZATION, ADMINISTRATION AND OPERATION - 3 Lec

Fire department organization, administration and management, fire suppression operations, fire prevention operations, public education, fire code enforcement.

FIRE PROTECTION ORGANIZATION INFORMATION SOURCES AND CAREER OPPORTUNITIES, THE SCOPE OF FIRE PROTECTION ORGANIZATIONS - 3 Lec

Various organizations that effect fire department operations from federal, state, county and local jurisdictions.

CODES AND STANDARDS - 3 Lec

Development of fire protection regulations, formation and types of codes and standards, fire safety standards making organizations. The National Professional Qualifications system established by the Joint Council of National Fire Service Organizations including 101, 102, 1021, 1031, 1041, etc.

ESTABLISHMENT OF NATIONAL STANDARDS OF PROFESSIONAL COMPETENCE FOR THE FIRE SERVICE - 1 Lec

Physical ability for firefighters, preparing for physical ability, the meaning of physical fitness, measuring physical fitness.

FINAL - 3 Lec

A comprehensive evaluation of learning process.

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COMPETENCIES AND SKILL REQUIREMENTS REQUIRED FOR ARTICULATION

(Use additional pages as necessary) Where appropriate, please incorporate standards being used (e.g. CTE standards). At the conclusion of this course, the student should be able to:

- Demonstrate awareness of industry standards, including those for sanitation.
- Compare the sources of training available between a fire department, county and state agencies and the post secondary educational system.
- Determine the origin, process and impact of a residential fire; identify burns; explain toxicity of smoke.
- Demonstrate the ability to discuss all aspects of safety and safety procedures utilized by fire fighters.
- Demonstrate the procedures for reporting a fire and receiving an alarm.
- Understand the importance of education programs and community support; visit a local facility.
- Discuss the history of fire service listing fires that have national and international interest.
- Describe the oral, written, physical and physical agility testing exams for the fire service.
- Describe the chain of command within the fire department; and pre-incident planning procedures.
- Discuss the roles of first responders, EMTs, and paramedics; compare their scopes of practice.
- Describe the various fire service facilities and the functions of firefighting equipment.
- Describe the make up and dynamics of a wild land fire; define wild land interface.
- Describe procedures for handling hazardous materials and for Standard Precautions.
- Define Class A and Class B fires; explain the portable extinguisher rating system.
- Describe the mental and physical fitness requirements a fire fighter must maintain.

MEASUREMENT METHODS

(Includes any industry certification or licensure):

Case Studies
 Class Discussions
 Electronic Delivery
 Group Study & Exercises
 Handouts
 Instructor Demonstrations
 Lecture
 Other
 Reading Assignments
 Visual Aids
 Writing Projects & Reports

TEXTBOOKS OR OTHER SUPPORT MATERIALS (Including Software):

College	High School / ROP
<p>Required: Introduction to Fire Protection 3rd Edition Delmar Cengage Learning. ISBN#1-4180-0177-5 \$105.25</p> <p>Recommended readings and/or materials: IFTA Essentials 4th edition</p> <p>Other: Assess to camera</p>	

COMMENTS:

College	High School / ROP

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North Orange County Regional Occupational Program

COURSE OUTLINE

COURSE TITLE: INTRODUCTION TO FIRE TECHNOLOGY
CBEDS TITLE: FIRE CONTROL AND SAFETY
CBEDS NO.: 5831
INDUSTRY SECTOR: PUBLIC SERVICES

<u>JOB TITLE</u>	<u>O*Net Code</u>
Forester Aide	45-4011.00
Fire Lookout	45-4011.00
Fire Crew Worker (Forestry)	33-2011.02
Fire Extinguisher Repairer	49-9043.00
Fire Extinguisher-Sprinkler Inspector/Repairer	
Fire Equipment Inspector	33-2021.00
Fire Equipment Helper (Fire & Safety Helper)	
Reserve Firefighter	
Fire Suppression Aide	
Utility Driver	

Course Description:

This course is designed to give students interested in a career in the Fire Service an opportunity to identify those qualifications and requirements for the position of Firefighter. Focus is on a variety of fire service related subjects, including a history of fire service, fire department organizations, fire behavior, firefighting tactics and strategies, hazardous materials, fire safety, tools and equipment, fire prevention, fire protection systems, codes and standards, fire service occupations, and related subjects.

As part of instruction, this course reinforces skills in reading, writing, speaking, listening, and mathematics and requires their application in workplace situations. Integrated throughout the course are foundation standards, which include communication, ethics, interpersonal/team skills critical thinking and problem solving, safety, technology, and other employment skills. Students are given opportunities to demonstrate personal qualities, including responsibility, self-confidence, and self-management.

Students receive a total of 185 classroom hours.

2/17/10

385 N. Muller St., Anaheim, CA 92801-5445 / Telephone: (714) 502-5877 Fax: (714) 535-0891

North Orange County Regional Occupational Program

Competencies	Hours Classroom	CTE Standards	Academic Standards
<ol style="list-style-type: none"> 1. Recognize the importance of good reading comprehension, writing, and math skills. 2. Understand the need for establishing a plan or goal for self-improvement, as needed. 3. Apply math skills to calculate engine pressures and water pressures. 4. Be able to read, write, give and follow directions. 5. Demonstrate the ability to spell correctly and use proper grammar, punctuation, and sentence construction. 6. Demonstrate an ability to understand and enforce fire laws, codes, and standards 7. Demonstrate an ability to understand and honor department rules and regulations. 8. Be able to prepare, write, file, and maintain various records and reports. 9. Demonstrate an ability to apply critical thinking and problem-solving skills on the job. 10. Use appropriate reference materials for locating information. 11. Discuss the importance of academic skills for recruitment and promotion. 			<p>(8)Reading 1.3, 2.1</p>
<p>D. Understand principles of effective communication.</p> <ol style="list-style-type: none"> 1. Communicate effectively orally and in writing. 2. Communicate effectively with members in the work-place and with the public. 3. Understand verbal and non-verbal communication. 4. Handle public inquiries effectively. 5. Demonstrate use of effective telephone skills. 6. Give a short oral presentation. 7. Submit a written report. 		<p>FS2.0</p>	<p>(8)Reading 2.6</p>
<p>E. Understand occupational safety considerations.</p> <ol style="list-style-type: none"> 1. Identify health and safety codes and related governmental regulations. 2. Identify inherent dangers and risks of the profession. 3. Understand and follow safety procedures. 4. Explain procedures for filing accident reports. 5. Understand the relationship between physical fitness and accident reduction. 6. Identify safety problems that can occur during training exercises. 7. Identify hazards around fire stations. 8. List the eight components of personal protective gear. 9. Identify hazards associated with emergency response. 10. Identify all special hazards associated with the profession. 		<p>FS6.0 C8.0</p> <p>C6.0</p>	<p>(8)Reading 2.1,2.6</p>

North Orange County Regional Occupational Program

Competencies	Hours Classroom	CTE Standards	Academic Standards
<p>B. Explain fire agencies dual role of suppression and rescue.</p> <ol style="list-style-type: none"> 1. Identify basic fire apparatus. 2. Recognize common tools and equipment used in the fire service, such as screwdrivers and wrenches. 3. Explain tool maintenance and care. 		C9.0	
<p>C. Describe the types of emergency calls to which firefighters respond.</p> <ol style="list-style-type: none"> 1. Identify call frequency, duration, and location. 2. Demonstrate CPR. 3. Explain purpose and use of AEDs. 4. Describe the "big four" in major emergency calls. 5. Explain the term urban-search-and-rescue. 6. Understand the 'Safe Surrender' law and recognize fire stations as safe havens. 		C3.0,9.0	
<p>D. Understand the concepts of fire ground management.</p> <ol style="list-style-type: none"> 1. Explain the Incident Command System and SEMS. 2. Discuss strategy and tactics. 3. Define offensive fire attack and defensive fire attack. 4. Explain a time-temperature-fire curve. 5. Name and describe the seven tactical priorities. 		C5.0, 8.0	
<p>E. Understand the steps taken during emergency response.</p> <ol style="list-style-type: none"> 1. Define size-up. 2. Explain prefire planning. 3. Understand the running card system. 4. Explain the importance of first-in-district knowledge. 5. Explain the five basic defensive driving techniques. 6. Explain driving policy at intersections while responding to code 3. 		C5.0	
<p>F. Explain the importance of safety for firefighters during emergency and non-emergency periods.</p> <ol style="list-style-type: none"> 1. Explain the function of a safety officer. 2. Explain proactive versus reactive. 3. Discuss typical fire ground accidents to firefighters. 4. Discuss the ways and means of accident prevention. 		FS6.0	
<p>G. Understand the importance of interagency cooperation.</p> <ol style="list-style-type: none"> 1. Explain interaction with police at the scene of a fire. 2. Define scope of practice. 3. Identify the role of the department in evidence presentation. 		C5.0	
<p>H. Discuss the significance of fire reports.</p> <ol style="list-style-type: none"> 1. Describe fire report systems in the fire service. 2. Discuss the benefits of a good emergency incident reporting system. 3. Describe the preparation, filing, and maintenance of fire reports. 		C7.0	

North Orange County Regional Occupational Program

Competencies	Hours Classroom	CTE Standards	Academic Standards
<p>4. Discuss all the various forms and reports typical of a fire department.</p> <p>I. Discuss the function of fire investigation.</p> <ol style="list-style-type: none"> 1. Identify those who conduct investigations. 2. Explain the terms cause of ignition and area of origin. 3. Describe those steps normally taken to investigate a fire. 4. Define arson. 5. Discuss motivation for arson crimes. 6. Discuss penalties for arson. <p>J. Discuss fire department communications.</p> <ol style="list-style-type: none"> 1. Describe where fire communication centers are usually located and why. 2. Discuss the fire dispatcher's role and the type of equipment he/she uses. 3. Discuss the critical relationship between the fire dispatcher and a fire company commander. 4. Understand the role of computer technology in fire communications. <p>K. Identify alarm and detection systems and devices.</p> <ol style="list-style-type: none"> 1. Describe municipal fire alarm systems. 2. Identify the types of heat detectors. 3. Discuss different types of smoke detectors. 	10	<p>C3.0</p> <p>FS2.0</p> <p>C9.0</p>	
<p>VI. FIRE PREVENTION CONCEPTS</p> <p>A. Explain the importance of public education.</p> <ol style="list-style-type: none"> 1. Discuss the importance of educating the public. 2. Discuss how public education is accomplished. <p>B. Discuss built-in fire protection systems in buildings.</p> <ol style="list-style-type: none"> 1. Recognize components of automatic sprinkler systems. 2. Discuss the value of automatic sprinklers. 3. Define types of sprinkler systems. 4. Recognize fire department sprinkler connections on buildings. 5. Discuss types of standpipe and hose systems. 6. Explain the four extinguishing properties of water. <p>C. Identify non-water-based fire protection systems.</p> <ol style="list-style-type: none"> 1. Discuss four basic types of portable fire extinguishers. 2. Define the care and use of extinguishers. 3. Discuss the advantages and disadvantages of types of extinguishers. 4. Explain the use of firefighting foam. 	10	<p>C5.0</p>	
<p>VII. HAZARDOUS MATERIALS AND SPECIAL HAZARDS</p> <p>A. Define properties of combustible solids.</p> <p>B. Define and discuss weapons of mass destruction (CBRNE), and relate it to recent news events.</p>	10	<p>FS1.0</p> <p>C3.0,5.0</p>	

North Orange County Regional Occupational Program

Competencies	Hours Classroom	CTE Standards	Academic Standards
<ul style="list-style-type: none"> 1. chemical 2. biological 3. radiological 4. nuclear 5. explosive C. Distinguish flammable and combustible liquids. D. Discuss the hazards of gases. E. Define hazardous materials. <ul style="list-style-type: none"> 1. Discuss community-right-to-know laws. 2. Recognize typical haz mat calls. 3. Demonstrate how haz mat specialists handle emergencies. 4. Determine how hazardous materials are identified. 5. Appreciate how government agencies and private organizations complement fire service. 6. Define first-responder. F. Discuss problems associated with electricity. <ul style="list-style-type: none"> 1. Discuss hazards associated with electricity. 2. Explain safety precautions in incidents involved with electric current. G. Discuss radiation hazards. <ul style="list-style-type: none"> 1. Identify types of radiation. 2. Understand safety precautions in emergencies involving radiation materials. H. Explain the dangers associated with infectious disease exposure. <ul style="list-style-type: none"> 1. Define infectious disease. 2. Explain universal precautions. 3. Discuss special precautions used by fire personnel during medical aid calls. 	<p>10</p> <p>10</p>	<p>FS6.0</p> <p>FS6.0</p> <p>FS6.0</p> <p>FS10.0</p> <p>C8.0</p>	
<p>VIII. BUILDING DESIGN AND CONSTRUCTION</p> <ul style="list-style-type: none"> A. Discuss the historical aspects of major fire disasters and building construction. B. Identify the six types of building materials used and how they react during fires. C. Describe how buildings are designed for public fire safety. D. Describe how ventilation operations by firefighters are affected by types of construction. E. Understand how designers improve building exposure problems. 	<p>10</p>	<p>FS10.0</p>	
<p>IX. CODES AND STANDARDS</p> <ul style="list-style-type: none"> A. Explain the historical development of fire codes and standards. B. Define building code. <ul style="list-style-type: none"> 1. Discuss the Uniform Building Code. 	<p>10</p>	<p>C8.0</p>	

North Orange County Regional Occupational Program

Competencies	Hours Classroom	CTE Standards	Academic Standards
2. Describe how the U.B.C. protects people. 3. List the five types of buildings. C. Describe the Uniform Fire Code. D. Identify the National Fire Protection Association. 1. Discuss the N.F.P.A. publications. 2. Explain the N.F.P.A. Life Safety Code, Standard 101. 3. Discuss the benefits the N.F.P.A. provides the fire service and the public. E. Explain how a local fire department enacts and enforces fire codes and ordinances.	185		
TOTAL HOURS	185		

Content standards addressed in class assignments throughout the course include the following:

Language Arts

Grade 8

Reading: 1.3, 2.1, 2.6

Writing: 1.3, 1.4, 2.6

Grades 9-10

Reading: 2.1, 2.3, 2.6

Writing: 1.3

Mathematics

Number Sense: 1.2, 1.3

Measurement & Geometry: 2.1

Mathematical Reasoning: 1.1, 1.2, 2.1, 2.6, 2.8, 3.1

Rancho Santiago Community College District

(Santa Ana College & Santiago Canyon College)

Articulation Agreement

for North Orange County ROP Course

Fire Technology Department of Rancho Santiago Community College District agrees to accept the North Orange County ROP course(s) identified below in lieu of the college course(s) listed, and agrees to award the number of college units indicated (or to award advanced placement) upon successful completion of the high school/ROP course and any attendant terms/conditions agreed to by the two institutions.

Agreement with: North Orange County Regional Occupational Program

RSCCD Course(s)	High School/ROP Course(s)	Units
Fire Technology 101 Fire Protection Organization	Introduction to Fire Technology	3

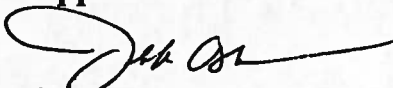
Specific Terms/Conditions: This agreement is limited to the high school students who receive an "A" or "B" from the Instructors of Record for the ROP Introduction to Fire Technology course, as specified in this agreement. In order to receive college credit, students need to complete Petition for Credit through Articulated Coursework form and other required paperwork and provide transcript.

Please contact M. Lucy Sims of Santa Ana College at (714) 564-6224.

Articulation Agreement Effective Dates (Academic Years):

2008-2009
 2009-2010
 2010-2011

Approved:


 Signature, RSCCD Instructor

11/10/09
 Date


 Signature, RSCCD Division Dean

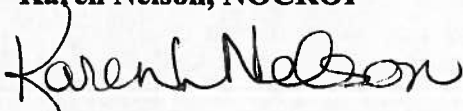
11/10/09
 Date

Signature, High School/ROP Instructor
Thanh Nguyen

Date


 Signature, High School/ROP Administrator
Karen Nelson, NOCROP

11-4-09
 Date



11/4/08