NCCER Overview

Addressing the Skilled Workforce Shortage Crisis

CERN Meeting

April 18, 2008 Washington, DC

nccer

NATIONAL CENTER FOR CONSTRUCTION EDUCATION AND RESEARCH

Affiliated with the University of Florida

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About NCCER

Don Whyte, President

The National Center for Construction Education and Research, affiliated with the University of Florida, is a not-for-profit 501 (c)(3) education foundation and is a leader in providing workforce development resources for the construction, maintenance and pipeline industry.

Resources include:

- Accreditation
- Instructor Certification
- Standardized Industry-Driven Curricula
- Nationally Recognized Skill Assessments
- Industry-Recognized Credentialing & Certification
- Construction Career/Recruiting Resources
- Construction Safety and Front-line Management Education

NCCER History



- Organized and funded By Leading Industrial Contractors
 - Contributed Subject Matter Experts (SMEs)
- Standardized 5 Key Industrial Crafts: electrical, pipefitting, millwright, welding, instrumentation
- Facilitated The Aspen Summit
- Developed The NCCER National Standardized Training Process
 - Standardized Curricula
 - Skills Portability through The National Registry

FOUNDING INDUSTRY LEADERS

- Fluor
- KBR
- Zachry Construction
- Metric Constructors
- KCI
- Austin Industrial
- TIC (The Industrial Company)
- National Industrial Contractors
- BE&K Construction
- Washington Group/Rust Constructors
- Bechtel/Becon

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Focus Areas

- ✓ Craft Training
- ✓ Recruiting/Image
- ✓ Safety Training
- ✓ Management Education
- ✓ Research

NCCER Partners

American Fire Sprinkler Association
Associated Builders & Contractors, Inc.
Associated General Contractors of America

Association for Career and Technical Education

Association for Skilled and Technical Sciences

Carolinas AGC, Inc.

Carolinas Electrical Contractors Association

Center for the Improvement of Construction Management & Processes

Construction Industry Institute

Construction Users Roundtable

Design-Build Institute of America

Electronic Systems Industry Consortium

Merit Contractors Association of Canada

Metal Building Manufacturers Association

NACE International

National Association of Minority Contractors

NCCER Partners

National Association of Women in Construction National Insulation Association National Ready Mixed Concrete Association National Systems Contractors Association National Technical Honor Society National Utility Contractors Association **NAWIC Education Foundation** North American Crane Bureau North American Technician Excellence Painting & Decorating Contractors of America Portland Cement Association SkillsUSA Steel Frectors Association of America Texas Gulf Coast Chapter ABC U.S. Army Corps of Engineers University of Florida Women Construction Owners & Executives, USA

Vision and Mission



Our Vision

Universally recognized by industry and government as the training, assessment, certification and career development standard for the construction, maintenance and pipeline craft professional

NCCER's Mission

Build a safe, productive and sustainable workforce of craft professionals

- Build owner demand for training
- Build support for craft training through govt. entities
- Substantially increase the number of customers served

Types of Training



- Apprenticeship
- Government Education
 - Department of Education
 - School-Based Vo-Tech
 - Secondary Vocational
 - Public
 - Charter High School
 - Adult Education
 - Public Post-secondary
 - Community College
 - Technical College
 - Career/Proprietary (For-profit)
 - Department of Labor
 - Job Corps, Youth Build,
 - Grant Programs WIA, OJT, etc.
 - Department of Corrections
- Construction
 - Regional/Corporate Training Center
 - Site/Project-Based
- Owner
- Manufacturer
- Third-Party/Consultant





Standardized Training Process

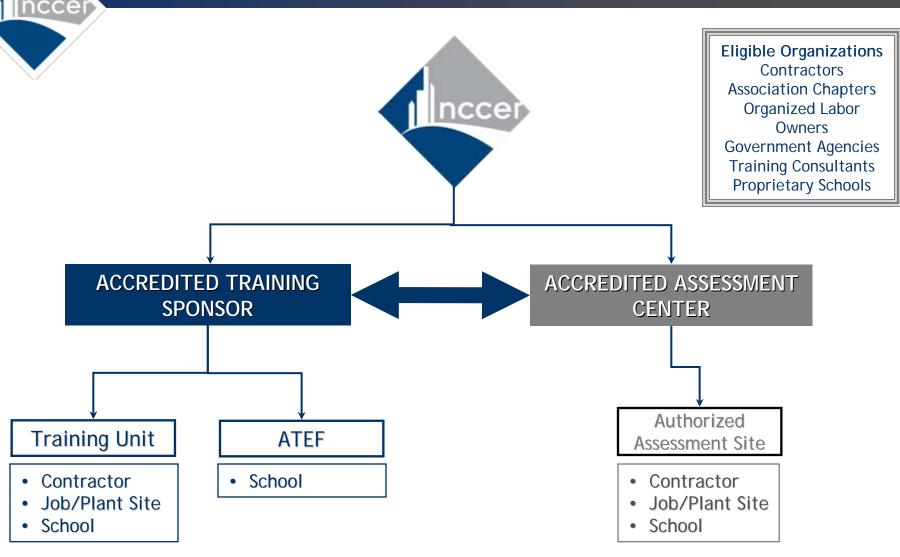
- Accreditation
- Instructor certification
- Standardized curriculum
- Assessment & certification
- Industry-Recognized Credentials

Accreditation Growth



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Accreditation Process



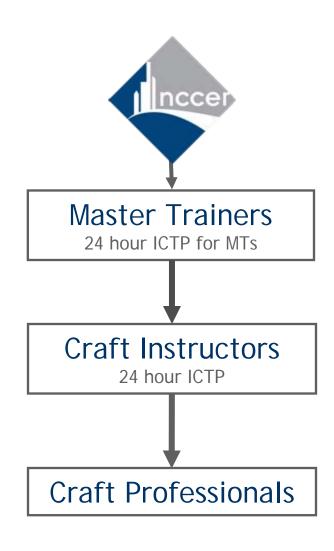


Audits - Statistics

	2007		2008 YTD		
Audit Type	Orgs Audited	Number of Programs	Orgs Audited	Number of Programs	
Follow Up	1	2	0	0	
For Cause	5	10	0	0	
Initial	57	81	1	1	
Random	1	2	0	0	
Reaccredit	32	56	5	7	
TOTAL	96	151	6	8	
Programs Terminated		46		3	



Instructor Certification

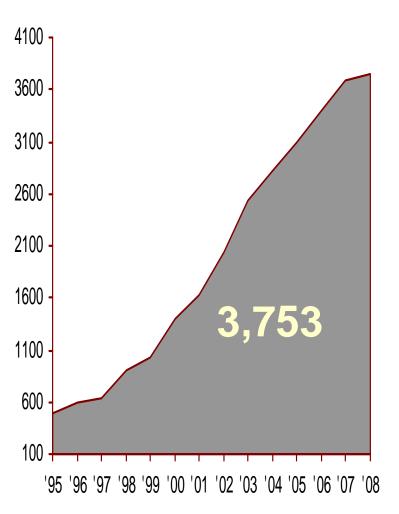


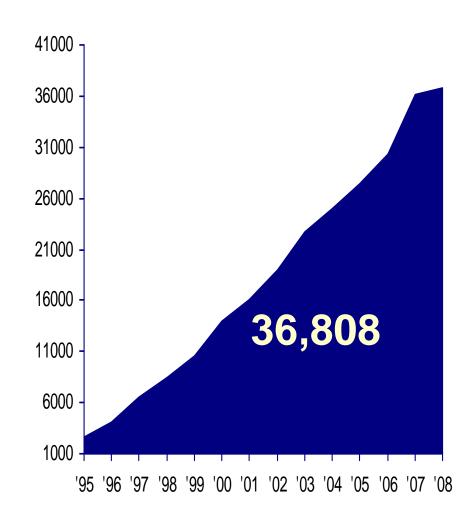


National Registry Statistics

Master Trainers

Craft Instructors







Standardized Curriculum

CONTREN® LEARNING SERIES

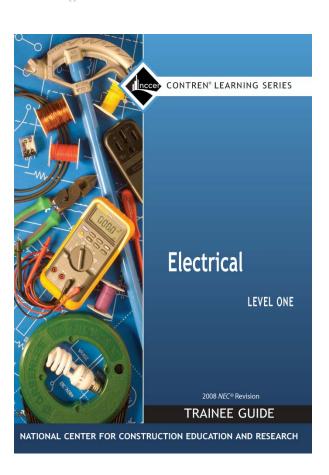
Over 250,000 trained in 2007





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STANDARDIZATION



- Common instructional system design (DACUM)
- Technical Review Committee: Subject Matter Expert (SME)
- Competency-based
- Instructor-led
- Curricula have common format

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National Technical Review Committee



- Comprised of journey-level & above craftspeople
- Includes contractors, business owners, technical trainers, safety professionals, and career & technical education instructors from across the country
- Meets with NCCER Project Manager and Technical Writer to develop occupational and training needs analyses.
- Provides guidance on needed revisions to the manuscripts.

COMPETENCY-BASED & INSTRUCTOR-LED



- Trainees learn skills at their own pace
- Trainees accelerate through demonstrated competencies on both written and performance tests
- NCCER-certified instructors verify successful test completions for credentialing through the National Registry



COMMON CURRICULUM FORMAT - CONTREN ELEARNING SERIES

- Module (Discrete task training unit)
 - ✓ Must pass written & performance tests for each
 - ✓ Each module stands alone (task training)
 - ✓ Each module is part of an overall course of study (apprenticeship or time-based training)
- Level Format
 - ✓ Modules sequenced in a logical instructional order for overall course study
 - ✓ Curricula meets DOL Office of Apprenticeship requirements for time-based training
- Instructor and Trainee Guide for each module and/or level

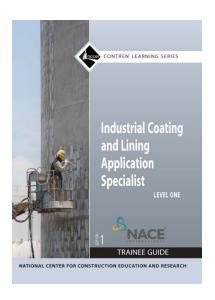
CONTREN LEARNING SERIES

- nccer
 - Advanced Electrical Topics

<**In Translation to Spanish>

<*Available in Spanish>

- Boilermaking
- Carpentry **
- Cabinetmaking
- Concrete Finishing **
- Construction Craft Laborer
- Construction Technology
- Core Curriculum: Introductory Craft Skills *
- Drywall
- Electrical
- Electronic Systems Technician
- Heavy Equipment Operations
- Highway/Heavy Construction
- HVAC
- Hydroblasting
- Industrial Maintenance: Electrical & Instrumentation
- Industrial Maintenance: Mechanical



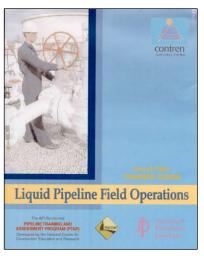
CONTREN LEARNING SERIES



- Instrumentation
- Insulating **
- Ironworking **
- Masonry
- Millwright
- Mobile Crane Operations
- Painting **
- Pipefitting **
- Pipelayer
- Plumbing
- Reinforcing Ironwork
- Rigging Fundamentals
- Rigging
- Scaffolding *
- Sheet Metal
- Site Layout
- Sprinkler Fitting *
- Welding



CONTREN LEARNING SERIES

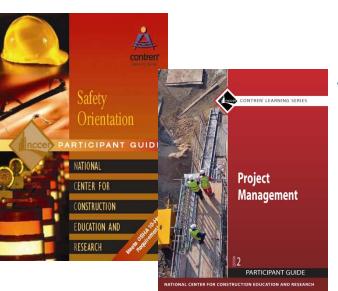


PIPELINE

- Gas Pipeline Operations
- Liquid Pipeline Field Operations
- Liquid Pipeline Control Center Operations
- Pipeline Corrosion Control
- Pipeline Electrical & Instrumentation
- Pipeline Maintenance
- Radiographic Testing of Pipeline Welds
- Pipeline Mechanical

SAFETY/MANAGEMENT

- Safety Orientation *
- Field Safety *
- Safety Technology
- Introductory Skills for the Crew Leader (available online)
- Project Supervision
- Project Management



NCCER Hispanic Resources

- ✓ Implementing short- & long-term Hispanic resources strategies
- ✓ Retooling curricula and assessments for Hispanic workers

Curriculum 2007

- Field Safety (Seguridad de Campo)
- Sprinkler Fitting 1
 (Instalación de Rociadores)
- Scaffold Building (Andamios)
- Carpentry Fundamentals
- Concrete Finishing
- Insulating 1



Assessments 2007

- Scaffold Builder
- Core Curriculum
- Concrete Finisher
- Industrial Insulator
- Rebar
- Masonry
- Industrial Pipefitting

NCCER Hispanic Resources

CONSTRUCT NET





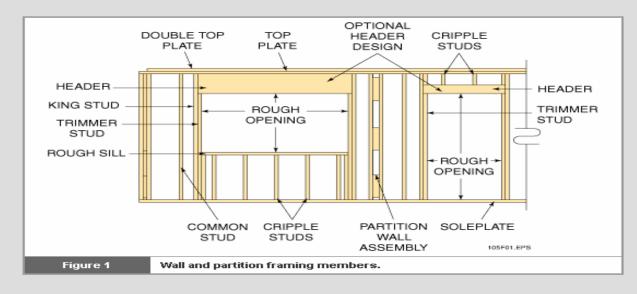
- Core
- Electrical
- Carpentry
- Const. Tech.
- HVAC
- Plumbing
- EST

Contren® Connect



2.0.0 Components of a Wall

 Key components of the wall system include the plates, studs, headers, sills, and partitions. Study the descriptions of these components in the text.



Note to Reader: You will need to refer frequently to Figure 1 during the discussion of wall systems.

- Walls require solid corners that can support the weight of the structure. The straightest, least defective studs are used for corners.
- One common method of making corners uses blocking between the corner studs.

LEVERAGING Technology with Traditional Training



Simulator Benefits





- Low risk Safe Practice
- Evaluate operator skill & knowledge prior to employment or advancement
- Teach basic operation of systems & equipment
- Site configuration orientation
- Periodic re-training for new product, bad habit correction
- Less expensive
 - instructor hours
 - vehicle hours
 - lost production
 - Accidents







Simulator Benefits



- Can be used 24-hours a day
- Simulate any conditions, anytime:
 - Weather Rain, Snow, Fog
 - Day/Night
 - Seasons
- Consistent presentation of material, regardless of
 - Location
 - Conditions
 - Instructor
 - Language
- Trouble Spots can be identified and trainee behavior corrected







Welding Simulation



- Increases the Number of Practice Passes
- Accelerates Learning
- Integrates with Existing Training Requirements
- Provides Objective Feedback
- Increases Safety
- Environmentally Friendly







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Market Breakdown

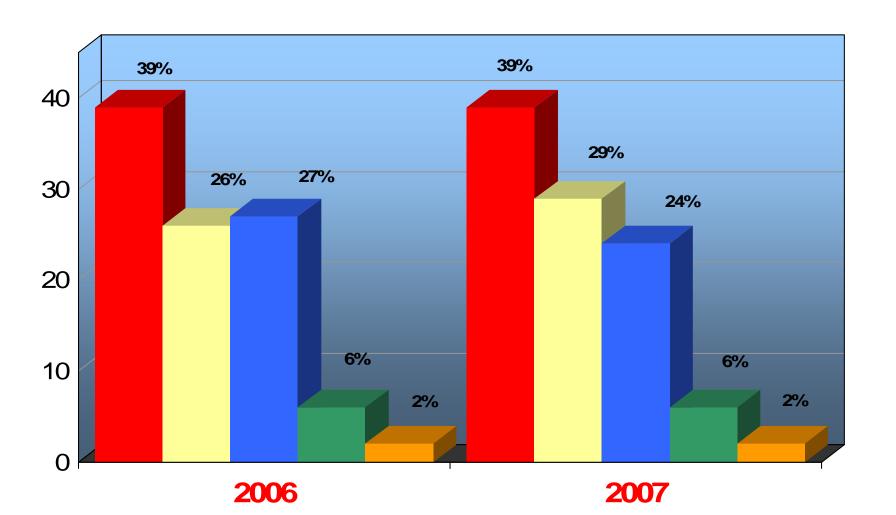
- ✓ Secondary/vocational high schools and technical
- ✓ State DOE
- ✓ Post-secondary community and technical colleges
- ✓ Career colleges
- ✓ Corrections (Adult and Juvenile-state, federal and private)
- ✓ Industry Associations
- ✓ Contractors
- ✓ Job Corps & Youth Build
- ✓ Owners
- ✓ Leased Labor

- ✓ Union Organizations
- ✓ State licensure
- ✓ State and local workforce agencies (Gulf Coast particularly)
- ✓ Gulf Coast Rebuild (I'M GREAT)
- ✓ Plant facilities
- ✓ Pipeline
- ✓ FFA
- ✓ Military & Military Corrections

Overall Contren® Usage

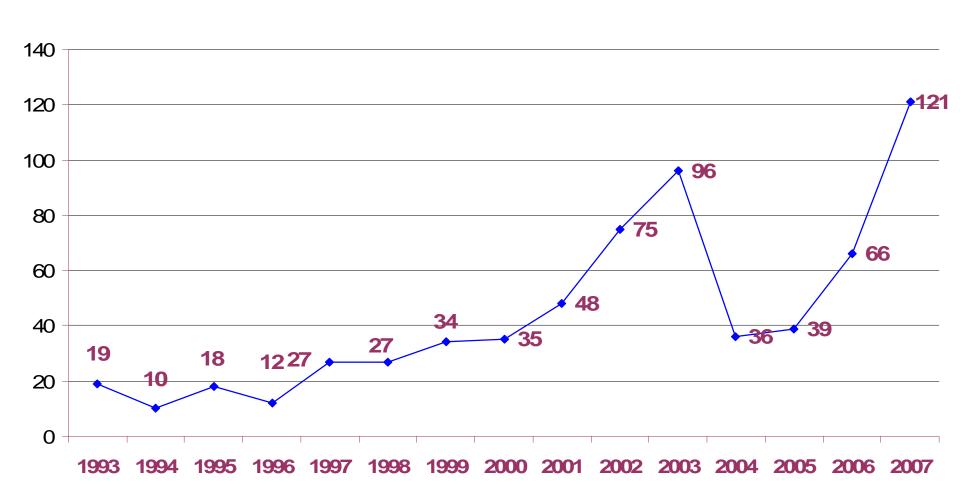
53% of usage in Secondary and Post Secondary Education



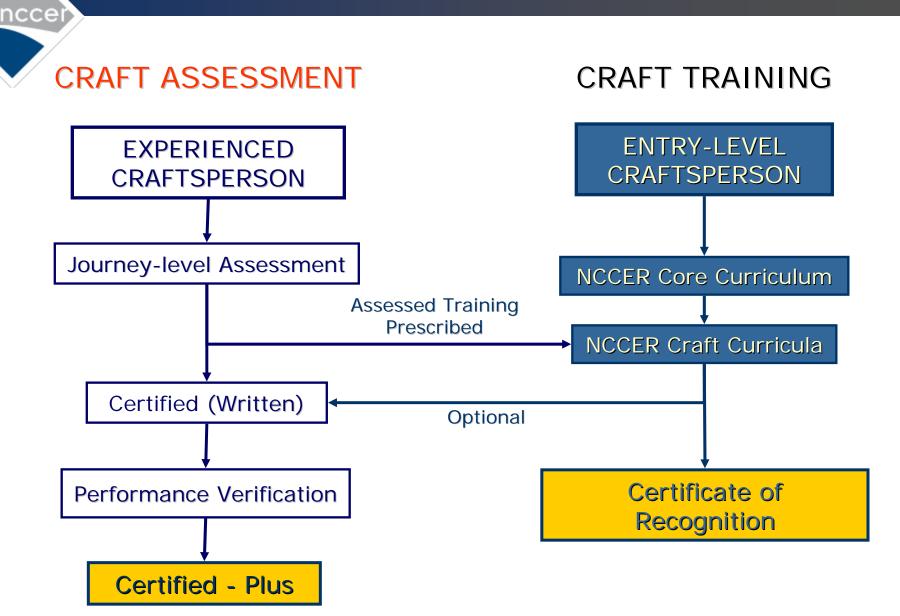


2007 Contren Projects

Continuously improve products and services to meet the needs of the industry and our customers.



Assessment vs. Training



Assessment & Certification

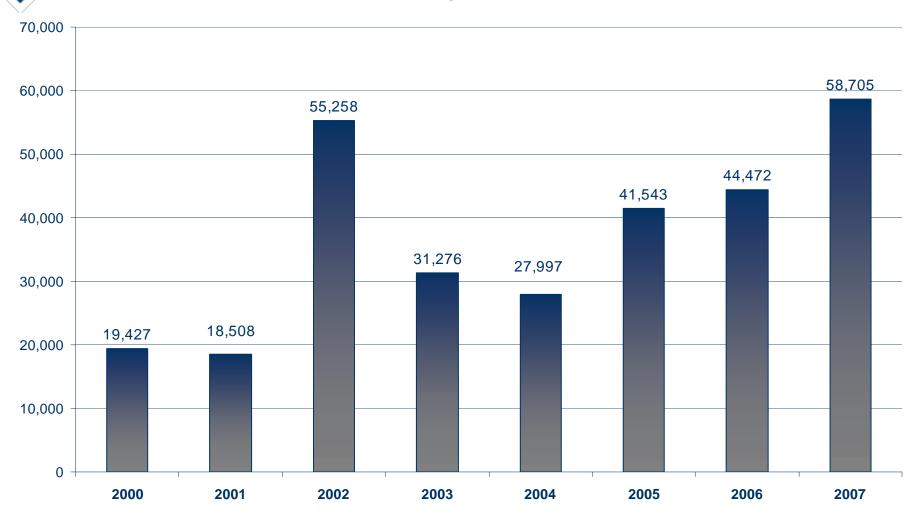
Score Report & Training Prescription 63% Overall Score

Module	Topic	Possible	Actual	% Correct	Status
23101	Introduction to Concrete Construction and Finishing	8	4	68	TR
23102	02 Safety Requirements		5	83	Pass
23103	103 Properties of Concrete		4	57	TR
23104 Tools and Equipment		8	5	83	Pass
23105	105 Preparing for Placement		4	100	Pass
23106	3106 Placing Concrete		4	66	TR
23107	107 Finishing, Part One		5	83	Pass
23108	8 Curing and Protecting Concrete		5	71	Pass
23109	Introduction to Troubleshooting	5	1	20	TR
23201	Properties of Concrete, Part Two		2	33	TR
23202	3202 Estimating Concrete Quantities		2	50	TR
23203	3203 Forming		4	100	Pass
23204	3204 Site Concrete		3	50	TR
23206	3206 Industrial Floors		3	75	Pass
23207	3207 Superflat Floors		1	25	TR
23208	208 Surface Treatments		1	25	TR
23209	Quality Control		4	80	Pass
23210	Making Repairs	4	1	25	TR
36108-01	Paving	8	5	83	Pass

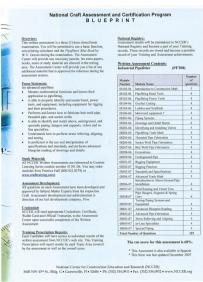


National Craft Assessment & Certification Program

Cumulative Program Total 292,478



Latest Craft Assessments Releases





National Craft Assessment and Certification Program B L U E P R I N T

Industrial Pipefitting

- 68% Cut Score
- 125-item exam
- 90-day swap out from date of release

Industrial Carpenter

- 75% Cut score
- 103-item exam
- 90-day swap out from date of release



National Craft Assessments

CRAFT

Industrial Electrician

Boilermaker Tech

Carpentry Level One

Commercial Carpentry

Concrete Finisher

Construction Technology

Electrical Level One

Electronic Systems Tech. (EST)

Finish Carpentry

Form Carpentry

Frame Carpentry

Commercial Electrician

Core: Intro Craft Skills

HVAC

Heavy Equip. Operator Level One

Industrial Carpentry

Industrial Ironworker

Industrial Maint. Electrician

Industrial Maint. Mechanic

Industrial Millwright

Industrial Painter

Industrial Pipefitter

Instrument Fitter

Instrumentation Tech

Masonry Level One

Mobile Crane Operator

Reinforcing Iron-Rebar

Rigging

Rigging Fundamentals

Scaffold Builder

Industrial Insulator

Boilermaker



National Pipeline Assessments

PIPELINE

Abnormal Operating Conditions - General

Abnormal Operating Conditions - Control Center

Abnormal Operating Conditions - Gas

Corrosion Prevention Field Technician 1 - Installation

Corrosion Prevention Field Technician 1 - Measurement

Corrosion Prevention Field Technician 2

Corrosion Prevention Field Technician 3

Electrical & Instrumentation Pipeline Technician

Field & Control Center Operation Technician

Gas Pipeline Operations

Gas Maintenance Specialty

Mechanical Pipeline Technician

NDT - Radiographic Film Interpretation of Pipeline Welds

Pipeline Maintenance Technician



Crane Operator Certification

Written Exam Categories

- 1. Industrial/All Purpose Crane
- 2. Boom Truck (Telescopic & Articulating Boom)
- 3. Hydraulic (Rough Terrain/All Terrain)
- 4. Lattice Boom (Crawler and Truck Mount)

Practical Exam Categories



- Industrial/All Purpose Telescopic Boom Cranes
- 2. Crawler Mount Telescopic Boom Cranes
- 3. Telescoping Boom Truck Fixed Control Station
- 4. Telescoping Boom Truck Rotating Control Station
- 5. Articulating Boom Truck Fixed Control Station
- 6. Articulating Boom Truck Rotating Control Station
- 7. Rough Terrain/All Terrain Fixed Cab Telescopic Boom Cranes – Single Control Station

- 8. Rough Terrain/All Terrain
 Rotating Cab Telescopic Boom
 Cranes Single Control Station
- 9. Truck Crane/All Terrain Telescopic Boom Cranes – Multiple Control Station
- Lattice Boom Crane Crawler Mount (Friction Machinery)
- Lattice Boom Crane Crawler Mount (Hydraulic Machinery)
- 12. Lattice Boom Crane Truck Mount (Friction Machinery)
- Lattice Boom Crane Truck Mount (Hydraulic Machinery)

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NCCER Management Programs

- Introduction to Crew Leader Webbased Program
- Clemson University Programs:
 - Project Supervisors Academy
 - Project Managers Academy
 - Safety Managers Academy
 - NAWIC Leadership Academy
 - Masters Degree Program
- Pima Community College Craft
 Training for College Credit



	- ,
October 28-31, 2007 NAWIC Leadership Academy for Women	tre you a NAWIC member?
	yes, chapter name or name
Complete the following information: (alease type or paid of	ina tyl
None	Cell Phone
Social Security Number	
Company Name	Phone Number
Address	
ChyStateCo	
Type of First (general, mechanical, etc.)	
Attender's Title	
Contact Person/Fosition	
Where did you learn about INCCER's NAWIC Leadership Academy?	
For notification in case of emergency:	
Name	Malaterohip
Day Phone	
Does the attender have a medical condition of which the academy should be	aware? C Yes C No
If yes, describe	
Is the attendee on any medication? Yes No	
Myes, please lot	
Attenden's Signature	Date
Employer's Signature	Date
Partnersh: 4Check Osei	
□ MasterCool □ Vita □ Ames □ Discover □ Check #	☐ Purchase Order # ☐ Inv
Credit Card: Name Cord Number	Exp. Date
Signature	
Puschase Order (Bill To):	

ACCENT is not required to for the above given by resolution of the accident, who are thermosives solely responsible for their occurses of individuality. The accidency training and above or spirion, which care only puper to any periodic army periodic legal action or spirion, which care only be given where activate to specify their existence.

82,334,8911 aut. 118 or refer to seww.necos.org. Confirmation will be sent prior to start of class.

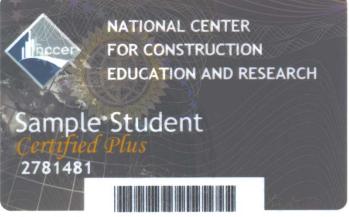




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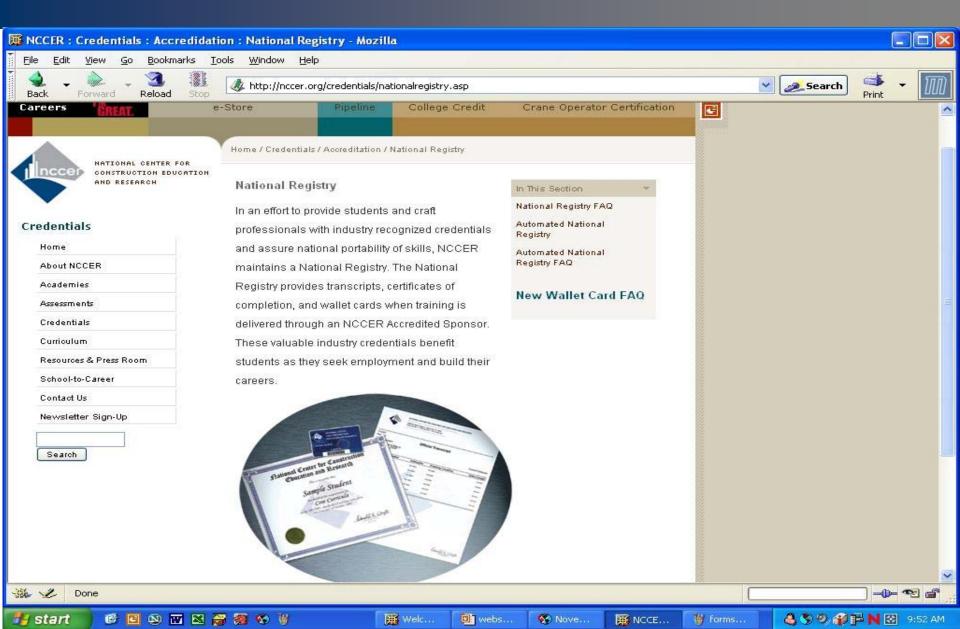
Sample Student

2781481



Industry Recognized Credentials

National Registry





Automated National Credentials

NCCER Automated National Registry







Frequently Asked Questions



Educational Outreach & Recruiting

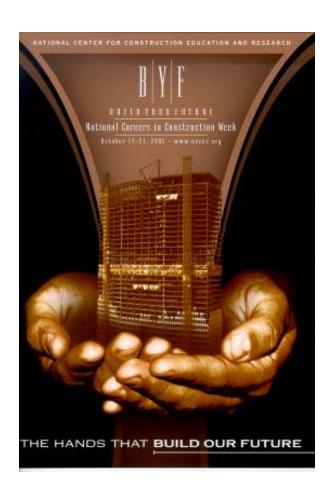
2006 CURT Workforce Development Award Winner

Build Your Future campaign

Linking industry to education

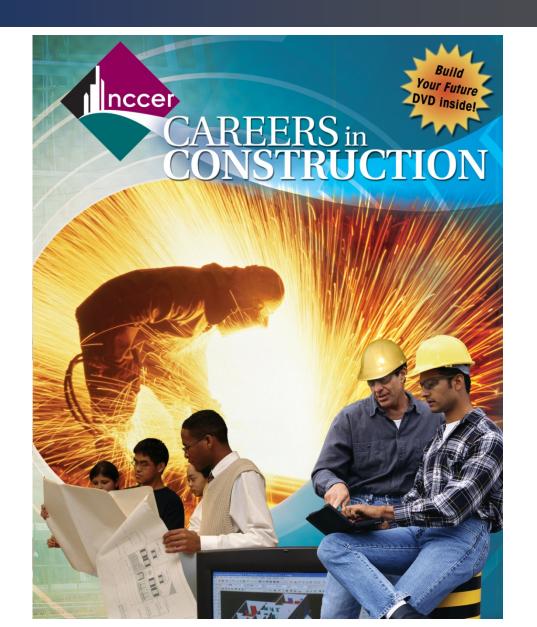
- Careers in Construction Week
 - October 15-19, 2007







Educational Outreach & Recruiting





with the NCCER logo.

Job Search - Search the Career Center database of jobs around the country. Registration not required.

Job Search Agents are included when you create an account with the McGraw-Hill Construction Career Center. You will be automatically notified by e-mail when new job opportunities are posted that match your criteria.

Employers - Click here to post your job listings online in the McGraw-Hill Construction Career Center or learn more about Resume searching packages. Search resumes for employees that have been trained and/or certified by NCCER.







Career Center Homepage In partnership with McGraw-Hill Construction

Choose Construction

initiative

A National Approach to Construction Workforce Development





Pending









Who is the competition for new workers?

Other high growth industries, including

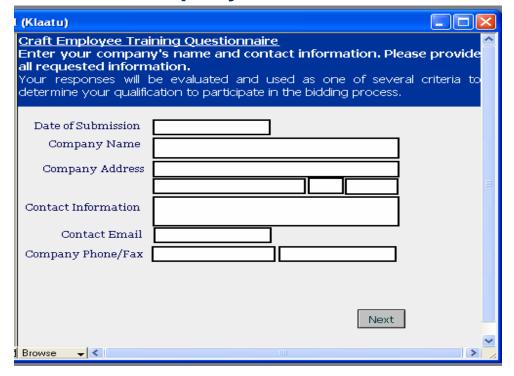
- Nursing
- Automotive
- Manufacturing
- Hospitality
- Services and retail

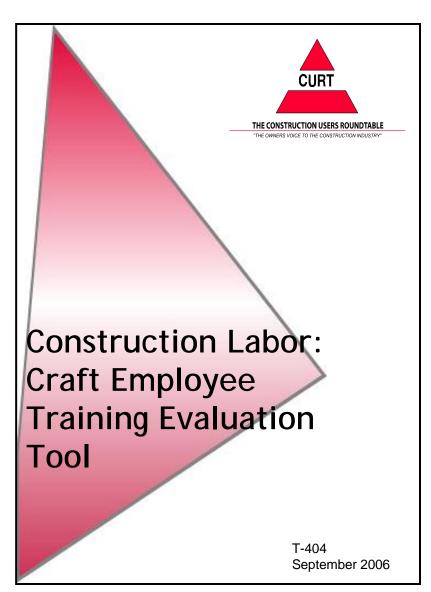


Pre-Qualification Verification

ORAFI

Company Information







Business Case for Training



Construction Industry Institute

www.construction-institute.org

RT 231 Craft Training in the US and Canada

Presented to: CII Annual Conference, CURT Annual Conference, AGC Education Conference, NPRA Workforce Conference, AGC Convention,



1% of Labor Cost Investment

	Average Improvement	
	Capital Project	Maintenance Project
Productivity Improvement	11%	10%
Turnover Cost Decrease	14%	14%
Absenteeism Decrease	15%	15%
Injury Decrease	26%	27%
Rework Decrease	23%	26%

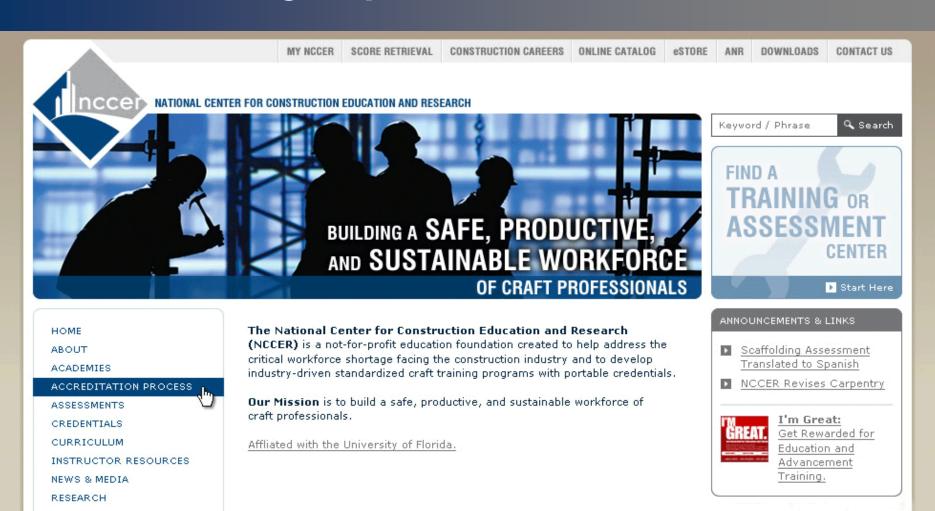


The Project's Business Case

Based on a Typical Industrial Project and Industry Survey Data...

	Average
Estimated Productivity Improvement	\$322,257
Estimated Turnover Reduction	\$32,150
Estimated Absenteeism Reduction	\$74,871
Estimated Injury Reduction	\$66,940
Estimated Rework Reduction	\$25,377
Total Benefits	\$521,595
Training Cost (1% Labor Cost)	\$230,296
Benefit Cost (B/C) Ratio	2.3

Newly Updated Web Site



HOME SITE MAP CONSTRUCTION CAREERS I'M GREAT PRIVACY CONTACT US ONLINE CATALOG

TRAINING TOOLBOX

NEWSLETTER SIGN-UP



National Center for Construction Education and Research

BUILDING TOMORROW'S WORKFORCE

THANK YOU

Questions?

For additional information on NCCER contact

1-888-NCCER20 www.nccer.org





NCCER Funding

- Royalties from Contren Product Sales
- Commission from Assessment Sales
- Academy & Master Trainer Programs
- Other Income Donations,
 Manufacturer Sponsorships, etc.
- National Training Service Agreements (15 cent/effort-hour) and General 2cent Contributions
- Interest from Restricted Endowment