

NRMCA CONCRETE DURABILITY COURSE

February 25-27, 2009 • Austin, Texas
AT&T Executive Education and Conference Center

Why should you attend: This 2½ day course will cover the fundamental mechanisms that impact durability of concrete. Recognize symptoms and learn about methods to evaluate deterioration of concrete; understand causes of durability problems and methods to prevent them; test methods for durability and their limitations; and code and specification criteria for durable concrete structures.

Topics will cover the concrete microstructure, cracking, corrosion mechanisms, freeze-thaw resistance, sulfate resistance, alkali aggregate reactions (AAR), and other durability-related distress.

The course will be taught by instructors who are on the forefront of current research and diagnosis of concrete durability.

The course will conclude with an exam. Persons who have obtained the NRMCA Concrete Technologist Level 3 certification at the NRMCA technical short course will qualify for NRMCA Concrete Technologist Level 4 certification on successful completion of this exam. This is not a prerequisite for attending.

Program at a Glance

Day 1 – Morning Session (8:00 a.m. to noon)

- ◆ Concrete Gone Wild – identify durability-related distress
- ◆ Nature of Concrete – hydration, pore structure, permeability
- ◆ Concrete cracks – identifying reasons for cracking and minimizing cracks

Day 1 – Afternoon Session (1:00 – 5:00 p.m.)

- ◆ Corrosion mechanisms – carbonation, chlorides, permeability
- ◆ Corrosion protection strategies
- ◆ Service-life prediction – Life-365 and beyond
- ◆ Case Study and Group Assignment

Day 2 – Morning Session (8:00 a.m. to noon)

- ◆ Alkali Aggregate Reactions – ASR and ACR
- ◆ Sulfate-Related durability Problems
- ◆ Other concrete deterioration – abrasion, erosion, chemical and acid attack

Day 2 – Afternoon Session (1:00 – 5:00 p.m.)

- ◆ Group presentations of case study
- ◆ Freeze-thaw durability and deicer scaling
- ◆ Code and Specification requirements — general overview and durability provisions
- ◆ Taming the Wild – Wrap-up interactive session on prevention measures.



Register today for this comprehensive course on a fundamental topic!

Day 3 – Morning Session (8:00 to 10:00 a.m.)

Exam – 2 hours

Instructors:

Michael Thomas, Ph.D., P.Eng.,
Professor, Department of Civil Engineering,
University of New Brunswick.

Kevin Folliard, Ph.D.,
Associate Professor, Department of Civil Engineering,
University of Texas at Austin

NRMCA Engineering Division Staff

Breakfast provided

REGISTER TODAY: use the attached form or visit NRMCA.org. For more course information, contact Michelle Elehenawi at (888) 846-7622 x1143 or melhenawi@nrmca.org.



Supports the P2P Initiative

CCP_f

Certified Concrete Professional

The highest professional designation in the industry. This seminar is part of NRMCA's Seminars, Training and Education Programs, STEPS®, and earns you credit towards becoming a **CCP_f**.

NRMCA

**NRMCA's Concrete Durability Course
Concrete Technologist Level IV Certification**

February 25-27, 2009

Austin, Texas

Day 1 & Day 2: 8:00 am - 5:00pm

Day 3: 8:00am - 10:00pm (Optional Exam)

NRMCA reserves the right to close registration in order to not exceed capacity, early registration is encouraged.

Submit separate form for each registrant. Save a copy for your files.

Name/Title

Company

Address (No PO Boxes)

City/State/Zip

Phone/Fax /Email

Emergency Contact Name/Phone

Supervisor Name/Title

Address

City/State/Zip

Phone/Fax/Email

Special Needs (Attach special needs information)

\$800 NRMCA Member \$1125 Non-Members

I will attempt the February 27 exam Yes No

Breakfast and light snacks provided

Course Location:

AT&T Executive Education and Conference Center

1900 University Avenue
Austin, TX 78705
512-404-1600

Hotel Info: For your convenience, NRMCA has contracted the **AT&T Executive Education and Conference Center** for a block of sleeping rooms at discount prices.

Room nights: Tuesday, Feb 24 - Thursday, Feb 26, 2009

Rate: \$159/night plus tax. **Call-in name:** NRMCA. Hotel rates and availability are not guaranteed after **February 10, 2009** Please make reservations early.

Shuttle Info: Super Shuttle - approx. \$25/way (713) 523-8888

Airport info: Austin Bergstrom International Airport (AUS)

Return flights should NOT be made before noon on February 27, 2009 if taking the exam.

Is your company an NRMCA member and also a member of an affiliate state association? If so, you may be entitled to an additional discount off the member price. Contact Jessica Moore, (240) 485-1152 or jmoore@nrmca.org for more information, or pay the full price and we will refund any applicable discount

Payment Method:

Check (make check payable to NRMCA)
Mail registration form and check to:
SunTrust Bank, c/o NRMCA
P.O. Box 79433
Baltimore, MD 21279

VISA MasterCard AmEx

Card Number Exp. Date

Name on Credit Card (print)

Signature

For credit card payment, fax form to:
Jessica Moore, Meetings. Dept., NRMCA, (301) 565-8200

Credit card or check, must accompany registrations. NRMCA No longer accepts P.O. #'s. Please Provide a credit card number or check with all registrations.

Important: NRMCA reserves the right to cancel this event. If cancelled, NRMCA will notify registrants via fax or e-mail by COB, **February 10, 2009** (NRMCA will refund the entire registration fee, but is not responsible for airline and hotel reservation fees.) Class confirmations will be sent after this possible cancellation date. It is advisable not to make travel arrangements until you receive your confirmation. You are responsible for making and paying for your own hotel and travel arrangements.

Please provide e-mail addresses for all requesting to receive registration confirmations: (notification does not guarantee that class will run)

Email address

Email address

Cancellation Policy: Full cancellation refunds, less a \$100 administration fee, will be extended until February 10, 2009. All cancellations after that date will not be refunded. Fee cancellations cannot be transferred to a future class. Registration cancellations must be made in writing to :

NRMCA Meetings Dept.
900 Spring Street
Silver Spring, MD 20910
Or, faxed to (301) 565-8200

For additional registration information, contact:
Jessica Moore, (240) 485-1152 or by e-mail at jmoore@nrmca.org.

This Course follows all federal anti-trust guidelines.

This course earns credit towards a **CCP^f** (Certified Concrete Professional) certification, the highest professional designation in the industry. For more information, visit www.nrmca.org/steps



For NRMCA Use Only Order #: _____ Authorization #: _____ Date _____ Confirmation #: _____