

NRMCA

Workforce Development



Improving Concrete Quality

WEDNESDAY, NOVEMBER 20, 2019, LITTLE ROCK, AR

Course Information

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Registration and Travel Information

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Course follows all federal anti-trust guidelines.

This course earns **8 credits** towards a CCPf designation in the Concrete Technology career track. CCPf, standing for Certified Concrete Professional, is the highest professional designation in the industry. For more information, visit www.nrmca.org/steps

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Purpose and Background

Improved concrete quality has far reaching benefits—in improved performance, reduced time and costs, a lower environmental footprint of concrete and an overall improvement in the quality of concrete construction. Based on quality surveys and award submissions, it has been observed that the industry does not commonly track quantifiable quality indicators and, as a result, the return on quality investments is not well understood. *Improving Concrete Quality*, will address these issues as well as other NRMCA resources which provide the basic content for the course.

What will you learn?

- How do you know if you have good quality? What should be your quality metric?
- How to become more profitable through better quality?
- What are all the key statistical calculations you need to know in concrete?
- How to control the mixing water content in concrete?
- How to deal with temperature and delivery time variations?
- What is the most effective way to ensure that your material ingredients are of good quality?
- How to improve batching accuracy, mixing uniformity?
- How to identify non standard testing and curing? How to improve testing quality?
- Tests a producer should do, internal audits and many more...

Who Should Attend?

This course will be of significant value to concrete producers that will come away with readily implementable steps to manage variability and attain a more consistent product, thereby seeing performance benefits and cost savings. Concrete ingredient material suppliers will benefit by understanding the needs of their customers and to develop information on variability that can help their quality systems.

The course will be of interest to contractors and testing laboratories. The course will help testing labs measure and improve testing quality.

Design professionals can benefit from this course by recognizing the opportunity for improved quality in concrete construction and the evolution to performance-based specifications.

Text/handouts – Publications worth \$350+

- *Improving Concrete Quality* book
- NRMCA QC Manual Section 1
- Quality Management System for Ready Mixed Concrete Companies
- NRMCA Quality Award, Survey and Certification Information
- Variables that Influence Concrete Compressive Strength
- Code and Standards Requirements for Acceptance Testing – Presentation with notes and checklist
- NRMCA/ASCC Pre-Construction Checklist
- Related Technology in Practice topics
- Related Specification in Practice topics and P2P Presentation

Instructors

Kevin A. MacDonald, FACI, is president and principal, Beton Consulting Engineers LLC, Mendota Heights, MN, with specific expertise in the production and performance of concrete. He is a licensed professional engineer in Minnesota and Ontario, Canada, and is a fellow of ACI. MacDonald co-chairs ACI subcommittee 130-B, Production/Transport/Construction; ACI committee 306, Cold Weather Concrete; chairs the NACE task group; and the TAC awards task group and is an active member of several ACI committees. He is the current president of the ACI Minnesota chapter and serves on the Steering Committee of the Aggregate & Ready Mix Association of Minnesota.

Karthik Obla, Ph.D., P.E., FACI, is Vice President, Technical Services at NRMCA. With over 25 years of experience in concrete technology, he is responsible for NRMCA's concrete producer quality initiatives as well as various educational and technical programs. He supports NRMCA's P2P initiative and directs the activities of the NRMCA Research Laboratory. A fellow of ACI and a winner of ACI's Young Professional Achievement Award and ASTM Award of Appreciation from the Sustainability and Concrete Committees, Dr. Obla is an active member of various ACI, ASTM, and TRB technical committees. He has served as chair for ASTM 09.49—Pervious Concrete, and ACI 232—Fly Ash and Natural Pozzolans. He holds a B. Tech in civil engineering from IIT (BHU) Varanasi, India and a M.S. and Ph.D. from the University of Michigan, Ann Arbor. He is a licensed professional engineer in the state of Maryland and has served as vice-president and president for the ACI San Antonio Chapter.

Improving Concrete Quality Course

WEDNESDAY, NOVEMBER 20, 2019, LITTLE ROCK, AR

7:30 AM - 4:30 PM

<i>NRMCA USE ONLY</i>
Date: _____
Member ID: _____
Confirmation#: _____

ATTENDEE INFORMATION

Name/Title: _____

Company: _____

Mailing Address: _____ City/State/Zip: _____

Phone: _____ Fax: _____ Email: _____

Emergency Contact Name/Phone: _____

Dietary Restrictions/Special Needs: _____

Please Send Registration/Receipt Confirmation Email to: _____

(Notification does not guarantee class will run)

COURSE FEES/PAYMENT AUTHORIZATION

\$295 Members and Non-members.

Please submit separate forms for ALL attendees

10% (3-5 members) 15% (+6 members)

Check Payment:

**by sending a check there will be a delay in processing*

(Make check payable to NRMCA)

SunTrust Bank, c/o NRMCA, P.O. Box 79433 Baltimore, MD 21279

Select One: Visa MasterCard AMEX

Card Number: _____

Exp. Date/CVV# _____

Cardholder Name: _____

Registration without payment will NOT be confirmed.

COURSE LOCATION

Course Location: ARDOT Materials Building, 11301 West Baseline Road
Little Rock, AR 72209

Parking: Parking is available to the right of second driveway into the building.

Hotel: NRMCA has NOT contracted a block of rooms for this course but suggests the following hotels near the Clinton National Airport.

- Holiday Inn Little Rock Conference Center, 3201 Bankhead Drive, Little Rock, AR 72206
- Holiday Inn Express Little Rock-Airport, 3121 Bankhead Drive, Little Rock, AR 72206

Closest Airport: The closest airport is the Clinton National Airport, Little Rock (LIT) located approximately 16 miles/20 minutes from the ARDOT Materials Building.

NRMCA POLICIES/INFORMATION

Cancellation Policy: Full cancellation refunds, less a \$50 administration fee, will be extended until **October 29, 2019**. All cancellations after **October 29, 2019** will not be refunded. Fee cancellations cannot be transferred to a future class. Substitutions can be made at any time with no penalty. Registration cancellations must be made in writing to: meetings@nrmca.org.

Confirmation of Event: After registration and payment is processed, a registration receipt will be provided (allow up to 72 hours). A class confirmation, confirming the course will run as scheduled, will be sent via email no later than COB, **October 29, 2019**.

Important/Class Confirmation: NRMCA reserves the right to cancel this event. In the unlikely event the class is cancelled, NRMCA will refund the entire registration fee, but is not responsible for airline and hotel reservation fees.

Register Online: www.nrmca.org/Education/Seminars/improving_concrete_quality.htm

Return Form to meetings@nrmca.org or Fax: (301) 565-8200

COURSE SCHEDULE

7:30 am	Registration
8:00 am	Overview of Quality Organization, Obla
8:30 am	Quantifying Impact of Quality Systems, Obla
9:15 am	Statistical Concepts for Monitoring Quality, MacDonald
9:45 am	Break
10:00 am	Monitoring and Controlling Water Content in Mixtures, MacDonald
10:45 am	Quantifying Variability of Ingredient Materials, Obla
11:30 am	Quantifying Variability Associated with Manufacturing, MacDonald
12:15 pm	Lunch
1:00 pm	Quantifying Variability Associated with Testing – Monitoring Test Data, MacDonald
1:45 pm	Producer Product Testing to Minimize Variability, MacDonald
2:15 pm	What to do with acceptance test data – Case study of 3 projects, Obla
2:45 pm	Impact of Specifications on Quality, MacDonald
3:15 pm	Break
3:30 pm	The Quality-Sustainability link, MacDonald
4:00 pm	Quality Management System (NRMCA Quality Certification Program), Obla