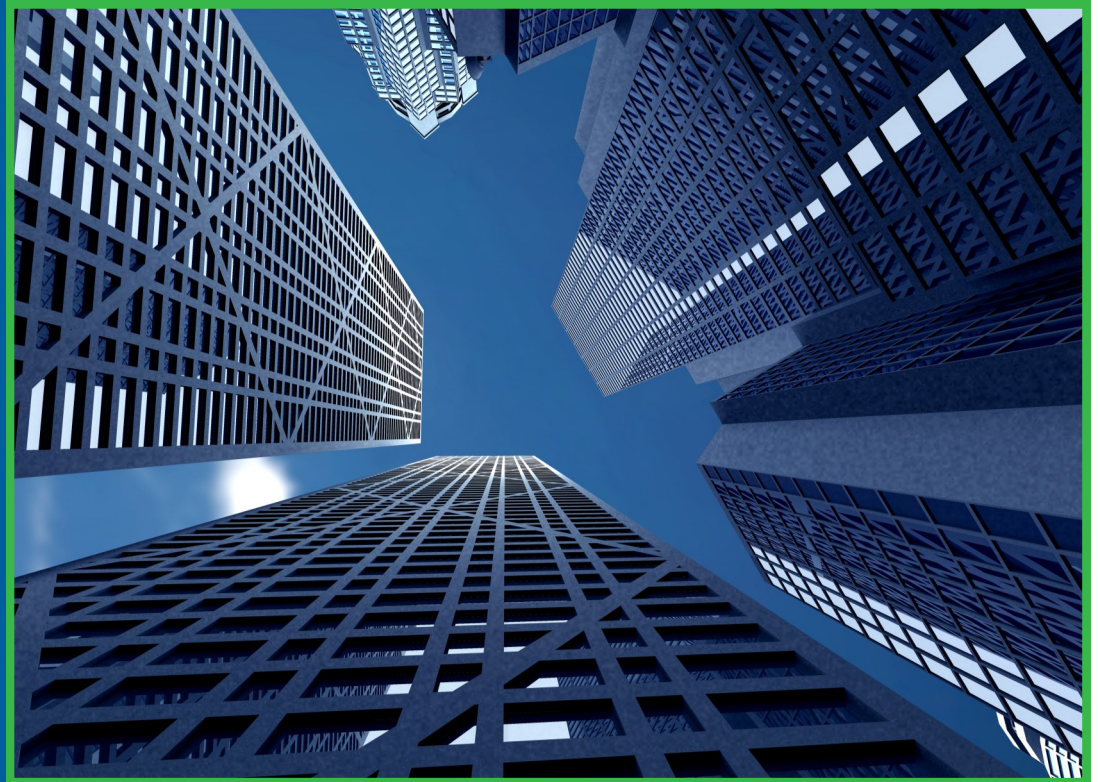


NEBB
Sound and Vibration
Certified Professional
Seminar and Exam



November 8-12, 2014
Deerfield Beach, FL



Introduction

The NEBB sound and vibration measurement is a valuable service to building owners who strive to maintain quality environments and minimize maintenance costs. Sound measurement and analysis plays an important role in providing acceptable space usage for various commercial, manufacturing and industrial activities. Vibration measurement and analysis is a proven predictive maintenance activity that helps minimize repair and downtime costs for rotating machinery. In our current business where building owners strive to maintain high occupancy and minimize maintenance costs, sound and vibration measurement and analysis, can help provide tangible cost savings.

NEBB's Sound and Vibration seminar is designed to prepare professionals in the correct method to perform consistent, repeatable readings to meet sound and/or vibration specifications for projects.

Register for the Seminar and Exams to save 50% off the regular price for the Sound and Vibration Exams

Learning objectives

- Learn how to satisfy specification and customer requirements, know how and when to perform readings
- Learn how to make basic troubleshooting/diagnostic determinations
- Learn how to make simple recommendations, to guide appropriate parties towards possible remediation solutions

Who should attend

This is a review seminar covering the engineering basics of sound and/ or vibration measurement. Individuals who attend the seminar should already possess a basic understanding of sound and vibration measurement.

Firms/individuals interested in achieving NEBB certification in sound and/ or vibration measurement and other firms currently certified in sound and/ or vibration seeking in-depth instruction in sound/ vibration measurement procedures.

Content

This course includes an overview of sound and/ or vibration measurement with both classroom reviews of basic applicable engineering fundamentals and hands-on sessions using current instrumentation. The written and practical examinations will be administered after the seminar.

Sound Measurement Seminar Schedule and Outline

<p>Saturday, November 8</p>	<p>7:00 AM - 8:00 AM</p>	<p>Registration</p>
	<p>8:00 AM - 4:30 PM</p>	<ul style="list-style-type: none"> • NEBB Sound Certification • Physics of Sound <ul style="list-style-type: none"> • Logarithms • Sound Sources • Attenuation of Sound • Free Field Conditions • Reverberant Fields • Near Field Conditions • Adding and Subtracting Sound Levels • Weighting Curves (A, C, Flat) • Human Response to Sound • Practice making sound level measurements • Practice Problems
<p>Sunday, November 9</p>	<p>8:00 AM - 4:30 PM</p>	<ul style="list-style-type: none"> • Review of Day 1 Material (Q & A) • Sound Level Instrumentation • Calibration of Sound Level Instrumentation • Sound Level Measurements <ul style="list-style-type: none"> • Background and Ambient Sound Levels • What is a valid measurement? • Indoor Sound Level Measurements • Outdoor Sound Level Measurements • Overall Sound Levels, dB(A) • NC and RC Charts • Analysis of Sound Measurement Data • NEBB Documentation Procedures • Practice Problems • Practice making sound level measurements and Plotting NC and RC Charts
<p>Monday, November 10</p>	<p>8:00 AM - 12:00 PM</p>	<ul style="list-style-type: none"> • Review of Day 2 material • Question and Answer Session • Written (2-hours) and Practical (1/2-hour) Exams

Vibration Measurement Seminar Schedule and Outline (continued)

Monday, November 10	1:00 PM - 4:30 PM	<ul style="list-style-type: none"> • Vibration Fundamentals <ul style="list-style-type: none"> • Acceleration, Velocity, Displacement • Simple Harmonic Motion • Single Degree of Freedom Systems • Relationship between Acceleration, Velocity, Displacement Phase
Tuesday, November 11	8:00 AM - 4:30 PM	<ul style="list-style-type: none"> • Vibration Unit Conversion Calculations <ul style="list-style-type: none"> • Summing Vibration Levels • Vibration Instrumentation <ul style="list-style-type: none"> • Overall vibration level meters • Spectrum Analyzers • Frequency Range • Bandwidth • Lines of Resolution • Frequency Resolution • Windowing • Transducer Sensitivity • Accelerometers, Velocity Transducers and Displacement Sensors
Wednesday, November 12	8:00 AM - 12:00 PM	<ul style="list-style-type: none"> • Practice making vibration measurements • Introductory Analysis of Vibration Measurements
Wednesday, November 12	1:00 PM - 4:30 PM	<ul style="list-style-type: none"> • Review of Day 2 material • Question and Answer Session • Written (2-hours) and Practical (1/2-hour) Exams

Abbreviations:

HSC – Study Course for Measuring Sound and Vibration

DA – Sound and Vibration Design and Analysis

PSS&V – Procedural Standards for the Measurement and Assessment of Sound and Vibration

Instructors (preliminary—subject to change)



Kevin Gaghan, Chairman of NEBB's S&V Committee,
Gaghan Mechanical, Inc., Alexandria, VA.

Kevin has worked in the mechanical field since 1979 and has been a NEBB Certified Professional since in 1991 for Testing, adjusting and Balancing and Sound & Vibration disciplines. He started his own mechanical contracting business in 1996.

Kevin is active in both national and chapter committees. He had been a contributor to Capital MarVa since 1994 and has served on NEBB national committee since 2003.



Stuart McGregor, member of NEBB's S&V Committee,
Engineering Dynamics, Inc., Englewood, CO

Stuart is a full partner and senior acoustical engineer at Engineering Dynamics, Inc. He has experience analyzing, designing and measuring noise and vibration from building mechanical systems on projects ranging from residential condominium buildings to commercial and industrial spaces.

Stuart has successfully completed over 1000 projects, testified as an expert witness in noise and vibration related cases, and teaches sound and vibration training seminars for NEBB certified professionals and technicians.

Stuart's professional affiliations include, Acoustical Society of America, Institute of Noise Control Engineering, American Society of Heating, Refrigerating, and Air Conditioning Engineers, and the NEBB.

Recommended Reference Material

- Study Course for Measuring Sound and Vibration
- Sound and Vibration Design and Analysis
- Procedural Standards for the Measurement and Assessment of Sound and Vibration

NEBB Sound and Vibration Certified Professional Examinations

The written exam will be a 2 hour exam, which will be open book with calculators, formula sheets, S&V Procedural Standards allowed. Cell phones with internet access are NOT allowed to be used during the test. Any/all attendees also have the option of taking the written test at any Kryterion test site of their choice. Practical tests must be administered by NEBB approved test proctors

NEBB's Sound and Vibration Certified Professional Seminar

Exam Schedule

Please note that exams are optional and are NOT included in the cost of the seminar registration. Additionally, NEBB will offer all examinations to any eligible candidate who wishes to be tested but does not want to attend the seminar. The written exam will be 2 hours long and practical exam will be 30 minutes. The exam is an open book, multi answer choice format. Seminar notes and reference materials will be distributed to attendees prior to the seminar. Contact Connie Vitale at NEBB prior to October 10, 2014 to schedule exams and confirm eligibility for certification.

Certification Requirements

The NEBB Sound and Vibration discipline offers certification to firms and individuals. All of the requirements are available on the NEBB website at www.nebb.org.

Registration

Complete attached Registration Form and send with payment to:

Connie Vitale | NEBB | 8575 Grovemont Circle, Gaithersburg, MD 20877-4121

REGISTRATION DEADLINE: Wednesday, October 8, 2014

Enrollment is limited. Available openings will be filled on a "first come-first served" basis.

Please contact Connie Vitale at 301-977-3698 to confirm that space is available prior to purchasing airline tickets, or committing to other expenses. Registrants will receive a confirmation letter, including instructions regarding required seminar materials.

Hotel Information

Below is a list of hotels close to the seminar location. Please don't schedule departure before 7:00 p.m. on November 12, 2014. **Reservations at the hotel of your choice must be made directly with the hotel.**

COMFORT SUITES at I-95 & 10 th Street, Deerfield Beach, FL	954.570.8887
QUALITY SUITES at I-95 & 10 th Street, Deerfield Beach, FL	954.570.8888
EXTENDED STAY at I-95 & 10 th Street, Deerfield Beach, FL	954.428.5997
HILTON HOTEL at I-95 & Hillsboro Blvd, Deerfield Beach, FL	954.427.7700
WELLESLEY INN at I-95 & Hillsboro Blvd, Deerfield Beach, FL	954.428.0661

Airport Information

The closest airport is the Fort Lauderdale-Hollywood International Airport (FLL).

NEBB Sound & Vibration Certified Professional Seminar Registration Form

I will attend the NEBB Sound and Vibration Certified Professional Seminar, November 8-12, 2014

Name: _____ Nickname: _____
Company Name: _____ Title: _____
Address: _____
City: _____ State: _____ Zip _____
Phone: _____ Fax: _____ Chapter: _____
Email: _____ Dietary requests: _____

All hotel reservations must be made directly by the seminar participant.

Fees: (check all that apply)

- \$800 Sound Measurement Seminar registration fee
- ~~\$340~~ \$170 Sound Measurement Certified Professional Exam Fee
- ~~\$400~~ \$200 Sound Measurement Practical Exam Fee
- \$800 Vibration Measurement Seminar Registration fee
- ~~\$340~~ \$170 Vibration Measurement Certified Professional Exam Fee
- ~~\$400~~ \$200 Vibration Measurement Practical Exam Fee
- \$95 / \$60 Procedural Standards for the Measurement of Sound and Vibration (\$95 for Non-NEBB Firms and \$60 for NEBB Firms)
- \$ _____ **TOTAL AMOUNT**

Payment method:

- Check Enclosed made payable to NEBB for Seminar Registration Fee
- VISA MASTERCARD AMERICAN EXPRESS

Name on the Card _____
Credit Card Number _____ | _____ | _____ Expiration _____
Security Code _____ Signature _____

Registration form and payment must reach the NEBB Office no later than Wednesday, October 8, 2014.

Connie Vitale, connie@nebb.org | Fax: 301.977.9589, NEBB, 8575 Grovemont Cir, Gaithersburg, MD 20877

Conditions:

- Pre-registration and pre-payment of fees are necessary to ensure your participation in the seminar.
- Cancellation by registrants, regardless of reason, will be subject to a \$250 service charge to cover NEBB's expenses. A refund of the prepaid registration and examination fees will be made less the \$250 service charge. All publication sales are final.
- No shows or late cancellations (those persons registered for the seminar who do not cancel 30 days prior to the seminar and subsequently do not attend the course) will forfeit the entire registration fee and examination fee unless a replacement can be found.
- NEBB reserves the right to cancel any seminars having insufficient registrants, in which case, all prepaid registration and examination fees will be refunded in full.
- NEBB cannot be responsible for any losses resulting from cancellation of a seminar.
- **In order to receive these discounted Sound and Vibration exam fees, you must register for the seminar and exam respectively and take the written and practical exam(s) at this seminar.**

NEBB®

8575 Grovemont Circle
Gaithersburg, Maryland 20877
Telephone: 1.301.977.3698
Fax: 1.301.977.9589

www.nebb.org

August 2014