EXCELSIOR COLLEGE

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CENTER FOR PROFESSIONAL DEVELOPMENT

CERTIFIED INDOOR ENVIRONMENTALIST

32 Hours/6 Months/Instructor-Facilitated
Course Code: **CPD043** || Course Cost: **$895**

OVERVIEW

Most everyone is concerned about the air quality in their workplace, home or school. The CIE program will help you determine if these clients do, in fact, have a problem. You'll learn the practical steps you should always follow in an indoor environmental assessment, how to take samples, and how to resolve common IAQ problems. You'll learn about HVAC, building science, and the major contaminants, including their health effects.

Your clients want to be confident that they're hiring a trustworthy and competent consultant. One of the best ways to demonstrate your competency is to obtain a third-party accredited certification. Not only does this program teach you practical skills to assess indoor environments, it also prepares you for the CIE and CIEC certifications by the American Council for Accredited Certification (ACAC). All the pertinent topics covered on the certification exams, including a 100-question practice examination, are included in this program to prepare you for certification.

Getting certified is completely optional. Exams are arranged through ACAC at computerized testing centers throughout the U.S. Certain experience requirements and fees apply to students getting certified (however, there are no experience requirements for this online program).

OBJECTIVES

Upon completion of this program, you'll be able to:

- Start an indoor air quality consulting practice
- Prevent, diagnose, and resolve indoor environmental problems in homes, offices, and schools
- Use IAQ instruments and equipment to measure contaminants such as mold, bacteria, VOCs, carbon monoxide, radon, particulates, triggers to asthma and allergies, and more
- Apply current industry guidelines to standardize assessments and reporting
- Understand how building design, HVAC, and material selection all influence the indoor environment

OUTLINE

I. Program Overview

- Certifications
- Definition of IAQ
- Historical Information
- Controlling an IAQ Problem

- Overview of all Program Modules

II. IAQ Contaminants and Health Effects

- Dose Response
- At-risk Populations
- Routes of Exposure
- Building-related Symptoms and Sick-building Syndrome
- Building-related Illness
- Stressors
- Particulate Matter
- Fungi (Mold)
- Bacteria
- Viruses
- Environmental Allergens
- VOCs
- Pesticides
- Radon
- Tobacco Smoke
- Combustion By-Products
- Carbon Monoxide
- Ozone
- Mineral Particulate
- Lead
- Sewer Gas

III. HVAC

- HVAC Impact on IAQ
- Commercial Systems
- Residential Systems
- Ventilation
- Filtration
- Pressurization
- Humidity Control
- Hygiene and Maintenance

IV. The Built Environment

- Psychrometrics
- Humidity
- Dew Point
- Psychrometric Chart Example Problems
- Sources of Building Moisture
- Liquid Water Intrusion
- Vapor Diffusion
- Vapor Barriers and Retarders
- Designs in Different Climate Zones
- Air Infiltration
- Blower Door Tests

- HVAC Equipment sizing
- Occupant Generated Humidity
- Pipe Leaks and Spills
- Preventing Mold During Construction

V. Assessments

- Scientific Method
- IAQ Assessment Plan
- Step 1, Gather Information
- Checklists
- Questionnaires and Interviews
- Document Review
- Step 2, Walk-through Inspection
- Outside the Building
- Occupied Space
- HVAC System
- Step 3, Indicator Measurements
- Temperature and Relative Humidity
- Ventilation
- Moisture
- Temperature Differential/Infrared Cameras
- Pressurization
- Step 4, Diagnostic Measurements
- Formulating a Hypothesis
- Testing the Hypothesis
- Statistical Errors
- Step 5, Report Your Findings
- Incorporating Standards
- Report Outline

VI. Sampling

- Mold
  - Air
  - Surface
  - Dust
  - Bulk
  - mVOC
- Bacteria
- Volatile Organic Compounds
- Carbon Monoxide
- Particles
- Allergens
- Ozone
- Radon

VII. Microbial Remediation

- Definition of Remediation
- Review of Standards

- Safety and Health
- Fixing the Moisture Problem
- Contaminant Control
- Contaminant Removal
- Biocides and Antimicrobials
- Verifying Remediation
- Writing Specifications
- Conflict of Interest

VIII. Standard of Care

- Regulations
- Model Building Codes
- ANSI Standards
- Non-ANSI Standards
- Guidelines

COMPUTER REQUIREMENTS

This program is compatible with Windows XP/Vista/7 and IE 7 and later browsers. Adobe Flash Player is required, as is an Internet connection (high-speed recommended).

INSTRUCTOR BIO

Ian Cull, PE, CIEC, CMC, CIAQP, is the president of Indoor Sciences and was elected in 2006 and 2009 by the membership of the Indoor Air Quality Association (IAQA) to serve on its board of directors for three-year terms. Ian was elected as the organization's vice president in 2008 and 2009. He also served as a non-voting board member for the Indoor Environmental Standards Organization (IESO) from 2007-2009.

Ian first started in the fields of indoor air quality and sustainability in 1995 when he joined Chelsea Group, Ltd., an IAQ and sustainability consulting firm. Ian has developed and taught numerous seminars, certification programs, and customized presentations, reaching well over 1,000 individuals in the U.S. and several other countries, including China and India. Ian is a master trainer for the IAQA and has taught their programs: Certified Indoor Environmentalist, Fundamentals of Indoor Air Quality and HVAC, Certified IAQ Manager, and Certified Microbial Investigator. His in-depth knowledge in all aspects of building science, IAQ, and sustainability make him a highly respected and commended teacher.

Ian is a professional environmental engineer whose skill in the classroom is based on his vast experience managing a large number of projects focused on improved indoor environments and sustainability. He has completed assessments in offices, schools, homes, dormitories, condominiums, hospitals and health care facilities. Ian is proficient not only in finding problems, but also in offering appropriate solutions and recommendations to prevent future re-occurrences.

Ian is also well known for developing three educational Web sites:

- www.SeeImGreen.com
- www.LabComparisons.com
- www.IAQforms.com

These helpful tools allow professionals in the sustainability and IAQ fields to collaborate and share information. More than 2,000 unique visitors use these sites each month.

Ian has a Bachelor's of Science degree in engineering from one of the country's top environmental engineering programs at University of Illinois, Champaign-Urbana. He is a licensed Professional Engineer (PE) in the state of Illinois, a Certified Indoor Environmental Consultant (CIEC), a Certified Microbial Consultant (CMC), and a Certified Indoor Air Quality Professional (CIAQP).

Ian is a member of the IAQA, the Chicago Chapter of the U.S. Green Building Council, the International Society of Indoor Air Quality and Climate, and the American Society of Heating, Refrigerating, and Air-Conditioning Engineers.

Ian is committed to seeing the fields of IAQ and sustainability grow in the right direction. To that end, he spends a great number of hours each week volunteering on committees and boards, including the following committees:

- Chairman, IAQA's Futures Committee: 2007-present
- Chairman, IAQAware subcommittee: 2005-present
- Chairman, IAQA's Ad-Hoc Committee on Conflict of Interest: 2007, 2008
- Chairman, IAQA's Ad-Hoc Web site Committee: 2009
- IAQA's CIE subcommittee: 2003-present
- IAQA's Education Committee: 2005-present
- IAQA Nominating Committee: 2007, 2008