Northwest Arkansas Community College
Division of Science & Mathematics

ENSC 2233 Instrumentation, Sampling, and Analysis: Air Quality

Catalog Description: Sampling protocol, procedures, quality control, and field analysis will be discussed in the course. The student will demonstrate proper selection of basic monitoring equipment and instrument calibration, sampling, field analysis, and preservation procedures; representative sampling methods; and prepare and evaluate documentation associated with sampling and field analysis. Practical hands-on case studies will be utilized in developing sampling strategies, sampling methods, and analysis of sampling results. The student will be able to prepare a written report of field analysis.

Prerequisite: Fundamentals of Industrial Hygiene or Consent of Instructor

Credit hours/ Contact hours/ Load hours: 3/3/3

Target Audience/Transferability: Successful completion of this course should prepare students for successful further study in environmental and regulatory science. This is a required course for Technical Certificate in Environmental & Regulatory Science and the Environmental & Regulatory Science AAS Degree. ENSC 2233 will transfer to the University of Arkansas at Fayetteville in Environmental, Soil, and Water Science as elective credit. ENSC 2233 will also transfer to Missouri Southern State University and Northeastern Oklahoma State University at Tahlequah, Oklahoma.

Required Material: Maslansky, Air Monitoring Instrumentation, 1st Edition, 1993
Reinholtz, Editor, OSHA 1910 General Industry Standards, 1st Edition, 2007

Student Learning Outcomes: Students completing this course will:
- Recognize the types of workplace hazards that may require industrial hygiene evaluation.
- Identify appropriate industrial hygiene sampling and monitoring strategies.
- Explain uses and limitations of major industrial hygiene monitoring instruments.
- Identify situations where sampling and monitoring are needed to further evaluate workplace.
- Evaluate hazardous conditions based on monitoring results.
- Prepare written industrial hygiene survey reports that summarize, interpret and discuss sampling results; states conclusions; and makes applicable recommendations.

Topics:
- Introduction to Industrial Hygiene
- Toxicology Review
- Occupational Health Standards
- Airborne Hazards
- Sampling for Airborne Contaminants
- Indoor Air Quality
- Controlling Airborne Hazards
- Occupational Skin Disorders
- Occupational Noise Exposures
- Ionizing Radiation

- Nonionizing Radiation
- Temperature Extremes
- Selection and Use of Respirators

Forms of Assessment: None