

**Common Course Outline**  
**ENVS 116**  
**Atmospheric Science and Air Quality Management**  
**3 Semester Hours**

**The Community College of Baltimore County**

**Description**

Atmospheric Science and Air Quality Management

Explores the basics of atmospheric chemistry and investigates how human activities are polluting and changing the global atmosphere; examines laws, regulations, and technologies designed to protect air quality as well as evaluate air sampling and monitoring procedures.

Prerequisite: ENVS 101 or permission of program coordinator

**Overall Course Objectives**

Upon successful completion of ENVS 116, a student will be able to:

1. Understand atmospheric chemistry and composition.
2. Describe the chemical structure and layering of the atmosphere.
3. Explain atmospheric dynamics and processes.
4. Explore the temporal, spatial, and scale characteristics of air pollution sources.
5. Assess point, non-point, mobile and stationary emissions sources.
6. Quantify principal, secondary and tertiary emission sources.
7. Interpret international policies, federal laws and state regulatory requirements.
8. Synthesize air quality management compliance requirements.
9. Describe air quality management technologies.
10. Administer basic air monitoring and sampling methodologies and procedures.
11. Develop an air sampling program.

**Major Topics**

Fundamentals of Atmospheric Chemistry  
Chemical Composition of the Atmosphere.  
Structure of the Atmosphere  
Dynamics and Atmospheric Processes  
Sources of Pollution and Atmospheric Change  
Temporal, Spatial, and Scale Characteristics  
Point, Non-Point, Mobile, and Stationary Sources  
Principal, Secondary, and Tertiary Sources  
Air Policy and Regulations  
International Agreements and Policy  
Federal Legislation.  
State Regulations and Permitting  
Air Pollution Control and Prevention Technologies  
Emissions Control Principles & Processes  
Techniques and Technologies to Reduce Emissions  
Air Sampling and Monitoring Procedures  
Developing Air Sampling Plans  
Sample Collection  
Sample Assessment and Evaluation

**Course Requirements**

Grading procedures will be determined by the individual faculty member but may include written or oral exams, completion of written assignments or papers, and participation in class discussion and group activities.

**Other Course Information**

ENVS 116 serves as an elective in the A.A.S. degree and certificate programs in Environmental Science and Technology.

**Date Revised**

9/15/00