



Department of

**Environmental & Civil Engineering**

Mercer University

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**EVE 402**

***Air Pollution Generation and Control***

**Fall 2019**

**Monday, Wednesday, Friday**

**9:00 – 9:50**

**Room EGC 110**

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**Instructor:** André Butler

**Office:** Suite 116E, School of Engineering

**Availability:** By appointment; VERY flexible

**Phone:** 301-2476 (w)

**Email:** butler\_aj@mercer.edu

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**Required** Wark, K., Warner, C.F., and Davis, W.T. "Air Pollution: Its Origin and Control," Third Edition, Addison Wesley, Longman, 1998. ISBN-13: 978-0673994165.

**Catalog Description:**

A study of air pollution, including measurements, causes and effects on the environment. Comparison of chemical and particulate pollution from various sources. Energy and meteorological characteristics of the atmosphere in relation to the distribution of pollutants. Evaluation and design of low emission systems and components. Discussion of practical solutions and governmental regulations for the present and future. Plant trips and design projects.

**Course Objectives:**

Upon successful completion of this course, students will be able to

1. Identify and list typical pollution sources and describe their effects on health and the environment.
2. Solve elementary problems related to air pollution concentrations (mass balances and volume air flow calculations) and visibility limitations associated with pollutants.
3. Apply meteorological skills to determine environmental stability and to describe micro and macro wind movements.
4. Use meteorology knowledge in combination with pollution dispersion modeling techniques (Gaussian) to predict target compound concentrations at any location from the point source.
5. Select/describe appropriate particulate control technology and perform basic design calculations.
6. Select/describe appropriate gas and vapor control technology and perform basic design calculations.
7. Discuss details surrounding both local and global environmental issues (global warming, ozone, greenhouse gases, attainment issues, etc).

**Course Website:** [http://faculty.mercer.edu/butler\\_aj/eve402.htm](http://faculty.mercer.edu/butler_aj/eve402.htm)

Visit often for course updates.

**Prerequisite:** EVE 290

**Grading:** The final grade will be determined as follows:

Homework	20%	
Exam #1	25%	
Exam #2	25%	
Final Exam	30%	<b>Saturday, 14 December, 2019, 9:00 - 12:00 Noon.</b>

**Homework:** Homework is an important component of the class and will be distributed regularly. Collaboration is acceptable, but each student must submit an individual assignment. As a general rule, late homework assignments will not be graded.

**Class Participation:** Students are expected to attend class and actively participate during discussions.

### **Class Standards**

1. Please turn off cell phones before entering the classroom.
2. Firearms/weapons are not allowed in Mercer University campus facilities. For more information, visit the MERPO website (<https://police.mercer.edu/>).
3. The **honor code** provisions as outlined in the *Bulletin* and in the student handbook, *The Lair*, will be assumed for everyone. It should be clear from class discussion whether an assignment is collaborative or individual. When in doubt, please ask to avoid potentially embarrassing situations. Plagiarism is a violation of the honor code and is strictly prohibited.
4. Students in need of accommodation due to a disability should contact the Access and Accommodation Office to complete the verification process to become approved for services. In order to receive accommodations, each term, students will request accommodation and faculty notification forms through the Access Office online system *Accommodate*. Students are strongly encouraged to schedule a meeting with each professor in a timely manner to discuss arrangements. Accommodations are not retroactive in nature. Note - Disability accommodations or status are not reflected on academic transcripts. Students with a history of a disability, perceived as having a disability or with a current disability who do not wish to use academic accommodations are also strongly encouraged to complete the verification process with the Access Office.

Students must request accommodations in a timely manner to receive accommodations in a timely manner.

5. Mental Health and Wellness: Mercer University faculty and staff recognize that mental health concerns can impact academic performance and interfere with daily life activities. Please notify your faculty member or academic advisor for academic assistance, as needed. CAPS can also provide support if you're feeling stressed, overwhelmed, anxious, depressed, lost or are struggling with personal issues. Please call or visit the [Counseling and Psychological Services \(CAPS\) website](#) for more information. These services are free and confidential, and support non-traditional, graduate, and undergraduate students. Students at Regional Academic Center locations may call a CAPS Office for assistance in finding local services (that may charge for their services) if distance to either campus creates challenges. CAPS locations include: MACON – Linden House (attached to the MEP Residence Hall), 478-301-2862; ATLANTA – 215 Sheffield Student Center, 678-547-6060.
6. This syllabus is subject to change.

### **Electronic Communication**

As the need arises, I may choose to communicate to the class via email. I will do this using a database that incorporates your official Mercer email account. As a general rule, I will not accommodate your personal email accounts regarding emails to the class.