

Advanced Green Chemistry: Connections to Our World

Online Course Syllabus

Summer 2024

Class Meeting Information

This is an online class to be completed between June 10 - August 5, 2024. Please familiarize yourself with the process, syllabus, technical requirements, and review the 12 Principles of Green Chemistry. Forums and assignments are aligned with weekly due dates and 4 one-hour synchronous zoom meetings.

Synchronous Zoom Meetings:

- June 10, 2024: 7:00 pm EST
- June 24, 2024: 7:00 pm EST
- July 8, 2024: 7:00 pm EST
- August 5, 2024: 7:00 pm EST

Instructor Information

Name: Annette Sebuyira

Annette Sebuyira is a New York State Master Teacher (Emeritus), a National Board-Certified Teacher, an Adjunct professor for Syracuse University and a Beyond Benign Lead Teacher (Certified). Annette earned a master's degree in science education and taught Science at Guilderland School district for 31 years. During her tenure with Guilderland High School Annette taught: AP Chemistry, SUPA chemistry & SUPA Forensics, and Regents & Honors Chemistry. In 2013 Annette attended a workshop presented by Beyond Benign through a grant provided by DEC at Siena College, and that forever changed her life. She has been passionate about Green Chemistry ever since. She has not only implemented the Green Chemistry Principles in all her teaching but has also been a co-facilitator of the NYS Green Chemistry Professional Learning Team (NYS MTP GC-PLT) that met monthly in a virtual space. After her retirement (June 2022) Annette continues to be a consultant with Beyond Benign and is therefore thrilled to be teaching this course and to be sharing in all the knowledge that you will bring to this course as well.

Prerequisites: High School Science Teaching experience, Intro to Green Chemistry Course, a basic understanding of green chemistry principles

Course Description:

Green Chemistry is the science of creating safe, energy efficient and non-toxic processes and products that provide sustainable solutions for the environmental problems facing our society today. Green Chemistry education must be integrated into the way we teach scientists from the earliest ages. This course will provide a more in-depth dive into the 12 principles of Green Chemistry to practice green chemistry pedagogy and procedures in their classrooms.

Students will review green chemistry technology analysis through the study of Green Chemistry Challenge winning projects, gain an understanding of how to incorporate toxicology into their curriculum, and delve into the application of green chemistry to student STEM activities and inquiry projects.

Course Objectives

After completing this course, the student will be able to:

- Discuss the 12 Principles of Green Chemistry in relationship to sustainability practices
- Apply Green Chemistry Principles to Presidential Green Chemistry Challenge projects
- Relate Green Chemistry principles to toxicology concepts
- Apply Green Chemistry and sustainable science principles to student-centered STEM activities and inquiry projects

Required readings and Video Analyses:

There will be assignments that will require you to watch a Ted Talk or video on Green Chemistry practices. All the links to the videos will be checked for accessibility and for close caption ability. All required readings will be given to students in the form of PDF or web-linked documents. No book purchases are required. The Green Chemistry community has made the majority of these resources available for free for educators and this class will encourage teachers to use those resources.

Forum Participation:

The asynchronous forums constitute the online class discussion and are a *substantial portion (20%)* of your grade. The student is expected to participate by posting substantive comments to the forums when assigned. The questions are designed to be based upon the readings and assignments for the week, but you are also encouraged to post comments related to general teaching and pedagogy. In addition to posting your own thoughts and ideas, please respond to at least one person's posting for each lesson, you should learn more from your peers here than you can from me so please take advantage of their classroom implementation ideas and tips. The questions I post will not have right or wrong answers and you will be scored on thoughtful participation not on correct content. The purpose of this is to generate student-to-student interaction. Of course, I invite you to participate much more than the minimum. You may also be learning at different times so please revisit discussion forums often even if you have fulfilled your requirement there. You can set the online learning portal to send new posts to your email if that is an easier way to keep track of the conversations.

PLEASE NOTE: I will not force the forum postings to come to you via email. You can come to the forum at your convenience, and/or you can choose individually for all discussion forum postings to be delivered to your email address. But for the sake of not forcing your inboxes to get filled up with postings, I will leave it to you to decide what method works best. Should you choose not to receive posts by email, you'll have to be responsible for frequently visiting the discussion forums to keep track of the postings.

Types of Communication

In an online course, the majority of our communication takes place in the course forums. However, when we have a need for communication that is private, we will use individual email or telephone. I prefer that you contact me by email for individual questions and only call if it's extremely time-sensitive. If you have questions of a general nature, please post them in the general question area so the whole class can participate.

Use of resources

I expect you to make use of materials in an ethical manner. Always cite your sources of information, and if you find you want to leverage someone's ideas, templates, etc., I expect you to credit the appropriate parties. Thanks in advance for being responsible!

Netiquette

In an online classroom, our primary means of communication is written. The written language has many advantages: more opportunity for reasoned thought, more ability to go in-depth, and more time to think through an issue before posting a comment. However, written communication also has certain disadvantages, such a lack of the face-to-face signaling that occurs through body language, intonation, pausing, facial expressions, and gestures. As a result, please be aware of the possibility of miscommunication and compose your comments in a positive, supportive, and constructive manner.

Expectations of Students:

I expect you to:

- Attend class fully prepared to discuss all assigned material –share responsibility for the quality of the experience.
- Contribute to the class discussion in a way that enhances the learning process.
- Conduct yourself in class as you would in a business situation (i.e., be courteous, offer constructive criticism, compliment on a job well done, and give thoughtful feedback).
- Provide ongoing feedback with regard to the extent in which this class is meeting your expectations and objectives.
- Complete all course work, reading and assignments by the due date: not doing so will affect your grade.
- Notify me as soon as possible if you have any emergencies or need more time to complete the course. I may or may not be able to accommodate this request.

Expectations of the Instructor:

You can expect me to:

- Review course content, materials, assignments and forum prompts prior to the start of the class
 - Post my syllabus to the class prior to the start date
 - Post my welcome message prior to the start date
 - Facilitate threaded discussions
 - Respond to individual email within 72 hours. My email address is Sebuyiraa@gmail.com
- Give you individual feedback on your posted assignments within about a week of the due date
- Enjoy teaching you and learning from you!

Evaluation and Grading

In this course you will be evaluated in the following way:

Topic 2 PowerPoint Presentation	20%
Topic 3 Lesson Plan	20%
Topic 4 Reflection	20%
Participation in discussion forums (4 Topics)	20%
Final Project	<u>20%</u>
	100%

Grading Scale

- A = 90% – 100%
- B = 80% – 89%
- C = 70% – 79%
- D = 60% – 69%