

Teaching Philosophy

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Teaching in the classroom and laboratory settings is the primary venue for building the knowledge, skills, and abilities that stimulate further student intellectual growth. Effective teaching requires an underlying philosophy of both how and what one learns. I believe that these components of learning are constructed in the mind of the student. Knowledge cannot be transferred directly from the teacher to the learner, so the teacher must call on the totality of his or her own experience to inspire and facilitate learning in each student.

My teaching experience includes faculty positions at *the United States Military Academy at West Point*, *Drury College* at Fort Leonard Wood, and *Georgia Gwinnett College*. I have taught classes and lead seminars in chemistry and environmental science. I have been versatile in teaching across the spectrum of the chemical sciences, to include general, introductory organic chemistry, advanced physical organic chemistry and instrumental chemistry courses, all with associated laboratory sequences which emphasize application of spectroscopic methods. I have also developed and taught courses in environmental toxicology. During these years of teaching, I have made a concerted effort to develop my teaching skills and philosophy and have been highly successful in a small, liberal arts, student-centered environment.

The small class size and student-centered environment at Georgia Gwinnett College permits me to practice the Thayer Method of instruction, resulting in great opportunities to develop critical thinking, problem solving, and inquiry in this diverse group of students. I strive to motivate them and stimulate the discovery of meaning, truth, and solutions to problems by incorporating practical industrial and biomedical applications of organic chemistry in the context of the lesson for the day using the latest multimedia technology. Likewise, students are encouraged to seek out examples of how organic chemistry impacts our world today and discuss them in class. Incorporated into this framework is the primacy of three fundamental concepts - structure, function and mechanism. My students learn that the ability to correctly draw and discuss chemical structures permits a better understanding of function and reactivity in organic chemistry. Knowledge of structure and function then leads to a grasp of mechanistic detail. I use quizzes regularly and provide rapid feedback to reward students for their preparation. Because the responsibility of preparation for class largely rests with the students, much of the class time can be devoted to advanced problem solving at the individual and group levels. In the end, this approach has helped students gain confidence in their understanding of the course material, ability to creatively and critically solve problems, and inspired them to continue their own intellectual development beyond the classroom.

Finally, critical course and instructor assessment is essential for improvement as a teacher. At the midterm and the end of each semester, students in my courses are invited to complete a course survey relating to my effectiveness as an instructor as well as their classroom and laboratory experiences. While the results have generally remained consistently positive and confirm the overall success of the organic chemistry program and the instruction, negative comments are taken seriously and in some cases, have caused adjustments in course and laboratory content or instructional technique.