

# Teaching Statement of George Corser, PhD

The purpose of this statement is to present my teaching philosophy and highlight a few accomplishments.

**Overview.** Since 2011, I have taught undergraduate courses in computer science and information systems, primarily programming courses in JavaScript, PHP/MySQL, Android, Java, and Python, but also more general topics such as cybersecurity, cybercrime, ethics and theory of computation. I have taught at three institutions, Saginaw Valley State University (SVSU), Oakland University (OU) and ITT Technical Institute (ITT Tech). I received a [perfect 5.0 rating](#) at OU, but as of this writing I maintain only a [4.4 rating](#) at SVSU.

**Challenges.** Some SVSU students are raw beginners. Others are expert programmers, perhaps even currently employed as full-time professionals. My most daunting challenge at SVSU has been delivering broad and deep instruction to learners at these worlds-apart learning levels. Another complication: technologies change rapidly. Especially in web/mobile app development, course content must be significantly updated every semester. Finally, there exists no consensus on how to evaluate computer science knowledge. How can I determine if my teaching methods are effective if I can't measure how much the students know at given points in time?

**Philosophy.** *Attitude, skills, and knowledge.* I work to develop student motivation, programming proficiency and conceptual understanding, or "attitude, skills, and knowledge" (ASK), in that order.

- **Attitude.** If students do not feel motivation to learn, no amount of teaching will help. I strive to keep students from getting overwhelmed by firing them up. If scores get low, I sometimes offer extra credit to keep their hopes up. Attitude is a two-way street. As Teddy Roosevelt put it, "No one cares how much you know until they know how much you care." I do my utmost to demonstrate I deeply care about student development. I have often met with students at 6:30am because no other time was available. I have found jobs for students. I even taught one student how to drive a car. I want there to be no question that I will do whatever it takes to help students inside and outside of the classroom. For students struggling I strive to show them that attitude can get them through.
- **Skills.** Courses traditionally present theory and fundamental principles before presenting examples and practice problems. I reverse this order. Some may ask, "How can you tell students to attempt problems before you've presented the method to solve those problems?" My response is this: Have you ever sat through a long lecture knowing you could figure things out if you just had an example? People are smart. Quantitative thinkers can infer the theory even if not explicitly stated. And if not, they will have better questions about the theory at lecture time if they've tried a few exercises beforehand.
- **Knowledge.** When I say knowledge, I mean abstract concepts, fundamental principles, usually presented with PowerPoint slides, whiteboard drawings, handouts, etc. I try to present such information after a class's attitude and skills have been established.

**Measurement.** *Measurement leads to improvement.* My overall goal is to move students from whatever learning level they exhibit now to the next higher level. To measure attitude, I assign an initial survey and final survey. To measure skills, I assign and evaluate computer programs. To measure knowledge, I use initial and final exams. I measure student ability with an initial exam at the beginning of each course. I use self-developed exam questions, except for Java programming courses, where I use AP Computer Science exam questions. To students who exhibit extremely high proficiency at the beginning of the course, I offer advanced projects.

**Integration with research.** Advanced projects in my courses sometimes lead to research tools and publications with student co-authors. One of my SVSU web development students developed a vehicle transportation system visualizer (**VisuTrace**: [csis.svsu.edu/~gpcorser/visutracer/city.html](https://csis.svsu.edu/~gpcorser/visutracer/city.html)). Another was a co-author on a paper publication (IEEE ICNC 2016: *Effect on vehicle safety of nonexistent or silenced basic safety messages*). I'm always seeking out student research collaborations!

**Accomplishments and special projects.** Since arriving at SVSU I have become interested in teaching as a service activity and as a research topic.

- **CS/IGNITE.** In 2017, I formed a learning community with SVSU College of Education students to teach computer science ([csignite.wordpress.com](https://csignite.wordpress.com)).
- **CS/EXPLORE.** In 2017, I developed a two-week course to teach advanced secondary school students how to program software in emerging technologies, including Internet-of-things, virtual reality and robotics ([www.svsu.edu/stemscholarsnetwork](http://www.svsu.edu/stemscholarsnetwork)).
- **Dow Professor Award.** In 2015, I won a teaching grant for Collaborative Computer Science Education called the Herbert H. and Grace A. Dow Professor Award ([www.teacherati.com](http://www.teacherati.com)).