

Teaching Statement

Frank Timmes

01Jan2024

Tell me and I forget. Teach me and I remember. Involve me and I learn.

I've been involving learners in astronomy, physics, and math since about 1982. Past affiliations include UC Santa Barbara, UC Santa Cruz, the University of Chicago, the School of the Art Institute of Chicago, and the MESA Summer Schools at UC Santa Barbara. Currently I engage learners at Arizona State University (ASU).

I specialize in large enrollment, online, introductory courses. Between 2015 and 2018 I was the instructor for the largest college-credit eligible astronomy course in the world (~15,000 enrollment per run), *Introduction to Solar Systems Astronomy*, offered by ASU and EdX. This experiment transitioned between 2018 and 2024 to ASU's [Universal Learners Program](#), where the course is heavily enrolled with learners from Starbucks, Uber, the US military, and other institutional partners. My current online course, *Energy in Everyday Life* has been running continuously since 2014, and routinely engages ~3000 learners per academic year. This multi-disciplinary survey course offers learners the opportunity to master practical job skills – the ability to observe, gather data, and think critically in order to make reasonable order-of-magnitude estimates in everyday life.

I subscribe to principles that create a culture of learning around involvement, inquiry, curiosity, and openness to failure. All of my courses are designed and executed with these principles foremost in mind. In my experience, effective learning of science:

- ★ Excites.
The greatest challenges to learning are disinterest and apathy.
- ★ Cultivates curiosity.
Activities that nurture a natural curiosity are better than the threat of a test.
- ★ Is active.
Effective learning is active, not passive. Watching a video is not enough.
- ★ Is applicable.
Use it or lose it. It is essential to apply what one is learning as one learns it.
- ★ Is community driven.
A community that inspires and challenges is crucial.
- ★ Doesn't discriminate.
Age, race, gender, income, or disability don't determine what one is capable of learning.
- ★ Allows for failure.
The best learners allow themselves to make mistakes along their journey.
- ★ Sparks questions.
The end of a good course isn't knowing all the answers – it's knowing what to ask next.

F. X. TIMMES

Frank Timmes

Professor, School of Earth and Space Exploration

Associate Editor-in-Chief, The American Astronomical Society Journals

Arizona State University, Tempe AZ 85287-1404

Email: fxtimmes@gmail.com Web: cococubed.com YouTube: [AAStronomy](https://www.youtube.com/AAStronomy)