



OPAS Standards, Courses and Curricula Committee Position Statement

November 8, 2006

The OPAS Standards Courses and Curricula (SCC) subcommittee has been meeting and holding curriculum discussions revolving around the mission described below:

SCC Mission: Improving standards and aligning courses to standards. Identifying gaps in curricula and course content to fill them. Continuous improvement to curriculum to assure the highest quality courses.

The debate has been so comprehensive in nature that the committee has been challenged to narrow the focus to discussion items that can make the most impact across Oregon's educational system. This position paper is an attempt to capture the current status of the subcommittee's work.

The OPAS SCC subcommittee believes that:

- 1) There exists a Tri-partnership between K-12, Higher Education, and Industry that must be fully explored to maximize the impact of inserting "Engineering" curriculum into the Oregon Educational System;
 - a. The committee did decide early on in their discussions to focus on K-12 Standards, but found that many of the discussions would identify Higher Education and Industry roles concurrently with action in the K-12 sector;
- 2) Engineering curriculum needs to be developed in partnership with core academics (i.e. Math, Science) and Professional or Career Technical Education (PTE/CTE) programs to ensure access for all students.
- 3) The current academic accountability movement under the No Child Left Behind Act (NCLBA) places an emphasis of accountability on core academics such as Reading, Writing, & Mathematics with the possible addition of Science in the near future. PTE/CTE places a vital role in supporting those efforts.
- 4) Engineering problem-solving methods need to be included in K-12 curriculum similar to the way the Scientific Method is taught today;
 - a. Massachusetts, New York, Indiana, & California are all states that currently have adopted strong science standards and strong engineering/technology standards that could be used as models for Oregon revisions to standards, assessments, and curricula;
 - b. Recently, the state of Washington has also been working on Essential Academic Learning Requirements. Although the committee and OPAS

staff have not had time to review these in detail, we believe they are likely to be relevant.

- 5) All high school graduates should be given the opportunity to graduate ready for any pre-engineering program. This can be achieved by:
 - a. Exposing all students to the Engineering problem-solving methods, ideally starting no later than middle school;
 - b. Raising basic graduation requirements to more closely align with college entrance requirements;
 - c. Creating incentives within the K-12 system that encourage students to take the rigorous coursework necessary for entrance into a higher-ed pre-engineering program;
 - d. Encouraging all high schools to adopt either an Advanced Placement program and/or an International Baccalaureate program to provide close alignment to college entrance requirements;
 - e. Providing extracurricular opportunities for students to problem solve in an Engineering environment (e.g., ORTOP, SMILE, STRUT, etc...)
- 6) Engineering curriculum easily fits into Applied Science, Mathematics, and/or PTE/CTE curriculum;
 - a. It is interesting to note that the latest report from the Oregon State Board of Education links Engineering curriculum with options for meeting the mathematics proficiency requirement;
- 7) All students need direct exposure to career counseling that include Engineering fields. This will be directly tied to meeting the new Oregon Department of Education Graduation Career-Related Learning Experience (CRLE) requirements for current high school freshman.
- 8) Emphasize Technology Literacy, not just technology use, throughout K-12.
- 9) Adopt the most efficient curriculum that will reach most/all of our public school students

Respectfully Submitted,

Sean Gallagher

Chair, OPAS Initiative Standards, Courses, and Curricula Committee

Principal, Hermiston High School