SREB | Advanced Career

Key Features That Form the Advanced Career Process

The Advanced Career (AC) program is a sequence of four high-quality career technical education (CTE) courses designed to help students to meet college- and career-readiness standards. The third and the fourth course in the sequence are constructed on a level of rigor with performance-level descriptors that qualify these courses for dual credit. Courses use a project-based learning pedagogy and are meant to serve a mainstream group of students.

Representatives from industry and postsecondary intuitions helped shape the curriculum design and technical content around authentic projects/problems embedded with the state standards or other rigorous college- and career-readiness standards. This enables students to test their interests and aptitudes in a career field while deepening academic and technical knowledge and skills, and developing their creativity, problem-solving and intellectual talents.

The sequence of four CTE courses ensures quality from school to school. The key features ensure rigor and quality:

1. CTE courses are **intellectually demanding,** providing students numerous assignments in the context of their career field to:

    - do substantial reading and reflective writing;
    - describe orally and in writing what they learn through class projects, problem-solving activities and laboratory work;
    - develop analytical thinking skills;
    - develop trouble-shooting and problem-solving skills;
    - develop research and organizational skills to address a problem or task;
    - use mathematics to support decisions and complete a class project or authentic work outside school; and
    - learn the habits of behavior that make for responsible adults and the habits of the mind for invention, experimentation and design.

2. A sequence of four CTE courses with embedded state standards or other rigorous standards for college- and career-readiness (reading, writing, mathematics and science) in a high-demand, high-wage field that is important to the state's economy. These courses help prepare students for several options beyond high school, including an entry-level job, apprenticeship, advanced training, industry certification, a two-year college certificate, an associate's degree and/or a bachelor's degree.

3. A non-duplicative sequence of four secondary courses that align with postsecondary study and a college-ready academic core. The career-focused program of study ensures that more students transition to postsecondary education without taking duplicate classes or remedial courses. The college-ready academic core includes:

- four college-preparatory English courses that require students to read and write short papers weekly, and prepare major research papers
- four years of mathematics, equivalent to Algebra I and higher
- at least three lab-based, inquiry-based science courses
- at least three social science courses

Two of the AC courses are foundational; the other two are advanced level. The foundational courses include authentic projects that require students to use college-readiness standards in mathematics, science and literacy that are normally taught in grades nine and 10. The foundational courses draw heavily upon those mathematics standards most essential for passing employer-certification exams and meeting readiness for college. The two advanced-level courses allow for postsecondary credit at the time the credit is earned (providing the students meet the readiness standards for entrance into the college), if these arrangements are supported by a formal agreement between secondary and postsecondary systems. The embedded state standards or other rigorous standards are those for grades 11 and 12.

4. Communities from industry, secondary education, postsecondary education and CTE fields helped design rigorous CTE courses built around challenging authentic projects that require students to:

   - Complete reading assignments critical to building technical and academic knowledge in their career fields. Students read challenging technical texts with elaborate diagrams and data increasingly with independence and confidence. They will also demonstrate the capacity to synthesize complex information into coherent written and oral statements.

   - Complete writing assignments that enable understanding of technical content, how to apply that understanding in completing major tasks, and how to address major problems or propose plans to submit to superiors or external contractors. Students keep a research journal or engineering notebook documenting pertinent facts, summaries of readings, lab experiences and mathematical calculations necessary to prepare their written report. Use state literacy and mathematics standards essential to college- and career-readiness in completing the authentic projects.

   - Apply scientific processes, design and conduct experiments, collect data and synthesize results, and use these to make justifications in a proposed technical, business or work-plan written report.

5. Curricula, course syllabi and project units ensure scalability of quality across states and schools.

6. End-of-project and end-of-course exams showcase students' ability to read complex materials and express their understanding through writing. Students practice solving the types of mathematics problems they will encounter in the workforce or further study. They gain a better understanding of the fundamental science concepts and processes of their that undergird their chosen career fields and the major technical knowledge and understandings on which the course is based. At the end of each course, both a student and teacher survey are administered.

- Include a low-stakes end-of-course (EOC) assessment for each course to measure student mastery of both technical and academic standards, with 40 percent to 50 percent of items designed to measure mastery of technical content and 50 percent to 60 percent of items measuring mastery of academic content — reading, writing, mathematics and science. The EOC is administered online.

- The objectives of the end-of-course exam, the student survey and faculty survey are to:

- Make continuous improvement in course materials and teacher training.

- Provide teachers and school leaders with information to boost student engagement and mastery of course materials.

- Provide insights on how to enhance the blending and support given to academic and Advanced Career teachers who work together to plan blended learning experiences across the curriculum.

- Provide information to determine the extent to which the courses are being implemented with fidelity ensuring quality across school sites.

7. Each instructor who teaches the course receives two weeks of training. This is essential for teachers to learn how to: a) effectively manage and facilitate project- and problem-based learning; b) engage students in becoming independent learners in reading technical materials and formulating study and work plans; c) instruct students in understanding and reasoning with major mathematics content and skills to complete project and classroom assignments; d) support students in using appropriate software and technology to complete the project; and e) manage the class and student assignments so that students acquire the habits of behavior and mind essential for future success.

   The two-week Summer Teacher Training Institute (STTI) includes a review of course content, instruction on project-based learning, classroom management and assessment in the project-based learning classroom, embedded rigorous reading and writing topics, embedded mathematics formative assessment lessons and Math-in-CTE lessons similar to the National Research Center for Career and Technical Education model and lessons that address both science processes and content standards.

8. Advanced Career is best implemented using an academy design — allowing AC teachers to work with mathematics, science and English teachers in planning blended-learning experiences.

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