SREB | High Schools That Work

Advanced Career (AC)

KEY FEATURES THAT FORM THE ADVANCED CAREER PROCESS

One goal of Advanced Career is to design, develop, implement and continuously improve a sequence of four high-quality career/technical (CT) courses rigorous enough for students to meet college- and career-readiness standards. The two advanced courses are to be constructed on a level of rigor with performance-level descriptors that will qualify these courses for dual credit. The courses are designed around a project-based learning pedagogy and are meant to serve a mainstream group of students.

The Advanced Career process requires employers to be engaged in designing and organizing technical and academic content around authentic projects/problems embedded with the Common Core State Standards or other rigorous college- and career-readiness standards. This will enable students to test their interests and aptitudes in the context of a career field while deepening academic and technical knowledge and skills, and developing their creativity, problem-solving and intellectual talents.

The intent is to develop a sequence of four CT courses that are transportable and scalable with greater assurance of quality from school to school. The key features to ensure rigor and quality in the courses being designed include the following:

1. Develop CT courses that meet the test of being **intellectually demanding** by providing students numerous assignment opportunities in the context of their career field to:
   - do substantial reading and reflective writing in the career field;
   - describe orally and in writing what they learn through class projects, problem-solving activities and laboratory work;
   - develop analytical thinking skills;
   - formulate problem statements, 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. Develop a sequence of four CT courses with embedded Common Core 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 states' economy. These courses should help prepare students for several options beyond high school including an entry-level job, apprenticeship, advanced training, industry certification, a two-year college certificate, associate's degree, and/or a bachelor's degree.
3. Align a non-duplicative sequence of four secondary courses to continued postsecondary study with a college-ready academic core. The goal is to form a career-focused pathway program of study that ensures more students transition to postsecondary education without having to take duplicate classes or remedial courses. At a minimum, the college-ready academic core should include:
   - four college-preparatory English courses in which students read and write short papers weekly, and prepare major research papers on a range of topics

- 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 Advanced Career courses would be considered foundational courses and two would be considered advanced level courses. The intent is to have the two foundational courses designed around authentic projects that will require students to draw heavily upon those college-readiness standards in mathematics, science and literacy that are normally taught in grades nine and 10. It is expected that these two foundational courses would draw heavily upon those mathematics standards most essential for passing employer-certification exams and meeting readiness for college. The two advanced-level courses would be the basis for awarding transcripted postsecondary credit at the time the credit is earned (providing the students meet the readiness standards for entrance into the college), and such arrangements are supported by a formal agreement between secondary and postsecondary systems. Further, the embedded Common Core State Standards or other rigorous standards would be drawn from those for grades 11 and 12.

4. Convene communities from industry, secondary education, postsecondary education and CT fields to design rigorous CT courses built around challenging authentic projects that will require students to do the following:
   - Complete reading assignments critical to building technical and academic knowledge in their career fields. Students will read challenging technical texts with elaborate diagrams and data and will increasingly show an ability to do so independently and with confidence. They will also demonstrate the capacity to synthesize complex information into coherent written and oral statements.
   - Complete writing assignments that enable students to convey their understanding of technical content, how to apply that understanding in completing major tasks, how to address major problems or propose plans to submit to superiors or external contractors. Further, students will 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 Common Core 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 the results, and use these to make justifications in a proposed technical, business or work-plan written report.
5. Devise the curricula, course syllabi and fully developed project units to ensure scalability of quality across states and schools.
6. Recognize the value of using end-of-project and end-of-course exams to give students an opportunity to demonstrate their ability to read complex materials and to express their understanding through writing. The exams will also afford students the opportunity to solve the kind of mathematics problems they will encounter in the workforce or further study. Plus, it will help them understand the fundamental science concepts and processes that undergird their chosen career fields and the major technical knowledge and understandings on which the course is based.

- 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. When fully developed, the EOCs will be 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. Provide two weeks of training for instructors to teach each of the courses. Two weeks of training are 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 class and student assignments so that students acquire both the habits of behavior and mind essential for success in future study and the workplace.

   The two-week Summer Teacher Training Institute (STTI) would include 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. Create a school organizational structure — an academy design — that provides opportunities for Advanced Career teachers to work with mathematics, science and English teachers in planning blended learning experiences. Require school sites adopting an Advanced Career curriculum to have a teacher in mathematics, science and literacy, plus a counselor and school principal to attend a two-day orientation session. **This session would explain how to create an academy where the Advanced Career teacher and a core group of academic teachers can work together to advance blended learning opportunities**.

   A Summer Support Seminar (SSS) within the two-week Summer Teacher Training Institute (STTI) would help principals and counselors to: a) understand the mission and vision of the Advanced Career curriculum; b) understand the power of career pathway programs of study; c) motivate and provide students a sense of purpose in high school; and d) ensure appropriate support for the Advanced Career teacher. The two-day SSS would also introduce mathematics, science and literacy teachers to the

Advanced Career curriculum, and it will have some of the learning experiences that will enhance teachers' knowledge in their respective subject areas through weekly planning meetings with the Advanced Career teacher. As a result, core academic Advanced Career teachers will achieve a greater blending of learning experiences that will enhance students' motivation and learning in both academic and Advanced Career courses.

9. State conditions for which some academic credit could be awarded for Advanced Career courses. Advanced Career courses will include college- and career-readiness standards for reading, writing, mathematics and science. If the goal is to award an academic credit in a given core curriculum area such as mathematics, it may take more than one Advanced Career course to teach the equivalent content of an academic mathematics course. If states or local districts elect to award such credit, the following conditions must be met:
   - Establish policy to allow awarding a select number of academic credits through CT course work.
   - Institute a process for the development and state approval of CT courses eligible for academic credit for high school graduation and for meeting requirements for postsecondary admissions. The process should result in a course or sequence of courses that have: a) sufficient academic standards to warrant an academic credit; b) a course syllabus with enabling learning activities; c) a project-based instructional pedagogy using authentic projects, problems and activities; d) formative and summative assessments; e) a grading system with criteria for reporting performance levels; and f) a highly qualified teacher certified in the academic and technical content.
   - Define requirements for teaching a CT course with embedded academic standards and provide ways for teachers to meet those prerequisites.
   - Validate students' academic learning in approved CT courses eligible for academic credit through: a) an end-of-course exam; b) an alternative assessment; c) a state-approved commercial academic assessment or industry certification exam; or d) a state-approved, teacher-developed, end-of-course exam for the CT course.
   - Establish a review process to assess the effectiveness of the CT course approved for academic credit to provide evidence that student outcomes are comparable, if not better, than student outcomes in the related academic course.

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