Signature Features of Career Pathway Programs of Study

1. **Students are able to access high-quality career pathway programs of study that offer technical courses aligned with a college- ready academic core.**

   Programs of study include a sequence of at least four non-duplicative, rigorous CT courses that lead to multiple postsecondary options — including employment, advanced training in the career field or an associate's or bachelor's degree. Programs of study offer students opportunities to earn industry certifications and transcripted dual credits. Programs of study also provide students with opportunities to participate in: (1) work-based learning that is developmental, progressive and increasingly intense and (2) career-technical student organizations (CTSOs) that enhance students' career development, academic engagement and acquisition of 21st- century skills.

2. **Technical center and high school leaders work to create an organization and scheduling structure that enable CT teachers to work frequently with other CT teachers, academic teachers and counselors to plan integrated academic and technical learning activities aimed at enhancing students' college and career readiness.**

3. **CT course sequences are derived from industry, reflect future employment needs and are designed around authentic projects spanning several days or weeks that require the application of academic, technical, technological and cognitive skills to complete.**

   Authentic projects require students to work in teams, engage in independent study and receive some direct instruction. Projects must be sufficiently complex so that students will need to struggle to acquire the deeper learning and skills required of professionals in the field.

4. **Students are given robust project-based assignments that require them to (1) apply their understanding of high school-level math, literacy and science; (2) demonstrate good habits of mind and behavior; and (3) exhibit problem-solving skills to complete.**

Students who experience higher-level authentic assignments show higher achievement than students who experience lower-level assignments. Robust assignments allow students to reflect on what they are learning and see connections between their academic and technical studies and potential future study and careers.

5. **Students are assessed using several strategies — rubrics, exams, written deliverables, teacher observations and external assessments — to determine whether they have mastered academic, technical, technological and cognitive concepts and skills. Students receive feedback and opportunities to relearn and master concepts and skills through authentic assignments.**

   The intent of classroom assessment is to advance student learning. End-of-project assignment grades are based on several factors, including: (1) students' demonstration of soft skills, team work and timeliness in completing work, (2) the quality of the products delivered — both the tangible product and the written deliverables as judged by a rubric, and (3) a written exam that determines if students have mastered the technical materials they should read and comprehend to complete the project, the math that was involved in completing the project, the science concepts embedded in the project, and the technical concepts, technology and software used. Comprehensive end- of-course exams for each course are given that assess students' mastery of all technical and academic knowledge and skills used to complete assignments.

6. **Career pathway programs of study are supported with a counseling for careers approach to educational and career exploration that begins no later than the middle grades and continues through high school.**

   Counseling for careers provides students and their parents with the information and experiences they need to help students identify, establish and stay focused on a career goal and a career pathway program of study. Both academic and CT teachers offer classroom experiences that enable students to explore their interests and aptitudes and learn about available educational and career opportunities.

7. **CT courses are taught by highly qualified teachers who have demonstrated their mastery of the academic, technical and 21st-century standards, skills and teaching methods needed to create challenging learning experiences and engage students in**

those experiences. CT teachers hold the industry credentials that students are expected to acquire in their career pathway programs of study.

CT teachers need professional development support to stay abreast of changing industry standards, academic and technical college- and career-readiness standards, and the technologies related to the courses and programs they offer. In its work on curriculum integration, the National Research Center for Career and Technical Education (NRCCTE) has outlined five core principles that facilitate integrated, contextual teaching and are critical to supporting high-quality CT teachers. These include (1) developing and sustaining a teacher community of practice centered on the occupational context but including both technical and academic teachers, (2) beginning the process of integrating the curriculum with the technical, not the academic curriculum, (3) understanding that academics offer essential workplace knowledge and skills, (4) maximizing the academic knowledge and skills contained in the occupational curriculum and (5) recognizing that CT teachers are not academic teachers, but teachers of academics in the context of their career fields.

8. **CT teachers work with both industry and postsecondary partners to create authentic projects and problems, assess the quality of student work against workplace and postsecondary requirements, offer students work-based learning experiences and provide students with information and advising that eases their transition from the technical center to further education and training and employment.**