Career Technical Education and Advanced Placement

Career Technical Education (CTE) programs provide students with rigorous technical skill development that reflects the competencies of the careers to which they aspire. In addition, high-quality CTE courses provide students with the opportunity to apply academic knowledge and skills and to learn critical meta-cognitive skills. In 2012, the National Association of State Directors of Career Technical Education Consortium (NASDCTEc) convened key stakeholders representing a wide range of organizations, including the College Board, interested in CTE to develop a shared definition of career readiness. The group of stakeholders, called the Career Readiness Partner Council, defined career readiness as:

> *A career-ready person effectively navigates pathways that connect education and employment to achieve a fulfilling, financially-secure and successful career. A career is more than just a job. Career readiness has no defined endpoint. To be career ready in our ever-changing global economy requires adaptability and a commitment to lifelong learning, along with mastery of key knowledge, skills and dispositions that vary from one career to another and change over time as a person progresses along a developmental continuum. Knowledge, skills and dispositions that are inter-dependent and mutually reinforcing. These include: Academic Knowledge and Skills, Technical Knowledge and Skills, and Employability Knowledge, Skills and Dispositions. (NASDCTEc, 2012)[1]*

As students navigate through the secondary systems, it is critical that no doors of opportunity be closed. All students need to be prepared to pursue postsecondary education (associate degrees, industry certificates, bachelor's degrees and beyond) because the majority of careers now require postsecondary education and training beyond high school.[2] Many CTE students are enrolled in CTE programs that provide dual credit and pursue college-level courses in the academic areas, many of which include Advanced Placement® (AP) courses. The AP courses, however, may or may not be aligned with or explicitly embedded within students' CTE programs of study. CTE students may then perceive AP courses as not "relevant," since the courses are positioned for students going on to four-year colleges, and therefore are discouraged from enrolling in AP.

To combat this misperception, the College Board and NASDCTEc collaborated to identify AP courses that are indeed relevant to the 16 Career Cluster® areas. This analysis was, in part, based on the courses recommended in the Career Clusters Plans of Study and Program of Study course sequences.

The original draft was shared at the October 2012 national meeting of the State CTE Directors and feedback from the Directors and other attendees resulted in this document. There was consensus that *AP English Language and Composition* and *AP Statistics* were relevant to programs in all Career Clusters and nearly every other AP exam was identified as relevant for at least one, if not more, of the Career Cluster areas.

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[1] For more, see www.CareerReadyNow.org
[2] Carnevale, Anthony P. et al. (June 2013). *Recovery: Job Growth and Education Requirements Through 2020.* Georgetown Center on Education and the Workforce. http://cew.georgetown.edu/recovery2020/

CAREER CLUSTERS®	AP® COURSES/EXAMS
1. Agriculture, Food & Natural Resources	**Arts**
2. Architecture & Construction	• Art History
3. Arts, A/V Technology & Communications	• Music Theory
4. Business Management & Administration	• Studio Art: 2-D Design
5. Education & Training	• Studio Art: 3-D Design
6. Finance	• Studio Art: Drawing
7. Government & Public Administration	**English**
8. Health Science	• English Language and Composition
9. Hospitality & Tourism	• English Literature and Composition
10. Human Services	**History & Social Science**
11. Information Technology	• Comparative Government and Politics
12. Law, Public Safety, Corrections & Security	• United States Government and Politics
13. Manufacturing	• European History
14. Marketing	• Human Geography
15. Science, Technology, Engineering & Mathematics	• Macroeconomics
16. Transportation, Distribution & Logistics	• Microeconomics
	• Psychology
	• United States History
	• World History
	Math & Computer Science
	• Calculus AB
	• Calculus BC
	• Computer Science A
	• Statistics
	Sciences
	• Biology
	• Chemistry
	• Environmental Science
	• Physics B
	• Physics C: Electricity and Magnetism
	• Physics C: Mechanics
	World Languages & Cultures
	• Chinese Language and Culture
	• French Language and Culture
	• German Language and Culture
	• Italian Language and Culture
	• Japanese Language and Culture
	• Latin
	• Spanish Language and Culture
	• Spanish Literature and Culture

It is important to note that not all of the listed courses and exams are appropriate for every student within each Career Cluster; rather, the listed AP courses have the *potential* to be relevant for students within a particular Career Cluster to support their Program of Study and increase access to rigorous college-level courses. This document is intended to guide college and career planning for students and is not intended to be an in-depth analysis of the content of the Career Clusters, CTE programs or AP courses.

This document is intended to be used by students, parents, counselors and teachers to establish pathways of study for students enrolled in CTE that lead to readiness for careers and the postsecondary education and training so often critical to accessing those careers. The document also sends the signal that all students should have the opportunity to engage in – and the preparation for – rigorous academic courses aligned to their post-high school plans, including AP courses.

CAREER CLUSTERS® & PATHWAYS	CAREER CLUSTER DESCRIPTION	POTENTIAL AP COURSES/EXAMS
All 16 Career Clusters		English Language and Composition Statistics
Agriculture, Food & Natural Resources • Agribusiness Systems • Animal Systems • Environmental Service Systems • Food Products & Processing Systems • Natural Resources Systems • Plant Systems • Power, Structural & Technical Systems	Careers in the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/ resources.	Biology Calculus Chemistry English Language and Composition Environmental Science Physics C: Mechanics Comparative Government and Politics United States Government and Politics Human Geography Microeconomics Macroeconomics Statistics World Languages & Cultures
Architecture & Construction • Construction • Design/Pre-Construction • Maintenance/Operations	Careers in designing, planning, managing, building and maintaining the built environment.	Calculus AB Calculus BC English Language and Composition Environmental Science Physics B Physics C: Electricity and Magnetism Physics C: Mechanics Studio Art: 2-D Design Studio Art: 3-D Design Studio Art: Drawing Human Geography Statistics World Languages & Cultures, especially Spanish
Arts, A/V Technology & Communications • A/V Technology & Film • Journalism & Broadcasting • Performing Arts • Printing Technology • Telecommunications • Visual Arts	Careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.	Art History Computer Science A English Literature and Composition Music Theory Statistics Studio Art: 2-D Design Studio Art: 3-D Design Studio Art: Drawing

Business Management & Administration • Administrative Support • Business Information Management • General Management • Human Resources Management • Operations Management	Careers in planning, organizing, directing and evaluating business functions essential to efficient and productive business operations.	Comparative Government and Politics Computer Science A English Language and Composition Macroeconomics Microeconomics Statistics United States Government and Politics World Languages & Cultures
Education & Training • Administration & Administrative Support • Professional Support Services • Teaching/Training	Careers in planning, managing and providing education and training services, and related learning support services.	English Language and Composition Psychology Statistics
Finance • Accounting • Banking Services • Business Finance • Insurance • Securities & Investments	Careers in planning, services for financial and investment planning, banking, insurance, and business financial management.	Calculus AB Comparative Government and Politics English Language and Composition Human Geography Macroeconomics Microeconomics Statistics United States Government and Politics World Languages & Cultures
Government & Public Administration • Foreign Service • Governance • National Security • Planning • Public Management & Administration • Regulation • Revenue & Taxation	Careers in planning and performing government functions at the local, state and federal levels, including governance, national security, foreign service, planning, revenue and taxation, and regulations.	Comparative Government and Politics English Language and Composition Environmental Science Macroeconomics Microeconomics Statistics United States Government and Politics World History World Languages & Cultures

Health Sciences • Biotechnology Research & Development • Diagnostic Services • Health Informatics • Support Services • Therapeutic Services	Careers in planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.	Art History Biology Chemistry English Language and Composition Macroeconomics Microeconomics Music Theory Physics C: Electricity and Magnetism Psychology Statistics Studio Art: 2-D Design Studio Art: 3-D Design Studio Art: Drawing
Hospitality & Tourism • Lodging • Recreation, Amusements & Attractions • Restaurants & Food/Beverage Services • Travel & Tourism	Careers in hospitality and tourism encompasses the management, marketing and operations of restaurants and other food services, lodging, attractions, recreation events and travel related services.	Art History Comparative Government and Politics English Language and Composition Environmental Science European History Human Geography Psychology Statistics United States Government and Politics World History World Languages & Cultures
Human Services • Consumer Services • Counseling & Mental Health Services • Early Childhood Development & Services • Family & Community Services • Personal Care Services	Preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care, and consumer services.	Biology Psychology Comparative Government and Politics United States Government and Politics Human Geography English Language and Composition Statistics Music Theory Studio Art: Drawing World Languages & Cultures

Information Technology • Information Support & Services • Network Systems • Programming & Software Development • Web & Digital Communications	Building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia and systems integration services.	Computer Science A English Language and Composition Music Theory Physics B Physics C: Electricity and Magnetism Physics C: Mechanics Statistics Studio Art: 2-D Design Studio Art: 3-D Design
Law, Public Safety, Corrections & Security • Correction Services • Emergency & Fire Management Services • Law Enforcement Services • Legal Services • Security & Protective Services	Careers in planning, managing, and providing legal, public safety, protective services and homeland security, including professional and technical support services.	Comparative Government and Politics Computer Science A English Language and Composition Psychology Statistics United States Government and Politics World Languages & Cultures
Manufacturing • Health, Safety & Environmental Assurance • Logistics & Inventory Control • Maintenance, Installation & Repair • Manufacturing Production Process Dev. • Production • Quality Assurance	Careers in planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.	Calculus BC Chemistry English Language and Composition Environmental Science Physics B Physics C: Electricity and Magnetism Physics C: Mechanics Statistics Studio Art: 2-D Design Studio Art: 3-D Design World Languages & Cultures
Marketing • Marketing Communications • Marketing Management • Marketing Research • Merchandising • Professional Sales	Careers in planning, managing, and performing marketing activities to reach organizational objectives.	Comparative Government and Politics English Language and Composition Human Geography Macroeconomics Microeconomics Psychology Statistics United States Government and Politics World Languages & Cultures

Science, Technology, Engineering & Mathematics (STEM) • Engineering & Technology • Science & Math	Careers in planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.	Biology Calculus AB Calculus BC Chemistry Computer Science A English Language and Composition Environmental Science Physics B Physics C: Electricity and Magnetism Physics C: Mechanics Statistics
Transportation, Distribution & Logistics • Facility & Mobile Equipment Maintenance • Health, Safety & Environmental Management • Logistics Planning & Management Services • Sales & Service • Transportation Operations • Transportation Systems/Infrastructure Planning, Management & Regulation • Warehousing & Distribution Center Operations	Careers in planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Comparative Government and Politics Computer Science A English Language and Composition Environmental Science Human Geography Macroeconomics Microeconomics Physics C: Mechanics Statistics United States Government and Politics World Languages and Culture

More Information:

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