**Advance CTE**

**Research Request**

Advanced Placement (AP) Courses and Career Technical Education (CTE) (*Prepared for Advance CTE and the College Board)*

**Request:**  *Advance CTE and the College Board are partnering on a project to identify how Advanced Placement (AP) courses best connect to the Career Clusters and can and should be embedded in CTE programs of study.*

*I am writing to ask that you - or someone on your team - respond to the following three questions, which will help us learn how states are incorporating AP into their state-approved programs of study and what courses the AP program should consider developing in the future. Thank you in advance for your responses!*

*If you are interested in being more involved, please let me know, and we'll reach out to schedule a brief follow-up conversation to learn more about how your state is connecting CTE and AP.*

*Best,*

*Kate  
  
1. Does your state allow AP courses to be part of a state-approved program of study?*

* *If yes, which courses and which Career Clusters/program areas?*
* *If no, why not?*
* *If no, would you consider it?*

*2. Over the next decade, are there new AP courses and exams (i.e. healthcare, technology, etc.) that the College Board should consider developing? What should those AP courses and exams be? And which is the most important based on state priorities?  
  
3. As Advance CTE and College Board continue to collaborate on the integration of AP into CTE programs of study, would you be interested in being involved in this project (e.g., being interviewed, reviewing crosswalk of AP courses and Career Clusters, etc.)?*

The following states submitted responses: [Alabama](#_Alabama), [Arizona](#_Arizona_1), [Arkansas](#_Arkansas_2), [California](#_California), [Colorado](#_Colorado), [Delaware](#_Delaware), [District of Columbia](#_District_of_Columbia), [Maryland](#_Maryland), [Massachusetts](#_Massachusetts), [Missouri](#_Missouri), [New Hampshire](#_New_Hampshire), [New Jersey](#_New_Jersey), [New Mexico](#_New_Mexico), [North Carolina](#_North_Carolina), [Ohio](#_Ohio), [Oklahoma](#_Oklahoma_1), [Oregon](#_South_Carolina), [Pennsylvania](#_Pennsylvania), [Rhode Island](#_Rhode_Island), [South Dakota](#_South_Dakota_1), [Tennessee](#_Tennessee) and [Wyoming](#Wyoming). To visit one state’s response directly, click on that state’s name in this section.

Numerous states allow AP courses to be a part of a state-approved program of study. AP Computer Science Principles and AP Computer Science A were the most common AP courses to be a part of a state-approved program of study. The most common AP courses/exams that states suggested the College Board develop were related to healthcare, Information Technology (IT), engineering, business, finance, manufacturing and agriculture. The responses sent by each state are below.

## 

## **Alabama**

1. Alabama currently allows AP Computer Science Principles and AP Computer Science A as part of the Information Technology and STEM Career Clusters.
2. Alabama is very interested in the expansion of AP Courses/Exams in the following areas:  Accounting/Finance, Health Sciences, Graphic Arts, and Human Development.
3. Alabama is always interested in being a leader for any CTE/AP collaboration that expands opportunities for students.  My contact information is below.  Please let me know how we can partner in these efforts.

Contact:

Sean J. Stevens  
Education Administrator, Counseling & Guidance   
[Alabama State Department of Education](http://www.alsde.edu/)

[sstevens@alsde.edu](mailto:sstevens@alsde.edu)

## **Arizona**

1. Yes. Only Computer Science/Software and App Development and Digital Photography
2. Biotechnology, Finance/Business, and Engineering
3. Yes!

Contact:

Cathie Raymond

Deputy Associate State Superintendent/ State Director for Career and Technical Education

Arizona Department of Education

[Cathie.Raymond@azed.gov](mailto:Cathie.Raymond@azed.gov)

## **Arkansas**

1. Computer Science, Family and Consumer Sciences, Health Professions, COURSES: AP Psychology (Education & Training; Health Professions; Medical Office Administration), AP Computer Science A & B (Computer Science Programs), IB Computer Science SL and HL (Computer Science Programs)
2. Technology, Health Care, Business topics, Agriculture topics, Transportation topics.
3. Not currently, maybe in the future.

Contact:

Cheryl Wiedmaier

Arkansas Department of Career Education

Associate Director for CTE

[Cheryl.Wiedmaier@arkansas.gov](mailto:Cheryl.Wiedmaier@arkansas.gov)

## **California**

1. Yes, we recognize AP in ICT and Natural Resources pathways.
2. I think we would like to see some AP in health care courses

1. Yes, CA would be interested in participating.  We are also interested in the work Gene Bottoms is doing with Advanced CTE courses.

Contact:

Donna Wyatt, Director  
Career and College Transitions Division  
California Department of Education  
[dwyatt@cde.ca.gov](mailto:dwyatt@cde.ca.gov)

## **Colorado**

1. AP Computer Science in Information Technology and AP Psychology in Criminal Justice. Districts have not submitted others to be considered in their program approvals.
2. I was on a taskforce for NBEA to justify AP Accounting for 6 years while I was in Georgia, and I have not heard an update. Is there AP Pre-Engineering? We would support that development as well. We have all of the IB courses in that area on program approvals, as well as the IB business courses.
3. Yes please.  As a reminder, I will most likely be out July 29 – October 5.

Contact:

Sarah Heath

Assistant Provost for CTE

Colorado Community College System

[sarah.heath@cccs.edu](mailto:sarah.heath@cccs.edu)

## **Delaware**

1. Yes, DE uses AP exams for our computer science pathway and environmental science pathway.
2. Future AP coursework needs to be discussed as does the methodology for development. This is not like building an English assessment, it needs to be updated and shift frequently. The comp science AP exam is a perfect example, e.g. it needs to be updated to better reflect java skill development for entry level tech's job. And College Board also needs to invest more in portfolio evaluation.
3. Yes.

Contact:

Luke Rhine

State CTE Director

Delaware CTE and STEM Office

Delaware Department of Education

[luke.rhine@doe.k12.de.us](mailto:luke.rhine@doe.k12.de.us)

## **District of Columbia**

1. Not Currently because of course elements – career and technical student organization integration, all aspects of industry, technical skills alignment, etc. Yes, we would consider allowing AP courses to be a part of a state-approved program of study.
2. Healthcare – LPN, Pharmacology,

Business and IT – CISCO, Cyber Security, Accounting

Marketing – Social Media Marketing

Human Services – Cosmetology/Barbering

Transportation – Logistics, Air Traffic Control, Automotive Technology Repair

Architecture and Construction – Building Information Management (BIM), Code Compliance, welding

STEM – Meteorology, Mechatronics, Electronics, Industrial Motor Control

1. Yes

Contact:

Chad Maclin

State CTE Director

Postsecondary Education and Workforce Readiness Division

Office of State Superintendent of Education (OSSE)

[chad.maclin@dc.gov](mailto:chad.maclin@dc.gov)

## **Maryland**

1. Yes, the Business Management, Accounting and Finance as well as the Marketing programs in the Business Management and Finance cluster all offer AP Economics as option for the 4th course in the sequence.  Additionally, the PLTW Computer Science program has AP Computer Science Principles and Computer Science A as required courses in the program sequence - the program is being adopted locally by some school systems in Maryland.
2. Are you aware of Project Lead the Way's (PLTW's) partnership with the College Board to allow for a number of AP courses to be used in either the Engineering and/or Biomed pathway programs?  Please see this[link](https://www.pltw.org/our-programs/ap-pltw) for further information.  We require students to take the full sequence of courses in the PLTW program, so we do not substitute AP courses in those programs (the AP courses are supplemental).

From the PLTW Website:  To help prepare all students for the global workforce, the College Board and Project Lead The Way (PLTW) have partnered on a program to encourage student participation in science, technology, engineering, and math (STEM) courses and build their interest in STEM degrees and careers. The program leverages the success of the College Board’s Advanced Placement Program (AP) and Project Lead The Way’s applied learning programs.

The program has three elements:

* College and career pathways that connect AP and PLTW courses
* Recognition for students who participate in the pathways, and recognition for schools
* A portfolio of career-focused opportunities for students

1. We are interested, but we do not have content specialists on staff who have the necessary expertise.  We can recommend external reviewers, if desired.

Contact:

Lynne Gilli

Assistant State Superintendent

Division of Career and College Readiness

Maryland State Department of Education

[lynne.gilli@maryland.gov](mailto:lynne.gilli@maryland.gov)

## **Massachusetts**

1. Yes, AP courses are permissible in all MA vocational technical programs and Carl D. Perkins CTE Programs.

* MA has 11 Voc. Tech. Education Clusters in which our MGL C.74, 44 state-approved vocational technical education (VTE) programs fall within.
* Many courses (academic and technical) constitute a MGL C. 74 vocational technical program.  Massachusetts has approved vocational frameworks, for each of our 44 vocational technical programs.  The frameworks consist of 6 strands, aligned to All-Aspects-of Industry, including embedded academics to support integration.  We strive for National Program Accreditations in our programs, which naturally leads to rigor and relevance, and that may include AP Courses, such as Project the Lead Way for Engineering.
* MA Career and Technical Education Programs (Carl D. Perkins), are of a less structured nature, and are not state-approved, but rather self-reported.  Perkins Programs vary in structure across the state, including whether or not AP courses are offered, IRC’s etc.  However, we do have 11 defined criteria to define the minimum requirements for a Perkins CTE Program.

1. MA state priorities would be those industries identified within MA Labor Market Blueprints as having skills gaps and labor shortages in relation to occupational demand. That includes manufacturing, health care, computer science, and information technology.  MA will be reviewing all 44 Vocational Program data to “sunset” some and prepare to create new programs in emerging industries.  All VTE and CTE Perkins Programs may contain AP courses/exams within their curricula maps.
2. Yes, particularly as MA develops “Pilot” new/non-existing C.74 VTE programs, in relation to Advance Career Clusters and MA Career Clusters – very timely.

Contact:

Keith Westrich

Associate Commissioner

Center for College, Career & Technical Education

Massachusetts Department of Elementary and Secondary Education

[kwestrich@doe.mass.edu](mailto:kwestrich@doe.mass.edu)

## **Missouri**

1. AP Macroeconomics and AP Microeconomics are listed as courses in our Finance Career Cluster.  We are exploring AP Computer Science being incorporated in our IT Career Cluster.
2. We have not had a discussion as to what new AP courses might be appropriate nor am I aware of any discussions taking place elsewhere in the Department regarding AP development.
3. Staff in the appropriate CTE program areas would be willing to serve on work teams.  However, their willingness to serve would be based on timing of the project and current priorities for their respective CTE program areas.

Contact:

Dennis Harden

Coordinator, Career & Technical Education

Department of Elementary and Secondary Education

[Dennis.Harden@dese.mo.gov](mailto:Dennis.Harden@dese.mo.gov)

## **New Hampshire**

1. Yes
2. No suggestions to offer.
3. Not at this time.

Contact:

Eric Feldborg

Director of Career and Technical Education & Administrator

New Hampshire Department of Education

[eric.feldborg@doe.nh.gov](mailto:eric.feldborg@doe.nh.gov)

## **New Jersey**

1. [AP Courses in CTE Program Sequence Excel Sheet](https://drive.google.com/file/d/0B5mNDtdS3JquN19pSWtHeDdEbkhsb19fbm9zQWRMNWVRQmtN/view?usp=sharing)
2. The areas of IT, Biotechnology, and ones in the Health Care are the ones which come to mind. Having AP courses as part of CTE programs make sense so that the linkage of College Readiness and Career Readiness becomes stronger.
3. We would like to be involved in the process.

Contact:

Linda Eno

Assistant Commissioner, Division of Teaching and Learning

New Jersey Department of Education

[Linda.Eno@doe.nj.gov](mailto:Linda.Eno@doe.nj.gov)

## **New Mexico**

1. NM allows AP courses to be part of a program of study. Funded programs have included those in the PLTW + AP Pathway Menu of Courses <https://www.pltw.org/our-programs/ap-pltw> or those which are closely aligned (AP Statistics in a Marketing Program of Study).

NM is moving in the direction of state-approved programs of study; however, we do not have this fully in place at this time.

NM allows AP courses to part of a funded program of study and will gladly consider AP courses to be part of a state-approved program of study once we have this in place.

1. Over the next decade, New Mexico would be supportive of the development of the following AP courses and exams:

* AP Accounting- this course would be applicable across multiple career clusters
* AP Anatomy and Physiology- would be an appropriate option for students in the health sciences career cluster

1. New Mexico is interested in being involved and we appreciate the project in which you are partnering with the College Board.

Contact:

Bobbi Eichhorst

Education Administrator

College and Career Readiness Bureau

New Mexico Public Education Department

[Barbara.Eichhorst@state.nm.us](mailto:Barbara.Eichhorst@state.nm.us)

## **North Carolina**

1. We offer AP courses in several of our clusters:

* (Soon to be AP) Accounting in the Finance Cluster
* AP Computer Science Principles in the IT Cluster
* AP Computer Science in the IT Cluster

We also include several IB courses in clusters.

1. Yes, there are several areas AP would help “market” CTE and pathways to the traditionally academic-focused child:

* AP Engineering and Manufacturing
* AP Marketing (Start with MBA HSB Course Guide, form partnership)
* AP Project Management (Joint opp with PMI and PMIEF)
* AP Healthcare Management/Science
* AP Drafting
* AP Principles of Business (Start with MBA HSB Course Guide, form partnership)

1. Absolutely!

Contact:

Adkins "Trey" Michael

Director, Career and Technical Education

North Carolina Department of Public Instruction

[trey.michael@dpi.nc.gov](mailto:trey.michael@dpi.nc.gov)

## **Ohio**

1. Yes – AP courses can be integrated in any CTE program. They receive state weighted funds as well.
2. For Ohio, we’d love to see AP courses in our priority areas, such as healthcare, agriculture, IT, manufacturing/engineering/robotics, as well as pathway-specific math courses. One of the important advantages to having AP courses for CTE pathways is that we hear from parents and students that they opt out of CTE programs because districts often do not weight CTE courses in the GPA like they do with AP courses.
3. Absolutely yes!

Contact:

Emily Passias

Director

Office of Career-Technical Education

Ohio Department of Education

[emily.passias@education.ohio.gov](mailto:emily.passias@education.ohio.gov)

## **Oklahoma**

1. Yes. Currently, STEM in the Pre-Engineering, Bioscience and Medicine Academies offer academic credit for AP Chemistry, AP Biology, AP Physics, and AP Calculus.  The Computer Science Academy offers AP Computer Science A.  Looking into AP Computer Science B and AP Statistics for BMITE Entrepreneurship Academy and instructors.
2. Here are a few that immediately come to mind, I would need to get the program managers for specific pathways that could culminate in an AP course.

* Architecture and Constructions – AP Computer Aided Design System
* Health– AP Anatomy and Physiology
* BMITE or T&I – AP Geographic Information System

Based on the Driver and Complementary Eco-Systems the GIS course would be the most important based on state priorities.

Contact:

Marcie Mack  
State Director  
Oklahoma Department of Career and Technology Education  
[marcie.mack@careertech.ok.gov](mailto:marcie.mack@careertech.ok.gov)

## **Oregon**

1. The easiest one might be Computer Science courses. I think schools may recommend AP courses to complement CTE Programs of Study, but because of our teacher requirements we don’t have many that include AP courses.  I think this is something we could consider.
2. Healthcare is a fast growing CTE area in Oregon.  Engineering is also a fast growing area.  Because our state is focused on STEM and CTE, as well as committed to a well-rounded education for all, integrated courses may be of particular interest.
3. Yes.

Contact:

Jennell Ives

High School Success / Accelerated Learning Specialist

Teaching, Learning, and Assessment

503-947-5777

[Jennell.Ives@state.or.us](mailto:Jennell.Ives@state.or.us)

## **Pennsylvania**

1. It is a local decision on which AP courses to offer.  They can be vendor purchased (College Board, International Baccalaureate) or locally developed AP courses. Pennsylvania does not support one vendor over another.

Contact:

Lee Burket

Director

Bureau of Career Technical Education

Pennsylvania Department of Education

[lburket@pa.gov](mailto:lburket@pa.gov)

## **Rhode Island**

1. Yes, AP classes can count toward a state-approved program of study. I’ve attached the guiding standards document that provides an overview of which credits are accepted.
2. We don’t have any strong opinions here. We are excited about the Computer Science AP classes, though, and are working to spread them in our state.
3. We’d be happy to be part of the conversation, but won’t be able to dedicate much time to it in the near term (at least until we fill Vanessa’s position).

Contact:

Spencer Sherman

College and Career Strategy Fellow, Office of College and Career Readiness   
Rhode Island Department of Elementary & Secondary Education

[spencer.sherman@ride.ri.gov](mailto:spencer.sherman@ride.ri.gov)

## **South Dakota**

1. Yes, AP course are used as academic classes within a program of study in a number of clusters.  This includes the following:

* AFNR: AP Biology, AP Chemistry, & AP Environmental Science
* Business Management & Administration: AP Statistics
* Finance: AP Statistics, AP Government
* Government/Public Administration: AP Statistics; AP Government
* Health Science: AP Biology; AP Chemistry
* Information Technology: AP Computer Science Principles; AP Physics; AP Calculus
* Law/Public Safety: AP Government
* Manufacturing: AP Physics; AP Calculus
* Marketing: AP Statistics
* STEM: AP Physics; AP Calculus; AP Statistics

1. Additional courses in the following would be helpful:

* Agricultural Science (e.g. food science); a similar partnership with CASE like the one in place with Project Lead the Way
* Healthcare (e.g. health informatics, medical terminology);
* More computer science (e.g. cybersecurity);
* Business/Finance; similar partnership with the Academy of Finance or MBAResearch like the one in place with Project Lead the Way

An expansion of the AP & Your Future online resources would also be helpful. Right now the resources are pretty bare bones and difficult to navigate. In South Dakota, students are most interested in the college credits they can earn from their AP courses—it would be nice if a clearer case for how the courses connect to careers was made, especially if it came from the College Board directly.

1. Yes. Our AFNR specialist would be especially interested in reviews related to this career cluster.

Contact:

Erin Larsen

Assistant Director

Career & Technical Education

[Erin.Larsen@state.sd.us](mailto:Erin.Larsen@state.sd.us)

## **Tennessee**

1. Yes!  You can see our full programs of study here:  <https://www.tn.gov/content/dam/tn/education/ccte/cte/cte_pos_2018-19.pdf>. Notable AP courses include AP Environmental Science in Ag, AP Calculus and Physics in Engineering, AP Studio Art in Digital Arts & Design, and several others (these are just a few!).
2. We would love this as we increase the ways our CTE students can earn college credit in high school. There are several CTE programs of study that should lead to four-year degrees as the majority of occupations in a given area require them. I would ask College Board to focus on these areas: areas where we don’t already have a nationally recognized industry certification and students are expected to go directly into four-year degrees. Marketing, finance, and business are good examples, as are many agriculture fields. Health care would be another good one, depending on the focus. For TN, IT, Health Care and Advanced Manufacturing are our biggest growth industries, but areas like Education & Training and Agriculture are the basis of our economy and always need support.
3. Yes, please! Copying members of our team, Deborah Knoll ([Deborah.Knoll@tn.gov](mailto:Deborah.Knoll@tn.gov)), Patrice Watson ([Patrice.Watson@tn.gov](mailto:Patrice.Watson@tn.gov)), and Tandra Martin ([Tandra.Martin@tn.gov](mailto:Tandra.Martin@tn.gov)), who I would like to be involved.

Contact:

Casey Haugner Wrenn

Division of College and Career Readiness

Tennessee Department of Education

[casey.haugner@tn.gov](mailto:casey.haugner@tn.gov)

**Wyoming**

1. We do allow AP courses in PoS. The only ones we have right now are computer science and programming.

2. Technology would be the highest priority since the state just required all Wyoming high school graduates to have at least one computer science course to graduate.

3. With our limited numbers, I'm not sure we would be the ones to talk to.

Contact:

Guy Jackson

State CTE Director

Wyoming Department of Education

[guy.jackson@wyo.gov](mailto:guy.jackson@wyo.gov)