# AP® Courses and Exams

**Arts**
- Art History
- Music Theory
- Studio Art: 2-D Design
- Studio Art: 3-D Design
- Studio Art: Drawing

**Capstone**
- AP® Research (2015)
- AP Seminar (2014)

**English**
- English Language and Composition
- English Literature and Composition

**History and Social Science**
- Comparative Government and Politics
- European History
- Human Geography
- Macroeconomics
- Microeconomics
- Psychology
- United States Government and Politics
- United States History

**Math and Computer Science**
- Calculus AB
- Calculus BC
- Computer Science A
- Computer Science Principles (2016)
- Statistics

**Sciences**
- Biology
- Chemistry
- Environmental Science
- Physics 1 (2015)
- Physics 2 (2015)
- Physics B (discontinued 2015)
- Physics C: Electricity and Magnetism
- Physics C: Mechanics

**World Languages and 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
Research findings:
AP student success at the college level

Strong AP programs in high schools, coupled with strong AP policies at colleges, support many positive outcomes for students.

Multiple research studies have confirmed the following benefits for AP students who achieve scores of 3 or higher on an AP Exam.

1. AP students perform well in subsequent college courses in the discipline.
2. AP students are more likely to major in their AP subject or a related discipline, particularly in STEM subjects.
3. AP students take more — not less — college course work in the discipline.
4. AP students are more likely to graduate within four years.
5. AP provides opportunities for underserved students to succeed.
Sample:  
70,000 students at 27 institutions, followed for five years

Outcomes analyzed:  
Intermediate course GPA, college majors

Control variables:  
SAT® scores

Full report:  

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### 1 AP students perform well in subsequent college courses in the discipline.

**Key finding**

A 2007 study\(^1\) revealed a number of benefits for students earning a score of 3 or higher on an AP Exam. In most AP subjects, they performed the same as, or better than, non-AP students in the intermediate-level college course related to their AP Exam — even after controlling for prior achievement.

**Figure 1: GPA in the subsequent college course, by performance**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Intro course (Non-AP)</th>
<th>AP score – 3</th>
<th>AP score – 4</th>
<th>AP score – 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>2.8</td>
<td>2.83</td>
<td>3.23</td>
<td>3.23</td>
</tr>
<tr>
<td>Calculus AB</td>
<td>2.43</td>
<td>2.84</td>
<td>2.98</td>
<td>2.99</td>
</tr>
<tr>
<td>Chemistry</td>
<td>2.88</td>
<td>2.91</td>
<td>3.15</td>
<td>3.15</td>
</tr>
<tr>
<td>English Language and Lit</td>
<td>3.04</td>
<td>3.26</td>
<td>3.68</td>
<td>3.68</td>
</tr>
<tr>
<td>Psychology</td>
<td>2.9</td>
<td>2.99</td>
<td>3.53</td>
<td>3.53</td>
</tr>
<tr>
<td>Spanish Language</td>
<td>3.11</td>
<td>3.23</td>
<td>3.87</td>
<td>3.87</td>
</tr>
<tr>
<td>U.S. Gov and Politics</td>
<td>2.78</td>
<td>2.88</td>
<td>3.02</td>
<td>3.02</td>
</tr>
<tr>
<td>U.S. History</td>
<td>2.87</td>
<td>3.04</td>
<td>3.33</td>
<td>3.33</td>
</tr>
</tbody>
</table>

Sample: 40,000 students at 39 colleges
Outcome analyzed: College major
Control variables: SAT scores, demographic variables, highest parental education

AP students are more likely to major in their AP subject or a related discipline, particularly in STEM subjects.

Key finding
A 2011 study² revealed that the likelihood of majoring in a particular discipline increased with AP Exam taking in that discipline, the number of AP Exams taken in the discipline, and AP performance in the discipline. The effect is strongest for STEM majors. Also, students who took AP Exams were more likely to have declared a major than non-AP students. AP is a strong indicator of interest in a discipline, providing an opportunity for colleges to identify potential majors.

Figure 2: Percentage of students majoring in a specific domain by AP participation

<table>
<thead>
<tr>
<th>Domain</th>
<th>Students who did not take an AP Exam</th>
<th>Students who took an AP Exam in a related subject area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological and Biomedical Sciences</td>
<td>8.4%</td>
<td>20.3%</td>
</tr>
<tr>
<td>Computer and Information Sciences</td>
<td>2.3%</td>
<td>17.9%</td>
</tr>
<tr>
<td>Foreign Languages, Literatures, and Linguistics</td>
<td>1.5%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Humanities and Liberal Arts</td>
<td>13.3%</td>
<td>15.1%</td>
</tr>
<tr>
<td>Mathematics, Statistics, Engineering, and Physical Sciences</td>
<td>16.2%</td>
<td>29.1%</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>14.0%</td>
<td>18.1%</td>
</tr>
</tbody>
</table>

Examined major at beginning of third year in college, not major upon graduation.
Does not account for prior interest or motivation.

Sample:
25,000 students in four cohorts enrolled at the University of Texas at Austin

Outcomes analyzed:
College GPA, number of college credit hours

Control variables:
High school rank, SAT scores

Full report:
http://bit.ly/13MGkl1

AP students take more — not less — college course work in the discipline.

Key finding
A 2009 study\(^3\) found that AP students who took at least one AP Exam generally took more credit hours in that subject area and in college overall than did non-AP students. Additionally, AP students who earned course credit based upon their AP Exam scores had statistically significantly higher GPAs than students without AP credit, even after controlling for prior academic achievement.

Figure 3: Mean subject credit hours taken in college, by AP participation

Adapted from Murphy and Dodd, 2009

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**AP students are more likely to graduate within four years.**

**Key finding**
A 2013 study\(^4\) found that students who took one or more AP Exams, regardless of what score was earned, were more likely to graduate from college in four years compared to non-AP students. The effect was the same even after controlling for prior academic achievement, demographic variables, and school-level variables. In addition, students who earned higher scores on AP Exams had a higher likelihood of graduating in four years compared with students who earn lower scores, after controlling for relevant variables.

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**Figure 4: Expected four-year graduation rate by AP participation and performance**

<table>
<thead>
<tr>
<th>AP Participation</th>
<th>AP Performance</th>
<th>Underrepresented minority</th>
<th>White or Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td>No AP</td>
<td>AP Exam</td>
<td>AP Score of 1</td>
<td>AP Score of 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>36%</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39%</td>
<td>47%</td>
</tr>
<tr>
<td>AP Score of 1</td>
<td>AP Score of 2</td>
<td>45%</td>
<td>53%</td>
</tr>
<tr>
<td>AP Score of 3</td>
<td>AP Score of 4</td>
<td>56%</td>
<td>62%</td>
</tr>
<tr>
<td>AP Score of 5</td>
<td></td>
<td>69%</td>
<td></td>
</tr>
</tbody>
</table>

Adapted from Mattern, Marini, and Shaw 2013

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**Note:**
Expected graduation rates were computed based on Sample 1 models. These values are associated with non-first generation status females with an average PSAT/NMSQT score attending a public institution of average selectivity. Please see research report for all results.
AP provides opportunities for underserved students to succeed.

Key finding
A 2006 study5 found that, even after controlling for prior academic achievement, student-level variables, and school-level variables, traditionally underserved students who earned a score of 3 or higher on at least one AP Exam had a higher probability of graduating from college in five years or less than non-AP students of the same ethnicity/socioeconomic status. From 2003 to 2013, the number of underrepresented students graduating from high school having taken one AP Exam tripled. The number of low income students quadrupled.

Sample:
67,000 students at Texas public colleges and universities

Outcome analyzed:
College graduation rate

Control variables:
Eighth-grade math test scores, school-level characteristics

Full report:

Figure 4: Increase in probability of college graduation within five years or less compared with students not participating in AP, by ethnicity and socioeconomic status

<table>
<thead>
<tr>
<th>Ethnicity/Socioeconomic Status</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black/African American</td>
<td>+28%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>+28%</td>
</tr>
<tr>
<td>White</td>
<td>+33%</td>
</tr>
<tr>
<td>Low Income</td>
<td>+26%</td>
</tr>
<tr>
<td>Non-Low Income</td>
<td>+34%</td>
</tr>
</tbody>
</table>

Adapted from Dougherty, Mellor, and Jian, 2006

Additional Research on AP Outcomes

College Subject Performance

Key finding: AP students perform at least as well as similar non-AP students in introductory courses.

Overall Performance

Key finding: Students who received AP credit outperformed non-AP students on first-year GPA.


Key finding: AP Exam scores are among the very best predictors of college performance.

College Completion

Key finding: Students who earn a 3 or higher on one or more AP Exams are more likely to graduate from college in five years or less even when controlling for prior academic achievement, demographic variables, and school-level variables.


Key finding: AP participants are more likely to graduate from college than nonparticipants.

Majors

Key finding: AP participants are more likely to major in a related discipline than nonparticipants, particularly in STEM subjects.


Key finding: AP participants are more likely to major in a related discipline than nonparticipants.
Essential AP Resources

Available on the AP higher ed website: www.aphighered.org

1. **AP course and exam descriptions or curriculum frameworks:** These documents, found on the page for each course and exam in the Courses & Exams section of the website, contain the learning objectives for AP courses and exams. Specific information is provided for redesigned courses and exams.

2. **Released AP Exams:** Because they are considered to be secure material, these may be obtained only by contacting a College Board representative at aphighered@collegeboard.org.

3. **Current research on student outcomes:** The Research & Reports section of the website includes both independent studies led by institutions across the country and College Board–sponsored research. Several of these research studies focus on placement validity, evaluating the success of AP students as they place into subsequent courses related to their AP Exam scores.

4. **Summary of AP Scores Reported for your college:** You can order this report, which includes participation and performance data for the AP students who sent scores to your college, through a form in the Research & Reports section of the website.

5. **National references:** American Council on Education credit and placement recommendations and the recommendations of national academic associations (e.g., National Science Foundation, American Council on the Teaching of Foreign Languages).

6. **Placement validity studies and data services:** The College Board offers a free service — the Admitted Class Evaluation Service™ (ACES™) — to help facilitate a review of AP performance in subsequent courses. Visit www.collegeboard.org/aces for more information. The College Board also regularly works with institutional researchers at colleges to develop and implement local, customized validity studies. To learn more, contact aphighered@collegeboard.org.
About AP®

The College Board’s Advanced Placement Program® (AP®) enables willing and academically prepared students to pursue college-level studies — with the opportunity to earn college credit, advanced placement, or both — while still in high school.

For further information, visit www.aphighered.org or contact aphighered@collegeboard.org.

About the College Board

The College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, the College Board was created to expand access to higher education. Today, the membership association is made up of over 6,000 of the world’s leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, the College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success — including the SAT® and the Advanced Placement Program®. The organization also serves the education community through research and advocacy on behalf of students, educators, and schools.

For further information, visit www.collegeboard.org.