Calculus in High School

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This PowerPoint will be available at
www.macalester.edu/~bressoud/talks
AP Calculus currently growing at >14,000/year (about 6%)
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Estimated # of students taking Calculus in high school (NAEP, 2005): ~ 500,000

Estimated # of students taking Calculus I in college: ~ 500,000 (includes Business Calc)
Mainstream Calculus II Enrollments
(fall only for 2- & 4- year colleges and

students (thousands)

academic year

4-yr colleges &
universities
2-yr colleges
AP Calculus BC only
BC exam,
8818 in 2002
13,809 in 2006
57% increase
High School Calculus breakdown:
370,000 take AP Calculus (College Board estimate)
50,000 take IB or Dual Enrollment
80,000 take another course with “Calculus” in the title
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270,000 took AP exam; AB: 208,000, BC: 62,000
High School Calculus breakdown:

370,000 take AP Calculus (*College Board* estimate)

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<table>
<thead>
<tr>
<th>AB exam</th>
<th>credit-AP</th>
<th>BC exam</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>5: 46,000</td>
<td>84%-77%</td>
<td>26,000</td>
<td>79%-73%</td>
</tr>
<tr>
<td>4: 43,000</td>
<td>82%-64%</td>
<td>12,000</td>
<td></td>
</tr>
<tr>
<td>3: 39,000</td>
<td>60%-39%</td>
<td>12,000</td>
<td></td>
</tr>
<tr>
<td>1–2: 80,000</td>
<td></td>
<td>12,000</td>
<td></td>
</tr>
</tbody>
</table>

Percentages from 2002 nationwide random sample for *The College Board* by Karen Morgan, N = 435 (AB), = 139 (BC)
Of 270,000 who took exam, 146,000 receive college credit for calculus, 123,000 use this credit to go directly to the next math class.

Roughly 124,000 took AP exam, did not get credit, about 2/3rds plan on retaking calculus in college.
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US Dept. of Ed. transcript study, high school class of 1992, 30% of those who took a course called “calculus” in high school took precalculus when they got to college. If extrapolated to current numbers, that would be 150,000.

~80,000 take generic “calculus”; ~100,000 take AP calculus but not the exam; 92,000 take AP exam and score less than 3.
Dual enrollment

In spring, fall 2005 (combined), 33,436 students studied Calculus I under dual enrollment programs: 14,030 in connection with 4-year colleges, 19,406 in connection with 2-year colleges.

<table>
<thead>
<tr>
<th>Control of</th>
<th>4-year colleges</th>
<th>2-year colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>syllabus</td>
<td>92%</td>
<td>89%</td>
</tr>
<tr>
<td>textbook</td>
<td>44%</td>
<td>74%</td>
</tr>
<tr>
<td>instructor</td>
<td>48%</td>
<td>52%</td>
</tr>
<tr>
<td>final exam</td>
<td>30%</td>
<td>37%</td>
</tr>
</tbody>
</table>
Phil Cheifetz, Nassau Community College

*The NCC Partnership Program in Mathematics*

- Training of high school teachers (one-week workshop plus regularly scheduled users’ group)
- Close supervision, college supervisor teaches the class once every two weeks
- College writes *and grades* the exams.
Early College High School

Goal: To give young people from groups underrepresented in higher education an opportunity to study college-level material while in high school, and to earn up to two full years of college credit while in high school.

Spearheaded by the Bill & Melinda Gates Foundation with support from Carnegie Corporation of New York, The Ford Foundation, and The W.K. Kellogg Foundation, it is a serious undertaking that is already operating in 130 schools, involving over 16,000 students. The goal by 2012 is 239 schools and 96,400 students.

For more, see my July Launchings: “The Dangers of Dual Enrollment” http://www.maa.org/columns/launchings/launchings_07_07.html
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