The California State University Bottleneck Courses Survey Report

CSU Board of Trustees
Item 2 Committee on Educational Policy
September 24-25, 2013
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CSU Bottleneck Courses Survey: Methodology

- **866** undergraduate department chairs emailed online CSU Bottleneck Courses Survey on June 14, 2013
- Online survey was confidential and consisted of 10 items
- Survey data were cross-checked against enrollment data from the Common Management System (CMS) and the Student Information Management System (SIMS) from all 23 campuses
- Survey focused on:
  - A common definition of bottleneck courses
  - Bottleneck courses that occurred during the 2012-2013 academic year
  - Total number of sections offered
  - Total number of additional sections needed to alleviate the bottleneck
  - Reasons for bottleneck courses
- Data collection concluded September 6, 2013 with **791** chairs reporting for a **91%** response rate
Limitations to the CSU Bottleneck Courses Survey

• Survey focused on bottleneck courses, not on student behavior

• Data are cross-sectional

• Bottleneck courses impact students differentially; some students get into bottleneck course sections and some do not

• Not all bottlenecks pose problems for all students

• Data for additional course sections needed are estimates subject to over estimation
Limitations to the CSU Bottleneck Courses Survey

Interplay of Bottleneck General Education Courses vs. Sections Actually Needed

100 Students

SOC 101
SOC chair reports 5 additional sections needed

PSYCH 101
PSYCH chair reports 5 additional sections needed

ART 101
ART chair reports 5 additional sections needed

15 additional sections needed

Students may only need one course - does not reflect true need
Further research is needed using students as unit of analysis
Is the bottleneck course really a bottleneck?

500 students could not enroll in a bottleneck course section

Physics 10
(General Education)

Physics department chair reports 25 additional sections needed

This is a bottleneck by definition, but students may have other course options that satisfy the requirement.
Addressing Data Over Estimation

• Survey results were re-examined to focus on data over estimation
• Selected only bottleneck courses required in the major for analysis because department chairs:
  o Know their bottleneck major courses the closest
  o Manage their department budgets
  o Schedule all their classes
  o Determine number of sections based on number of majors
  o Consider room sizes and space constraints
  o Understand faculty expertise
  o Manage pool of part-time faculty
  o Manage faculty workload
  o Analyze course sequencing to provide flexibility to students
  o Advise students who are having trouble getting into classes
  o Maintain accurate roadmaps
Reasons for CSU Bottleneck Courses

1. Not enough funding to hire faculty
2. Not enough tenured and tenure-track faculty available
3. Not enough qualified part-time faculty available
4. **Time and day constraints for scheduling rooms**
5. Not enough seating capacity for labs
6. Not able to substitute the class with another class
7. Not enough seating capacity for lecture courses
8. Other (please specify)
9. Students repeating a required class to improve their grade
Time and Day Constraints for Scheduling Rooms...

500 students in the major

Department Chair

- Seats 40 MW: A.M. only
- Seats 25 TTh: P.M. only
- Seats 30 MWF: A.M. only
- Seats 100 MW: A.M. only
- Seats 35 TTh: P.M. only
### Bottleneck Major Courses by Undergraduate Level

<table>
<thead>
<tr>
<th>Level</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-Level</td>
<td>138</td>
<td>15.9</td>
</tr>
<tr>
<td>200-Level</td>
<td>174</td>
<td>20.1</td>
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<tr>
<td>300-Level</td>
<td>376</td>
<td>43.4</td>
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<tr>
<td>400-Level</td>
<td>178</td>
<td>20.6</td>
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<tr>
<td>Total</td>
<td>866</td>
<td>100.0</td>
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</tbody>
</table>

- 36% Lower Division
- 64% Upper Division
Bottleneck Major Courses by Discipline

- STEM: 323 (37%)
- Liberal Arts: 212 (24%)
- Health & Human Svcs: 149 (17%)
- Arts: 110 (13%)
- Business: 40 (5%)
- Education: 32 (4%)

Total: 866
STEM: 37%  
Liberal Arts: 24%  
Health & Human Svcs: 17%  
Arts: 13%  
Business: 5%  
Education: 4%  
Total: 866
Main reasons:
1. Not enough tenured, tenure-track and qualified part-time faculty
2. Not enough funding to hire faculty
3. Not enough seating capacity for labs
4. Time and day constraints for scheduling rooms

829 Additional Sections Needed

1,785 Sections Taught
Main reasons:

1. Not enough tenured, tenure-track and qualified part-time faculty
2. Not enough funding to hire faculty
3. Not able to substitute the class with another class
4. Time and day constraints for scheduling rooms
Main reasons:
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4. Not able to substitute the class with another class
Main Reasons:

1. Not enough funding to hire faculty
2. Not enough tenured, tenure-track and qualified part-time faculty
3. Not able to substitute the class with another class
4. Not enough seating capacity

Bottleneck Major Courses
THE ARTS

234 Additional Sections Needed

349 Sections Taught
Main Reasons:
1. Not enough funding to hire faculty
2. Not enough tenured, tenure-track and qualified part-time faculty
3. Students repeating a required class to improve their grade
4. Not enough seating capacity
Main Reasons:
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CSU Bottleneck Courses Survey revealed:

- Bottleneck courses exist across all disciplines
- STEM and Liberal Arts had the most bottlenecks; Education and Business had the fewest
- Upper division (300- and 400-level) bottleneck courses overlap minimally
- On average 70% of students were enrolled in bottleneck course sections
- Conservatively, 2,103 additional major course sections were needed
Study Takeaways: What We Know

• Bottleneck courses are not permanent roadblocks
• Reasons are multilayered, complex and differ by campus
• Most commonly reported reasons: Lack of funding to hire faculty; not enough qualified part-time faculty; room scheduling and lab space constraints
• Difficult to establish a system-level response as policies, enrollment patterns, scheduling, space issues and department funding vary by campus
Study Takeaways: What We Don’t Know

Impact of bottleneck courses related to:

• Scope of the problem for students
• Time to degree
• Retention rates
• Graduation rates
• Demographic characteristics of students affected by bottlenecks
• Student behavior in terms of course and schedule planning
• Extent to which students have worked with advisors
Thank You

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