

Cost Reduction Strategies

The 30 projects involved in the [Program in Course Redesign](#) used a variety of strategies to reduce instructional costs. Here is a summary of those strategies that have proven to be most effective.

Step 1. Identify the enrollment profile of the course

- Stable enrollment
- Growing enrollment

Step 2. Choose the appropriate cost reduction strategy.

Step 3. Choose the labor savings tactic(s) that will allow you to implement the chosen strategy with no diminution in quality.

- Substitute coordinated development and delivery of the whole course and shared instructional tasks for individual development and delivery of each individual course section.
- Substitute interactive tutorial software for face-to-face class meetings.
- Substitute automated grading of homework, quizzes, exams for hand grading.
- Substitute course management software for human monitoring of student performance and course administration.
- Substitute peer interaction or interaction with other personnel for one-to-one faculty/student interaction.
- Substitute online training materials for face-to-face training of GTAs, adjuncts and other personnel.

Is the course enrollment stable?

If the course enrollment is relatively stable (and accommodating more students is not a goal), you must reduce the number of people involved in teaching the course in order to produce cost savings. There are three strategies that will enable you to do this:

- Reduce the number of sections and increase the section size. This will allow you to reduce the number of people involved in teaching the course.

Example: [Fairfield University](#) reduced the number of sections from 7 to 2 and increased the number of students in each section from 35-40 to 130-140. These changes enabled Fairfield to reduce the number of full-time faculty teaching the course from 7 to 4, freeing 3 to teach other courses.

- Reduce the number of graduate teaching assistants (GTAs) involved in the course.

Examples: [Penn State](#) reduced the number of GTAs from 12 in the traditional course to 4 in the redesigned course. [The University of Iowa](#) reduced the number of GTAs from 21.5 to 17.5, and [Carnegie Mellon University](#) reduced the number of GTAs from 10 to 5.

NOTE: If you do not have GTAs (or you do not want to reduce the number of GTAs), do not despair. Of the 30 projects in the [Program in Course Redesign](#), only 9 (2 of 10 in Round I, 5 of 10 in Round II, and 2 of 10 in Round III) employed this strategy. The other 21 used other cost-reduction strategies.

- Change the mix of personnel teaching the course.

Example: [Tallahassee Community College](#) (TCC) reduced the number of full-time faculty involved in teaching the course from 32 to 8 and substituted less expensive adjunct faculty without sacrificing quality and consistency. In the traditional course, full-time faculty taught 70% of the course, and adjuncts taught 30%. In the redesigned course, full-time faculty teach 33% of the course, and adjuncts teach 67%. Full-time faculty were freed to teach second-level courses where finding adjuncts is much more difficult. By making these changes, TCC reduced the cost-per-student by 43% and produced an annual dollar savings of \$321,000, the highest dollar savings in Round III.

Examples: Both the [University at Buffalo \(UB\)](#) and the [University of Colorado-Boulder \(UC\)](#) substituted undergraduate learning assistants (ULAs) for GTAs. At UB, the number of assistants available to help students was doubled. The hourly cost of a GTA was \$39 compared to \$8 for an ULA. ULAs turned out to be better at assisting their peers than GTAs because of the ULAs' better understanding of students' common misconceptions and their superior communication skills. While the employment of ULAs at UC was driven by the need to reduce costs (\$23 vs. \$9 per hour), the ULAs were more effective than most GTAs. ULAs were highly motivated to make the course a success. Because students regarded the ULAs as peers, they were more open about their learning difficulties with them than with GTAs.

By mixing and matching these strategies, you can create opportunities for further cost reduction. If you reduce the number of sections and increase the section size (and reduce the number of people involved in teaching the course), you may also

- Reduce the number of graduate teaching assistants (GTAs); and/or change the mix of personnel teaching the course.

Example: [Virginia Tech](#) reduced the number of sections from 38 to 1 and increased the number of students in each section from 40 to 1500. In the traditional format, a mix of tenure-track faculty (10), instructors (13), and GTAs (15) taught the 38 sections. In the redesign, tenure-track faculty members' time declined by 85%, and the time spent by GTAs decreased by 82%. The time for all instructors declined by 77%. The redesign added 1,885 hours of undergraduate peer tutoring. Students now receive greater one-on-one assistance: the total interaction time of all personnel increased from 1,140 hours in the traditional model to 2,305 hours in the redesigned course. Full-time faculty were freed to teach upper division math courses; GTAs were deployed to other departmental assignments. By making these changes, [Virginia Tech](#) reduced the cost-per-student by 77%, the highest percentage in Round I.

Example: [The University of Southern Mississippi](#) reduced the number of sections from 30 to 2 and increased the number of students in each section from 65 to 1000. These changes enabled the university to reduce the number of faculty teaching the course from 16 (8 full-time faculty and 8 adjuncts) to the equivalent of 2 full-time faculty and 4 GTAs. Prior to the redesign, 50% of the course was taught by full-time faculty, and 50% was

taught by adjuncts. Southern Mississippi eliminated adjuncts completely. The course is now taught 100% by full-time faculty supported by GTAs for writing assignment grading. By making these changes, six full-time faculty were freed to teach other courses, and the funds previously used to hire adjuncts were made available for a variety of academic enhancements in the department. [The University of Southern Mississippi](#) reduced the cost-per-student by 56%, the highest percentage reduction in Round III.

Do you want to accommodate enrollment growth?

If accommodating more students is a goal, you do not have to reduce the number of people involved in teaching the course in order to produce cost savings, although you can do this. Here are three strategies that will enable you to serve more students:

- Increase the number of sections, keep section size the same, keep personnel the same, and serve additional students.

Example: [The University of Illinois at Urbana-Champaign](#) has almost doubled the enrollment in three Spanish courses with no increase in staffing. In the traditional format, instructors met with one group (~24 students) four times per week. In the redesigned format, they meet with two groups (~20 students) two times per week each.

- Keep the number of sections the same *or* increase the number of sections, increase section size, keep personnel the same, and serve additional students

Example: [Portland State University](#) originally planned to increase section size from 20-24 to 30-36 and increase the number of students served from 690 to 960. Based on experience during the 2002-03 academic year, the team decided to maintain section size at a lower level and to increase the number of sections offered, which supported an increase in the total number of students from 690 to 1270. Because of seat-time reduction, the number of sections could be doubled in the same physical space with a small increase in personnel.

- Reduce the number of sections and increase the section size, change the mix and serve additional students

Example: [The University of Tennessee-Knoxville \(UTK\)](#) increased the number of students served from 1500 to 2000. In the traditional format, 16 adjunct instructors and 6 GTAs taught 57 sections (~27 students) each. In the redesigned format, GTAs are paired with experienced instructors as support partners, reducing the number of sections from 57 to 38 and doubling the number of students in each section from 27 to 54 students. UTK reduced the cost-per-student by 74%, the highest percentage in Round II.

Example: [Florida Gulf Coast University \(FGCU\)](#) reduced the number of sections from 31 to 2 and increased the number of students served in the first year of the redesign from 800 to 950. Full-time faculty taught 20% of the traditional course, and adjuncts taught 80%. FGCU eliminated adjuncts completely; the course is now taught 100% by full-time faculty supported by a new position called the preceptor. Preceptors, most of whom have a B.A. in English, are responsible for interacting with students via email, monitoring student progress, leading Web Board discussions and grading critical analysis essays. Each preceptor works with 10 peer learning teams or a total of 60 students. Replacing adjuncts independently teaching small sections (\$2,200 per 30-student section) with

preceptors assigned a small set of specific responsibilities (\$1,800 per 60-student cohort) in the context of a consistent, faculty-designed course structure will allow FCGU to accommodate ongoing enrollment growth while steadily reducing its cost-per-student.

- Change the mix of personnel teaching the course and serve additional students.

Example: [Rio Salado College](#) created a new position called the course assistant to troubleshoot technology questions, monitor student progress, and alert instructors to student difficulties with the material. Approximately 90% of questions students asked were non-instructional in nature. Adding the course assistant @ \$12 per hour allowed Rio to increase the number of students that could be handled by one instructor from 30 to 100.