

Structuring (the Teaching of) Multisection Courses

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Many larger institutions have mathematics and statistics courses that have very large enrollments and they organize several sections of the same course. Familiar examples include Math 118, 119 at IUPUI and Bloomington, Math 165, 166, 261 at IUPUI and West Lafayette, and other calculus classes, general statistics, precalculus, “liberal arts” math, and many others at a wide variety of institutions. There may not be many multisection math courses in small liberal arts colleges, but even there, sometimes the structure of the curriculum necessitates it. This means faculty at all kinds of institutions address questions about how to teach multisection courses and meet the goals of the students, the faculty, and the university for the course. Moreover, a look around will reveal examples of many different solutions to the problem, almost as many different solutions as there are institutions!

The discussion this week will focus on the nature of these decisions, the advantages, the disadvantages, and the trade-offs that must be part of the decisions.

Because the structures chosen depend on the type of course and because we discussed calculus for engineering, science, and math last last week, we will specialize on the structure for this calculus course in two institutions.

University A has a first calculus course with 300 students, enough tenure line faculty members to teach all small sections for the course if this is desirable, and no available rooms with a capacity of more than 120. In contrast, University B has a first calculus course with 2000 students, not enough tenure line faculty to teach all small sections for the course, but they have available classrooms with capacities of a variety of sizes up to a maximum 500 (and an auditorium with a capacity of 3000 seats). Both universities can hire as many lecturers, graduate students, and/or adjunct faculty to be involved in teaching this course as are needed. Students at both universities are expected to attend class for 200 – 240 minutes per week, and standard class periods at each are either 50 minutes or 75 minutes.

If possible, please think about the following questions before the seminar: we will discuss them from the beginning of the seminar. Naturally, the questions are interrelated!

For each question, think about the advantages and disadvantages of each of the possible answers you imagine, including the perspective of the faculty, the students, the administration, and the parents.

- How long should each class be? How many days should the class meet each week?
- How many students should be in each section of the class?
- Who should be teaching the classes?
- How detailed should the syllabus for the course be: every instructor assigns the same exercises on the same days discusses the same text sections on the same days? Every instructor entirely on her/his own except the major topics (e.g. chapter topics) are the same?
- Only common midterms and common final exams for all sections of the course? Every instructor makes up own midterms and final exams?
- What about homework, quizzes?
- Grades assigned for all students based only on common work? Every instructor prepares grades as she/he decides to do?
- How will you decide if what you do is working well?