

Letter to the Editor

The Teaching Hour/ Course Duration Ratio

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In the construction of a medical curriculum, the number of teaching (contact) hours is an element that is always considered because the total number of available contact hours is finite and there must be a guide to allow for the fitting of various subjects into the limited time frame. Indeed, the American Association of Medical Colleges Curriculum Director (12th ed., 1983-84) provides a listing of such contact hours for accredited medical schools in the United States and elsewhere. On the other hand, an important parameter for a medical curriculum—the concentration of subject matter relative to time—has been ignored. Thus two schools may each allocate, for example, 170 contact hours to physiology, but one school may disperse that time over an entire academic year, whereas the other school may wedge the hours into 8 or 9 weeks. To make a hasty assessment of the relationship between the physiology course length and the number of contact hours in physiology (i.e., lecture density and total contact hour density), I used the above-mentioned Directory for contact hour data and then interrogated Physiology Departments as to course length.

Of 127 schools in the continental US, 27 were eliminated from further consideration because the Directory data did not disclose any discrete definable physiology course; in most of these instances, an organ-systems approach was indicated. A questionnaire simply requesting course length was answered by 91 schools and not answered by 9 schools; in some instances the respondents volunteered contact hour data, which permitted an updating of the Directory information. Of the 91 schools providing information, 34 offered a "Full" or traditional physiology course, and 57 presented a "Partial" course in which neurophysiology was relegated to a neuroscience course.

Table 1 is derived principally from the Directory data and summarizes the number of contact hours in physiology for those schools offering the "Full" or the "Partial" course. Median values are shown as well as those for the 1st and 3rd quartiles, which represent the values for the 50% of the schools surrounding the median.

Type of Course	Total Lecture, Hours	Total Contact, Hours
"Partial"	88 (77-100)	153(123-175)
"Full"	112 (89-136)	184 (151-202)

It is evident that the average "Partial" course has some 24 fewer lectures and 31 fewer total contact hours than

the traditional "Full" course. The neuroscience courses offered in conjunction with the "Partial" physiology courses had an average of 60.8 lecture hours, and it is therefore likely that the "lost" 24 contact hours were neurophysiology lecture hours that have simply been shifted into the neuroscience courses, where they represent about one-third of the neuroscience lectures.

Type of Course	Course Duration, Weeks	Total Lecture Hours/Week	Total Contact Hours/Week
"Partial"	17.0 (15-21)	5.0 (4.2-6.0)	9.0 (6.8-10.7)
"Full"	18.5 (16-22)	5.4 (4.4-8.0)	9.5 (6.6-10.9)

In Table 2 the element of course length is introduced as well as the concept of the number of contact hours per week. The median course length for the "Partial" and "Full" courses was equivalent to about one semester, but this value is highly misleading, since it masks an extremely wide range of course lengths and obscures the fact that the frequency distribution of course lengths is multimodal, reflecting the several types of course segments (quarters, one semester or two quarters, and two semesters or three quarters). The range of course durations was 12-40 weeks for the "Full" courses and 9-32 weeks for the "Partial" courses.

Regardless of whether the traditional course or the truncated course is offered, the average concentration of contact hours is quite similar. The median number of lecture hours per week is about 5, and there are about 4 additional hours per week devoted to labs, conferences, etc. Not shown in Table 2 but of interest is the fairly wide range of lecture and total contact hour densities. In both the "Full" and "Partial" course categories the lecture hours per week ranged from about 2.5 to 10.5 hours/week, whereas the total contact hours per week ranged from 3.5 to 19.5 hours/week.

As one might expect, there is a positive correlation between the number of contact hours and either the duration of the course or the number of contact hours per week. Nevertheless, this association is only moderate (Spearman coefficient R ranged from 0.46 to 0.63) between the number of contact hours and the contact hour per week and lower yet ($R = 0.04$ to 0.39) between the number of contact hours and the course durations. It is therefore reasonable to say that the teaching hour density is not merely a reflection of the number of contact hours in the course. What significance a high or low contact hour/week ratio may bear on learning effectiveness is indeed complicated by the fact that more than one course is usually offered in the same time segment of the year. It might be of interest if one could ascertain whether there is any correlation between the teaching hour density and some objective measure of performance, such as perhaps the National Board examinations.

I am grateful to all the Chairmen of the Departments of Physiology who responded so promptly to my inquiry.

Correction

Physiologist 27(6): 418, 1984. Cell and General Physiology Section Secretary is Caroline Pace.