

## SECTION 4 – CURRICULAR ISSUES

### Introduction

This section responds to the Joint Committee's first guiding principle, *enhancing the effectiveness of UCLA's educational programs*, by addressing the different influences the quarter and semester calendars have on the curriculum. The issues identified here come primarily from oral and written reports from the representatives of the Graduate Council and the Undergraduate Council, the standing committees of the Academic Senate responsible for approving courses, curricula and educational policies. We have not segregated the issues according to graduate and undergraduate education because both councils had similar comments and concerns. In addition to reviewing issues related to the traditional academic year, we have included a discussion of Summer Sessions because curricular offerings during summer are becoming more integral to our funding base and the needs of UCLA's students, particularly undergraduates.

### Curricular Advantages of Both Calendars

The Graduate Council and Undergraduate Council listed the following advantages for teaching and learning under the quarter and semester systems:

#### Quarter

- There is greater flexibility in scheduling.
- There can be a wider range of course offerings, more subjects covered, and exposure to more professors.
- Fundamental and introductory courses can be taught more often.
- The consequences of failure in a particular course are less severe.
- Students may benefit from the intensity of the quarter system.
- From the student's perspective, the impact of "boring courses" is reduced.
- Within the shorter time-frame, instructors are more likely to set priorities and be more careful regarding content.
- With more courses overall, quarters allow more opportunities for courses in the professor's area of expertise.

#### Semester

- Students can pace their studies over a longer period.
- There is more time for distributed learning and subject coherence.
- There is more time to develop major projects (term papers, research assignments).
- There is more time for faculty consultation, which can also lead to more thoughtful evaluation and more effective letters of recommendation.
- Texts designed for semester-length courses can be better used.
- There are decreased stress levels (work & family) as opposed to the quarter system.
- Students may more easily catch up if they perform poorly on the midterm.
- There is proportionally less time spent on initial set-up and administering tests.
- Many topics can be taught more holistically, with less fragmentation.

In our deliberations, we considered whether it might be possible to secure the advantages of the semester system while retaining the efficiency and flexibility of quarters. One possible way to

do this would involve a combination of full-semester and half-semester courses. It is important to note, however, that half-semester courses will probably not be a practical option in most cases, as they tend to be quite difficult to administer. Notably, Berkeley uses only a very few half-semester courses; thus, if UCLA were to move to semesters, it would be according to the standard model, and the standard arguments for each system would apply.

The Joint Committee compared UCLA’s current calendar with Berkeley’s proposed calendar (Table 4.1) and focused on key differences in academic pace, opportunities for reading days before exams, and the length of final exam periods and inter-session breaks. We elected to use Berkeley’s proposed calendar because it allows more room for a viable summer session interval, which is of major concern for UCLA (summer session is discussed later in this section).

**Table 4.1. Comparison of two academic calendars**

	<b>Current UCLA Quarter Calendar</b>	<b>Proposed Berkeley Semester Calendar</b>
<b>No. of academic terms</b>	3 quarters plus summer sessions	2 semesters plus summer sessions
<b>No. of weeks per academic term for Instruction + reading days</b>	10 weeks	14 weeks
<b>Start of September instruction</b>	Last Thursday of Sept.	First Tuesday of Sept.
<b>Fall Final Exams</b>	Second week of Dec.	Third week of Dec.
<b>Start of January instruction</b>	Second Monday of Jan.	Third Tuesday of Jan.
<b>Spring Final Exams</b>	Second week of June	Mid-May
<b>From Day 1 of Fall instruction to last day of spring exams</b>	37 weeks, 2 days	36 weeks, 4 days
<b>Weekdays available for instruction</b>	146 days	140 days
<b>Weekdays available for examinations</b>	15 days	10 days
<b>Weekdays available for Exam Prep (“Reading Days”)</b>	0 days	4 days
<b>Winter Break (1)</b>	3 weeks, 2 days	4 weeks, 3 days
<b>Weekend days and holidays during academic year</b>	77 days	71 days
<b>Summer Break (2)</b>	14 weeks, 5 days	15 weeks, 3 days
<b>No. of weekdays during summer break, excluding holidays</b>	73 days (14 weeks, 3 days)	78 days (15 weeks, 3 days)
<b>No. of instructional weeks during summer</b>	12 weeks	TBD

- (1) “Winter Break” is defined as the number of calendar days from the last day of fall exams to the first day of instruction in January, including holidays.
- (2) “Summer Break” is defined as the number of calendar days from the last day of spring exams to the first day of instruction in the fall, including holidays.

The Joint Committee asked Professor Daniel Solorzano (Chair, Department of Education in the Graduate School of Education and Information Studies) to identify studies in higher education or the psychology of learning that would support or refute some of the widely held beliefs about the effectiveness of learning and/or teaching under the quarter and semester systems. As he discovered, there is little conclusive evidence to support one calendar system over another. Most

studies are descriptive in nature or focus on administrative management situations outside of an academic context.

Professors Elizabeth and Robert Bjork recommended articles that studied learning strategies,<sup>1</sup> which argue the long-term advantages of distribution practice sessions over time. While this point is significant and well documented in the literature on learning, it is not clear that these research results can be applied directly to an academic setting to identify differences in educational effectiveness between a 10-week quarter and a 15-week semester.

## Curricular Design

The responsibility for the curricular offerings at UCLA—as with most institutions of higher education—rests squarely with the faculty. Historically, faculty design curricula in terms of bodies of knowledge and training that they deem central to their particular discipline, which they apportion among an integrated set of courses; these courses are then assigned unit value according to how many hours of work per week they require of students, both inside and outside the classroom (3 hours per unit in the UC system).

Under the quarter system, students (both graduates and undergraduates) are expected to complete more units to complete their degrees, according to a simple arithmetic formula. Under both systems, students are expected to complete 15 units per term. Since undergraduates are expected to graduate in four years, they graduate with at least 180 units under the quarter system and at least 120 units under the semester system:

$$\begin{array}{l} \text{Quarter:} \quad 15 \text{ units/quarter} \times 12 \text{ quarters} = 180 \text{ units} \\ \text{Semester:} \quad 15 \text{ units/semester} \times 8 \text{ semesters} = 120 \text{ units} \end{array}$$

Until recently, the default unit assignment for a course on the quarter system at UCLA has been four units, with students typically completing 45 courses. Traditionally, semester courses have been three units, with students typically completing 40 courses. In recent years, university faculties under both systems have been more willing to create different modules for course unit values. For example, at UCLA (quarter system) and Berkeley (semester system), courses range in value from one-unit freshman seminars (as in our new *Fiat Lux* series) to eight-unit studio/workshop courses. Nonetheless, most quarter courses at UCLA are valued at four or five units and most semester courses at Berkeley are valued at three or four units. If the average class under the quarter system is 4.5 units, students will take 40 classes to graduate, while if the average class under the semester system is 3.5, students will take ~34 courses to graduate.

We focus above on the number of courses because faculty often relate the number of courses that students are expected to complete directly with the “flexibility,” “breadth,” “rigor,” or “depth” of a university education. Statements like: “exposure to variety is done effectively in the quarter system, but is ruined by the semester system” or “longer courses on fewer topics simply do not provide as broad an education as somewhat shorter courses on more topics” are common among

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<sup>1</sup> Bjork, R. A. (1994) Memory and metamemory considerations in the training of human beings. In *Metacognition: Knowing about Knowing*. J. Metcalfe and A. Shimamura (eds.), Cambridge MA, MIT Press (pp. 185-205).  
Bjork, R.A. (1999) Assessing our own competence: Heuristics and illusions. In *Attention and Performance XVII. Cognitive Regulations of Performance: Interaction of Theory and Application*. D. Gopher and A. Koriste (eds). Cambridge MA, MIT Press (pp. 435-459).

those who argue for the quarter system. In similar fashion, proponents of the semester system argue for the greater rigor and depth of inquiry that semesters are seen to facilitate. Yet both perspectives tend to accept too easily the existing division of a discipline into roughly commensurate courses as a given, rather than as something that might productively be re-imagined.

A specific issue that has emerged at UCLA, and which should be addressed within the context of curricular reform regardless of whether UCLA switches to semesters, is that we are currently still stuck within a “course is a course is a course” mind-set. This has had a number of consequences, including the following:

- Quarter courses have often tried to cover the same material as semester courses, but compressed into a ten-week schedule.
- Re-uniting at UCLA, which has tried to correct for this compression by assigning appropriate credit for work performed, has in many cases simply substituted a different “one size fits all” mind-set for the previous one.

Potentially, curricular reform, whether or not in the context of a conversion to the semester system, may help push us out of this mind-set. If we remain on the quarter system, courses may be redesigned within a more holistic conception of each discipline, often with fewer units. If we were to move to semesters, we may choose in many cases to spread learning experiences and opportunities over a longer period at a reduced time-investment (and thus, again, with fewer units). In other words, we may expand a course into a semester frame without adding significant work (thus, lowering the number of units instead), which could enhance the potential for learning and maintain some of the flexibility of the quarter system regarding the variety of courses available.

### **Converting Quarter Curricula to Semester Curricula**

Most discussions of calendar change, at UCLA and elsewhere, spend a fair amount of time detailing different methods of “conversion” by which current course offerings might be converted into semester courses. There are two main models of conversion:

**MODEL 1:** Preserve the amount of time spent per week and thus the number of units for a course. This is especially suitable for year-long courses, which must be re-divided into two courses instead of three, so that, after a year under either system, a student would do the same work, learn the same material, and receive the same credit.

**MODEL 2:** Preserve the course as a course, spreading it over a semester and reducing the number of units accordingly. This is especially suitable for stand-alone courses, for which a student gets roughly the same proportional credit (although conversion of units can only rarely be exact, since partial unit credit is not a possibility).

While there are undoubtedly many cases in which one of these two options would make perfect sense, we would urge programs to consider moving away from what is basically a preservationist attitude—i.e., one that asks: how can we convert our present system with a minimum of trouble? Such an approach would not, in all likelihood, produce the best overall results for UCLA.

The typical experience at other institutions that have switched to semesters is that the number of course offerings is reduced significantly in the process of conversion. Given this probable outcome of a decision to move to semesters, it would behoove us not simply to convert what we have now, but rather to look at our curricular offerings more holistically with an eye toward redesigning them. It would probably prove useful for many departmental programs to look carefully at the curricula of similar institutions for models.

One particular kind of problem likely to be encountered in any calendar change or major curricular reform involves the coordination of courses given by one department that are required by another department. There will be times when conversion of courses according to either method will adversely affect some client departments. For example, if two quarters of a year-long math sequence are now required by a science program, the conversion of the sequence to two semesters would create an incompatibility. On the other hand, if another program requires the full sequence, stretching it out to three semesters could cause even more severe problems. Negotiations here could be quite complex, affecting many departments and programs. Again, looking carefully at the offerings and requirements of other institutions should prove helpful, especially of those that have recently undertaken a shift (such as the University of Minnesota).

### **Logistical Issues Affecting the Curriculum**

Although not precisely academic issues, there are other logistical matters that impinge on curriculum. These include the following:

#### ***Class Size and the Lack of Large Lecture Halls***

A few faculty members who wrote the Joint Committee were concerned that the semester system would lead to the need to teach large introductory courses that would require “mega” lecture halls, larger than those UCLA has currently (or could build in the next decade). The problem can be stated in the following way. Department X now accommodates 1200 students annually by teaching three sections of an introductory course, one each quarter. Under the semester calendar, the department would continue to offer the introductory course but would redesign it to be taught over 15 weeks. To accommodate 1200 students, the department might want to teach two sections of 600 students. This solution may not be desirable because of the larger class size, or even possible because UCLA does not have general assignment halls that seat more than 400 students. The only larger auditorium is Royce Hall (~1200 - orchestra), which is rarely used for lectures.

Under this scenario, the department may face two possible solutions:

- Reduce the size of the course by one-third and teach two sections of 400 each
- Teach three sections of 400 students each

The first solution is not tenable because the department would fail to meet the needs of the students. The second solution would require that the department devote more teaching resources to the introductory course because 45 faculty weeks ( $3 \times 15 = 45$ ) would be devoted to this class under the semester rather than 30 faculty weeks ( $3 \times 10 = 30$ ) under the quarter. This may not be feasible given the size of the faculty and the need to offer core classes for majors and graduates students, as well as a range of electives.

### *Special Facilities for Studio and Laboratory Courses*

An issue similar to the problem of lecture-hall capacity involves the deployment of student laboratories and special studio facilities. Three members of the Joint Committee were asked to investigate this issue: Professor Craig Merlic (life and physical science student laboratories), Professor Kung Yao (engineering student laboratories), and Professor Lorraine Sakata (studios for students in art and architecture). Each report is summarized here.

#### *Student laboratories in science*

Most science departments teach introductory courses with labs; currently, most of the College's basic science labs are used to capacity. Would converting to semesters produce a capacity problem? The capacity problem is readily illustrated. If 1000 students enroll annually in an introductory course, 333 could be accommodated each term under the quarter system but 500 would have to be accommodated under the semester system. Professor Merlic indicated that in most cases (but not all), more students per term might be accommodated, but *only* if departments offered labs every evening and all day on Saturday. He also noted that under the semester system, introductory labs would require more staff and TAs, who normally devote only one quarter to teaching an introductory lab. Lastly, he noted that expanding a one-quarter lab to a semester would require faculty to develop a greater number of lab sessions, which might require the purchase of more equipment and supplies.

Professor Merlic also noted that there would be an important pedagogical issue for the advanced laboratories in a conversion. In his department, Chemistry and Biochemistry, there are six senior-level advanced laboratory courses, some of which would have to be merged, while unique ones would either be eliminated or lengthened. Given the discipline-specific content of some of the laboratories, and their educational importance, elimination may not be an option.

In sum, these two problems (lab capacity and the need for substantial curricular redesign) could add substantial cost to mounting introductory lab courses if we convert to a semester system.

#### *Student laboratories in engineering*

Professor Yao surveyed each of the engineering departments, and his findings were similar to those reported by Professor Merlic. In some departments (but not all), converting to the semester system would create a lab capacity problem. In all cases, an expansion of a 10-week lab class to 15 weeks would increase student time in the lab (which some applauded) but would require more resources, as well as considerable time to redesign each lab class.

#### *Student studios in the arts and architecture*

Professor Sakata surveyed each department in the School of Arts and Architecture (SOAA). These departments use dance studios, practice rooms (individual and ensemble), large rehearsal rooms for choral and orchestral activities, computer-equipped laboratories, and specialized studios for art (i.e., painting, sculpture, drawing, etc). With one exception, SOAA departments believed that converting from quarters to semesters would create problems similar to those identified for the sciences and engineering—that is, problems in capacity and in redesigning the curriculum to provide students with the variety of experiences currently available. Only one department, Architecture and Urban Design, did not perceive any problems in scheduling (graduate level only) classes to fit into a semester structure. Since all Architecture and Urban Design students enroll in studio courses throughout the academic year, it makes little difference for them whether the year is divided into three quarters or two semesters.

### ***Accreditation for Undergraduate and Graduate Programs in the Professional Schools***

Many of UCLA's professional programs must undergo periodic accreditation as well as periodic review by the Academic Senate. The committee was interested in how a change in the calendar might affect the accreditation process. Professor Ajit Mal (Engineering) was asked to review this issue, using Engineering as the example. Professor Mal's report made two major points:

- All engineering programs were reviewed in 2000 by the Accreditation Board of Engineering and Technology (ABET), as well as the Computer Science Accreditation Council (CSAC) that grants accreditation to Computer Science programs. Four of the six engineering programs were granted accreditation for six years and two were granted accreditation for three years (due to perceived deficiencies in some areas).
- Since most engineering programs across the nation are on semesters, UCLA should not find it difficult to create suitable programs that would be accredited. The timing of the change would be important as preparing for accreditation is a major task.

The Committee did not seek input from other Schools on General Campus whose programs are accredited.

### **Summer Sessions**

The tremendous growth in UCLA Summer Sessions enrollment during the past two years makes it now impossible to think about the academic calendar without taking into account the summer interval. This growth is due not only to lower fees, but also to an increased focus on summer sessions as a way for students to accelerate or keep pace with degree requirements. As UCLA places more emphasis on summer—both for educational opportunities and State funding—there is growing concern that courses offered during summer may not have the same breadth and rigor as those offered during the academic year. Any calendar shift must be mindful of both the integral nature of summer to the academic calendar and of the problem of ensuring equivalency in course offerings in summer as compared with those offered during the terms of the academic year.

### ***Historical Context***

As detailed in Section 2, a State-funded ten-week academic summer quarter was actually operated at UCLA for two years following UCLA's initial move to quarters—i.e., Summer 1968 and Summer 1969—before the experiment was cancelled due to reductions in State funding and lower-than-hoped-for enrollments. Then, beginning in Summer 1970 and continuing through Summer 2000, the summer instructional program became a self-sustaining academic subsidiary of UCLA Extension, operating in two six-week sessions, with eight and ten week variants in the first session to accommodate the pedagogical preferences of faculty and departments. This arrangement changed slightly in 1996, when the Chancellor directed that academic departments receive a share of the net income generated from the summer session programs as an incentive to increase summer course offerings and enrollments.

In summer 2001, as part of the Tidal Wave II initiative, State funding was provided to UCLA (and two other UC campuses) to lower the net cost to students during summer session, which resulted in a headcount increase in enrollment by 900 FTE, or 57% over the previous summer. Excluding the graduating seniors of Spring 2001 and the entering freshmen in Fall 2001, nearly

one-half (48%) of “continuing” UCLA undergraduates enrolled in one or more summer session courses in 2001. Preliminary data for Summer 2002 indicate an increase by an additional 11% in Summer 2002 compared to 2001, with an additional 233 FTEs (for a new total of 2332 FTE in 2002 compared to 1200 in 1999).

**Course Equivalency**

Faculty and administrators at UCLA have the obligation to provide outstanding summer programs. As summer programs expand, the State will expect an increase in ladder-faculty participation, and both students and faculty expect that courses offered during the summer will have an equivalency in instruction measured by instructional time and time for outside study (as discussed above) as well as by quality of instructors. Whether or not UCLA decides to modify its calendar, issues relating to Summer Session will require more attention from departments and Academic Senate agencies responsible for the curricula.

One of the motivating factors at UC Berkeley for the proposal for 140 instruction days (vs. 146 days) is the expansion of the “summer break” by one additional week, from 14 weeks to 15 weeks. Colleagues at UC Berkeley have indicated their expectation that this one-week expansion will accommodate additional summer instructional periods and generate greater student FTE.<sup>2</sup>

UCLA currently offers most of its courses during one of two six-week summer sessions, with a few programs opting for eight or ten-week sessions. Time for teaching and learning is compressed, particularly during the six-week sessions.<sup>3</sup> For example, students enrolled in a typical four-unit class during the academic year are expected to devote 120 hours to the class over a ten-week quarter. Of these 120 hours, 28-30 hours per quarter are usually devoted to lecture (three hours per week, not counting holidays or exams), leaving ~90 hours (nine hours per week) for outside study, writing papers, as well as discussion (if discussion sections are offered). During summer, those 120 hours must be compressed into six weeks, with students expected to devote 20 hours per week; for example, they might spend five hours/week in lecture with 15 hours/week of outside study, as indicated in the following table.

**Table 4.2. Expected “equivalency of instruction” expressed in hours per week: a comparison of 10-week quarter and 15-week semester courses taught in six-week or eight-week summer sessions**

Course and term	Regular Term 10-wk quarter or 15-wk semester.		Summer Session 6-wk instruction		Summer Session 8-wk instruction	
	Lecture hrs/wk	Outside hrs/wk *	Lecture hrs/wk	Outside hrs/wk *	Lecture hrs/wk	Outside hrs/wk *
4-unit quarter course	3.0	9.0	5.0	15.0	3.75	11.25
5-unit quarter course	4.0	12.0	7.0	19.0	5.0	15.00
3-unit semester course	3.0	6.0	7.5	15.0	6.0	11.00
4-unit semester course	4.0	9.0	10.0	22.5	7.5	15.00

\* Assuming Academic Senate Regulation 760, which states, “The value of a course in units shall be reckoned at the rate of one unit for three hours’ work per week per term on the part of the student, or the equivalent.”

<sup>2</sup> One possibility UC Berkeley is considering is to schedule two separate, slightly overlapping eight-week sessions during the summer. This option may be difficult at UCLA, given our heavy use of classroom facilities in the summer.

<sup>3</sup> The Department of Mathematics offers its courses only in the 8-week session because the faculty believe it is not possible to effectively teach a 10-week quarter course in six weeks.

According to the data above, students enrolled in a typical three-unit semester course may expect to spend 45 hours in lecture (three hours/week) and 90 hours in outside study (nine hours/week), totaling 135 hours during a 15-week term. Compressing this semester course into a six-week summer course is daunting and would require 22.5 hours/week, with 7.5 hours/week of lecture and 15 hours/week of outside work. As shown, a compression of this magnitude will already be in place for new five-unit GE courses in Summer 2003, which would require 26 hours/week. Data in Table 4.2 indicate that students enrolled in summer courses are expected to spend considerably more time out of class per week than those enrolled in the same course during the academic year, which may be an unrealistic expectation.

One way to alleviate this compression would be to use longer terms in summer, as is sometimes done already at UCLA. This might be done either by reducing summer session to one term (perhaps of flexible length) or by overlapping sessions, as in the overlapping eight-week terms now being considered by Berkeley.