



California Community Colleges Chancellor's Office

Hours and Units Calculations

I. Standard Formula for Credit Hour Calculations

Standards for credit hour calculations are contained in title 5 §§55002.5, 55002(a)(2)(B), and 55002(b)(2)(B). Courses not classified as cooperative work experience, clock hour, or open entry/ open exit use the following method for calculating units of credit.

Divide the total of all student learning hours (lecture, lab, activity, clinical, TBA, other + outside-of-class hours) by the hours-per-unit divisor, round down to the nearest increment of credit awarded by the college. Expressed as an equation:

$$\frac{\text{[Total Contact Hours + Outside-of-class Hours]}}{\text{Hours-per-unit Divisor}} = \text{Units of Credit}$$

The result of this calculation is then rounded down to the nearest .5 increment or to the nearest fractional unit award used by the district, if smaller than .5. This formula applies to both semester and quarter credit calculations. While this formula can yield a value below the lowest increment of credit awarded by the college, zero-unit courses are not permissible. The following definitions are used in the application of this formula:

- **Total Contact Hours:** The total time per term that a student is under the direct supervision of an instructor or other qualified employee as defined in §§58050 - 58051. This number is the sum of all contact hours for the course in all calculations categories, including lecture, recitation, discussion, seminar, laboratory, clinical, studio, practica, activity, to-be-arranged, etc. Contact hours for courses may include hours assigned to more than one instructional category, e.g. lecture and laboratory, lecture and activity, lecture and clinical.
- **Outside-of-class Hours:** Hours students are expected to engage in course work outside of the classroom. Federal and state regulations for credit hour calculations are based on the total time a student spends on learning, including outside-of-class hours. As a matter of standard practice in higher education, lecture and related course formats require two hours of student work outside of class for every hour in-class. All other academic work, including laboratory, activity, studio, clinical, practica, TBA, etc. must provide an equivalent total number of student learning hours as typically required for lecture, with the ratio of in-class to outside-of-class work prorated appropriately for the instructional category.

Typically, these ratios are expressed as follows:

Instructional Category	In-class Hours	Outside-of-class Hours
Lecture (Lecture, Discussion, Seminar and Related Work)	1	2
Activity (Activity, Lab w/ Homework, Studio, and Similar)	2	1
Laboratory (Traditional Lab, Natural Science Lab, Clinical, and Similar)	3	0

Other categories or ratios for inside- to outside-of-class hours are possible, but should fall within the parameters for one unit of credit as described above. Standard expectations in higher education for credit hour calculations generally align with the in-class to outside-of-class ratios as described in this table. Deviations from these widely accepted standards, while permitted, can negatively affect course transferability and articulation and should be used with caution. Since TBA hours are required to be listed separately on the COR, any outside-of-class hours expected of students in relationship to TBA contact hours must be included in the total student learning hours for the calculation.

- **Hours-per-unit Divisor:** The value, or value range, used by the college to define the number of hours required to award each unit of credit. This value must be minimum of 48 and maximum of 54 hours for colleges on the semester system and a minimum of 33 and maximum of 36 for colleges on the quarter system. This number represents the total student learning hours for which the college awards one unit of credit. Colleges may use any divisor within this range, but should maintain consistency between the divisor and the dividend. For example, if a college uses the $51 = 1$ unit calculation to determine the hours of lecture and outside of class work in the dividend, they should use 51 as the divisor. Colleges that indicate the minimum and maximum range of 48 – 54 should show that same range for the dividend in the equation and resulting unit calculation.

Colleges must exercise caution in determining the hours-per-unit divisor for credit hour calculations. Because California finance laws assume that primary terms average 17-weeks on the semester system and 11½ weeks on the quarter system (the two semesters or three quarters equal the traditional 35-week academic year), and because student attendance and related apportionment state compliance auditing is based on the student contact hours delineated in the official COR, the Chancellor’s Office strongly recommends that colleges use the 18-week semester or 12-week quarter as the basis for the student contact hour calculation used in the COR, even if a college has been approved to use a compressed academic calendar. The 18-week semester or 12-week quarter primary term provides the greatest flexibility in terms of contact hours, and colleges do not risk an audit finding for excessive apportionment claims such as they might experience using a 16-week semester basis for the contact-

hour calculation. Additionally, it is also important to note the flexible calendar program is designed around the 35-week traditional academic calendar, so basing contact hour targets around an 18-week semester assures that instructional hours lost to “flex” activities will not result in the district not providing the minimum number of hours required by Title 5, section 55002.5, to award a unit of credit. Colleges using the 48-hour minimum calculation for determining credit hours risk problems with apportionment calculations and audits. Colleges must be specifically authorized by the Chancellor’s Office to use a compressed calendar, which adds further caution to the use of the minimum end of the hour to unit range.

Likewise, the activity or laboratory with homework calculation should be used with caution. In the natural sciences and other disciplines, it is standard practice to base the number of units awarded for laboratory solely on contact hours, even though there may be some expectation of student work or preparation outside of class. Any alteration of this relationship for laboratory courses in the natural sciences and clinical hours in many allied health fields, can jeopardize programmatic accreditation where specific ratios or hours are required for program components or course acceptability in meeting major or general education requirements when transferred to a baccalaureate degree-granting institution. Use of this category should be restricted to only those instructional areas where it is clearly aligned with accepted practices higher education. The term “activity” as used in this context is not intended to limit or define the use of this term locally. Some colleges use this term—and related credit calculations—interchangeably with laboratory.

The Course Outlines of Record for many districts do not specify the outside-of-class hours, relying instead on the assumption of traditional ratios for inside- to outside-of-class hours for lecture, laboratory, or other course formats. In instances where districts only record total contact hours for the course as a whole or in each instructional category on the Course Outline of Record, the course submission must include the expected hours of student work outside of class used to determine total student learning hours for the purposes of credit calculations as described above. The tables on the following pages provide guidance for the expected outside-of-class hours for a wide range of typical credit hour calculations.

II. Fractional Unit Awards and Minimum Thresholds

Title 5 requires colleges to award units of credit in .5 unit increments at a minimum. Calculations for each increment of credit awarded by the college represent the minimum threshold for awarding that increment of credit. Students are awarded the next increment of credit only when they pass the next minimum threshold.

For example, if a course is designed to require 180 total student learning hours (36 lecture, 72 lab, and 72 outside-of-class hours), the calculation of units works as follows:

$$180 / 54 = 3.33$$

3 units of credit

In this example, the college would not award 3.5 units until the total student learning hours reached the 189-hour minimum threshold for 3.5 units. However, if a college offers credit in .25 increments, this example would yield a 3.25 unit course. Another common example is a course offered for 40 contact hours, with no hours of homework, resulting in 40 total student learning hours. In a district that awards credit in .5 increments, $40 \text{ total student learning hours} / 54 = .75$, which meets the minimum threshold for .5 units of credit, but does not pass the minimum threshold for 1 unit of credit. In this example, 40 total student learning hours (36 contact and 4 outside-of-class) would award .5 units of credit. This is similar to grading systems where, for example, a student earns a “B” for any percentage between 80 and 89. The student is only awarded an “A” when they reach the minimum threshold of 90 percent.

III. Cooperative Work Experience

Units for Cooperative Work Experience courses are calculated as follows:

- Each 75 hours of paid work equals one semester credit or 50 hours equals one quarter credit.
- Each 60 hours of non-paid work equals one semester credit or 40 hours equals one quarter credit.

IV. Clock Hour Courses / Programs

The definition of a clock hour program and standards for awarding of units of credit for these programs is defined in federal regulations 34 CFR §668.8(k)(2)(i)(A) and 668.8(l), respectively. In this regulation, a program is considered to be a clock-hour program if a program is required to measure student progress in clock hours when:

- Receiving Federal or State approval or licensure to offer the program; or
- Completing clock hours is a requirement for graduates to apply for licensure or the authorization to practice the occupation that the student is intending to pursue.

Programs that meet this definition are required to use a federal formula for determining the appropriate awarding of credit that is outlined in 34CFR §668.8(l).

V. Local Policy

Colleges are encouraged to develop local policy, regulations, or procedures specifying the accepted relationship between contact hours, outside-of-class hours, and credit for calculating credit hours to ensure consistency in awarding units of credit. The creation of a standing policy or formal calculation document helps districts fulfill the responsibility of local governing boards under Title 5 §55002 to establish the relationship between units and hours for the local curriculum development and approval process.

VI. Sample Calculations Tables

The tables on the following pages provide examples of common configurations for credit hour calculations, divided into two sections.

The first section provides tables for three most common ratios of in-class to outside-of-class work as described above for semester calculations. The table on the left provides calculations for the minimum 48 hours = 1 unit of credit. The table on the right provides calculations for the maximum baseline of 54 hours = 1 unit of credit. For colleges that use 51, 52.5 or other intermediate divisors, the same general principle and ratios apply and all calculations should fall between these two number sets. For example, a college using 51 as the divisor would show 3 units of lecture credit as 51 hours of in-class work, 102 hours outside of class for a total of 153 total student learning hours. While these tables are not prescriptive, they are accurate guides for the development of local processes or policy and provide good examples of compliant calculations that are aligned to widely accepted standards for higher education. The second section provides examples of calculation tables in the same format for quarter calculations.

Section 1: Sample Calculation Tables – Semester Calculations

Lecture	48 = 1 unit			54 = 1 unit		
Units	Contact Hours	Homework Hours	Total Student Learning Hours	Contact Hours	Homework Hours	Total Student Learning Hours
0.50	8	16	24	9	18	27
1.00	16	32	48	18	36	54
1.50	24	48	72	27	54	81
2.00	32	64	96	36	72	108
2.50	40	80	120	45	90	135
3.00	48	96	144	54	108	162
3.50	56	112	168	63	126	189
4.00	64	128	192	72	144	216
4.50	72	144	216	81	162	243
5.00	80	160	240	90	180	270
5.50	88	176	264	99	198	297
6.00	96	192	288	108	216	324
6.50	104	208	312	117	234	351
7.00	112	224	336	126	252	378
7.50	120	240	360	135	270	405
8.00	128	256	384	144	288	432
8.50	136	272	408	153	306	459
9.00	144	288	432	162	324	486
9.50	152	304	456	171	342	513
10.00	160	320	480	180	360	540
10.50	168	336	504	189	378	567
11.00	176	352	528	198	396	594
11.50	184	368	552	207	414	621
12.00	192	384	576	216	432	648
12.50	200	400	600	225	450	675
13.00	208	416	624	234	468	702
13.50	216	432	648	243	486	729
14.00	224	448	672	252	504	756
14.50	232	464	696	261	522	783
15.00	240	480	720	270	540	810
15.50	248	496	744	279	558	837
16.00	256	512	768	288	576	864
16.50	264	528	792	297	594	891
17.00	272	544	816	306	612	918
17.50	280	560	840	315	630	945
18.00	288	576	864	324	648	972

Activity, Lab w/Hmwrk	48 = 1 unit		
Units	Contact Hours	Homework Hours	Total Student Learning Hours
0.50	16	8	24
1.00	32	16	48
1.50	48	24	72
2.00	64	32	96
2.50	80	40	120
3.00	96	48	144
3.50	112	56	168
4.00	128	64	192
4.50	144	72	216
5.00	160	80	240
5.50	176	88	264
6.00	192	96	288
6.50	208	104	312
7.00	224	112	336
7.50	240	120	360
8.00	256	128	384
8.50	272	136	408
9.00	288	144	432
9.50	304	152	456
10.00	320	160	480
10.50	336	168	504
11.00	352	176	528
11.50	368	184	552
12.00	384	192	576
12.50	400	200	600
13.00	416	208	624
13.50	432	216	648
14.00	448	224	672
14.50	464	232	696
15.00	480	240	720
15.50	496	248	744
16.00	512	256	768
16.50	528	264	792
17.00	544	272	816
17.50	560	280	840
18.00	576	288	864

54 = 1 unit		
Contact Hours	Homework Hours	Total Student Learning Hours
18	9	27
36	18	54
54	27	81
72	36	108
90	45	135
108	54	162
126	63	189
144	72	216
162	81	243
180	90	270
198	99	297
216	108	324
234	117	351
252	126	378
270	135	405
288	144	432
306	153	459
324	162	486
342	171	513
360	180	540
378	189	567
396	198	594
414	207	621
432	216	648
450	225	675
468	234	702
486	243	729
504	252	756
522	261	783
540	270	810
558	279	837
576	288	864
594	297	891
612	306	918
630	315	945
648	324	972

<i>Lab, Clinical, Activity, etc.</i>	48 = 1 unit			54 = 1 unit		
Units	Contact Hours	Homework Hours	Total Student Learning Hours	Contact Hours	Homework Hours	Total Student Learning Hours
0.50	24	0	24	27	0	27
1.00	48	0	48	54	0	54
1.50	72	0	72	81	0	81
2.00	96	0	96	108	0	108
2.50	120	0	120	135	0	135
3.00	144	0	144	162	0	162
3.50	168	0	168	189	0	189
4.00	192	0	192	216	0	216
4.50	216	0	216	243	0	243
5.00	240	0	240	270	0	270
5.50	264	0	264	297	0	297
6.00	288	0	288	324	0	324
6.50	312	0	312	351	0	351
7.00	336	0	336	378	0	378
7.50	360	0	360	405	0	405
8.00	384	0	384	432	0	432
8.50	408	0	408	459	0	459
9.00	432	0	432	486	0	486
9.50	456	0	456	513	0	513
10.00	480	0	480	540	0	540
10.50	504	0	504	567	0	567
11.00	528	0	528	594	0	594
11.50	552	0	552	621	0	621
12.00	576	0	576	648	0	648
12.50	600	0	600	675	0	675
13.00	624	0	624	702	0	702
13.50	648	0	648	729	0	729
14.00	672	0	672	756	0	756
14.50	696	0	696	783	0	783
15.00	720	0	720	810	0	810
15.50	744	0	744	837	0	837
16.00	768	0	768	864	0	864
16.50	792	0	792	891	0	891
17.00	816	0	816	918	0	918
17.50	840	0	840	945	0	945
18.00	864	0	864	972	0	972

Section 2: Sample Calculation Tables - Quarter Calculations

<i>Lecture</i>	33 = 1 unit		
Units	Contact Hours	Homework Hours	Total Student Learning Hours
0.5	5.5	11	16.5
1.0	11.0	22	33.0
1.5	16.5	33	49.5
2.0	22.0	44	66.0
2.5	27.5	55	82.5
3.0	33.0	66	99.0
3.5	38.5	77	115.5
4.0	44.0	88	132.0
4.5	49.5	99	148.5
5.0	55.0	110	165.0
5.5	60.5	121	181.5
6.0	66.0	132	198.0
6.5	71.5	143	214.5
7.0	77.0	154	231.0
7.5	82.5	165	247.5
8.0	88.0	176	264.0
8.5	93.5	187	280.5
9.0	99.0	198	297.0
9.5	104.5	209	313.5
10.0	110.0	220	330.0
10.5	115.5	231	346.5
11.0	121.0	242	363.0
11.5	126.5	253	379.5
12.0	132.0	264	396.0
12.5	137.5	275	412.5
13.0	143.0	286	429.0
13.5	148.5	297	445.5
14.0	154.0	308	462.0
14.5	159.5	319	478.5
15.0	165.0	330	495.0
15.5	170.5	341	511.5
16.0	176.0	352	528.0
16.5	181.5	363	544.5
17.0	187.0	374	561.0
17.5	192.5	385	577.5
18.0	198.0	396	594.0

36 = 1 unit		
Contact Hours	Homework Hours	Total Student Learning Hours
6	12	18
12	24	36
18	36	54
24	48	72
30	60	90
36	72	108
42	84	126
48	96	144
54	108	162
60	120	180
66	132	198
72	144	216
78	156	234
84	168	252
90	180	270
96	192	288
102	204	306
108	216	324
114	228	342
120	240	360
126	252	378
132	264	396
138	276	414
144	288	432
150	300	450
156	312	468
162	324	486
168	336	504
174	348	522
180	360	540
186	372	558
192	384	576
198	396	594
204	408	612
210	420	630
216	432	648

<i>Activity or Lab w/Hmwk</i>	33 = 1 unit		
Units	Contact Hours	Homework Hours	Total Student Learning Hours
0.5	11.0	5.5	16.5
1.0	22.0	11.0	33.0
1.5	33.0	16.5	49.5
2.0	44.0	22.0	66.0
2.5	55.0	27.5	82.5
3.0	66.0	33.0	99.0
3.5	77.0	38.5	115.5
4.0	88.0	44.0	132.0
4.5	99.0	49.5	148.5
5.0	110.0	55.0	165.0
5.5	121.0	60.5	181.5
6.0	132.0	66.0	198.0
6.5	143.0	71.5	214.5
7.0	154.0	77.0	231.0
7.5	165.0	82.5	247.5
8.0	176.0	88.0	264.0
8.5	187.0	93.5	280.5
9.0	198.0	99.0	297.0
9.5	209.0	104.5	313.5
10.0	220.0	110.0	330.0
10.5	231.0	115.5	346.5
11.0	242.0	121.0	363.0
11.5	253.0	126.5	379.5
12.0	264.0	132.0	396.0
12.5	275.0	137.5	412.5
13.0	286.0	143.0	429.0
13.5	297.0	148.5	445.5
14.0	308.0	154.0	462.0
14.5	319.0	159.5	478.5
15.0	330.0	165.0	495.0
15.5	341.0	170.5	511.5
16.0	352.0	176.0	528.0
16.5	363.0	181.5	544.5
17.0	374.0	187.0	561.0
17.5	385.0	192.5	577.5
18.0	396.0	198.0	594.0

36 = 1 unit		
Contact Hours	Homework Hours	Total Student Learning Hours
12	6	18
24	12	36
36	18	54
48	24	72
60	30	90
72	36	108
84	42	126
96	48	144
108	54	162
120	60	180
132	66	198
144	72	216
156	78	234
168	84	252
180	90	270
192	96	288
204	102	306
216	108	324
228	114	342
240	120	360
252	126	378
264	132	396
276	138	414
288	144	432
300	150	450
312	156	468
324	162	486
336	168	504
348	174	522
360	180	540
372	186	558
384	192	576
396	198	594
408	204	612
420	210	630
432	216	648

<i>Lab, Clinical, Activity, etc.</i>	33 = 1 unit		
Units	Contact Hours	Homework Hours	Total Student Learning Hours
0.5	16.5	0.0	16.5
1.0	33.0	0.0	33.0
1.5	49.5	0.0	49.5
2.0	66.0	0.0	66.0
2.5	82.5	0.0	82.5
3.0	99.0	0.0	99.0
3.5	115.5	0.0	115.5
4.0	132.0	0.0	132.0
4.5	148.5	0.0	148.5
5.0	165.0	0.0	165.0
5.5	181.5	0.0	181.5
6.0	198.0	0.0	198.0
6.5	214.5	0.0	214.5
7.0	231.0	0.0	231.0
7.5	247.5	0.0	247.5
8.0	264.0	0.0	264.0
8.5	280.5	0.0	280.5
9.0	297.0	0.0	297.0
9.5	313.5	0.0	313.5
10.0	330.0	0.0	330.0
10.5	346.5	0.0	346.5
11.0	363.0	0.0	363.0
11.5	379.5	0.0	379.5
12.0	396.0	0.0	396.0
12.5	412.5	0.0	412.5
13.0	429.0	0.0	429.0
13.5	445.5	0.0	445.5
14.0	462.0	0.0	462.0
14.5	478.5	0.0	478.5
15.0	495.0	0.0	495.0
15.5	511.5	0.0	511.5
16.0	528.0	0.0	528.0
16.5	544.5	0.0	544.5
17.0	561.0	0.0	561.0
17.5	577.5	0.0	577.5
18.0	594.0	0.0	594.0

36 = 1 unit		
Contact Hours	Homework Hours	Total Student Learning Hours
18	0	18
36	0	36
54	0	54
72	0	72
90	0	90
108	0	108
126	0	126
144	0	144
162	0	162
180	0	180
198	0	198
216	0	216
234	0	234
252	0	252
270	0	270
288	0	288
306	0	306
324	0	324
342	0	342
360	0	360
378	0	378
396	0	396
414	0	414
432	0	432
450	0	450
468	0	468
486	0	486
504	0	504
522	0	522
540	0	540
558	0	558
576	0	576
594	0	594
612	0	612
630	0	630
648	0	648

