

Reapportionment for the 2020 - 2023 Faculty Senate Elections

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As required by the Faculty Senate Bylaws (Chapter VII.D.1), the Faculty Senate will be reapportioned every three years based on the formula in Part II.A.4 of the constitution.

Due to the merger with the Health Science Center and the acquisition of the School of Law, the size of the senate was expanded from 100 to 120 to accommodate the new units in 2014. At that time it was decided to continue to assign the clinical faculty of the College of Medicine a fixed number of senators. To align with the new size of the Faculty Senate, this group was assigned two senate seats. Given this is in the Senate Constitution, this will continue in the reapportionment cycle.

The first step in reapportionment is to determine the “count” for each unit. The number of faculty was provided by the Dean of Faculties office. The numbers were then combined to find the total for each unit as shown in column 2 of Table 1. This value was found by counting each full time faculty as one and part-time faculty as one-fifth as required by the Faculty Senate Constitution in Part II.A.4.

Using this information, the total faculty count is 3568.8. The count does not include the clinical faculty of the College of Medicine. The equal proportions method is used to determine the distribution of the 118 senators. This is the same method used by the House of Representatives. See the last page for the details on how the priority numbers are calculated.

When apportioning for the faculty senate, each of the 19 units must have a minimum of two seats, so those are assigned before any priority numbers are calculated. That leaves $120 - 2 \times 19 - 2 = 80$ seats to be assigned starting with the unit with the highest priority number at that point. This is shown in Table 1 where EN gets their 3rd seat which is then followed by LA. The results based on this apportionment are shown in Table 2 and summarized below.

Unit	2007	2010	2014	2017	2020
Agriculture and Life Sciences (AG)	13	14	13	11	11
College of Architecture (AR)	4	4	4	4	5
Bush School (BU)	2	2	2	2	2
Mays Business School (BS)	5	7	6	6	5
Baylor College of Dentistry (CD)	-	-	4	5	5
Education and Human Development (ED)	9	8	8	8	8
Engineering (EN)	15	15	16	18	19
Geosciences (GE)	4	4	4	4	4
Law School (LS)	-	-	2	2	3
University Libraries (LB)	3	3	3	3	3
Liberal Arts (LA)	17	17	17	15	14
College of Medicine (CM)	-	-	5+2	5+2	5+2
College of Nursing (CN)	-	-	2	2	2
College of Pharmacy (CP)	-	-	2	2	2
College of Rural Public Health (PH)	-	-	2	2	2
College of Science (SC)	13	12	13	12	12
TAMU – Galveston (GV)	4	5	4	4	4
TAMU - Qatar Campus (QT)	2	2	3	3	2
Veterinary Medicine & Biomedical Sciences (VM)	9	7	8	10	10

The best way to make the necessary adjustments was should be discussed at the next meeting of the Election committee. As part of the adjustment process, it is desirable to have about one-third of each unit's senators up for election each year. Additionally, the decrease in the size of some caucus will require the renumbering of seats.

Table 1: Initial apportionment of seats with priority numbers

Unit	faculty	2020	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	priority		
AG	334.0	2	1	1																			136.4	
AR	147.6	2	1	1																				60.26
BS	168.2	2	1	1																				68.67
BU	60.4	2	1	1																				24.66
ED	246.6	2	1	1																				100.7
EN	595.8	2	1	1																				243.2
GE	107.2	2	1	1																				43.76
GV	126.0	2	1	1																				51.44
LA	431.8	2	1	1																				176.3
LB	86.0	2	1	1																				35.11
QT	74.4	2	1	1																				30.37
SC	365.6	2	1	1																				149.3
VM	291.8	2	1	1																				119.1
CM	152.0	2	1	1																				62.05
CD	141.6	2	1	1																				57.81
CN	45.8	2	1	1																				18.7
CP	46.6	2	1	1																				19.02
PH	70.0	2	1	1																				28.58
LS	77.4	2	1	1																				31.6
CMX		2																						
TOT	3568.8	40																						

Table 2: Final apportionment of seats with priority numbers

Unit	faculty	2020	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	priority		
AG	334.0	11	1	1	1	1	1	1	1	1	1	1	1										29.071	
AR	147.6	5	1	1	1	1	1																	26.948
BS	168.2	5	1	1	1	1	1																	30.709
BU	60.4	2	1	1																				24.658
ED	246.6	8	1	1	1	1	1	1	1	1														29.062
EN	595.8	19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	30.564	
GE	107.2	4	1	1	1	1																		23.971
GV	126.0	4	1	1	1	1																		28.174
LA	431.8	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1							29.797	
LB	86.0	3	1	1	1																			24.826
QT	74.4	2	1	1																				30.374
SC	365.6	12	1	1	1	1	1	1	1	1	1	1	1	1									29.271	
VM	291.8	10	1	1	1	1	1	1	1	1	1	1											30.758	
CM	152.0	5	1	1	1	1	1																	27.751
CD	141.6	5	1	1	1	1	1																	25.853
CN	45.8	2	1	1																				18.698
CP	46.6	2	1	1																				19.024
PH	70.0	2	1	1																				28.577
LS	77.4	3	1	1	1																			22.343
CMX		2																						
TOTAL	3568.8	120																						

Equal Proportions Method

P represents a state's total population

n represents the number of seats a state would have if it gained a seat (because all states automatically received one seat the next seat gained is "seat two," and the next "seat three," and the next "seat four," and so on.)

The multiplier equals $\frac{1}{\sqrt{n(n-1)}}$ [which is the reciprocal of the geometric mean].

Thus the formula for calculating the multiplier for the third seat is:

$$\frac{1}{\sqrt{n(n-1)}} = \frac{1}{\sqrt{3(3-1)}} \gg 0.408248$$

The multiplier for the fourth seat is:

$$\frac{1}{\sqrt{n(n-1)}} = \frac{1}{\sqrt{4(4-1)}} \gg 0.288675$$

Once the "multipliers" have been calculated, the next step is to multiply this figure by the population total (P) for each of the 50 states (the District of Columbia is not included in these calculations). The resulting numbers are the priority values.

Once you've calculated priority values for each state for the total anticipated seats, the next step is to rank and number the resulting priority values starting with seat 51 until all 435 seats have been assigned (remember, each state automatically received one seat). Next, tally the number of seats for each state to arrive at the total number of seats in the House of Representatives apportioned to each state.

Source: U.S. Census Bureau, Population Division

[Questions?](#) / 1-866-758-1060
