

How many kilograms of paper did the Vanderbilt student body use in the 2019-2020 academic year?

At first, we need to calculate the student body population at Vanderbilt University. We assume the student body only has undergraduates since this group of people is the only one who actively participates in the student clubs and has the greatest average credit hours per semester. Thus, we exclude graduates (master, Ph.D.), and also the medical school students. I can find that the total student at Vandy last year is 6,861. This number is not including the exchange students and visiting scholars. Since the student body is a relatively stable population, we exclude exchange students and visiting scholars from our considerations. We assume the main categories for students to use paper are the textbook, notes, and homework. Besides, we also assume that only 1/3 of the whole student body takes summer courses for each session. Vandy has one May and two summer sessions. Therefore, one academic year could be regarded as three semesters. The graduation requirement for Vanderbilt undergraduate is at least 120 credits hours. Most of the students need to graduate with four years, eight semesters. One typical undergraduate course is 3-credit-hour. Thus, five courses should be taken each semester. Fifteen courses are taken in one academic year for each student at Vanderbilt University. We assume, on average, one course requires just one textbook. Since Vanderbilt University has Brightspace, we assume that all of their assignments are submitted through the Brightspace electronically. Moreover, we need to stratify the whole population based on their preference for taking notes. Some of the students prefer electronic devices to paper. They will take notes and do the homework on their tablets. Based on the information I found online: 37% of the college students reported *taking notes electronically*; 66% of them use the electronic version of the textbook since it is cheaper. Based on the information, I looked up online: textbooks, on average, weigh anywhere between two to six pounds. We take the average of the average so that textbook could weigh 4 pounds, which is 1.81437 kilograms. Therefore, one student will use $1.81437 \text{ kg per course per student} \times 15 (\text{courses per year}) = 27.216 \text{ kg per student per year}$. We assume one A4 paper needed for the notes per 50-min class. *A typical college semester can be as fifteen weeks long*. One week typically contains three classes. Therefore, the number of lecture notes need per year per undergraduate student should be $15 (\text{weeks}) \times 3 (\text{classes per week}) \times 15 (\text{courses per academic year}) = 675 \text{ A4 papers per student per academic calendar year}$. *A standard sheet of laser-printer paper of the usual thickness, either US "letter" size or international "A4" size, weighs 4.5 grams.* $675 \times 4.5 / 1000 = 3.075 \text{ kg}$. Finally, the calculation should be $= (100\% - 37\%) \times 6861 \times 3.075 \text{ kg} + (100\% - 66\%) \times 6861 \times 27.216 \text{ kg} = 76,779,3241 \text{ kg}$. In conclusion, the Vanderbilt student body uses 76,779,3241 kg of paper in the 2019-2020 academic year.

Separate
thoughts
into
logical
chunks

Separate
math
from text

Too precise