



Rules for SGPA/CGPA Calculation

1. Grades like “W”, “Withdrawn”, “I”, “X”, “S” are not considered for SGPA/CGPA calculation. Courses like SG, CW, Thesis progress (for PG students) and those in the OC bracket are awarded S/X grades.
 - a. Only these grades (corresponding grade points are also shown) are considered.
 - i. A+ : 10
 - ii. A : 10
 - iii. A- : 9
 - iv. B : 8
 - v. B- : 7
 - vi. C : 6
 - vii. C- : 5
 - viii. D : 4
 - ix. F : 2 for SGPA calculation.
 - x. F : 0 for CGPA calculation.

SGPA Calculation

1. Semester performance is indicated by a Semester Grade Point Average (SGPA) which is a weighted sum of all the points earned in the courses done in a semester. The SGPA is given for each semester and is computed using the following formula.

$$SGPA = (u_1.w_1 + u_2.w_2 + \dots + u_n.w_n) / (u_1 + u_2 + \dots + u_n)$$

where u_i is the number of credits for the course i and w_i is the points earned through the letter grade in that course, and n is the number of courses taken in the semester. Courses in which S-X, W, I, etc. grades are awarded are not considered (thus, grades in OC courses are never considered for SGPA calculation).

CGPA Calculation



1. The overall performance is indicated by a Cumulative Grade Point Average (CGPA) which is computed in the same manner as the computation of SGPA but for all the courses done until then. The CGPA is computed using the following formula.

$$\text{CGPA} = (u_1.w_1 + u_2.w_2 + \dots + u_n.w_n) / (u_1 + u_2 + \dots + u_n)$$

where u_i is the number of credits for the course i and w_i is the points earned through the letter grade in that course, and n is the number of courses taken until then. Courses in which S-X, W, I, etc. grades are awarded are not considered (thus, grades in OC courses are never considered for CGPA calculation).

It should be noted that CGPA is not the average of the semester-wise SGPA's or the average of the earlier CGPA's.

Additional Rules for CGPA Calculation for B.Tech. Students

B.Tech. students are allowed to do “extra credits” beyond 156 credits (156 credits include 2 credits of SG and CW each), and at most 8 credits of those extra-credits can be used to replace “worst credits” (credits earned from worse performing courses) for CGPA calculation.

Let N denote the number of total worst credits which is determined in the following manner from the baseline credits after the 6th and the subsequent semesters. The number of semesters is counted based on those semesters in which a student has registered for courses.

- at the end of the 6th semester: $N = \text{minimum} \{ \text{Extra credits beyond 116 (including OC but without including SG/CW), 8} \}$. 116 corresponds to 29 full courses.
- at the end of the 7th semester: $N = \text{minimum} \{ \text{Extra credits beyond 136 (including OC but without including SGCW), 8} \}$. 136 corresponds to 32 full courses.
- at the end of the 8th semester: $N = \text{minimum} \{ \text{Extra credits beyond 152 (including OC but without including SG/CW), 8} \}$. 152 corresponds to 39 full courses.
- at the end of the 9th or subsequent semester: same rule as for the 8th semester

So, if a student has done 130 credits at the end of the 6th semester, $N = \text{minimum} \{ 14, 8 \} = 8$.

The CGPA is still calculated using the earlier formula

$$\text{CGPA} = (u_1.w_1 + u_2.w_2 + \dots + u_n.w_n) / (u_1 + u_2 + \dots + u_n)$$



but now courses with total credits at most N are removed. There could be multiple possibilities on which courses to remove; the maximum CGPA obtained after considering all possibilities is retained as the final CGPA.

Note: Once CGPA is calculated for a semester and results are declared, it remains unchanged for that semester. The worst-credit calculations do not change the CGPA of earlier semesters. Thus, different courses may be removed at the end of the 6th, 7th, and 8th semesters.

Note: It may be possible that the best CGPA is obtained after removing less than N credits (it could even be the case that the best CGPA is obtained without removing any credits).

Note: Courses with S-X grades (e.g., those in the OC bucket) are counted in the total credits but are never counted in SGPA/CGPA calculation.

Note: The semester number of a student used to calculate baseline credits is based on the number of semesters where a student has registered for courses; in particular, semesters where a student may have taken a semester leave are not counted.

Example:

Till 4th Semester:

1. Total credits done: 80
2. Total grade points: 590
3. CGPA till 5th semester: $590/80 = 7.38$

Course registration in 5th Semester

| Sr. No. | Course | Credit | Grade | Grade points |
|---------|---------------|--------|-------|--------------|
| 1. | Course 1 | 2 | B- | 14 |
| 2. | Course 2 | 2 | D | 8 |
| 3. | Course 3 | 2 | B | 16 |
| 4. | Course 4 | 4 | B- | 28 |
| 5. | Course 5 | 4 | A | 40 |
| 6. | Course 6 | 8 | B | 64 |
| | Total credits | 22 | | 170 |

SGPA of 5th Semester: $170/22 = 7.73$

CGPA of 5th semester: $760/102 = 7.45$

Course registration in 6th Semester

| Sr. No. | Course | Credit | Grade | Grade points |
|---------|--------------------------|--------|-------|--------------|
| 1. | Course 1 | 2 | B- | 14 |
| 2. | Course 2 | 4 | D | 16 |
| 3. | Course 3 | 6 | B | 48 |
| 4. | Course 4 | 8 | B | 64 |
| 5. | Course 5 (online course) | 4 | S | |
| | Total credits | 24 | | 142 |

Note that the grade for Course-5 is S and thus, it is never counted towards SGPA and CGPA calculation.

SGPA of 6th Semester: $142/24-4(\text{Online course}) = 142/20 = 7.1$

Total credits done after 6th semester = $102+24 = 126$ credits

Total grade points till 6th semester = $760 + 142 = 902$

Total extra credits done = $126-116 = 10$ credits

Maximum worst credit remove from CGPA calculation = 8 credits

There are various possibilities of removing “at most 8 credits” and the maximum value after considering all possibilities will be the CGPA. We show all the possibilities and the corresponding calculations below.

1. CGPA calculation (without removing worst credits): $(902)/(126-4(\text{Online course})) = 902/122 = 7.39$
2. CGPA calculation (after removing 2 worst credits): $(902-14)/(126-2-4(\text{Online course})) = 888/120 = 7.4$
3. CGPA calculation (after removing 4 worst credits): $(902-16)/(126-4-4(\text{Online course})) = 886/118 = 7.51$
4. CGPA calculation (after removing 4 worst credits): $(902-14-8)/(126-2-2-4(\text{Online course})) = 880/118 = 7.46$
5. CGPA calculation (after removing 6 worst credits): $(902-48)/(126-6-4(\text{Online course})) = 854/116 = 7.36$
6. CGPA calculation (after removing 6 worst credits): $(902-16-14)/(126-4-2-4(\text{Online course})) = 872/116 = 7.52$



7. CGPA calculation (after removing 6 worst credits): $(902-14-14-8)/(126-2-2-2-4(\text{Online course})) = 866/116 = 7.47$
8. CGPA calculation (after removing 8 worst credits): $(902-64)/(126-8-4(\text{Online course})) = 838/114 = 7.35$
9. CGPA calculation (after removing 8 worst credits): $(902-28-16)/(126-4-4-4(\text{Online course})) = 858/114 = 7.53$
- 10. CGPA calculation (after removing 8 worst credits): $(902-14-8-16)/(126-2-2-4-4(\text{Online course})) = 864/114 = 7.58$**
11. CGPA calculation (after removing 8 worst credits): $(902-48-14)/(126-6-2-4(\text{Online course})) = 840/114 = 7.37$
12. CGPA calculation (after removing 8 worst credits): $(902-14-14-16-8-12)/(126-2-2-2-2-4(\text{Online course})) = 850/114 = 7.46$

Thus, the CGPA at the end of the 6th semester would be 7.58.