

A grading system is a method for evaluating and categorizing student performance. In the current education system in India, the grading system plays a vital role in assessing student's academic performance not only on their learning abilities but also on their acquired knowledge and skills and their performance in extra and co-curricular activities.

The UGC suggests that all Indian Colleges use a consistent 10-point grading system, with letter grades from O(Outstanding) to F(Fail) and the appropriate number of points. The goal is to make sure that all colleges use the same methods to grade student's work and figure out their Grade Point Average (GPA).

GPA/ SGPA stands for the **Grade Point Average/ Semester Grade Point Average**. It is a standard method of calculating a student's average score obtained over a specific period i.e. a semester. SGPA is calculated by dividing the average points scored by a student by the total credit hours attended by the student

CGPA stands for **Cumulative Grade Point Average**. **CGPA** is used to denote a student's overall performance in an academic year. It is calculated based on the grade points obtained across all courses. A higher CGPA reflects better academic performance. The mean SGPA of the semesters is first calculated and then it is divided by the total number of credits. Both CGPA and SGPA are indicated by a numeric value.

Eligibility Criteria for Passing Courses

1. Theory Courses

- o Students must secure a minimum of **35%** in **internal assessments** (out of 50 marks).
- o Students must secure a minimum of **35%** in **external assessments**.
- o Students must achieve an **aggregate of 40%** to be eligible for passing the course.

2. Practical Courses

- o Students must secure a minimum of **35%** in **internal assessments** (out of 50 marks).
- o Students must secure a minimum of **35%** in **external assessments**.
- o Students must achieve an **aggregate of 50%** to be eligible for passing the course.

The **10-point grading system** is commonly used in Indian schools, colleges, and universities. Under this system, grades are assigned based on student performance, and each grade corresponds to a specific grade point on a scale of 10.

RANGE OF MARKS FOR GRADE AND GRADE POINTS								
RANGE	90 -100	80-89	70-79	60-69	50-59	40-49	0-39	ABSENT
GRADE	O	A+	A	B+	B	C	F	Ab
GRADE POINT S	10	9	8	7	6	5	0	0

F- Failure due to insufficient marks in the course

Ab - Failure due to non-appearance in the examination

Credit Points (CP) can be calculated by using the formula

$$\text{Credit Points (CP)} = \text{Grade Points (GP)} \times \text{Number of credits of a Course}$$

Formula for semester grade point average(SGPA) & cumulative grade point average (CGPA)

The Semester Grade Point Average (SGPA) is calculated by dividing the sum of credit points (CP) secured from all courses registered in a semester, by the total number of credits registered during that semester. It is given by the formula

$$SGPA = \frac{\sum_{i=1}^n (C_i \times GP_i)}{\sum_{i=1}^n C_i} \text{ or } SGPA = \frac{\sum_{i=1}^n (CP_i)}{\sum_{i=1}^n C_i}$$

The Cumulative Grade Point Average (CGPA) is calculated on the basis of the results of all semesters completed so far. It is given by the formula

$$CGPA = \frac{\sum_{i=1}^n (C_i \times GP_i)}{\sum_{i=1}^n C_i}$$

where C_i is the credit for i^{th} course in any semester and GP_i is the grade point for that course.

Percentage of Marks can be calculated by using the formula

$$\text{Percentage of Marks} = [\text{Final CGPA earned} - 0.5] \times 10$$

Example Calculation for SGPA:

Course Code	Grade (G)	Grade Points (GP)	Credits (C)	Credit Points (CP)
Course Code 1	O	10	3	10 x 3 = 30
Course Code 2	A+	9	2	9 x 2 = 18
Course Code 3	A	8	3	8 x 3 = 24
Course Code 4	B+	7	3	7 x 3 = 21
Course Code 5	B	6	3	6 x 3 = 18
Course Code 6	C	5	1	5 x 1 = 5
Course Code 7	A+	9	2	9 x 2 = 18
Course Code 8	O	10	2	10 x 2 = 20
Course Code 9	O	10	1	10 x 1 = 20
			20	
SGPA		174 / 20 = 8.7		

Example Calculation for CGPA:

Semesters	Credits	SGPA	Credit x SGPA
Semester 1	20	8.7	20 x 8.7 = 174
Semester 2	21	8.4	21 x 8.4 = 176.4
Semester 3	20	8.9	20 x 8.9 = 178
Semester 4	21	7.9	21 x 7.9 = 165.9
Semester 5	20	8.8	20 x 8.8 = 176
Semester 6	22	8.9	22 x 8.9 = 195.8
Semester 7	19	8.7	19 x 8.7 = 165.3
Semester 8	18	8.9	18 x 8.9 = 160.2
	161		1391.6
CGPA			1391.6 / 161 = 8.64

For final percentage of marks equivalent to the computed final CGPA,

$$\% \text{ of Marks} = (8.64 - 0.5) \times 10 = 8.14 \times 10 = 81.4 \%$$

For calculations of SGPA and CGPA, performance in failed courses (F grade) will also be taken into account, and the credits of such courses will also be included in the multiplications and summations. After passing the failed course(s) newly obtained grades will be taken into consideration for calculation of SGPA and CGPA. However, mandatory courses will not be taken into consideration.

A student shall be declared successful or 'passed' in a semester, if student secures a $GP \geq 5$ ('C' grade or above) in every course in that semester (i.e. when student gets an **SGPA ≥ 5.00** at the end of that particular semester) and a student shall be declared successful or 'passed' in the entire under graduate programme, only when gets a **CGPA ≥ 5.00** for the award of the degree as required.

A student who registers for all the specified courses as listed in the course structure of Curriculum and secures the required number of 164 credits (with **CGPA ≥ 5.0**), within 8 academic years from the date of commencement of the first academic year, shall be declared to have

‘qualified’ for the award of the B.Tech. degree in the chosen branch of Engineering as selected at the time of admission.

Award of Degree:

1. Students with final **CGPA ≥ 8.00 at the end of the under graduate programme**, and fulfilling the following conditions shall be placed in “**First Class with Distinction**”

- (i) Should have passed all the courses in ‘**first appearance**’ within the first four academic years (or 8 sequential semesters) from the date of commencement of first year or first semester. (For Lateral Entry students the duration shall be 3 years (6 semesters).)
- (ii) Should not have been detained or prevented from writing the Semester End Examinations in any semester due to shortage of attendance or any other reason
- (iii) Students fulfilling the conditions listed above alone will be eligible for award of ‘**university rank**’ and ‘**gold medal**’.

2. Students with final **CGPA ≥ 7.00 but < 8.00 , at the end of the under graduate programme** shall be placed in ‘**first class**’, provided, the student should have passed all the courses specified within the first four academic years from the date of commencement of the first year.

3. Students with final **CGPA ≥ 6.00 but < 7.00 , at the end of the under graduate programme** shall be placed in ‘**second class**’.

4. All other students who qualify for the award of the degree with final **CGPA ≥ 5.00 but < 6.00 at the end of the under graduate programme**, shall be placed in ‘**pass class**’.

5. A student with final **CGPA < 5.00 at the end of the under graduate programme** will not be eligible for the award of the degree.