Tutorial on Credit Based System (CBS)

1. Go site https://www.ptu.ac.in/
2. Click Academics → Credit Base System → software
3. Download zipped file named as 'grade computation.rar' at some convenient location.
4. Right click at the downloaded file and chose extract here. (This operation requires winrar software to be installed on your PC. If you donot have this software, then it can be downoaded from here http://www.rarlab.com/download.htm)
5. After extracting, a folder named as 'Grade PTU_New_14-12_2015' will appear at the same location.
6. Open this folder, and it will contain four files named as Grade.xls, Grade.dat, Grade.exe and Grade.res'. Here Grade.exe is the sofware having Grade.dat as input and Grade.xls as output. Grade.res is scratch file and it is needed for proper execution of the software. Donot rename or delete any of these four files.
7. Copy all these four files.
8. Make a new folder in the name of your class or branch etc. and paste these four copied files in this folder.
9. Double click Grade.dat and PC will ask you that windows cannot open this file. Click use program from my computer and chose notepad (for Window 8 or above, click more options button and chose notepad). Note that you need to perform this step only once on your PC.
10. Open your account in the exam portal (http://exam.gndec.ac.in/) and download the sheet after marking attendance. Give this file a suitable name (**Suppose it is BTech_1st_IT_PH_Th**)
11. Fill marks on the column named as internal marks obtained. Close this file and save all changes while closing.
12. Open Grade.dat, the first row contains single entry, which is maximum marks for the subject. Please change these marks according to your subject.
13. The second row again contains a single entry, which is the total number of students in the branch, that should also be changed accordingly. **(Note: This must be equal to the number of students, for which internal marks are filled in the downloaded sheet from http://exam.gndec.ac.in/).**
14. Third row onward, there are two entries in each row separated by tab. In each row first entry is roll no. and second entry is marks obtained. Select all these rows containing roll no and marks and delete these. Now open the excel file (**BTech_1st_IT_PH_Th**) downloaded from **http://exam.gndec.ac.in/** and copy the columns showing University Roll No and Internal Marks (Without titles) simultaneously. Now paste these two columns in the Grade.dat input file from third row onward. Save and close Grade.dat.
15. Now double click Grade.exe and click yes on the pop up message. After the execution of program open the output excel file Grade.xls, which will show number of students, maximum marks, mean and standard deviation in the first four rows and contain five columns from fifth row onward. The first column is serial number, second is University roll no., third one is marks obtained, fourth column is

for normalized marks and fifth column is for Grades obtained.

16. Copy the contents of fifth colum (i.e. Grades) and paste it in your excel file **BTech_1st_IT_PH_Th** at appropriate place. Now close and save this file (**BTech_1st_IT_PH_Th**) and upload it in your exam portal.
17. Now make a table of mean and standard deviation, (**Note that these are out of hundred)** which is to be preserved for reappear and improvement students. One such table is shown below (Table-1):
    Maximum Marks = 60
    No. Of students = 40
    Mean = μ = 53.14
    Standard deviation = σ = 21.77

$$\mu + 1.80\sigma = 53.14 + 1.8 \times 21.77 = 92.33$$
$$\mu + 1.35\sigma = 53.14 + 1.35 \times 21.77 = 82.53$$
$$\mu + 0.85\sigma = 53.14 + 0.85 \times 21.77 = 71.64$$
$$\mu + 0.35\sigma = 53.14 + 0.35 \times 21.77 = 60.76$$
$$\mu + 0\sigma = 53.14 + 0 \times 21.77 = 53.14$$
$$\mu - 0.35\sigma = 53.14 - 0.35 \times 21.77 = 45.52$$
$$40\% \text{ of } 100 = 40$$

Table-1 (Relative Grading)

S.No.	Criteria for Grades	Marks Range	Grade
1	$Marks \geq \mu + 1.80\sigma$	$Marks \geq 92.33$	O
2	$\mu + 1.35\sigma \leq \text{Marks} < \mu + 1.8\sigma$	$82.53 \leq \text{Marks} < 92.33$	A+
3	$\mu + 0.85\sigma \leq \text{Marks} < \mu + 1.35\sigma$	$71.64 \leq \text{Marks} < 82.53$	A
4	$\mu + 0.35\sigma \leq \text{Marks} < \mu + 0.85\sigma$	$60.76 \leq \text{Marks} < 71.64$	B+
5	$\mu + 0\sigma \leq \text{Marks} < \mu + 0.35\sigma$	$53.14 \leq \text{Marks} < 60.76$	B
6	$\mu - 0.35\sigma \leq \text{Marks} < \mu + 0\sigma$	$45.52 \leq \text{Marks} < 53.14$	C
7	$40 \leq \text{Marks} < \mu - 0.35\sigma$	$40.00 \leq \text{Marks} < 45.52$	P
8	$Marks < 40.00$	$Marks < 40.00$	F

18. Suppose a student gets 37 marks out of 60 in the reappear/improvement examination. Then first scale the marks of student out of hundred. In the present example 37 out of 60 is equal to $37 \times \frac{100}{60} = 61.67$ out of 100. So 61.67 should be looked in for the grade in the above table, which gives student B+ grade to student. **Note: For an improvement candidate the upper grade is capped at A only. That is even if a student gets more than 92.33 marks (in above example), he/she should not be given O grade. Only A grade can be assigned to the improvement candidate as the highest grade.**
19. For a class having less than 30 students, absolute grades are computed by the software. Same process should be used to compute and fill the grades as described above. However now grades of reappear/ improvement candidates should be evaluated according to table 2 (given below) instead of table -1.

Table-2 (Absolute Grading)

S.No.	Marks Range	Grade
1	$90 \leq \text{Marks} \leq 100$	O
2	$80 \leq \text{Marks} < 90$	A+
3	$70 \leq \text{Marks} < 80$	A
4	$60 \leq \text{Marks} < 70$	B+
5	$50 \leq \text{Marks} < 60$	B
6	$45 \leq \text{Marks} < 50$	C
7	$40 \leq \text{Marks} < 45$	P
8	$Marks < 40$	F

Note that just like relative grading, marks must be scaled out of 100 before giving grades in this case also. Moreover, the highest grade to assigned for improvement candidate is A.