



RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY

“(Established by Government of Central Provinces Education Department by Notification No. 513 dated the 1st of August, 1923 & presently a State University governed by Maharashtra Public Universities Act, 2016 (Mah. Act No. VI of 2017).)”

DIRECTION NO. 32 OF 2024

ADMISSIONS AND EXAMINATIONS LEADING TO THE AWARD OF THE CERTIFICATE, DIPLOMA OR DEGREE OF BACHELOR OF TECHNOLOGY (MAJOR) WITH HONOURS/HONORS WITH RESEARCH/DOUBLE MINOR DEGREE', DIRECTION, 2024

Whereas, the Maharashtra Public Universities Act, 2016 (VI of 2017) (hereinafter the “Act”) has been made applicable to the Rashtrasant Tukadoji Maharaj Nagpur University (herein after the “University”) w.e.f. 1st March 2017;

AND

Whereas, the University has issued Direction No.27 of 2022 dealing with the composition of the four faculties created by the Act;

AND

Whereas, the Board of Studies in various subjects in science in their meetings held on 12/03/2024 & 13/03/2024 has prepared the scheme of examination and recommended for Four Year Bachelor of Technology with multiple Entry and Exit options as per the NEP 2020;

AND

Whereas, the faculty of Science and Technology in its meeting held 21/3/2024 vide item No. 1J has considered, accepted and recommended to Academic Council;

AND

Whereas, the Academic Council in its meeting held on 22/4/2024 has considered & accepted for Bachelor of Technology (Major) in the Faculty of Science and Technology syllabi with draft direction and the Scheme of examination of Semester-I to VIII;

AND

Whereas, Direction Nos. 43 of 2023, governing B.Tech. programs till date have been lapsed;

AND

Whereas, National Education policy 2020 is required to be implemented in the faculty of Science and Technology for under graduate programmes with multiple Entry and Exit options'

AND

Whereas, Government of Maharashtra has issued G.R. dated 04.07.2023 in order to implement the provisions of NEP 2020;

AND

Whereas, as per the provisions of section 73 (1) of the Act an Ordinance is required to be made for laying down the conditions under which students can be admitted to any course of study leading to the award of degrees, diplomas, certificates, and other academic distinctions;

AND

Whereas, making of an Ordinance is a time-consuming process and there was urgency in introducing the degree course of “Bachelor of Technology (Major)” in the faculty of Science

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and Technology necessitating issuance of a Direction by the Vice-Chancellor, in exercise of his powers under section 12(8) of the Act;

Now, therefore, I, Dr. Subhash R. Chaudhari, Vice-Chancellor Rashtrasant Tukadoji Maharaj University Nagpur, in exercise of my powers under section 12 (8) of the Act, do hereby issue the following Directions:

1. This Direction may be called "Admissions and Examinations leading to the award of Certificate, Diploma or Degree of BACHELOR OF TECHNOLOGY (Major) with Honors / Honors with Research/Double Minor Degree, Direction, 2024.
2. This direction shall come into force from the academic session 2024-25.
3. INTERPRETATION CLAUSE: In this direction, unless the context requires otherwise the words, phrases and abbreviations used shall have the following meaning:
 - a. "AEC" means the Ability Enhancement Courses.
 - b. "Academic Council" means the Academic Council of the R. T. M. Nagpur University, Nagpur
 - c. "ATKT" means Allowed to Keep the Term in higher semester
 - d. "Board of Studies" means Board of Studies for various programs of Technology in the faculty of Science & Technology in the University.
 - e. "CC" means Co-curricular Courses.
 - f. "CIE" means Continuous Internal Evaluation which refers to the internal assessment of students conducted at the college concerned.
 - g. "Competent Authority" (for admission purpose) means an "Authority" established or assigned the duty to regulate admissions in the course by the Government of Maharashtra or an authority constituted by the University, for this purpose.
 - h. "Course" means a paper/subject (theory or practical) prescribed for any semester of the programme.
 - i. "Credit" (C) for a course is dependent on the number of hours of instruction per week in that course, and is obtained by using a multiplier of one (1) for theory and a multiplier of half (1/2) for practical (laboratory) hour.
 - j. "Credit Points" refer to the product of no. of credits multiplied by the Grade Point for a given course/paper.
 - k. "Cumulative Grade Point Average (CGPA)" refers to the Cumulative Grade Point Average weighted across all semesters.
 - l. "Degree" means the Under Graduate Degree awarded after successful completion of the programme governed by this Direction.
 - m. "Fees" means the fees prescribed by the University/Shikshan Shulka Samiti of Government of Maharashtra for the Under Graduate programme under this Direction, from time to time.
 - n. "Grade Letter" is an index to indicate the performance of a student in a particular course (Paper). It is the transformation of actual marks secured by a student in a course/paper. Grade letters are O, A⁺, A, B⁺, B, C, P, F and AB.
 - o. "Grade Point" is the weightage allotted to each grade letter depending on the range of marks awarded in a course/paper.
 - p. "Graduate programme" means Bachelors' degree programme in Technology
 - q. "MOOC" means Massive Open Online Course offered by SWAYAM/NPTEL or any other recognized University or Institution.
 - r. "SEC" means Skill Enhancement Courses.

- s. **"SEE"** means semester end examination.
- t. **"Semester Grade Point Average (SGPA)"** refers to the performance of the student in a given semester. SGPA is based on the total credit points earned by the student in all the courses and the total number of credits assigned to the courses/papers in a Semester.
- u. **"Student"** means student admitted to Bachelor's Degree Programme in Technology under this direction.
- v. **"ODL"** means Open and Distance Learning.
- w. **"OE"** means Open Elective Courses.
- x. **"University"** means The Rashtrasant Tukadoji Maharaj Nagpur University.
- y. **"VSC"** means the Vocational Skill Courses.

4. Details of Eligibility for B.Tech. Semester I Examination

- a. The candidate should be an Indian National; The candidate should have passed 12th Standard Examination of the Maharashtra State Board of Secondary and Higher Secondary Education/CBSE/ICSE or its equivalent examination with Physics and Mathematics as compulsory subjects along with one of the Chemistry or Biotechnology or Biology or Technical Vocational subjects or Computer Science or Information Technology or Informatics Practices or Agriculture or Engineering Graphics or Business Studies or Electronics or Entrepreneurship and obtained at least 45 % marks (at least 40 % marks, in case of Backward class categories, Economically Weaker Section and Persons with Disability candidates belonging to Maharashtra State only) in the above subjects taken together; and The Candidate should have appeared in all the subjects in MHT-CET 2023 and should obtain non zero score in MHTCET 2023 conducted by the Competent Authority. **OR**
- b. The candidate should have passed minimum 3 years Diploma in Engineering and Technology and obtained at least 45 % marks (at least 40 % marks, in case of Backward class categories Economically Weaker Section (EWS) and Persons with Disability candidates belonging to Maharashtra State only) **OR**
- c. The candidate should have passed three years Diploma Vocational (D. Voc.) Stream in the same or allied sector.

5. Admission criteria for direct second year (lateral entry)- Engineering /Technology

- a. Passed minimum three years or two years (Lateral Entry) Diploma Course in Engineering and Technology with at least 45% marks (40% marks in case of Candidates of Backward Class categories, Economically Weaker Section and Persons with Disability category belonging to Maharashtra State) in any branch of Engineering and Technology from an All-India Council for Technical Education or Central or State Government approved Institution or its equivalent;
- b. Passed B.Sc. Degree from a University Grants Commission (UGC) or Association of Indian Universities recognized University with at least 45% marks (40% in case of candidates of Backward Class categories, Economically Weaker Section and Persons with Disability category belonging to Maharashtra State) and passed HSC or its equivalent examination with Mathematics as a subject;
- c. Any other criterion declared from time to time by the appropriate authority as defined under the Act.

6. Duration of the Program

Duration of the B.Tech. Program shall be FOUR years (EIGHT Semesters) as mentioned here:

- (1) The Bachelor of Technology (B.Tech.) – 1st Semester Examination,
- (2) The Bachelor of Technology (B.Tech.) – 2nd Semester Examination,
- (3) The Bachelor of Technology (B.Tech.) – 3rd Semester Examination,
- (4) The Bachelor of Technology (B.Tech.) – 4th Semester Examination,
- (5) The Bachelor of Technology (B.Tech.) – 5th Semester Examination,
- (6) The Bachelor of Technology (B.Tech.) – 6th Semester Examination,

(7) The **Bachelor of Technology (B.Tech.)** – 7th Semester Examination and

(8) The **Bachelor of Technology (B.Tech.)** – 8th Semester Examination

Note: Maximum duration for completing the degree is **eight years** from the date of admission to first year.

7. Student Progression Path and Provisions for Multiple Entry and Exit

Students will have the flexibility to enter a program in odd semesters and exit a program after the successful completion of even semester as per their future career needs:

- a. Students exiting the First-Year programme after securing minimum 40 credits will be awarded UG Certificate in the relevant Discipline /Subject provided they secure 8 credits in work-based vocational courses or internship / Apprenticeship offered during summer vacation in addition to 4 credits from skill-based courses earned during the first and second semester.

OR a student can continue the program in 2nd year.

- b. Students exiting the Second Year Programme after securing minimum 80 credits will be awarded UG Diploma in the relevant Discipline /Subject provided they secure additional 8 credits in skill-based vocational courses (skill-based courses, internship, mini projects etc) offered during summer vacation after the second year.

OR a student can continue the program in 3rd year.

- c. Students exiting the 3-year UG program will be awarded B.Voc. in the relevant Discipline /Subject upon securing minimum 120 credits with additional 8 credits in skill-based vocational courses (skill-based courses, internship, mini projects etc.) offered during summer vacation after the sixth semester.

OR a student can continue the program in 4th year.

- d. Exit options shall be provided with Certification, Diploma and B. Vocational/B.Sc. degrees to the students at the end of the second, fourth and sixth semester, respectively, in the four-year degree programme. Students will receive a Bachelor's degree with the single minor (Multidisciplinary Minor) on successfully completing all eight semesters of the UG Programmes either at a stretch or with opted exits and re-entries. In addition to this, student will receive a Bachelor's degree with Double Minor/Honours/ Research subject to earning additional 18 credits.

Table 1: Credit Framework

Level	Qualification Title	Additional Credits to be Earned	Credits	Sem	Year
4.5	One Year UG Certificate in Tech. OR Continue with Major	8 (Vocational/Skill Course or Internship)	40	2	1
5.0	Two Year UG Diploma in Tech. OR Continue with Major	8 (Vocational/Skill Course or Mini Project/ Internship)	80	4	2
5.5	Three Year bachelor's degree in B. Voc./ B.Sc. (Technology) OR Continue with Major	8 (Vocational/Skill Course or Mini Project/ Internship)	120	6	3
6.0	Four Year Bachelor's degree in Technology (B.Tech.) with Multidisciplinary Minor	Not Required	160	8	4
6.0	Four Year Bachelor's degree in Technology (B.Tech.) with Honors & Multidisciplinary Minor	18 - 20	178 -180	8	4
6.0	Four Year Bachelor's degree in Technology (B.Tech.) Honors with Research & Multidisciplinary Minor	18 - 20	178 -180	8	4
6.0	Four Year Bachelor's degree in Technology (B.Tech.) with Double Minors (Multidisciplinary & Specialization Minors)	18 - 20	178 -180	8	4

- e. The Bachelor of Technology (B.Tech.) Degree with **Honours** in chosen Major Engg. / Tech. Discipline with Multidisciplinary Minor (178 -180 credits) enables students to take up five-six additional courses in the same Major Engg. / Tech. discipline of 18 to 20 credits distributed over semesters III to VIII. The decision regarding the mechanism of distribution of these 18-20 credits over semesters III to VIII, which are over and above the min. 160 Credits prescribed for Four Year Multidisciplinary Bachelor Degree in Technology (B.Tech.), will be taken by Academic Authorities of University.
- f. The Bachelor of Technology (B.Tech.) **Honors with Research** Degree in chosen Major Engg. / Tech. Discipline with Multidisciplinary Minor (178 -180credits), the students will work on a research project/dissertation for 18-20 credits in the fourth year (VII & VIII sem.) in the same Major Engg. / Tech. discipline. The decision regarding the mechanism of distribution of these 18-20 credits over semesters VII & VIII, which are over and above the min. 160 Credits prescribed for Four Year Multidisciplinary Bachelor Degree in Technology (B.Tech.), will be taken by Academic Authorities of University.
- g. The Bachelor of Technology (B.Tech.) Degree in chosen Major Engg. / Tech. Discipline with **Double Minor** (Multidisciplinary and Specialization Minor, (178 -180 credits) enables students to take up five-six additional courses worth 18 to 20 credits in another Engg. / Tech. discipline/ Emerging Area Specialization distributed over semesters III to VIII. The decision regarding the mechanism of distribution of these 18-20 credits over semesters III to VIII, which are over and above the min. 160 Credits prescribed for Four Year Multidisciplinary Bachelor Degree in Technology (B.Tech.), will be taken by Academic Authorities of University.

8. Re-entry or Lateral Entry

- a. Students, opting for exit at any level, will have the option to re-enter the programme from where they had left off, in the same or in a different higher education institution within FOUR years of exit and complete the degree programme within the stipulated maximum period of EIGHT years from the date of admission to first year UG.
 - b. Re-entry at various levels for lateral entrants in academic programmes shall be based on the earned and valid credits as deposited and accumulated in the Academic Bank of Credits (ABC) through Registered Higher Education Institutions (RHEI) and proficiency test records.
 - c. Lateral entry into the programme of study leading to the UG Diploma / B. Vocational/ B.Sc./ UG Bachelor's Degree with single minor/ UG Bachelor's Degree with Double Minor/ Honours /Research will be based on the validation of prior learning outcomes achieved and subject to availability of seats based on intake capacity.
 - d. Eligibility for admission to the UG Bachelor's Degree with Double Minor/ Honours /Honors with Research as per UGC guidelines: Minimum CGPA/CPI of 7.5 or minimum 75% after second semester for UG Bachelor's Degree with Double Minor/ Honours and Minimum CGPA/CPI of 7.5 or minimum 75% after sixth semester for UG Bachelor's Degree Honors with Research.
9. The examinations specified in clause 5 above shall be held twice a year at such places and on such dates as may be fixed by the University.
10. A collegiate student shall have pursued a regular course of study for not less than 90 days in a semester of the academic session before being examined for any semester examination of B.Tech. in any recognized institution and/or college affiliated to Rashtrasant Tukadoji Maharaj Nagpur University where the B.Tech. programme is conducted.
11. Without prejudice to the other provisions of Ordinance No. 6 relating to the Examinations in general, the provisions of paragraphs 5, 7, 8, 10, 26 and 31 of the said Ordinance shall apply to every collegiate candidate.

12. The fees for the examination shall be as prescribed by the University from time to time and whenever any change is made in the fees prescribed for any examination that shall be notified through a notification for information of the examinees concerned.

13. Types of Courses

A student admitted to this program is required to undergo and successfully complete the following types of courses as mentioned in the scheme of examination:

Table 2: Types of Courses and Choice for Selection

SN	Course Type	Choice for Selection
1.	Major (Core) Subject (92 Credits)	A student is required to select her/his 'MAJOR' program from amongst the choices provided in this scheme of examination before filling the examination form for 1 st Semester. Change of major program shall not be permitted after the examination form is submitted. Major program comprises of Mandatory and Elective Course.
2.	Compulsory Multidisciplinary Minor Courses (MDM) (14 Credits)	The semester wise Multidisciplinary Minor courses are mentioned in the scheme of each program. These Minor subjects are from the different disciplines of the Engineering/Technology faculty or from different faculty altogether. The credits of compulsory Multidisciplinary Minor courses shall be completed as mentioned in the scheme of respective program.
3.	Open Elective Course (OE) (08 Credits)	A student is required to select an 'OPEN ELECTIVE' course from the 'Open Elective Basket' prepared faculty-wise by the university before filling the examination form for the semester concerned. Such an 'OPEN ELECTIVE' course is to be chosen compulsorily from the faculty other than that of Major Discipline. A student is allowed to earn credits for 'OPEN ELECTIVE' course by successfully completing online courses of equivalent credits from SWAYAM/NPTEL learning platforms or from other Higher Education Institutions affiliated to RTM Nagpur University. However, this needs to be informed by student to the college before commencement of the semester and an application for transfer of credits is required to be made by student.
4.	Vocational Skill Course (VSC) (04 Credits)	A student is required to successfully complete the 'VOCATIONAL SKILL COURSE' as mentioned in this scheme of examination. This course shall be corresponding to the 'MAJOR' program selected by a student.
5.	Skill Enhancement Course (SEC) (04 Credits)	A student is required to select a 'SKILL ENHANCEMENT COURSE' from the basket provided by the university for this purpose. A student is allowed to earn credits for 'SKILL ENHANCEMENT COURSE' by successfully completing online courses of equivalent credits from SWAYAM/NPTEL learning platforms or from other Higher Education Institutions affiliated to RTM Nagpur University provided they are approved by the competent authority of RTM Nagpur University or the courses from Sector Skill Council. However, this needs to be informed by student to the college before commencement of the semester and an application for transfer of credits is required to be made by student.
6.	Ability Enhancement Course (AEC) (04 Credits)	A student is required to undergo and successfully complete the 'ABILITY ENHANCEMENT COURSE' as mentioned in the scheme of examination of respective program.
7.	Indian Knowledge System Course (IKS) (02 Credits)	A student is required to undergo and successfully complete the 'INDIAN KNOWLEDGE SYSTEM COURSE' as mentioned in this scheme of examination.

8.	Value Education Course (VEC) (04 Credits)	A student is required to undergo and successfully complete the 'VALUE EDUCATION COURSE' as mentioned in this scheme of examination.
9.	Co-Curricular Course (CC) (04 Credits)	A student is required to select a 'Co-Curricular Course' from the basket prescribed by the university. This course must be completed at the Higher Education Institute (HEI) where the student has taken admission and transfer of credit is not permissible for this type of course.
10.	Field Project (FP) / Internship/Apprenticeship / Community Engagement Project (CEP) / Research Project (RP)/RM (24 Credits)	A student is required to undergo and successfully complete this course as mentioned in the scheme of examination under the guidance of supervisor/mentor assigned by the HEI. This course must be corresponding to the 'MAJOR' program. This course must be completed at the HEI where the student has taken admission and transfer of credit is not permissible for this type of course.

14. Availability of 'Major' and 'Intake Capacity'

All HEIs affiliated to the University for offering B.Tech. Program in the Faculty of Science and Technology shall adhere to the following:

Table 3: List of MAJOR Programs

S.N.	'Major' to be offered	Code of 'Major'
1	Artificial Intelligence & Data Science	AD
2	Artificial Intelligence & Machine Learning	AM
3	Artificial Intelligence	AI
4	Civil Engineering	CV
5	Computer Engineering	CE
6	Computer Science & Engineering	CS
7	Computer Technology	CT
8	Electrical Engineering	EL
9	Electronics /Electronics & Telecommunication / Electronics & Communication Engineering	ET
10	Fire Engineering	FE
11	Industrial Internet of Things	II
12	Information Technology	IT
13	Mechanical Engineering	ME
14	Robotics & Artificial Intelligence	RA

The intake capacity of each program will be the sanctioned intake approved by All India Council for Technical Education (AICTE), Government of Maharashtra, Directorate of Technical Education (DTE) and Rashtrasant Tukadoji Maharaj Nagpur University.

15. All HEIs affiliated to the University offering B.Tech. Programs are required to display the list of 'Major' programs offered along with the scheme of teaching & examination on the Notice Board as well as on the website of HEI to make students aware about the availability of programs. Moreover, HEIs are expected to define and display the 'Standard Operating Procedure' for their faculty members and students to facilitate the process of selecting 'Major' and other subjects in all verticals (Refer table 2).

16. In pursuance with the National Education Policy 2020 and a Government Resolution No. एनईपी-2022/ (67/23)/तांसी-2 dated 4th July 2023 issued by the Government of Maharashtra, the credit framework for B.Tech. Program is given in **Annexure - I**.

17. Teaching and Examination Schemes:

Teaching and Examination Schemes (of eight semesters) and Syllabus of Semester I & II for all B.Tech. Programs is appended in **Annexure - II**.

18. Credit Specifications:

- Theory/Tutorial Courses:** A minimum of 15 hours of teaching per credit is required in a semester (One hour/credit/week).
- Laboratory/Performance Based Courses:** A minimum of 30 hours in laboratory or performance-based activities is required in a semester (two hour/credit/week). Performance based activities include Studio activities, Workshop based activities, internship, Apprenticeship, Field based learning, community engagement learning, etc.
- Each semester will consist of at least 15 weeks of Academic Work equivalent to 90 actual teaching days.

19. Assessment

- The final total assessment of examinees is made in terms of Continuous Internal Assessment (CIE) and Semester End Examination (SEE) for each course taken together.
- For each course mentioned in Annexures – II, III and IV, the examination shall be conducted at college level and RTM Nagpur University level (as mentioned in the scheme).
- For each course mentioned in annexure - V, the examination shall be conducted at the college level according to the evaluation system prescribed in annexure – V.

Table 4: CIE Assessment Plan (Theory Course)

1a	Attendance of the student during a particular semester.	05 Marks
1b	An assignment (min. two) based on curriculum to be assessed by the teacher concerned.	05 Marks
1c	Subject wise class test (min. two) or activities conducted by the teacher concerned with proper rubrics.	20 Marks
Continuous Internal Evaluation (CIE) marks/course		30

- In case of Courses having more than 30 marks for CIE, a scheme of examination is appended with the detailed syllabus of the course.
- Expected classroom activities shall consist of the following: (a) Group Discussion (b) Seminars (c) Power Point Presentations (d) Elocution (e) Debate (f) Role Play (g) Case Studies (h) Educational Games. The teacher is expected to undertake a minimum of four of the aforesaid activity.
- The CIE marks will be communicated to the University at the end of each semester, but before the semester end examinations or as instructed by the university. These marks will be considered for the declaration of the results.
- The record of internal marks, evaluation & results should be maintained for a min. period of three year by the respective institute/college for verification by the competent authority.

20. Standard of Passing

The scope of the course, percentage of passing in Theory and Project and Internal Assessment will be governed as per following rules:

- In order to pass the Bachelor of Technology (B.Tech.) 1st, 2nd, 3rd, 4th, 5th, 6th, 7th and 8th Semester Examinations, an examinee shall obtain not less than 45 % (Grade 4.5) marks

- in each theory course/paper, taking CIE & SEE together. Whereas, for practical/performance-based examination an examinee shall obtain not less than 50 % (Grade 5) marks in each practical, taking CIE & SEE together.
- (ii) An examinee who is unsuccessful at the examination shall be eligible for admission to the subsequent examinations on payment of a fee prescribed for the examination together with the conditions of the ordinance/direction in force from time to time.
 - (iii) The candidates who pass all the semester examinations in the first attempt are eligible for ranks/university merit position.
 - (iv) The results of the candidates who have passed the Semester-VIII examination but not passed the lower semester examinations shall be declared as NCL (not completed lower semester examinations). Such candidates shall be eligible for the Degree only after successful completion of all the lower semester examinations.
 - (v) The successful examinees at the B.Tech. Semester VIII examination shall be awarded division based on CGPA as follows:

Table 5: CGPA Vs Division

CGPA	Division
7.5 and above	1 st division with distinction
6 to 7.49	1 st division
5 to 5.99	2 nd division

- (vi) Provisions of **Ordinance No. 3 of 2007** relating to the award of Grace Marks for passing and examination, securing higher division / class and for securing distinction in subject(s) shall be applicable.
- (vii) University guidelines and directions issued from time to time regarding Improvement of Results, Reassessment/Revaluation and Incentive Marks shall be applicable to B.Tech. Program covered under this direction.

21. GRADE Conversion Table and Computation of SGPA & CGPA

Table 6: Grade Conversion Table (Theory)

SN	Letter Grade	Grade Point Range	Mark Range (%)	Performance
1	O	9.00 - 10.00	90 - 100	Outstanding
2	A+	8.00 - < 9.00	80 - < 90	Excellent
3	A	7.00 - < 8.00	70 - < 80	Very Good
4	B+	6.00 - < 7.00	60 - < 70	Good
5	B	5.00 - < 6.00	50 - < 60	Average
6	C	4.50 - < 5.50	45 - < 50	Pass
7	F	Below 4.5	Below 45	Fail
8	AB	0	-	Absent

Table 7: Grade Conversion Table (Practical)

SN	Letter Grade	Grade Point Range	Mark Range (%)	Performance
1	O	9.00 - 10.00	90 - 100	Outstanding
2	A+	8.00 - < 9.00	80 - < 90	Excellent
3	A	7.00 - < 8.00	70 - < 80	Very Good
4	B+	6.00 - < 7.00	60 - < 70	Good
5	B	5.50 - < 6.00	55 - < 60	Above Average
6	P	5.00 - < 5.50	50 - < 55	Pass
7	F	Below 5	Below 50	Fail
8	AB	0	-	Absent

22. Computation of SGPA & CGPA:

The UGC recommends the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

- i. The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e

$$\text{SGPA (Si)} = \Sigma(\text{Ci} \times \text{Gi}) / \Sigma \text{Ci}$$

where Ci is the number of credits of the ith course and Gi is the grade point scored by the student in the ith course.

- ii. The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

$$\text{CGPA} = \Sigma(\text{Ci} \times \text{Si}) / \Sigma \text{Ci}$$

where Si is the SGPA of the ith semester and Ci is the total number of credits in that semester.

- iii. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

- iv. CGPA to Percentage (%) conversion formula:

$$\text{Percentage (\%)} = (\text{CGPA}) \times 10$$

Illustration for Computation of SGPA & CGPA**i) Illustration for SGPA**

COURSE	CREDIT	GRADE LETTER	GRADE POINT	CREDIT POINT (Credit * Grade)
Course 1	3	A	8	3 * 8 = 24
Course 2	4	B+	7	4 * 7 = 28
Course 3	3	B	6	3 * 6 = 18
Course 4	3	O	10	3 * 10 = 30
Course 5	3	C	5	3 * 5 = 15
Course 6	4	B	6	4 * 6 = 24
	20			139

$$\text{SGPA (Si)} = \Sigma(\text{Ci} \times \text{Gi}) / \Sigma \text{Ci}$$

where Ci is the number of credits of the ith course and Gi is the grade point scored by the student in the ith course.

$$\text{Thus, SGPA} = 139 / 20 = 6.95$$

ii) Illustration for CGPA

Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6
Credit : 20	Credit : 22	Credit : 25	Credit : 26	Credit : 26	Credit : 25
SGPA : 6.9	SGPA : 7.8	SGPA : 5.6	SGPA : 6.0	SGPA : 6.3	SGPA : 8.0

$$CGPA = \frac{\sum(C_i \times S_i)}{\sum C_i}$$

where S_i is the SGPA of the i th semester and C_i is the total number of credits in that semester.

$$\text{Thus, CGPA} = \frac{20 \times 6.9 + 22 \times 7.8 + 25 \times 5.6 + 26 \times 6.0 + 26 \times 6.3 + 25 \times 8.0}{144} = 6.73$$

23. Promotion to Higher Semester (A.T.K.T.)

- A.** The unsuccessful candidate of any semester examination shall be ALLOWED TO KEEP THE TERM (ATKT) in accordance with the following table: (Theory and Practical of a course/subject mentioned in the scheme shall be considered as independent passing head).

Table 8: Promotion to Higher Semester (A.T.K.T.)

Admission to academic year	Candidate should have passed All courses of the following exam	Candidate should have filled the examination form and appeared for the following examinations	Candidate should have passed in Minimum 50% courses of the following examination
1 st Semester	H.S.S.C/equivalent	-----	-----
2 nd Semester	-----	1 st Semester	-----
3 rd Semester	-----	2 nd Semester	50% courses of 1 st and 2 nd Semesters taken together
4 th Semester	-----	3 rd Semester	As Above
5 th Semester	1 st and 2 nd Semesters	4 th Semester	50% courses of 3 rd and 4 th Semesters taken together
6 th Semester	As Above	5 th Semester	As Above
7 th Semester	3 rd and 4 th Semesters	6 th Semester	50% courses of 5 th and 6 th Semesters taken together
8 th Semester*	As Above	7 th Semester	As Above

- B. *Note:** 1. A candidate admitted to Final Semester can appear for Final Semester examination however the result of the Final Semester examination will be withheld (NCL – Not Cleared lower semester examinations) unless the candidate clears all the lower examinations of the program.
2. For calculating the requirement of fifty percent passing heads fraction if any is to be rounded off to lower digit.

24. Provision for B.Tech. students admitted under previous directions:

Students admitted to B.Tech. program under previous directions shall not be absorbed into the scheme of examination under this direction. Hence, the university shall continue to conduct these examinations for THREE years to provide opportunities to failure students of these programs. All failure students after these additional SIX attempts will be required to take admission to 1st year of B.Tech. program as per this direction.

25. General Guidelines:

- a. The baskets of Elective & Vocational Skill Courses are related to the Major, are given at the end of scheme.
- b. The baskets of Open Elective Courses, Skill Enhancement Courses, Co-curricular Courses and Indian Knowledge System (IKS) being common will be available at the end (after the scheme of all Major Programs) in the form of Annexures.
- c. SEE (Semester End Examination) for Theory as well as Practical examinations as mentioned in the scheme shall be conducted by the University for all semesters.
- d. In case, a student is opting out any of the course (subject to conditions of this scheme) and bringing credits from any other institutes/online courses outside the scheme, the marks/grades obtained by student shall be certified by the Principal and be submitted to the university as CIE (Continuous Internal Examination) marks.

26. Abbreviations Used:

CIE: Continuous Internal Evaluation SEE: Semester End Examination

OE: Generic/Open Electives, VSEC: Vocational Skills & Skill Enhancement Courses, VSC: Vocational Skill Courses, SEC: Skill Enhancement Courses, AEC: Ability Enhancement Courses, IKS: Indian Knowledge Systems, VEC: Value Education Courses, OJT: On Job Training (Internship/Apprenticeship), FP: Field Project, CEP: Community Engagement & Service, CC: Co-curricular Courses, RM: Research Methodology, RP: Research Project

27. Provision for Transfer of Credits

The B.Tech. programs offered under this direction provides enhanced academic flexibility to students in terms of selecting the courses they want to learn. A student can opt for any course from any statutory/recognized University or a MOOC from SWAYAM/NPTEL in lieu of a course mentioned in this scheme of examination as 'Open Elective Courses' and 'Skill Enhancement Courses'. The mechanism for transfer of credits earned through these courses to be adhered is mentioned here:

1. Every student is mandatorily required to create an ID on Academic Bank of Credits (ABC) and shall submit her/his ID to the college.
2. Any Course mentioned in this scheme of examination under 'Open Elective Courses' and 'Skill Enhancement Course' may be opted by a student for taking a MOOC from SWAYAM/NPTEL learning platform.
3. A student cannot opt any other course than the courses mentioned in course category in point no. 2 above.
4. If a student is willing to opt out any such course in a particular semester, he/she will have to select a course of equivalent or more credits available on such online learning platforms in that semester and proceed for registration for the same well before commencement of the designated semester. This is expected to ensure that the student will be able to submit the certificate in time.
5. Registration for the online course, submission of assignments, completion of course, submission of examination form and producing the Course Completion Certificate with marks/grade to college shall be the sole responsibility of the student.

6. A certificate of completion of such an ODL/Online course shall be submitted by the student to the University through college before end term evaluation of designated semester.
7. Such a certificate shall mandatorily have the number of credits, duration of the course and grades/marks obtained by the student and shall preferably have a QR code for verification.
8. The college shall submit the grades/marks obtained by the student to the University along with Internal Assessment marks for the concerned examination.
9. **Normalization of Marks:** There is a possibility that the composition of marks for ODL/ONLINE course may deviate from the composition of marks under this scheme of examination. In such a case the total marks (Proctored Examination + Assignments) obtained by a student in ODL/ONLINE course shall be proportionately converted by taking a basis of total maximum marks prescribed in this Scheme of Examination and such normalized marks be split (Theory, Practical and CIE) in the proportion as prescribed under this scheme of examination.

Normalization Formula:

$$\text{Proportionate Marks} = \frac{\text{Marks obtained in Online/ODL course}}{\text{Max. Marks of Online/ ODL course}} \times \text{Max. Marks under this Scheme}$$

Example:

Case	Marks under this Scheme of Examination				Marks under ODL/Online Scheme			Marks Obtained by Student		
	Max. Marks SEE (TH) *	Max Marks SEE (PR)	Max. Marks (CIE)	Total Marks	Max. Marks Proctored Examination (SEE)	Max. Marks Assignments (CIE)	Total Marks	Proctored Examination	Assignment	Total
A	80	--	20	100	75	25	100	46	20	66*
B	--	50	50	100	75	25	100	46	20	66*
C	--	--	100	100	75	25	100	46	20	66*

*While converting, marks will be rounded off to the next integer if fraction is ≥ 0.5

Normalization of Total Marks:

$$\begin{aligned} \text{Proportionate Marks} &= \frac{46+20}{100} \times 100 \\ &= 66 \text{ Marks} \end{aligned}$$

Distribution of normalized marks as prescribed by this Scheme of Examination


Case	Total Normalized Marks	Composition of Marks prescribed as per this Scheme of Examination				Proportionate Distribution of Marks as per this Scheme of Examination			
		Max. Marks SEE (TH) *	Max Marks SEE (PR)	Max. Marks (CIE)	Total Marks	Marks Obtained SEE (TH) *	Marks Obtained SEE (PR)	Marks Obtained (CIE)	Total Marks Obtained
A	66	80	--	20	100	53	--	13	66
B	66	--	50	50	100	--	33	33	66
C	66	--	--	100	100	--	--	66	66

10. If a student has opted for an ODL/Online course in a particular semester and failed to obtain minimum passing marks as per this scheme of examination, the student shall be declared 'Failed' in that particular course. Such a student will be required to fill in the examination form in the consecutive attempt and submit the passing certificate in order to get his/her corrected result.
11. If a student has opted for an ODL/Online course in a particular semester and failed to submit the course completion certificate within prescribed time for whatsoever reason, then the result of a student for that semester shall be 'WITHELD' until he/she submits the course completion certificate with marks/grades to the university through college.
12. A separate guideline of 'Transfer of Credits' issued by the University will be applicable to the students of B. Tech. Programs from the date of its issuance.

28. If any question of interpretation of any clause arises for this Direction & related annexure the same shall be referred to the Dean, Faculty of Science & Technology, whose decision in consultation with the Vice-Chancellor shall be final and binding on all concerned.

29. **Saving Clause:** The examination and teaching scheme mentioned in this direction shall not be made applicable to any student admitted to B.Tech. program before 2024-25 and such a student will be governed by the earlier respective direction governing B.Tech. program.

Date:
Place: Nagpur


(Dr. Subhash R. Chaudhari)
Vice Chancellor

