





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)

THE FACULTY OF SCIENCE AND TECHNOLOGY

DIRECTION NO.38OF 2022

ADMISSION AND EXAMINATIONS OF STUDENTS IN THE FULL TIME, SEMESTER PATTERN (CHOICE BASED CREDIT SYSTEM) PROGRAMMES LEADING TO THE AWARD OF THE DEGREE OF BACHELOR OF TECHNOLOGY (B. Tech.), DIRECTION, 2022.

Whereas, The Maharashtra Public Universities Act,2016(VI of 2017) has come into force from 1st March 2017;

AND

Whereas, Rashtrasant Tukadoji Maharaj Nagpur University(hereinafter "the University") is now being governed by the Maharashtra Public Universities Act,2016 (VI of 2017) (hereinafter the Act);

AND

Whereas, the Board of Studies in Applied Science and Humanities and Adhoc Committee in General Engineering, in the Faculty of Science and Technology, at their meetings held on 11/12/2020 and 14/1/2021, keeping the guidelines of All India Council of Technical Education(AICTE) in mind have decided to make uniform guidelines to design new 160 credits curriculum for the Bachelor of Engineering (B.E.) and Bachelor of Technology (B.Tech.) Programmes leading to the award of degrees of Bachelor of

Engineering & Bachelor of Technology (Full time), in the Faculty of Science and Technology;

AND

Whereas, Hon'ble Vice-Chancellor in exercise of his powers under section 12(7) of the Act has on behalf of the Faculty of Science & Technology and also the Academic Council approved the structure of the Bachelor of Engineering (B.E.) and Bachelor of Technology (B.Tech.) programmes, having 160 credits and also the draft Direction in that regard, as required by the provisions of sections 35(d) and 33 (s) and (t) of the Act;

AND

Whereas, introduction of new academic programme requires making of an Ordinance as per the provisions of section 73(1) of the Act however, since Ordinance making is a time consuming process and there is urgency in introducing the new 160 credit based Full time Bachelor of Engineering and Bachelor of Technology programmes in the faculty of Science and Technology from the academic session 2020-21 a Direction by the Vice-Chancellor, as an interim measure was issued on as Direction no. 2 of 2021. The said Direction is now lapsed by virtue of provisions of the proviso to Section 12(8) of the M.P.U. Act 2016.

AND

Whereas, in the meetings of Board of Studies of various subject in the Engineering in its meeting dated 7.6.2022 have prepared and accepted the Guiedelines for Honors (Major) and (Minor) for B.Tech. Programs, the said Guidelines are also accepted and approved in the meeting of the Faculty of Science and Technology on 23.06.2022 and approved by the Academic Council in its meetings dates 8.7.2022 respectively.

AND

Whereas the University has meanwhile issued a Direction no. 32/2021 regarding change of nomenclature of the erstwhile under graduate programme in Engineering,

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Bachelor of Engineering (B.E.) to Bachelor of Technology (B.Tech.) the said changes are also required to be incorporated.

AND

Whereas, the issuance of an Ordinance is now therefore necessary, incorporating the new guidelines, change of nomenclature of the Degree and the provisions of the Direction no. 2/2021 so lapsed but issuance of an Ordinance is a time consuming process and there is an urgency with respect to admission and examination in the under graduate programmes of Engineering;

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

- 1. This Direction shall be called "Admission and examinations of students in the full time, semester pattern (Choice Based Credit System) Programmes leading to the award of the Bachelor of technology (B. Tech.), Direction 2022."
- 2. This Direction shall come in to force from the date of its issuance.
- 3. This Direction shall be applicable from the academic session 2022-23 for first year of the program and progressively onwards.
- 4. In this Direction unless the context requires otherwise:
 - a. "ATKT" means "Allowed to keep Term" in the higher semester, as per the rules herein.
 - b. "Board of Studies" means the Board of Studies in Applied Science and Humanities and General Engineering, in the Faculty of Science and Technology.
 - c. "Course" a unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work / field work per week.
 - d. "Credit" means the unit by which the course work is measured. It is measured in terms of weekly class hours assigned to a Course.

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- e. "Credit Point" (CP) It is the product of grade point and number of credits for a course.
- f. "Cumulative Grade Point Average (CGPA)" It is a measure of overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.
- g. "Degree" means the Degrees of the Bachelor of Technology (B.Tech.) (full time) (Semester Pattern) (Choice Based Credit System).
- h. "Letter Grade" It is an index of the performance of the students in a said course. Grades are denoted by the letters O, A+, A, B+, B, C, P and F.
- i. "Grade Point" It is a numerical weight allotted to each letter grade on a 10-point scale..
- j. "Programme" means and includes both the Bachelor of Engineering(B.E.) and the Bachelor of Technology (B.Tech.) (Full time) (Semester Pattern) (Choice Based Credit System) programmes under this Direction (for short the 160 credit programmes).
- k. "Student" means a student admitted to the programme under this Direction.
- 1. "Semester Grade Point Average(SGPA)" It is a measure of performance of work done in a semester. It is a ratio of total credit points secured by a student in various courses registered in a semester and the total course credits taken during that semester. It shall be expressed upto two decimal places.
- m. "University" means Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.

5. Admission and eligibility to the Programmes:

(a) Subject to the compliance with the provisions of this Direction and other Ordinances/Directions, in force from time to time, an applicant for admission to Semester-I of the programme shall have passed 12th (Science)

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- examination with subjects specified in Director of Technical Education (Maharashtra)" s circulars issued from time to time
- (b) The students having Diploma in Technical Education and also the students who are B.Sc. graduates are eligible for the lateral entry in the second year of the programmes.
- (c) The minimum percentage of marks in the qualifying examination shall be as per the applicable governing rules Framed by Government of Maharashtra from time to time.
- (d) The students having Diploma of Board of Technical Education and taking lateral admission to direct B.E./B.Tech at second year level are not required to appear for any subjects of the first year of B.E./B.Tech of new 160 credit pattern. Their SGPA and CGPA will be considered from second year.
- (e) The students with B.Sc. degree taking admission to second year level shall have to appear, additionally, for theory and practical (if applicable) examination of Engineering Graphics-I, Basics of Civil and Mechanical Engineering, Basics of Electrical Engineering, Computational Skill and Engineering Mechanics of First year in new 160 credit pattern.
- 6. Duration of the Programmes:
 - i. The B.Tech programme shall consist of 4 Years (Eight Semesters)
- 7. Medium of Instructions: The medium of instructions and examinations shall be English.
- 8. Structure of the Programmes:
 - I. The detail structure of the B.Tech programmes shall be as given in Annexures A to H-xii.
 - II. The B.E. /B.Tech programme shall also be of two more types i.e. B.E./B.Tech with Minor and Major (Honor), Guidelines for Honors, Major



and Minor are given under Annexure -I

A) B.Tech Degree with a Minor/Major (Honor)

- a) A student who fulfills the requirements of the B.E./B.Tech. program of the discipline in which he/she is admitted, will be awarded with B.E./B.Tech. degree in that discipline. The flexibility is offered for students to successfully complete additional 18 to 20 credits by passing the courses through online mode from the specified platforms. Such students shall be awarded B.E./B.Tech Degree with Minor.
- b) If a student is unable to earn additional 18 to 20 credits along with all the prescribed credits of the program in which he/she is admitted within the stipulated allowed duration of the original program he/she will not be awarded Minor/Major (Honor) degree.

B) B. Tech. with Minor:

a) Minor scheme aims for additional knowledge in any other branch for enhancement of employability. During the span of Four years (Three Years in case of lateral entry) on completion of 18 to 20 additional credits in another discipline, the B.Tech. degree with "Minor Specialization in -------" (concerned discipline/subject) will be awarded to the student on completion of final semester.

[The detailed guidelines for Honors (Major) and Minor for B.Tech. Programme are annexed herewith as Annexure "I"]

b) A student having final CGPA of more than or equal to 7 in regular programme with no backlog in any semester, during the span of his/her degree will be eligible to get Degree with Minor.

C) B.Tech. with Major (Honor):

a) Honor (Major) scheme aims at growth of vertical knowledge of the

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student in his/her parent branch which may have advance knowledge or research orientation. During the span of four years (Three Years in case of lateral entry) on completion of 18 to 20 additional credits, through online mode, in the same discipline, the B.Tech. degree with "Major in....." (concerned Discipline) or Honor "will be awarded to the student on completion of Final semester.

b) A student having final CGPA of more than or equal to 7 and no backlog subjects, in any semester, during the span of his/her degree programme will be eligible to get Degree with "Honor", otherwise the student will be eligible to get Degree with "Major" specialization in the discipline, under this category.

The detailed guidelines for Honors (Major) and (Minor) for B.Tech. Programme are annexed herewith as Annexure "I"

Detailed curriculam of Major (Honor)/ Minor is available on RTMNU website.

9. Curriculum of the Programmes:-

The detail content of the courses prescribed for each semester of the B.Tech. programmes shall be as determined by the relevant Board of Studies and notified by the University from time to time.

- 10. Scheme of Examinations: -
- i) Subject to the provisions of the general rules of the University with respect to conduct of examinations and in particular the rules regarding payment of examination fees, award of grace marks, and the maximum and minimum passing marks and eligibility for getting exemption in any passing heads, as shown in the relevant Annexures herein, there shall be end semester examination to be conducted by the University as per the scheme and modalities to be notified from time to time.
- ii) An examinee who does not pass or who fails to present himself/herself for the



examination(s) shall be eligible for reappearing in the same examination on payment of a fresh fee and such other fees as may be prescribed from time to time. However, re-admission to the semester would be allowed only when a regular session is running for a particular semester.

- iii) In the case of unsuccessful examinees, the marks obtained in the college assignment in the subjects, he/she has failed, shall be carried forward. However, the student has option to forgo the college assignment marks.
 - I. Annexure A: B.Tech 1st Semester Scheme of Examination
 - II. Annexure B: B.Tech 2nd Semester Scheme of Examination
 - III. Annexure C: B.Tech 3rd Semester Scheme of Examination.
 - i. Civil Engineering 3rd Semester Scheme of Examination.
 - ii. Mechanical Engineering 3rd Semester Scheme of Examination.
 - iii. Electrical Engineering 3rd Semester Scheme of Examination.
 - iv. Electronics Engineering/ Electronics & Telecommunication Engineering/ Electronics & Communication Engineering 3rd Semester Scheme of Examination.
 - v. Chemical Engineering 3rd Semester Scheme of Examination.
 - vi. Chemical Technology 3rd Semester Scheme of Examination.
 - vii. Fire Engineering 3rd Semester Scheme of Examination.
 - viii. Artificial Intelligence & Data Science 3rd Semester Scheme of Examination.
 - ix. Artificial Intelligence 3rd Semester Scheme of Examination.
 - x. Robotics & Artificial Intelligence 3rd Semester Scheme of Examination.
 - xi. Industrial IOT 3rd Semester Scheme of Examination.
 - xii. Artificial Intelligence and Machine Learning 3rd Semester Scheme of Examination.
 - xiii. Information Technology 3rd Semester Scheme of Examination.
 - xiv. Computer Technology 3rd Semester Scheme of Examination.
 - xv. Computer Engineering 3rd Semester Scheme of Examination.
 - xvi. Computer Science Engineering 3rd Semester Scheme of Examination.
 - xvii. Bio-Technology 3rd Semester Scheme of Examination.
 - xviii. Aeronautical Engineering 3rd Semester Scheme of Examination.

IV. Annexure D: B.Tech 4th Semester Scheme of Examination

- i. Civil Engineering 4th Semester Scheme of Examination
- ii. Mechanical Engineering 4th Semester Scheme of Examination
- iii. Electrical Engineering 4th Semester Scheme of Examination
- iv. Electronics Engineering/ Electronics & Telecommunication Engineering/ Electronics & Communication Engineering 4th Semester Scheme of Examination
- v. Chemical Engineering 4th Semester Scheme of Examination

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- vi. Chemical Technology 4th Semester Scheme of Examination
- vii. Fire Engineering 4th Semester Scheme of Examination
- viii. Artificial Intelligence & Data Science 4th Semester Scheme of Examination
- ix. Artificial Intelligence 4th Semester Scheme of Examination
- x. Robotics & Artificial Intelligence 4th Semester Scheme of Examination
- xi. Industrial IOT 4th Semester Scheme of Examination.
- xii. Artificial Intelligence and Machine Learning 4th Semester Scheme of Examination.
- xiii. Information Technology 4th Semester Scheme of Examination.
- xiv. Computer Technology 4th Semester Scheme of Examination.
- xv. Computer Engineering 4th Semester Scheme of Examination.
- xvi. Computer Science Engineering 4th Semester Scheme of Examination.
- xvii. Bio-Technology 4th Semester Scheme of Examination.
- xviii. Aeronautical Engineering 4th Semester Scheme of Examination.

V. Annexure E: B.Tech 5th Semester Scheme of Examination

- i. Civil Engineering 5th Semester Scheme of Examination
- ii. Mechanical Engineering 5th Semester Scheme of Examination
- iii. Electrical Engineering 5th Semester Scheme of Examination
- iv. Electronics Engineering/ Electronics & Telecommunication Engineering/ Electronics & Communication Engineering 5th Semester Scheme of Examination
- v. Chemical Engineering 5th Semester Scheme of Examination
- vi. Chemical Technology 5th Semester Scheme of Examination
- vii. Fire Engineering 5th Semester Scheme of Examination
- viii. Artificial Intelligence & Data Science 5th Semester Scheme of Examination
- ix. Artificial Intelligence 5th Semester Scheme of Examination
- x. Robotics & Artificial Intelligence 5th Semester Scheme of Examination
- xi. Industrial IOT 5th Semester Scheme of Examination.
- xii. Artificial Intelligence and Machine Learning 5th Semester Scheme of Examination.
- xiii. Information Technology 5th Semester Scheme of Examination.
- xiv. Computer Technology 5th Semester Scheme of Examination.
- xv. Computer Engineering 5th Semester Scheme of Examination.
- xvi. Computer Science Engineering 5th Semester Scheme of Examination.
- xvii. Bio-Technology 5th Semester Scheme of Examination.
- xviii. Aeronautical Engineering 5th Semester Scheme of Examination.

VI. Annexure F: B.Tech 6th Semester Scheme of Examination

- i. Civil Engineering 6th Semester Scheme of Examination
- ii. Mechanical Engineering 6th Semester Scheme of Examination
- iii. Electrical Engineering 6th Semester Scheme of Examination
- iv. Electronics Engineering/ Electronics & Telecommunication Engineering/ Electronics & Communication Engineering 6th Semester Scheme of Examination
- v. Chemical Engineering 6th Semester Scheme of Examination
- vi. Chemical Technology 6th Semester Scheme of Examination
- vii. Fire Engineering 6th Semester Scheme of Examination

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- Artificial Intelligence & Data Science 6th Semester Scheme of Examination viii.
- Artificial Intelligence 6th Semester Scheme of Examination ix.
- Robotics & Artificial Intelligence 6th Semester Scheme of Examination X.
- Industrial IOT 6th Semester Scheme of Examination. xi.
- Artificial Intelligence and Machine Learning 6th Semester Scheme of Examination. xii.
- Information Technology 6th Semester Scheme of Examination. xiii.
- Computer Technology 6th Semester Scheme of Examination. xiv.
- Computer Engineering 6th Semester Scheme of Examination. XV.
- Computer Science Engineering 6th Semester Scheme of Examination. xvi.
- Bio-Technology 6th Semester Scheme of Examination. xvii.
- Aeronautical Engineering 6th Semester Scheme of Examination. xviii.

VII. Annexure G: B.Tech 7th Semester Scheme of Examination

- Civil Engineering 7th Semester Scheme of Examination
- Mechanical Engineering 7th Semester Scheme of Examination ii.
- Electrical Engineering 7th Semester Scheme of Examination iii.
- Electronics Engineering/ Electronics & Telecommunication Engineering/ Electronics & iv. Communication Engineering 7th Semester Scheme of Examination
- Chemical Engineering 7th Semester Scheme of Examination ٧.
- Chemical Technology 7th Semester Scheme of Examination vi.
- Fire Engineering 7th Semester Scheme of Examination vii.
- Artificial Intelligence 7th Semester Scheme of Examination viii.
 - Robotics & Artificial Intelligence 7th Semester Scheme of Examination ix.
 - Industrial IOT 7th Semester Scheme of Examination. X.
- Artificial Intelligence and Machine Learning 7th Semester Scheme of Examination. xi.
- Bio-Technology 7th Semester Scheme of Examination. xii.

VIII. Annexure H: B.Tech 8th Semester Scheme of Examination

- Civil Engineering 8th Semester Scheme of Examination i.
- Mechanical Engineering 8th Semester Scheme of Examination ii.
- Electrical Engineering 8th Semester Scheme of Examination iii.
- Electronics Engineering/ Electronics & Telecommunication Engineering/ Electronics & iv. Communication Engineering 8th Semester Scheme of Examination
- Chemical Engineering 8th Semester Scheme of Examination V.
- Chemical Technology 8th Semester Scheme of Examination vi.
- Fire Engineering 8th Semester Scheme of Examination vii.
- Artificial Intelligence 8th Semester Scheme of Examination viii.
- Robotics & Artificial Intelligence 8th Semester Scheme of Examination ix.
- Industrial IOT 8th Semester Scheme of Examination. X.
- Artificial Intelligence and Machine Learning 8th Semester Scheme of Examination. xi.
- Bio-Technology 8th Semester Scheme of Examination. xii.

11. Calculation of SGPA and CGPA

Degree will be based on SGPA and CGPA calculations since First Semester (Third semester in case of lateral entry students)

- a) SGPA and CGPA will be calculated on the basis of the grades as detailed below
 - i) Conversion of Marks to Grades and Grade Points using Absolute Grading system.
 - For each course taken, the student will be assigned with a grade based on the combined performance in all the assessments.
 - Table -1 shows the various grades, grade points awarded to students with mark range as indicated. Table-1: Award of Grades and Grade Points for Theory Courses

(a) Course/Subject carrying maximum 100 marks

Marks Range)	Grade	Grade Point	Performance
$X \ge 91$	О	10	Outstanding
91 >X ≥ 85	A+	9	Excellent
$85 > X \ge 76$	A	8	Very Good
$76 > X \ge 66$	B+	7	Good
$66 > X \ge 56$	В	6	Average
$56 > X \ge 45$	P	5	Pass
X<45	F	0	Fail
Absent	AB	0	Absent

X = Marks obtained out of 100

(b): Course/Subject carrying maximum 50 marks

Marks Range(for Max 50 marks)	Grade	Grade Point	Performance
$X \ge 46$	О	10	Outstanding
$46 > X \ge 42$	A+	9	Excellent
$42 > X \ge 38$	A	8	Very Good
$38 > X \ge 33$	B+	7	Good
33>X ≥28	В	6	Average
$28>X \ge 23$	Р	5	Pass
X<23	F	0	Fail
Absent	AB	0	Absent

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X = Marks obtained out of 50

(c): Award of Grades and Grade Points for Practical Courses

Marks Range (for Max 50 marks)	Grade	Grade Point	Performance
<i>X</i> ≥ 46	0	10	Outstandin
$46>X \ge 42$	A+	9	Excellent
42>X ≥ 38	Α	8	Very Good
$38 > X \ge 34$	B+	7	Good
34>X ≥30	В	6	Average
30>X ≥ 25	P	5	Pass
X<25	F	0	Fail
Absent	AB	0	Absent

X = Marks obtained out of 50

Audit Course does not carry any credit, hence, will not be considered in the SGPA/CGPA calculation. But the grade card will reflect "Audit course" and will be awarded with grade as in Table-1(a or b or c). However, the student will have to pass the course with minimum required attendance and evaluation result to clear the semester.

ii) Obtaining Grade Point

- The academic performance of a student will be graded on Ten pointscale.
- The qualitative assessment of student's performance will be indicated by these grades.
- Each grade is associated with a grade point as listed in Table-1.

iii) Calculating SGPA and CGPA

- The grades upto "P" awarded to student in all the courses shall be converted into a Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA).
- 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.

SGPA (Si)=
$$\sum$$
(Ci X Gi)/ \sum 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.

• 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.

$$CGPA = \sum (Ci \times Si) / \sum Ci$$

Where Si is the SGPA of the ith semester and Ci is the Total number of credits in that semester.

- The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.
- iV) Incentive credits to the students participating in NCC/NSS/ Games & Sports/Cultural Activities/Curricular and Co-curricular Activities willbe awarded as per the University prevailing ordinance"

12. Class/Division

The class/division in academic performance of the student for the complete duration of program to be classified as follows:

- a. First Class with distinction: CGPA 7.5 and above,
- b. First Class: CGPA 6.0 and above, but less than 7.5, and
- c. Second Class: CGPA less than 6.0

As per requirements, the conversion of the performance index CGPA into equivalent percentage of marks, the formula shall be used is-

Percent marks = (CGPA)*10.

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13. Award of Merit Ranks

The students admitted to the programmes governed by this Direction on successful completion of the programme shall be eligible to be awarded a merit rank as per the general rules of the University in this regard.

14. Exit Policy for Failure/Dropout Students:

i). Student who wish to exit before the completion of the program duration, may be issued Certificate/Diploma/Advance Diploma as pertheir acquired levels of learning with additional skill as mentioned below.

Table-3: Additional online/off line Courses required to qualify

Award	Year of Completion	Additional online/offline
Certificate	Certificate on exit afterFirst year	courses required. I Certificate course of 30 hours duration (2 Credits)
Diploma	Diploma on exit after Second year	I Diploma Course of 60 hours duration. (4 Credits) in specialized area.
Advance Diploma	Advance-Diploma onexit after Third year	1 Diploma Course of 90 hours duration (6 credits)inspecialized area

Note:- Students may opt for MOOC or specified platforms for onlinecourses with prior permission of University

ii). Student who wish to exit without completing First year and who is not eligible for award of "certificate/Diploma/Adv Diploma" should undergo hands on training for getting Certificate.

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	Exit Policy for Fa	ailure Students : Hands on Training
i	Orientation	- Engineering Based- Skill Development based- Atmanirbhar- Self employable
ii	Duration	6 Months
iii	Areas o	Automobile Workshop, Machine Shop, Welding Shop, Motor Winding, Electric Fittings, TV Repairing, Mobile Repairing, Hardware Repairing, Networking, Road constructions, building constructions, Physician Course, X Ray Technician, Biomedical Instrumentation, etc (Skill Development Courses from Jivan Shikshan Abhiyan, NSQF)
iv	Credits	10-15
V	Nature o	f Certificate

a) Institute and University should have a joint MOU with workshops/Shops/Service

Providers/Contractors/Entrepreneurs etc. at

local level

- b) Certificate to be issued on the basis of regular monitoring and handson training report from concerned agency after 6 month.
- c) In case student is not interested to undertake any above mentioned training then certificate to be issued on the basis of

credits earned.

d) Students must earn 20credits and above out of subjects he/she hasto pass in First year. This can be provided with credit certification for multidisciplinary entry.

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15 A.T.K.T Rules

- i.) For calculation of passing heads, any decimal fraction should be rounded off to lower digit.
 - ii) Passing the semester shall include all the credit and audit subject heads.
 - iii)For getting promotion in the higher class (under ATKT) a student mustobtain minimum 40% credits prescribed for a particular year, comprising two semesters.

16. ABSORPTION SCHEME

- i. After introduction of the 160 credit programmes under this Direction existing B.E. and B.Tech. programmes shall be discontinued in a phase-wise (progressive) manner and the failure students of the said programmes shall be provided maximum five attempts to clear all the courses/subject(s) of the said programmes after which they shall be absorbed in the 160 credit programmes under this Direction as perthe absorption scheme hereunder.
- ii. The students of the existing programmes shall also be entitled to join the 160 credit programmes as per the absorption schemes provided by relevant Board of Studies. However, student will have to appearfor the examinations under new 160 Credit Scheme for the matchablesubjects in which student has not cleared the subject in the existing programmes.
- iii.a) A student having passed in particular course/subject heads of the existing programme at any semester level shall be exempted from such subject heads at any level (lower/higher) of the new 160 Credit programme. If any course/subject is named with a new nomenclature but is having similar contents it shall also be exempted. The respective Board of Studies shall prepare and notify the list of such subjects. Wherever a student is absorbed in the new 160 credit course with benefit of exemption in courses/subjects, in anysemester, proportionate marks/grades shall be awarded in the concerned course/subject heads.
 - b) Wherever a new course/subject has been introduced in the new 160 Credit programme in any semester which was not to be found in the existing programmes the internal marks shall be awarded inproportion to the marks/grades earned by a student in the university/external examination in the concerned new course/subject head.

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- C) Student being absorbed in new 160 Credit Pattern shall be exempted from the subject/s which he/she has cleared in the existing semester pattern as per the absorption scheme provided by the concern B.O.S.However the subject/s which he/she has not cleared in the old semester pattern and having no equivalent subject at any level ofnew 160 Credit Pattern shall not be considered during the absorption irrespective of the status of the result of that subject.
- 17. If any difficulty in implementation of the scheme of this Direction is encountered or any doubt regarding interpretation of any provision of this Direction arises the matter shall be referred for decision of the Vice- Chancellor whose decision shall be final and binding on all the concerned people.

Nagpur

Date: 14/09/2022

(Dr. Subhash R. Chaudhari) Vice-Chancellor

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Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur Four Years B.E. Course

Scheme of Examination B.E. First year (All Branches of Engineering)

First Semester

Sub	Subjects	Wor	kload in	hrs	Credits			Marks			Minimu	m Passing
Code		L	T/A	P		The	ory	Practical		Total	Marks	
						Internal	Uni	Internal	Uni		Theory	Practical
BSE1-1T	Mathematics-I	3	1	-	4	30	70	-	-	100	45	-
BSE1-2T	Applied Physics	3	2	-	4	30	70	-	-	100	45	-
BSE1-3T	Energy and Environment	2	2	-	3	30	70	-	-	100	45	-
BSE1-4T	Communication Skills	2	-	-	2	15	35	-	-	50	23	-
BSE1-5T	Engineering Graphics	1	-	-	1	15	35	-	-	50	23	-
BSE1-6T	Basics of Civil & Mechanical	4			Audit	50	-	-		Audit	-	-
	Engineering											
BSE1-2P	Applied Physics Lab	-	-	3	1.5			25	25	50	-	25
BSE1-3P	Energy and Environment Lab	-	-	2	1			25	25	50	-	25
BSE1-4P	Communication Skills Lab	-	-	2	1			25	25	50	-	25
BSE1-5P	Engineering Graphics Lab	-	-	4	2			25	25	50	-	25
Three weel	ks Induction Program						•			•		
	Total	15	11		19.5	120*	280	100	100	600		

• L- Lecture, P-Practical, T- Tutorial, A- Activity (Half Credit per Hour)

Scheme of Examination B.E. First year (All Branches of Engineering)

Second Semester

Sub	Subjects	Wor	kload in	hrs	Credits			Marks			Minimu	m Passing
Code		L	T/A	P		The	ory	Practical		Total	Marks	
						Internal	Uni	Internal	Uni		Theory	Practical
BSE2-1T	Mathematics-II	3	1	-	4	30	70	-	-	100	45	-
BSE2-2T	Advanced Engineering Materials	2	2	-	3	30	70	-	-	100	45	-
BSE2-3T	Applied Chemistry	3	2	-	4	30	70	-	-	100	45	-
BSE2-4T	Computational Skills	2	-	-	2	15	35	-	-	50	23	-
BSE2-6T	Basics of Electrical Engineering	2	-	-	2	15	35	-	-	50	23	-
BSE2-7T	Engineering Mechanics	2	-	-	2	15	35	-		50	23	-
BSE2-8T	Indian Culture & Constitution	2	-	-	Audit	50	-	-	-	Audit	-	-
BSE1-5P	Workshop Practices	-	-	4	2	-	-	50	50	100	-	50
BSE2-2P	Advanced Engineering Materials	-	-	2	1	-	-	25	25	50	-	25
BSE2-3P	Applied Chemistry			3	1.5	-	-	25	25	50	-	25
BSE2-4P	Computational Skills			2	1	-	-	25	25	50	-	25
Three weel	ks Induction Program		•									
	Total	16	5	11	22.5	135*	315	125	125	700		

- L- Lecture , P-Practical, T- Tutorial, A- Activity (Half Credit per Hour)
 * Audit course marks are not counted in total marks

Guidelines

- Energy and Environment shall be taught by faculty of Chemistry and will come under board of Applied Science and Humanities (only by Chemistry Dept)
- Advance Engineering Materials shall be taught by faculty of Physics and will come under board of Applied Science and Humanities (only by Physics Dept)

RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FACULTY OF SCIENCE & TECHNOLOGY

SCHEME OF EXAMINATION & EVALUATION B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

SEMESTER: THIRD

Sr.		6.11.1		kload Iours	l in		C	redit				Marks	5		Minimum passing marks	
No	Subject Code	Subject		T/	P		T/	Р	Total	The	ory	Prac	ctical	Total	Theory	Practical
				Α	Г	_	Α	Г	TOtal	Int	Uni	Int	Uni	TOtal	THEOTY	
1	BTCVE301T	Mathematics-III	3	1	0	3	1	0	4	30	70			100	45	
2	BTCVE302T	Fluid Mechanics	3	0	0	3	0	0	3	30	70			100	45	
3	BTCVE302P	Fluid Mechanics (Practical)	0	0	2	0	0	1	1			25	25	50		25
4	BTCVE303T	Solid Mechanics	3	1	0	3	1	0	4	30	70			100	45	
5	BTCVE303P	Solid Mechanics (Practical)	0	0	2	0	0	1	1	1	1	25	25	50		25
6	BTCVE304T	Geotechnical Engineering	3	0	0	3	0	0	3	30	70			100	45	
7	BTCVE304P	Geotechnical Engineering (Practical)	0	0	2	0	0	1	1			25	25	50		25
8	BTCVE305T	Building Construction & Elementary Building Drawing	2	0	0	2	0	0	2	30	70			100	45	
9	BTCVE305P	Building Construction & Elementary Building Drawing (Practical)	0	0	2	0	0	1	1			25	25	50		25
10	BTCVE306T	Effective Technical Communication	2	0	0	2	0	0	2	15	35	50		50	23	
	Total			2	8	16	2	4	22	165	385	100	100	750		

• L- Lecture, P-Practical, T- Tutorial, A- Activity (Half Credit per Hour)

Center G. Pierrede

(Dr. A.N. Dabhade)
Reas Member

(Dr. Avinash N Shrikhande,) BOS (Girlf Engg) Chairman

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur

Faculty of Science & Technology

Course and Examination Scheme of Bachelor of Engineering (Mechanical Engineering)

III Semester B. Tech (Mechanical Engineering)

				no L		Lama			1		Exan	nination Sc	cheme	THE STATE OF	4	
					ing Sc urs/We	A TOTAL OF THE STREET		77.77	NE P	Theory			Practical			
Sr No	Course Code	Category	Course Title	L	Т	P	Credits	Duration of Exam (Hrs)	Max. Marks College Assesment	Max. Marks University Assessment	Total Marks	Min. Passing Marks	Max. Marks College Assesment	Max. Marks University Assessment	Total Marks	Min. Passing Marks
1	BEME301T	Basic Science	Applied Mathematics - III	3	1		4	3	30	70	100	45	-		-	-
2	ВЕМЕЗ02Т	Professional core courses	Manufacturing Processes	3	-	-	3	3	30	70	100	45		*	-0	95
3	BEME302P	Professional core courses	Manufacturing Processes Lab	*	-	2	1		-	-	-	3.5	25	25	50	25
4	вемезозт	Professional core courses	Engineering Thermodynamics	3	1	-	4	3	30	70	100	45				-
5	BEME304T	Professional core courses	Kinematics of Machines	3	1	-	4.	3	30	70	100	45	-			-
6	BEME305P	Professional core courses	Machine Drawing & Solid Modelling	-	1	2	2	-		-		-	50	50	100	50
7	BEME306P	Professional core courses	Computer Programming	-	1	2	2	-		-	- P. C./E.		50	50 tioned in the sy	100	50 concerned
8	BEME307P	Mandatory Course	Sports / Yoga / NSS/NCC	•		3	Audit (0)	College	Assessment	in Grades O, F	I, D, C (E)	course)				1
á		Tota	ı	12	5	9	-	-	120	280	400	-	125	125	250	
		Semester	Total		26		20					Marks 6	50			

Medantal Exal.

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Faculty of Science & Technology

Course Scheme of Bachelor of Engineering (Mechanical Engineering)

					1	CREDIT	ΓS		a - Alle	
Sr. No	Course Category	SEM-I	SEM II	SEM III	SEM IV	SEM V	SEM VI	SEM VII	SEM VIII	TOTAL
1	Humanities, Social Sciences & Management courses	3			3	3				9
2	Basic Science courses	9	9	4						22
3	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc	7	13							20
4	Professional core courses			16	17	14	15	1		62
5	Professional Elective courses relevant to chosen specialization/branch						6	7	7	20
6	Open Electives: Courses from other technical and /or emerging subjects			7		3		6	3	12
7	Project work, seminar and internship in industry or elsewhere, Industry Training and Skill Development	w)				1	2	6	6	15
8	Mandatory Courses [Environmental Sciences, Induction training, Indian Constitution, Essence of Indian Knowledge Tradition]									0
	TOTAL	19	22	20	20	21	23	19	16	160
	TOTAL MARKS	600	600	650	650	650	700	500	550	4900

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

B.TECH. (Electrical Engineering)(CBCS) SCHEME OF EXAMINATION

THIRD SEMESTER

Board	Subject Code	Subject		T	eaching S	cheme	Credit	MARI- Theory Pr						m Passing arks
			L	P	T/A	Total				Practi	cal	m	200	
GS	BTCHEE3O1T	Electrical Engineering Mathematics	3	-	1T	4	4	Internal		Internal	Uni.	Total	Theory	Practica
EE	BTCHEE3O2T	Network Analysis	3		1A		4	30	70	-	-	100	45	
EE	ВТСНЕЕЗОЗТ	Electrical Measurement &	3			4	4	30	70	-	•	100	45	
EE	ВТСНЕЕЗО4Т	Instrumentation Analog Devices & Circuits	3	1-	1A	4	4	30	70		-	100	45	
EE	BTCHEE3O5T	Renewable Energy studies	3	-	1A	4	4	30	70	-	-	100	45	
EE	ВТСНЕЕЗО6Т	Introduction to Python	3	+		3	3	30	70	-		100	45	
	BTCHEE3O7T	programming	1	-	-	1	1	15	35	-	_	50	23	
	BTCHEE3O2P	Environmental studies Network Analysis Lab	1	-	1A	1	Audit	50*	-	-		5,33	23	
	ВТСНЕЕЗОЗР	Electrical measurement &	-	2	-	2	1	-	-	25	25	Audit 50	-	25
	BTCHEE3O4P	instrumentation Lab	-	2	-	2	1	-	-	25	25	50		18.22
		Analog Devices & circuits Lab	-	2	F	2	1	-	-					25
EE	BTCHEE3O6P	Introduction to Python programming Lab		2	-	2	1			25	25	50		25
		Total	17	8	1T+4A	29	24	+	-	25	25	50		25
			1 -	O	A. A. 1. 1974	29	24	165	385	100	100	750		

L- Lecture, P-Practical(Half Credit per Hour), T- Tutorial, A- Activity, * indicates noncredit subject

For Internal 30 marks, 15 marks for activity and 15 marks for CIA (continues internal assessment)

R.T.M. Nagpur University, Nagpur

SCHEME OF EXAMINATION

B.E. ELECTRONICS & TELECOMMUNICATION / ELECTRONICS & COMMUNICATION ENGINEERING/ ELECTRONICS ENGINEERING

(SEMESTER – III)

			7		-l			Credi				MARK	S	
Code	Subject		J	Ceaching S	cneme			t			Theory		Practical	Total
Code	Subject	L	Prac tical	Tutoria l/ Activit y	Tota l	L	P	T/A	Total	Internal	Univ.	Interna l	Univ.	Mark s
BEETC -301	Applied Maths-III	3	-	1T	4	3	1	1	4	30	70	-	-	100
BEETC -302T	Components for Electronic circuit design	3	-		3	3	-	-	3	30	70	-	-	100
BEETC -302P	Components for Electronic circuit design Lab	-	2	-	2	-	1	-	1	-	-	25	25	50
BEETC -303T	Digital System Design	3	-	1T	4	3	-	1	4	30	70	-	-	100
BEETC -303P	Digital System Design Lab	1	2	1	2	1	1	-	1	-	-	25	25	50
BEETC -304P	Network Theory	3	1	-	3	3	1	-	3	30	70	-	-	100
BEETC -305T	Signal & System	3	-	-	3	3	-	-	3	30	70	-	-	100
BEETC -306T	Measurement and Instrumentation	3	-	-	3	3	1	-	3	30	70	-	-	100
BEETC -307P	Electronics Workshop I Lab	-	2	-	2	-	1	-	1	-	-	25	25	50
BEETC -308T	Consumer affairs	2	1		2							-	1	Audit
	Total	20	6	2 T	28	18	3	2	23	180	420	75	75	750

SCHEME OF EXAMINATION RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR THIRD SEMESTER B. TECH (CHEMICAL ENGINEERING)

	Code			V	Vork	Loac	Hrs			Credit			Ma	irks			Min. %
Sr. No.	Theory (T)	Subject	Board									The	ory	Prac	tical	Total	of Marks Required
INO:	Practical (P)			L	p	Т	Total	L	P	Т	Total	College Assessment	University	College Assessment	University	Marks	for Passing
Ī	CE-PCC-301T	Material & Energy Balance Computations	BCE	3	0	1	4	3	0	1	4	30	70	72		100	45%
2	CE-PCC-302T	Particle & Fluid Particle Processing	BCE	3	0	1	4	3	0	1	- 4	30	70	1.2	2	100	45%
3	CE-PCC-303T	Thermodynamics – II	BCE	3	0	1	4	3	0	1	4	30	70		3-5	100	45%
4	CE -GES -304 T	Material Science	BGE	3	0	0	3	3	0	0	3	30	70	161		100	45%
5	CE- BS -305 T	Maths - III	BGE	3	0	0	3	3	0	0	3	30	70	(*)		100	45%
6	CE -BS -306 T	Elementary Molecular Approach	BGE	3	0	0	3	3	0	0	3	30	70	18	1 10	100	45%
7	CE -GES -307P	Material Science Laboratory	BGE	0	2	0	2	0	1	0	1	-	¥	25	25	50	50%
8	CE -BS -308 P	Elementary Molecular Approach –Laboratory	BGE	0	3	0	3	0	1.5	0	1.5		н	25	25	50	50%
9	CE -GES -309 P	Engineering workshop	BGE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
10	CE-PCC-310P	Particle & Fluid Particle Processing Lab	BCE	0	3	0	3	U	1.5	0	1.5	-	- v	25	25	50	50%
		Total		18	11	3	32	18	5.5	3	26.5	180	420	100	100	800	-



SCHEME OF EXAMINATION RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR THIRD SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

	Code			N	/ork	Loa	d Hrs		C	redit			Ма	ırks			Min. % of
Sr.	Theory (T)	Subject	Board					-				The	ory	Pract	tical	1	Marks
No.	Practical (P)			L	P	T	Total	L	P	Т	Total	College Assessment	University	College Assessment	University	Total Marks	Required for Passing
1	CT-PCC- 301T	Material & Energy Balance Computations	BCE	3	0	1	4	3	0	1	4	30	70	-		100	45%
2	CT-PCC- 302T	Particle & Fluid Particle Processing	BCE	3	0	1	4	3	0	1	4	30	70			100	45%
3	CT-PCC- 303T	Thermodynamics – II	BCE	3	0	1	4	3	0	1	4	30	70			100	45%
4	CT-GES- 304 T	Material Science	BGE	3	0	0	3	3	0	0	3	30	70			100	45%
5	CT-BS- 305 T	Maths - III	BGE	3	0	0	3	3	0	0	3	30	70			100	45%
6	CT-BS- 306 T	Elementary Molecular Approach	BGE	3	0	0	3	3	0	0	3	30	70			100	10.75.50
7	CT-GES- 307P	Material Science Laboratory	BGE	0	2	0	2	0	1	0	1	50	70	25	25	50	45%
8	CT-BS- 308 P	Elementary Molecular Approach – Laboratory	BGE	0	3	0	3	0	1.5	0	1.5		3	25	25	50	50%
9	CT-PCC- 309P	Particle & Fluid Particle Processing Lab	BCE	0	3	0	3	0	1,5	0	1.5			25	25	50	50%
		Total		18	8	3	29	18	4	3	25	180	420	75	75	750	30%

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Semester - III (Second Year)

Branch: Fire Engineering

Third Semester:

		100000	ork Lo (Hours)					Marks				imum a Morke
Subject Code	Subjects		m/4	т	Credits	The	ory	Pract	ical	Total	Passiii	g Marks
		L	T/A	Р		Int	Uni	Int	Uni	Total	Theory	Practical
ESC-FE-201	Fluid Mechanics	2	1	-	3	30	70	-	-	100	45	_
ESC-FE-202	Advanced Electrical Systems	2	1	-	3	30	70	-	-	100	45	-
ESC-FE-203	Structural Mechanics	3	1	-	4	30	70	÷	-	100	45	-
ESC-FE-204	Engineering Thermodynamics	3	1	-	4	30	70	-		100	45	2
HSMC-FE-201	Universal Human Values – II	2	1	-	3	30	70	-	_	100	45	2000
ESC-FE-201(P)	Fluid Mechanics Laboratory	_	-	2	1	-	-	25	25	50	S	25
ESC-FE-202(P)	Advanced Electrical Systems Laboratory	_	-	2	1	-	-	25	25	50	-	25
ESC-FE-203(P)	Structural Mechanics Laboratory	-		2	1	_	-	25	25	50	.=	25
PCC-FE-201(P)	Fire Ground Operations – III	_		5	2.5	_	-	25	25	50	1=	25
	Total	12	5	11	22.5	150	350	100	100	700		

^{*} L- Lecture, P- Practical, T- Tutorial, A- Activity (Half Credit Per Hour)

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B.E. SCHEME OF EXAMINATION 2021-22
Scheme of Teaching & Examination of Bachelor of Engineering III Semester B.E. (Artificial Intelligence& Data Science)

Sr. No.	Course Code	Category	Course Name		ours, leek		Credit s	Maximu	m Marks				Minimu Marks	m Passing
								TI	heory	Practica	nl .	Total		
				L	Т	Р								
								Internal	University	Internal	University		Theory	Practical
1	BEAI&DS301T	Basic Science Course	Discrete Mathematics and Graph Theory	3	1	0	4.00	30	70	-	-	100	45	
2	BEAI&DS302T	Professional core courses	Operating Systems	3	1	0	4.00	30	70	-	-	100	45	
3	BEAI&DS303T	Professional core courses	Computer Architecture & Organization	3	0	0	3.00	30	70	-	-	100	45	
4	BEAI&DS304T	Professional core courses	Data Structures	3	1	0	4.00	30	70	-	-	100	45	
5	BEAI&DS304P	Professional core courses	Data Structures LAB	0	0	2	1.00	-	-	25	25	50		25
6	BEAI&DS305T	Professional core courses	Digital Circuits & Fundamentals of Microprocessor	3	0	0	3.00	30	70			100	45	
7	BEAI&DS305P	Professional core courses	Digital Circuits & Fundamentals of Microprocessor Lab	0	0	2	1.00	-	-	25	25	50		25
8	BEAI&DS306P	Engineering Sciences	Professional Skills I (Core Python)	0	0	2	1.00			25	25	50		25
9	BEAI&DS307T	HSMC	Universal Human Values	2	0	0	2.00	15	35			50	23	
10	BEAI&DS308T	Mandatory Course	Environmental Science	2	0	0	Audit	-	-	-	-	Audit	-	
		Total		19	3	6	23.00	165	385	75	75	700		

B. Tech. SCHEME OF EXAMINATION 2021-22

Scheme of Teaching & Examination of Bachelor of Technology III Semester B.TECH. (Artificial Intelligence)

Sr.	Course Code	Category	Course Name	Hours	/ Wee	ek	Credits	Maximu	um Marks					m Passing
No.	Course Couc	Category						TI	heory	Practica	l _y =	Total	Marks	
	100			L	T	P						_		Ja .: 1
								Internal	University	Internal	University		Theory	Practical
	BTECHAI301T	Basic Science Course	Discrete Mathematics and Graph Theory	3	1	0	4.00	30	70	-		100	45	
2	BTECHAl302T	Professional core courses	Operating Systems	3	1	0	4.00	30	70		-	100	45	
3	ВТЕСНАІЗОЗТ	Professional core courses	Computer Architecture & Organization	3	0	0	3.00	30	70	-	-	100	45	
4	BTECHAI304T	Professional core courses	Data Structures	3	1	0	4.00	30	70	E	-	100	45	
5	BTECHAI304P	Professional core courses	Data Structures LAB	0	0	2	1.00	3 . €3	1=01	25	25	50		25
6	BTECHAI305T	Engineeri ng	Digital Circuits & Fundamentals of Microprocessor	3	0	0	3.00	30	70			100	45	
7	BTECHAI305P	Engineeri ng	Digital Circuits & Fundamentals of Microprocessor Lab	0	0	2	1.00	-	-	25	25	50		25
8	BTECHA1306P	Engineeri ng Sciences	Professional Skills I (Core Python)	0	0	2	1.00			25	25	50		25
9	BTECHAI307T	HSMC	Universal Human Values	2	0	0	2.00	15	35			50	23	
10	BTECHAI308T	Mandatory Course	Environmental Science	2	0	0	Audit		3	College ass	essment in gr	rades O,	A,B,C	
		Tota	1	19	3	6	23.00	165	385	75	75	700		

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

III Semester B. Tech. (Robotics & Artificial Intelligence)

Sr.	Course Code	Category	Course Name		urs/		Credits		Ma	ximum M	arks			
No.					eek			Th	eory	Pr	actical	Total	Minimum Ma	
				L	T	P		Internal			University		Theory	Practical
1	BTechRAI301T	Basic Science Course	Discrete Mathematics and Graph Theory	3	1	0	4.00	30	70	ii e	128	100	45	
2	BTechRAI302T	Professional core courses	Operating Systems	3	0	0	3.00	30	70	12	*	100	45	
3	BTechRAI303T	Professional core courses	Principles of Robotics	3	0	0	3.00	30	70	-		100	45	
4	B.TechRAI304T	Professional core courses	Data Structures Algorithms	3	1	0	4.00	30	70	5.	-	100	45	
5	BTechRAI304P	Professional core courses	Data Structures Algorithms Lab	0	0	2	1.00	*	-	25	25	50		25
6	BTechRAI305T	Engineering Sciences	Analog and Digital Circuit	3	1	0	4.00	30	70			100	45	
7	BTechRAI305P	Engineering Sciences	Analog and Digital Circuit Lab	0	0	2	1.00	-	-	25	25	50		25
8	BTechRAI306P	Professional core courses	Professional Skills (Python)	0	0	2	1.00			25	25	50		25
9	BTechRAI307T	HSMC	Universal Human Values	2	0	0	2.00	15	35			50	23	
10	BTechRAI308T	Mandatory Audit Course	Environmental Science	2	0	0	Audît		1	College	assessment in gr	ades O, A,B,	C C	
	Tota	1		19	3	6	23.00	165	385	75	75	700		

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

III Semester B.Tech. (Industrial IOT)

Sr.	Course	Category	Course Name	Но	urs	,	Credits	Maximu	ım Marks				Minimu Marks	m Passing
No.	Code			W	eek			T	heory	Practical		Total	000000000000000000000000000000000000000	
				L	Т	Р		Internal	University	Internal U	niversity		Theory	Practical
1	BTechIOT301T	Basic Science Course	Discrete Mathematics and Graph Theory	3	1	0	4.00	30	70	-		100	45	
2	BTechIOT302T	Professional core courses	Operating Systems	3	0	0	3.00	30	70	(4)	-	100	45	
3	BTech1OT303T	Professional core courses	Sensors and Actuators	3	0	0	3.00	30	70	-	-	100	45	
4	BTechIOT303P	Professional core courses	Sensors and Actuators lab	0	0	2	1.00	<u>-</u>	-	25	25	50		25
5	BTechIOT304T	Professional core courses	Data Structures & Algorithm Design	3	0	0	3.00	30	70	(4)	-	100	45	
6	BTechIOT304P	Professional core courses	Data Structures & Algorithm Design Lab	0	0	2	1.00	:=X	37	25	25	50		25
7	BTechIOT305T	Engineering Sciences	Logic Design and Microcontroller	3	0	0	3.00	30	70			100	45	
8	BTechIOT305P	Engineering Sciences	Logic Design and Microntroller Lab	0	0	2	1.00	-	\$	25	25	50		25
9	BTechIOT306P	Engineering Sciences	Professional Skills (Core Python)	0	0	2	1.00			25	25	50		25
10	BTechIOT307T	HSMC	Universal Human Values	2	0	0	2.00	15	35			50	23	
11	BTechIOT308T	Mandatory Course	Environmental Science	2	0	0	Audit			College ass	essment in gr	ades O, A,	в,с	
		Total		19	1	8	22.00	165	385	100	100	750		

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B.Tech. SCHEME OF EXAMINATION 2022-23

Scheme of Teaching & Examination of Bachelor of Engineering III Semester B.Tech. (Artificial Intelligence& Machine Learning)

Sr.	Course Code	Category	Course Name		Hou		Credits	Maximum	Marks				Minimur Marks	n Passing
No.				s/W		k P		Th	eory	Practical		Total	Maiks	
				L	1	Р		Internal	University	Internal	University		Theory	Practica
1	BTAI&ML301T	Basic Science Course	Discrete Mathematics and Graph Theory	3	1	0	4	30	70	8-1	n	100	45	=
2	BTAI&ML302T	Professional core courses	Operating Systems	3	1	0	4	30	70	*11.5	3	100	45	
3	BTAI&ML303T	Professional core courses	Computer Architecture & Organization	3		0	3	30	70	=	ē	100	45	
4	BTAI&ML304T	Professional core courses	Data Structures	3	1	0	4	30	70	*	-	100	45	
5	BTAI&ML304P	Professional core courses	Data Structure Lab	0	0	2	1		1 1 2 1	25	25	50		25
6	BTAI&ML305T	Professional core courses	Digital Circuits & Microprocessor	3	0	0	3	30	70			100	45	
7	BTAI&ML305P	Professional core courses	Digital Circuits & Microprocessor Lab	0	0	2	1	-	-	25	25	50		25
8	BTAI&ML306P	Professional core courses	Professional Skills I (Core Python)	0	0	2	1			25	25	50		25
9	BTAI&ML307T	HSMC	Universal Human Values	2	0	0	2	15	35			50	23	
10	BTAI&ML308T	Environmental Science Courses	Environmental Science	2	0	0	Audit Course			College assess	sment in grades (), A,B,C		
		Total		19	3	6	23	165	385	75	75	700		

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

FOUR YEAR BACHELOR OF TECHNOLOGY (B. TECH.) DEGREE COURSE SEMESTER: THIRD [C.B.C.S]

	THIRD [C.D.C.3]
RRANCH.	INFORMATION TECHNOLOGY
DIVANCII:	INTURMATION TECHNOLOGY
The second second second second	TECHNOLOGY

			Work	BRANCH:		1			NAME OF THE OWNER	Le legal	T III	м.			
Subject Code	Subject		Work	Load				Credit				Marks			Min
Code		Lecture	Practical	Tutorial/	Total	L	P	T/A	-	Theor		Pra	ctical	Total Marks	Passir g
DTITTAGA				Activity	- John	"	1	T/A	Total	Internal	Univer	Inter	Univ		
BTIT3017	Applied Mathematics-III	3		1	4	3		1	4	20	sity	nal	175		
BTIT3027	- 10 Stanting Logic &	3			3	3				30	70			100	45
BTIT302P	Design using 'C'				3	3			3	30	70			100	45
51115021	Programming Logic & Design using 'C'		2		2		1		1						
BTIT303T	Digital Electronics and								1			25	25	50	25
	Fundamental of Microprocessor	3		1	4	3		1	4	30	70			100	45
BTIT303P	Digital Electronics and			nigo est		4			100		, ,			100	
	Fundamental of		2		2		1		1			25	25		25
BTIT304T	Microprocessor											25	25	50	
	Emerging Trends in Information	3			3	3			3	30	70			100	45
BTIT305T	Technology System Programming													100	1.5
- 12 12 Au	System Frogramming	3			3	3			3	30	70			S.	
BTIT306P	Software Lab -1		2		2					30	70			100	45
BTIT307T	Universal Human Values				2		1		1			25	25	50	25
-IBAY	omversar Human Values	2			2	2			2	15	35				
BTIT308T	Environmental Science (Audit)	2			2	-	-	-	-		33			50	23
	Total	19													
		19	6	2	27	17	3	2	22	165	385	75	75	700	

Dr Kalesh Malik

R.T.M. Nagpur University, Nagpur Four Year B.TECH. Course (Revised Curriculum as per AICTE Model Curriculum)

B.Tech. III Semester (Computer Technology) Scheme

			hing Sc				0.	Scheme	
Code No.	Subject				Evali	uation S		Credi	Min
		L	T	P	CA	UE	Tota l	ts	Passing
BTCT301T	Mathematics III (TH)	3	1	0	30	70	100	4	45
BTCT302T	Problem Solving using Python (TH)	3	0	0	30	70	100	3	45
BTCT302P	Problem solving using Python (PR)	0	0	2	25	25	50	1	25
ВТСТ303Т	Digital Design and Fundamentals of Microprocessor (TH)	3	0	0	30	70	100	3	45
ВТСТ303Р	Digital Design and Fundamentals of Microprocessor (PR)	0	0	2	25	25	50	1	25
BTCT304T	Computer Architecture and Organization (TH)	3	1	0	30	70	100	4	45
BTCT305T	Theoretical Foundations of Computer Science	3	1	0	30	70	100	4	45
BTCT306T	Universal Human Values (TH)	2	0	0	15	35	50	2	25
ВТСТ307Р	Computer Workshop-I (Web Technologies) (PR)	0	0	2	25	25	50	1	25
BTCT308T	Consumer Affairs	2	-	-	_	•		-	
	Total	19	3	06	240	460	700	23	

Dr daleh Malik

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FOUR YEAR BACHELOR OF TECHNOLOGY (B.Tech.) DEGREE COURSE

SEMESTER: 3rd (C.B.C.S.)

BRANCH: COMPUTER ENGINEERING

Third Semester:-

S	Subject Code	Subject	Tea	ching S	Scheme	Ev	aluation	Scheme		Minimum
N			L	T	P	CA	UE	Total	Credits	Minimum Passing
1	BTCME301T	Mathematics – III	4			30	70	100	4	45
2	BTCME302T	Digital Circuits and Fundamentals of Microprocessor	3	1		30	70	100	4	45
3	BTCME303T	Object Oriented Programming	3	1		30	70	100	4	45
4	BTCME304T	Theory of Computation	3	-	5	30	70	100	3	45
5	BTCME305T	Introduction to Computer Networks	3	-	-	30	70	100	3	45
6	BTCME306T	Universal Human Values	2	-	-	15	35	50	2	23
7	BTCME302P	Digital Circuits and Fundamentals of Microprocessor Lab	-	-	2	25	25	50	1	25
8	BTCME303P	Object Oriented Programming (Lab)	-	-	2	25	25	50	1	25
9	BTCME307P	Computer Workshop- I(Lab)	-	-	2	25	25	50	1	25
10	BTCME308T	Environmental Science	2	-		-	-	1=	Audit	
		Total	20	02	06	240	460	700	23	

L: Lectures T: Tutorials P: Practical

Drdalesh Malik Adhoz Chairman STC

R.T. M. Nagpur University, Nagpur FOUR YEAR B.TECH. COURSE

B.Tech. SCHEME OF EXAMINATION wef: 2021-22

Scheme of Teaching & Examination of Bachelor of Technology III Semester B.Tech. (Computer Science and Engineering)

Sr. No.	Course Code	Category	Course Name	Hours/		Credits	Maximum Marks				Min Passing			
				Week			Theory		Practical		Total	Theory	Practical	
				L	Т	P								
				lan:			aline des	Internal	University	Internal	University			
1	BTECHCSE301T	Basic Sciences courses	Applied Mathematics – III	3	1	-	4	30	70	-	-	100	45	
2	BTECHCSE302T	Professional core courses	Object Oriented Programming with Java	3 .	1	-	4	30	70	-	-	100	45	
3	BTECHECSE303T	Professional core courses	Operating System	3	-	-	3	30	70	-	-	100	45	
4	BTECHCSE304T	Professional core courses	Computer Architecture & Digital System	3	1	-	4	30	70	-	-	100	45	
5	BTECHCSE305T	Professional core courses	Ethics in IT	3	-	-	3	30	70	2		100	45	
6	BTECHCSE306T	Humanities	Universal Human Values	2	- 3	-	2	15	35	-	-	50	23	
7	BTECHCSE307T	Mandatory Course	Environment Science (Audit)	2	-	-	0	-	-	-		-		
8	BTECHCSE302P	Professional core courses	Object Oriented Programming with Java	-	-	2	1		-	25	25	50		25
9	BTECHCSE303P	Professional core courses	Operating System	-		2	1		-	25	25	50		25
10	BTECHCSE308P	Professional core courses	Computer Workshop-I	-	-	2	1	-		25	25	50		25
Tota	Total					6	23	165	385	75 1	75	700		

Dr daleh Malit

PROPOSED SCHEME OF EXAMINATION FOR B. TECH (BIOTECHNOLOGY) THIRD SEMESTER B. TECH (BIOTECHNOLOGY)

Sr. No.	Code Theory (T) Practica 1 (P)	Subject	Board		Work (Ho	urs)				redit				Iarks		Total Marks	Min. % Marks Required for passing
				L	P	T	Tot al	L	P	T	Total	The College	ory Univer	Pra College	ctical University		
												Assess- ment	sity	Assess- ment	Cinversity		
1	BT -HS -301T	Effective Technical Communication	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
2	BT - BS -302 T	Biochemistry	BBT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
3	BT - BS -303 T	Microbiology	BBT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
4	BT -PC -304 T	Bioprocess Calculations	BBT	2	0	1	3	2	0	1	3	30	70	-	-	100	45%
5	BT -PC -305 T	Analytical Techniques	BBT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
6	BT -BS -306 P	Biochemistry Laboratory	BBT	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
7	BT - BS -307 P	Microbiology Laboratory	BBT	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
8	BT - PC -308 P	Analytical Techniques Laboratory	BBT	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
9	BT- PS - 309 P	Technical Seminar	BBT	0	2	0	2	0	1	0	1	-	-	100	-	100	50%
		Total		13	10	1	24	13	5	1	19.5	135	315	175	75	700	

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur Faculty of Engineering & Technology Course and Examination Scheme Bachelor of Technology-Aeronautical Engineering III Semester B. Tech. (CBCS)

			Teac	hing So	cheme				Exan	ination Sche	me	77		
	Subject	H	lours weel	*	No. of			Theory				Practica		
	Subject	L	T	P	Credits	Duration of Paper (Hrs)	Max Marks University Assessment	Max Marks College Assessment	Total Marks	Min. Passing Marks	Max Marks University Assessment	Max Marks College Assessment	Total Marks	Min. Passing Marks
BTAE 301T	Applied Mathematics -III	3			3	03	70	30	100	45	-	-	-	Harks
BTAE 302T	Aero- Thermodynamics	3	-	-	3	03	70	30	100	45	-	-	40	-
BTAE 302P	Aero- Thermodynamics	-	-	2	1	-	8₩6	12	-	100	25	25	50	25
BTAE 303T	Fluid Mechanics & Machinery	3	-	-	3	03	70	30	100	45	- E		-	-
BTAE 303P	Fluid Mechanics & Machinery	-	-	2	1	*	100	\$ = 53	•	0147	25	25	50	25
BTAE 304T	Avionics –I	3	-	-	3	03	70	30	100	45		-	-	*
BTAE 305P	Computer Programming	-	1	2	2	-	•		20	10	25	25	50	25
BTAE 306T	Elements of Aeronautics	3	-	-	3	03	70	30	100	45			-	N#
BTAE 307T	Aerodynamics-I	3		-	3	03	70	30	100	45	20章		-)	-
BTAE 308T	Essence of Indian Traditional Knowledge	2	14 -	-	-		College as	ssessment in Gra		,B,C (Evalua cern subject)	tion mentioned i	in the Syllabus o	f	
	Total	20	1	6	22		420	180	600	*	75	75	150	
	Semester Total		27		22					Marks 750				



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RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR **FACULTY OF SCIENCE & TECHNOLOGY**

SCHEME OF EXAMINATION & EVALUATION B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

SEMESTER: FOURTH

Sr.	Subject			rkloac Hours			С	redit				Marks				m passing arks
No	Code	Subject		T/	Р		_	Р	Total	The	ory	Prac	tical	Total	Theory	Dunctical
			L	Α	٢	_	I	٢	Total	Int	Uni	Int	Uni	Total	Theory	Practical
1	BTCVE401T	Concrete Technology	3	0	0	3	0	0	3	30	70	1		100	45	I
2	BTCVE402T	Structural Analysis	3	1	0	3	1	0	4	30	70			100	45	-
3	BTCVE402P	Structural Analysis (Practical)	0	0	2	0	0	1	1	1	1	25	25	50		25
4	BTCVE403T	Environmental Engineering	3	0	0	3	0	0	3	30	70			100	45	
5	BTCVE403P	Environmental	0	0	2	0	0	1	1			25	25	50		25
3	B1C VE403F	Engineering(Practical)			۷	0	U	ı	•			23	23	50		25
6	BTCVE404T	Transportation Engineering	3	0	0	3	0	0	3	30	70			100	45	
7	BTCVE404P	Transportation Engineering (Practical)	0	0	2	0	0	1	1			25	25	50		25
8	BTCVE405T	Surveying &Geomatics	3	0	0	3	0	0	3	30	70	1		100	45	i
9	BTCVE405P	Surveying &Geomatics (Practical)	0	0	4	0	0	2	2			25	25	50		25
10	BTCVE406P	Mini Project (Practical)	0	0	2	0	0	1	1			25	25	50		25
		TOTAL	15	1	12	15	1	6	22	150	350	125	125	750		

• L- Lecture, P-Practical, T- Tutorial, A- Activity (Half Credit per Hour)

(Dr. Avinash N Smikhande,) BOS (Gvill Engg) Chairman

Note: In Summer vacation after 4th Semester, students have to complete 2 to 3 weeks industrial / Government / NGO / MSME / Rural Internship / Innovation / Entrepreneurship training. In the beginning of 5th semester, students have to submit detailed report of summer vacation training to department. Center G. Prende

BOS Member

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur

Faculty of Science & Technology

Course and Examination Scheme of Bachelor of Engineering (Mechanical Engineering)

IV Semester B. Tech (Mechanical Engineering)

				Teach	ing Sch	ame		17,2,1	1		Exam	ination Sc	heme			
			7 117 1 27 1 1 1 2		urs/We					Theory				Practica	1	
Sr No	Course Code	Category	Course Title	L	Т	Р	Credits	Duration of Exam (Hrs)	Max. Marks College Assesment	Max. Marks University Assessment	Total Marks	Min. Passing Marks	Max. Marks College Assesment	Max. Marks University Assessment	Total Marks	Min. Passing Marks
1	BEME401T	Professional core courses	Machining Processes	3	*	-	3	3	30	70	100	45	-	-	*	
2	BEME401P	Professional core courses	Machining Processes Lab	-		2	1	-		2-5-1			25	25	50	25
3	BEME402T	Professional core	Fluid Mechanics & Hydraulic Machines	3	1	-	4	3	30	70	100	45			-	-
4	BEME402P	Professional core	Fluid Mechanics & Hydraulic Machines Lab		-	2	1			-	*	-	25	25	50	25
5	BEME403T	Professional core	Material Science & Engineering	3	×	-	3	3	30	70	100	45	4.	-		*
6	BEME404T	Professional core courses	Mechanics of Materials	3	1	-	4	3	30	70	100	45		-		-
7	BEME404P	Professional core	Materials Testing Lab		-	2	1			- 1		-	25	25	50	25
8	BEME405T	Humanities & Social Science	Professional Ethics	3	-	-	3	2	30	70	100	45		-	- labus of a	- oncerned
. 9	BEME406P	- Alamana - Alam	Sports /Yoga / NSS/NCC	-		3	Audit (0)	Colleg	e Assessmen	t in Grades O, A	L, B, C (E)	course)	indefines men		1	
		TOTAL		15	2	9	1	-	150	350	500	*	75	75	150	*
		Semester Tot	al		26		20					Marks 65	50			

West and English

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR B.TECH. (Electrical Engineering) (CBCS) SCHEME OF EXAMINATION

FOURTH SEMESTER

Board	Subject	Subject	T	each	ing Sc	heme	C. Ji			MARKS			Control of the Contro	m Passing arks
Боаги	Code	Subject					Credit	Theo	ry	Practi	cal	T-4-1	TO.	D
			L	P	T/A	Total		Internal	Uni.	Internal	Uni.	Total	Theory	Practical
EE	BTCHEE401T	Signal & Systems	3	2	1T	4	4	30	70	-	-	100	45	
EE	BTCHEE4O2T	Digital Electronics	3	-	-	3	3	30	70		- 2	100	45	
EE	BTCHEE4O3T	Electrical machines-I	3	-	-	3	3	30	70	-	-	100	45	
EE	BTCHEE4O4T	Power System	3	-	-	3	3	30	70	-	-	100	45	
EE	BTCHEE4O5T	Electromagnetic Fields	3	-	1T	4	4	30	70	-		100	45	
EE	BTCHEE4O6T	Simulation & ProgrammingTechniques	3	-	-	3	3	30	70	-	-	100	45	
1		Internship (2 to 3 weeks) (After III semester break)		-	1A	1	1	-		50		50		
EE	BTCHEE4O2P	Digital Electronics lab	-	2	-	2	1	•	-	25	25	50	P - 1 1	25
EE -	BTCHEE4O3P	Electrical machines-I Lab	-	2	-	2	1	341	-	25	25	50		25
EE	BTCHEE4O6P	Simulation & Programming Techniques Lab		2	-	2	1	-	-	25	25	50	Egit.	25
		Total	18	6	2T+ 1A	27	24	180	420	125	75	800		

- L- Lecture, P-Practical(Half Credit per Hour), T- Tutorial, A- Activity
- Internship:- a) Student shall be allowed to undergo internship after III semester break
 - b) Internal marks for internship of IV semester may be awarded after successful completion of internship
 - c) 50 internal marks given for internship shall be given as
 - i) 25 marks based on detailed report about internship along with certificate provided by company/industry
 - ii) 25 marks based on presentation by student about what he/she learned during internship

(Dr. A. Shubhali)

Dr. 5. M Keld)

Dr. J. B. Pulzele

SCHEME OF EXAMINATION FOR

B. LELECTRONICS & TELECOMMUNICATION / ELECTRONICS & COMMUNICATION ENGINEERING / ELECTRONICS ENGINEERING

(SEMESTER - IV)

Code	Subject		Teachin	ng Scheme			Cre	dit			MAI	RKS			Minim Passing N	
							27			Theo	T)	Practic	al	Total Mark s	Theory	Practical
		L	Practic al	Tutorial/ Activity	Total	L	P	T/A	Total	Internal	University	Internal	Univ.			
BEETC- 401T	Microcontrollers & Applications	3		1T	4	3	•	1	4	30	70	*		100	45	
BEETC- 401P	Microcontrollers & Applications Lab	2	2		2	₹ <u>₽</u>	1	-	1	20	-	25	25	50		25
BEETC- 402T	Analog &Digital Communications	3	(#)	1T	4	3	-	1	4	30	70	Treat to	-	100	45	
BEETC- 403P	Analog and Digital Electronics Lab	-	2	-	2	N + H	1	-	1	=	15	25	25	50		25
BEETC- 404T	Analog System Design	3	(2)	1T	4	3	-	1	4	30	70		-	100	45	
BEETC- 405T	Data structure & Algorithm	3	-	*	3	3	5	-	3	30	70	5	((6)	100	45	
BEETC- 406T	HSC: Numerical Mathematics and Probability Using MATLAB	3		-	3	3	17 <u>2</u> 2		3	30	70	-	-	100	45	
BEETC- 407T	Programming for problem solving	2	-	•	2	2	35=1	-	2	15	35	-	15	50	23	
	Programming for problem solving Lab	-	4	-	4	S-2	2	-	2			25	25	50		25
BEETC- 408I	Internship								1			50	(-	50		25
BEETC- 409A	Audit Course HSC: Universal human values	1			1									AUD IT		
	Total	18	8	3T	28	16	n 4	3	24	165	385	125	75	750		

• L- Lecture , P-Practical, T- Tutorial , A- Activity

• Audit course marks are not counted in total marks

James Brojate

N. G. Baware

positive 18

(Taksord) Pranowi 1.5.5.

23/09/22

De. H. Balling

SCHEME OF EXAMINATION RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FOURTH SEMESTER B. TECH (CHEMICAL ENGINEERING)

	Code			1	Work	Loa	d Hrs		(redit			M	arks			
Sr. No.	Theory (T)	Subject	Board		T							The	ory	Prac	tical	Total	Min. % of Marks
	Practical (P)			L	P	T	Total	L	þ	T	Total	College Assessment	University	College	University	Marks	Required for Passing
1	CE-PCC-401T	Process Technology & Economics	BCE	3	0	1	4	3	0	1	4	30	70	Assessment		100	45%
2	CE-PCC-402T	Mass Transfer I	BCE	3	0	0	3	3	0	0	3	30	70			100	20,0000
3	CE-PCC-403T	Fluid Mechanics	BCE	3	0	1	4	3	0	1	4	30	70			1000	45%
4	CE-PCC-404T	Numerical Methods in Chemical Engineering	BCE	2	0	0	2	2	0	0	2	15	35			100	45% 45%
5	CE- BS -405 T	Inorganic Process Technology	BGE	3	0	0	3	3	0	0	3	30	70	150		11.50(0)	
6	CE- HSMC-HS - 406 T	HASS II: Functional English	BGE	2	0	0	2	2	0	0	2	15	35	-		100	45% 45%
7	CE-PCC-407P	Fluid Mechanics Lab	BCE	0	2	0	2	0	I	0	1		-	25	25	200	
8	CE-PCC-408P	Numerical Methods in Chemical Engineering Lab	BCE	0	2	0	2	0	ı	0	1			25	25	50	50%
9	CE- BS -409 P	Inorganic Process Technology Laboratory	BGE	0	3	0	3	0	1.5	О	1.5			25	25	50	50%
10	МС	Environmental Sciences	BCE	2	0	0	2	0	0	0	0		153		*	-	Audit Course S/SF**
		Total		18	7	2	27	16	3.5	2	21.5	150	350	75	75	650	

^{**} S/SF Grade for Audit Course S – Satisfactory or SF – Not Satisfactory

Made

SCHEME OF EXAMINATION RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FOURTH SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

	Code			V	Vork	Load	Hrs		C	redit			Ma	rks			Min. % of
Sr. No.	Theory (T)	Subject	Board									Theo	ory	Pract	ical		Marks
INO.	Practical (P)		1-505,038,03	L	P	Т	Total	L	Р	T	Total	College Assessment	University	College Assessment	University	Total Marks	Required for Passing
I.	CT-PCC-401T	Process Technology & Economics	BCE	3	0	1	4	3	0	1	4	30	70	-		100	45%
2	CT-CS-402T	*Special Technology I	BCHT	3	0	0	3	3	0	0	3	30	70		-	100	45%
3	CT-PCC-403T	Fluid Mechanics	BCE	3	0	1	4	3	0	1	4	30	70	3	-	100	45%
4	CT-PCC-404T	Numerical Methods in Chemical Engineering	BCE	2	0	0	2	2	0	0	2	15	35			50	45%
5	CT-BS-405 T	Inorganic Process Technology	BGE	3	0	0	3	3	0	0	3	30	70			100	450/
6	CT-HSMC-HS - 406 T	HASS II Functional English	BGE	2	0	0	2	2	0	0	2	15	35		-	50	45% 45%
7	CT-PCC-407P	Fluid Mechanics Lab	BCE	0	2	0	2	0	1	0	1			25	25	50	4504
8	CT-PCC-408P	Numerical Methods in Chemical Engineering Lab	BCE	0	2	0	2	0	1	0	1	2		25	25	50	45% 50%
9	CT-BS-409 P	Inorganic Process Technology Laboratory	BGE	0	3	0	3	0	1.5	0	1.5		-	25	25	50	50%
10	CT-GES-410 P	Engineering Workshop	BGE	0	3	0	3	0	1.5	0	1.5		-	25	25	50	500/
11	MC	Environmental Sciences	BCE	2	0	0	0	0	0	0	-		-	-	-	-	50% Audit Course S/SF**
- 4		Total		16	10	2	28	16	5	2	23	150	350	100	100	700	

^{**} S/SF Grade for Audit Course S - Satisfactory or SF - Not Satisfactory

^{*}Food Technology

^{*}Oil Technology

^{*}Petrochemical Technology

^{*}Pulp and Paper Technology

^{*}Plastic and Polymer Technology *Surface Coating Technology

Semester - IV (Second Year)

Branch: Fire Engineering

Fourth Semester:

		W	ork Loa (Hours)	ıd				Marks			-	imum
Subject Code	Subjects		T / A	D	Credits	The	ory	Pract	ical	Total	Passin	g Marks
		L	T/A	Р		Int	Uni	Int	Uni	Total	Theory	Practical
PCC-FE-202	Fire Service Hydraulics	2	1	-	3	30	70	-	_	100	45	-
ESC-FE-205	Heat and Mass Transfer	3	1	-	4	30	70	2 - -	-	100	45	-
ESC-FE-206	Basic Electronics and Communication	3	1	-	4	30	70	(-	_	100	45	:
PCC-FE-203	Fundamentals of Fire Engineering	3	-	-	3	30	70		-	100	45	-
PCC-FE-204	Structural Fire Protection	3	_	-	3	30	70	-	==2	100	45	-
PCC-FE-202(P)	Fire Service Hydraulics Laboratory	1	-	2	1	=_0	_	25	25	50	0=	25
ESC-FE-205(P)	Heat and Mass Transfer Laboratory	_	-	2	1	E	_	25	25	50	-	25
ESC-FE-206(P)	Basic Electronics and Communication Laboratory	-	-	2	1	-	=	25	25	50	_	25
PCC-FE-205(P)	Fire Ground Operations – IV		2	5	2.5	_	_	25	25	50	-	25
	Total	14	3	11	22.5	150	350	100	100	700		

^{*} L- Lecture, P- Practical, T- Tutorial, A- Activity (Half Credit Per Hour)

Acuf Forkelg -

B.E. SCHEME OF EXAMINATION 2021-22 Scheme of Teaching & Examination of Bachelor of Engineering IV Semester B.E. (Artificial Intelligence& Data Science)

Sr. No.	Course Code	Category	Course Name		ours leek		Credit s	Maximu	m Marks				Minimu Marks	m Passing
								TI	heory	Practica	I	Total		
				L	Т	Р								
								Internal	University	Internal	University		Theory	Practical
1	BEAI&DS401T	Professional core courses	Introduction to AI	3	0	0	3.00	30	70	-	-	100	45	
2	BEAI&DS402T	Professional core courses	Theory of Computation	3	1	0	4.00	30	70	-	-	100	45	
3	BEAI&DS403T	Basic Science Courses	Mathematical Foundation for Data Science	3	0	0	3.00	30	70	-	-	100	45	
4	BEAI&DS404T	Professional core courses	Object Oriented Programming with JAVA	3	0	0	3.00	30	70	-	-	100	45	
5	BEAI&DS404P	Professional core courses	Professional Skills II (Java)	0	0	2	1.00	-	-	25	25	50		25
6	BEAI&DS405T	Professional core courses	Database Management Systems	3	0	0	3.00	30	70			100	45	
7	BEAI&DS405P	Professional core courses	Database Management Systems Lab	0	0	2	1.00	-	-	25	25	50		25
8	BEAI&DS406T	Engineerin g Sciences	Microcontroller & Embedded System	3	1	0	4.00	30	70	-	-	100	45	
9	BEAI&DS406P	Engineerin g Sciences	Microcontroller & Embedded System Lab	0	0	2	1.00	-	-	25	25	50	-	25
10	BEAI&DS407T	Project Work/Internship	Internship	0	0	2	1.00			50		50		
		Total		18	2	8	24.00	180	420	125	75	800		

B.Tech. SCHEME OF EXAMINATION 2021-22 Scheme of Teaching & Examination of Bachelor of Technology IV Semester B.TECH. (Artificial Intelligence)

Sr.	Course Code	Category	Course Name	Но	urs/		Credits	Maxim	um Marks	3			Minimum	Passing
No.			NATION AND ADDRESS OF THE PARTY	W	eek			Th	ieory	Practica		Total	Marks	
				L	Т	P								
								Internal	Universit	Internal	University		Theory	Practical
1	BTECHAI40IT	Professional core courses	Introduction to Artificial Intelligence	3	0	0	3.00	30	70	F	-	100	45	
2	BTECHAI402T	Professional core courses	Theory of Computation	3	1	0	4.00	30	70	-	0	100	45 🕶	
3	BTECHAI403T	Basic Science Courses	Mathematical foundation for Artificial Intelligence	3	0	0	3.00	30	70	_	-	100	45	
4	BTECHAI404T	Professional core courses	Object Oriented Programming with JAVA	3	0	0	3.00	30	70	발	-	100	45	
5	BTECHAI404P	Engineering Sciences	Professional Skills II (Java)	0	0	2	1.00		177	25	25	50		25
6	BTECHAI405T	Professional core courses	Database Management Systems	3	0	0	3.00	30	70			100	45	
7	BTECHAI405P	Professional core courses	Database Management Systems Lab	0	0	2	1.00	-	-	25	25	50		25
8	BTECHAI406T	Engineering Sciences	Microcontroller & Embedded System	3	1	0	4.00	30	70			100	45	•
9	BTECHAI406P	Engineering Sciences	Microcontroller & Embedded System Lab	0	0	2	1.00	(=)	(-1	25	25	50		25
10	BTECHAI407T	Project/ Internship	Internship	0	0	2	1.00			50		50		25
		Total		16	4	8	24.00	180	420	125	75	800		

E & W

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

IV Semester B.Tech. (Robotics & Artificial Intelligence)

Sr.	Course Code	Category	Course Name		urs. 'eek		Credit s		Max	cimum M	arks		Min	imum
No.				L	T	P		Т	heory	Pra	ectical	Total		g Marks
								Internal	University	Internal	University		Theory	Practical
1	BTechRAI401T	Professional core courses	Introduction to AI	3	0	0	3.00	30	70	¥	-	100	45	
2	BTechRAI402T	Professional Core courses	Computer Networks	3	0	0	3.00	30	70		-	100	45	
3	BTechRA1403T	Professional Core courses	Robotics Sensor Technology	3	0	0	3.00	30	70	5	-	100	45	
4	B.TechRAI404T	Professional core courses	Object Oriented Programming	3	0	0	3.00	30	70		7.	100	45	
5	BTechRAI404P	Professional core courses	Object Oriented Programming Lab	0	0	2	1.00	-	-	25	25	50		25
6	BTechRAI405T	Professional core courses	Robot Kinematics	3	0	0	3.00	30	70			100	45	
7	BTechRAI405P	Professional Core courses	Robot Kinematics Lab	0	0	2	1.00	-	10	25	25	50		25
8	BTechRAI406T	Professional Core courses	Intelligent Embedded System	3	1	0	4.00	30	70	(*)		100	45	
9	BTechRAI406P	Professional Core courses	Intelligent Embedded System Lab	0	0	2	1.00	-	-	25	25	50	-	25
10	BTechRAI407P	Project Work/Internship	Internship	0	0	2	1.00			50	277	50		25
	L	Total	1	18	1	8	23.00	180	420	125	75	800		

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

IV Semester B.Tech. (Industrial IOT)

Sr.	Course Code	Category	Course Name	G8008	urs eek	- 4	Credi ts		Max	imum M	arks			imum igMarks
No.				VV				Т	heory	Practical	W	Total		
				L	T	P		Internal	University	Internal	University		Theory	Practical
1	BTechIOT 401T	Professional core courses	Embedded System for IOT	3	0	0	3.00	30	70			100	45	
2	BTechIOT 401P	Professional core courses	Embedded System for IOT	0	0	2	1.00	=	72	25	25	50		25
3	BTechIOT 402T	Professional Core courses	Introduction to Artificial Intelligence	3	0	0	3.00	30	70		-	100	45	
4	BTechIOT 403T	Professional Core courses	Computer Networks	3	0	0	3.00	30	70		5 - 3	100	45	
5	BTechIOT 404T	Professional core courses	Object oriented programming	3	0	0	3.00	30	70	U	-	100	45	
6	BTechIOT404P	Professional core courses	Object oriented programming	0	0	2	1.00	=	-	25	25	50		25
7	BTechIOT 405T	Professional core courses	Database Management Systems	3	0	0	3.00	30	70		1	100	45	
8	BTechIOT 405P	Professional core courses	Database Management Systems Lab	0	0	2	1.00	\(\frac{1}{2}\)		25	25	50		25
9	BTechIOT 406T	Engineering Sciences	Analog and Digital Communication	3	0	0	3.00	30	70	170	i i	100	45	
10	BTechIOT 406P	Engineering Sciences	Analog and Digital Communication lab	0	0	2	1.00	-		25	25	50	-	25
11	BTechIOT 407P	Project Work/Internsh ip	Internship	0	0	2	1.00			50	2550	50		25
		Total		18	(10	23.00	180	420	150	100	850		

B K

Scheme of Teaching & Examination of Bachelor of Technology IV Semester B.TE.CH.(Artificial Intelligence & Machine Learning)

hen	e of Teach	ing & Exami	nation of Bachelo	roft	echno	may a	A CASCELLON		Contract William Contract	Ace in 10	n Mark	(5		Minimu	ni Passing arks	
				way and the same of the		ACMADINATION OF THE PERSON NAMED IN			The second of th	A. D. S.	Prat	nical	Total	Annual Section (Section Section Sectio	Practical	
-		AND DESCRIPTION OF THE PARTY OF		養養4.)	ursiwe	T	Credits	T	heory			University		Theory		
r.N	Course	Category	Course Name	. L.	T	P		Internal	Universi	ity Inti	ernsi	and the second deposit assessed the second	160	45	gipping of the second of the s	
0	BTALEML	Basic Science	Mathematical Foundation for	3	()	0		30	71)			The state of the s	100	45	and the second s	D-C-S
1	4017	Course	AI&ML			10	3	30	711	and the same of th	and the second second second second	AND A CONTRACTOR OF THE PROPERTY AND ADDRESS OF	100	-		
	BTAI&ML	Professional Core Course	Introduction to A1	3	10		-	30	70			A	100	45	and the case of the same	_
3	BTAI&ML 403T	Professional Core Course	Database Management System	7,7	()		3	_30	The second secon		25	25	50	. I	25	
-	BTAI&MI	Professional Core Course	Database Management System	0		0	100	S. Commencer			54 - ³		10	0 4		
1 4	403P	Conc	Lab Theory of				0	30)	70	gerge a district order (s) president de se					
1	BTAI&M	1 Care Course	Computation					3 3	0	70).	The second secon		10 "		
1	BTAI&N 405T	IL Professiona Core Cours	- www.mine Will	And the state of t	S. C.	0	0			nero de sudución propietos esculado	-	2.		50		25
1	6	VII. Profession	al Object Oriente		0	0	2		A. T. C.	*	2	5		-	-	
	7 BTAI&1	C'merc	Java Lab		0							-		100	45	
1	BTAI	ML Profession	nal Micro Controller rse Embedded Sys	and tem	3	A STATE OF THE STA	0	4	30	76		and the second s				
	8 406	Core Cou			ng sincethian — ay anna an Mainte (190	-					The second secon	25	25	50		2 .
	BTAK	ML Profession Core Co	onal Micro Controlle Embedded Sy	stem)	0	0	2	and the second						30		26
	400	p Core c.	Lab						_	and the second s		50		800		
			Internshi	p	0	0	1 2 8	24	180	420	0					
	10 BTA	&ML 7P	otal		18 2000	- Comment	1		1				-	2		

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR SCHEME OF EXAMINATION FOR

FOUR YEAR BACHELOR OF TECHNOLOGY (B. TECH.) DEGREE COURSE

SEMESTER: FOURTH [C.B.C.S]

BRANCH: INFORMATION TECHNOLOGY

				***									Marks			Min
r. o.	Subject Code	Subject		2	kLoad			•	Credit		The	eory	Prac	etical	Total Marks	Passing
0.			Lectur e	Practi cal	Tutorial/ Activity	Total	L	P	T/A	Total	Intern al	Univer sity	Inter nal	Univ.		
	BTIT401T	Discrete Mathematics and Graph Theory	3		1	4	3		1	4	30	70			100	45
	BTIT402T	Data Structure and Program Design	3			3	3	,		3	30	70			100	45
	BTIT402P	Data Structure and Program Design		2		2		1	1	1			25	25	50	25
	BTIT403T	Object Oriented Programming System	3			3	3			3	30	70			100	45
	BTIT403P	Object Oriented Programming System		2		2		1		1 .		10	25	25	50	25
	BTIT404T	Computer Architecture Organization	3			3	3			3	30	70			100	45
	BTIT405T	Introduction to Computer Network	3			3	3			3	30	70			100	45
	BTIT406T	Operating Systems	3			3	3			3	30	70			100	45
	BTIT407P	Software Lab -2		2		2		1		1			25	25	50	25
	BTIT408T	Consumer Affairs (Audit)	2			2										
	BTIT409P	Internship		2		2		1		1			50		50	25
		Total	20	8	1	29	18	4	1	23	180	420	125	75	800	

B.Tech. IV Semester(Computer Technology) Scheme

R.T.M. Nagpur University, Nagpur Four Year B.Tech. Course (Revised Curriculum as per AICTE Model Curriculum)

Code No.	Subject	Teac	hing S	cheme	Eval	uation	Scheme	Credits	Min Passing Marks
	Subject	L	T	P	CA	UE	Total		The state of the s
BTCT401T	Discrete Mathematics and Graph Theory (TH)	3	1	0	30	70	100	4	45
BTCT402T	Social Ethics in Information Technology (TH)	2	0	0	15	35	50	2	23
BTCT403T	Object Oriented Programming using Java (TH)	3	0	0	30	70	100	3	45
BTCT403P	Object Oriented Programming using Java (P)	0	0	2 -	25	25	50	1	25
BTCT404T	Data Structures and Program Design (TH)	3	0	0	30	70	100	3	45
ВТСТ404Р	Data Structures and Program Design(P)	0	0	2	25	25	50	1	25
BTCT405T	Computer Networks (TH)	3	1	0	30	70	100	4	45
ВТСТ406Т	Operating Systems (TH)	3	1	0	30	70	100	4	45
ВТСТ407Р	Computer Workshop-II (PR)	0	0	2	25	25	50	1	25
ЗТСТ408Т	Environmental Science	2	0	0	0	0	0	Audit	23
3TCT409P	Internship	0	0	2	50	i • ii.	50	1	25
	Total	19	03	06	290	460	750	24	

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In Addit Alche

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FOUR YEAR BACHELOR OF TECHNOLOGY (B.Tech.) DEGREE COURSE SEMESTER: 4th (C.B.C.S.)

BRANCH: COMPUTER ENGINEERING

Fourth Semester:-

S N	Subject Code	Subject	Teac	ching S	cheme	Eva	luation	Scheme	Credits	Min Passing
			L	T	P	CA	UE	Total	- Credito	Marks
1	BTCME401T	Discrete Mathematics and Graph Theory	3	1	٠.	30	70	100	4	45
2	BTCME402T	Web Technology	3	-		30	70	100	3	45
3	BTCME403T	Operating System	3		-	30	70	100	3	45
4	BTCME404T	Data Structures	3	1		30	70	100	4	45
5	BTCME405T	Computer Architecture and Organization	3	-		30	70	100	3	45
6	BTCME406T	System Programming	3	-	-	30	70	100	3	45
7	BTCME402P	Web Technology-Lab	-	-	2	25	25	50	1	25
8	BTCME403P	Operating System- Lab	_	-	2	25	25	50	1	25
9	BTCME404P	Data Structure-Lab	-	-	2	25	25	50	1	25
10	BTCME407T	Consumer Affairs	2	- 2		-	-	_	Audit	23
11	BTCME408P	Internship (Min. 4 Weeks)		-	2	50		50	1	25
		Total	20	02	08	305	495	800	24	

L: Lectures T: Tutorial P: Practical

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RTMNU B.TECH. SCHEME OF EXAMINATION 2021-22

Scheme of Teaching & Examination of Bachelor of Technology IV Semester B.Tech. (Computer Science and Engineering)

Sr.	Course Code	Category	Course Name	Hour	s/ W	/eek	Credit s		Max	kimum Mai	rks		Min Pass	ing Marks
No.	coarse coae	Categor,				- 23		Th	eory	Pra	ctical	Total	Theory	Practica
				L	Т	Р								
				5.6				Internal	University	Internal	University			
1	BTECHCSE401 T	Basic sciences	Discrete Mathematics and Graph Theory	3	0	0	3	30	70			100	45	1
2	BTECHCSE402 T	Professional core courses	Data Structure and Program Design	3	1	0	4	30	70	-	= = }	100	45	
3	BTECHCSE402 P	Professional core courses	Data Structure and Program Design Lab	0	0	2	1			25	25	50		25
4	BTECHCSE403 T	Professional core courses	Database Managements Systems	3	0	0	3	30	70	-	-	100	45	
5	BTECHCSE403	Professional core courses	Database Managements Systems Lab	0	0	2	1		-	25	25	50		25
6	BTECHCSE404	Professional core courses	Computer Networks	3	0	0	3	30	70			100	45	
7	BTECHCSE405 T	Professional core courses	Theory of Computation	3	1	0	4	30	70	-	-	100	45	
8	BTECHCSE406 T	Professional core courses	System Programming	3	0	0	3	30	70			100	45	
9	BTECHCSE407	Professional core courses	Computer Workshop-II (Python)	0	0	2	1	-	12-7	25	25	50		25
10	BTECHCSE408	Project-CS	Internship	0	0	2	1	-	-	50	-	50		25
		Total		18	2	8	24	180	420	125	75	800		



PROPOSED SCHEME OF EXAMINATION FOR B. TECH (BIOTECHNOLOGY) FOURTH SEMESTER B. TECH (BIOTECHNOLOGY)

Sr.	Code	Subject	Boa			ad (H				redit	120111	(OLOGY)		larks		Total	Min. %
No.	Theory (T) Practical (P)	Subject	rd	wor		·	ŕ									Marks	Marks Required for passing
				L	P	T	Tot	L	P	T	Total		heory		etical		
							al					College Assess- ment	University	College Assessm- ent	University		
1	BT -BS - 401 T	Cell and molecular biology	BBT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
2	BT-PC - 402 T	Green Biotechnology and Pollution Abetment	BBT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
3	BT -BS - 403 T	Biochemistry Metabolism	BBT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
4	BT -PC - 404 T	Bioinformatics and Computational Biology	BBT	2	0	1	3	2	0	1	3	30	70	-	-	100	45%
5	BT -AU - 405 T	Environmental Science	BBT	2	0	0	2	0	0	0	Audit	50	-	-	-	50	-
6	BT -HS - 406 T	Engineering Economics	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
7	BT -BS - 407 P	Cell and molecular biology Laboratory	BBT	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
8	BT -BS - 408 P	Biochemistry Metabolism Laboratory	BBT	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
9	BT -PC - 409 P	Bioinformatics and Computational Biology Laboratory	BBT	0	2	0	2	0	1	0	1	-	-	25	25	50	50%
		Total		15	8	1	24	13	4	1	18	185	315	75	75	650	

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur Faculty of Engineering & Technology

Course and Examination Scheme Bachelor of Technology-Aeronautical Engineering

IV Semester B. Tech. (CBC

				hing S	cheme				Exan	ination Scho	eme			
Subject	Cubicat		Hours weel	- T. C.				Theory				Practica	l	
Code	Subject	L	Т	P	No. of Credits	Duration of Paper (Hrs)	Max Marks University Assessment	Max Marks College Assessment	Total Marks	Min. Passing Marks	Max Marks University Assessment	Max Marks College Assessment	Total Marks	Min. Passing Marks
BTAE 401T	Manufacturing Process- I	3) <u>+</u>	-	3	03	70	30	100	45	-	Assessment		-
BTAE 401P	Manufacturing Process Lab.		S.	2	1	-	-		2	-	25	25	50	25
BTAE 402T	Aircraft Structure- I	3	1	-	4	03	70	30	100	45	.=	-	*	
BTAE 402P	Aircraft Structure- I	S#88	3 = 3	2	1		124	_	-	-	25	25	50	25
BTAE 403T	Aerodynamics-II	3	.	-	3	03	70	30	100	45		-	-	-
BTAE 403P	Aerodynamics Lab		140	2	1		-				25	25	50	25
-BTAE 404T	Propulsion- I	3	90	14	3	03	70	30	100	45	·*	-	-	161
BTAE 405T	Aircraft Flight Mechanics	3	1	-	4	03	70	30	100	45	-	-	_	120
BTAE 406T	Professional Ethics	2			2	02	35	15	50	25				
BTAE 407P	Mini Project –I: (Internship/Case Study)	-	-	4	2	-		-	•	-	25	25	50	25
BTAE 408T	Environmental Studies	3	2				College as	ssessment in Gra		B,C (Evalua cern subject)	ntion mentioned	n the Syllabus o	f	
	Total	20	2	10	24		385	165	550	-	100	100	200	
S	emester Total		32		24			915	N	Aarks 750				



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RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FACULTY OF SCIENCE & TECHNOLOGY

SCHEME OF EXAMINATION & EVALUATION

B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

SEMESTER: FIFTH

Sr.				rkload Hours	l in		С	redit				Marks				n passing arks
No	Subject Code	Subject		T/	Р	_	Т	Р	Total	The	ory	Prac	ctical	Tot	Theory	Practical
			L	Α	Г		•	Г	TOtal	Int	Uni	Int	Uni	al	THEOLY	riactical
1	BTCVE501T	Hydraulic Engineering	3	0	0	3	0	0	3	30	70			100	45	
2	BTCVE501P	Hydraulic Engineering (Practical)	0	0	2	0	0	1	1			25	25	50		25
3	BTCVE502T	Reinforced Cement Concrete	3	1	0	3	1	0	4	30	70			100	45	
)	BICVEJU21	(RCC) designs	3	I	U	5	ı	U	4	30	70			100	45	
4	BTCVE503T	Civil Engineering Materials,	3	0	0	3	0	0	3	30	70			100	45	
4	B1C VE3031	Testing & Evaluation	3	0	U	5	0	0	า	50	70			100	45	
		Civil Engineering Materials,														
5	BTCVE503P	Testing & Evaluation	0	0	2	0	0	1	1			25	25	50		25
		(Practical)														
6	BTCVE504T	Professional Practice, Law &	3	0	0	3	0	0	3	30	70			100	45	
0	D1C VE3041	Ethics	3	U	U	3	U	0	3	30	70			100	40	
7	BTCVE505T	Elective-I	3	0	0	3	0	0	3	30	70			100	45	
8	BTCVE506T	Elective-II	3	0	0	3	0	0	3	30	70			100	45	
9	BTCVE507P	Industrial Training (Already done in summer vacation after 4 th sem) & Professional Skill Training (Software Applications in Civil Engineering)	0	0	2	0	0	1	1			50	50	100		50
10	BTCVE508AU	Organizational Behavior	2	0	0	0	0	0	0			50	Audit	50		
		TOTAL	20	1	6	18	1	3	22	180	420	150	100	850		

• L- Lecture, P-Practical, T- Tutorial, A- Activity (Half Credit per Hour)



(Dr. A.N. Dabhade)
Ras Member

(Dr. Avinash N Shrikhande,) BOS (Gvill Engg) Chairman

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur

Faculty of Science & Technology

Course and Examination Scheme of Bachelor of Engineering (Mechanical Engineering)

V Semester B. Tech (Mechanical Engineering)

				Teach	ning Sc	heme			1		Exan	ination Sc	heme			
					urs/We					Theory		1		Practice	ıl	
Sr No	Course Code	Category	Course Title	L	Т	P	Credits	Duration of Exam (Hrs)	Max. Marks College Assesment	Max. Marks University Assessment	Total Marks	Min. Passing Marks	Max. Marks College Assesment	Max. Marks University Assessment	Total Marks	Min. Passing Marks
1	BEME501T	Professional core courses	Heat Transfer	3	I	14	4	3	30	70	100	45	117			
2	BEME501P	Professional core courses	Heat Transfer Lab		7-	2	1		-	•	*	*	25	25	50	25
3	ВЕМЕ502Т	Professional core courses	Energy Conversion-1	3	1		4	3	30	70	100	45			*	-
4	ВЕМЕ503Т	Professional core courses	Design of Machine Elements	3	1	-	4	3	30	70	100	45	-		*	-
5	BEME503P	Professional core courses	Design of Machine Elements Lab			2	1		-	921	P&	/#	25	25	50	25
6	BEME504T	Humanities, Social Sciences & Management courses	Industrial Economics and Management	3	*		3	3	30	70	100	45	-		8	-
7	BEME505T	Open Elective Course	Open Elective - I	3	•		3	3	30	70	100	45	-	7,1 -		
8	BEME506P	Project work, seminar and internship in industry or elsewhere	Industrial Visit*	-	741	2	1	-					50		50	25
9	BEME507P	Mandatory Course	Performing Art			3	Audit (0)	Colleg	e Assessment	t in Grades O, A	A, B, C (E)	course)	iidelines men	tioned in the syl	labus of c	oncerned
	1	TOTAL		15	3	9		-	150	350	500	1.4	100	50	150	
		Semester Total			27		21					Marks 65	50			العرا

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

B.TECH. (Electrical Engineering) (CBCS) SCHEME OF EXAMINATION

FIFTH SEMESTER

Board	Subject	Subje	Tea	ching	Scheme					MARKS			The second secon	n Passing arks
	Code	ct					Credit	Theor	y	Practi	cal	70. 4.1	- m	
			L	P	T/A	Tot al		Internal	Uni.	Internal	Uni.	Total	Theory	Practical
EE	BTCHEE5O1T	Microprocessor & Microcontroller	3	-	-	3	3	30	70	(100	45	
EE	BTCHEE5O2T	Control systems	3	1-2	1A	4	4	30	70	-	_	100	45	
EE	BTCHEE5O3T	Power electronics	3	-	1T	4	4	30	70		-	100	45	
EE .	BTCHEE5O4T	Advanced Electrical Power System	3	-	-	3	3	30	70		-	100	45	
EE	BTCHEE5O5T	Professional elective-I	3	-	1.1	3	3	30	70		-	100	45	
EE	BTCHEE5O1P	Microprocessor & Microcontroller lab	1,9	2	7.	2	1	-	-	25	25	50		25
EE	BTCHEE5O2P	Control systems lab	:==	2	-	2	1	-	-	25	25	50		25
EE	BTCHEE5O3P	Power Electronics lab	-	2	-	2	1			25	25	50		25
		Total	15	6	1A+1T	23	20	150	350	75	75	650		

• L- Lecture, P-Practical(Half Credit per Hour), T- Tutorial, A- Activity

Profes	sional Elective-I
1. Electrical M	fachine – II
2. Power Stati	on Practice
3. Electrical Po	ower Utilization

22/7/22 hale)

Dr. 5. M. Kelo)

Dr. J.B. Fulsely

SCHEME OF EXAMINATION FOR B.TECH ELECTRONICS & TELECOMMUNICATION / ELECTRONICS & COMMUNICATION ENGINEERING (SEMESTER – V)

			Teach	ing Schem	9		C	redits				MARKS			Ma	n Passing arks
ode	Subject		1 caci	ing Schem			C	icuits		Yi.e.	Theory	T	heory	Practical	Theory	Practical
		L	P	T/A	Total	L	P	T/A	Total	Internal	Univ.	Internal	Univ.			
EETC 01T	Embedded System Design	2)#:	1 T	3	2	.=	1	3	30	70	12-	-	100	45	
EETC 01P	Embedded System Design Lab	重	2	-	2	-	1	-	1	-	-	25	25	50		25
EETC 02T	Electromagnetic Waves	3	: = %	1T	4	3	-	1	4	30	70	-	12/	100	45	
EETC 03T	Digital Signal Processing	3	-	-	3	3	-		3	30	70	<u>-</u>		100	45	
EETC 03P	Digital Signal Processing Lab	-	2	-	2	=	1	-	1	-	-	25	25	50		25
EETC 04OT	HSC: IEED(Economics)	2		1A	3	2	-	1	3	30	70			100	45	
EETC 05PE	PEC-I	2		1T	3	2	-	1	3	30	70	-	-	100	45	
EETC 06P	Electronic Workshop II	<u>8</u>	2	a a a	2		1	-	1	-	-	25	25	50		25
EETC 507A	Audit Course	2	0	0	2	0	0	0	0		i.	-	5.	Audit Course S/NS**	25) 	
	Total	14	6	3T+1A	24	12	3	4	19	150	350	ن _ه 75	75	650		

udit Course S/NS**: S- Satisfactory / NS - Not Satisfactory

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SCHEME OF EXAMINATION RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FIFTH SEMESTER B. TECH (CHEMICAL ENGINEERING)

	Code			W	ork	Load	Hrs		Cre	edit			Ma	rks			Min. % of
Sr.	Theory (T)	Subject	Board									The	ory	Pract	ical	Total Marks	Marks Required fo
No.	Practical (P)	Subject	Doard	L	p	T	Total	Ľ	Р	T	Total	College Assessment	University	College Assessment	University	Iviaiks	Passing
1	CE-PCC-501T	Heat Transfer	BCE	3	0	1	4	3	0	1	4	30	70	19-8		100	45%
2	CE-PCC-502T	Chemical Reaction Engineering I	BCE	3	0	1	4	3	0	ì	4	30	70		197	100	45%
3	CE-PCC-503T	Mass Transfer II	BCE	4	0	1	5	4	0	1	5	30	70		-	100	45%
4	CE-CEL-504T	Core Elective I	BCE	3	0	0	3	3	0	0	3	30	70		•	100	45%
5	CE-OEL-505T	Open Elective I	BCE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
6	CE-HSMC- HS-506T	HASS III: Industrial Economics & Project Management	BCE	2	0	0	2	2	0	0	2	15	35	-		50	45%
7	CE-PCC-507P	Chemical Reaction Engineering Lab	BCE	0	3	0	3	0	1.5	0	1.5	20	*	25	25	50	50%
8	CE-PCC-508P	Mass Transfer Lab	BCE	0	3	0	3	0	1.5	0	1.5			25	25	50	50%
9	CE-PCC-509P	Heat Transfer Lab	BCE	0	3	0	3	0	1.5	Ó	1.5		-	25	25	50	50%
10	MC MC	Constitution of India/ Essence of Indian Traditional Knowledge		2	0	0	2	0	0	0	0			12	~	23#2	Audit Course S/SF**
		Total		20	9	3	32	18	4.5	3	25.5	165	385	75	75	700	

** S/SF Grade for Audit Course S – Satisfactory or SF – Not Satisfactory

		Subject Name	
Elective		BOARD	
Licotive		BCE	
Core Elective	Statistical Design of Experiments	Non-Newtonian Flow and Rheology	Chemical Process Synthesis and Design
Open Elective I	Environmental Pollution and Control	Renewable Energy	Energy Conservation and Recycling



SCHEME OF EXAMINATION RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FIFTH SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

	Code			1	Vork	Load	Hrs		C	redit			Ma	ırks			Min. % of
Sr.	Theory (T)	Subject	Board					1				The	ory	Pract	ical		Marks
No.	Practical (P)	Subject	Board	L	Р	Т	Total	L	Р	Т	Total	College Assessment	University	College Assessment	University	Total Marks	Required for Passing
31	CT-PCC-501T	Heat Transfer	BCE	3	0	1	4	3	0	1	4	30	70	-	- 4	100	45%
2	CT-PCC-502T	Chemical Reaction Engineering I	BCE	3	0	1	4	3	0	1	4	30	70	#1	186	100	45%
3	CT-PCC-503T	Mass Transfer I	BCE	3	0	0	3	3	0	0	3	30	70		874	100	45%
4	CT-CS-504T	*Special Technology II	BCHT	3	0	0	3	3	0	0	3	30	70	20	- 3	100	45%
- 5	CT-OEL-505T	Open Elective I	BCE	3	0	0	3	3	0	0	3	30	70	-	1.00	100	45%
6	CT-HSMC- HS-506T	HASS III Industrial Economics & Project Management	BCE	2	0	0	2	2	0	0	2	15	35	-		50	45%
7	CT-PCC-507P	Chemical Reaction Engineering I Lab	BCE	0	3	0	3	0	1.5	0	1.5	(/2)		25	25	50	50%
8	CT-CS-506P	*Special Technology I Lab	BCHT	0	3	0	3	0	1.5	0	1.5	7.0	(*)	25	25	50	50%
9	CT-PCC-509P	Heat Transfer Lab	BCE	0	3	0	3	0	1,5	0	1.5		(72)	25	25	50	50%
10	MC	Constitution of India/ Essence of Indian Traditional Knowledge		2	0	0	2	0	0	0	0		•	-			Audit Course S/SF**
		Total		19	9	2	30	17	4.5	2	23.5	165	385	75	75	700	The risk of

^{**} S/SF Grade for Audit Course S - Satisfactory or SF - Not Satisfactory

		Su	bject Name	
Elective			BOARD	
			BCE	
Open Elective I	Environmental Pollution and Control	Renewable Energy	Ener	gy Conservation and Recycling

^{*}Food Technology, *Oil Technology, *Petrochemical Technology, *Pulp and Paper Technology,

^{*}Plastic and Polymer Technology, *Surface Coating Technology

Semester - V (Third Year)

Branch: Fire Engineering

Fifth Semester:

			rk Load Hours)	d			N	1arks				imum
Subject Code	Subjects	T.	TP / A	D	Credits	The	ory	Practi	ical	T-4-1	Passin	g Marks
		L	T/A	Р		Int	Uni	Int	Uni	Total	Theory	Practical
PCC-FE-301	Fire Dynamics	2	1	-	3	30	70	-	-	100	45	
ESC-FE-301	Automobile Engineering	3	-	1 -	3	30	70	-	(m)	100	45	-
ESC-FE-302	Instrumentation and Control	2	1	2-	3	30	70	-	-	100	45	-
PCC-FE-302	Fire Protection	2	1	-	3	30	70	-	-	100	45	-
HSMC-FE-301	Fundamentals of Management	3	-	1-	3	30	70	-	-	100	45	-
PCC-FE-303	Fire Laws	2	_	See	2	30	70	-	-	100	45	_
PCC-FE-301 (P)	Fire Dynamics Laboratory	-		2	1	-	_	25	25	50	-	25
ESC-FE-301 (P)	Automobile Engineering Laboratory	10-3	-	2	1		-	25	25	50		25
ESC-FE-302 (P)	Instrumentation and Control Laboratory	-	_	2	1	-	-	25	25	50	_	25
PCC-FE-304 (P)	Fire Ground Operations – V	_	=	5	2.5	_	-	25	25	50	_	25
	Total	14	3	11	22.5	180	420	100	100	800		

^{*} L- Lecture, P- Practical , T- Tutorial, A- Activity (Half Credit Per Hour)

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B.TECH SCHEME OF EXAMINATION 2021-22 Scheme of Teaching & Examination of Bachelor of Technology V Semester B.TECH(Artificial Intelligence & Data Science)

Sr. No.	Course Code	Category	Course Name		urs, eek		Credits	Maximu	ım Marks				Minimu Marks	m Passing
								Т	heory	Practical		Total		
				L	Т	Р								
								Internal	University	Internal	Jniversity		Theory	Practical
1	BTECH_AI&DS- 501T	Professional core courses	Data Mining	3	0	0	3.00	30	70			100	45	
2	BTECH_AI&DS- 502T	Professional core courses	Design and Analysis of Algorithms	3	0	0	3.00	30	70	2		100	45	
3	BTECH_AI&DS- 502P	Professional core courses	Design and Analysis of Algorithms lab	0	0	2	1.00			25	25	50	45	25
4	BTECH_AI&DS- 503T	Professional core courses	Machine Learning Techniques	3	0	0	3.00	30	70	-	SER.	100	45	
5	BTECH_AI&DS- 504T	Engineering Sciences	Internet of Things and its Application	3	0	0	3.00	30	70	-	-	100	45	
6	BTECH_AI&DS- 504P	Engineering Sciences	Internet of Things -Lab	0	0	2	1.00	-	-	25	25	50		25
7	BTECH_AI&DS- 505T	Professional Elective Course	Elective- I	3	0	0	3.00	30	70			100	45	
8	BTECH_AI&DS- 506P	Professional core courses	Professional Skills-III	0	0	2	1.00			25	25	50	45	25
9	BTECH_AI&DS- 507T	HSMC	Effective Technical Communication	2	0	0	2.00	15	35			50	23	
	******************************	Total	<u> </u>	17	0	6	20	165	385	75	75	700		

Elective I- 1. NoSQL 2. Information Security 3. Wireless Communication Technologies 4. ARM Processor & its Essentials

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B.Tech. SCHEME OF EXAMINATION 2021-22

Scheme of Teaching & Examination of Bachelor of Technology V Semester B.Tech. (Artificial Intelligence)

	Course Code	Course Code Category Course Name					Credit	Maxim	um Marks			120		ım Passing
No.				We	ek		s	Theory		Practi	cal	Total	Marks	
				L	T	P								
								Internal	University	Intern	al University		Theory P	ractical
1	BTECHAI501 T	Professional core courses	Computer Communication Network	3	0	0	3.00	30	70			50	45	
2	BTECHAI502 T	Professional core courses	Design and Amarysis of	4	0	0	4.00	30	70	-8	-	100	45	
3	BTECHAI502 P		Design and Analysis of Algorithms lab	0	0	2	1.00			25	25	100	45	25
4	BTECHAI503 T	Professional core courses		3	0	0	3.00	30	70	-	-	100	45	
5	BTECHAI503 P	COURT SEE SEE STREET SEE STREET SEE SEE SEE SEE	Machine Learning Techniques Lab	0	0	2	1.00			25	25	100	45	25
6	BTECHAI504 T	Engineering Sciences	Internet of Things and Robotics	3	0	0	3.00	30	70	-	-	100	45	
7	BTECHAI504 P	Engineering Sciences	Internet of Things and Robotics Lab	0	0	2	1.00	-	-	25	25	50		25
8	BTECHAI505 T	Professional Elective Course	Elective- I	3	0	0	3.00	30	70			100	45	
9	BTECHAI506 P	HSMC	Organizational Behaviour	2	0	О	Audit			College	assessment in g	rades O, A.	B,C	
Tota	ıl			18	0	8	19	150	350	75	75	650		T

Elective I- 1. NoSQL 2. Information Security 3. Wireless Communication Technologies 4. ARM Processor & its Essentials

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

V Semester B.Tech. (Robotics & Artificial Intelligence)

Sr. No.	Course Code	Category	Course Name	4	ours Veel		Credi ts		Max	imum M	arks			imum g Marks
20 1000.95				L	Т	P		TI	heory	Pra	actical	Total		
								Internal	University	Internal	University		Theory	Practica
1	BTechRAI501T	Professional Core courses	Robot Dynamics	3	0	0	3.00	30	70			100	45	
2	BTechRAI501P	Professional core courses	Robot Dynamics	0	0	2	1.00			25	25	50	45	25
3	BTechRAI502T	Professional Core courses	Machine Learning Algorithms	3	1	0	4.00	30	70	-	-	100	45	
4	BTechRAI502P	Professional core courses	Machine Learning Algorithms lab	0	0	2	1.00			25	25	50	45	25
6	BTechRAI503T	Professional core courses	Robotic Drive System	3	0	0	3.00	30	70		-	100	45	
7	BTechRAI504T	Engineering Sciences	Internet of Things and its Application	3	0	0	3.00	30	70			100	45	
8	BTechRAI504P	Engineering Sciences	Internet of Things and its Application	C	0	2	1.00	-	-	25	25	50		25
9	BTechRAI505T	Professional Elective Course	Elective-I	3	0	0	3.00	30	70			100	45	
10	BTechRAI506T	HSMC	Effective Technical Communication	2	2 0	0	2.00	15	35			50	23	
	Total			17	1		6 21	165	385	75	75	700		

ElectiveI-1. Field and Service Robotics 2. Information Security 3. Wireless Communication Technologies 4. ARM Processor & its Essentials 5. Drone & Automation System

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

V Semester B.Tech . (Industrial IOT)

Sr.	Course Code	Category	Course Name	- Committee	ours eek		Credits		Ma	ximum N	Marks		2500277330	imum igMarks
No.					100 - 10			n	Theory	Practica	ı	Total		
				L	T	P		Internal	University	Internal	University		Theory	Practical
1	BTechIOT501T	Professional core courses	IOT Architecture & Protocols	3	0	0	3.00	30	70			100	45	
2	BTechIOT501P	Professional core courses	IOT Architecture & Protocols Lab	0	0	2	1.00			25	25	50		25
3	BTechIOT502T	Professional Core courses	Machine Learning	3	0	0	3.00	30	70	-	-	100	45	
4	BTechIOT502P	Professional core courses	Machine LearningLab	0	0	2	1.00			25	25	50	45	25
5	BTechIOT503T	Professional core courses	Cloud & FOG Computing	3	0	0	3.00	30	70	14.	-	100	45	
6	BTechIOT504T	Professional Core course	Advanced Signal Processing	3	1	0	4.00	30	70		-	100	45	
7	BTechIOT504P	Professional Core course	Advanced Signal Processing Lab	0	0	2	1.00	-	-	25	25	50		25
8	BTechIOT505T	Professional Elective Course	Elective- I	3	0	0	3.00	30	70			100	45	
9	BTechIOT506T	HSMC	Effective Technical Communication	2	0	0	2.00	15	35			50	23	
		Total	Li como de la como de	17	1	6	21	165	385	75	75	700		

Elective I- 1. Computer Graphics for Virtual Reality 2. Data Visualisation

3. Wireless Communication Technologies 4. Industrial & Medical IOT

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Scheme of Teaching & Examination of Bachelor of Engineering V Semester B.Tech. (Artificial Intelligence& Machine Learning)

Sr.	Course Code	Category	Course Name	Sec. 10.	Hou	rs	Credits	Maximum	Marks				Minimur	n Passing
No.				/We	eek			Th	eory	Practical		Total	Marks	
				L	Т	P								
								Internal	University	Internal	University		Theory	Practica
1	BTAI&ML501T	Professional core courses	Computer Communication Networks	3	0	0	3	30	70			100	45	
2	BTAI&ML502T	Professional core courses	Data Analytics & Machine Learning	3	0	0	3	30	70	-	-	100	45	
3	BTAI&ML502P	Professional core courses	Data Analytics & Machine Learning Lab	0	0	2	1			25	25	50		25
4	BTAI&ML503T	Professional core courses	Design and Analysis of Algorithms	3	0	0	3	30	70	-		100	45	
5	BTAI&ML503P	Professional core courses	Design and Analysis of Algorithms Lab		0	2	1			25	25	50		25
6	BTAI&ML504T	Professional core courses	Internet of Things & Cloud Computing	3	0	0	3	30	70	-	•	100	45	
7	BTAI&ML504P	Professional core courses	Internet of Things & Cloud Computing	0	0	2	1			25	25	50		25
8	BTAI&ML505T	Professional Elective		3	0	0	3	30	70			100	45	
9	BTAI&ML506T	HSMC	Efective Technical Communication	2	0	0	2	15	35			50	23	
		Total		17	0	6	20	165	385	75	75	700		

Elective-1:

ARM Processors and its Essentials , Distributed Computing , Robotics, Web and Social Media Analytics

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FOUR YEAR BACHELOR OF TECHNOLOGY (B. TECH.) DEGREE COURSE SCHEME OF EXAMINATION FOR

BRANCH: INFORMATION TECHNOLOGY SEMESTER: FIFTH [C.B.C.S]

		S	EMEST	EIX. III	TH [C.B.	111/21	A Print I	Marks				Total	Min	
Sr.	Subject			Work ad	do			Theory		Practical		Mark s	Marks	
lo.	Code	Subject				Total	Credits	Interna	Unive	Interna	U			
	Cour	Te supplied to the supplied to	Lecture 3	Prac ti cal	Tutori al/ Activi ty	3	Crouns	1	rsity	ı	ni v.		0 45	
							3	30	70			10	0 43	
	BTIT501T	Software Engineering &								25	25	50	25	
		Project Management		2		2				25	23			
2	BTIT501P	Software Engineering & Project Management			1	3	3	30	70			10	0 45	
3	BTIT502T	Design and Analysis of	2		1			30	70			10	00 45	
		Algorithms JAVA Programming	3			3	3	30					25	
4	BTIT503T	JAVA Flogramming				1 2	1			25	25	5 50	0 25	
<i>E</i>	BTIT503P	JAVA Programming Lab		2		2	1					1	00 45	
5	B1113031		2		1	3	3	30	70				00	
6	BTIT504T	Theory of Computation	2			-	3	30	70			1	00 45	
2500	DEMES OF T	Elective- I	3			3	3	30	,,,,		2	5 5	50 25	
7	BTIT505T			2		2	1			25	2	.5		
8	BTIT506P	Software Lab (Basics of AR & VR / Web Technology)				2	2	15	35				50 23	
9	BTIT507T	Effective Technical	2			2								
7		Communication	2										C#0	
10	BTIT508T	Yoga & Meditation (Audit)			6 2	25	5 20	100	40	0 75		75	650	
		Total	17	0	0 2	2.								

Elective -I (BTIT505T)

- 1. Gaming Architecture & Programming (BTIT505T.1)
- 2 High Performance Computer Architecture (BTIT505T.2)



R.T.M. Nagpur University, Nagpur Four Year B.TECH. Course (Revised Curriculum as per AICTE Model Curriculum)

B.TECH. V Semester(Computer Technology) Scheme

200	centificate trible acceptaged to dark to the	Teac	ching Sch	eme	Eva	aluation Scheme		Credits	Min	
Code.	Subject	L	T	P	CA	UE	Total	Credits	Passing	
BTCT501T	Design and Analysis of Algorithms (TH)	3	0	0	30	70	100	3	45	
BTCT501P	Design and Analysis of Algorithms Lab (PR)	0	0	2	25	25	50	1	25	
ВТСТ502Т	Database Management System(TH)		0	0	30	70	100	3	45	
ВТСТ502Р	Database Management System(PR)	0	0	2	25	25	50	1	25	
ВТСТ503Т	Software Engineering and Project Management (TH)	3	0	0	30	70	100	3	45	
BTCT504T	Effective Technical Communication (TH)	2	0	0	30	70	100	2	45	
BTCT505T	Artificial Intelligence (TH)	3	0	0	30	70	100	3	45	
BTCT506T	Elective -1	3	0	0	30	70	100	3	45	
BTCT507T	Professional Ethics (Audit Course)	2	0	0	0	0	0	0	Audit	
	Total	17	5	6	175	475	650	19		

Elective – I : BTCT506T BTCT506T.1 TCP/IP

BTCT506T.2 Computer Graphics

BTCT506T.3 System Software & Device Drivers

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FOUR YEAR BACHELOR OF TECHNOLOGY (B.Tech.) DEGREE COURSE SEMESTER: 5th (C.B.C.S.)

BRANCH: COMPUTER ENGINEERING

Fifth Semester:-

S. N.	Subject Code	Subject	1	eachi Schem	-	F	Sche		Credits	Min	
14.			L	T	P	CA	UE	Total		Passing 45	
1	BTCME501T	Database Management System	3	1	-	30	70	100	4		
2	BTCME502T	Computer Graphics	3	-	_	30	70	100	3	45	
3	BTCME503T Java Programming		3	-	<u>#</u>	30	70	100	3	45	
4	BTCME504T	Γ Elective-I			-	30	70	100	3	45	
5	BTCME501P	Database Management System - Lab	-	158	2	25	25	50	1	25	
6	BTCME502P	Computer Graphics – Lab		-	2	25	25	50	1	25	
7	BTCME503P	Java Programming -Lab	-		2	25	25	50	1	25	
8	BTCME505T Humanities - II Effective Technical Communication		2	1	-	15	35	50	3	23	
9	BTCME506T	Yoga & Meditation	-	-	2	-	-	-	Audit		
10		Total	14	02	08			600	19		

Elective-I:

1. Microcontrollers & Applications,

Artificial Intelligence,
 Software Engineering

RTMNU B.TECH. SCHEME OF EXAMINATION 2021-22

Scheme of Teaching & Examination of Bachelor of Technology V Semester B.Tech. (Computer Science and Engineering)

S. N.	Course Code	Category	Subject	Hours/ Week		23	Credit		Ma	Min Passing Marks				
						<	s	Theory		Practical		Total	Theory	Practical
					L	Т	P		Internal	Universit y	Internal	Universit y		
1	BTECHCSE501 T	Professional core courses	Artificial Intelligence	3	1	•	4	30	70	· -		100	45	
2	BTECHCSE502 T	Professional core courses	Software Engineering & Project Management	3	-	-	3	30	70	e=	-	100	45	
3	BTECHCSE503 T	Humanities Social and Management Courses	Effective Technical Communication	2.		•	2	15	35	5) 🖝	-	50	23	-
4	BTECHCSE504 T	Professional core courses	Design & Analysis of Algorithms	3	1	-	4	30	70	79	-	100	45	
5	BTECHCSE505 T	Professional core courses	Elective-I	3	-	-	3	30	70	-	-	100	45	
6	BTECHCSE501 P	Professional core courses	Artificial Intelligence - Lab	8,5	7	2	1		•	25	25	50	-	25
7	BTECHCSE504	Professional core courses	Design & Analysis of Algorithms –Lab	3	-	2	1		12	25	25	50	-	25
8	BTECHCSE506 P	Professional core courses	Professional Skill Lab -1	2	=	2	1	-	-	25	25	50	-	25
10	BTECHCSE507 T	Mandatory Course	Yoga & Meditation (Audit Course)	2	-	-	Audit		-	-	-	-	-	-
			Total	16	2	06	19	135	315	75	75	600		

Elective-I: 1. TCP/IP

2. Design Patterns

3. Data Warehousing & Mining



PROPOSED SCHEME OF EXAMINATION FOR B. TECH (BIOTECHNOLOGY) FIFTH SEMESTER B. TECH (BIOTECHNOLOGY)

Sr. No	Code Theory (T) Practical (P)	Subject	Boar d			k Loa ours)			Cı	redit		,	M	arks		Total Marks	Min. % Marks Required for passing
	(2)			L	P	Т	Tot al	L	P	Т	Total	The College Assessme nt	Universit y	Prac College Assessment	tical University		
1	BT -HS - 501 T	Entrepreneurship and Startups	BGE	1	0	1	2	1	0	1	2	15	35	-	-	50	45%
2	BT -PC - 502 T	Immunology & Immunotechnology	BBT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
3	BT -PC - 503 T	Genetic Engineering and rDNA Technology	BBT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
4	BT -PC - 504 T	Fluid Mechanics and Solid Handling	BBT	2	0	1	3	2	0	1	3	30	70	-	-	100	45%
5	BT -PE - 505 T	Professional Elective-I	BBT	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
6	BT -OS - 506 T	Open Subject-I	BBT	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
7	BT -AU - 507 T	Indian Constitution	BGE	2	0	0	2	0	0	0	Audit	50	-	-	-	50	-
8	BT -PC - 504 T	Immunology & Immunotechnology Laboratory	BBT	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
9	BT -PC - 504 T	Genetics & rDNA Technology Laboratory	BBT	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
		Total		17	6	4	27	16	3	4	22	160	440	50	50	700	

Professional Elective-I

	List of available courses under Professional Elective – I
S. No.	Course
1	Big Data Analytics
2	Advanced Bioprocess Control
3	Biosimilars Technology

Open Subject-I

	List of available courses under Open Subject – I
S. No.	Course Title
1	3D Printing & Design
2	Internet of Things
3	Cheminformatics & Medicinal Chemistry
4	Biomaterials
5	Green Economy and Sustinablity

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur Faculty of Engineering & Technology Course and Examination Scheme of Bachelor of Technology-Aeronautical Engineering V Semester B. Tech. (CBCS)

	²			hing So	heme				Exan	aination Scho	eme			
Subject	Subject	,	lours week		NI. C	a a		Theory				Practical		
Code	Subject	L	Т	P	No. of Credits	Duration of Paper (Hrs)	Max Marks University Assessment	Max Marks College Assessment	Total Marks	Min. Passing Marks	Max Marks University Assessment	Max Marks College Assessment	Total Marks	Min. Passing
BTAE 501T	Propulsion- II	3		.=0	3	03	70	30	100	45	-	- Assessment	_	Marks -
BTAE 501P	Propulsion- II Lab	-	*	2	1				-		25	25	50	25
BTAE 502T	Aircraft System & Instrumentation	3	25	-	3	03	70	30	100	45	-	-	2	-
BTAE 502P	Aircraft Systems & Instrumentation Lab	(12)	S-45	2	1	-		.	-		25	25	50	25
BTAE 503T	Aircraft Structure- II	3	ï	-	4	03	70	30	100	45				
BTAE 503P	Aircraft Structure- II Lab		-	2	1	-	184				25	25	50	25
BTAE 504T(OE)	Open Elective-I	3		-	3	03	70	30	100	45	H	7	-	
BTAE 505T(E)	Elective-I	3	-	8/	3	03	70	30	100	45	-	-	(#)	
BTAE 506T	Introduction to Aeromodelling	2	-	5	70	Col	lege assessment	in Grades as O,	A,B,C (Eva	luation ment	tioned in the Sylla	abus of concerne	ed subject)	
	Total	17	1	6	19	3 2 3	350	150	500		75	75	150	_
S	Semester Total		24		19					Marks 650	10	13	130	

	Open Elective-I		Elective-I
Course Code	Course Name	Course Code	Course Name
BTAE 504T(OE) - 1	Intellectual Property Rights	BTAE 505T(E) -1	Heat and Mass Transfer
BTAE 504T(OE) - 2	Gender Sensitization	BTAE 505T(E) -2	Smart materials and Introduction to composites
BTAE 504T(OE) - 3	Organizational Behavior and Entrepreneurship Development	BTAE 505T(E) -3	
BTAE 504T(OE) - 4	Industrial Economics and Management	BTAE 505T(E) -4	



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RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FACULTY OF SCIENCE & TECHNOLOGY

SCHEME OF EXAMINATION & EVALUATION

B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

SEMESTER: SIXTH

Sr.	Subject	6.1.	Wo	orkload Hours	in		C	redit				Marks				n passing arks
No	Code	Subject		Τ/Α	Р		т	P	Total	The	eory	Prac	tical	Total	Theone	Dunation
			L	T/A		L	•		Total	Int	Uni	Int	Uni	Total	Theory	Practical
1	BTCVE601T	Estimating & Costing	3	1	0	3	1	0	4	30	70			100	45	
2	BTCVE601P	Estimating & Costing (Practical)	0	0	2	0	0	1	1	1	-	25	25	50	-	25
3	BTCVE602T	Construction Engineering & Management	2	1	0	2	1	0	3	30	70			100	45	
4	BTCVE603T	Water Resource Engineering	3	0	0	3	0	0	3	30	70			100	45	
5	BTCVE604T	Elective-III	3	0	0	3	0	0	3	30	70			100	45	
6	BTCVE605T	Open Elective-I	3	0	0	3	0	0	3	30	70			100	45	
7	BTCVE606P	Computer Aided Civil Engineering Drawing (Practical)	0	0	2	0	0	1	1	1		50	50	100	-	50
		TOTAL	14	2	4	14	2	2	18	150	350	75	75	650		

• L- Lecture, P-Practical, T- Tutorial, A- Activity (Half Credit per Hour)

Note: In summer vacation after 6^{th} Semester, student have to complete 3 to 4 weeks industrial / Government / NGO / MSME / Rural Internship / Innovation / Entrepreneurship training. In the beginning of 7^{th} semester, student have to submit detailed report of summer vacation training to department.

(Dr. A.N. Dabhade)
Ross Member

Center G. Picrole

(Dr. Avinash N Shrikhande,) BOS (Girlf Engg) Chairman

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur

Faculty of Science & Technology

Course and Examination Scheme of Bachelor of Engineering (Mechanical Engineering)

VI Semester B. Tech. (Mechanical Engineering)

				Tanch	ing Sch	ome	Credits	114			Exam	ination Sc	heme			
			1933		ing Sci irs/We					Theory		330		Practica	d	
r No	Course Code	Category	Course Title	L	T	P		Duration of Exam (Hrs)	Max. Marks College Assesment	Max. Marks University Assessment	Total Marks	Min. Passing Marks	Max. Marks College Assesment	Max. Marks University Assessment	Total Marks	Min. Passing Marks
1	BEME601T	Professional core	Automation in Production	3	1		4	3	30	70	100	45	4	-	-	
2	BEME601P	Professional core	Automation in Production Lab		li-	2	L	~			*	-	25	25	50	25
3	BEME602T	Professional core courses	Energy Conversion-II	3	1	3	4	3	30	70	100	45	*	-	*	25
4	ВЕМЕ602Р	Professional core courses	Energy Conversion Lab			2	1		*	11 0,8 11		1	25	25	50	
5	ВЕМЕ603Т	Professional core courses	Dynamics of Machines	3	1	-	4	3	30	70	100	45		*	50	25
6	BEME603P	Professional core courses	Dynamics of Machines Lab		-	2	1				-	14	25	25		23
7	BEME604T	Professional Elective courses	Elective - I	3	4.7	9	3	3	30	70	100	45	*	-	1 1	
8	BEME605T	Professional Elective courses	Elective - II	3	2	-	3	3	30	70	100	45	*		-	
1 9	BEME606P	Project work, seminar and internship in industry or elsewhere	Skill Development*			4	2	-	-			+	50		50	25
10	BEME607P	Project work, seminar and internship in industry or elsewhere	Summer Internship**		ring Su Vacati		Audit (0)							-	* D-L	Concarna
11	BEME608P	Mandatory Course	Environment Science		-	2	Audit (0)	Colleg	e Assessmen	t in Grades O,	A, B, C (E	course)	ntioned in the s	1	
- 110		TOTAL		15	3	13	-		150	350	500		125	75	200	*
		Semester Total			31		23					Marks 7	00			

Chairman Emply

Wellands Emply

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR B.TECH. (Electrical Engineering) (CBCS) SCHEME OF EXAMINATION

SIXTH SEMESTER

Board	Subject Code	Subject	1	Геас	hing Scher	ne				MARKS			100	m Passing arks
				1			Credit	Theor	y	Practic	cal	-		
			L	P	T/A	Total		Internal	Uni.	Internal	Uni.	Total	Theory	Practical
GS	BTCHEE6O1T	Engineering Economics & Management	3	-	-	3	3	30	70	-	-	100	45	
EE	BTCHEE6O2T	Computer Applications in power system	3	-	1T	4	4	30	70	_		100	45	714
EE	BTCHEE6O3T	Switch gear & protection	3	740	1T	4	4	30	70				/	
	BTCHEE6O4T	Open electives-I	3	-	-	3	3		70	-	•	100	45	
EE	BTCHEE6O5T	Professional elective-II	3	-		3	-	30	70	7	-	100	45	
	BTCHEE6O6T	Yoga & Meditation	-	2		220	3	30	70	/=	-	100	45	
***		Computer Applications in		- 4	-	2	Audit	843	-	25*	-	25*		
EE	BTCHEE6O2P	power system lab	-	2	-	2	1	:-	-	25	25	50		25
EE	BTCHEE6O3P	Switch gear & protection lab	-	2	-	2	1			2.5				an.o.o
EE	BTCHEE6O7P	Internship 3 to 4 weeks (After 4th	-	_	2A		2	-	-	25	25	50		25
		or 5 th semester break) / Mini Project			ZA	2	2		-	50	-	50		
		Total al(Half Credit per Hour) T- Tut	15	6	2A+2T	25	21	150	350	100	50	650		

ctical(Half Credit per Hour), T-Tutorial, A-Activity, * indicates noncredit subject

Open Electives -I	Professional Elective-II
PLC and SCADA systems	Advanced control System
2. Solar PV Systems	Optimization Technique
3. Organizational behavior	Spaniazatori recrinique Blectric Drives and their control
4. Numerical Mathematics & Probability using MATLAB	4

• Internship:- a) Student shall be allowed to undergo internship after 4th or 5th semester break

Internal marks for internship of VI th semester may be awarded after successful completion of internship

50 internal marks for internship shall be given as-

i) 25 marks based on detailed report about internship along with certificate provided by company/industry

ii) 25 marks based on presentation by student about what he/she learned during internship

SCHEME OF EXAMINATION FOR

B.TECH ELECTRONICS & TELECOMMUNICATION / ELECTRONICS & COMMUNICATION ENGINEERING (SEMESTER - VI)

			Teaching	Scheme		C	redit	MESTER			MARKS			Minimum Mar	ks
ode Subject			1 outling	Sometime			*****		Theo	ry	Prac	ctical	Total	Theory	Practical
_	L	P	T/A	Total	L	P	T/A	Total	Internal	Univ.	Internal	Univ.	Marks		
ETC- Computer 1T Communication Netwo	ork 2	•	e e	2	2	-	-	2	30	70	-	(#)	100	45	
Computer Communication Netwo	ork -	2	-	2	(=):	1	-	Ì		□	25	25	50	5	25
ETC- Internet of Things (IO	Γ) 2	-	-	2	2) 		2	30	70	3=	.=	100	45	
ETC- 1OT Lab	-	2	-	2	-	1		1	-	-	25	25	50		25
ETC- Wireless Sensor Netwo	rk 2	-	H 0	2	2	-	-	2	30	70	-	-	100	45	
ETC-Wireless Sensor Netwo	rk -	2	14 9	2		1	-	1	-	-	25	25	50		25
ETC- 4PE PEC-II	2	-	1T	3	2	() <u>-</u>	1	3	30	70		-	100	45	
ETC- SOE OE-I	2	-	1A	3	2	a m a	1	3	30	70		1 0 2)	100	45	
ETC- HSC: Effective Technology Communication	ical _		3A	3		72	3	3	-	-	50		50	23	
ETC- 07I Mini Project(Internshi	p) -		3A	3		N=:	3	3	-	-	25	25	50		25
ETC- 08A Audit Course	2	0	0	2	0	0	0	0	-	-	-		Audit Course S/NS**		
Total	12	6	1T+7A	26	10	3	8	21	150	350	150	100	750		

Audit Course S/NS**: S- Satisfactory / NS - Not Satisfactory

SCHEME OF EXAMINATION RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR SIXTH SEMESTER B. TECH (CHEMICAL ENGINEERING)

	Code			V	Vork	Loa	d Hrs		C	redit			Ma	arks			Min. % of
Sr. No.	Theory (T)	Subject	Board									The	ory	Prac	tical		Marks Required
	Practical (P)			L	р	Т	Total	L	Р	Т	Total	College Assessment	University	College Assessment	University	Total Marks	for
1	CE-PCC-601T	Chemical Reaction Engineering II	BCE	3	0	1	4	3	0	1	4	30	70	-	-	100	Passing 45%
2	CE-PCC-602T	Process Equipment Design	BCE	3	0	1	4	3	0	1	4	30	70			100	45%
3	CE-PCC-603T	Process Dynamics & Control	BCE	3	0	1	4	3	0	1	4	30	70			100	45%
4	CE-CEE-604T	Core Elective- II	BCE	3	0	0	3	3	0	0	3	30	70	2	7 2 7 7	100	45%
5	CE-OLE-605T	Open Elective-11	BCE	3	0	0	3	3	0	0	3	30	70	-		100	45%
6	CE- HSMC- HS -606T	HASS IV Industrial organization & Entrepreneurship Development	BCE	2	0	0	2	2	0	0	2	15	35		12	50	45%
7	CE-PCC-607P	Chemical Reaction Engineering II Lah	BCE	0	3	0	3	0	1.5	0	1.5	III a III		25	25	50	50%
8	CE-PCC-608P	Process Equipment Design & Drawing Lab	BCE	0	3	0	3	0	1.5	0	1.5	T- a	-	25	25	50	50%
9	CE-PCC-609P	Process Dynamics & Control Lab	BCE	0	3	0	3	0	1.5	0	1,5			25	25	50	50%
10	CE-PCC-610P	Summer Internship (3-4 weeks) (to be evaluated in seventh semester)	ВСЕ	0	0	0	0	0	0	0	0	.			-		
		Total		17	9	3	29	17	4.5	3	24.5	165	385	75	75	700	

		Subject Name	
Elective		BOARD	
		BCE	
Core Elective II	Advanced Separation Processes	Computational Fluid Dynamics	Process Intensification
Open Elective II	Polymer Science and Engineering	Chemical Processing for Microelectronics	Membrane Technology



SCHEME OF EXAMINATION RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR SIXTH SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

	Code			V	Vork	Load	Hrs		C	redit			Ma	rks			Min. % of
Sr.	Theory (T)	Subject	Board									The	ory	Pract	tical	1	Marks
No.	Practical (P)	Julyses	Doard	L	P	Т	Total	L	P	Т	Total	College Assessment	University	College Assessment	University	Total Marks	Required for Passing
1	CT-PCC-601T	Chemical Reaction Engineering II	BCE	3	0	1	4	3	0	1	4	30	70	•	-	100	45%
2	CT-PCC-602T	Process Equipment Design	BCE	3	0	1	4	3	0	1	4	30	70		142	100	45%
3	CT-PCC-603T	Process Dynamics & Control	BCE	3	0	1	4	3	0	1	4	30	70		140	100	45%
4	CT-CS-604T	*Special Technology III	BCHT	3	0	0	3	3	0	0	3	30	70	M 1 -	-	100	45%
5	CT-CS-605T	*Special Technology IV	BCHT	3	0	0	3	3	0	0	3	30	70	9		100	45%
6	CT-HSMC-HS -606T	HASS IV Industrial organization & Entrepreneurship Development	BCE	2	0	0	2	2	0	0	2	15	35	¥		50	45%
7	CT-PCC-607P	Chemical Reaction Engineering II Lab	BCE	0	3	0	3	0	1.5	0	1.5			25	25	50	50%
8	CT-PCC-608P	Process Equipment Design & Drawing Lab	BCE	0	3	0	3	0	1.5	0	1.5			25	25	50	50%
9	CT-PCC-609P	Process Dynamics & Control Lab	BCE	0	3	0	3	0	1.5	0	1.5		-	25	25	50	50%
10	CT-CS-610P	*Special Technology II Lab	BCHT	0	3	0	3	0	1.5	0	1.5	170	-	25	25	50	50%
11	CT-CS-611P	Summer Internship (3-4 weeks) (to be evaluated in seventh semester)	ВСНТ	0	0	0	0	0	0	0	0	17		-	-	-	-
		Total		17	12	3	32	17	6	3	26	165	385	100	100	750	- 2

^{*}Food Technology, *Oil Technology, *Petrochemical Technology, *Pulp and Paper Technology, *Plastic and Polymer Technology, *Surface Coating Technology

Semester - VI (Third Year)

Branch: Fire Engineering

Sixth Semester:

		1	Vork Lo (Hours					Marks			21 (1) (2) (2) (2)	imum
Subject Code	Subjects	1	T/A	D	Credits	The	ory	Pract	ical	Tatal	Passin	g Marks
		L	T/A	P		Int	Uni	Int	Uni	Total	Theory	Practical
PCC-FE-305	Fixed Fire Fighting Installations	2	1	1-1	3	30	70	_	-	100	45	_
PCC-FE-306	Paramedics	2	1	-	3	30	70	#	=	100	45	_
PCC-FE-307	Fire Modelling	2	1	-2	3	30	70	=	-	100	45	
PCC-FE-308	Fundamentals of Industrial Safety and Health	2	1	=0	3	30	70	-	_	100	45	-
PCC-FE-309	Fire Codes and Standards	3	_	_	3	30	70	-	=	100	45	_
PCC-FE-310	Fire and Life Safety Audit	2	-	-	2	30	70	=	-	100	45	-
PCC-FE-305 (P)	Fixed Fire Fighting Installations Laboratory	1	=	2	1	-	_	25	25	50	-	25
PCC-FE-306 (P)	Paramedics Laboratory	1	-	2	1) -)	-	25	25	50		25
PCC-FE-307 (P)	Fire Modelling Laboratory	(-	2	1	i—i	-	25	25	50	-	25
PCC-FE-311 (P)	Fire Ground Operations – VI	-	-	5	2.5	-		25	25	50	-	25
	Total	13	4	11	22.5	180	420	100	100	800		

^{*} L- Lecture, P- Practical, T- Tutorial, A- Activity (Half Credit Per Hour)

Iskely - Jang

B.TECH SCHEME OF EXAMINATION 2021-22

Scheme of Teaching & Examination of Bachelor of Technology VI Semester B.TECH(Artificial Intelligence & Data Science)

Sr. No.	Course Code	Category	Course Name		urs/ eek	50	Credits	Maximu	ım Marks				Minimu Marks	m Passing
								T	heory	Pra	actical	Total		
			*	L	T	P								Let 15 E
								Internal	University	Internal	University		Theory	Practical
1	BTECH_AI&DS- 601T	Professional core courses	Deep Learning	3	0	0	3.00	30	70	-		100	45	
2	BTECH_AI&DS- 601P	Professional core courses	Deep Learning Lab	0	0	2	1.00			25	25	50		25
3	BTECH_AI&DS- 602T	Engineering Sciences	Computer Communication Network	3	0	0	3.00	30	70	-	92	100	45	
	BTECH_AI&DS- 603T	Professional core courses	Digital System Design using Verilog	3	0	0	3.00	30	70	-	-	100	45	
4	BTECH_AI&DS- 603P	Professional core courses	DSD-Lab	0	0	2	1.00		9	25	25	50		25
5	BTECH_AI&DS- 604T	Professional Elective Course	Elective-II	3	0	0	3.00	30	70			100	45	
6	BTECH_AI&DS- 605T	Open Elective	Open Elective-1	3	0	0	3.00	30	70			100	45	
7	BTECH_AI&DS- 606P	Professional core courses	Professional Skills-IV	0	0	2	1.00	-		25	25	50		25
8	BTECH_AI&DS- 607T	Mandatory course	Intellectual Property Rights	2	0	0	Audit			College as	ssessment in g	rades O, A,E	3,C	
10	BTECH_AI&DS- 608P	Project Work/Internship	p Mini Project /Internship	0	0	6	3.00	-	-	25	25	50	÷.	25
		Total		17	0	1.	2 21.00	150	350	100	100	700		

Elective II: 1. Web and Social Media Analytics 2. Block Chain and Cyber Security 3. Intelligent Sensor & Instrumentation 4. Robotics and Intelligent Systems

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Scheme of Teaching & Examination of Bachelor of Technology VI Semester B.Tech. (Artificial Intelligence) B.Tech. SCHEME OF EXAMINATION 2021-22

Sr.	CourseCode	Category	Course Name	Hou	ırs/W	eek	Credit	Maxim	um Marks	3			Minimu	ım
No.								Theory		Practica	ıl	Total	Passing Marks	
				L	Т	P								
	112							Internal	University	Internal	University		Theory	Practical
l'a	BTECHAI601T	Professional core courses	Deep Learning	4	0	0	4.00	30	70	-	-	100	45	
2	BTECHAI601P	Professional core courses	Deep Learning Lab	0	0	2	1.00			25	25	50		25
3	BTECHAI602T	Professional core courses	AI in Natural Language Processing	3	0	0	3.00	30	70	-	-	100	45	
4	BTECHAI602P	Professional core courses	AI in Natural Language Processing Lab	0	0	2	1.00			25	25	50		25
5	BTECHAI603T	Engineering Sciences	Digital System Design using Verilog	3	О	0	3.00	30	70		-	100	45	
6	BTECHAI603P	Engineering Sciences	Digital System Design Lab	0	0	2	1.00	-	-	25	25	50		25
7	BTECHAI604T	Professional Elective Course	Elective 2	3	0	0	3.00	30	70			100	45	
8	BTECHAI605T	Open Elective	Open Elective-1	3	0	0	3.00	30	70			100	45	
10	BTECHAI606P	Mandatory Course	Intellectual Property Rights	2	0			1	Coll	ege assessr	nent in grades	O, A,B,C	-1	1
11	BTECHAI607P	Project/ Internship	Mini Project/Internship	-	0	6	3.00	-		25	25	50	-	25
Tota				18	О	12	22.00	150	350	125	75	700		

Elective II: 1. Web and Social Media Analytics 2. Block Chain and Cyber Security3. Intelligent Sensor & Instrumentation 4. Intelligent Transport Systems

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

VI Semester B.Tech. (Robotics & Artificial Intelligence)

Sr.	Course Code	Category	Course Name		ours. Veek	60	Credits	Maxim	um Mark	S			Minima Passing	um Marks
No				•	VEER			Т	heory	Pr	actical	Total		
				L	T	P								
								Internal	University	Internal	University		Theory	Practical
1	BTechRAI601T	Professional Core courses	Computer Vision & Deep Learning	3	0	0	3.00	30	70	-	-	100	45	
2	BTechRAI601P	Professional Core courses	Computer Vision & Deep Learning Lab	0	0	2	1.00			25	25	50		25
3	BTechRAI602T	Professional core courses	Automation System Design	3	0	0	3.00	30	70	•	-	100	45	
4	BTechRA1602P	Professional Core courses	Automation System Design lab	0	0	2	1.00			25	25	50		25
5	BTechRAI603T	Professional Core courses	Big Data Analytics for Business Intelligence	3	0	0	3.00	30	70	1.	178	100	45	
6	BTechRAI603P	Professional Core courses	Big Data Analytics for Business Intelligence Lab	0	0	2	1.00	=	(- €)	25	25	50		25
7	BTechRAI604T	Professional Elective course	Elective 2	3	0	0	3.00	30	70			100	45	
8	BTechRAI605T	Open Elective course	Open Elective-1	3	0	0	3.00	30	70			100	45	
9	BTechRAI606T	HSMC	Organizational Behavior	2	0		Audit		u <u>la</u>	College a	assessment in gra	ades O, A,B	,C	- Land of the land
10	BTechRAI607P	Project Work/Internship	Mini Project/Internship	0	0	6	3.00	R		25	25	50		25
	Total	K		17	0	12	21.00	150	350	100	100	700		

ElectiveII:1.Computer Integrated Manufacturing Systems 2.Block Chain Technologies. 3. Intelligent Sensor & Instrumentation 4. Robotics and Intelligent Systems 5. Robotic Process Automation

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

VI Semester B.Tech. (Industrial IOT)

Sr.	Course Code	Category	Course Name	Ho	urs		Credit s		Ma	kimum M	arks			imum gMarks
No.	Code			w	eek	8		TI	neory	Prac	ctical	Total		
				L	Т	P		Internal	Universit	Internal	University		Theory	Practical
1	BTechIOT601T	Professional core courses	Mobile & Web Application Development	3	0	0	3.00	30	70	5	-	100	45	
2	BTechIOT601P	Professional core courses	Mobile & Web Application Development Lab	0	0	2	1.00			25	25	50		25
3	BTechIOT602T	Professional Core courses	Digital modelling and SOC	3	1	0	4.00	30	70	-	•	100	45	
4	BTechIOT602P	Professional core courses	Digital modeling and SOC Lab	0	0	2	1.00			25	25	50		25
5	BTechIOT603T	Professional core courses	Big data Analytics & Business Intelligence	3	0	0	3.00	30	70	25		100	45	
6	BTechIOT603P	Professional core courses	Big data Analytics & BusinessIntelligence	0	0	2	1.00	(=)	182	25	25	50		25
7	BTechIOT604T	Professional Elective Course	Elective- 2	3	0	0	3.00	30	70			100	45	
8	BTechIOT605T	Open Elective	Open Elective-1	3	0	0	3.00	30	70			100	45	
9	BTechIOT606T	HSMC	Organizational Behaviour	2	0	0	Audit Cours e	Col	lege assessme	nt in grades	O, A,B,C			
10	BTechIOT607P	Project Work /Internship	Mini Project /Internship	0	0	6	3.00	=	4	25	25	50	-	25
		Total		17		1 1:	22.00	150	350	100	100	700		

Elective II: 1. Web and Social Media Analytics 2. Linux and shell programming 3. Intelligent Sensor & Instrumentation 4. Robotics and Intelligent Systems 5. Block Chain & Cyber Security

Scheme of Teaching & Examination of Bachelor of Engineering VI Semester B.Tech. (Artificial Intelligence& Machine Learning)

Sr.	Course Code	Category	Course Name		lour	s/	Credits	Maximum	Marks				Minimur Marks	n Passing
No.		-		Wee	k			Th	eory	Practical		Total	Marks	
				L	T	Р								
								Internal	University	Internal	University		Theory	Practica
1	BTAI&ML601T	Professional core courses	Language Processor	3	0	0	3	30	70	72	-	100	45	
2	BTAI&ML601P	Professional core courses	Language Processor Lab	0	0	2	1			25	25	50		25
3	BTAI&ML602T	Professional core courses	Introduction to Cryptography and Blockchain	3	0	0	3	30	70	-	9 - 6	100	45	
4	BTAI&ML602P	Professional core courses	Introduction to Cryptography and Blockchain Lab	0	0	2	1			25	25	50		_
5	BTAI&ML603T	Professional core courses	Digital system Design using Verilog	3	0	0	3	30	70			100	45	
6	BTAI&ML603P	Professional core courses	Digital system Design using Verilog Lab	0	0	2	1,			25	25	50		25
7	BTAI&ML604T	Open Elective courses	Open Elective -1	3	0	0	3	30	70)		100	45	
8	BTAI&ML605T	Professional Elective	Elective 2	3	0	0	3	30	70			100	45	
9	BTAI&ML606P	Professional core courses	Mini Project	0	0	6	3			25	25	50		25
10	BTAI&ML607T	HSMC	Intellectual Property Right	2	0	0	Audit							
Tot	51			17	0	12	21	150	350	100	100	700		

Elective-2

Data Visualization, Intelligent Sensor and instrumentation, Human Computer Interface, Software Engineering

Open Elective-1

Bioinformatics, Bioinspired Computing

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

SCHEME OF EXAMINATION FOR

FOUR YEAR BACHELOR OF TECHNOLOGY (B. TECH.) DEGREE COURSE SEMESTER: SIXTH [C.B.C.S] BRANCH: INFORMATION TECHNOLOGY

7	C-Li-	Subject		-				MARKS		7 2 110			
Sr. No.	Subject Code	Subject		Teac	ching Schen	1e		Theory		P	ractical	Total Mark	Min Mar
			Lectur e	Prac ti cal	Tutorial / Activit	Tot al	Credi ts	Interna I	Unive rsity	Inter nal	Uni v.	S	ks
1	BTIT601T	Data Base Management System	3		,	3	3	30	70			100	1.5
2	BTIT601P	Data Base Management System		2		2	1	30	70	25	2.5	100	
4	BTIT602T	Artificial Intelligence and Machine Learning	3	-			1			25	25	50	25
5	BTIT602P		3		4 4	3	3	30	70			100	45
<i>c</i>		Artificial Intelligence and Machine Learning		2		2	1			25	25	50	25
0	BTIT603T	Elective – II	3			3	3	30	70		23	100	
7	BTIT604T	Elective – III	3			3	3	30	70			100	
3	BTIT605T	Open Elective- I	3			3	3	30	70			100	100
)	BTIT606P	Mini Project & Industrial Visit		6		6	3			25	25		25
10	BTIT607T	Economics of IT Industries	2			2	2	15	35			50	23
1	BTIT608T	Organizational Behavior	2			2						50	
		Total	19	10		28	22	120	480	75	75	750	Audit



Elective -II (BTIT603T)

- 1. Cluster & Grid Computing (BTIT603T.1)
- 2. Blockchain (BTIT603T.2)
- 3. Advances in Computer Networks (BTIT603T.3)

Open Elective - I (BTIT605T)

- 1. Data Science (BTIT605T.1)
- 2. Computer Animation (BTIT605T.2)

Elective -III (BTIT604T)

- 1. Cloud Computing (BTIT604T.1)
- 2. Human Computer Interface (BTIT604T.2)
- 3. Software Testing & Quality

Assurance (BTIT604T.3)

dates

Four Year B.TECH. Course (Revised Curriculum as per AICTE Model Curriculum)

B.TECH. VI Semester(Computer Technology) Scheme

Code	Subject	Teac	hing So	cheme	Eval	uation	Scheme	6 111	M: D :
Code	Subject	L	T	P	CA	UE	Total	Credits	Min Passing
BTCT601T	Compiler Design (TH)	3	0	0	30	70	100	3	45
BTCT601P	Compiler Design (PR)	0	0	2	25	25	50	1	25
BTCT602T	Data Warehousing and Mining (TH)	3	0	0	30	70	100	3	45
ВТСТ602Р	Data Warehousing and Mining (PR)	0	0	2	25	25	50	1	25
BTCT603T	Elective - II	3	0	0	30	70	100	3	45
BTCT604T	Elective -III	3	0	0	30	70	100	3	45
BTCT605T	Open Elective -1	3	0	0	30	70	100	3	45
ВТСТ606Т	Economics of IT Industry	2	0	0	15	35	50	2	23
BTCT607P	Mini Project	0	0	4	25	25	50	2	25
BTCT608T	Organization Behaviour (Audit)	2	0	0	0	0	0	0	Audit
	Total	17	5	8	175	475	650	21	

Elective-II BTCT603T	Elective –III BTCT604T	Open Elective-1 BTCT605T
BTCT603T-1 High Performance Computer Architecture	BTCT604T-1 Embedded System	BTCT605T-1 Digital Image Processing
BTCT603T-2 Software Testing & Quality Assurance	BTCT604T-2 Mobile Application & Development	BTCT605T-2 Advanced Web Technology
BTCT603T-3 Advanced Microprocessor	BTCT604T-3 Cloud Computing	BTCT605T-3 Multimedia & Animation

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FOUR YEAR BACHELOR OF TECHNOLOGY (B.Tech.) DEGREE COURSE

SEMESTER: 6th (C.B.C.S.)

BRANCH: COMPUTER ENGINEERING

Sixth Semester-

S.	Subject Code	Subject		eachii chem	-	-	valuat Schen		Credits	Min
N.			L	T	P	CA	UE	Total		Passing
1	BTCME601T	Design and Analysis of Algorithms	3	-		30	70	100	3	45
2	BTCME602T	TCP/IP	3	: 3	-	30	70	100	3	45
3	BTCME603T	Elective-II	3	. F.		30	70	100	3	45
4	BTCME604T	Elective-III	3	190	-	30	70	100	3	45
5	BTCME605T	Open Elective-I	3			30	70	100	3	45
6	BTCME601P	Design and Analysis of Algorithms- Lab	-	-	2	25	25	50	1	25
7	BTCME602P	TCP/IP -Lab	-	-	2	25	25	50	1	25
8	BTCME606P	Emerging Technology Lab -II	2 -	-	2	25	25	50	1	25
9	BTCME607P	Mini Project & Internship	-	-	6	25	25	50	3	25
10	BTCME608P	Seminar / Presentations on Current trends	-		2	50	: = :	50	Audit	Ţ
		Total	15	00	14	300	450	750	21	

Elective-II: -

1. Human Computer Interaction

Elective-III: -1. Distributed Computing

2. Internet of Things

2. Machine Learning

3. Robotics

3. Data Warehousing & Mining

Open Elective-I - 1. Digital Image Processing

2. Mobile Computing

RTMNU B.TECH. SCHEME OF EXAMINATION 2021-22

Scheme of Teaching & Examination of Bachelor of Technology VI Semester B.Tech. (Computer Science and Engineering)

S. N.	Course Code	Category	Subject		ur: /ee	1000	Credits		Ма	eximum M	larks		10.00 and 20.00 and 20.00	assing arks
								Th	neory	Pra	ectical	Total	Theory	Practica
				L	T	P		Internal	University	Internal	University			
1	BTECHCSE601T	Professional core courses	Compiler Design	4	-	-	4	30	70		13	100	45	
2	BTECHCSE602P	Professional core courses	Hardware Lab		=	2	1	-	-	25	25	50	-	25
3	BTECHCSE603T	Professional core courses	Elective-II	3	-	-	3	30	70		-	100	45	-
4	BTECHCSE604T	Professional core courses	Elective-III	3	-	-	3	30	70	-	-	100	45	-
5	BTECHCSE605T	Professional core courses	Open Elective-I	3	-	-	3	30	70	1-	-	100	45	
6	BTECHCSE606P	Professional core courses	Professional Skill Lab II		-	2	1	-	11 -	25	25	50	-	25
7	BTECHCSE601P	Professional core courses	Compiler Design-Lab	-	-	2	1	-		25	25	50		25
8	BTECHCSE607P	Professional core courses	Mini Project	•		6	3	-	25	50	50	100	-	45
10	BTECHCSE608T	Humanities Social and Management Courses	Economics of IT Industry	2		•	2	-	-	-	-	-	_	
11	BTECHCSE609T	Mandatory Course	Intellectual property Rights (Audit Course)	2	-		Audit			-	-	-	23	-
			Total	17	-	12	21	120	280	125	125	650		

Elective-II: - 1. Machine Learning

2.Internet of Things

3. Cluster and Cloud Computing

Elective-III: - 1. Data Science

2. Distributed Operating Systems

3. Human Computer Interaction

Open Elective:- 1. Linux Fundamentals 2. Android Application Development 3. Blockchain Technologies

PROPOSED SCHEME OF EXAMINATION FOR B. TECH (BIOTECHNOLOGY) SIXTH SEMESTER B. TECH (BIOTECHNOLOGY)

Sr. No.	Code Theory (T) Practical (P)	Subject	Boar d	Wor			Hours)		` `	edit				arks		Total Marks	Min. % Marks Required for passing
				${f L}$	P	T	Tota	L	P	T	Total		eory	Pract			
							1					College Assessm ent	University	College Assessment	Universit y		
1	BT -PC - 601 T	Bioseparation Engineering	BBT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
2	BT -PC - 602 T	Mass Transfer In Biotechnology	BBT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
3	BT -PC - 603 T	Bioprocess Engineering	BBT	2	0	1	3	2	0	1	3	30	70	-	-	100	45%
4	BT -PC - 604 T	Plant Tissue culture Technology	BBT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
5	BT -PE - 605 T	Professional Elective-II	BBT	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
6	BT -OS - 606 T	Open Subject-II	BBT	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
7	BT-AU- 607 T	Sports and Yoga	BBT	2	0	0	2	0	0	0	Audit	50	-	-	-	50	-
8	BT -PC - 608 P	Mass Transfer In Biotechnology Laboratory	BBT	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
9	BT -PC - 609 P	Bioprocess Engineering Laboratory	BBT	0	2	0	2	0	1	0	1	-	-	25	25	50	50%
10	BT -PC - 610 P	Plant Tissue culture Technology Laboratory	BBT	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
		Total		19	8	3	30	18	4	3	24	120	480	75	75	800	

Professional Elective-II

	List of available courses under Professional Elective – II
S. No.	Course Title
1	Machine Learning
2	Waste Management
3	Stem-Cell Technology

Open Subject-II

	List of available courses under Open Subject – II
S. No.	Course Title
1	Artificial Intelligence
2	Synthetic & Systems Biology
3	Good Manufacturing and Laboratory Practice
4	Heat Transfer in Biotechnology
5	Environment and Sustainability

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur Faculty of Engineering & Technology Course and Examination Scheme of Bachelor of Technology - Aeronautical Engineering VI Semester B. Tech. (CBCS)

				ing Sche	eme				Exan	nination Scl	heme			
Subject		Ho	urs per	week			¥	Theory				Practic	al	
Code	Subject	L	Т	P	No. of Credits	Duration of Paper (Hrs.)	Max Marks University Assessment	Max Marks College Assessment	Total Marks	Min. Passing Marks	Max Marks University Assessment	Max Marks College Assessment	Total Marks	Min. Passing Marks
BTAE 601T	Aircraft Design	3	-		3	03	70	30	100	45	-	-	20	_
BTAE 601P	Aircraft Design Laboratory	(=0)	-	2	1	•		396		-	25	25	50	25
BTAE 602T	Space Technology	3	1	-2	4	03	70	30	100	45	-			-
BTAE 603T	Open Elective-II	3	-	-	3	03	70	30	100	45			-	•
BTAE 604T	Elective-II	3			3	03	70	30	100	45	(*)	-	-	
BTAE 605P	Aero-design and Simulation Lab	-	-	2	1			-		3	25	25	50	25
BTAE 606P	Non Destructive Inspection Lab	+	1,6	2	1	-			-		25	25	50	25
BTAE 607T	Effective Technical Communication	2	9 5 9	-	2	02	35	15	50	25		-	-	2
BTAE 608P	Mini Project- II : {Internship/Case Study/ Seminar}		(141)	6	3				-		50	50	100	50
BTAE 609P	Sports/Yoga/ NSS/NCC			3	0		College asses	sment in Grad			 ation mention	ed in the Sylla	bus of	
	Total	14	1	15	21		315	135	450	cern subjec	125	125	250	
	Semester Total		30		21			100		Aarks 700	123	143	250	

Ope	en Elective-II		Elective-II
Course Code	Course Name	Course Code	Course Name
BTAE 603T(OE)-1	Design of Machine Elements	BTAE604T(E)-1	Aircraft Mechanisms Analysis and Synthesis
BTAE 603T(OE)-2	Finance And Accounting	BTAE604T(E)-2	Flight Dynamics
BTAE 603T(OE)-3	Renewable Energy Sources	BTAE604T(E)-3	Principles of Combustion
BTAE 603T(OE)-4	Industrial Safety and Environment	BTAE604T(E)-4	Aerodynamic Design of Compressors and Turbine



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RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FACULTY OF SCIENCE & TECHNOLOGY

SCHEME OF EXAMINATION & EVALUATION

B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

SEMESTER: SEVENTH

Sr.	Subject		Workload in Hours				С	redit				Marks			Minimum passin marks	
No	Code	Subject		T/A	Р		_	В	Total	The	eory	Prac	tical	Total	Theory	Dusatical
			L	T/A	٢	L	ı	Р	Total	Int	Uni	Int	Uni	Total	Theory	Practical
1	BTCVE701T	Design of Steel Structure	3	1	0	3	1	0	4	30	70			100	45	
2	BTCVE702T	Elective IV	3	0	0	3	0	0	3	30	70			100	45	
3	BTCVE703T	Elective V	3	0	0	3	0	0	3	30	70			100	45	
4	BTCVE704T	Elective VI	3	0	0	3	0	0	3	30	70			100	45	
5	BTCVE705T	Open Elective-II	3	0	0	3	0	0	3	30	70			100	45	
6	BTCVE706P	Project Work Phase-I	0	0	6	0	0	3	3	1		50	50	100	1	50
		Total	15	1	6	15	1	3	19	150	350	50	50	600		

• L- Lecture, P-Practical, T- Tutorial, A- Activity (Half Credit per Hour)

(Dr. Avinash N Shrikhande,) BOS (Girlf Engg) Chairman

Note:

Center Gilling

- 1. Project Work Phase-I shall consist of detailed report of "Internship report" of 3 to 4 weeks underwent after 6th semester and "SeminarReport" shall consist of Topic selected for Project work
- 2. Equal weightage shall be given to the components of "Internship Report" and "Seminar Report"

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur

Faculty of Science & Technology

Course and Examination Scheme of Bachelor of Engineering (Mechanical Engineering)

VII Semester B. Tech (Mechanical Engineering)-(2023 onwards)

		1011								ering)-(2023	Exan	nination S	cheme			
					ing Sch		PILL			Theory			10 11	Practical	WILL ST	
r No	Course Code	Category	Course Title	L	Т	P	Credits	Duration of Exam (Hrs)	Max. Marks College Assesment	Max. Marks University Assessment	Total Marks	Min. Passing Marks	Max. Marks College Assesment	Max. Marks University Assessment	Total Marks	Min. Passing Marks
1	BEME701T	Professional Elective courses	Elective - III	3	7	+	3	3	30	70	100	45				
2	BEME702T	Professional Elective courses	Elective - IV	3	*		3	3	30	70	100	45	25	25	50	25
3	BEME702P	Professional Elective courses	Elective - IV Lab	2		2	Ï		-	-	100	45	22			-
4	BEME703T	Open Elective Course	Open Elective - II	3	-		3	3	30	70	100	45		1	-	
5	BEME704T	Open Elective Course	Open Elective - III	3	*		3	3	30	70	100	49			100	
6	BEME705P	Project work, seminar and internship in industry or	Project - I			12	6	É		-			50	-	50	25
		elsewhere				2	Audit	Colle	ge Assessme	nt in Grades O.	A, B, C (F	valuation	guidelines men	tioned in the sy	llabus of c	oncerned
7	BEME706P	Mandatory Course	Self Development	-	-	4	(0)		The state of the s	1	400	Cours	75	25	100	
		TOTAL		12	0	16	-	*	120	280	400					
_		Semester Total			28		19					Marks	500			

St. S. H. Charles Siral.

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR B.TECH. (Electrical Engineering) (CBCS) SCHEME OF EXAMINATION SEVENTH SEMESTER

Board	Subject Code	subject	1	each	ing Sch	eme	Credit			MARKS				n Passing arks
								Theor	У	Practic	al	Total	Theory	Practical
			L	P	T/A	Total		Internal	Uni.	Internal	Uni.	Total	Theory	Fractical
EE	BTCHEE701T	Professional elective-III	3	-	-	3	3	30	70		-	100	15	
EE	BTCHEE702T	Professional elective-IV	3	-	-	3	3	30	70		-	10.00	45	
EE	BTCHEE7O3T	Professional elective-V	3	-	-	3	2	30		-	-	100	45	
EE	BTCHEE7O4T	Open electives-II	3	-	-	2	3		70	-	-	100	45	
	BTCHEE7O5T	Ancient Indian History	1			3	3	30	70		-	100	45	
EE	BTCHEE7O6P	Elective Lab-I	1	-	-	1	Audit	50*	-		-	50*		
			•	4		2	1	-	-	25	25	50		25
EE	BTCHEE7O7P	Elective Lab-II	-	2	- F	2	1	-	-	25	25	50		25
EE	BTCHEE7O8P	Project &Seminar	-	-	3A	3	3	-	-	50	23	50		
		Total	13	4	3A	20	17	120	280	100	50	550		25

• L-Lecture, P-Practical(Half Credit per Hour), T-Tutorial, A-Activity, * indicates noncredit subject

Open Electives II	Professional Elective III	Professional Elective IV	Professional Elective V
Energy Management and Audit	Advanced Power Electronics	Testing and Maintenance of Electrical Equipment	Electrical Machine Design
Industrial Economics and Entrepreneurship	2. HV Engineering	2. Electrical Installation & Design	Digital signal processing and its applications
3. Electric and Hybrid Vehicles	3. Introduction to Artificial Intelligence		

Elective lab I	Elective lab II
1) HV Engineering OR 2) Floatrical Providence 16: 14:	Electrical Installation & Design OR
Electrical Drawing and Simulation	Electrical Workshop

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SCHEME OF EXAMINATION FOR B.TECH ELECTRONICS & TELECOMMUNICATION / ELECTRONICS & COMMUNICATION ENGINEERING (SEMESTER – VII)

		70. 1	6.1				· 117		В		MARKS			Minimum Passing Marks		
Subject		Teach	ing Scheme			(Credit		7	Theory	Pi	Total	Theory	Practical		
	L	P	T/A	Total	L	P	T/A	Total	Internal	Univ.	Internal	Univ.	Marks			
PEC-III	3	2	1T	6	3	1	1	5	30	70	25	25	150	75		
PEC-IV	3	2	1T	6	3	1	1	5	30	70	25	25	150	75		
PEC-V	3	N m N		3	3	2=		3	30	70	-	73	100	45		
PEC-IV PEC-V OE-II	2	-	1T	3	2	-	1	3	30	70	-		100	45		
Seminar/Internship	-	2	20	2	-	1	4	1		4	50	-	50		25	
IPR	1		1A	2	-	-	.70	-		5	-	3 7	Audit Course S/NS**			
Total	12	6	3T+1A	22	11	3	3	17	120	280	100	50	550			

Audit Course S/NS**: S- Satisfactory / NS - Not Satisfactory

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SCHEME OF EXAMINATION RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR SEVENTH SEMESTER B. TECH (CHEMICAL ENGINEERING)

	Code			W	ork	Load	Hrs		C	redit			Ma	rks			Min. % of
Sr.	Theory (T)	6.1.										The	ory	Pract	ical		Marks
No.	Practical (P)	Subject	Board	L	Р	Т	Total	L	р	Т	Total	College Assessment	University	College Assessment	University	Total Marks	Required for Passing
ı	CE-PCC-701T	Transport Phenomena	BCE	3	0	1	4	3	0	1	4	30	70	-		100	45%
2	CE-PCC-702T	Process Modelling and Simulation	BCE	3	0	1	4	3	0	Ī	4	30	70	-	*	100	45%
3	CE-CEE-703T	Core Elective- III	BCE	3	0	0	3	3	0	0	3	30	70	~	•	100	45%
4	CE-CEE-704T	Core Elective- IV	BCE	3	0	0	3	3	0	0	3	30	70		2	100	45%
5	CE-OLE-705T	Open Elective- III	BCE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
6	CE-OLE-706T	Open Elective- IV	BCE	3	0	0	3	3	0	0	3	30	70	2 -	-	100	45%
7	CE-PCC-707P	Process Modelling and Simulation Lab	BCE	0	3	0	3	0	1.5	0	1.5		-	25	25	50	50%
8	CE-PCC-708P	Seminar and Summer Internship Evaluation	BCE	0	3	0	3	0	1,5	0	1.5		•	50		50	50%
		Total		18	6	2	26	18	3	2	2.3	180	420	75	25	700	

			Subject Name							
Elective			BOARD							
	BCE									
Core Elective III	Interfacial Science and Engineering	Advanced Catalysis		Advanced Petroleum Refining						
Core Elective IV	Piping Engineering	Multiphase Reactor Des	ign	Multiphase Flow						
Open Elective III	Nanoscience and Nanotechnology	Optimization of Chemic	al Processes	Biochemical Engineering						
Open Elective IV	Fluidization Engineering	Advanced Materials	Scale up methods	Sustainable Development and Governance						



SCHEME OF EXAMINATION RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR SEVENTH SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

	Code			W	ork l	Load	Hrs	•	Cı	redit			Ma	rks	- DOUBLE		Min. % of
Sr.	Theory (T)	61:										The	ory	Pract	ical		Marks Required
No.	Practical (P)	Subject	Board	L	Р	Т	Total	L	Р	Т	Total	College Assessment	University	College Assessment	University	Total Marks	for Passing
1	CT-PCC-701T	Transport Phenomena	BCE	3	0	1	4	3	0	1	4	30	70		8.5	100	45%
2	CT-PCC-702T	Mass Transfer II	BCE	4	()	1.	5	4	0	1	5	30	70	i i		100	45%
3	CT-CS-703T	*Special Technology V	BCHT	3	0	0	3	3	0	0	3	30	70	74	-	100	45%
4	CT-CS-704T	*Special Technology VI	BCHT	3	0	0	3	3	0	0	3	30	70			100	45%
5	CT-OFL-705T	Open Elective II	BCE	3	()	0	3	3	0	0	3	30	70			100	45%
6	CT-CS-706P	*Special Technology III Lab	BCHT	0	6	0	6	0	3	0	3	(40)	-	25	25	50	50%
7	CT-PCC-707P	Mass Transfer Lab	BCE	0	3	0	3	0	1.5	0	1.5	129		25	25	50	50%
8	CT-CS-708P	Seminar and Summer Internship Evaluation	ВСНТ	0	3	0	3	0	1.5	0	1.5	120	*	50		50	50%
Т		Total		16	12	2	30	16	6	2	24	150	350	100	50	650	

		Subject Name	
Elective		BOARD	
Licetive		BCE	
Open Elective II	Nanoscience and Nanotechnology	Optimization of Chemical Processes	Biochemical Engineering

^{*}Food Technology, *Oil Technology, *Petrochemical Technology, *Pulp and Paper Technology, *Plastic and Polymer Technology, *Surface Coating Technology

Semester - VII (Fourth Year)

Branch: Fire Engineering

Seventh Semester:

		1	Vork Lo (Hours					Marks			Minimum Passing Marks	
Subject Code	Subjects	L T/A P Credits Theory Practical Int Uni Int Uni 2 1 - 3 30 70 - - 3 - - 3 30 70 - - 3 - - 3 30 70 - - 2 - - 2 30 70 - -	Tr. (1	Passin	g Marks							
		L	1/A	P		Int	Uni	Int	Uni	Total	Theory	Practical
PCC-FE-401	Fire and Arson Investigation	2	1	-	3	30	70	-	=	100	45	3-1
PCC-FE-402	Fire Risk Assessment	3	-	-	3	30	70	-	-	100	45	-
PCC-FE-403	Special Hazards	3	-	-	3	30	70		=	100	45	-
PEC-FE- (401-404)	Elective-I 401-Nuclear Reactors and Safety 402-Chemical Process Safety 403-Occupational Health & Hygiene Management 404-Disaster Management	2			2	30	70	-	-	100	45	
OEC-FE- (401-404)	Open Elective – I 401-Robotics 402-Cyber Security 403-Internet of Thing 404-Artificial Intelligence	2	-	-	2	30	70	_	-	100	45	-
PROJ-FE-401 (P)	Mini Project	-	-	5	2.5	-	-	50	50	100	_	50
PCC-FE-404 (P)	Fire Ground Operation -VII	=	=	5	2.5	=	-	25	25	50		25
MC-FE-401 (P)	MC-FE-401 (P) Summer Internship				Audit	-	-	50		50	-	25
	Total	12	1	10	18	150	350	125	75	700		

^{*} L- Lecture, P- Practical, T- Tutorial, A- Activity (Half Credit Per Hour)

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B.Tech. SCHEME OF EXAMINATION 2021-22

Scheme of Teaching & Examination of Bachelor of Technology VII Semester B.Tech. (Artificial Intelligence)

Sr	8 3		Course Name	Н	ours		Credits	Maximur	n Marks				Minimu	m
No				V k	Vee			Т	heor y	Practica	ı	Total	Passing	Aarks
				L	T	P	7.							
								Internal	University	Interna I	University		Theory	Practical
1	BTECHAI701T	Professional core courses	Modern CompilerDesign	3	0	0	3.00	30	70	3 100	72	100	45	
2	BTECHAI701P	Professional core courses	Modern CompilerDesign Lab	0	0	2	1.00			25	25	50		25
3	BTECHAI702T		Digital Signal & Image Processing	3	0	0	3.00	30	70	.51	-	100	45	
4	BTECHAI702P		Digital Signal & Image Processing Lab	0	0	2	1.00			25	25	50		25
5	BTECHAI703T	Professional Elective Course	Elective- III	3	0	0	3.00	30	70	-	-	100	45	
6	BTECHAI704P	Open Elective	Open Elective- III	3	0	0	3.00	30	70	-	-	100	45	
7	BTECHAI705	Project/ Internship	Project		0	6	3.00	-		50	50	100	1	25
Total				14	0	10	17.00	120	280	100	100	600		

Elective III: 1. Human Computer Interaction 2 Medical Image Analysis 3. Data Compression & Encryption Techniques 4. Micro-Electro-Mechanical Systems

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

VII Semester B. Tech. (Robotics & Artificial Intelligence)

Sr. No.	Course Code	Category	Course Name	50743	urs/ eek		Credits		Ma	aximumMa	irks		Min	imum
140.				L	Т	P		TI	neory	Pra	ectical	Total	Theory P 100 45 50 100 45 100 45	
								Internal	University	Internal	University		Theory	Practical
1	BTechRAI701T	Professional core courses	Robot Programming	3	0	0	3.00	30	70	-	-	100	45	
2	BTechRAI701P	Professional core courses	Robot Programming Lab	0	0	2	1.00			25	25	50		25
3	BTechRAI702T	Professional core courses	Digital Signal Processing for Robotics	3	0	0	3.00	30	70	-	-	100	45	
4	BTechRAI702P	Professional core courses	Digital Signal Processing for Robotics Lab	0	0	2	1.00			25	25	50		25
5	BTechRAI703T	Profession al Elective Course	Elective-III	3	0	0	3.00	30	70	•	-	100	45	
6	BTechRAI704T	Open Elective	Open Elective-II	3	0	0	3.00	30	70			100	45	
7	BTechRAI705P	Project Work	Project		0	6	3.00	-	-	50	50	100		50
	Tota	ıl		12	0	10	17.00	120	280	100	100	600		

Elective III:1.Human Robot Interaction 2. CNC Machines 3. Embedded Controllers and Real time Operating Systems 4. Natural Language Processing 5. Additive Manufacturing

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

VII Semester B.Tech . (Industrial IOT)

Sr.	Course Code	Category	Course Name	1	urs/ eek		Credits		M	aximum M	larks		Minimum Passing Marks	
110.					onoren.			T	heory	Practical		Total		
				L	Т	P		Internal	University	Internal	University		Theory	Practical
1	BTechIOT701T	Professiona Icore courses	Digital Image Processing	3	0	0	3.00	30	70	-	(12)	100	45	
2	BTechIOT701P	Professiona lcore courses	Digital Image Processing Lab	0	0	2	1.00			25	25	50		25
3	BTechIOT702T	Professiona lcore courses	Natural Language Processing	3	0	0	3.00	30	70	2	-	100	45	
4	BTechIOT702P	Professiona lcore courses	Natural Language Processing Lab	0	0	2	1.00			25	25	50		25
5	BTechIOT703T	Professional Elective Course	Elective- III	3	0	0	3.00	30	70	-	-	100	45	The second of th
6	BTechIOT704T	Open Elective	Open Elective- II	3	0	0	3.00	30	70	-	7.	100	45	
7	BTechIOT705P	Project Work	Project	0	0	6	3.00	-	হন্দা	50	50	100		50
		Total		12	0	10	17.00	120	280	100	100	600		

Elective III: 1. Deep Learning and Neural Network 2. Medical Image Analysis 3. Micro-Electro- Mechanical Systems 4. Data compression and encryption

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Scheme of Teaching & Examination of Bachelor of Engineering VII Semester B.Tech. (Artificial Intelligence& Machine Learning)

Sr.	Course	Category	CourseName		lours	5/	Credit	Maximum	Marks				Minimum Passing Marks		
No.	Code			Weel	k		s	Th	eory	Practical		Total	Marks		
1,000				L	Т	Р									
-								Internal	University	Internal	University		Theory	Practica	
1	BTAI&M L701T	Professional core courses	Deep Learning	3	0	0	3	30	70		15	100	45		
2	BTAI&M L701P	Professional core courses	Deep Learning Lab	0	0	2	1			25	25	50		25	
3	BTAI&M L702T	Professional core courses	Digital Signal and Image Processing	3	0	0	3	30	70	-	0.4	100	45		
4	BTAI&M L702P	Professional core courses	Digital Signal and Image Processing Lab	0	0	2	1			25	25	50		25	
5	BTAI&M L703T	Open Elective courses	Open Elective -2	3	0	0	3	30	70			100	45		
6	BTAI&M L704T	Professional Elective courses	Elective 3	3	0	0	3	30	70			100	45		
7	BTAI&M L705P		Project Phase -1 /Internship	0	0	6	3			50		100		50	
		Total		12	0	10	17	120	280	100	100	600			

Elective -3: AI Knowledge Representation and Reasoning, Distributed and Object Oriented Database, Switching Theory, Biomedical Instrumentation.

Open Elective-2: Congnitive Systems and Networks, Non-Conventional Energy Sources, Energy Harvesting System

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PROPOSED SCHEME OF EXAMINATION FOR B. TECH (BIOTECHNOLOGY) SEVENTH SEMESTER B. TECH (BIOTECHNOLOGY)

Sr. No.	Code Theory (T) Practic al (P)	Subject	Boar d	Wo	rk Loa		ŕ		Credit Marks							Total Marks	Min. % Marks Require d for passing
				L	P	Т	Tot al	L	P	T	Total	College Assessme nt	eory Universit y	College Assessment	tical University		
1	BT -HS -701 T	Intellectual Property Rights (IPR) & Regulatory	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
2	BT -PC -702 T	Data analysis and Simulations	BBT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
3	BT -PE -703 T	Professional Elective-III	BBT	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
4	BT -PE -704 T	Professional Elective-IV	BBT	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
5	BT -OS- 705 T	Open Subject-III	BBT	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
6	BT -OS- 706 T	Open Subject-IV	BBT	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
7	BT -PC -707 P	Data analysis and Simulations Laboratory	BBT	0	2	0	2	0	1	0	1	-	-	25	25	50	50%
8	BT -PS -708 P	Project-I	BBT	0	4	0	4	0	2	0	2	-	-	100	-	100	50%
9	BT -PS -709 P	Summer Internship	BBT	0	6	0	6	0	3	0	3	-	-	100	-	100	50%
		Total		17	12	4	33	17	6	4	27	110	440	225	25	800	

Professional Elective-III

	List of available courses under Professional Elective – III										
S. No.	Course Title										
1	Gene Expression and Transgenic										
2	Bioprocess Equipment Design										
3	Animal Tissue Culture Technology										

Professional Elective-IV

	List of available courses under Professional Elective – IV										
S. No.	Course Title										
1	Precision Medicine & Wellness										
2	Cryogenic Application in Biotechnology										
3	Nano Biotechnology										

Open Subject-III

	List of available courses under Open Subject – III
S. No.	Course Title
1	Rational Drug Discovery
2	Virtual Reality
3	Food and Nutrition Technology

Open Subject-IV

	List of available courses under Open Subject – IV
S. No.	Course Title
1	Fermentation Technology
2	Bioterrorism and National Security
3	Data Sciences

RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR FACULTY OF SCIENCE & TECHNOLOGY

SCHEME OF EXAMINATION & EVALUATION B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

SEMESTER: EIGHTH

Sr.	Subject			rkload Hours			C	redit				Marks				m passing arks
No	Code	Subject		T/	Р		_	Р	Total	The	eory	Practical		Total	Theoni	Dunctical
			L A P		۲	_	'	۲	Total	Int	Uni	Int	Uni	Total	Theory	Practical
1	BTCVE801T	Construction Methods And Equipment Management #	3	0	0	3	0	0	3	30	70			100	45	
2	BTCVE802T	Digital Land Surveying And Mapping (DLS&M) #	3	0	0	3	0	0	3	30	70	1		100	45	1
3	BTCVE803T	Open Elective-III	3	0	0	3	0	0	3	30	70			100	45	
4	BTCVE804P	Project Work Phase-II	0	0	12	0	0	6	6	1		100	100	200		100
		TOTAL	9	0	12	9	0	6	15	90	210	100	100	500		

Note:

- 1. These # subjects (BTCVE801T and BTCVE802T) should be undertaken through online mode by using NPTEL/SWAYAM /MOOCS Platforms OR through regular classroom teaching in Department of Civil Engineering of affiliated Colleges. Examinations will be conducted by RTMNU.
- 2. Project Work Phase-II shall consist of detailed report of continued project work from 7th Semester or internship in industry or at appropriate work place.

(Dr. Avinash N Shrikhande,) BOS (Girlf Enga) Chairman

Center Giller

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur

Faculty of Science & Technology

Course and Examination Scheme of Bachelor of Engineering (Mechanical Engineering)

VIII Semester B. Tech(Mechanical Engineering)-(2023 onwards)

											Exam	ination Sc	heme				
				A STATE OF THE PARTY OF THE PAR	ing Scl urs/We	3774VXV		T A S		Theory				Practica	al		
Sr No	Course Code	Category	Course Title	L	Т	P	Credits	Duration of Exam (Hrs)	Max. Marks College Assesment	Max. Marks University Assessment	Total Marks	Min. Passing Marks	Max. Marks College Assesment	Max. Marks University Assessment	Total Marks	Min. Passing Marks	
1	BEME801T	Professional Elective courses	Elective - V	3	-	-	3	3	30	70	100	45	7-1		-	- 25	
2	BEME801P	Professional Elective courses	Elective - V Lab		2	2	1	-	*			-	25	25	50	25	
3	BEME802T	Professional Elective courses	Elective - VI	3		-	3	3	30	70	100	45	*	-			
4	BEME803T	Open Elective Course	Open Elective -IV	3	-	-	3	3	30	70	100	45	*:	-			
5	BEME804P	Project work, seminar and internship in industry or elsewhere	Project - II	*		12	6					-	100	100	200	100	
6	BEME805P		Self Development		-	2	Audit (0)	Colleg	e Assessment	t in Grades O, A	, B, C (Ev	aluation gu course)	1		1		
		TOTAL	7.00	9	0	16	-		- 90	210	300		125	125	250	-	
		Semester Total			25		16			Marks 550							

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Mechanical English Mechanical English

ELECTIVE I	ELECTIVE II	ELECTIVE III	ELECTIVE IV	ELECTIVE V	ELECTIVE VI	OPEN ELECTIVE I	OPEN ELECTIVE II
VI SEM	VI SEM	VII SEM	VII SEM (T+P)	VIII SEM (T & P)	VIII SEM	V SEM	VII SEM
Mechanical Vibrations	Tribology	Design of Transmission System	Computer Aided Design		Design Optimization	Organizational Behaviour & Enterpreneurship Development	Industrial Safety & Environment
Synthesis of Mechanism	Tool Design	Design of Material Handling System	Mechanical Measurement & Metrology	Computer Integrated Manufacturing	Stress Analysis	Automobile Engineering	Pollution and its Control
Operation Research	Advanced Manufacturing Techniques	Total Quality Management	Mechatronics	Refrigeration & Air conditioning	Industrial Engineering	Project Evaluation & Management	Finance & Cost Management
Production Planning & Control	CNC & Robotics	Composite Materials	Hydraulies & pneumatics	Additive Manufacturing	Green & Sustainable Manufacturing		
Convective Heat Transfer	Design of Heat Exchangers	Solar Energy & Utilization			Energy Conservation and Management		
Power Plant Engineering	Advanced I C Engines	Automobile Engineering			Computational Fluid Dynamics Energy Conversion		

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OPEN

VIII SEM

Industrial

Robotics

Renewable

Resources

Management

Energy

OPEN

VIII SEM

Design of

Fuel Cell

Control

Technology

Intrumentation &

Experiments

ELECTIVE III ELECTIVE IV

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR B.TECH. (Electrical Engineering) (CBCS) SCHEME OF EXAMINATION

EIGHTH SEMESTER

Board	Subject	Subject	,	Teach	ing Sch	eme	Curalit			Minimum Passing Marks				
	Code						Credit	Theor	ry	Practic	cal	T	m.	
			L	P	T/A	Total		Internal	Uni.	Internal Uni.		Total	Theory	Practical
EE	BTCHEE801T	Advance Professional elective-VI #*	3	-	22	3	3	30	70	an Typeri	- 1	100	45	
EE	BTCHEE8O2T	Advance Professional elective-VII #*	3	-	-	3	3	30	70		-	100	45	
EE	BTCHEE8O3P	Project	-	12		12	6		-	75	75	150		75
EE	BTCHEE8O4P	Internship (5 to 6 weeks) in Industry at appropriate work place	*	-	4A	4	4		-	100		100		75
		Total	6	12	4A	22	16	60	140	175	75	450		

[#] These subjects should be undertaken through online mode.

*Alternatively students can choose any course with 3 credits from MOOCs Platform for which the list is given below.

Additional subjects may be conducted through online courses.

Teacher shall be assigned workload for internship and industrial project.

List of MOOCs platforms which offer online certifications courses as below: -

- 1. SWAYAM-https://swayam.gov.in
- 2. NPTEL-https://onlinecourses.nptel.ac.in
- 3. MOOC-http://mooc.org

OR

Students may opt following online courses designed by BoS Electrical Engineering, RTMNU Nagpur

Professional Elective-VI	Professional Elective-VII
Power semiconductor drives	1. EHVAC / DC transmission System
Electrical Distribution System	2. Power Quality

• Internship:- a) Student shall be allowed to undergo internship for 5 to 6 weeks during 8 th semester in industry/ company at appropriate work place b) Internal marks for internship of 8 th semester may be awarded after successful completion of internship

c) 100 internal marks for internship shall be given as-

i) 50 marks based on detailed report about internship along with certificate provided by company/industry

ii) 50 marks based on presentation by student about what he/she learned during internship

LIST OF ELECTIVE SUBJECTS

ibility using MATLAE
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applications
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(Dr. A. Shubhale)

(Dr.s.M. welo)

127107122 Dr. J. B. Fulzely

SCHEME OF EXAMINATION FOR B.TECH ELECTRONICS & TELECOMMUNICATION / ELECTRONICS & COMMUNICATION ENGINEERING (SEMESTER - VIII)

	8		Teacl	hing Sch	eme		A	Credit				MARKS			Minimum Passing Mar		
Code	Subject	L P T/A Total			L	P	T/A	Total	Th	eory	Practi	ical	Total Marks	Theory	Practical		
	Durana									Internal	Univ.	Internal	Univ.				
BEETC- 801PE	Program Elective –VI MOOC/NPTEL Course	3	•	-	3	3	-	-	3	30	70	-	-	100	45		
BEETC- 802PE	Program Elective -VII MOOC/NPTEL Course	3	-	-	3	3	-	-	3	30	70	-	-	100	45		
BEETC-	Project	20	12	-	12		6	-	6	-	-	50	50	100		50	
803P	Seminar	-	-	2A	2	-	-	2	2	-	. 	50	-	50		25	
	Total	6	12	2A	20	6	6	2	14	60	140	100	50	350			

Dr. P. B. Pollee PROWN
INTO Pour
Dr. R. D. P. D. Pour

LIST OF ELECTIVE COURSES

Semester	Elective Type	Subject
		1. Operating Systems
		2. Information Theory and Error Correctin
V	Program Elective-I	Codes
		3. Electronic Design Techniques With HD
		4. Sensors and Systems
		Computer Architecture
	Program Elective-II	Database Management Systems
VI	1 Togram Litetive-II	3. Antennas & Wave Propagation
7. 6:		4. Control System Engineering
	Open Elective-I	Consumer Electronics
	Open meenve-r	2. Industrial Electronics
		1. Audio and Video Engineering
	Program Elective-III	2. Web Technologies
	riogram Elective-III	3. Mobile Communications
	A DESCRIPTION OF THE PROPERTY	4. Robotics and Automation
		Mixed Signal Design
	Program Elective-IV	2. Data Science/ Cloud Computing
VII	1 Togram Elective-1v	3. Radar and Satellite Communication
***		4. PLA and Scada
		1. Soft computing
	Program Elective-V	2. Fundamentals of Machine Learning
	110grain Elective-v	3. Optical Communication
		4. Biomedical Engineering
	Open Elective II	1. Mechatronics
	орен Елесиче п	2. Bioengineering
		1. CMOS VLSI Design
	Mooc I	2. Artificial Intelligence
VIII	1.10001	3. Evolution of Air Interface towards 5G
10.000		4. MEMS
	MOOC	1. VLSI Signal Processing
4	111000	2. Android Programming

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SCHEME OF EXAMINATION RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR EIGHTH SEMESTER B. TECH (CHEMICAL ENGINEERING)

Sr.	Code			Work Load Hrs				Credit				Marks					
No.	Theory (T)	Subject										The	eory	Pract	tical		Min, % of
	Practical (P)	\$1750	Board	L	Р	T	Total	L	р	Т	Total	College Assessment	University	College Assessment	University	Total Marks	Marks Required
1	CE-PCC-801P	Industry Internship / Project	BCE	0	6	0	6	0	9	()	9	_	o eraity		*	No. of the last of	for Passing
		Total		0		0	,	0	0		-		- 2	100	100	200	50%
		1.000		U	0	U	0	0	9	0	9	•		100	100	200	5

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SCHEME OF EXAMINATION RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR EIGHTH SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

	Code				Wor	rk Load	Hrs		C	redit			Ma	ırks							
Sr. No.	Theory (T)	Subject										The		Prac	tical		Min. % of				
	Practical (P)		P)	etical (P)		ical (P) Board					P T	Total	L	L P	Т	Total	College Assessment	University	College Assessment		Total
1	CT-PCC-801P	industry Internship / Project	BCHT	0	6	0	6	0	9	0	0	rosossinen	Chiversity		University	Marks	for Passin				
		20			1000	750	-				10000	-		100	100	200	50%				
		Total		0	6	0	6	0	9	0	9	4		100	100	200					

Conoday

Semester – VIII (Fourth Year)

Branch: Fire Engineering

Eight Semester:

			ork Load Hours)	1			1	Marks				imum g Marks
Subject Code	Subjects				Credits	The	ory	Practi	ical	Total	1 40011	
Subject Code	And the state of t	L	T/A	P		Int	Uni	Int	Uni	Total	Theory	Practical
			_	20	10	-		200	300	500	-	250
PROJ-FE-402 (P)	Industrial Training and Attachment					1332		200	300	500		
	Total	0	0	0	10	-	-	200	300	500		

GENER Sout

B.Tech. SCHEME OF EXAMINATION 2021-22 Scheme of Teaching & Examination of Bachelor of Technology VIII Semester B.Tech. (Artificial Intelligence)

Sr	Course Code	Category	Course Name	Hours/	Week		Credits	Maximun	n Marks				Minimum Passing
No								Theory		Practica	ıl	Total	Marks
				L	Т	P							
								Internal	University	Internal	University		Theory Practical
	BTECHAI8017	Professional Elective Course	Elective IV	3	0	0	3.00	30	70		-	100	45
2	BTECHA802T	Professional Elective Course	Elective V	3	0	0	3.00	30	70	-	-	100	45
3	BTECHAI8037	Project/ Internship	Project	0	0	12	8.00			100	100	200	
Tota	1		*	6	0	12	14.00	60	140	100	100	400	

Elective IV:1. Cloud Computing 2 Augmented & Virtual Reality 3. Biomedical Instrumentation 4. Measurement and Design

Elective V: 1. Mobile Communication and Web Analytics 2. Optical Circuits & Fibres 3. Cyber Crimes & Digital Forensics 4. Data Visualization

Jon De W

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

VIII Semester B.Tech. (Robotics & Artificial Intelligence)

Sr.	Course Code	Category	Course Name		urs/ eek		Credits	11300 Maria (1130 - 1130 Maria (1130 M	М	aximum M	arks		Minimur	n Passing
				L	Т	P		T	heory	Pr	actical	Total	A STATE OF THE PARTY OF THE PAR	ırks
							Ì	Internal	University	Internal	University		Theory	Practical
1	BTechRAI801T	Professional Elective Course	Elective-IV	3	0	0	3.00	30	70	-	-	100	45	
2	BTechRAI802T	Professional Elective Course	Elective-V	3	0	0	3.00	30	70	-	-	100	45	
3	BTechRAI803P	Project Work	Project	0	0	16	8.00			100	100	200		100
Total				6	0	16	14.00	60	140	100	100	400		

Elective IV: 1. Cloud Computing 2. Robotics & Industrial Applications 3. Medical Robotics 4. Pattern Recognition

Elective V: 1.Cognitive Robotics 2.Operational Research in Robotics 3.Digital Forensics 4. Micro-Electro-Mechanical System

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Credit Structure

B. Tech. Robotics and Artificial Intelligence

Sr.No.	Semester				Categ	gory			Total
	Participation of the Section of the Control of the	BSC	ESC	HSMC	PCC	PEC	OEC	PROJ	
1.	Î	09	07	03	<u>u</u>		*	2#	19
2	II	09	13		5	-	2	72°	22
3	III	04	05	02	12		-	=	23
4	IV	-		-	22	2 %	2	01	23
5	V			02	16	03		-	21
6	VI	-	-		12	03	03	03	21
7	VII	-	45	22	08	03	03	03	17
8	VIII	_	-		74	06	-	08	14
Total		22	25	07	70	15	06	15	160

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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

VIII Semester B.Tech . (Industrial IOT)

Sr. No.	Course Code	Category	Course Name	5573	urs/ eek		Credit s	Maximur	n Marks				Minimun Ma	n Passing rks
05.00								9	Γheory	Practical	Į,	Total		
				L	Т	P						0		
								Internal	University	Internal	University		Theory	Practical
1	BTechIOT - 801T	Professional Electiv e Course	Elective IV	3	0	0	3.00	30	70	-	-	100	45	
2	BTechIOT - 802T	Professional Electiv e Course	Elective V	3	0	0	3.00	30	70		f	100	45	
3	BTechIOT - 803P	Project Work	Project	0	0	16	8.00			100	100	200		100
		Total		6	0	16	14.00	60	140	100	100	400		

Elective IV: 1. Cyber forensic and cyber defense 2. Generative adversarial network 3. Biomedical Instrumentation 4. Measurement and Design

Elective V: 1. Ubiquitous Sensing, Computing and Communication 2. Optical Circuits & Fibers 3. Cyber Crimes & Digital Forensics 4. Database Security and Access Control

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Credit Structure for UG Program B.Tech Industrial IOT

Sr. No.	Semester				Categ	gory			Total
		BSC	ESC	HSMC	PCC	PEC	OEC	PROJ	
1.	Ĩ	09	07	03	-	120	-	-	19
2	II	09	13	-	•	(<u>2</u> 1)	2	-	22
3	III	04	04	02	12				22
4	IV	_	04	=	18	9 34 00		01	23
5	V	-		02	16	03		(=)	21
6	VI	-	-		13	03	03	03	22
7	VII	_	-	-	08	03	03	03	17
8	VIII	_	14	-	-	06	3.00 E	08	14
Total		22	28	07	67	15	06	15	160

W D

Scheme of Teaching & Examination of Bachelor of Engineering VIII Semester B.Tech. (Artificial Intelligence& Machine Learning)

Sr.	Course	Category	Course	Children and	Hour	s/	Credits	Maximun	n Marks				Minimu Passing	
No.	Code		Name	We	ek			Th	eory	Practical		Total	Passing	ilai K5
		L T P												
								Internal	University	Internal	University		Theory	Practical
1	BTAI&ML 801T	Professio nalcore courses	Elective 4	3	0	0	3	30	70	-	-	100	45	
2	BTAI&ML 802T	Professio nalcore courses	Elective 5	3	0	0	3	30	70	-		100	45	
3	BTAI&ML 803P		Project Phase 2 / Internship		0	12	8	0	0	100	100	200		100
		Total		6	0	12	14	60	140	100	100	400		

Elective4: Augumented and Virtual Reality, Mobile Application Development, Big Data and NoSQL, Stastical Methods

Elective 5: Salesforce, Optical Circuits and Fibres, Business Intelligence, Cyber crimes and Digital Forensics, Natural Language Engineering

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Category wise credit distribution:

					Category				
Sr. No.	Semester	BSC	ESC	HSMC	PCC	PEC	OEC	PROJ	Total
1	ı	9	7	3	-	127	-	-	19
2	II	9	13	1125	22	~	-	-	22
3	III	3	2	2	13	121		-	20
4	IV	1980	390	-	22	-	120	-	22
5	V		-	2	14	3		-	19
6	VI	-	-	2	12	4	4	1	23
7	VII	170	-	2	8	4	4	3	21
8	VIII	-	· •	170	i e	6		8	14
Т	otal	21	22	11	69	17	8	12	160

Open Elective / Professional Elective

Computational Biology

Industry 4.0

Game Theory

Human Computer Interface

Buisness Intelligence

Bioinformatics

Virtual / Augmented Reality

Congnitive Systems

Fuzzy logic and Neural Network

Distributed Computing

R Programming

Cognitive Systems

Soft Computing

Current trends and technologies in AL&ML

optimization Methodologies

Natural Language Processing







PROPOSED SCHEME OF EXAMINATION FOR B. TECH (BIOTECHNOLOGY) EIGHTH SEMESTER B. TECH (BIOTECHNOLOGY)

Sr. No.	Code Theory (T) Practic	Subject	Boar d	Wo	ork Lo	ad (Ho	ours)	(Credit	,			Marks			Total Marks	Min. % Marks Require d for
	al (P)			L	P	T	Tota l	L	P	T	Tota l	College Assessm ent	eory University	Pra College Assessme nt	ctical University		passing
1	BT -PS -801 P	Project-II (Biotech Industrial or Biotech In- house Project or Bio- Entrepreneurship/startups)	ВВТ	0	18	0	18	0	9	0	9	-	-	100	200	300	50%
		Total		0	18	0	18	0	9	0	9	-	-	100	200	300	

B.Tech. Biotechnology Board

Suggested Credit Structure of UG Engineering Program

Sr.No.	Category	Credits Distribution	Credits Distribution as
		as per AICTE	per Scheme Submitted
1	Hymonities and Copiel Coinness including Management	12	9
1	Humanities and Social Sciences including Management	12	9
	courses		
2	Basic Science courses (Physics, Chemistry, Mathematics)	19	23.5
3	Engineering Science courses including workshop, EG, basics	16	13
	of electrical/mechanical/computer program etc.		
4	Biological Science courses including laboratory	16	18
5	Professional core courses	43	49.5
6	Professional Elective courses relevant to chosen	18	16
	specialization/branch		
7	Open subjects -Electives from other technical and/or	18	16
	emerging Subjects		
8	Project work, seminar and internship in industry or elsewhere	18	15
9	Mandatory Courses: [Environmental Sciences, Induction	-	Non Credit
	training, Indian Constitution, Essence of Indian Knowledge		
	Tradition]		
	Total	160	160

R.T.M. Nagpur University, Nagpur

Guidelines for HONORS (MAJOR) & MINOR For B.Tech. Programs of all the Engineering Colleges

1.0 PREAMBLE

Apart from the minimum credit requirements as per the scheme of exam for the award of the undergraduate engineering degree, these Honors (Major), Minor Programs offered by RTMNU provide opportunities for supplementing the learning experience. These programs offered are in parent as well as in diverse areas. These credits when are in a focused branch would earn the students' credentials like Honors (Major)/Minor. Honors (Major) scheme aims for vertical knowledge growth in his/her own branch which may have research orientation while Minor scheme aims for additional knowledge in any other branch for enhancing the employability.

On successful completion of the requirements of Honors (Major), the UG student will receive B. Tech. (Honors) degree with the mention of Honors' specialisation. Similarly on successful completion of the requirements of minors the UG student will receive B. Tech. degree with the mention of minors' specialisation. Additionally, the concerned college shall also issue the certificate of completion of Honors (Major) or Minors.

Participation of students in these programs shall not be mandatory. Aspiring students will register for courses mentioned in the program and acquire 18 (minimum) to 20 credits. A student opting for 'Honors' will not be entitled to register for 'Minor' and vice-versa. It is expected that the students with good academic standing, utilize their surplus time for enhancing their academic learning experience and gain a wide exposure.

These schemes are implemented progressively from the batch of UG students admitted in 2020-21 onwards. No additional fee would be charged for Honors/Minor courses by the college or University. However, SWAYAM-NPTEL will charge the fees for proctored examination and certification.

2.0 CREDITS to be earned by students for Honors (Major) / Minor degree

Total credits to be earned for Honors (Major) or Minor will be 18 to 20 along with all the prescribed credits of the regular B.Tech. program in which he/she is admitted.

Examples:

- a) Student who has completed regular B.Tech. in stipulated time schedule and also earned all prescribed Honor (Major) or Minor credits at the time of declaration of final year result, is eligible to get regular + Honor (Major) or Minor degree.
- b) Student who has completed regular B.Tech. in stipulated time schedule but fail to earn all prescribed Honor (Major) or Minor credits at the time of declaration of final year result, is eligible to get only regular degree.

3.0 DEGREE WITH HONORS, MAJOR & MINOR:

Technically there is no difference between the Title, Scheme of Examination and Syllabus between Honors and Major programs as far as number of credits and syllabus is concerned. A student will be conferred with:

- a) Honors Degree (e.g., "BTech in Mechanical Engineering with Honors in Advanced Dynamics") only if he/she is having a final CGPA of more than or equal to 7 in regular Program with no backlog in any semester, during the span of his/her degree (including Honors program).
- b) Degree with Major (e.g., "BTech in Mechanical Engineering with Majors in Advanced Dynamics") if he/she is not having a final CGPA of more than or equal to 7 in regular Program and/or had backlog subjects, in any semester, during the span of his/her degree (including Major program).
- c) Degree with Minor (e.g., "BTech in Mechanical Engineering with Minor in Electrical Engineering") if he/she is having a final CGPA of more than or equal to 7 in regular Program with no backlog in any semester, during the span of his/her degree (including Minor program).

Note: 1. It is expected that every department of the college/institution offering Major/Minor should appoint one Honors (Major)/Minor coordinator to help students sort out academic as well as administrative issues. Also, one Single Point of Contact (SPoC) be appointed at college/institute level.

2. The scheme shall ideally begin from the fourth semester of UG for the students admitted in the session 2020-21 onwards. However, it is flexible to the extent that student interested may start it from first semester also.

- 1. This platform is indigenously developed by seven IITs and IISc together under the umbrella of Ministry of Education, Govt. of India. Website address of NPTEL is www.nptel.ac.in and SWAYAM has its website 4.0 SWAYAM-NPTEL:
 - 2. SWAYAM-NPTEL platform has its own assessment system consisting of CIE (25 marks) and SEE (75 marks). For successful completion, 40 marks are required (min. 10 marks in CIE and 30 in SEE). SEE is a proctored exam which is conducted at designated centres at national level. Nagpur is one of such centres for
 - 3. SWAYAM-NPTEL follows the CBCS system. Every course is allotted credits based on the number of hours of the course duration. Students are given the choice to select the courses from core and elective courses
 - 4. SWAYAM-NPTEL charges fee of Rs. 1000/- (500/- for SC/ST) for conducting proctored examination and
 - CIE: Continuous Internal Evaluation SEE: Semester End Examination (Proctored Exam)

Each Board of Studies is offering minimum three Honors (Major) Programs. All these Honors (Major) Programs are 5.0 CERTIFICATE OF HONORS (MAJOR) offered through SWAYAM - NPTEL platform

Students having CGPA more than or equal to 6 (for regular students CGPA of third semester and for lateral entry students SGPA of third semester will be considered) and no backlogs shall be eligible to register for Honors courses of their parent discipline from the list prescribed by the University.

b) Implementation:

- 1. RTM Nagpur University has prescribed "branch wise specialisation wise" list of courses (core & elective) for Honors (Major), with all details including course name, course code, name of subject matter expert (SME) with affiliation, credits, teaching & evaluation scheme, course outcomes, detail syllabus and list of
- While giving the scheme of all such specialisations which course is to be completed in which semester is given, but it is only suggestive not compulsory. Semester wise course list is given with the logic of i) lower semester - lower level of difficulty and ii) lower semester courses are sometimes prerequisite to the higher
- 3. University will check whether a student has i) earned 18-20 credits & ii) the credits earned are by clearing the courses mentioned in the list of same specialisation pertaining to the parent branch of B.Tech.
- 4. The HoD of the parent department will identify and appoint one faculty member as "Honors/Minor Coordinator" who shall be responsible for all coordination, record keeping and guidance to the students.
- All applications of concerned students shall be verified and forwarded to the SPoC with remarks by the Honors/Minor Coordinator and HoD of the parent department.

Completing the assignments, giving the proctored examination and earning the certificate of requisite credits with prescribed percentage via SWAYAM - NPTEL platform is considered as satisfactory attendance for students.

The complete assessment and evaluation scheme is prescribed by SWAYAM-NPTEL platform, which students need to follow and abide by. If a student is not able to pass the course, can go for another attempt as and when the course

Certificates worth 18-20 credits of Honors courses must be produced on or before the last date/paper of 8th semester is made available for exam by SWAYAM-NPTEL. examination. Credits mentioned on such certificates will be final and binding.

All requirements of the regular program and Honors have to be completed within the stipulated period of the regular program i.e.,04 years for UG students who were admitted in the First Year of the program and 03 years for those who got lateral entry in second year of the program. No additional period will be permitted. If a student is unable to earn additional 18-20 credits along with all the prescribed credits of the parent program within the stipulated allowed duration, he/she will not be awarded Honors. The partial completion of Honors courses, if any, shall not be adjusted or converted into program credits anywhere in the credits structure of the curriculum of the regular program in which they were admitted and such additional credits will remain extra.

f) Certificate:

- For an Honors course completed successfully by the student, he/she shall be issued a certificate of completion
 of that course by SWAYAM-NPTEL. The passing of individual Honors courses shall not be mentioned on
 the Grade Cards.
- After earning 18-20 credits of Honors, a separate certificate of "Honors in ______ (name of specialisation/domain of Honors)" shall be awarded to the student by the college on completion of final semester. University will provide B.Tech. degree in parent branch with "Honors in ______ (name of specialisation/domain of Honors)".
- 3. After earning 18-20 credits of Major, a separate certificate of "Major in _____ (name of specialisation/domain of Major)" shall be awarded to the student by the college on completion of final semester. University will provide B.Tech. degree in parent branch with "Major in _____ (name of specialisation/domain of Major)".

g) Dropping/Withdrawal/Termination from Honors:

If a student drops or withdraws from the Honors scheme at any stage, the additional credits earned through Honors courses shall not be converted into program credits (core/electives/lab/project etc) and they will remain extra.

h) Class & Medal:

Successful completion of the Honors scheme will not indicate any Class or Division. For the award of a Medal to meritorious students, in case of a tie, student who has earned the Honors will be preferred.

6.0 CERTIFICATE OF MINOR

Each Board of Studies is offering minimum one MINOR program which is made available through SWAYAM – NPTEL platform. The program for MINOR offered by a department (for example CSE), shall be offered to all other departments except for the students of the parent department (CSE).

a) Eligibility of student:

Students having CGPA more than or equal to 6 (for regular students CGPA of third semester and for lateral entry students SGPA of third semester will be considered) and no backlogs shall be eligible to register for Minor courses of other than their parent discipline from the list prescribed by the University.

b) Implementation:

- RTM Nagpur University has prescribed "branch wise" list of Minor courses (core & elective), with all details
 including course name, course code, name of subject matter expert with affiliation, credits, teaching &
 evaluation scheme, course outcomes, detail syllabus and list of references.
- 2. While giving the scheme of branch wise Minor courses, which course is to be completed in which semester is given, but it is only suggestive not compulsory. Semester wise course list is given with the logic of i) lower semester lower level of difficulty and ii) lower semester courses are sometimes prerequisite to the higher semester courses.
- 3. University white deciding to give Minor degree will check whether B.Tech. student has i) earned 18-20 credits & ii) the credits earned are from the list of courses of the same Minor prescribed by the University. List of the courses leading to Minor is prescribed by the University for every department/program.

c) Student Attendance:

Completing the assignments, giving the prectored examination and earning the certificate of requisite credits with prescribed percentage via SWAYAM-NPTEL platform is considered as satisfactory attendance for students.

The complete assessment and evaluation scheme is prescribed by SWAYAM-NPTEL platform, which students need to follow and abide by. If a student is not able to pass the course, can go for another attempt as and when the course

Certificates worth 18-20 credits of Honors courses must be produced on or before the last date/paper of 8th semester examination. Credits mentioned on such certificates will be final and binding.

All requirements of the Minor program have to be completed within the stipulated period of the original program i.e., 04 years for UG students who were admitted in the First Year of the program and 03 years for those who got lateral entry in second year of the program. No additional period will be permitted. If a student is unable to earn 18-20 credits along with all the prescribed credits of a program in which he/she is admitted within the stipulated allowed duration of the original program he/she will not be awarded degree with Minor. The Minor courses completed partially, shall not be adjusted or converted into program credits anywhere in the credits structure of the regular curriculum of the parent program and they will remain extra.

- 1. For Minor courses completed successfully by the student, he/she shall be issued a certificate of completion of that course by SWAYAM-NPTEL. The passing of individual Minor courses shall not be mentioned on
- 2. After earning 18-20 credits of Minor, a separate certificate of "Minor Specialization in Engineering" shall be awarded to the student by the college on completion of final semester. University will provide B. Tech. degree in parent branch with "Minor Specialization in _
- 3. After earning 18-20 credits of Minor in interdisciplinary courses a separate certificate of "Minor in Multidisciplinary Courses" shall be awarded to the student by the college on completion of final semester. University will provide B.Tech. degree in parent branch with "Minor in Multidisciplinary Courses".

If a student drops or withdraws from the Minor scheme at any stage, the additional credits earned through Minor courses shall not be converted into program credits (core/electives/lab/project etc) and they will remain extra.

Successful completion of Minor scheme will not indicate any Class or Division. For the award of a Medal to meritorious students, in case of a tie, students who have completed the Minor scheme will be preferred.

On the basis of proctored examination conducted by NPTEL / SWAYAM, full credits shall be transferred only after 7.0 CREDIT TRANSFER submission of successful course completion certificates along with admit cards of examination.

The grade conversion and credit transfer of proctored examination conducted by NPTEL-SWAYAM shall be considered as below,

	Tabl	Equivalent Term	Grade Point
Score	Equivalent Grade	Outstanding	10
100	0		9
CONTRACTOR OF THE PARTY OF THE	A+	Excellent	8
90 to 99.99	· A	Very Good	0
80 to 89.99		Good	7
70 to 79.99	B+	Above Average	6
60 to 69.99	В	Average	5
50 to 59.99	C		4
	P	Pass	0
40 to 49.99	F	Fail	1 0
<40	Ab	Absent	0

2.0 GENERAL GUIDELINES FOR AWARENESS OF HONORS (MAJOR)/MINOR PROGRAMS:

1. Under each BoS, a steering committee shall be formed for smooth conduct of the Honors / Minor Program being offered by the department. The proposed composition shall be,

HoD (Chairman) + three senior teachers

- The steering Committee will conduct a meeting with all Fourth Semester students to explain the Honors (Major)/Minor programs including their contents, advantages, employability, specialization and any other related future aspects.
- 3. The committee shall be responsible for proper publicity of Honors (Major)/Minor programs, allocation of facilitators, smooth implementation of the mentoring scheme of NPTEL and liaising with students who have opted for the program.
- 4. Each department shall prepare an Honors (Major)/Minor brochure containing Scheme of Examination and Syllabus as prescribed by the University. Honors (Major)/Minor brochure so prepared shall be uptoaded on the website of the college.
- 5. The Honors (Major)/Minor Brochure shall also be mailed to each 4th Semester student and their parents by the department.
- 6. A video clip explaining the features of all Honors (Major)/Minor programs shall also be made available on the college website by each department.
- 7. The feedback and response related to Honors (Major)/Minor programs offered by each department shall be conducted immediately after the presentation of the steering committee and any action if required shall be taken immediately.

10.0 GRIEVANCE REDRESSAL MECHANISM

A committee constituted under the Chairmanship of the Dean will be responsible to address the grievances of students, teachers, institution and other concerned stake holders.

Dean (Science & Technology)