

JHARKHAND UNIVERSITY OF TECHNOLOGY

**(Established by State Act No. of 2017) Ranchi,
Jharkhand, India**

ACADEMIC REGULATIONS

FOR

M.TECH. PROGRAMS

Effective from the

ACADEMIC YEAR 2018-19

Contents

Sl.No	Topic	Page No.
1	INTRODUCTION	3
2	DURATION OF PROGRAMME	4
3	ELIGIBILITY	4
4	ADMISSIONS	4
5	ATTENDANCE	5
6	COURSE STRUCTURE	5
7	REGISTRATION	5
8	EXAMINATION	7
9	GRADING OF PERFORMANCE IN EXAMINATIONS	8
10	RECORDS OF ACADEMIC PROGRESS	9
11	REQUIREMENT FOR AWARD OF DEGREE	9
12	AWARD OF DEGREE	9
13	GRADE AFTER COMPLETION OF THE COURSE	10
14	RE-ADMISSION IN THE DEPARTMENT/COLLEGE/ INSTITUTION	10
15	DISSERTATION SUBMISSION	11
16	AWARD OF DISSERTATION MARKS	14
17	INTERPRETATION OF ORDINANCES	14
18	ACADEMIC REQUIREMENTS	15
19	THESIS AND THESIS EXAMINATION	20
20	GRADUATION REQUIRMENTS	22
21	REMOVAL OF DIFFICULTY	23
22	ANNEXURE- I	23
23	ANNEXURE- II	24
24	ANNEXURE- III	26
25	ANNEXURE- III.1	28
26	ANNEXURE- III.2	30
27	ANNEXURE- III.3	32
28	ANNEXURE- IV	33
29	ANNEXURE- V	34
30	ANNEXURE- VI	36

1. INTRODUCTION

The provisions contained in these regulations govern the conditions for imparting instructions in various post-graduate courses, conducting examinations and evaluation of students' performance leading to the **degree** of Master of Technology (M. Tech.). These are applicable to the new batches of Post Graduate students with the approval of the JHARKHAND UNIVERSITY OF TECHNOLOGY from time to time.

1.1 Disciplines: The specializations in which the courses of study are available and degrees will be awarded are:

1. Civil Engineering (Structural Engineering)
2. Civil Engineering (Geotechnical Engineering)
3. Mechanical Engineering (CAD/CAM)
4. Mechanical Engineering (Heat Power)
5. Mechanical Engineering (Machine Design)
6. Mechanical Engineering (Production Technology)
7. Electrical and Electronics Engineering (Power System)
8. Electrical and Electronics Engineering (Control Systems)
9. Computer Science and Engineering
10. Metallurgical Engineering (Process Metallurgy)
11. Metallurgical Engineering (Physical Metallurgy)
12. Chemical Engineering (Chemical Plant Design)

Department	Specialization
Civil Engineering	Structural Engineering
	Geotechnical Engineering
Mechanical Engineering	Heat Power/Thermal Engineering
	CAD/CAM
	Machine Design
	Production Technology/Production Engineering
Electrical and Electronics Engineering	Power Systems
	Control Systems
Computer Science & Engineering	
Metallurgical Engineering	Process Metallurgy
	Physical Metallurgy

New disciplines may be added any time in future with the approval of the appropriate authority of the Jharkhand University of Technology, Ranchi.

1.2 The provisions of these regulations shall also be applicable to any new disciplines that will be introduced from time to time and added to the list in Section 1.1.

1.3 Any regulation, as and when required, may be changed on the recommendation of the Academic council of the University.

2. DURATION OF PROGRAMME

2.1 Total duration of M. Tech. Programme shall be 2 years, with each year comprising of two semesters. Each semester shall normally have teaching for the 90 working days or as prescribed by A.I.C.T.E. from time to time.

2.2 The student admitted to M. Tech. Programme shall complete the course within a maximum period of four academic years from the date of first admission, failing which he/she has to discontinue the M.Tech. Programme.

2.3 The minimum credit requirement for M. Tech. degree is 68 credits.

3. ELIGIBILITY

3.1 Eligibility for admission in the M. Tech. Programme shall be the Bachelor's degree in the appropriate branch of Engineering.

3.2 The Academic Council of the University shall have power to amend or repeal the eligibility criteria laid down at Clause 3.1.

3.3 With GATE Score M.Sc. students can also be admitted to a relevant M.Tech. Degree program in allied branches.

4. ADMISSION

4.1 University shall permit admission to M. Tech. Programmes and award M.Tech. degrees to only such courses those are duly approved by AICTE/Academic Council of the University.

4.2 Admission to M.Tech. Programmes in the first year will only be made through GATE/Entrance test(s) conducted by the University followed by counselling.

4.3 Admission on migration of a candidate from any other University to the University should be allowed/Even credit theory should be permitted.

4.4 Reservation in admission to an M.Tech. programme shall be governed by the AICTE/State Government/ Central Government rules. Where such rules are at variance with each other, the decision of the Academic Council/Executive Council shall be final.

4.5 As per the NEP, limited number of students may be allowed for inter-college transfer with mutual consent of concerned institutions (Annexure ...GUIDELINES TO BE FINALIZED)

4.6 The University reserves the right to cancel the admission of any student at any stage of his career on grounds of unsatisfactory academic performance, irregular attendance in classes or indiscipline (Annexure I).

4.7 At the time of admission, the student is required to provide the following documents:

- (a) A certificate for proof of age (Birth certificate or Board certificate).
- (b) Pass certificate of the qualifying examination.
- (c) College/ School leaving certificate. [CLC/SLC]
- (d) Migration certificate
- (e) 02 recent passport size colour photographs
- (f) GATE score

(g) Other relevant category certificate, if any.

4.8 The student is also required to fill up prescribed forms for semester registration in the Jharkhand University of Technology, Ranchi.

4.9 A provisional admission may be permitted if any of the certificates is not produced, except College/ School leaving certificates and the rest have to be submitted on any other date to be fixed by the University/College/Institute.

5. ATTENDANCE

5.1 Every student is required to attend all the lectures, tutorials, practical classes and other prescribed curricular and co-curricular activities. The attendance can be condoned upto 25% on medical grounds or for other genuine reasons beyond the control of students.

5.2 A further relaxation of attendance upto 15% for a student can be given by the Dean (Academic)/ Principal of the College/ Director of the Institute provided that he/she has been absent with prior permission of the Dean (Academic)/Principal of the College/ Director of the Institute for the reasons acceptable to him.

5.3 No student will be allowed to appear in the end semester examination if he / she does not satisfy the overall average attendance requirements of Clause no. 5.1 and 5.2 and such student(s) shall be treated as having failed.

5.4 The attendance shall be counted from the date of admission in the college or start of academic session whichever is later.

6. COURSE STRUCTURE

6.1 There will be four types of courses.

- i Core Courses: These are the courses which are to be compulsorily studied by a student as the core requirement to complete the requirements of a program in a said discipline of study.
- ii Programme Specific Elective Courses: These are the courses, which can be chosen from a pool of courses supportive to the discipline.
- iii Open Elective Courses: These are the course, which can be chosen from the pool of courses. These should be supportive to the discipline/ providing extended scope/enabling an exposure to some other discipline / domain / nurturing student proficiency skills.
- iv Audit Courses: Courses, which are identified as mandatory non -credit courses.
- v Mini-Project: This is a course in which the student will have to solve a live problem using software/analytical/computational tools.
- vi **Dissertation:** In dissertation the student will have to work on a research topic under the guidance of supervisor(s). Write a dissertation report and make a presentation of the research work carried out during the semester(s).

6.2 The minimum number of students to be registered for an Elective to be offered shall not be less than 05.

6.3 A student shall exercise his/her option in respect of the electives and register for the same at the beginning of the concerned semester. The student may be permitted to opt for change of elective subject within 15 days from the date of commencement of the semester as per the calendar of the University.

7. REGISTRATION

7.1 Every student in the post graduate programme is required to be present in person and register for each semester on the date fixed and notified in the Academic Calendar. The registration process will have 3 components:

- a) Physical presence of the student on the campus on the first day of the semester,

- b) Payment of semester fees including any unpaid dues of past semesters and
- c) Selection of courses/subjects papers to be studied during the semester.

7.2 Registration of students in each semester will be coordinated by the **Examination Section of the University**. The subject details will be verified by the faculty members of respective Faculty/College/Institute. Payment of dues will be verified by the **Examination Section of the University**. An appropriate semester registration form will be used for this purpose.

7.3 A student who fails to register on the day announced for the purpose may be permitted by the Dean (Academic)/Principal/Director, in consideration of any urgent compelling reasons, late registration within next 5 working days on payment of an additional fee as prescribed by the University/College/Institute. Normally no late registration shall be permitted after the fifth working day from the scheduled date, except in special cases, a serious medical problem, a family calamity, etc. to be approved by the **Dean (Academic)/Principal/Director**. However, under no circumstances late registration after 15 calendar days from the scheduled date of registration is allowed.

7.4 Only those students will be permitted to register who have

- i cleared all University/College/Institute and Hostel dues of the previous semesters, Paid all required prescribed fees for the current semester,
- ii not been debarred from registering for a specified period on disciplinary or any other ground
- iii satisfied the academic requirements and not been struck off from the rolls of the Institute.

7.5 To be able to register in the semester a student must

- i Secure 'P' [Pass grade point].
- ii For passing the theory subject, student shall have to secure minimum of 40% of the maximum marks prescribed by the university for the subject and 50% of the aggregate marks including the sessional marks.
- iii For a pass in Practical / Internship/ Project/ Viva-voce examination, a student shall secure a minimum of 50% marks prescribed by the university in the relevant Practical / Internship/ Project/ Viva-voce including sessional marks.
- iv For passing a subject **which** has only **TA component and No ESE component** (such as Mini-project), a student shall secure a minimum of 50% of the maximum marks prescribed.
- v Obtain a Cumulative Grade Point Average (CGPA) of not lower than 5 (considering all courses including those in which the student has secured an F (Fail) grade. The method for calculating SGPA and CGPA is illustrated in Clause 10. If the CGPA at the end of the 2nd semester class is less than 5, the student will not be allowed to register in 3rd semester and resume it in the following year along with the next batch of students. In the repeat year, he must attend classes and be treated at par with fresh students. The M. Tech. programme must be completed within 4 years (i.e.8 semesters).
- vi Students who do not satisfy the Clause 7.5 or remains absent shall be deemed to have failed in that subject and may reappear in the University examination in the subsequent examination. However, the sessional marks awarded to the student/s at previous attempt in the concerned subject will be carried forward.
- vii A candidate may be awarded grace marks upto a maximum of total 10 marks, in maximum four subjects but not more than three marks in any subject including theory papers, practicals, project, seminar, industrial training and/ or aggregate marks in each academic year provided he/she can be declared to have passed the academic year by the award of these marks. The grace marks shall not be added to the aggregate marks.

7.6 For registration in 4th semester, a student must obtain CGPA not less than 5 in 3rd semester.

7.7 The classes of all semesters will start from the day following the registration, or any other date as per academic calendar of the University

7.8 A student who has been debarred from appearing at an examination either

i As a measure of disciplinary action or

ii For adopting malpractice at an examination, may register for the subject (s) as backlog papers in the following semester. Those who have been awarded grade X (“debarred”) because of poor attendance or for any other reason need to register for the course and attend classes as per rules. (Expect for 1st semester as per 7.3). Grade at the end of First Year (2nd Semester) CGPA \geq to register in 3rd semester with full suite of courses. To register in higher semester with full suite of course CGPA should also not be less than 5.

8. DISTRIBUTION OF MARKS IN VARIOUS EXAMINATIONS

End Semester Examination	60 MARKS
Internal Examination	40 MARKS

8.1 The examination office of the Jharkhand University of Technology will conduct the End Semester Examinations (ESE).

The end semester examinations will be of 60 marks. It will comprise of eight questions (answer any five) and carry 12 marks each. Questions will be set from the entire syllabus, at least one question from each module (wherever possible).

8.2 Mid semester examination of 20 marks (out of total internal marks 40) will be conducted by respective institute. The mid-term examination shall be conducted on 50% of the syllabus.

The mid semester examinations will comprise of seven questions (answer any five) and carry 4 marks each. Questions will be set from the syllabus as mention in **Clause 8.2**, at least one question from each module (wherever possible).

Internal	Marks
Mid Semester Exam	20
Two Class Tests	5+5=10
Assignment	5
Attendance	5
Total	40

8.3 Practical / Viva – Voce examination marks / Mini project

- External examiner viva-voce examination marks 30%

- Practical performed during lab period 40%
- Attendance 10%
- Lab record / lab file maintenance up to the mark 20%

8.4 Dissertation

- External examiner evaluation 30 %
- Internal evaluation by project in-charge 70 %

All necessary Charts, Tables, Codes and Data book, drawing board required by examinees will be provided by JUT/ respective College/Institution as per requirement.

9. GRADING OF PERFORMANCE IN EXAMINATIONS

As a measure of student's performance, an 8-point grading system using the following letter grades and corresponding grade points per credit shall be followed:

9.1 Performance Letter grade Grade Point per credit

Excellent	A+	10
Very good	A	9
Good	B+	8
Fair	B	7
Average	C+	6
Pass	C	5
Fail	F	0

Following method will be used for of converting percentage marks to Letter grades:

% of marks obtained with Letter Grade

90% and above	A+
80% to 89%	A
70% to 79%	B+
60% to 69%	B
50% to 59 %	C+

35% to 49% C

≤ 35 % F

To earn academic credit in a subject, a student should get a grading of “C” or above. Where prerequisite is specified for a course, a grading of C, or above shall be deemed as satisfying the prerequisite requirement.

10. RECORDS OF ACADEMIC PROGRESS

10.1 Semester Grade Point Average (SGPA) shall be calculated as under:

\sum Semester (Course credits x Grade point) for all courses

SGPA = -----

\sum Semester (Course credits)

10.2 The academic progress of the students in each semester shall be maintained in a grade card or transcript, wherein the grades awarded to students as well as the points secured by the students in the examinations, shall be entered. The transcript given to the students at the end of their complete undergraduate program shall indicate the Cumulative Grade Point Average (CGPA) which shall be calculated as follows:

\sum All Semester (Course credits x Grade point) for all courses

CGPA = -----

\sum All Semester (Course credits) i.e. \sum (All subjects credits)

The CGPA shall be rounded off to one place of decimal. While calculating CGPA, the ‘F’ shall be replaced by the better grade earned in these course in the subsequent semester/ Summer Examination.

10.3 The university shall follow the following conversion between CGPA and % marks.

% marks = (CGPA -0.5) x 10.0

10.4 The summer programme will be scheduled during the long Institute vacations after completion of regular semester. A student is permitted to register only for three theory papers for course scheduled in the summer programme, only if, he/she had registered for these courses earlier in the semester and wishes to repeat them because of failure in the courses.

11. GRADUATION REQUIREMENT

In order to qualify for a M. Tech. degree covered under these Regulations, a student must:

Complete all the credit requirements for the degree, as laid down in the prescribed curriculum of the discipline, with a minimum grade ‘C’ scored in every subject.

Obtain a CGPA of 5 or higher at the end of the semester in which he/she completes all the requirements for the degree.

12. AWARD OF DEGREE

Mode of Examination:

The theory and the internal/practical/project components will be bifurcated as follows:

- **Theory component**

1. TA (Internal Evaluation) – 40 marks

- a) Assignment/Class Test - 20 marks
- b) Mid semester examination - 20 marks (One half hours duration)

2. End semester examination- 60 marks (3 Hours duration)

- **Sessional/ Practical/ Mini Project Component**

- (a) TA(Progressive Evaluation)- 70 %
- (b) End semester external (viva-voce) - 30 %

- **Dissertation**

- (a) TA (Progressive Evaluation) – 70 %
- (b) Viva-voce examination – 30 %

Cases of adoption of unfair means in an examination shall be dealt with by the **Examination Disciplinary Committee** of Jharkhand University of Technology. If adoption of unfair means is proved, the punishment may be, depending on the quantum of the offence and prior record, reduction of grade, de-registration of a course, expulsion for one or more semesters or outright expulsion from the Institute.

13. AWARD OF DIVISION AFTER COMPLETION OF COURSE

70% and above	First class with distinction
60% to 69%	First class
40% to 59%	Second class (But CGPA not < 5)

14. RE-ADMISSION IN THE FACULTY/ COLLEGE/INSTITUTION

A student may be allowed for re-admission provided he/she satisfies one of the following conditions:

- A student is declared fail.
- A student did not appear in a semester examination or he/she was not granted permission to appear at the examination.
- A student has been detained by the institute and subsequently has been permitted to take re-admission.
- A student as an ex-student passed the examination of the academic year or qualified for carryover system.
- A student promoted with carry over subjects and he/she opted for readmission.

15. DISSERTATION SUBMISSION

15.1 The medium of expression for the dissertation shall be English language.

15.2 In addition to the Sessional and Practical work as required in the syllabi and course curricula, every student shall, in his/ her third and fourth semester, carry out dissertation work under the overall supervision of a supervisor or two supervisors. Normally only a teacher of the **Department/ Centre** concerned shall be allowed to supervise a dissertation work. When the topic of a dissertation so warrants at the most two teachers of the **Department/ Centre** concerned may be allowed to supervise a dissertation work. Considering the interdisciplinary nature of the work involved, a teacher from the sister department may be allowed to be associated as a co-supervisor. No person, other than a teacher of the Institute, shall be permitted to supervise an M.Tech dissertation work. Under no circumstances there shall be more than two supervisors (including cosupervisor) for a dissertation work.

15.3 Every M.Tech student shall, before the end of second semester, apply to the Co-ordinator concerned for allotment of suitable topic for carrying out dissertation work during the third and fourth semester. Every such application shall contain, among other things:

A synopsis of the problem (in about 300 words) on which he/she proposes to work along with the proposed plan of work and the title of the proposed dissertation.

The name(s) and designation(s) of the proposed supervisor(s). (c) An affirmation of consent by the proposed supervisor(s).

15.4 The **Co-ordinators** shall, in consultation with the Head concerned, finalise the topic for dissertation work along with the name(s) of the supervisor(s).

For this purpose, the **Co-ordinator** shall take into account the relevance of the topic on which the candidate proposes to work. However, the **Co-ordinator** may, if he considers it necessary or expedient, ask a student to carry out dissertation work on a topic other than the topic proposed by the student and/or under a supervisor other than the one under whom the student proposed to carry out his/ her dissertation work. Under every such situation the student shall submit a fresh application under rule 15.3 incorporating necessary changes as desired.

The Co-ordinator shall prepare a list comprising the names of the students, topic allotted to each of them along with the name of the supervisor(s). The list duly approved by the Head concerned shall be sent to the Academic Section before the commencement of the third semester.

15.5 The dissertation shall:

- a) be composed on the problem stated in the student's application made under Rule 15.3;
- b) embody the result of studies carried out by him/her;
- c) show evidence of the student's capacity for critical examination and judgement; and,
- d) be satisfactory in presentation so far as language, style and form are concerned.

Every such dissertation shall include a suitable abstract of the work presented.

15.6 The student shall indicate clearly and extensively in the preface to his/her dissertation and specially in notes:-

- a) the source from which referred information is taken;
- b) the extent to which he/she has availed himself/ herself of the work of others and the portion of the dissertation he/she claims to be his/ her original; and
- c) whether his/ her dissertation work has been conducted independently or in collaboration with others.

15.7 No student shall be allowed to submit his/her interim dissertation (at the end of the third semester) or the dissertation (at the end of the fourth semester) or to deliver the seminar on dissertation/ interim dissertation or to appear at the viva-voce examination on dissertation/interim dissertation at the end of the third or fourth semester, as the case may be, unless he/ she was present and actually carried out dissertation related work on 75% of the working days during the semester concerned. A certificate to this effect, issued by the Supervisor(s) concerned and duly endorsed by the Co-ordinator concerned, shall be considered necessary and sufficient for this purpose. However, a student who, owing to medical or other valid grounds (as admissible by the **Dean/Director/Principal**, fails to secure the required 75% attendance but carries out dissertation related work by being present on not less than 60% of the working days in a semester, may be permitted by the Dean/Director/Principal, in his own discretion, to submit his/her dissertation/ interim dissertation and/or to deliver the seminar on dissertation/ interim dissertation and/ or to appear at the viva-voce examination. In all such cases, the **Dean/Director/Principal** shall exercise his discretion in consultation with the Dean (Academic) and the **Co-ordinator/** Head concerned.

15.8 Every student who, with prior permission from the **Co-ordinator** concerned, spends a specified period of time in an industry/ organisation/ institute during third and/or fourth semester for reasons of work related to his/her dissertation, shall be required to produce an attendance certificate from an appropriate officer of the industry/ organisation/ institute concerned, in respect of the days on which the student was actually present in the industry/ organisation/ institute concerned and carried out work related to his/her dissertation. The number of days so mentioned in the certificate shall be reckoned for the purpose of deciding a student's eligibility to submit his/her dissertation/ interim dissertation as the case may be and/or to deliver the seminar on dissertation/ interim dissertation and/ or to appear at the viva-voce examination under **Clause 15.7**.

For the purpose of this rule the co-ordinator concerned shall not permit a student to spend any period of time in an industry/ organisation/ institute for reasons of work related to his/her dissertation unless the supervisor(s) concerned specifically recommends him to do so. While granting permission under this Clause the **Co-ordinator** shall ensure that the student concerned completes other requirements for the semester as stipulated in the curricula and syllabi. No student shall be entitled to any relaxation of the requirements of the course curriculum and syllabus on the ground that he/she was absent from the Institute for the purpose of carrying out dissertation related work.

15.9 Every third semester student shall submit, at the end of the semester, on a date not later than the last date specified for the purpose in the academic calendar, three typed (or printed) copies of his/ her interim dissertation to the co-ordinator concerned. The interim dissertation shall:

- a) be composed on the problem stated in the student's application made under **Clause 15.3**;
- b) embody the result of studies carried out so far by him/her;
- c) be satisfactory in presentation so far as language, style and form are concerned; and
- d) be accompanied by a certificate from the supervisor to the effect that the dissertation is a record of work done by the student himself/ herself.

15.10 At the end of the third semester every registered and eligible student shall deliver a seminar and appear at the viva-voce examination to be held by a committee of examiners. The **Co-ordinator** shall, in consultation with the Head concerned, notify the date of the seminar and viva-voce. The performance of the student in the seminar shall be evaluated and the viva-voce shall be conducted by a committee of examiners comprising the following:

- i Head Concerned Chairman
- ii One member of faculty from a Sister Department/**Centre** (to be nominated by the

- Dean/Director/Principal) Member
- iii An internal examiner Member
- iv Co-ordinator of the M.Tech Programme Convenor

The supervisor under whose guidance the student worked for his/her dissertation shall normally be the internal examiner. Under exceptional cases, the Dean/Director/Principal may appoint a different internal examiner.

Presence of three members of the committee shall be necessary for conducting the seminar and viva-voce.

The viva-voce shall be with reference to the dissertation work and related topic only and shall be conducted in public where persons not belonging to the Committee of examiners can be present as silent observers.

The Committee shall evaluate and award separate marks for the seminar and for the Viva-voce. The marks so awarded shall be sent in a sealed envelope to the Examination.

15.11 Every student shall, on completion of his/ her dissertation work, submit to the Examination Section (through the Co-ordinator concerned) three typed (or printed) bound copies of his/her dissertation embodying the results of his/ her dissertation work along with three copies of abstract of about 500 words with an application (in prescribed form) for examination.

The dissertation can be submitted on any working day after the expiry of 16 weeks from the commencement of the fourth semester but not later than the date specified for the purpose in the academic calendar.

Provided that, in exceptional cases, the Chairman may permit a student (on the recommendation of Head/ Co-ordinator concerned) to submit his/ her dissertation within the following semester for which tuition fee/ hostel and other fees (as may be applicable) shall be charged.

No such dissertation shall be processed for examination unless it is accompanied by (a) the prescribed fee and (b) a certificate from the supervisor to the effect that the dissertation is a record of work done by the student himself/ herself.

15.12 The dissertation shall satisfy the following conditions:

(i) It should be satisfactory as far as its scientific/technical/literary presentation is concerned. The dissertation should be submitted along with the 'Originality Report' using an antiplagiarism software e.g., Turnitin or similar software. The student shall also provide a certificate of non-plagiarism duly countersigned by the dissertation supervisor/ guide. The colleges will forward the M.Tech thesis along with Turnitin plagiarism check report having similarity less than 20%.

(ii) It is presumed that a candidate would endeavour to present quality work in the dissertation leading to get the results published in one International Journal (SCOPUS / SCI indexed) or two International conference papers. The thesis evaluation panel will give due consideration on this point while awarding marks for dissertation.

(iii) If the conditions stated at **Clause 15.12**

(iv) is not met then the thesis will entirely be reviewed by the departmental committee consisting of head and two senior faculty members of the department along with the guide, coordinator of the M.Tech. programme and one person to be nominated by the Director of the Institute before viva-voce.

(v) The dissertation shall be typed as per the prescribed format and specifications given in the Annexure II.

15.13 If a student fails in the 'Seminar and viva-voce on dissertation' or in dissertation in the fourth semester, he/she may-be allowed to resubmit the dissertation and appear at the viva-voce/ seminar within a period of six months from the date of declaration of the result of the fourth semester.

16. AWARD OF DISSERTATION MARKS

16.1 Session marks for the dissertation shall be awarded jointly by the supervisor(s)/guide, Head of the Department and a senior faculty member of the department.

16.2 Final dissertation evaluation will be carried out by an external examiner. The viva voce will be held at examination center(s) decided by the University. The marks shall be awarded by the external examiner(s) appointed by the University. The supervisor(s)/guide may join the viva voce if he/she desires so.

17. INTERPRETATION OF ORDINANCES

Notwithstanding anything contained in the Ordinances, the Vice-Chancellor may, on behalf of the Academic Council/ Executive Council approve the amendment, modification of the Ordinance (s), which in his/her opinion is necessary or expedient for smooth running of a programme and reports it to the next meeting of the Academic Council/Executive Council. In case of any dispute, difference of opinion in interpretation of these Ordinances or any other matter not covered in these Ordinances, the decision of the Vice- Chancellor/ Academic Council/Executive Council shall be final and binding.

18. ACADEMIC REQUIREMENTS

18.1 Minimum Residence, Maximum Duration and Academic Requirements

The following Table lists the minimum residence and maximum duration allowed in the program, and credit requirements for graduation in the various program (to be read together with **Section 2.3 and Tables 2 & 3 of Annexure – II**):

"Course Work" includes only postgraduate course credits as well as permitted undergraduate course credits (up to a maximum number of 2 courses of level 4), unless stated otherwise. To satisfy the "Minimum Residence" requirements, registration must be over consecutive semesters; exception will be made only if the student is on authorized leave. "Maximum Duration" is counted from the date of student's first registration. SPI/CPI will be calculated only on the basis of course work.

Program	Minimum Total Credits	Minimum Credits through Course Work	Minimum Credits through Thesis Work	Minimum Number of Courses ¹	Minimum Residence ²	Maximum Duration
M.Tech.	220	88	99	8	4 Semesters	4 Years

1. The 'Minimum Number of Courses' is only indicative and in case of any difference, the minimum number of credits through course work will be required to be fulfilled.

The minimum specified for each category is arrived at on the basis of optimum credits per semester. This gives flexibility to a student to choose more/less credits between courses and research work to make up for the minimum credit requirement for a program.

A Department may prescribe, with prior approval of the Academic Council, additional credits of courses/thesis over and above the minimum specified in the above Table.

Calculation of credits for M.Tech. Program:

The credits assigned for the course work is given by

$$C = L + T + P + SS$$

$$SS = 2L + T + A,$$

where L indicates the number of lecture hours per week, T indicates the number of tutorial hours per week, P indicates the number of practical hours per week, SS stands for self-study hours expected to be spent by the student per week while A indicates number of additional hours to be put in by the candidate as additional work. The value of A will usually be zero. However, in some courses with no tutorial, there may be term paper submissions to be done by individual students. Similarly, in some laboratory courses there may be a need for significant amount of preparation before the experiment(s) can be conducted. In such situations, to reflect the actual academic load of the course, A may be adequately chosen. Examples for a few cases are given in Annexure – VI.

18.2 Extension of Program

No student who has completed the prescribed maximum duration in the program shall be allowed to register in the subsequent semester unless he/she has been granted extension of the program by the Chairman, Academic Council on the recommendations of the DPGC and the SPGC.

18.3 Audit Courses

The students are permitted to audit courses, with the consent of the instructor concerned, but such courses shall not be shown either on the registration form or on the grade report.

18.4 Evaluation of Academic Performance in a Course

1. In each course a student is registered, he/she earns certain approved credits and is awarded a letter grade indicating his/her overall performance in that course.
2. There shall be continuous evaluation of the academic performance of the student. For this purpose, there shall be two periodical examinations and one end semester examination. In addition, home assignments, quizzes, etc. may be given by the course instructor. Weights for different components of the evaluation may be decided by the course instructor.

After the evaluation of the total semester performance, the Instructor would assign a letter grade based on the overall performance of a student in that course. The actual weights for different components of the evaluation applicable for a specific course and the pattern of grading shall be announced by the course instructor in the beginning of the semester.

Please see *Annexure – VIII*

3. A student getting an F grade in a course must repeat the course. If the course happens to be an elective course, he/she can substitute the same by another elective course with the permission of the Convener, DPGC.
4. If an M.Tech. student does not secure a CPI of at least 6.0 at the end of a semester/summer term, he/she may be allowed to repeat a course in which he/she has obtained grade D, or substitute the course (if it is an elective course) by another elective course with the permission of the Convener, DPGC.

If a Ph.D. student does not secure a CPI of at least 6.5 at the end of a semester/summer term, he/she may be allowed to repeat a course in which he/she has obtained grade D, or substitute the course (if it is an elective course) by another elective course with the permission of the Convener, DPGC.

Whenever a student is permitted to repeat or substitute a course, the new letter grade replaces the old letter grade in the computation of the CPI, but, both the grades appear on his/her grade report.

5. A student registers for thesis credits for M.Tech program in units of 11 credits in a semester. A semester load of research work is equivalent to 5 units.
At the end of the semester, the progress made by an M.Tech. student towards the

thesis work during the semester will be assessed by the supervisor(s) and the grade S/X will be awarded for each thesis unit if the work is satisfactory/unsatisfactory, as the case may be.

Format for the M.Tech. thesis grades in student's grade reports

Thesis Units	Maximum Thesis Credits	Grading Options
5	55	5S, 4S+1X, 3S+2X, 2S+3X, 1S+4X or 5X
4	44	4S, 3S+1X, 2S+2X, 1S+3X or 4X
3	33	3S, 2S+1X, 1S+2X or 3X
2	22	2S, 1S+1X or 2X
1	11	1S or 1X
0	0	0S+0X

6. If a student is on leave for a part of the semester or submits his/her thesis in the middle of a semester, the Academic Council may reduce his/her thesis units appropriately, on the recommendation DPGC.
7. In addition to the above, a separate oral examination will be conducted for M.Tech. students as outlined in [Section 11.5.1](#).

18.5 Computation of the Semester Performance Index (SPI) and Cumulative Performance Index (CPI)

The Semester Performance Index (SPI) is a weighted average of the grade points earned by a student in courses credited and describes his/her academic performance in a semester. If the grade points associated with the letter grades awarded to a student are $G_1, G_2, G_3, G_4,$ and G_5 in five courses and the corresponding credits are $C_1, C_2, C_3, C_4,$ and C_5 , the SPI is given by

$$\text{SPI} = \frac{C_1 \times G_1 + C_2 \times G_2 + C_3 \times G_3 + C_4 \times G_4 + C_5 \times G_5}{C_1 + C_2 + C_3 + C_4 + C_5}$$

The Cumulative Performance Index (CPI) indicates the overall academic performance of a student in all the courses registered up to and including the latest completed semester/summer term. It is computed in the same manner as the SPI, considering all the courses (say, n), and is given by

$$\text{CPI} = \sum_{i=1}^n \frac{C_i \times G_i}{C_i}$$

where $C_1, C_2,$ etc. are the credits for the courses that the student has registered for all the semesters including the summer terms completed and $G_1, G_2,$ etc. are respectively the corresponding grade points.

In the computation of both SPI and CPI, courses with S, X and T grades are ignored.

Where necessary, the CPI may be converted to its percentage equivalent by multiplying the same by 10.

18.6 Make-up Examination

If a student, for cogent reasons such as illness, etc., fails to appear in the end-semester examination in one or more course(s), he/she may make a request personally or through someone to the Chairperson, SPGC duly forwarded by the Convener, DPGC for a make-up examination within two days of the date of the scheduled examination. Such a request must, however, be made on a prescribed form, available in the office of the Dean of Academic Affairs, giving reasons for the failure to appear in the end-semester examination with a certificate from the designated medical officer of the Institute, in case the failure was due to illness.

For failures to appear in periodical examinations, etc., it is entirely up to the Instructor to ascertain the proficiency of the student by whatever means he/she considers appropriate if he/she is satisfied of the genuineness of the reason for the concerned student's absence from the examination.

18.7 Academic Performance Requirement

1. The students in the M.Tech. program have to fulfil the credits requirement as specified in Section 7.1.
2. The minimum CPI requirement for graduation is
3. The DPGC will keep a watch on the progress of students who earn less than 50% of credits at the end of first semester and issue a letter stating that they should fulfil the requirements as per the following clause with intimation to the Academic Council.
4. If a student, at the end of the summer term after the second semester, fails to earn at least 50% of the total credits of the cumulative load up to that point, he/she shall be deemed to have earned zero credits and all the grades he/she has obtained in both the first and the second semesters will be cancelled. Such a student has to repeat the program by registering again for the program as a fresh candidate. However, for the purpose of maximum duration of the course the date of his/her first registration shall be treated as the starting point. The grade report shall indicate that the previous grades are cancelled and the fresh grades are for the semesters which he/she has repeated.
5. The Department/College/Institute **Post Graduate Committee (PGC)** will also keep a watch on the M.Tech. students who are registered for the thesis credits and will issue a warning letter to a student if he/she accumulates two X grades in the thesis units.
6. An M.Tech.-student will normally be not allowed to continue in the program if he/she accumulates four or more X grades in the thesis units.
7. The cases of termination of the program of such students will be presented to the Academic Council by the Chairperson, Academic Council based on the recommendation of the DPGC/IPGC/CPGC concerned.
8. The termination letter is issued by the Head of the Department/Director/Principal of the Institute/College after receiving the communication from the Dean of Academic.

19. THESIS AND THESIS EXAMINATION

19.1 Appointment of Thesis Supervisors for M.Tech. Students

1. A student shall not normally have more than two supervisors (Supervisor and a Co- Supervisor) at any given time. In case of students under external registration program, the co-supervisor shall be from the sponsoring organization, who shall be referred to as external supervisor.
2. The supervisor(s) will normally be appointed at the end of the first semester for M.Tech. students.

Till the supervisor is appointed, a faculty advisor may be appointed by the DPGC/IPGC/CPGC for all students admitted in a particular semester, who will advise on the selection of courses, oversee the performance and credit requirements of each one of that batch of students.

3. Thesis supervisor(s) of a student will be appointed from amongst the faculty members of the Department/College/Institute by the Chairperson, Academic Council on the recommendation of DPGC/CPGC/IPGC.
4. Under exceptional circumstances, an employee of JUT with the rank of senior scientific officer and above and having a doctoral degree in the discipline concerned can be appointed as a co-supervisor of a M. Tech. student. The recommendation of the DPGC/CPGC/IPGC through the Academic Council, regarding the merit and qualifications of the co-supervisor under consideration will be sent to the Chairman, Academic Council for approval. Such an employee can be appointed as co-supervisor for only one M. Tech. student at a time.
5. In exceptional cases a student can have a co-supervisor from outside the Institute on the recommendation of the DPGC/CPGC/IPGC and the Academic Council and approval of the Chairman, Academic Council.
6. The appointment or change of supervisor(s) will be communicated to the Academic Council by the **DPGC/CPGC/IPGC**. No change/addition of supervisor(s) is allowed after the thesis has been submitted.
7. In case there has been a change/addition in the supervisor(s), the M.Tech. thesis will not be submitted earlier than three months from the date of such a change.
8. If a student's supervisor proceeds on long leave for more than three months in case of M.Tech. students, the **DPGC/CPGC/IPGC** shall appoint a new supervisor or a co-supervisor in consultation with the supervisor and the student. In such a case the number of supervisors may be more than two if an external supervisor already exists. If the supervisor of a student proceeds on leave for not more than three months in case of M.Tech. students, the **DPGC/CPGC/IPGC** may appoint a program coordinator to take care of the various formalities.

***Note:** The comprehensive examination can be conducted by the **Convener, DPGC** or the program coordinator. However, the **SOTA**, open seminar, thesis submission, defense, etc. might get postponed till the supervisor returns. However,

if the student has a co-supervisor, these things may be taken care of by the co-supervisor.

9. If all research work and related analysis are complete except for writing and submission of the thesis, and the supervisor proposes to go on leave, the **DPGC/CPGC/IPGC** may appoint a program coordinator, to take care of the formalities, such as providing the list of examiners, conducting the oral examination, etc.
10. In case a supervisor resigns/retires/expires or otherwise ceases to be a faculty member of the Institute, the **DPGC/CPGC/IPGC** will appoint a new supervisor or co-supervisor.
11. In case a faculty member is due to retire in less than two years' time, he/she will not be appointed as a supervisor or co-supervisor.
12. In such extra-ordinary situations as and when a supervisor refuses to supervise a student who had completed nearly half of the thesis credits, the candidate may be given an option to identify another supervisor from the same Department/College/Institute and transfer his/her thesis credits earned thus far, under the new supervisor. Alternatively, the candidate may be given a choice to transfer his/her registration to another Department/College/Institute where a matching research area exists and a faculty member is willing to supervise the student. The two **DPGCs/CPGC/IPGC** concerned should come to a mutual agreement. The matter should be sent to Chairman, Academic Council, through Dean (Academic) for approval.

19.2 Constitution of Committees/Boards for Thesis and Oral Examination

19.2.1 M.Tech. Thesis Oral Examination Committee

1. The thesis will be examined by an oral examination committee proposed by the thesis supervisor(s)/program coordinator in consultation with the Head of the Department/ College/Institute concerned. It will be recommended by the **DPGC/CPGC/IPGC** and approved by the Chairperson, Academic Council.
2. The committee shall consist of the thesis supervisor(s)/ program coordinator and at least two but not more than four other members, one of whom should belong to a Department/ School other than the student's Department/College/Institute. The thesis supervisor/program coordinator will act as the Chairman of the Committee.

19.3 Submission of Thesis

19.3.1 M.Tech. Thesis

After the M.Tech. thesis oral examination committee has been constituted, unbound copies of the thesis one for each examiner of the oral board, (prepared according to the format prescribed in the "Specification and Information Regarding the Preparation of Thesis"), will be submitted to the Dean (Academic) through the **DPGC/CPGC/IPGC** and Academic Council, at least 10 days before the probable date of oral examination. The Academic Section will arrange to send the copies of the thesis to the examiners.

Two copies of the abstract (approximately 250 words) should also be submitted along with the thesis.

19.4 Processing of the Thesis

19.4.1 M Tech Oral Examination

1. The oral examination will be conducted within four months from the date of submission of the thesis. If a student does not appear in the oral examination within this time period, his/her program would be deemed to have been terminated. Request for reinstatement in the program by such a student should be addressed to the Chairman, Academic Council. The request may be considered by the Academic Council and in case the Academic Council grants the request it shall specify the requirements that the student must fulfil for the award of the degree.
2. The thesis supervisor/program coordinator will intimate the date of the oral examination to the Academic Section.
3. The oral examination committee will evaluate the thesis, conduct the oral examination and send a report of the examination to the Dean of Academic through **DPGC/CPGC/IPGC** and the Chairperson, Academic Council.
4. A thesis will be considered to have been accepted if all members of the oral examination committee recommend its acceptance. A thesis, which is not accepted, will be considered to have been rejected. Upon acceptance, the candidate is expected to submit the bound copies to the Academic Section incorporating corrections, if any, normally within one week of the acceptance of the thesis by the oral examination committee.
5. If a thesis is rejected in the present form but recommended for resubmission after incorporating any modification/correction suggested by the oral examination committee, oral examination of the resubmitted thesis will be conducted by the original committee unless a different committee is approved by the Chairperson, Academic Council. If the re-submitted thesis is rejected, the matter will be reported to the Academic Council for appropriate action.
6. Acceptance of the thesis will be reported to the Academic Council for approval.

20. GRADUATION REQUIREMENTS

A student shall be deemed to have completed the graduation requirements, if the student has

- i) passed all the prescribed courses,
- ii) attained the minimum required CPI,
- iii) earned the minimum number of credits through course work and thesis work and the minimum number of total credits prescribed for the program,
- iv) satisfied the minimum residence requirements,

- v) satisfied all the requirements specified by the concerned Department/School, if any,
- vi) satisfied the quality of expectations for the thesis as specified by the thesis board,
- vii) at least a research publication (desirable) for M.Tech. (to be submitted separately), and
- viii) satisfied all the requirements specified by the Senate and the Ordinances.

In addition, the student should have paid all the dues to the Institute and, should have no pending case of indiscipline.

21. REMOVAL OF DIFFICULTY

Notwithstanding anything contained in these ordinances, the Academic Council of the JUT, Ranchi reserves the right to modify/amend without notice, the curricula, procedures, requirements, and rules pertaining to its postgraduate program.

Any doubt or dispute about the interpretation of these Ordinances shall be referred to the Chairman, Academic Council of the JUT, Ranchi, whose decision shall be final and binding.

ANNEXURE - I

POSTGRADUATE COMMITTEES

Each Department shall have a Department Postgraduate Committee (**DPGC**) consisting of a Convener to be nominated by the Head of the Department of the concerned Department in consultation with the faculty of the Department, the Head of the Department and a minimum of four and a maximum of eight faculty members to be chosen by the Department, and two students. The student members shall be chosen by the postgraduate students of the Department for a period of one academic year.

The University Postgraduate Committee (**UPGC**) shall consist of the Conveners of all the **DPGCs**, and five additional student members, of whom two shall be from the Ph.D. program, two shall be from the M.Tech. program. The student members shall be nominated by the Students'. In addition, the outgoing Chairperson (if not otherwise a member, by virtue of being Convener of the **DPGC** concerned) shall be a member of **SPGC**. The Chairperson, **SPGC** is elected according to the procedures laid down by the Elections Committee of the Senate.

The **SPGC** shall have jurisdiction in the following matters concerning the postgraduate program of the Institute: the formal approval of new courses of instruction, modification of courses already approved, the credit value of courses, the formal approval of admission of postgraduate students, the admission of qualified students to candidacy for degrees, the rules governing the form of presentation and disposal of theses, the conduct of oral and written examinations and in such other related matters as may be referred to it by the Senate.

The functions of the **UPGC** shall consist primarily of general policy determination, coordination and review, but the Senate shall retain the power of final review. In the

discharge of its responsibilities the committee shall make full use of the appraisals and recommendations of the various Departments concerned. This committee shall be assisted by the **DPGCs**.

The student members shall not participate when the cases of academic evaluation of individual students are being considered, although the students' opinion might be sought prior to taking any decision.

ANNEXURE - II

Table 1: M.Tech. Program and the Specializations

A. Program in the Engineering Disciplines

Program	Specialization
M.Tech. in Civil Engineering	a) Environmental Engineering b) Geotechnical Engineering c) Hydraulics and Water Resources Engineering d) Structural Engineering e) Transportation Engineering
M.Tech. in Electrical Engineering	a) Power Systems b) Electrical Machines and Drives c) Control Systems d) Power Electronics
M.Tech. in Electronics Engineering	a) Microwave Engineering b) Digital Techniques and Instrumentation c) Microelectronics d) Communication Systems Engineering
M.Tech. in Mechanical Engineering	a) Machine Design b) Thermal and Fluid Engineering c) Production Engineering
M.Tech. in Metallurgical Engineering	a) Extractive Metallurgy b) Alloy Technology
M.Tech. in Mining Engineering	a) Mine Environment b) Rock Mechanics c) Mine Planning

B. Interdisciplinary Program

Program	Offered by
M.Tech. in Industrial Management	Mechanical Engineering Department
M.Tech. in Systems Engineering	Electrical Engineering Department

Table 2: M.Tech. Program and the Requisite Qualifications

A. Program with specializations

Discipline	Specialization	Eligibility
Civil Engineering	f) Environmental Engineering g) Geotechnical Engineering h) Hydraulics and Water Resources Engineering i) Structural Engineering j) Transportation Engineering	B.Tech. or an equivalent degree in the respective branch of engineering.
Mechanical Engineering	d) Machine Design e) Thermal and Fluid Engineering f) Production Engineering	B.Tech. or an equivalent degree in the respective branch of engineering.
Metallurgical Engineering	c) Extractive Metallurgy d) Alloy Technology	B.Tech. or an equivalent degree in Metallurgical Engg., Materials Science/Engineering, Mineral/Chemical/Ceramic /Mechanical Engg., Chemical Tech. or M.Sc. (Physics/ Chemistry) with
		specialization in Solid State Physics, Physical/ Inorganic Chemistry provided the candidate passed B.Sc./ B.Sc. (Hons.) Examination with Mathematics as one of the subject at undergraduate level
Mining Engineering	d) Mine Environment e) Rock Mechanics f) Mine Planning	B.Tech. or an equivalent degree in the respective branch of engineering.
Electrical Engineering	e) Power Systems f) Electrical Machines and Drives	B.Tech. or an equivalent degree in Electrical Engg.
	g) Control Systems	B.Tech. or an equivalent degree in Electrical/ Electronics/ Control Systems/ Instrumentation Engg.
	h) Power Electronics	B.Tech. or an equivalent degree in Electrical/ Electronics Engg.
Electronics Engineering	f) Microwave Engg. g) Digital Techniques and Instrumentation h) Microelectronics i) Communication Systems Engg.	B.Tech. or an equivalent degree in Electrical or Electronics Engg. with valid GATE Score in Electronics Engg.

A. Inter-disciplinary program

Discipline	Eligibility
Industrial Management (Offered by the Mechanical Engineering Department)	B.Tech. or an equivalent degree in any branch of engineering
Systems Engineering (Offered by the Electrical Engineering Department)	B.Tech. or an equivalent degree in any branch of engineering

NOTE: 1. Candidates desirous of applying for admission to different M.Tech. program must send separate applications to the Department/College/Institute concerned for M.Tech. program being offered by the Department/College/Institute. Separate applications are also required for inter-disciplinary program offered by the same Department.

Candidates desirous of applying for admission to different M.Tech. program must send their original application to the Department/College/Institute which is their first preference and copy of their application to each of their other preferred Departments/College/Institute.

2. Not more than 40% of the total seats in the Departments, wherever candidates from allied disciplines are declared eligible for admission, shall be open for any one allied discipline. However, preference will be given for eligible candidates from the discipline based on their performance in the written test/interview.
3. Not more than 40% of the total seats in interdisciplinary program in Schools will be open for any ONE branch of Engineering or Science.

ANNEXURE III

RESERVATION OF SEATS

SC/ST Category

In each program 15 per cent seats are reserved for the Scheduled Castes (SC) candidates and 7.5 per cent seats are reserved for the Scheduled Tribes (ST) candidates. Such candidates are required to produce at the time of admission an **original certificate** in the prescribed format (see Annexure III.1).

OBC Category

Board of Governors has approved 27 per cent reservation for Other Backward Classes (OBCs) candidates (other than those covered under the category of “creamy layer”).

The reservation is applicable to those OBC candidates who satisfy the following eligibility requirements.

1. They belong to one of the castes listed against the state of their residence on the website of **National Commission of Backward Classes (NCBC)**, i.e., they belong to the **central list** of **OBC** (visit the URL: <http://ncbc.nic.in/backward-classes/index.html>).

2. They are excluded from the Creamy Layer as provided in the OM No. 36012/22/93-(SCT) dated 8th September, 1993 of the Ministry of Personnel, Public Grievance and Pension, Department of Personnel and Training as amended by that Department vide OM No. 36033/3/2004-Estt.(Res) dated 9th March, 2004 and any other notification that may take place before the admission. More details on the definition of Creamy Layer are available at the following links:

<http://ncbc.nic.in/html/creamyayer.html>

http://persmin.gov.in/WriteData/WMS/ScanDocument/36033_5_2004_01April2005.htm

To ensure that the benefit of reservation is given only to the **OBCs excluded from the Creamy Layer** (as per the above-mentioned Office Memorandum), candidates belonging to the OBC category are required to produce at the time of admission an **original certificate** in the prescribed format (see Annexure III.2).

PC Category

In each category of seats (unreserved and reserved), 3 per cent seats are reserved for the Physically Challenged (PC) candidates and are to be filled up as per the admission procedure laid down for that category. In case one or more of the seats reserved for the PC candidates in a category remain vacant, those are permitted to be filled up by the other candidates belonging to the same category.

ANNEXURE III.1

(Format of SC/ST Certificate)

FORM OF THE CERTIFICATE TO BE PRODUCED BY SCHEDULED CASTE AND SCHEDULED TRIBE CANDIDATES IN SUPPORT OF THEIR CLAIM

1. This is to certify that Shri/Shrimati/Kumari* _____ son/daughter* of _____ of Village/Town* _____ in District/Division* _____ of State/Union Territory* _____ belongs to the _____ Caste/Tribe* which is recognised as a Scheduled Caste/Scheduled Tribe* under:-

The Constitution (Scheduled Castes) Order, 1950

*The Constitution (Scheduled Tribes) Order, 1950

*The Constitution (Scheduled Castes) (Union Territories) Order, 1951

*The Constitution (Scheduled Tribes) (Union Territories) Order, 1951

[As amended by the Scheduled Castes and Scheduled Tribes Lists (Modification Order) 1956, the Bombay Reorganisation Act, 1960, the Punjab Reorganisation Act, 1966, the State of Himachal Pradesh Act, 1970, the North Eastern Areas (Reorganisation) Act, 1971, the Scheduled Castes and Scheduled Tribes Orders, (Amendment) Act, 1976 and the Scheduled Castes and Scheduled Tribes Orders (Amendment) Act, 2002].

*The Constitution (Jammu & Kashmir) Scheduled Castes Order, 1956;

*The Constitution (Andaman and Nicobar Islands) Scheduled Tribes Order, 1959, as amended by the Scheduled Castes and Scheduled Tribes Order (Amendment) Act, 1976;

*The Constitution (Dadara and Nagar Haveli) Scheduled Castes, Order, 1962;

*The Constitution (Dadara and Nagar Haveli) Scheduled Tribes, Order, 1962;

*The Constitution (Pondicherry) Scheduled Castes Order, 1964;

*The Constitution (Uttar Pradesh) Scheduled Tribes Order, 1967;

*The Constitution (Goa, Daman and Diu) Scheduled Castes Order, 1968;

*The Constitution (Goa, Daman and Diu) Scheduled Tribes Order, 1968;

*The Constitution (Nagaland) Scheduled Tribes Order, 1970;

*The Constitution (Sikkim) Scheduled Castes Order, 1978;

*The Constitution (Sikkim) Scheduled Tribes Order, 1978;

*The Constitution (Jammu and Kashmir) Scheduled Tribes Order, 1989;

*The Constitution (Scheduled Castes) Orders (Amendment) Act, 1990;

*The Constitution (Scheduled Tribes) Order (Amendment) Act, 1991;

*The Constitution (Scheduled Tribes) Order (Second Amendment) Act, 1991;

2. This certificate is issued on the basis of the Scheduled Castes/Scheduled Tribes* Certificate issued to Shri/Shrimati* _____ father/mother* of Shri/Shrimati/Kumari* _____ of Village/Town* _____ in District/Division* _____ of the State/Union Territory* _____ who belong to the Caste/Tribe* which is recognized as a Scheduled Caste/Scheduled Tribe* in the State/Union Territory* _____ issued by the _____ dated _____.

3. Shri/Shrimati/Kumari* _____ and/or* his/her* family ordinarily reside(s)** in village/town* _____ of _____ District/Division*

of the State/Union Territory* of____.

Signature _____

Designation_____ (with seal of Office)

Place_____ State/Union Territory* _____ Date _____

***Please delete the word(s) which are not applicable.**

IMPORTANT NOTES

1. The term “ordinarily reside(s)** used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.

2. Officers competent to issue Caste/Tribe certificates:

(i) District Magistrate/Additional District Magistrate/Collector/Deputy Commissioner/Additional Deputy Commissioner/Deputy Collector/1st Class Stipendiary Magistrate/City Magistrate/Sub-Divisional Magistrate/Taluka Magistrate/Executive Magistrate/Extra Assistant Commissioner.

(ii) Chief Presidency Magistrate/Additional Chief Presidency Magistrate/Presidency Magistrate.

(iii) Revenue Officers not below the rank of Tehsildar.

(iv) Sub-Divisional Officer of the area where the candidate and/or his family normally reside(s).

(v) Administrator/Secretary to Administrator/Development Officer (Lakshadweep Island).

3. Certificate issued by any other authority will be rejected.

ANNEXURE III.2

(Format of OBC Certificate)

FORM OF CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES APPLYING FOR ADMISSION TO CENTRAL EDUCATION INSTITUTES UNDER THE GOVERNMENT OF INDIA

This is to certify that Shri/Smt./Kum. _____
_____ Son/Daughter of Shri/Smt. _____ of
Village/Town _____ District/Division _____ in the
_____ State belongs to the
_____ Community which is recognized as a
backward class under:

- (i) Resolution No. 12011/68/93-BCC(C) dated 10/09/93 published in the Gazette of India Extraordinary Part I Section I No. 186 dated 13/09/93.
- (ii) Resolution No. 12011/9/94-BCC dated 19/10/94 published in the Gazette of India Extraordinary Part I Section I No. 163 dated 20/10/94.
- (iii) Resolution No. 12011/7/95-BCC dated 24/05/95 published in the Gazette of India Extraordinary Part I Section I No. 88 dated 25/05/95.
- (iv) Resolution No. 12011/96/94-BCC dated 9/03/96.
- (v) Resolution No. 12011/44/96-BCC dated 6/12/96 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 11/12/96.
- (vi) Resolution No. 12011/13/97-BCC dated 03/12/97.
- (vii) Resolution No. 12011/99/94-BCC dated 11/12/97.
- (viii) Resolution No. 12011/68/98-BCC dated 27/10/99.
- (ix) Resolution No. 12011/88/98-BCC dated 6/12/99 published in the Gazette of India Extraordinary Part I Section I No. 270 dated 06/12/99.
- (x) Resolution No. 12011/36/99-BCC dated 04/04/2000 published in the Gazette of India Extraordinary Part I Section I No. 71 dated 04/04/2000.
- (xi) Resolution No. 12011/44/99-BCC dated 21/09/2000 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 21/09/2000.
- (xii) Resolution No. 12015/9/2000-BCC dated 06/09/2001.
- (xiii) Resolution No. 12011/1/2001-BCC dated 19/06/2003.
- (xiv) Resolution No. 12011/4/2002-BCC dated 13/01/2004.
- (xv) Resolution No. 12011/9/2004-BCC dated 16/01/2006 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 16/01/2006.

Shri/Smt./Kum. _____ and/or his family ordinarily reside(s) in the
_____ District/Division of
_____ State. This is also to certify that he/she does not
belong to the persons/sections (Creamy Layer) mentioned in Column 3 of the
Schedule to the Government of India, Department of Personnel & Training O.M. No.
36012/22/93-Estt.(SCT) dated 08/09/93 which is modified vide OM No.
36033/3/2004 Estt.(Res.) dated 09/03/2004.

Dated:
District Magistrate/
Deputy
Commissioner, etc.
Seal

NOTE:

(a) The term 'Ordinarily' used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.

(b) The authorities competent to issue Caste Certificates are indicated below:

(i) District Magistrate / Additional Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner / Deputy Collector / Ist Class Stipendiary Magistrate / Sub- Divisional magistrate / Taluka Magistrate / Executive Magistrate / Extra Assistant Commissioner (not below the rank of Ist Class Stipendiary Magistrate).

(ii) Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.

(iii) Revenue Officer not below the rank of Tehsildar' and

(iv) Sub-Divisional Officer of the area where the candidate and / or his family resides.

RELAXATION IN THE QUALIFYING MARKS FOR SC/ST CANDIDATES

A relaxation of 5% marks / 0.5 CPI shall be admissible on all qualifying marks/CPI for Scheduled Caste and Scheduled Tribe candidates in the admission.

EXAMPLES FOR CREDIT CALCULATION

a) Theory courses with Tutorials

Assuming that there are 4 contact hours per week per course, out of which, one contact hour is devoted to tutorial,

$$C = 3 L + 2 T + P + A$$

$$= 3 \times 3 + 2 \times 1 + 0 + 0 = 9 + 2 = 11$$

b) Theory courses without Tutorials

Assuming that there are 3 contact hours per week per

course, $C = 3 L + 2 T + P + A$

$$= 3 \times 3 + 0 + 0 + 0 = 9$$

c) Theory courses with 3 contact hours per week per course and two hours of additional work per week

$$C = 3 L + 2 T + P + A$$

$$= 3 \times 3 + 0 + 0 + 2 = 9 + 2 = 11$$

d) Practical courses

Assuming that one hour of preparatory work is required before conducting a 3-hour practical per week,

$$C = 3 L + 2 T + P + A$$

$$= 0 + 0 + 3 + 1 = 4.$$

e) Thesis credits:

Assuming that a week-long research work by a student can be approximately equated to 5 credits, a semester shall carry 55 credits of research work, which is equivalent to 5 units. In other words, one unit of thesis work is equivalent to 11 credits.

ANNEXURE – V

Rules Regarding Conduct and Discipline

Following rules shall be in force to govern the conduct and discipline of all students:

1. Students shall show due respect to the teachers of the Institute, the Wardens and Hostel Superintendent of the Hostels, the Sports Officers and the Officers of the National Cadet Corps; proper courtesy should also be extended to the employees of the Institute and of the Hostels. They shall also pay due attention and courtesy to visitors.

2. Students are required to develop a friendly relationship with fellow students. In particular, they are expected to show kindness and consideration to the new students admitted to the Institute every year. Law bans ragging in any form to anybody. Any act of physical or mental pressurization of junior students, individually or in group, will be considered as an act of ragging. Ragging also includes forcing junior students to meet seniors outside institute premises, or in places where a student has no valid reason to be present, asking irrelevant questions or using abusive language. Ragging will be considered as gross indiscipline and will be severely dealt with, which may include expulsion from the institute. Any incident of ragging inside or outside the campus must be reported to a Hostel Superintendent, the chief warden or a faculty member designated to look after ragging issues by any student, senior or fresher, who has witnessed an incident. Failure to report a ragging incident will be considered a serious offence, even if one is not personally involved in it. If a junior student yields to any form of ragging by senior students and does not inform the Institute or Hostel Superintendents, or wilfully withholds the information in an enquiry of ragging incident, the matter will be treated as indiscipline on the part of the junior student and invite punishment comparable to those against ragging itself. Wilful withholding of complaint by a junior student does not automatically exempt a senior from punishment.

3. The following acts of omission and/or commission and comparable offences shall constitute gross violation of the code of conduct and are liable to invoke disciplinary measures:

Furnishing false statement of any kind in the form of application for admission or for award of scholarship or prizes etc. Furnishing false statement to the Disciplinary Committee, or willfully withholding information relevant to an enquiry. Organizing or participating in any activity that has potential for driving fellow students along lines of religion, caste, home state, and batch of admission or any other unhealthy criterion.

- Physical or mental harassment of fresher's through physical contact or oral abuse.
- Getting involved in a brawl or fight with persons outside the Institute, either alone or in a group, irrespective of whom initiated the conflict.
- Willfully damaging or stealthily removing any property belongings of the Institute, Hostels or fellow students.
- Adoption of unfair means in the examinations.
- Possession, consumption or distribution of alcoholic drinks or any kind of hallucinogenic drugs.
- Organizing or participating in any group activity except purely academic and scientific programmes in company with others in or outside the campus without prior permission of the Principal of the Institute.
- Mutilation or unauthorized possession of library books.
- Not cooperating with faculty, officers investigating a potential disciplinary issue.
- Resorting to noisy and unseemly behaviour, disturbing studies of fellow students.

- Disturbing in drunken state or otherwise an incident an academic or student function or any other public event.
 - Not obeying traffic rules on campus, not following safety practices or causing potential danger to oneself or other persons in any way.
 - Displaying lack of courtesy and decorum, resorting to indecent behaviour anywhere within or outside the campus.
 - Not intimating his/her absence to the Hostel Superintendent before leaving campus.
 - Getting involved in an activity that violates state or national laws.
4. Commensurate with the gravity of the offence, the punishment for indiscipline may be
- Reprimand, impose fine or take any other suitable measure.
 - Debarment from medals and prizes.
 - For economic offences (either misappropriation of money or damage to Institute property), the cost to the damage done will be recovered along with a penalty which may be up to ten times of the cost recovered.
 - Partial (one month or one semester) or complete debarment from campus placement,
 - Reduction in grade in one or more courses.
 - Expulsion from the Hostel.
 - Rustication for a specified period, or outright expulsion from the Institute.
5. All major acts of indiscipline, which may have serious repercussion on the students in general and/or which may warrant a uniform and more formalized nature of investigation, shall be handled by the Institute Disciplinary Committee appointed by Principal of the Colleges. The Disciplinary Committee shall investigate complaints; examine available evidence and award punishment. Recommendation of the committee, which will include the suggested punishment in case of guilt proven, will be forwarded to the Chairman of the Governing Body of the Colleges for necessary action.
6. Proof of guilt need not necessarily be at the same level as necessary in a court of law. The committee, in order to protect the academic rights of a greater body of students, may award disciplinary measures if it is reasonably satisfied that such measures are in the greater interest of the students.
7. The Principal of the Colleges, at his discretion may take additional measures keeping in mind long term issues and impact on other aspects of Institute management. The Principal make minor changes in the nature of punishment awarded or reduce the level and/or quantum of punishment if he feels appropriate.
8. Acts which may be classed as ‘crimes’ rather than acts of indiscipline will be reported to the state authorities; they include such acts as causing serious injury to fellow students or others, causing major damage to Institute property, being involved in activities prejudicial to national security or to that maintaining communal harmony etc.
9. Cases of adoption of unfair means in an examination shall be dealt with by the Examination Disciplinary Committee of Jharkhand University of Technology. If adoption of unfair means is proved, the punishment may be, depending on the quantum of the offence and prior record, reduction of grade, de-registration of a course, expulsion for one or more semesters or outright expulsion from the Institute.

APPENDIX – VI

Guidelines for Arrangement of Certificates and Text in Thesis

For M.Tech.

1. Cover Page (In prescribed colour and format)
2. Inside Cover Page (Identical to Cover Page)
3. Declaration Certificate of Guide(s)
4. Certificate of Approval
5. Acknowledgments
6. Abstract
7. Nomenclature (if any)
8. Contents

Main text of thesis should be typed on A4 size paper in Font Times New Roman (Size 12) with margin: Left 1.5”, Right: 1”, Top: 1”, Bottom: 1” and arranged in suitable sections like introduction, Problem Definition, Literature Review, Computational / Design/ Experimental work/Case study, Results and Discussion, Conclusion, Future Scope of Work, References, Appendix (if any). The Thesis must be hard cover bound.



SAMPLE PROFORMA FOR THE COVER AND INSIDE PAGE

Paper : A4, Margin : Top : 1", Bottom : 1", Left 1.5", Right : 1",

Line Spacing : 1.5 lines throughout the page ,

Text Alignment : Centre throughout the page

Arial 16 Caps
Bold

**EXPERIMENTAL INVESTIGATION OF THE EFFECT
OF HEIGHT ON THE FLOW FIELD AROUND
PROTRUSIONS AT SUPERSONIC SPEED**

Arial 12
Caps 2
Blank
Lines



Times New Roman
16, Bold, Italic



**A Thesis
Submitted in partial fulfilment of the
requirements for the award of the Degree of**

Arial 12 Caps
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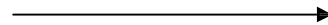


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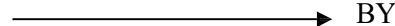


**MASTER OF TECHNOLOGY
IN CAD/CAM**

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Arial 14



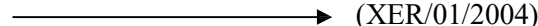
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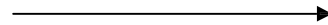
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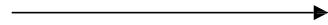
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Institute Logo
Size 1"x 1"



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Arial 14 Caps
Bold



**DEPARTMENT OF MECHANICAL
ENGINEERING B.I.T. SINDRI
828123, DHANBAD 2018**

JHARKHAND UNIVERSITY OF TECHNOLOGY, JHARKHAND

Paper : A4, Margin : Top : 1”, Bottom : 1”, Left 1.5”, Right : 1”,
Line Spacing : 1.5 lines through out the page ,
Text Alignment : Centre through out the page

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DECLARATION CERTIFICATE

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Thesis Title

Arial 14, Bold

Arial 14

This is to certify that the work presented in the thesis entitled
**“Experimental Investigation of the Effect of Height on the Flow Field
around Protrusions at Supersonic Speed”** in partial fulfillment of the
requirement for the award of Degree of **Master of Technology in
Mechanical Engineering** of BIT Sindri, Dhanbad is an authentic work
carried out under my supervision and guidance.

To the best of my knowledge, the content of this thesis does not
form a basis for the award of any previous Degree to anyone else.

Date :

Arial 14

(Supervisor’s Name & Signature)

Dept. of Mechanical Engineering
B.I.T., Sindri, Dhanbad

Arial 14 Head


Dept. of Mechanical Engineering
B.I.T., Sindri
Dhanbad- 828123

Dean

(Academic)
B.I.T., Sindri,
Dhanbad – 828123

(Do not mention names)

Paper : A4, Margin : Top : 1", Bottom : 1", Left 1.5", Right : 1", Line Spacing : 1.5 lines through out the page , Text Alignment : Centre through out the page

Arial 16 Caps, Bold  **CERTIFICATE OF APPROVAL**

Arial 12 1 Blank Line 

Thesis Title Arial 14, Bold	{	The foregoing thesis entitled " Experimental Investigation of the Effect of Height on the Flow Field around Protrusions at Supersonic Speed ", is hereby approved as a creditable study of research topic and has been presented in satisfactory manner to warrant its acceptance as prerequisite to the degree for which it has been submitted.
Arial 14		It is understood that by this approval, the undersigned do not necessarily endorse any conclusion drawn or opinion expressed therein, but approve the thesis for the purpose for which it is submitted.

(Internal Examiner)

(External Examiner)

(Chairman)

Head of the Department

Colour scheme for cover page of post graduate thesis/project: M.Tech  Light Blue

* * *