



RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

NOTIFICATION

No. Acad/Sci.F/2015

Date : 16th February,2015

To,

The Principal
of all the affiliated Science Colleges
of Rashtrasant Tukadoji Maharaj
Nagpur University, Nagpur

Subject:- Issue of Direction No. 3 of 2015.

Sir/Madam,

I am forwarding herewith a copy of the Direction No. 3 of 2015 issued by the Hon'ble Vice-Chancellor under Section 14(8) of Maharashtra Universities Act, 1994 '**Direction governing the examination leading to the Degree of (Master of Science) (Credit Based Semester Pattern) And Degree of (Master of Science And Technology) Applied Geology(Credit Based Semester Pattern)**' along with the scheme to be implemented from Academic Session 2014-2015.

You are requested to kindly bring it to the notice of all teachers and students of your college.
Thanking you,

**New Direction available on the Rashtrasant Tukadoji Maharaj Nagpur University website.
(www.nagpuruniversity.org.)**

Yours faithfully,

Sd/-

(Dr. A.V. Gomashe)
Registrar,

No. Acad/Sci.F./2015

Nagpur dated the 16 th February,2015

Copy for information and necessary action along with the Direction, Scheme and Syllabi as mentioned above to :-

- 1) The Dean Faculty of Science, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.
- 2) The Controller of Examinations, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
- 3) The Director, B.C.U.D., Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
- 4) The Deputy Registrar (Examinations) Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.
- 5) The Deputy Registrar (Coll. Sec.) Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
- 6) The Asstt. Registrar (Prof. Exam.), Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
- 7) The Asstt. Registrar (Conf.), Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.
- 8) The Asstt. Registrar (Exams & Enquiry.), Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
- 9) The Officer-in-Charge, Publication Section, R.T.M. Nagpur University, Nagpur.
- 10) The Asstt. Registrar, Ordinance Section, R.T.M. Nagpur University, Nagpur
- 11) The P. A. to the Hon'ble Vice-Chancellor, R.T.M. Nagpur University, Nagpur
- 12) The P. A. to the Hon'ble Pro-Vice-Chancellor, R.T.M. Nagpur University, Nagpur
- 13) The P. A. to the Registrar, R.T.M. Nagpur University, Nagpur
- 14) Mrs. Veena Prakash, Information Scientist, R.T.M. Nagpur University, Nagpur

Sd/-

(Puranchandra Meshram)
Deputy Registrar (Acad.)



RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
FACULTY OF SCIENCE

DIRECTION NO. 3 OF 2015

**DIRECTION RELATING TO THE EXAMINATION LEADING TO THE DEGREE OF विज्ञान पारंगत
(MASTER OF SCIENCE) (CREDIT BASED SEMESTER PATTERN), AND DEGREE OF विज्ञान पारंगत
(तंत्र) उपयोजित भूशास्त्र- (MASTER OF SCIENCE AND TECHNOLOGY) APPLIED GEOLOGY (CREDIT
BASED SEMESTER PATTERN)
(FACULTY OF SCIENCE)**

(Issued under Section 14(8) of the Maharashtra Universities Act, 1994)

Whereas, Maharashtra Universities Act, 1994 (hereinafter referred to as Act) has come into force from 22nd July, 1994 and was amended from time to time,

AND

Whereas, the University Grants Commission, New Delhi vide letter No.D.O.No.F-2/2008/(XI Plan), dated 31 January 2008 regarding new initiatives under the XI Plan – Academic reforms in the University has suggested for improving quality of higher education and to initiate the academic reform at the earliest,

AND

Whereas, the Board of Studies in all the Science subjects in their meeting held during 15.12.2011 prepared the syllabi and scheme of examination for the M.Sc. and M.Sc. Tech degree course and recommended for starting of the credit based semester pattern in Faculty of Science from the academic session 2012-13,

AND

Whereas, the Emergent Faculty of Science in its meeting held on 27.1.2015, has considered, accepted and recommended to Academic Council, for M.Sc. and M.Sc. Tech along with draft direction and other details.

AND

Whereas, the Vice Chancellor of Rashtrasant Tukadoji Maharaj Nagpur University, in exercise of powers conferred upon me under sub-section (7) of section 14 of the Maharashtra Universities Act., 1994, on behalf of the Academic Council & Management Council on for M.Sc. along with draft direction and other details.

AND

Whereas, the new draft direction and scheme of examination as per semester pattern is to be implemented from the Academic Session 2014-15 for M.Sc. and M.Sc. Tech degree course which is to be regulated by this direction and as such there is no existence and framing of an Ordinance for the above examination is a time consuming process.

AND

Whereas, ordinance making is a time consuming process, therefore, I, Dr. V.S. Deshpande , Vice Chancellor Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur in exercise of powers vested under Section 14(8) of the Act do hereby issue the following Direction.

1. This Direction may be called "Direction relating to examinations leading to the Degree of विज्ञान पारंगत -- Master of Science in the Faculty of Science (Credit Based Semester Pattern).
2. The direction shall come into force from the date of its issue by Hon'ble Vice Chancellor and shall remain in force till the relevant ordinance comes into being in accordance with the provisions of the Act.
2. The duration of the M.Sc. course shall be of two academic years consisting of four semesters with University examinations at the end of each semester namely:
 - a) विज्ञान पारंगत [M.Sc. Semester I Exam.]

- b) विज्ञान पारंगत [M.Sc. Semester II Exam.]
 c) विज्ञान पारंगत [M.Sc. Semester III Exam.]
 d) विज्ञान पारंगत [M.Sc. Semester IV Exam.]
3. The duration of the M.Sc. (Tech) Applied Geology course shall be of three academic years consisting of six semester with University examinations at the end of each semester namely:
- a) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र [M.Sc. Semester I Exam.]
 b) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र [M.Sc. Semester II Exam.]
 c) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र [M.Sc. Semester III Exam.]
 d) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र [M.Sc. Semester IV Exam.]
 e) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र [M.Sc. Semester V Exam.]
 f) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र [M.Sc. Semester VI Exam.]
4. The examinations shall be held at such places and dates which are notified by the University.

ELIGIBILITY TO THE COURSE:

5. Subject to their compliance with the provisions of this direction and of other ordinances in force from time to time, the following applicant candidates shall be eligible for the admission to Master of Science and examinations thereof

A) a) For विज्ञान पारंगत [M.Sc. (Physics) Semester-I]

For admission to the M.Sc. Semester I in Physics, a candidate shall have offered Physics as one of the subjects at the qualifying B.Sc. Examination.

b) For विज्ञान पारंगत [M.Sc. (Chemistry) Semester-I]

For admission to the M.Sc. Semester I in Chemistry, a candidate shall have offered Chemistry/ Industrial Chemistry as one of the subjects at the qualifying B.Sc. Examination.

c) For विज्ञान पारंगत [M.Sc. (Mathematics) Semester-I]

For admission to the M.Sc./ M.A. Semester I in Mathematics, a candidate shall have offered Mathematics as one of the subjects at the qualifying B.Sc. /B.A. Examination.

Provision of M.Sc./M.A. Mathematics private students should be withdrawn.

d) For विज्ञान पारंगत [M.Sc. (Statistics) Semester-I]

For admission to the M.Sc./M.A. Semester I in Statistics, a candidate shall have offered Statistics/Mathematics as one of the subjects at the qualifying B.Sc./B.A. Examination.

An applicant holding B.A./B.Sc. with Mathematics for admission to M.Sc./M.A. course in Statistics.

e) For विज्ञान पारंगत [M.Sc. (Computer Science) Semester-I]

For admission to the M.Sc. Semester I in Computer Science, a candidate shall have offered Computer Science as one of the optional subjects of study and examination at B.Sc. degree or B.Sc./B.E. examination with Post B.Sc. diploma course in Computer Science and Application of RTM Nagpur University or any other statutory university or B.Sc. with optional subjects Computer Maintenance/ B.Sc. (Information Technology) / B.C.A.

f) For विज्ञान पारंगत [M.Sc. (Electronics) Semester-I]

For admission to the M.Sc. Semester I in Electronics, a candidate shall have offered Electronics as one of the subjects at the qualifying B.Sc. Examination / B.Sc. with Computer Maintenance as one of the subject.

g) For विज्ञान पारंगत [M.Sc. (Information Technology) Semester-I]

For admission to the M.Sc. Semester I in Information Technology, a candidate must have Mathematics at 10+2 level and shall have passed B.Sc. (Computer Science) / B.Sc. (Information Technology) / B.Sc. (with Information Technology as the optional subject) / Bachelor of

Computer Application (BCA)/ B.Sc. with optional subjects Mathematics, Computer Maintenance, Computer Science / As per (e).

For विज्ञान पारंगत [M.Sc. (Botany) Semester-I]

h) For admission to the M.Sc. Semester I in Botany, a candidate shall have offered Botany as one of the subjects at the qualifying B.Sc. Examination / B.Sc. (Agriculture) with Botany as one of the subject.

i) For विज्ञान पारंगत [M.Sc. (Zoology) Semester-I]

For admission to the M.Sc. Semester I in Zoology, a candidate shall have offered Zoology as one of the subjects at the qualifying B.Sc. Examination.

j) For - विज्ञान पारंगत [M.Sc. (Sericulture) Semester-I]

For admission to the M.Sc. Semester I in Sericulture, a candidate shall have offered Sericulture / Zoology / Botany / Microbiology/Biochemistry as one of the subjects at the qualifying B.Sc. Examination / B.Sc. (Agriculture Science).

k) For विज्ञान पारंगत [M.Sc. (Microbiology) Semester-I]

For admission to the M.Sc. Semester I in Microbiology, a candidate shall have offered Biotechnology /Microbiology as a subject of study and examination at B.Sc. degree.

l) For विज्ञान पारंगत [M.Sc. (Biochemistry) Semester-I]

For admission to the M.Sc. Semester I in Biochemistry, a candidate shall have offered Chemistry and Biochemistry as subjects of study and examination at B.Sc. degree.

m) For विज्ञान पारंगत [M.Sc. (Biotechnology) Semester-I]

i) Eligibility criteria for admission to the M.Sc. Semester I in Biotechnology, shall be all Life Science graduates or Agriculture or Veterinary or Fishery Sciences or Pharmacy / Engineering / Technology / Medicine (MBBS) or B.D.S. graduates.

ii) Eligibility criteria for admission to the M.Sc. Semester I in Biotechnology (as per(i)) shall be - minimum 55% marks at U.G. level to seek admission in Rajiv Gandhi Biotechnology Centre, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

Whereas admission to the M.Sc. Semester I in Biotechnology (as per(i)) to seek admission in the affiliated colleges of Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur shall be at par with the other P.G. subject in Science Faculty.

n) For विज्ञान पारंगत [M.Sc. (Environmental Science) Semester-I]

For admission to the M.Sc. Semester I in Environmental Science, a candidate shall have offered Environmental Science as one of the subjects at the qualifying B.Sc. Examination/ B.Sc. Agriculture Science with Environmental Science as one of the subject..

o) For विज्ञान पारंगत [M.Sc. (Geology) Semester-I]

For admission to the M.Sc. Semester I in Geology, a candidate shall have offered Geology as one of the subjects at the qualifying B.Sc. Examination.

p) For विज्ञान पारंगत [M.Sc. (Tech) Applied Geology Semester-I]

For admission to the M.Sc. (Tech) Semester I in Applied Geology, a candidate shall have offered Geology as one of the subjects at the qualifying B.Sc. Examination.

B) Candidates shall have passed any one of the above examinations from Rashtrasant Tukadoji Maharaj Nagpur University or any other statutory University of India or abroad, recognized by the UGC or any other concerned apex regulatory authority/ body of India.

7) a) विज्ञान पारंगत **M.Sc. Semester I Examination**

Students who have fulfilled the eligibility criteria as mentioned in Section 6 and have been admitted to this course in Semester I.

b) विज्ञान पारंगत **M.Sc. Semester II Examination**

Students who have been admitted to this course in semester II.

c) विज्ञान पारंगत **M.Sc. Semester III Examination**

Students who have been admitted to this course in semester III.

d) विज्ञान पारंगत **M.Sc. Semester IV Examination**

i. Students who have been admitted to this course in semester IV.

ii. Every student shall submit three copies of the project report (typed and properly bound) for the Fourth Semester to the University at least one month prior to the commencement of the final practical examination through the Head of the Department/ Centre / the Principal of the college concerned along with the certificate signed by the supervisor and declaration by the candidate towards original work which is not submitted to any university or organization for award of the degree. The scheme/ guidelines for the students and supervisors regarding Project Work Report are given in Appendix-4.

(Note: Subject to the Rules of ATKT as mentioned in para 9 of this direction)

8) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र **[M.Sc. (Tech) Applied Geology]**

a) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र **[M.Sc. (Tech) Applied Geology] Semester I Examination**
Students who have fulfilled the eligibility criteria as mentioned in Section 6 and have been admitted to this course in Semester I.

b) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र **[M.Sc. (Tech) Applied Geology] Semester II Examination**
Students who have been admitted to this course in semester II.

c) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र **[M.Sc. (Tech) Applied Geology] Semester III Examination**
Students who have been admitted to this course in semester III.

d) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र **[M.Sc. (Tech) Applied Geology] Semester IV Examination**
Students who have been admitted to this course in semester IV.

e) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र **[M.Sc. (Tech) Applied Geology] Semester V Examination**
Students who have been admitted to this course in semester V.

f) विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र **[M.Sc. (Tech) Applied Geology] Semester VI Examination**
Students who have been admitted to this course in semester VI.

(Note: Subject to the Rules of ATKT as mentioned in para 9 of this direction)

9) A) The ATKT rules for admission for the विज्ञान पारंगत M.Sc. Course (Theory ,Practical and Seminar as separate passing head) shall be as given in the following table-

Admission to Semester	Candidate should have passed in all the subjects of the following examination of R.T.M. Nagpur University	Candidate should have passed at least two third of the passing heads of the following examinations
Semester I	As provided in the para 6 of the direction	-----
Semester II	-----	-----
Semester III	-----	Semester I and II taken together
Semester IV	-----	Semester I, II and III taken together

B) The ATKT rules for admission for the विज्ञान पारंगत(तंत्र)उपयोजित भूशास्त्र M.Sc. (Tech) Applied Geology Course (Theory ,Practical and Seminar as separate passing head) shall be as given in the following table-

Admission to Semester	Candidate should have passed in all the subjects of the following examination of R.T.M. Nagpur University	Candidate should have passed at least two third of the passing heads of the following examinations
Semester I	As provided in the para 6 of the direction	-----
Semester II	-----	-----
Semester III	-----	Semester I and II taken together
Semester IV	-----	Semester I, II and III taken together
Semester V	Semester I and II	Semester III and IV taken together
Semester VI	-----	Semester III, IV and V taken together

10) a) Without prejudice to other provisions of Ordinance no. 6 relating to the examination in general, provisions of Para 5, 8, 9, 10, 26, 31 and 32 of the said ordinance shall apply to every student admitted to this course.

(b) The students admitted to these courses shall be governed by general Ordinances/ Directions of the University which are applicable to all the regular or ex-students. These ordinances include complete as well as relevant provision of Ordinance No. 2,6,7-A, 9,10,19,109, Ordinance No. 30 of 2006 (amended Ordinance No. 4 of 2006), Direction 9 of 2008, Direction 5 of 2004 wherever applicable accordingly AND Direction/Ordinance of ATKT as well as reassessment/ provisional admission as issued from time to time.

11) The fees for the tuition, examination, laboratory and other fees shall be as prescribed by the university from time to time.

12) (a) The scope of the subjects shall be as prescribed in the syllabus.

(b) The medium of instruction and examination shall be English.

13) The number of papers and maximum marks assigned to each paper and minimum marks/grade, an examinee must obtain in order to pass the examination shall be as prescribed in appendix 1, 2, 3, 4 and 5 appended with this direction.

14) The examinee at each of the examination shall have option of not being declared successful at the examination in case he/she does not secure a minimum of grade equivalent to 55% marks at the examination. This option will have to be exercised every time the application is submitted to any of the examinations. Once this option is exercised, the option shall be binding on the examinee and it shall not be evoked in under any circumstances.

15) The classification of the examinee successful at the semester and examinations and at the end of final semester examination shall be as per the rules and regulations of credit based semester pattern as prescribed in appendix, appended with this direction.

16) The provisions of direction no. 3 of 2007 for the award of grace marks for passing an examination, securing higher grade in subject(s) as updated from time to time shall apply to the examination under this direction.

17) The names of the successful examinee passing the examination as a whole in the minimum prescribed period and obtaining prescribed number of places securing the grades equivalent to first and second division shall be arranged in order of merit as provided in ordinance 6 relating to examination in general.

18) No candidate shall be admitted to an examination under this direction, if he/she has already passed the same examination of this university or of any other university.

19) Examinee successful at the final examination shall on payment of the prescribed fees, will be entitled for the award of the degree in the prescribed form signed by the Vice Chancellor.

20) This course is based on credit based semester pattern and therefore, it will be also regulated by guidelines and regulation given in appendices which are part of this direction.

Appendix-1

Scheme of teaching and examination under credit based semester pattern for M.Sc. Programme in all subjects except Mathematics and M.Sc. (Tech) Applied Geology

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)			Credits	Examination Scheme					
			Th	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th	Pr.
1	I	I	4		4	4	3	100		100	40	
2	I	II	4		4	4	3	100		100	40	
3	I	III	4		4	4	3	100		100	40	
4	I	IV	4		4	4	3	100		100	40	
5	I	Practical I		8	8	4	3-8*	80	20	100		40
6	I	Practical II		8	8	4	3-8*	80	20	100		40
7	I	Seminar	2		2	1	---		25	25	10	
		Total	18	16	34	25				625	170	80

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)			Credits	Examination Scheme					
			Th	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th	Pr.
1	II	I	4		4	4	3	100		100	40	
2	II	II	4		4	4	3	100		100	40	
3	II	III	4		4	4	3	100		100	40	
4	II	IV	4		4	4	3	100		100	40	
5	II	Practical I		8	8	4	3-8*	80	20	100		40
6	II	Practical II		8	8	4	3-8*	80	20	100		40
7	II	Seminar	2		2	1	---		25	25	10	
		Total	18	16	34	25				625	170	80

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)			Credits	Examination Scheme					
			Th	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th	Pr.
1	III	I	4		4	4	3	100		100	40	
2	III	II	4		4	4	3	100		100	40	
3	III	III	4		4	4	3	100		100	40	
4	III	IV	4		4	4	3	100		100	40	
5	III	Practical I		8	8	4	3-8*	80	20	100		40
6	III	Practical II		8	8	4	3-8*	80	20	100		40
7	III	Seminar	2		2	1	---		25	25	10	
		Total	18	16	34	25				625	170	80

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)			Credits	Examination Scheme					
			Th	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th	Pr.
1	IV	I	4		4	4	3	100		100	40	
2	IV	II	4		4	4	3	100		100	40	
3	IV	III	4		4	4	3	100		100	40	
4	IV	IV	4		4	4	3	100		100	40	
5	IV	Practical I		8	8	4	3-8*	80	20	100		40
6	IV	Project		8	8	4	3-8*	80	20	100		40
7	IV	Seminar	2		2	1	---		25	25	10	
		Total	18	16	34	25				625	170	80

Note: Th = Theory; Pr = Practical/lab, * = If required, for two days.

- In each semester student will have to give seminar on any topic relevant to the syllabus encompassing the recent trends and development in that field. The topic of the seminar will be decided at the beginning of each semester in consultation with the supervising teachers. The student has to deliver the seminar which will be followed by discussion. The seminar will be open to all the teachers of the department, invitees, and students.
- The student will have to carry out the research based project work in lieu of practical in the fourth semester in the department or depending on the availability of placement; he/she will be attached to

any of the national/regional/private research institute/organization. The student in consultation with supervisor will finalize the topic of the project work at the beginning of the third semester.

3. Each theory paper is supposed to cover minimum 60 clock hours (15 clock hours per unit) of teaching and 240 clock hours per semester for all the four papers.
4. One credit course of theory will be of one clock hour per week of 25 marks running for 15 weeks and four credit course of theory will be of four clock hours per week of 100 marks running for 15 weeks.
5. One credit course of practical will consist of two clock hours of laboratory exercise of 25 marks running for 15 weeks and four credit course of practical will consist of eight hours of laboratory exercise of 100 marks running for 15 weeks.

Appendix-2

Scheme of teaching and examination under credit based semester pattern for M.Sc. Programme in Mathematics

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)		Credits			Examination Scheme					
			Theory	Total	Theory	Int.* Ass.	Total	Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
									External Marks	Internal Ass.		Th (Ext.Mar)	Int. Ass.
1	I	I	5	5	4	1	5	3	100	25	125	40	10
2	I	II	5	5	4	1	5	3	100	25	125	40	10
3	I	III	5	5	4	1	5	3	100	25	125	40	10
4	I	IV	5	5	4	1	5	3	100	25	125	40	10
5	I	V	5	5	4	1	5	3	100	25	125	40	10
Total			25	25	20	05	25		500	125	625	200	50

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)		Credits			Examination Scheme					
			Theory	Total	Theory	Int.* Ass.	Total	Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
									External Marks	Internal Ass.		Th (Ext.Mar)	Int. Ass.
1	II	I	5	5	4	1	5	3	100	25	125	40	10
2	II	II	5	5	4	1	5	3	100	25	125	40	10
3	II	III	5	5	4	1	5	3	100	25	125	40	10
4	II	IV	5	5	4	1	5	3	100	25	125	40	10
5	II	V	5	5	4	1	5	3	100	25	125	40	10
Total			25	25	20	05	25		500	125	625	200	50

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)		Credits			Examination Scheme					
			Theory	Total	Theory	Int.* Ass.	Total	Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
									External Marks	Internal Ass.		Th (Ext.Mar)	Int. Ass.
1	III	I	5	5	4	1	5	3	100	25	125	40	10
2	III	II	5	5	4	1	5	3	100	25	125	40	10
3	III	III	5	5	4	1	5	3	100	25	125	40	10
4	III	IV	5	5	4	1	5	3	100	25	125	40	10
5	III	V	5	5	4	1	5	3	100	25	125	40	10
Total			25	25	20	05	25		500	125	625	200	50

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)		Credits			Examination Scheme					
			Theory	Total	Theory	Int.* Ass.	Total	Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
									External Marks	Internal Ass.		Th (Ext.Mar)	Int. Ass.
1	IV	I	5	5	4	1	5	3	100	25	125	40	10
2	IV	II	5	5	4	1	5	3	100	25	125	40	10
3	IV	III	5	5	4	1	5	3	100	25	125	40	10
4	IV	IV	5	5	4	1	5	3	100	25	125	40	10
5	IV	V	5	5	4	1	5	3	100	25	125	40	10
		Total	25	25	20	05	25		500	125	625	200	50

***Internal Assessment:** For the purpose of internal assessment the department will conduct three tests (with equal weight of marks). Best two scores of a student in these tests will be considered to obtain the internal assessment score of that student.

Appendix-3

Scheme of teaching and examination under credit based semester pattern for M.Sc. (Tech) Applied Geology

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)			Credits	Examination Scheme					
			Th	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th	Pr.
1	I	I	4		4	4	3	100		100	40	
2	I	II	4		4	4	3	100		100	40	
3	I	III	4		4	4	3	100		100	40	
4	I	IV	4		4	4	3	100		100	40	
5	I	Practical I		8	8	4	3	80	20	100		40
6	I	Practical II		8	8	4	3	80	20	100		40
7	I	Seminar	2		2	1	---		25	25	10	
		Total	18	16	34	25				625	170	80

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)			Credits	Examination Scheme					
			Th	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th	Pr.
1	II	I	4		4	4	3	100		100	40	
2	II	II	4		4	4	3	100		100	40	
3	II	III	4		4	4	3	100		100	40	
4	II	IV	4		4	4	3	100		100	40	
5	II	Practical I		8	8	4	3	80	20	100		40
6	II	Practical II		8	8	4	3	80	20	100		40
7	II	Seminar	2		2	1	---		25	25	10	
		Total	18	16	34	25				625	170	80

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)			Credits	Examination Scheme					
			Th	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th	Pr.
1	III	I	4		4	4	3	100		100	40	
2	III	II	4		4	4	3	100		100	40	
3	III	III	4		4	4	3	100		100	40	
4	III	IV	4		4	4	3	100		100	40	
5	III	Practical I		8	8	4	3	80	20	100		40
6	III	Practical II		8	8	4	3	80	20	100		40
7	III	Seminar	2		2	1	---		25	25	10	
		Total	18	16	34	25				625	170	80

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)			Credits	Examination Scheme					
			Th	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th	Pr.
1	IV	I	4		4	4	3	100		100	40	
2	IV	II	4		4	4	3	100		100	40	
3	IV	III	4		4	4	3	100		100	40	
4	IV	IV	4		4	4	3	100		100	40	
5	IV	Practical I		8	8	4	3	80	20	100		40
6	IV	Practical II		8	8	4	3	80	20	100		40
7	IV	Seminar	2		2	1	---		25	25	10	
		Total	18	16	34	25				625	170	80

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)			Credits	Examination Scheme					
			Th	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th	Pr.
1	V	I	4		4	4	3	100		100	40	
2	V	II	4		4	4	3	100		100	40	
3	V	III	4		4	4	3	100		100	40	
4	V	IV	4		4	4	3	100		100	40	
5	V	Practical I		8	8	4	3	80	20	100		40
6	V	Practical II		8	8	4	3	80	20	100		40
7	V	Seminar	2		2	1	---		25	25	10	
		Total	18	16	34	25				625	170	80

S.No.	Semester	Theory Paper/ Practical	Teaching Scheme (Hrs/ week)			Credits	Examination Scheme					
			Th	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks		Th	Pr.
1	VI	I	4		4	4	3	100		100	40	
2	VI	II	4		4	4	3	100		100	40	
3	VI	III	4		4	4	3	100		100	40	
4	VI	IV	4		4	4	3	100		100	40	
5	VI	Practical I		8	8	4	3	80	20	100		40
6	VI	Practical II		8	8	4	3	80	20	100		40
7	VI	Seminar	2		2	1	---		25	25	10	
		Total	18	16	34	25				625	170	80

Appendix-4
Project Work Scheme
/ Guidelines for the Students, Supervisors and Examiners

Every student is required to carry out **Experimental / Field Based Project Work** (this is in lieu of practical II of semester IV) on a related research topic of the subject /course. It must be an original work and must indicate some degree of experimental work. On the basis of this work, student must submit the Project Report (typed and properly bound) in two copies at least one month prior to commencement of the final Practical/lab Examination of Semester IV. The project report shall comprise of Introduction, Material and Methods, Results, Discussion, Summary, Conclusions and, References along with the declaration by the candidate that the work is original and not submitted to any University or Organization for award of the degree and certificate by the supervisor and forwarded through Head/Course-coordinator/Director of the Department/Centre or the Principal of the College

The supervisors for the Experimental Project Work shall be from the following.

A person selected by the duly constituted Selection Committee in the relevant subject and approved by the University, exclusively for P.G. course.

OR

A person selected by the duly constituted Selection Committee of the University approved by the University and appointed as a full time regular teacher at U.G. level in the relevant subject and having at least 15 years teaching experience.

OR

A person selected by duly constituted Selection Committee of R.T.M. Nagpur University, approved by the University and appointed as full time regular teacher at UG level having M. Phil degree with 10 years

teaching experience at UG level, or a person who has Ph.D. Degree, with 5 years teaching experience in relevant subject.

OR

Scientists of National Laboratories/ Regional Research Laboratories who are approved by dint of their appointments in such facilities by the Union Government / the State Government / Nagpur University / Other Universities recognized by UGC with at least in the Grade Pay of Rs.8000/-.

The topic for the project work will be assigned to the student by supervisor at the beginning of third semester. The topic will be forwarded to the controller of examination by the head of the department. The Project Work will carry total 100 marks out of which weightage of 80 marks will be evaluated by both external and internal examiner in the respective Department / Center / Affiliated College. The examiners will evaluate the Experimental Project Work taking into account the 1) Coverage of subject matter, 2) Arrangement and presentation, 3) References and 4) Critical application and original experimental contribution of the candidate.

Distribution of Project Marks

For Written Project Work : 80 Marks

Viva-voce : 20 Mark

For

Total : 100 Marks

Appendix-4 (A)

Seminar

Guidelines for Students, Supervisors and Examiners

During all the semesters, student will have to deliver seminar on any topic relevant to the syllabus with emphasis on the recent trends and development in that field. The topic of the seminar will be decided at the beginning of each semester in consultation with the supervisory teacher. Head of the Department will distribute the students among the faculty members. The student has to deliver the seminar which will be followed by discussion. The seminar will be open to all the teachers of the department, invitees and students. The students should submit the seminar report typed and properly bound in two copies to the head of the department and the same shall be evaluated by the concerned supervisor and head of the department. The average marks shall be considered for the final result. The marks of the seminar shall be forwarded to the university within due period through head of the Department. The record of the seminar should be preserved till the declaration of the final result.

Appendix-5 General Rules and Regulations

A) Pattern of Question Paper

1. There will be four units in each paper.
2. Question paper will consist of five questions.
3. Four questions will be on four units with internal choice (One question on each unit).
4. Fifth question will be compulsory with questions from each of the four units having equal weightage and there will be no internal choice.
5. Maximum marks of each paper will be 100.
6. Each paper will be of 3 hours duration.
7. Projects shall be evaluated by both internal and external examiners.
8. Practical/laboratory examination of 100 marks. Distribution of marks shall be 20 internal and 80 external.
9. Minimum passing marks in each head (theory, practical & internal assessment) will be 40%.

B) Absorption scheme:

- 1) While switching over to semester pattern, the failure students of annual pattern will be given total five (three plus two) chances to clear each examination.
- 2) The candidates who have cleared first year annual pattern examination in the subject shall get admission to third semester directly. However, candidates who are allowed to keep term will not be eligible for admission to third semester unless they clear all the papers and practicals of first year annual pattern examination.
- 3) The unsuccessful students of old course shall be permitted to appear for higher class as per the new course examination of the post graduate programme (semester, credit and grade system) provided that they submit a certificate from the Head of Department / Principal of the College stating that they have satisfactorily undergone a course of study in all the subjects of the new course as per the absorption scheme of a particular post graduate programme.

C) Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA)

1. On clearing a paper, based on the cumulative score (out of 100) in that paper, a student will be given **Grade Point Average (GPA)** (Maximum of 10, and minimum of 4) for that paper on the following basis.

SCORE (out of 100)	Grade	GRADE POINT AVERAGE (out of 10)
100 to 75	O: Outstanding	10
74 to 65	A: Very Good	09
64 to 55	B: Good	08
54 to 50	C: Average	07
49 to 45	D: Satisfactory	06
44 to 40	E: Pass	05
Below 40	F: Fail	00 or fail

The description for each of the grades are as follows:

Grade Proposed Norms

O: Outstanding: Excellent analysis of the topic, (75% and above)

Accurate knowledge of the primary material, wide range of reading, logical development of ideas, originality in approaching the subject, neat and systematic organization of content, elegant and lucid style;

A: Very Good: Excellent analysis of the topic (65 to 74% and above)

Accurate knowledge of the primary material, acquaintance with seminal publications, logical development of ideas, neat and systematic organization of content, effective and clear expression;

B: Good: Good analysis and treatment of the topic (55 to 64%)

Basic knowledge of the primary material, logical development of ideas, neat and systematic organization of content, effective and clear expression;

C: Average: Some important points covered (50 to 54%)

Basic knowledge of the primary material, logical development of ideas, neat and systematic organization of content, good language or expression;

D: Satisfactory: Some points discussed (45 to 49%)

Basic knowledge of the primary material, some organization, acceptable language or expression;

E: Pass: Any two of the above (40 to 44%)

F: Fail: None of the above (Below 40%)

2. On clearing all the papers in a semester, a student will be allotted a **Semester Grade Point Average (SGPA)** for that particular semester. As the pattern given above does not have differential weights for papers, the SGPA of a student for a particular semester will be the average of the GPA's for all the papers.
3. A student will be allotted a **Cumulative Grade Point Average (CGPA)** after clearing all the four semesters. Again as there is no differential weight system for semesters, the CGPA of a student will be the average of the four SGPA's of that student.

The CGPA can be converted to the usual / conventional divisions in the following way.

CGPA	Final Grade	Equivalent class/division
9.00 to 10.00	O	First class (outstanding)
8.00 to 8.99	A	First class (excellent)
7.00 to 7.99	B	First class with distinction
6.00 to 6.99	C	First class
5.00 to 5.99	D	Second class
4.00 to 4.99	E	Pass class
Below 4.00	F	Fail

- a. A student failed to score minimum 40% marks in each head of passing and in aggregate shall be given F grade.
- b. Student with F grade in a course would be granted credit for that course but not the grade for that course.
- c. Grade points earned in each paper shall be calculated as – Grade points obtained (vide above table) x Credits for the paper.
- d. The formula for GPA will be based on Weighted Average. The final GPA will not be printed unless a student passes courses equivalent to minimum 100 Credits.
4. While declaring the result, the existing relevant ordinances are applicable. For verification and revaluation existing rules will be applicable.
5. The candidate may take all the examinations as per the provisions of ATKT simultaneously but his result of final semester shall not be declared unless he is declared successful at lower examinations.
6. If an examinee failed to pass the post graduate programme within five successive years (for four semesters degree) and within six successive years (for six semesters degree) from the date of his / her first admission to particular post graduate programme he/ she shall be declared as “Not Fit for the Course (NFC)” and he/ she will not be allowed to appear further for any previous examination of the course.
7. The computation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) of an examinee shall be given below:
 - a. The marks will be given in all examinations which will include the college assessment marks, and the total marks for each Theory/ Practical shall be converted into Grades as per above table. SGPA shall be calculated based on Grade Points corresponding to Grade as given in

above table and the credits allotted to respective Theory / Practical shown in the scheme for respective semester.

- b. SGPA shall be computed for every semester and CGPA shall be computed only in IV semester (for four semester degree) and VI semester (for sixth semester degree). The CGPA of IV / VI semester shall be calculated based on SGPA of all four semesters / six semesters as per following computation:

$$\text{SGPA} = \frac{C1 \times G1 + C2 \times G2 + \dots + Cn \times Gn}{C1 + C2 + \dots + Cn}$$

Where C1 = Credit of individual Theory / Practical

G1 = Corresponding Grade Point obtained in the Respective Theory/ Practical

$$\text{CGPA} = \frac{(\text{SGPA}) I \times (\text{Cr}) I + (\text{SGPA}) II \times (\text{Cr}) II + (\text{SGPA}) III \times (\text{Cr}) III + (\text{SGPA}) IV \times (\text{Cr}) IV}{(\text{Cr}) I + (\text{Cr}) II + (\text{Cr}) III + (\text{Cr}) IV}$$

Where, (SGPA) I = SGPA of I Semester; (Cr) I = Total Credits for I Semester;

(SGPA) II = SGPA of II Semester; (Cr) II = Total Credits for II Semester;

(SGPA) III = SGPA of III Semester; (Cr) III = Total Credits for III Semester; (SGPA) IV

= SGPA of IV Semester; (Cr) IV = Total Credits for IV Semester

With the issuance of the Direction, the Direction No. 17 of 2014 shall stand repealed.

Nagpur :

Dated : 16.02.2015.

Sd/-

Dr. V.S. Deshpande

Vice-Chancellor