



**GOVERNOR'S SECRETARIAT, BIHAR**  
**RAJ BHAVAN, PATNA-800022**

e-mail/fax  
Speed post

Letter No. Estb.-40/2017-

/GS(I)

Dated-

From

P.C. Chaudhary  
O.S.D. (Judicial)

To

The Vice Chancellor  
All the Universities of Bihar  
(Except RAU, PUSA and BAU, Sabour)

Sub.: Regarding approval of Ordinance and Regulations of Choice Based Credit System(CBCS) (PG level) for its introduction in the Universities of Bihar.

Sir,

Inviting reference to letter No.- Estb.-40/2017-1340/GS(I), dated 14-05-2018 of this Secretariat vide which feedback and comments on the Draft Ordinance & Regulations of Choice Based Credit System (CBCS) (PG level) for its introduction in the Universities of Bihar were asked.

Hon'ble Chancellor after due consideration of the feedback and comments received from the different Universities and considering the advise of the Advisory Committee has been pleased to approve the Ordinance and Regulations of Choice Based Credit System(CBCS) (PG level) for its introduction in the Universities of Bihar under relevant provisions of the Bihar State Universities Act, Patna University Act, Nalanda Open University Act, 1995 and Aryabhatta Knowledge University Act, 2008 as amended up-to-date (copy enclosed).

These Ordinance and Regulations shall supersede the existing Ordinance and Regulations of Post-Graduate courses of different Universities in the State of Bihar.

Yours faithfully,  
Sd/-  
(P.C. Choudhary)  
O.S.D.(Judl.)

Memo No. Estb.-40/2017-

/GS(I)

Dated-

Copy along with copy of approved Ordinance and Regulations of Choice Based Credit System(CBCS) (PG level) forwarded to the Principal Secretary, Education Department, Govt. of Bihar, Patna for information and necessary action.

Sd/-  
O.S.D.(Judl.)

Memo No. Estb.-40/2017-1457/GS(I)

Dated- 29-05-2018

Copy along with copy of approved Ordinance and Regulations of Choice Based Credit System(CBCS) (PG level) forwarded to the Technical Director, Computer Cell, Rajbhavan, Patna for uploading on the website of Rajbhavan/ Guard File.

P.C. Choudhary  
O.S.D.(Judl.) 29/5/2018

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UNIVERSITIES OF BIHAR  
ORDINANCE &  
REGULATION  
for  
The 2 yr (Four Semester)  
Post Graduate Degree Course  
**M.Sc.** in the faculty of Science  
Under  
**CHOICE BASED CREDIT SYSTEM (CBCS)**  
(To be effective from 2018-19)

*Dinesh Kumar* *MDP*  
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Table. 1. Description of papers for M. Sc. degree in the faculty of Science under CBCS

Semester	Course/ Paper Code	Nature of Course/ Paper	Marks	Marks of CIA	Marks of ESE	Passing criterion	Qualifying Criterion
SEMESTER I	CC- 1	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	CC- 2	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	CC- 3	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	CC- 4	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	AECC-1	Ability Enhancing Compulsory Elective	100	50	50	45% in CIA 45% in ESE	Qualifying
SEMESTER II	CC- 5	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	CC- 6	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	CC- 7	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	CC- 8	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	CC- 9	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	AEC-1	Ability Enhancing Elective paper	100	50	50	45% in CIA 45% in ESE	Qualifying
SEMESTER III	CC- 10	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	CC- 11	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	CC- 12	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	CC- 13	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	CC- 14	Subject related Compulsory	100	30	70	45% in CIA 45% in ESE	Marks decide class/ CGPA
	AECC-2	Discipline Specific Elective	100	50	50	45% in CIA 45% in ESE	Qualifying
SEMESTER IV	EC-1	Subject specific elective	100	Will be decided by the BOCS	Will be decided by the BOCS	45% in CIA 45% in ESE	Marks decide class/ CGPA
	EC-2	Subject specific elective	100	Will be decided by the BOS	Will be decided by the BOS	45% in CIA 45% in ESE	Marks decide class/ CGPA
	DSE - 1	Ability Enhancing Compulsory Elective	100	30	70	45% in CIA 45% in ESE	Qualifying
	or GE-1	Generic Elective – may be unrelated to subject / across the faculty	100	30	70	45% in CIA 45% in ESE	Qualifying

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## Regulations for Examination of M.Sc. (Semester System) in the Faculty of Science, Patna University

### 1. General

- 1.1 These regulations shall be called the "Regulations of Examination" for M.Sc. (Science).
- 1.2 These regulations shall come into force from the academic year 2018-2019.

### 2. Programme of Study

- 2.1 The University shall offer M.Sc. degrees in the following subjects in the Faculty of Humanities:  
Botany, Chemistry, Biochemistry, Herbal Chemistry, Bio-technology, Bio informatics, Microbiology, Computer Science, Information Technology Geology, Mathematics, Physics, Statistics, Zoology, Electronics, Environmental Science, Energy Studies, Disaster Management, Nano Science
- 2.2 The durations of M.Sc. (Semester System) course shall be of four semesters spread over two academic years. Each semester shall be of ninety teaching days.
- 2.3 Each academic session shall consist of two semesters – I and III: from July to December and II and IV: from January to June.
- 2.4 The M.Sc. Course shall consist of 20 papers spread over four semesters. There shall be five papers in first semester, six papers in second semester, six papers in third semester and three papers in fourth semester carrying 100 marks in each paper. The entire curriculum shall be of 2000 marks taken together. However, the class shall be awarded on the performance of the candidate on 16 papers including 14 CC and two EC papers having an aggregate of 1600 marks.
- 2.5 In each semester each elective paper shall carry 100 marks. The four elective papers - one AEC, two AECC and one DSE or one GE will be qualifying in nature. A student shall not be considered pass and eligible for award of the final degree unless he/she obtains minimum qualifying marks in these four papers. A complete description of papers is given in table 1.
- 2.6 The distribution of papers like theory, practical, field work, project, internship, dissertation etc. with number of credits is specified in each subject in the course structure of the subject concerned of the department.
- 2.7 The term 'credit' means weightage given to a course in relation with the instructional hours assigned to it. One credit will generally consist of ten hours of instruction. The M.Sc. Science course shall be of one hundred credits divided as 25 credit in first semester, 30 credit in second semester, 30 credit in third semester and 15 credit in fourth semester. The number of credit for each paper of the Master's degree programme shall be specified in the course structure of the subject concerned.

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evaluated by the teacher concerned. The answer scripts of the mid-semester tests shall be shown to students by the concerned teacher.

4.2 The End of Semester Examination (ESE) shall be named as follows:

- (a) M.A. Part (I)-Semester I Examination and Semester II Examination respectively.
- (b) M.A. Part (II) – Semester III Examination and Semester IV Examination respectively..
- (c) Syllabus for each paper shall be divided into at least 5 units. Based on this, the question paper pattern for the End Semester Examination shall have divided into three parts A, B, C comprising of objective type questions with multiple choice, short answer type questions and long answer type questions respectively as mentioned below :

Part	Nature of questions	Number of questions to be asked	Number of questions to be answered	Marks of each question	Total marks
Part-A	Objective type questions with multiple choice	10	10	02	20
Part-B	Short answer type questions	05	04	05	20
Part-C	Long answer type questions	04	03	10	30
Total Marks					70

#### Part – A

Ten objective type Questions-All questions to be answered  
 (Questions shall be picked up from the whole syllabus  
 Preferably two questions from each unit)  $10 \times 2 = 20$  marks

#### Part-B

Five short Answer Questions –Four questions to be answered  
 (Questions shall be picked up from the whole syllabus  
 preferably one question from each unit)  $4 \times 5 = 20$  marks

#### Part – C

Five long answer Questions-Three questions to be answered.  
 (Questions shall be picked up from the whole syllabus  
 preferably one question from each unit)  $3 \times 10 = 30$  marks

4.2 The examination of I and III semesters, shall be generally held in the month of November-December and that of II and IV semester shall be held in the month of May-June.

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### 3. Evaluation of Performance Under Semester System

3.1 The performance of a student in each paper will be assessed on the basis of a Continuous Internal Assessment (CIA) of 30 marks and the End of Semester Examination (ESE) consisting of 70 marks.

3.2 The components of C.I.A. are follows :

(i) Two mid-semester written tests of one hour duration each	= 15 Marks
(ii) Seminar/Quiz	= 05 Marks
(iii) Assignment	= 05 Marks
(iv) Punctuality and conduct	= 05 Marks
<b>Total</b>	= 30 Marks

3.3 The performance of a student in the elective papers AEC and AECC in each semester addressing the issues of i. Skill Development, ii. Human Values and Professional Ethics and Gender Sensitizationiii. Environment and Sustainability and Swachchha Bharat Abhiyan Activities shall be assessed on the basis of a continuous Internal Assessment (CIA) of 50 marks and the End Semester Examination (ESE) consisting of 50 marks.

3.4 The components of C.I.A. in these papers shall be as follows:

(i) One mid-semester written tests of one hour duration each	= 10 Marks
(ii) Seminar/Quiz	= 10 Marks
(iii) Assignment	= 15 Marks
(iv) Discharge of Institutional Social Responsibility /Community Services (report to be submitted)	= 15 Marks
<b>Total</b>	= 50 Marks

3.5 The concerned teacher of the course/paper shall be responsible for conducting the mid-semester tests and other components of the CIA.

3.6 The ESE will be written examination examinations of 3-hours duration conducted by the University.

3.7 The evaluation of laboratory paper and field work, wherever applicable will also be based on CIA and an end-semester practical examination.

3.8 All such examination shall be as per the provisions of examination board and moderation board of the Patna University.

3.9 **Only those students who secured minimum qualifying marks in of 45% in the CIA shall be allowed to fill up the End Semester Examination form.**

3.10 **The marks of CIA in each paper be submitted by the Department along with the End semester Examination form failing which the student may not be issued admit card for the examination.**

### 4. Examinations :

4.1 The End-Semester-Examination will be conducted by the University. The Mid Semester examinations and other components of CIA shall be conducted and evaluated by the concerned departments. The practical examinations wherever applicable shall be conducted at the department. The Head of the department will appoint external examiner(s) for practical End Semester Examination with the approval of the University. The mid-semester tests will be conducted and

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- 4.3 In formulating the entire programme of studies, each Department shall be guided by the consideration that at the Postgraduate level, students should be familiar with all the sub-disciplines, trends and paradigms of the subject contributing to the knowledge pool and also the value education and employability factor. Keeping this in view the Department will decide subject based 14 core papers, 2 EC papers and other 4electivespapers.
- 4.4 Paper Setting: For ESE, 50% examiners will be engaged from outside the university by the parent University as per the provisions of the examination board.
- 4.5 In Subjects, where there is Practical/Project/Field Study/Internship/Dissertation etc. generally not more than 4-5 credits should be allowed for such papers in each semester. The distribution of marks for CIA and ESE for such papers shall be decided by the Board of Courses and Study (BOCS) of the respective subject with the approval of the University and details mentioned the syllabus for which 50 marks will be for CIA and 50 marks for ESE.
- 4.6 All practical papers shall be evaluated by two external examiners. The distribution of CIA marks in practical papers shall be as per the course structure.

## 5. Passing of Examinations and Promotions Rules

### Promotion Rules

- 5.1 There shall be no supplementary examination in any of the papers in any semester. (I, II, III and IV).
- 5.2 The candidates who have been admitted to the First Semester of a two year Postgraduate Programme in a session can be placed in the following categories on the basis of their attendance in the Semester.
  - (i) Those who have cleared the CIA and attended the required minimum percentage (75%) of attendance of lectures/practical classes separately.
  - (ii) Those who have not attended the required minimum percentage of attendance (75%) both in Theory and Practical shall in no case be permitted to appear in the End Semester Examinations.
- 5.3 After appearing at the Semester Examination, the candidates can be placed in following categories in the context of declaration of the results of the Semester Examination (ESE):
  - (i) To be declared passed in End Semester Examination in any subject, a candidate must secure atleast 45% marks in each paper separately in CIA, theory and practical, wherever applicable.
  - (ii) If a candidate secures 45% marks in atleast three papers in his/her First/Second/Third End Semester Examination he/she shall be promoted to next higher semester.
  - (iii) Candidates shall have to clear their backlog paper(s) in the next end semester examination of that semester whenever it is available.
  - (iv) Even if a student is promoted to Fourth Semester, his/her final result will only be declared when he/she has cleared all their backlog papers.

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(v) Final result of M.Sc. Course shall be published on the basis of candidate's performance in the 16 papers spread over four semesters provided he/she has passed with minimum qualifying marks of 45% in the elective papers of each semester.

(vi) The Final result will be published only after he/she has cleared all the 20 papers securing minimum qualifying marks.

(vii) Since it is a continuous evaluation programme, student shall be awarded Grade Point (GP) at the End of each Semester Examination and cumulative Grade Point (CGP) at the End of Final End Semester Examinations in 10 point scoring system.

(viii) There shall be no supplementary examination. A student has to score minimum 45% marks in his CIA. Failing to secure minimum marks he/she shall have to repeat the CIA along with the students of the same semester of the next academic session.

(ix) If students fail to secure minimum 45% marks in CIA of any paper his/her result will be declared as failed in that paper. Students shall have to reappear in that paper in the same semester of next academic session.

(x) The name of the promoted candidate/candidates will not be included in the merit list of that subject.

(xi) A promoted candidate, if he has passed in CIA but fails in theory paper/papers, he/she shall retain his/her CIA score and will reappear in the theory paper only of the semester whenever available. However, if a candidate is declared fail in any End Semester Examination, shall retain nothing and will have to redo the course work of failed semester again and he has to appear again in CIA as-well-as theory paper.

#### 6. Improvement of Result :

If candidate passes in End Semester Examination (ESE), he/she may apply for the improvement of his/her result in maximum of two papers of the fourth semester. He/she can avail this facility only in theory papers. Better of the two results will be treated as final result of candidates in those papers.

However, the name of such candidates with improved result will not be included in the merit list.

#### 7. Declaration of Result :

The following grading system shall be used by Teacher/Examination department :

Letter Grade	Percentage Range	Numerical of Letter Grade	Description of Grade
O	100-91	10	Outstanding
A++	90-81	9	Excellent
A+	80-71	8	Very Good
A	70-61	7	Good
B+	60-51	6	Average
B	50-45	5	Pass
F	Less than 45	Less than 5	Fail

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## 8. Examinations :

8.1 The End Semester Examinations (ESE) shall be conducted by the University. The continuous Internal Examinations (CIA) shall be conducted by the concerned department.

## 9. Passing of Examination :

9.1 A student shall be declared to have 'passed' and promoted to the next semester when he/she earns 'B' grade or above grade as mentioned in the table in section 7 in the semester examination covering continuous evaluation, mid-term and end-term examinations in all the courses for which he/she was registered in the said semester.

- (i) In order to be promoted from Semester I to Semester II, a candidate has to pass in at least three papers in Semester I Examinations.
- (ii) In order to be promoted to the Semester III, a candidate needs to pass in at least three papers of Semester I and three papers of Semester II.
- (iii) In order to be promoted to the Semester IV, a candidate must clear all papers of semester I, atleast three papers of semester II and three papers of semester III.
- (iv) In Semester IV, a candidate needs to have cleared all the twenty papers for the award of the Degree.
- (v) A Student passed or promoted to the next Semester shall be entitled to get admitted in the Semester to which he/she has been declared passed/promoted.

9.2 A student will be deemed as 'FAILED' in a semester when he/he gets 'F' grade in more than 50% of the papers offered in the examinations to meet the requirements. Such students will be advised by the University to repeat the semester on payment of semester fee or the half of the academic year fee.

9.3 A student who has secured less than 'B' GRADE in one or more course may also be promoted to the next semester if he/she has not otherwise failed as per section above. However, he/she will have to re-appear at the examination of such courses one time only as and when it is held or at the time of regular End-semester examination (ESE) in which he/she has been promoted.

9.4 A student shall be declared to have failed in the programme when he/she fails to qualify for promotion to the next semester after two successive attempts.

9.5 Grades that may be shown in the award sheet of a student without any numerical value are N.A (Not Applied) and S.P (Satisfactory Performance) for course(s) extending beyond a semester such as Project Work.

9.6 There shall be a Grade Point Average (GPA) calculated for each semester on the basis of grades obtained in that semester. The GPA for the Jth Semester is calculated as :

$$GPA = \frac{\sum m_i o_i}{\sum o_i}$$

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Where  $n$  is the number of course in the  $J$ th semester,  $m_i$  denotes the numerical value of the grade obtained in the  $J$ th course of the semester denotes the number of credits for the  $J$ th course of the semester.

Example:

Let us consider the numerical grade and credit of a student given in the table below GPA for  $J$ th semester can be calculated.

Course	Paper I	Paper II	Paper III	Paper IV	Paper V
Credit	5	5	5	5	5
Numerical Grade	7	8	5	7	6

The GPA for the  $J$ th semester is calculated as :

$$\frac{GPA = 7 \times 5 + 8 \times 5 + 5 \times 5 + 7 \times 5}{5+5+5+5} = 6.75$$

The cumulative Grade Point Average (CGPA) for  $k$  semester is given as :

$$CGPA = \frac{\sum_{j=1}^k (GPA_j \times C_j)}{\sum_{j=1}^k C_j}$$

where  $C_j$  is the total number of credits in the  $j$ th Semester.

For example, consider the GPA's obtain by a student in four semester along with total credit in each semester is given as follows.

Semester	First	Second	Third	Fourth
GPA	6.75	6.00	8.12	7.62
Total Credit	16	20	18	16

$$CGPA = \frac{(6.75 \times 16) + (6.00 \times 20) + (8.12 \times 18) + (7.62 \times 16)}{16+20+18+16}$$

$$= \frac{108+120+146+16+121.92}{70}$$

$$CGPA = \frac{496.06}{70} = 7.08$$

- 9.7 The award sheet of the students will show the grades obtained in all the courses offered in each semester, grades/categories without numerical value (if applicable), the GPA and the promotion status.
- 9.8 To be eligible for the award of Master Degree, students must obtain a minimum final cumulative Grade Point Average (CGPA) of 5.0.
- 9.9 To find percent equivalent to CGPA the following formula may be used; percent = CGPA  $\times$  10
- 9.10 Answer books or sheets will be coded before being passed on the examiner and decoded before tabulation work.

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### List of Allied subjects:

Main Subjects	Allied Subjects
Physics	<p>Group A – B. Tech. / B.E in Electronics / Electrical &amp; Electronics / Electronics &amp; Communication Engineering / Electronics and Instrumentation / Computer Science / Information and Communication Technology / Material Science / Nano Science / Nano Technology / Energy Studies.</p> <p>Group B – B.Sc. Hons. in Mathematics with Physics as a subsidiary subject., B.Sc. Hons. In Chemistry with Physics and Mathematics as a subsidiary subject, B.Sc. Hons in Geology with Physics and Mathematics as subsidiary subjects, B.Sc. Hons in Electronics with Mathematics as subsidiary subject, B.Sc. Hons in Statistics with Physics and Mathematics as subsidiary subject, B.Sc. Hons in Computer Science with Physics, and Mathematics as subsidiary subject, Three year degree course after 10+2 with Physics and Mathematics.</p> <p>Group C - B.Sc. in Applied Physics with Mathematics/ B.Sc.in Energy Studies with Mathematics / B.Sc. in Material Science with Mathematics / B.Sc. in Nano Science with Mathematics.</p>
Botany	B.Sc. / B.Tech. in Biotechnology / Environmental Science / Micro Biology / Life Sciences / Bio-Chemistry
Zoology	B.Sc. / B.Tech. in Biotechnology / Environmental Science / Micro Biology / Life Sciences / Bio-Chemistry

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Sl. No.	Head/ Item	For Indian Resident <b>Fee in Indian Rupees.</b>	Non-Residents Indian (NRI) and Foreign Students in US dollar(\$)
I.	Admission Fee(Per semester)	150/-	90
II.	Registration fee(one time) if applicable	200/-	20
III.	Caution Money(one time)	500/-	200
IV.	Tuition fee(per semester)	150/-	250
V.	Eklavya&Tarang (one time in each Academic Session)	10/-	25
VI.	<b>Total</b>	<b>1010/-</b>	<b>585</b>
VII.	Miscellaneous (Per semester)		
	Central library	100/-	10
	Electricity fee	300/-	10
	Identity card fee	60/-	5
	NSS fee	50/-	5
	Parking	50/-	5
	Internal Examination fee	300/-	25
	Library Maintenances Fund	100/-	5
	Building Maintenance Fund	100/-	10
	Medical fee	100/-	5
	Athletic Fund(for College)	100/-	5
	Athletic Fund(for University)	100/-	5
	Common room Fund	50/-	5
	Extra-curricular Fee(Cultural)	50/-	5
	Environmental Protection Fee	20/-	5
	Student's Welfare Fee	10/-	5
	Poor student's fund	10/-	5
	Student's Union Fund	100/-	5
	Society Subscription	50/-	5
	Magazine Fund	50/-	5
	Hand Book/Directory	50/-	5
VIII.	<b>Total</b>	<b>1750/-</b>	<b>135</b>
IX.	<b>Grand total</b>	<b>2760/-</b>	<b>720</b>
X.	Less Registration fee	200/-	20
XI.	<b>Total amount Ist semester</b>	<b>2560/-</b>	<b>700</b>
XII.	Total amount in subsequent semesters excluding caution money & Registration charges	2060/-	500
XIII.	Practical fee per semester wherever applicable	500/-	50
XIV.	Field work wherever applicable(one time)	1000/-	100
XV.	1. The order of the GOB issued from time to time in regards to fee structure will be followed strictly.		

The fee structure may be revised from time to time by the University only after the approval of the State Government.

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xii. A candidate seeking admission against seats under special quota as mentioned above [7.ii to 7.x] shall have to submit special quota application along with main admission application form and attach the supporting document to substantiate their claim. Applications received separately later on shall not be entertained.

xiii. No student shall be provided two weightage for the purpose of admission under special quota from 7.ii to 7.x.

8. No applicant shall be admitted to the course who has not applied for admission within the notified time period.

9. The admitted students will have to register themselves with the Patna University to be able to appear in the Patna University examination within the stipulated period /at the time of admission.

10. No such applicant shall be admitted who, in the opinion of the Head of the Department and endorsed by the Vice Chancellor, should not be admitted in the best interest of the University.

11. During the tenure of the course, if it is found that any document/documents or submission made by a student in support of his/her admission to M.Sc. course is/are forged or fake, his/her admissions shall automatically stand cancelled. The concerned candidate shall be solely responsible for the cancellation of his/her admission and other punitive action/actions.

12. The Vice Chancellor of the respective University has the absolute right to reject /deny admission to any candidate without assigning any reason if he/she judges that this is in the best interest of the University.

13. No candidate shall be allowed to register for any other degree course in the same University or any other university during the same academic session of his/her study of M.Sc. under the subjects of the Faculty of Science.

#### 14. Medium of Instruction/Teaching

Medium of instruction for teaching-learning and examination will be English.

#### 15. Fee Structure

The Fee Structure for the M.A. shall be as mentioned in Table 4.

16. If need arises, the University with the approval of relevant Statutory bodies and the Governor's Secretariat may modify / add or delete any provision of this ordinance.

**Tabl.4: FEE STRUCTURE PER SEMESTER** for Post Graduate Degree (M.Sc.) under Regular mode in the faculty of Science

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ii. Reservation for Persons with Disabilities (PwD) candidates will be followed as per orders of the Government of Bihar issued from time to time.

iii. A maximum of two seats in each subject over and above the sanctioned seats shall be filled by applicants who have distinguished themselves in sports. Under this category only those applicants shall be considered who have represented their University/State in different disciplines at state/national level events.

iv. A maximum of two seats in each subject over and above the sanctioned seats shall be filled by applicants who have distinguished themselves in Fine Arts. Under this category only those applicants shall be considered who have represented their University/State in different disciplines at state/national level events.

v. Two seats shall be reserved for NCC-C Certificate holders. This reservation will also be over and above the normal sanctioned strength of the subject.

vi. Two seats shall be reserved for NSS Certificate holders representing University/ State. This reservation will also be over and above the normal sanctioned strength of the subject.

vii. Reservation for sons/daughters/ spouse of Military personnel/Defence Personnel will be followed as per provisions of the General Ordinance for Admission to Various Courses received from the Governor's Secretariat, Bihar, Patna vide its letter no.PU18/99-3944/GS(I) dated 28.8.1999. This reservation will also be over and above the normal sanctioned strength of the subject.

viii. Reservation for sons/daughters of the respective university teachers will be followed as per provisions of the General Ordinance for Admission to Various Courses received from the Governor's Secretariat, Bihar, Patna vide its letter no.PU18/99-3944/GS(I) dated 28.8.1999. This reservation will also be over and above the normal sanctioned strength of the subject.

ix. Reservation for sons/daughters of the respective university non-teaching staff will be followed as per provisions of the General Ordinance for Admission to Various Courses received from the Governor's Secretariat, Bihar, Patna vide its letter no.PU18/99-3944/GS(I) dated 28.8.1999. This reservation will also be over and above the normal sanctioned strength of the subject.

x. 2% seats of the sanctioned strength in any subjects may be filled with NRI/Foreign students. These seats will be treated as over and above the normal sanctioned strength. NRI candidates under this category shall submit their applications duly recommended by M.E.A. (Ministry of External Affairs) alongwith the copies of the documents showing NRI status.

xi. A candidate seeking admission against under various reserved category i.e. SC/ST/EBC/ OBC/WBC etc. has to mention about the category at the time of submitting the main admission application form and attach the supporting document to substantiate his/ her claim. Applications received separately later on shall not be entertained.

*Rehmat Ali*

*Darsila*  
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## 5. Eligibility Criteria

5.1. The eligibility criterion for applying for admission in M.Sc. are as follows:-

(i) Passed the Bachelor degree(B.Sc.) with 45% marks in respective Honours subject/major subject/ core course

or

(ii) Passed the Bachelor degree with 55% marks in Subsidiary/Pass course/Allied subject.

5.2 Admission to M.Sc. course will be taken on the basis of marks in the Bachelor Degree course or performance in PET/H.

5.3 Structure of the entrance test:

Questions shall be of multiple choice type with four options with a single correct answer. The entrance test shall be held on OMR sheet. The duration of the test shall be of 2:30 hour. The total marks will be 200 marks. There shall be no negative marking. There shall be two parts in the question paper as mentioned in Table.3.

**Table.3. Details of entrance test**

Part A	General Aptitude Test	50 marks	50 questions	1 mark for each question
Part B	Subject test	150 marks	75 questions	2 marks for each question

5.4 The application fee for applying for admission to M.Sc. courses will be Rs.750/-only. This will include the fee for admission test (whenever applicable). On the recommendation of the Academic Council and with the approval of the statutory bodies of the respective university, application fee may be revised whenever required.

## 6. No. of seats

Any change in the number of seats in a particular subject shall be decided by the respective University in accordance with the guidelines received from the State Government from time to time.

## 7. Reservation of Seats

i. The reservation of seats in each course shall be as per reservation rules of the Government of Bihar.

*Richaawhony* *Das Bihari*  
5/4/18

#### 4. Admission to M.Sc. Part-I (First Semester)

4.1 A candidate seeking admission to M.Sc. (Semester System) must be a graduate having passed the Bachelor Degree (B.Sc.) with Honours in the subject concerned or as a subsidiary subject or as a subject in pass course or in an allied subject. Preference will be given to those having passed with the subject as a Hons Subject /Major subject/ Core Course.

4.2 In such subjects where candidates with Honours/ Subsidiary / Pass degree are not available, students having degree in allied subjects may be treated at par as having Honours Degree in the subject. Lists of allied subjects are enclosed as Annexure 1. The Academic Council of the University on the recommendation of its equivalence committee shall modify the lists of allied subject/subjects whenever needs arise.

4.3 For Patna University eighty (80% ) of the total sanctioned seats of the subject concerned shall be reserved for the candidates having graduation degree from Patna University and the remaining 20% seats shall be open. The decision has been taken in view of the following observations:

“The academic calendar in Patna University is strictly followed and the session for both UG and PG courses are exactly on schedule, whereas in all other state universities in Bihar, the sessions for both U.G. and P.G. courses are late by two to three years. Therefore, it is reasonable to give opportunity to students graduated from Patna University to take admission in P.G. course in Patna University, otherwise the Patna University graduates have to wait for 2/3 years to continue their P.G. studies and suffer a break in the continuity of their academic carrier. This will lead to injustice to the students graduating from Patna University. Therefore, it is proposed that 80% seats be reserved for the students passing out from Patna University.”

4.4 Admission to M.Sc. Part-I (First Semester), shall be made in order of merit. The merit list shall be prepared on the basis of marks obtained by the applicant in the Bachelor Degree Course or through Entrance test.

In case of Entrance Test it will be organised by the University to be named as ‘Name of the respective University’ - Postgraduate Entrance Test in the Faculty of Humanities abbreviated as : PET/H. The merit list shall be prepared on the basis of marks obtained by the applicant in the PET/H to be organised by the respective University.

*Rehan Shauq*

*Hasan Ali*

3.2.2. The final CGPA/ class will be decided on the performance of the student in the 16 courses/ papers including the 14 Core Courses (CC) / papers and two EC /papers.

3.2.3 The one DSE or one GE, two AECC, one AEC papers will be qualifying in nature and a student has to score at least 45% marks in these papers. Grade will be awarded separately for these courses, however, performance in these elective courses/ papers will not be considered for awarding the final CGPA/ class.

### 3.2.4 Ability Enhancement Compulsory Courses(AECC):

University will run two **Ability Enhancement Compulsory Courses** (AECC) which are qualifying in nature and a student has to qualify in both these courses. The courses are:

**AECC-1** : Environmental Sustainability (3 Credit)  
&Swachchha Bharat Abhiyan Activities (2 Credit)

**AECC- 2** : Human Values & Professional Ethics (3 Credit)  
& Gender Sensitization (2 Credit)

**Students will do assignments/project work related to institutional social responsibilities including Swachchha Bharat Abhiyan Activities during SEMESTER BREAK.**

3.2.5 University will run a number of **Ability Enhancement Courses** (AEC) and Skill Enhancement Courses; a student can choose one from these. For example:

#### **Basket Ability Enhancement Courses (AEC)**

- Computers and IT Skill
- Web Designing
- Financial Risk Management/
- Solid waste Management/
- Mushroom Culture /
- Bio-fertilizer production/
- Environmental Law/
- Tourism & Hospitality Management/
- Lifeskill& skill development /
- Yoga Studies

etc.

#### 3.2.6 Discip

In each subject the CC/ paper -5 being taught in the second semester will be open to be selected as a DSE paper. In the first phase a student will be allowed to choose a paper from any subject other than his/ her Core Course (CC) from the same faculty in the same university.

### 3.2.7 Generic Elective (GE) Course:

University will run a number of **Generic Elective Courses** (GE); a student can choose one from these. For example:

#### **Basket of GE courses**

- Music
- Dramatics

*Pechawhary* *Devi*

The details of credits for individual components and individual courses are given in Table.2.

**Table 2: Structure of the 2 Yrs (Four Semesters) Post Graduate Degree course under CBCS:**

Semester	No of COURSE / Papers	Credit per COURSE/ paper	Total credit	Minimum No of Learning Hours#	No of CORE COURSE/ PAPER	No of ELECTIVE Course/ PAPER	Code & Nature of Elective Course/ paper
I	05	05	25	250	4	1	AECC-1
SEMESTER BREAK							
II	06	05	30	300	5	1	AEC-1
SEMESTER BREAK							
III	06	05	30	300	5	1	AECC-2
SEMESTER BREAK							
IV	03	05	15	150	0	3	EC -1* EC -2* DSE-1 or GE-1
<b>Total</b>	<b>20</b>		<b>100</b>	<b>1000</b>	<b>14</b>	<b>6</b>	

#For Tutorial (T)/ Practical (P)/ Field Work (FW)/ Internship etc. extra working hour to be added as per requirement and will be decided by the BOCS of the respective subject.

\* The two **Elective Courses (EC)** to be studied in semester IV may be

- Both theory papers**
- / **One Theory paper and One Practical paper**
- / **One Theory paper and One Project work**
- / **One Theory paper and One Field work**
- / **Both Project work/ Internship**

**IMP : It is desirable that all students of all courses be given adequate exposure over and above the class room teaching to enhance the scope of employability.**

**3.2.1.** The distribution of the six elective papers shall be - two EC, one DSE or one GE, two AECC, one AEC. Students may opt for any elective course out of a list of elective papers (**Basket**) offered by the parent department or any other department/s as per his/her choice with the prior permission of the parent department. The list of elective papers, syllabus and prerequisite of the elective course will be as decided by the Board of Courses of Studies (BOCS) of the concerned subject/ department.

*Rechana Ray*

*Rasheed*  
5-4-18

### 3.1.1 Core Course (CC):

A course which should compulsorily be studied by a candidate as a core requirement on the basis of subject of MA studies and is termed as a Core course.

### 3.1.2. Elective Course (EC):

Generally a course which can be chosen from a pool of courses (Basket) and which may be very specific or specialized or advanced or supportive to the subject/discipline of study or which provides an extended scope or which enables an exposure to some other subject/discipline/domain or nurtures the candidate's proficiency/skill is called an Elective Course.

### 3.1.3 Discipline Specific Elective Course(DSE):

Elective courses may be offered by the main discipline/subject of study is referred to as **Discipline Specific Elective**. The University/Institute may also offer discipline related Elective courses of interdisciplinary nature (to be offered by main discipline/subject of study).

### 3.1.4 Generic Elective (GE) Course:

An elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure is called a **Generic Elective**.

P.S.: A core course offered in a discipline/subject may be treated as an elective by other discipline/subject and *vice versa* and such electives may also be referred to as Generic Elective.

### 3.1.4 Ability Enhancement Courses (AEC):

The Ability Enhancement Courses (AEC) / Skill Enhancement Courses (SEC). "AEC" courses are the courses based upon the content that leads to life skill enhancement.

### 3.1.6 Ability Enhancement Compulsory Courses(AECC): (Qualifying and Non-CGPA course):

University will run a number of **Ability Enhancement Compulsory Courses(AECC)** which is qualifying in nature and student from all faculties have to qualify in all courses.

### 3.1.7 Dissertation/Project/ Internship/ Industrial Training:

An elective course designed to acquire special/advanced knowledge, such as supplement study/support study to a project work, and a candidate studies such a course on his own with an advisory support by a teacher / faculty member is called dissertation/project.

## 3.2 CREDIT

The total minimum credits, required for completing a PG program is 100.

*Pechawat Jayasuri*  
5.4.18

## 2. The subjects:

The Postgraduate Degree 'Master of Science'[M.Sc.] in the Faculty of Science shall be offered in the following subjects as mentioned in Table 1 below.

**Table 1.** Subjects available for M.Sc. degree in the faculty of Science:

Sl.No.	Name of the subject	Programme code	Study Centre
1	Botany	M.Sc.(BOT)	
2	Biochemistry	M.Sc.(BIO)	
3	Chemistry	M.Sc.(CHE)	
4	Geology	M.Sc.(GEO)	
5	Mathematics	M.Sc.(MAT)	
6	Statistics	M.Sc.(STA)	
7	Physics	M.Sc.(PHY)	
8	Zoology	M.Sc.(ZOO)	
9	Herbal Chemistry	M.Sc.(HER)	
10	Environmental Science	M.Sc.(ENV)	
11	Biotechnology	M.Sc.(BIO)	
12	Bioinformatics	M.Sc.(BIOIN)	
13	Electronics	M.Sc.(ELE)	
14	Energy Studies	M.Sc.(ENT)	
15	Microbiology	M.Sc. (MBIO)	
16	Nano Science	M.Sc. (NANO)	
17	Computer Sc		
18	Information Technology (IT)		

## 3. OUTLINE OF THE CHOICE BASED CREDIT SYSTEM (CBCS) for PG degree courses:

It consists of a number of courses i.e. **Core Course (CC)**, **Elective Course (EC)**, **Discipline Specific Elective Course (DSE)**, **Ability Enhancement Courses (AEC)**, and **Ability Enhancement Compulsory Courses (AECC)**. Each course is equivalent to a paper. The nature of these courses are defined below.

*Rehan Ali*

*Sarosh Ali*  
5-4-18