



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

Letter No.PU-(Regulations)-31/2013- 8c/ GS (I), Dated 10-01-2014
From,

U.K. Choubey
Addl. Secretary

To,

The Vice Chancellor
Patna University
Patna.

Sub:- Regarding approval of the amended Admission Ordinance (Semester System) and the Examination Regulations (Semester System) of **M.Sc. in Biotechnology**, under self-financing course.

Sir,

I am directed to invite a reference to the University's letters no Acad/628, dated 12.04.2012, Acad/592, dated 22.04.2013, Acad/979, dated 03.08.2013, Acad/1351, dated 27.09.2013, Acad/1553, dated 29.10.2013, Acad/1572, dated 30.10.2013, Acad/1585, dated 01.11.2013, Acad/1596, dated 02.11.2013 and Acad/659/R, dated 20.11.2013 on the subject noted above and to inform that the Hon'ble Chancellor, after due consideration of the proposal of the University, advice of the Advisory Committee and in exercise of powers vested in him under Section 38(2) and 39(2)(ii) of the Patna University Act, 1976, as amended up to date, has been pleased to approve the Admission Ordinance (Semester System) and Examination Regulations (Semester System) of **M.Sc. in Biotechnology**, a self-financing course (**copy enclosed**) from the Session 2012-13 with the condition to seek approval of the number of seats from the State Govt. from the next Academic Session (2014 onwards) and send compliance to this Secretariat before commencement of the next Academic Session.

Further necessary action may kindly be taken accordingly.

Yours faithfully


(U.K. Choubey)
Addl. Secretary

Encl:-As above



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Further necessary action may kindly be taken accordingly.

Yours faithfully

Encl:-As above

Sd/-
(U.K. Choubey)
Addl. Secretary

Memo No. PU-(Regulations)-31/2013- GS/(I) Dated

Copy alongwith copy of approved amended Admission Ordinance (Semester System) and Examination Regulations (Semester System) of **M.Sc. in Biotechnology**, a self-financing course forwarded to Principal Secretary, Education Department, Govt. of Bihar for information and necessary action.

Encl:-As above

Sd/-
(U.K. Choubey)
Addl. Secretary

Memo No. PU-(Regulations)-31/2013- 80/ GS/(I) Dated 10-01-2014
Copy alongwith copy of approved amended Admission Ordinance (Semester System) and Examination Regulations (Semester System) of **M.Sc. in Biotechnology**, a self-financing course forwarded to Scientist-D, In-charge Computer Cell, Raj Bhavan, Patna for uploading on the website of Raj Bhavan/Guard File of Regulations and Ordinance of Patna University, Patna.

Encl:-As above

Sd/-
(U.K. Choubey)
Addl. Secretary

PATNA UNIVERSITY

Ordinance for Admission of Students to Post Graduate Degree Course in Biotechnology.

1. Admission to M.Sc. Biotechnology course is open to candidates who have passed B.Sc. (Hons.) or an equivalent examination conducted by a University established or incorporated by law and are eligible to apply for admission.
2. Eligibility for Admission: To be eligible for admission to this course, a candidate must have:
 - 2.1 Graduate degree in Life Sciences (Botany, Zoology, Biotechnology, Microbiology and Industrial Microbiology and Environmental Sciences)

OR

 Graduate degree in Biochemistry, Bioinformatics and Chemistry with Life Sciences subjects as subsidiary.

OR

 B.Sc. (Ag.), B.V.Sc.

OR

 M.B.B.S. degree or equivalent thereof.
 - 2.2 Qualify in the written Aptitude/Entrance Test followed by a Viva-voce to be conducted by the Department.

Every candidates must have obtained atleast 55% (for General Category & 45% for EBC, SC & ST) marks in Graduation.
3. Written Aptitude/Entrance Test : Admission to the Post Graduate Course in Biotechnology shall be made on the basis of the marks obtained at the written Aptitude/Entrance Test (100 marks) followed by Viva-Voce (25 marks) conducted by the Department. The merit list for admission will be made after combining both written aptitude and viva-voce marks (altogether 125 marks).
4. Number of seats and reservation :
 - 4.1 The total number of seats for admission to the course is 20 (Twenty) including both general and reserved categories.
 - 4.2 The reservation of seats belonging to SC, ST, EBC (BC-I) and OBC (BC-II)'s categories will be provided as per the Patna University rules.

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S.K. Mishra
6-12-13

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SEMESTER SYSTEM

PATNA UNIVERSITY, PATNA

REGULATIONS FOR POST GRADUATE (M.Sc.) COURSE IN
BIOTECHNOLOGY


1. Student shall undergo a certified study extending to Four semesters. Each semester will consist of at least 90 teaching days of six hours each.
2. **Eligibility for Admission:** To be eligible for admission to this course, a candidate must have:
 - 2.1 Graduate degree in Life Sciences (Botany, Zoology, Biotechnology, Microbiology & Industrial Microbiology and Environmental Sciences)
or
Graduate degree in Biochemistry, Bioinformatics and Chemistry with Life Sciences subjects as subsidiary
or
B.Sc. (Ag), B.V.Sc.
or
M.B.B.S. degree or equivalent thereof

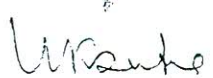
Every candidate must have obtained at least 55% (for general category) and 45 % (for EBC, SC and ST) marks in Graduation.

2.2 Qualify in the Written Aptitude/Entrance Test followed by a viva-voce to be conducted by the Department.

3. **Written aptitude/entrance test and Viva-voce:**

- 3.1 Admission to M. Sc. Biotechnology course shall be made on the basis of a *written aptitude/entrance test* (100 marks) followed by *viva-voce* (25 marks), both to be conducted by the Department. The merit list for admission will be made after combining both written aptitude and viva-voce marks (altogether 125 marks).
- 3.2 The question *written aptitude /entrance test* will cover the disciplines such as chemistry, biochemistry, plant physiology, cell biology, molecular biology, genetics, environmental biology, microbiology and biotechnology. The details of the written test will be available in the prospectus along with the application form.


Co-ordinator
Degree Course in Biotechnology
Patna University


Head of the Department
Patna University
PATNA-800 005.

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4. Reservation seat to SC, ST, EBC (BC I) and OBC (BC II) category students unless specified otherwise, will be as per the rules of Patna University applicable at the time of admission.
5. Didactic lectures shall not exceed two third of the time schedule. Regular seminar and group discussions and problem-oriented discussions shall be held regularly.
6. Course Structure:

Semester - I

Code	Subject	Credit	End Semester exam (ESE)	Continuous Internal Assessment (CIA)	Total
BT-M-101	Cell & Molecular Biology and Genetics	5	70	30	100
BT-M-102	Microbiology	5	70	30	100
BT-M-103	Biomolecule and Basic Enzymology	4	70	30	100
BT-M-104	Practical-I (Based on BT-M-101, 102 & 103)	6	70	30	100
		20	280	120	400

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Co-ordinator
M. Sc. Degree Course in Biotechnology
Patna University

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Head of the Department of Biology
Patna University
PATNA-800 005.

[Signature]
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B. K. Mishra
06.12.13

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Semester - II

Code	Subject	Credit	End Semester exam (ESE)	Continuous Internal Assessment (CIA)	Total
BT-M- 201	Biophysics and Instrumentation	5	70	30	100
BT-M- 202	Biology of Immune System	5	70	30	100
BT-M- 203	Bioprocess Technology	4	70	30	100
BT-M- 204	Practical-II (Based on BT-M-201, 202 & 203)	6	70	30	100
		20	280	120	400

Semester - III

Code	Subject	Credit	End Semester exam (ESE)	Continuous Internal Assessment (CIA)	Total
BT-M- 301	Recombinant DNA Technology	5	70	30	100
BT-M- 302	Plant and Animal Biotechnology	5	70	30	100
BT-M- 303	Biostatistics and Bioinformatics	4	70	30	100
BT-M- 304	Practical-III (Based on BT-M-301, 302 & 303)	6	70	30	100
		20	280	120	400

Prasenjit

Co-ordinator
 M. Sc. Degree Course in Biotechnology
 Patna University

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Head of the Department
 Patna University
 PATNA-800 005.

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Semester - IV

Code	Subject	Credit	End Semester exam (ESE)	Continuous Internal Assessment (CIA)	Total
BT-M- 401	Elective I	4	70	30	100
BT-M- 402	Elective II	4	70	30	100
BT-M- 403	Practical-IV (Based on BT-M-401 & 402)	6	70	30	100
BT-M- 404	Project Dissertation & Viva	6	100	-	100
		20	310	90	400

Elective Papers: Two to be selected

Code	Subject	Credit	End Semester exam (ESE)	Continuous Internal Assessment (CIA)	Total
BT-M-401	Environmental Biotechnology	4	70	30	100
BT-M-402	Microbial Biotechnology	4	70	30	100
BT-M-402	Advanced Plant and Agriculture Biotechnology	4	70	30	100

NOTE: - List of Practical will be supplied at the Start of every Semester and will depend upon the availability of infrastructure facility and resources in the Department.

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Co-ordinator
 M. Sc. Degree Course in Biotechnology
 Patna University

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Head of the Dept. of
 Patna University
 PATNA-800 005.

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7. Examination:

- 7.1 Only a student registered with the Patna University after admission in this course will be eligible for appearing in the examinations.
- 7.2 There shall be one end semester examination (ESE) in each semester.
- 7.3 Theory paper will be set as prescribed in the syllabus by the examiners out of panel as approved by the moderation board and assented by the Vice-chancellor, PU. The each theory paper will be distributed in 5 Units. The duration of the theory examination will be of 3 (three) hours and students are required to answer total of 5 (Five) questions out of which question number one and two will be compulsory which will be of objective type and short answer type, respectively.

The details of questions break-up for each theory paper (Total Marks-70) will be:

Section 1

Question 1: Objective type carrying 20 marks

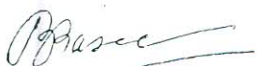
Section 2

Question 2: Short answer type: Five questions to be set (one from each Unit). Examinee will answer any four questions (5 marks x 4 question- 20 marks)


Section 3

Five questions to be set (One from each Unit), out of which examinee will answer any three questions (10 marks x 3 questions= 30)

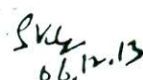
- 7.4 Candidate's skill in interpretation of common investigated data, identification of specimens etc. will also be evaluated.
- 7.5 The examination are to be designed with a view to ascertain whether the candidate has developed necessary knowledge and skills along with clear concepts of fundamentals which are necessary for him to carry out his day to day work competently.
- 7.6 There shall be two external examiners preferably from outside the university or state in each practical paper (of six hours duration).

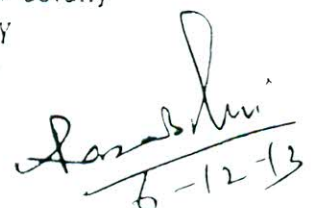


Co-ordinator
M. Sc. Degree Course in Biotechnology
Patna University


Head of the Department of Botany
Patna University
PATNA-800 005


R. K. Mishra
6.12.13


S. K. Singh
06.12.13


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8. Distribution marks in each semester:

Evaluation of each semester shall be done by a continuous internal assessment (CIA) by the concerned course teacher as well by an end semester examination (ESE) and will be consolidated at the end of the course.

(i) Distribution of marks in end semester examination (ESE):

- (a) **First semester:** There shall be three theory papers and one practical paper of 70 mark each carrying a total of 280 marks.
- (b) **Second semester:** There shall be three theory papers and one practical paper of 70 marks each carrying a total of 280 marks.
- (c) **Third semester:** There shall be three theory papers and one practical paper of 70 mark each carrying a total of 280 marks.
- (d) **Fourth semester:** There shall be two theory papers (Elective papers) and one practical paper of 70 marks each and a Project dissertation of 100 marks carrying a total of 310 marks. Each student shall have to undertake a mini research project and submit his or her results in scientific manuscript form for evaluation on the dissertation and viva-voce.

(ii) The components for continuous internal assessment (CIA) are: There shall be CIA to assess the values, skill and knowledge imbibed by students. Internal assessment is to be done by the Department. It would comprise 30 marks in each paper. The fractions of marks in each paper are given below:

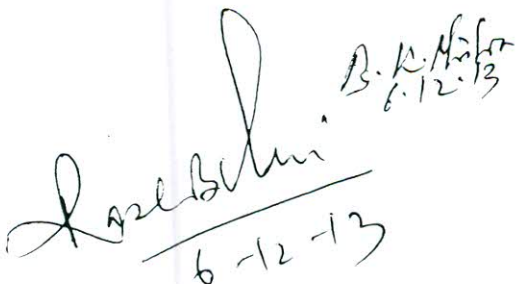
S.No.	Components	Marks
01	Two tests (One hour duration each)	7.5x2=15 (Third repeat test for genuine Absentees)
02	Seminar/Quiz/ Assignments	10
03	Regularity and behaviour	05
	Total	30 Marks



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Patna University
PATNA-800 005.


B. K. Mishra
6.12.13


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Award of degree and promotion rule:

The following grading system shall be used for award of degree:

Letter	Percentage Range	Numerical Value of Letter Grade	Description of Grade
A+	80 and above	9	Excellent
A	70-79	8	Very Good
A-	60-69	7	Good
B+	52-59	6	Above Average
B	46-51	5	Average
B-	40-45	4	Satisfactory
C+	35-39	3	Below Average
C	30-34	2	Unsatisfactory
C-	Below 30	1	Very Unsatisfactory

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Rules for Promotion to the Next Semester

- 9.1 A student shall be declared as 'passed' and promoted to the next semester when s/he earns B Minus or above grade in the semester examination covering continuous evaluation and end-term examinations in all the courses in the said semester.
- 9.2 A Student will be deemed as 'failed' in a semester when s/he gets below B Minus in the semester, or does not appear in the examinations to meet the requirements
- 9.3 A student who has secured less than B Minus may also be promoted to the next semester if s/he is not otherwise failed as per section 9.2 above. However, s/he 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 semester end examination in which/ s/he has been promoted.
- 9.4 When a student fails to appear in the semester ending examination in one out of four or two out of five/ six courses, s/he will also be promoted to the next semester subject to the conditions at section 9.1 above s/he will have to re-appear at the examination of such courses one time only as and when it is held or at the time regular semester end examination in which s/he has been promoted.
- 9.5 A student who has secured from A to B⁻ in any end semester examination (ESE) shall be allow to appear one time only for improvement of marks in only two theory courses as an when it is held at the time of regular end semester examination.

[Signature]
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M. Sc. Degree Course in Biotechnology
Patna University

[Signature]
Head of the Department
Patna University
PATNA-800 005.
5/11/13

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10. Attendance:

75% of attendance in a subject for appearing in the examination shall be compulsory.

- 11. Regular periodical exams will be conducted throughout the course.
- 12. The Vice-chancellor will appoint a board of moderator and all the examinations conducted and results published under the examination Board, Patna University.
- 13. Wherever this regulation is silent, such matter will be governed by the regulation already existing for the postgraduate science course of the Patna University.

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M. Sc. Degree Course in Biotechnology
Patna University



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Patna University,
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6.12.13

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