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

Letter No.MU-(Regulations)-61/2013- GS (I), Dated

From,
N.K. Singh
Under Secretary

To,
The Vice Chancellor
Magadh University,
Bodh Gaya.

Sub:- Regarding approval of the Admission Ordinance and Regulations of self-financing Course of M.Sc. Biotechnology in Magadh University.

Sir,
I am directed to invite a reference to the University's letter no.XM/113/13, dated 17.12.2013 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 Bihar State Universities Act, 1976, as amended up-to-date, has been pleased to approve the Admission Ordinance and Regulations of self-financing Course of M.Sc. in Biotechnology (copy enclosed) from the Session 2013-14 with the condition to seek approval of the number of seats from the State Govt. before beginning of 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

Encl:-As above

Sd/-
(N.K. Singh)
Under Secretary

Memo No. MU-(Regulations)-61/2013- GS/(I)
Copy alongwith copy of approved Admission Ordinance and Regulations of self-financing Course of M.Sc. in Biotechnology forwarded to Principal Secretary, Education Department, Govt. of Bihar for information and necessary action.

Encl:-As above

Sd/-
(N.K. Singh)
Under Secretary

Memo No. MU-(Regulations)-61/2013- 385 GS/(I) Dated 03-03-2014
Copy alongwith copy of approved Admission Ordinance and Regulations of self-financing Course of M.Sc. in Biotechnology 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

(N.K. Singh)
Under Secretary
MAGADH UNIVERSITY, BODHGAYA
ORDINANCE

M.Sc. Bio-technology

Two years Post Graduation course

On self-financing Basis (Regular mode)

The proposed course shall be known as Master of Science in Biotechnology. Duration of course shall be of 4 semesters spread over in two years.

1. Eligibility for Admission:
   i. To be admitted to the course of Master of Science (Biotechnology) a candidate must have passed one of the following examinations from Magadh University, or any other university recognized by U.G.C. B.Sc. (Hons) or equivalent examination under 10+2+3 pattern of education in Biotechnology, Biochemistry, Environmental Science, Industrial microbiology, Microbiology, Botany, Chemistry & Zoology.
   
   **OR**

   Graduation in Agriculture/ Forestry/Veterinary/Medical Sciences/ Pharmacy with a minimum of 45% marks in aggregate.

   ii. V.C, M.U. shall have right to cancel the admission of any candidate who in his opinion towards not suitable in the interest of institution.

   iii. No applicant shall be considered for admission who has not applied for admission within the specified time.
2. Admission and Selection procedure:

(i) The university/Department shall advertise the admission communiqué/notice in the month of May-June of each year just after the publication of result of B.Sc. (Hons.) Biotechnology result of M.U.

(ii) Interested candidates shall be required to get the prospectus and admission form from the office of P.G. Department of Biotechnology of M.U. on payment of Rs. 800/- (Eight hundred only) for general category and Rs. 600 (Six hundred only) for SC/ST categories in cash or DD in favour of **Director Biotechnology, M.U.** payable at Bodh Gaya Branch of Central Bank of India. Duly filled in application forms must be submitted on or before last day of submission of forms.

(iii) The admission to the present course shall be made on the basis of merit list of Entrance Aptitude Test (EAT) followed by counselling.

(iv) The entrance test will be conducted to test the knowledge of the candidate from various disciplines of science especially Biotechnology and allied subjects. The duration of the test shall be of one hour or as decided by the department and questions will be of objective/short answer type.

(v) The University reserves the right to take any decision in all matters of admissions and to enhance or reduce the seats as per university rules.

3. Reservation:-

The University shall strictly follow the reservation rules of the state government during the process of admission.
4. Intake:-

The intake of students shall be determined by the state government/Competent apex body. However, at present intake capacity is 32 (Thirty two) only.

5. Fee Structure:-

Semester wise fee structure are as under-

<table>
<thead>
<tr>
<th>Semester</th>
<th>Admission fee</th>
<th>Rs. 500 = 00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester I</td>
<td>Semester fee</td>
<td>Rs. 18500 = 00</td>
</tr>
<tr>
<td>Examination fee</td>
<td>Rs. 1500 = 00</td>
<td></td>
</tr>
<tr>
<td>Semester II</td>
<td>Semester fee</td>
<td>Rs. 18500 = 00</td>
</tr>
<tr>
<td>Examination fee</td>
<td>Rs. 1500 = 00</td>
<td></td>
</tr>
<tr>
<td>Semester III</td>
<td>Semester fee</td>
<td>Rs. 18500 = 00</td>
</tr>
<tr>
<td>Examination fee</td>
<td>Rs. 1500 = 00</td>
<td></td>
</tr>
<tr>
<td>Semester IV</td>
<td>Semester fee</td>
<td>Rs. 18500 = 00</td>
</tr>
<tr>
<td>Examination fee</td>
<td>Rs. 1500 = 00</td>
<td></td>
</tr>
</tbody>
</table>

(a) Apart form this Rs. 3,000/- (Three thousand) shall be realized as caution money at the time of admission. This amount is refundable.

(b) The present course is self financing and if necessary, it may be revised after the approval of Chancellor’s office.

(c) The students once admitted in the course will be automatically promoted to subsequent semester as per the regulation for the course without any further admission.
MAGADH UNIVERSITY, BODH GAYA
REGULATION
M.Sc. Bio-technology
Two years Post Graduation course
On self-financing basis (Regular mode)

Semester and Credit system:-
1. Semester System:
   (i) P.G. in Biotechnology course shall comprise of 4 semesters spread over two years and each semester shall comprise of six months duration. The I and III Semester shall start from July and come to an end in December and subsequently II & IV semester shall start from January and come to an end in June.
   (ii) The curriculum of each P.G. semester course shall comprise of 4 papers, each paper of 100 marks (100X4= 400 marks). Thus the entire curriculum shall be of 1600 marks taken together (400X4=1600 marks).
   (iii) From 1st to 3rd semester, in each paper 20% marks shall be awarded through internal assessment based on written test, attendance and seminar presentation and remaining 80% shall be awarded through written examination and external evaluation.
   (iv) In 1st to 3rd semester there shall be one practical based paper.
   (v) In the 3rd semester there shall be one two general and one elective theory papers and one practical based paper.
   (vi) In the 4th semester a dissertation cum advance training programme shall be carried out. This shall be evaluated in 400 marks by external examiners through presentations.
(vii) The curriculum of all theory papers per semester shall be divided into units of a duration of 3 hours and curriculum of each practical paper will be of 4/6 hours duration based on the theory papers of the concerned semester.

2. Credit System:

(i) The curriculum contents shall be divided into units/subunits and assigned to numerical values termed as credits.

\[ \text{i.e. paper} \rightarrow \text{Units} \rightarrow \text{Credit} \]

a) Credit of a course is a measure of weekly unit work assigned for that course. The entire course will be of 80 credits.

b) Each credit shall be equivalent to 15 hrs. of teaching per week.

c) Each lecture shall be of one hour.

d) A theory paper of a course shall be of 4 credits i.e. 15X4 = 60 hours but in Practical/Viva/GD the maximum credits shall be 08 i.e.

\[ 15 \times 8 = 120 \text{ hrs.} \]

<table>
<thead>
<tr>
<th>Semester</th>
<th>Theory Paper</th>
<th>Credits</th>
<th>Total</th>
<th>Pract./Viva/G.D.</th>
<th>Credits</th>
<th>Total credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>3T</td>
<td>4</td>
<td>12</td>
<td>1Prac/Viva/GD</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>II</td>
<td>3T</td>
<td>4</td>
<td>12</td>
<td>1Prac/Viva/GD</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>III</td>
<td>3T</td>
<td>4</td>
<td>12</td>
<td>1Prac/Viva/GD</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>IV</td>
<td>Dissertation cum advance training</td>
<td>36-38</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6 days per week; 6 X 6 hrs = 36 hrs/week

36X4 weeks = 144 hrs per month.
3. Attendance:

75% attendance shall be essential for all the students to be sent up for appearing in each semester end examination. However, relaxation upto 10% shall be provided as per existing rules of the university. The marks in attendance shall not exceed 5 (five) in each paper and the marks on attendance for all the four papers shall be calculated as below:-

Overall marks on attendance in each semesters = \frac{\% \text{ of attendance} \times 20}{100}

4. Registration:

Registration of each students shall be essential in the Magadh University. The students who is not registered in Magadh University shall have to get herself/himself registered on payment of requisite fee.

The students who are not registered under Magadh University shall not be allowed to appear at the examination:

5. Examination:

I. Each course shall have semester end examination to be conducted by the university.

II. Each theory paper shall have written examination of 80 marks to be evaluated externally and internal assessment of 20 marks which shall be splitted as under:

- Written test- 10 marks.
- Attendance – 05 marks
- Seminar presentation - 05 marks

Total 20 marks

III. In the written examination of theory papers, there shall be nine questions of which Q.no.1 shall be compulsory and objective type.

Students shall have to answer five question including Q. no. 1.
IV. The answer sheets are to be encoded before evaluation and decoded before tabulation which shall be highly confidential.

V. Students shall have to secure a minimum of 40% marks in each paper in internal assessment and semester end examination taken together and 45% in aggregate of any semester to be declared successful.

VI. Students failing to obtain 40% marks in any paper (s) in a semester end examination, shall have to clear the affected paper (s) in the next semester end examination alongwith the papers of the same semester.

VII. If a student missed an internal assessment examination he/she will have a second chance with the permission of the concerned Head of the Department on the consideration of genuineness of the case.

VIII. There shall be no supplementary examination in any of the semester course.

IX The successful students in semester I, II, & III will be declared as passed while the final result shall be declared on the basis of 45% aggregate marks of all semester I, II, III & IV taken together.

Promotion Rules:

(i) Those who have failed in not more than two paper in any (I, II or III) end semester examination shall be treated as promoted to the higher next semester. They will have to clear their failed paper in the next examination of the semester.

(ii) The promoted students shall have to clear the affected paper (s) in the next subsequent examination of that semester.

(iii) Their final result will only be published after the candidate has cleared all the papers of all semesters.
Improvement of Result:

(i) The students shall be permitted to improve their result in maximum of two papers in each semester during subsequent examination of the semester. The better of the two result will be treated as his final result.

Award of Degree:

(i) The degree of M.Sc. shall be awarded to a candidate who secured a minimum of 45% marks in aggregate of all the four semesters taken together and the result shall be declared on the basis of aggregate marks obtained as follows:

(a) 75% marks and above - 1st class with distinction
(b) 60% marks and above - 1st Class
(c) 45% marks and above - 2nd class
(d) Below 45% - fail

(ii) Successful candidates will be awarded the degree of Master of Science in Biotechnology, in faculty of science, M.U. Bodh Gaya mentioning the specialization.

Note: If any matter, which has not been included in this amendment, the existing rules and regulations of the university shall prevail.
## Annexure-I

(A) P.G. Course in Biotechnology, M.U. of 1600 Marks

<table>
<thead>
<tr>
<th>Semester</th>
<th>Papers (Theory, Practical)</th>
<th>External assessment</th>
<th>Internal assessment</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From July to December</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Th: Cell Biology &amp; Biomolecules</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Th: Microbial Physiology and Genetics</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Th: Biochemistry, Computer application &amp; Biostatistics</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>4&lt;sup&gt;th&lt;/sup&gt; Pract: Covering 1&lt;sup&gt;st&lt;/sup&gt; to 3&lt;sup&gt;rd&lt;/sup&gt; theory papers</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>II</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From January to June</td>
<td>5&lt;sup&gt;th&lt;/sup&gt; Th: Molecular Biology and Genetic engineering</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>6&lt;sup&gt;th&lt;/sup&gt; Th: Immunology</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>7&lt;sup&gt;th&lt;/sup&gt; Th: Macromolecules &amp; Basic Enzymology</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>8&lt;sup&gt;th&lt;/sup&gt; Th: Pract: Covering 5&lt;sup&gt;th&lt;/sup&gt; to 7&lt;sup&gt;th&lt;/sup&gt; papers</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>III</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From July to December</td>
<td>9&lt;sup&gt;th&lt;/sup&gt; Th: Animal &amp; Plant Biotechnology</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>10&lt;sup&gt;th&lt;/sup&gt; Th: Fermentation &amp; Bioprocesses</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>11&lt;sup&gt;th&lt;/sup&gt; Th: (Elective paper): Biophysical chemistry or Environmental Biotechnology</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>12&lt;sup&gt;th&lt;/sup&gt; Th: Pract. Covering 9&lt;sup&gt;th&lt;/sup&gt; to 11&lt;sup&gt;th&lt;/sup&gt; Papers</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>IV</td>
<td>Dissertation cum Advance training Programme</td>
<td>400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From January to June</td>
<td>In lieu of papers XIII, XIV, XV &amp; XVI</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(B) Engagement of classes for completion of syllabus:

<table>
<thead>
<tr>
<th></th>
<th>Theory classes</th>
<th>Practical</th>
<th>Total classes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Semester I</strong></td>
<td>4 credits/paper</td>
<td>8 credits/paper</td>
<td>300 hrs</td>
</tr>
<tr>
<td></td>
<td>=60 hours X 3 paper</td>
<td>= 120 hrs X 1 paper</td>
<td></td>
</tr>
<tr>
<td></td>
<td>= 180 hours</td>
<td>= 120 hrs</td>
<td></td>
</tr>
<tr>
<td><strong>Semester II</strong></td>
<td>As above</td>
<td>As above</td>
<td>As above</td>
</tr>
<tr>
<td><strong>Semester III</strong></td>
<td>As above</td>
<td>As above</td>
<td>As above</td>
</tr>
<tr>
<td><strong>Semester IV</strong></td>
<td>Dissertation &amp; Advance training programme</td>
<td>Training hrs. = 400-430 hrs + Prep. of dissertation 144 hrs</td>
<td>544-574 hrs</td>
</tr>
</tbody>
</table>

Signature:

Director
P.G. Dept. of Biotechnology
M.U. Bodh-Gaya