

Academic Bulletin **2015-2016**

ACBR



**Dr. B.R. Ambedkar Center for Biomedical Research
University of Delhi, Delhi-110007, India**

Academic Program

Dr B.R Ambedkar Center for Biomedical Research (ACBR) at University of Delhi offers M.Sc. and M.Sc.-Ph.D. Combined Degree Programs in Biomedical Sciences for Undergraduates interested in pursuing a career in Biomedical Sciences with a motto of Excellence, Impact and Innovation. The education objective of ACBR is to provide an unparalleled educational experience to students, preparing them to take their places as future leaders in Biomedical Research and other allied professions.

Admission to these Programs is offered on the basis of a highly competitive combined Entrance Test for both the streams, conducted on all India basis, followed by Interview and Group Discussion. The selected candidates have to successfully complete four semesters (two years) course work. Five core courses per Semester are compulsory for all students in the first three Semesters, whereas in the final Semester the students undergo six months intensive research training along with two optional courses of their choice. The extensive curriculum allows the students to gain theoretical and practical knowledge in basic and interdisciplinary areas of Biomedical Sciences with ample emphasis on project-based learning. The students are trained to use state-of-art instrumentation, laboratory and library facilities at ACBR.

The following are the Guidelines for the continuation of the candidates admitted to M.Sc-Ph.D. Combined Degree Program further to Ph.D. Program:

- Successful completion of M.Sc. Biomedical Sciences Program(2 years) at ACBR
- Continuation will be on the basis of merit and availability of vacancies in the preferred research area.
- The Guidelines for admission to Ph.D. Program of University of Delhi (Ordinance VI B) will be strictly followed.

Please Note: There will be one common Entrance Test for admission to the M.Sc. and M.Sc.-Ph.D. Combined Degree Program in Biomedical Sciences.

Eligibility

Bachelor's Degree in Biomedical Sciences/Life Sciences/ Zoology/ Botany/ Microbiology/ Chemistry/ Biochemistry/ Environmental/Biology/ Biotechnology/ Laboratory Techniques/ B.Pharm/ B.V.Sc. or M.B.B.S. with at least 55% marks from University of Delhi or any other examination recognized by the University or equivalent thereto.

Age Criteria

There is no minimum age bar for admission to this course.

Number of Seats in M.Sc. and M.Sc. - Ph.D. Program in Biomedical Sciences:

The admission criteria of the candidates to the course will be strictly followed as per the following breakup:

Category	Number of Seats
GENERAL	23
SC (15%)	07
ST (7.5%)	04
OBC (27%)	12
TOTAL	46

Supernumerary

PwD	01
CW	02
FOREIGN NATIONAL (5%)	02
SPORTS/EXTRA CURRICULAR ACTIVITIES (UPTO 5%)	RESTRICTED TO 02

1.2 Administration of the Academic Programs

The academic year of M.Sc. Program commences from the 2nd/3rd week of July and spans two Semesters. The first Semester begins in July and ends in the middle of November, and second Semester runs from January till the end of April every year. Each Semester consists of theory and practical instructions followed by Semester Examinations as per the Academic Calendar notified by University of Delhi.

1.3 How to Apply

Please Read the Academic Bulletin carefully before filling the PG Admission Form on the DU website.

There will be one common Entrance Test for admission to the M.Sc. and M.Sc.-Ph.D. Combined Degree Program in Biomedical Sciences.

1.4 Selection Procedure for M.Sc. & M.Sc. – Ph.D. Combined Degree Program

Application forms & registration for the admission to the postgraduate programs can be accessed on DU Web Portal (<http://www.du.ac.in/du/index.php?page=admissions>).

The admissions will be made through a common all India Entrance Test comprising (1) Written Test and (2) Interview and (3) Group Discussion.

Written Test: The candidates will appear for an objective type test consisting of 200 multiple choice questions. **The test will be of 800 marks and 3 hrs duration.**

The written test consists of two parts:

Part-I will comprise reasoning test, general knowledge, basic mathematics, data interpretation and test of English language.

Part-II will comprise of questions from Chemistry, Botany, Zoology, Biochemistry, Environmental Sciences, Microbiology, Genetics, Immunology, Biotechnology, Medicine, Pharmacy and other allied sciences.

Performance in written test will be the sole basis for short-listing candidates for Interview & Group Discussion. For each seat, 4 candidates will be called for Interview & Group Discussion. **The Interview will carry 100 marks, while Group Discussion and Academic Record will be of 50 marks each.**

Merit will be decided by the total marks secured in Written Test, Interview, Group Discussion and Academic Record (i.e. out of 1000 marks).

The distribution of academic marks is as under:-

Percentage of marks obtained in class 12th	Weightage
a. More than or equal to 90%	50
b. Less than 90% or equal to 80%	40
c. Less than 80% or equal to 60%	30
d. Less than 60%	20

The candidates admitted to M.Sc.-Ph.D. Combined Degree Program will be eligible for continuation to Ph.D. Program subject to the following Guidelines:

- Successful completion of M.Sc. Biomedical Sciences Program(2 years) at ACBR
- The admission to Ph.D. Program will be on the basis of merit and availability of vacancies in the preferred research area.
- The Guidelines for admission to Ph.D. program of University of Delhi (Ordinance VI B) will be strictly followed.

General Important Points

1. No relaxation in the minimum eligibility conditions is permissible.
2. Rounding of fraction of marks is not permissible.
3. In case of total marks (Entrance + Group Discussion + Interview + Academic Marks) being the same, rank in the Entrance Examination is taken into account in deciding the final position on the merit list. In case, both the above are same, the Date of Birth shall be taken into account (senior will be benefited) for deciding the final position on the merit list.
4. No student shall be denied admission on the basis of gap period.

1.5 Reservations/Relaxation

1. 15 % of the seats are reserved for Scheduled Caste candidates.
2. 7.5% of the seats are reserved for Scheduled Tribe candidates.
3. 27% of all the seats are reserved for OBC candidates.
3. 3% seats are reserved for the physically challenged candidates.
4. 5% of the seats are reserved for Children/Widows of the Officers and men of Armed Forces including paramilitary personnel killed/disabled during the hostilities.

5. Relaxation of 5% marks in the minimum eligibility will also be allowed to categories of SC/ ST/ Physically Challenged candidates and Children/Widows of the Officers and Men of Armed Forces including paramilitary personnel killed/ disabled during the hostilities.

1.5.1 Reservation of Seats for Scheduled Caste/Tribe Candidates

1. 15% of the total number of seats is reserved for candidates belonging to Scheduled Caste.
2. 7½ % of the total number of seats is reserved for candidates belonging to Scheduled Tribes.
3. Candidates belonging to Scheduled Caste and Scheduled Tribes shall be allowed concession of 5% in the minimum marks in the minimum eligibility requirements.
4. If sufficient number of such candidates is not forthcoming, the seats reserved for candidates belonging to Scheduled Caste and Scheduled Tribe shall be filled up by other candidates with the specific prior approval of the University.
5. The candidates are required to bring the SC/ST certificate issued in their own name from an approved District Authority stating the Scheduled Caste/Scheduled Tribe, to which the candidate belongs at the time to interview. A list of approved authorities is given below-

- District Magistrate/Additional District Magistrate/Collector/Deputy Commissioner/Addl. Deputy Commissioner/Deputy Collector/1st Class Stipendiary Magistrate/ City Magistrate (not below the rank of 1st Class Stipendiary Magistrate, Sub-Divisional Magistrate)/Taluka Magistrate/Executive Magistrate/ Extra Assistant Commissioner.
- Chief Presidency Magistrate/Additional Chief Presidency Magistrate/ Presidency Magistrate.
- Revenue Officer not below the rank of Tehsildar.
- Sub-Divisional Officer of the area where the Candidate and/or his/her family normally resides.
- Administrator /Secretary to Administrator/Development Officer (Locative and Minicoy Islands)

1.5.2 Reservation of Seats for other Backward Classes (OBC)

The University will abide by the directions of the Ministry of Human Resource Development Govt. of India.

1.5.3 Reservation for Armed Forces

1. 5% seats for Children/Widows/Wives of the Officers and Men of the Armed Forces including Para-Military Personnel, killed/disabled during hostilities and who die on duty.
2. The candidates under this category shall be allowed concession of 5% marks in the minimum eligibility requirements. Their provisional candidature is subject to production of entitlement card from the competent authority.
3. In order to become eligible for the above concessions, the Children/Widows/Wives of the Officers and Jawans etc. will be required to submit the certificate of educational concessions (in original) from anyone of the following authorities:
 - Secretary, Kendriya Sainik Board, Delhi
 - Secretary, Rajya/Zila Sainik Board Officer-in-Charge, Record Office
 - First-Class Stipendiary Magistrate
4. In case sufficient number of eligible candidates mentioned above is not available, the vacancies will be treated as unreserved in the respective categories.

1.5.4 Reservation of Seats for Physically Challenged Candidates

1. 3% seats are reserved for the physically challenged candidates for admission.
2. The candidates under this category shall be allowed concession of 5% marks in the minimum eligibility requirements. Their provisional admission is subject to their medical examination by the University Health Center.

The modalities for admission are as under:-

1. The 3% reservation may be allocated as follows: 1% for persons with low vision or blindness; 1% for hearing impaired; 1% for those with loco motor disabilities and/or cerebral palsy. However, if sufficient candidates are not available in a subcategory then candidates from other sub-categories should be considered.
2. In case of candidates with more than one type of reservation, this reservation shall cut across the existing reservations of SC/ST; children/widows/ wives of officers and men of armed forces including paramilitary forces killed/disabled in action or those who died/disabled on duty, etc. in accordance with the principle of

interlocking reservations. In other words, there will be sub-reservations for physically disabled candidates in each reserved category, thus a disabled SC/ST candidate would have preference over an able-bodied SC/ST candidate.

Note:

It is clarified that there is no bar to a candidate seeking admission under the physically handicapped category to seek admission either under the General Category or any other reserved category if the candidate, is otherwise eligible and entitled to take the benefit of any other reservation.

3. If a sufficient number of candidates are not available under the reserved categories then their seats may be filled with general category candidates.
4. The application form should be accompanied by a certificate of physical disability issued by a duly notified Medical Board of a District/ Government Hospital set up for examining the physically challenged candidates under the provisions of the Persons with Disability (equal opportunities, protection of rights and full participation) Act 1995. The certificate should indicate the extent of (i.e. percentage) of the physical handicap and it should bear the photograph of the candidate concerned and it should be counter signed by one of the Doctors constituting the Board issuing the certificate.

Notes:

a. In the event of any doubt either by the University authorities or by the Head of the Institution/ Department/ Principal of the College as to the genuineness of the certificate or the extent of the disability of the candidate concerned or in regard to the entitlement of the candidate to seek admission under the category of physically disabled candidates, it is open to the University authorities/the Principal of the College to refer the candidate to a Medical Board to be constituted by the University and/or take such other steps as may be required to ascertain the correct facts and entitlement of the candidate concerned and if it is found that the candidate is not eligible or entitled under this category, cancel the admission after issuing a show cause notice to the candidate concerned giving him 15 days time to reply.

b. The candidate would give a declaration to the effect that information furnished in the application form and the documents annexed to the same

and information contained therein are true and correct and that in the event of the same being found to be incorrect in any respect his/her admission is liable to be cancelled, in addition to any other action that may be taken against him/her.

5. The admission of the Physically Challenged Candidates (3%) shall be subject to their medical examination and appropriate recommendations of the Chief Medical Officer, WUS Health Centre (Main Campus). In all cases, separate merit lists will be made for disabled candidates under the 3% quota. However, if the number of applicants for a course/institution exceeds the quota, a priority list of candidates will be prepared taking into account:
 - a. Marks obtained in the qualifying examination for admission and
 - b. Severity of the disability

NOTE:

Marks obtained in the qualifying exams being same, priority will be given to candidate whose disability is more severe, e.g. complete loss of vision over partial loss of vision OR loss of a complete limb over loss of a few fingers etc.

1. The Delhi University Disabilities Committee shall strictly monitor the implementation of the provision of the reservation in all constituent /affiliated Colleges/Departments/Institution of the University of Delhi.

Grievances regarding admissions under reservation for persons with disabilities should be reported to the Dean Students' Welfare, who will convene a meeting of the Grievance Committee set up for the purpose.

1.6 Admission of Foreign Students

1. Foreign students seeking admission are required to apply directly to Foreign Students Advisor, to Foreign Students Registry, faculty of management Studies, University of Delhi, Delhi-110007, who will arrange for their admission.
2. Foreign students who are stationed in India and have passed last examination from Board/University in India may seek admission on the basis of the merit

through entrance examination along with other students after obtaining No Objection Certificate from the Foreign Students Advisor.

3. Foreign National having qualifying Degree from foreign Universities are exempted from the entrance Test requirements.

1.7. Certificates and other documents required at the time of filling up the form for M.Sc. & M.Sc. - Ph.D. Programme will be as per the University of Delhi guidelines for all Post-Graduate Courses.

1.8. Fee Structure

The fee for M.Sc. and M.Sc. – Ph.D. combined degree program in Biomedical Sciences is payable in three installments every year.

M.Sc.	(Admission Fee) First Instalment (in ₹)	Second Instalment (in ₹)	Third Instalment (in ₹)	Total (in ₹)
First Year	8435	1500	1500	11435
Final Year	7285	1500	1500	10285
GRAND TOTAL				21720/=

1.9 Refund of Fees

The cases for refund of fees will be governed as per the University Rules.

1.10 Scholarships/financial assistance

The students are encouraged to apply for financial assistance offered by Government of India, Government of Delhi and financial Institutions including banks, for the economically weaker sections of society such as Physically handicapped and SC/ST/Backward Classes. The students who are not in receipt of any scholarship /fellowship or financial assistance from any other sources are eligible to apply for financial assistance directly to the concerned agencies through the Director, ACBR.

1.11 Fee waivers

Limited number of fee waivers is available for the needy and deserving students as per University rules.

1. 12 Fellowship Awards for M.Sc. Students

a. The Jean and Ashit Ganguly Education Scholarship

The fellowship is awarded to meritorious students based on the recommendations of the selection committee comprising of one nominee of Dr. A.K. Ganguly. The number of scholarships depends upon the interest accrued on the endowment fund given by the donor. The Jean and Ashit Ganguly Education scholarship for M.Sc. will be ₹ 1500/- per month.

b. Jawahar Bhawan Trust Merit-cum-Means Scholarship (Two)

The Jawahar Lal Memorial Trust, New Delhi, has instituted two merit-cum-means fellowships of ₹ 1,000/- for M.Sc. students each year.

c. Prof. Gurbaksh Singh Education Fellowship

Prof. Gurbaksh Singh Education fellowship ₹ 6000 (per annum) is awarded to one M.Sc. student each year. The selection procedure is based on academic merit and interview with an additional consideration of financial needs of the students.

d. Major (Dr.) S.P. Datta award for toppers in M.Sc. Biomedical Sciences.

Ms. Meena Datta w/o Late Dr. Major S.P. Datta has instituted an endowment fund for the award of cash prize to the two toppers of M. Sc Biomedical Sciences (Final year). The two awards consist of a one-time annual book award, equivalent to the interest which accrues on the Principal Amount invested with a difference of ₹ 1000/- between the award of first and second position.

e. Prof. H. C. Gaur Education Fellowship

Prof. H. C. Gaur Education fellowship of ₹ 4000 (per annum) is awarded to one M.Sc. student each year. The selection is based on academic merit and interview with an additional consideration of financial needs of the students.

CLASSIFICATION OF PAPERS

Part I: Semester – I

S.No.	Code	Subject	Maximum Marks	Credits
1	MBS 101	Organic Chemistry-I	100	4
2	MBS 102	Biochemistry	100	4
3	MBS 103	Cell Biology	100	4
4	MBS 104	Medical Microbiology	100	4
5	MBS 105	Genetics	100	4
6	MBS 106	Practicals	100	4
Total			600	24

Part I: Semester – II

S.No.	Code	Subject	Maximum Marks	Credits
1	MBS 201	Organic Chemistry-II	100	4
2	MBS 202	Molecular Biology and Biotechnology	100	4
3	MBS 203	Application of Statistics & Mathematics for Biology	100	4
4	MBS 204	Immunology	100	4
5	MBS 205	Human Physiology-I	100	4
6	MBS 206	Practicals	100	4
Total			600	24

Part II: Semester – III

S.No.	Code	Subject	Maximum Marks	Credits
1	MBS 301	Human Physiology-II	100	4
2	MBS 302	Principles of Medicinal Chemistry	100	4
3	MBS 303	Analytical and Biomedical Techniques & Instrumentation	100	4
4	MBS 304	Molecular Oncology	100	4
5	MBS 305	Toxicology & Pharmacology	100	4
6	MBS 306	Practicals	100	4
Total			600	24

Part II: Semester – IV

S.No.	Code	Subject	Maximum Marks	Credits
1	MBS 401	Dissertation	400	16
2	MBS	Special Paper I (Optional)	100	4
3.	MBS	Special Paper II (Optional)	100	4
4.		Total	600	24

Special Papers* being offered (based on choice cum merit basis)

1	MBS 402	Genome Biology		
2	MBS 403	Concepts in drug discovery and mechanism	Interdisciplinary	Chemistry
3	MBS 404	Advanced Medicinal Chemistry	Interdisciplinary	Chemistry
4	MBS 405	Radiation Biology	Interdisciplinary	Zoology
5	MBS 406	Topics in Clinical Research	Interdisciplinary	
5	MBS 407	Advanced Immunology	Interdisciplinary	Zoology
6	MBS 408	Advanced Toxicology & Pharmacology		

SCHEME OF EXAMINATION

1. English shall be the medium of instruction and examination.
2. Examinations shall be conducted at the end of each semester as per the Academic Calendar notified by the University of Delhi.
3. The system of evaluation shall be as follows:
 - 3.1 Each Theory course will carry 100 marks and the evaluation will have two components:
 - i. **Internal Assessment:** 30 marks
 - a. Attendance: 05 marks
 - b. Test / Assignments: 25 marks

These criteria are tentative and could be modified by the faculty members associated with teaching of a paper based course on Guidelines approved by the academic council.

- ii. **End of Semester Examination** : 70 marks
- 3.2 The practical will be conducted at the end of the semester for 100 marks.

4. The candidate has to undergo research training and the scheme of evaluation for dissertation shall be as follows:
 - 4.1 Dissertation work will formally begin from end of 2nd Semester and will be completed at the end of 4th semester.
 - 4.2.2 The evaluation criteria for dissertation work will consist of internal evaluation by the concerned supervisor based on general performance, written assignments, student seminar, in-class examination during the duration of the dissertation (100 marks), Project work (200 marks) and viva-voce (100 marks) the last two being evaluated by a board of examiners constituted by committee of courses ACBR as per Delhi University Rules.
5. Examinations for courses shall be conducted only in the respective odd and even Semester as per the Scheme of Examinations. Regular as well as Ex-students shall be permitted to appear / re-appear / improve in courses of Odd Semesters only at the end of Odd Semesters and courses of Even-Semesters only at the end of Even Semesters.

PASS PERCENTAGE

Minimum marks for passing the examination in each semester shall be 40% in each paper and 45% in aggregate of a Semester.

However, a candidate who has secured the minimum marks to pass in each paper but has not secured the minimum marks to pass in aggregate may reappear in any of the paper/s of his choice in the concerned semester in order to be able to secure the minimum marks prescribed to pass the Semester in aggregate.

No student would be allowed to avail of more than two chances to pass a paper inclusive of the first attempt.

PROMOTION CRITERIA

Semester to Semester:

Students shall be required to fulfil the Part to part Promotion Criteria. Within the same part, students shall be promoted from a semester to the next Semester, provided she/he has passed at least three out of the five theory examinations of the current Semester. However passing in practical is mandatory for promotion from one semester to next. There shall not be any repeat/improvement allowed for practical examination.

Part I to Part II:

Admission to Part II of the programme shall be open to only those students who have successfully passed at least 6 theory papers out of papers offered for the Part I courses comprising of Semester-I and Semester-II taken together and two practical papers. However, she/he will have to clear the remaining papers while studying in Part-II of the programme.

DIVISION CRITERIA

Successful candidates will be classified on the basis of combined results of Part-I and Part-II examinations as follows:

Candidates securing 60% and above:	I Division
Candidates securing between 50% and 59.99%:	II Division
All others between 40-49.99%:	Pass

QUALIFYING PAPERS

None

SPAN PERIOD

No students shall be admitted as a candidate for the examination for any of the Parts/Semesters after the lapse of four years from the date of admission to the Part-I/Semester-I of the M.Sc. in Biomedical Programme.

ATTENDANCE REQUIREMENT

No student shall be considered to have pursued a regular course of study unless he/she is certified by the Head /Director of the Dr. B.R. Ambedkar Center for Biomedical Research, University of Delhi, to have attended 75% of the total number of lectures and seminars conducted in each Semester, during his/her course of study. Provided that he/she fulfils other conditions, the Head/Director, Dr. B.R. Ambedkar Center for Biomedical Research may permit a student to the next Semester who falls short of the required percentage of attendance by not more than 10% of the lectures and seminars conducted during the Semester.
