

Academic Bulletin **2016-2017**

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.

1.1 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(3%)	01
CW(5%)	02
FOREIGN NATIONAL (5%)	02
SPORTS/EXTRA CURRICULAR ACTIVITES (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 (2) Interview and (3) Group Discussion.

Written Test: The candidates have to appear for an objective type test consisting of 150 multiple choice questions. The test will be of 600 marks and 2 hrs duration.

The written test consists of two parts:

Part-I (30 Questions) will comprise reasoning test, general knowledge, basic mathematics, data interpretation and test of English language.

Part-II (120 Questions) 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. Following marks distribution will be followed

Interview	60 Marks
Group Discussion	40 Marks
Academic marks	50 Marks*

Merit will be decided by the Total Marks secured in Written Test, Interview, Group Discussion and Academic Record (i.e. out of 750 marks).

*The distribution of academic marks is as under:-

Percentage of marks obtained in class 12	Weightage (marks)
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-off 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 Relaxations/Concessions [Ref. No. Aca.I/UG-PG:Admissions/2014/759 dated May 22, 2014]

(a) Scheduled Caste/Scheduled Tribe

Ref: AC Resolution No. 88 dated 14/6/1983; EC Resolution No. 157 dated 24/12/2001

The minimum eligibility requirement for the Scheduled Caste/Scheduled Tribe candidates will be that they must have passed the qualifying school/degree examination. Provided that the minimum eligibility for admission to post-graduate Courses be the minimum pass marks of the qualifying examination concerned of the University of Delhi. In the case of Scheduled Caste/Scheduled Tribe candidates who had passed the last qualifying examination from other Universities, they should have secured at least the same percentage of pass marks at the qualifying examination as prescribed for the equivalent examination of Delhi University for purposes of admission to the Post-graduate course of this University.

That where the admission is based on screening /written test, both for under-graduate and post-graduate courses, the Scheduled Caste/Tribe candidates would also be required to take the test but their merit list will be drawn separately.

However, for admission to the M.Phil. and Ph.D. Programmes, the SC/ST candidates shall be given 5% relaxation in the minimum eligibility marks.

(b) Other Backward Classes

Ref: Notification No. Aca.I/2012-13/OBC/588 dated 11/4/2012

The OBC candidates shall be given a relaxation in the minimum eligibility in the qualifying examination and in the minimum eligibility (if any) in the admission entrance test to the extent of 10% of the minimum eligibility marks prescribed for the General Category candidates.

All those OBC candidates who meet the minimum eligibility marks in the qualifying examination and the minimum eligibility marks (if any) in the entrance test shall be eligible for admission in order of their merit, keeping in view the availability of seats reserved for them.

The OBC candidates who belong to the '**Non-Creamy Layer**' and whose castes appear in the **Central List** of the OBCs only shall be eligible to be considered for admission under the OBC Category.

(c) Persons with Disabilities (PWD)

The PWD candidates with not less than 40% disability shall be given a relaxation in the minimum eligibility in the qualifying examination and in the minimum eligibility (if any) in the admission entrance test to the extent of 5%.

(d) Children/Widows of the eligible Armed Forces Personnel (CW Category)

A concession of 5% marks in the minimum eligibility requirement in the qualifying examinations.

(e) The candidates belonging to the Scheduled Caste, Scheduled Tribe, and Persons with Physical Disability shall be charged the admission form/entrance examination fee at concessional rates.

1.6 RESERVATIONS

(a) Scheduled Caste/Scheduled Tribe/Other Backward Classes

Reservation of seats in admissions to various under-graduate and post-graduate courses, including the M.Phil. programme, shall be in the following manner:

Scheduled Caste	= 15 % of total intake in each course
Scheduled Tribe	= 7 ½ % of total intake in each course
Other Backward Classes	= 27% of total intake in each course

The seats reserved for the SC/ST shall be filled by the SC/ST candidates only. However, in the case of non-availability of the eligible candidates the reserved seats may be interchanged between the SC & ST. If still any seat remains unfilled, the same shall be left vacant.

The seats reserved for the OBCs shall be filled with the OBC candidates only. Only if OBC candidates possessing the minimum eligibility marks are not available in the OBC category then the vacant OBC seats shall be converted into General Category seats in accordance with the admission schedule notified by the University.

(b) Supernumerary seats:

i. Persons with Disabilities (PWD)

I. 3% of total intake (1% each for the persons with low vision or blindness, hearing impaired and loco motor disability or cerebral palsy (interchangeable in case of non-availability of candidates in the sub-categories).

II. 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.
- III.** 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.

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.

(ii) Children/Widows of the eligible Armed Forces Personnel

(CW Category) = 5% of the seats in each course.

As per the guidelines approved by the Academic Council, admission of candidates belonging to CW categories have to be made in the following order of priorities:

- I. Widows/Wards of Defence personnel killed in action.
- II. Wards of serving personnel and ex-servicemen disabled in action;
- III. Widows/Wards of Defence personnel who died in peace time with death attributable to military service;
- IV. Wards of Defence personnel disabled in peace time with disability attributable to the military service; and
- V. Wards of Ex-servicemen/personnel and serving personnel including personnel of police forces who are in receipt of Gallantry Awards;

Category-V (Gallantry Awards) include: Param Vir Chakra, Ashok Chakra, Sarvottam Yudh Seva Medal, Maha Vir Chakra, Kirti Chakra, Uttam Yudh Seva Medal, Viur Chakra, Shaurya Chakra, Yudh Seva Medal, Sena Medal, Nau Sena, Vayusena Medal, Mention-in Despatches, President's Police Medal for Gallantry, Police Medal for Gallantry.

Authorities Competent to issue educational concession certificates under CW Category:-

- Secretary, Kendriya, Sainik Board, Delhi
- Secretary, Rajya Zila Sainik Board
- Officer-in-Charge, Records Office
- 1st class Stipendiary Magistrate

- Ministry of Home Affairs (for Police personnel in receipt of Gallantry Awards)

(iii) **Foreign Nationals=5%** seats in each course in the Center.

(iv) **Sports/Extra Curricular Activities (ECA)**

upto 5% of total intake in each postgraduate course may be offered to the candidates on the basis of Sports in accordance with the guidelines issued by the University from time to time.

1.7 Permission to students to apply under General/SC/ST/OBC Category as well as CW, PWD Category etc.

The candidates applying for admission to various courses shall be permitted to apply simultaneously under Gen/SC/ST/OBC Category as well as Children of War Widows, Person with Disability and other categories for which reservations/concession is admissible. The application forms should, therefore, contain appropriate columns for mentioning such categories.

1.8 Registration / Admission of Foreign Nationals

- a) The foreign nationals seeking admission in the University/its colleges shall have to get themselves registered with the Foreign Students Registry (FSR) in compliance with the schedule notified by the FSR. No Foreign students will be admitted directly by the Center.
- b) Foreign Nationals shall be exempted from appearing in Admission Entrance Test conducted by the Center for admission to various post-Graduate Courses including Professional Courses. Foreign Nationals who are stationed in India and have passed last examination from Board /University in India shall also be exempted from appearing in entrance test conducted by the Center in all Courses.
- c) All the Categories of foreign students shall come under the same category of 5% quota for foreign nationals for admission to post-Graduate and other Courses. This shall include foreign nationals with qualifications attained either from Indian Board /University or Foreign Board/University.
- d) All admissions in Foreign Students category shall be done on individual merit and a single merit list of foreign students, both with Indian and foreign qualifications shall be prepared for admission in various courses.

- e) At least one seat shall be reserved for foreign nationals in all Post-Graduate courses wherever the total numbers of seats for admission is less than 20.
 - f) Foreign students seeking admission are required to apply directly to Foreign Students Advisor, to Foreign Students Registry Office, Room No. 11, First Floor, Conference Center, Opposite Botany Department, University of Delhi, Delhi-110007, who will arrange for their admission.
- 1.9** The Center also holds Groups Discussion (GD) and interview in addition to the admission entrance test, shall not assign more than 15% marks to the GD and interview.
- 1.10.** The merit list for the general seats will comprise of all the candidates in the order of merit. No one will be excluded from the same. In other words, it will also include SC/ST/OBC candidates if they come in the general merit. A candidate cannot be excluded from the general category merit list just because he belongs to SC/ST/OBC. Such a candidate is entitled to be considered under the general category, as well as under the reserved category. Admission to open category seats will be strictly in the order of merit without excluding SC/ST/OBC candidates.
- 1.11** All those courses wherein admissions are based on the rank in the entrance examination, the candidates will be eligible for admission only after the result of the qualifying examination has been declared and the candidates meet the minimum eligibility criteria. Thus the candidates who are though eligible for admission on the basis of the admission entrance test but they do not have the result of their qualifying degree examinations shall not be allowed provisional admission. Such candidates will, however, be considered for admission in the subsequent admission lists, as and when the results of the qualifying examinations are declared provided the candidates submit the results to the Center.
- 1.12** The practice of condonation of delay in admission by the Vice-Chancellor has been discontinued from the academic session 2011-2012. Therefore, admission to all the postgraduate courses shall have to be finalized by the Center in strict compliance of the scheduled of admission notified by the University and in no case admission shall be allowed beyond the last date of admission.
- 1.13** The Center shall get the relevant certificates submitted for availing the benefit of reservation verified from the respective issuing authorities.

1.14 As per A.C. Resolution 40 dated 24/4/1997, no student of the University shall be permitted to pursue two degree courses simultaneously either from the University of Delhi or from other University except the part-time diplomas/certificates of the University of Delhi.

1.15 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.

2. 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/=

3. Refund of Fees

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

4. 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, 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.

5. Fee waivers

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

6. 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 the donor. 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 for 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 paper will carry 100 marks and the evaluation will have two components:
 - i. **Internal Assessment:** 30 marks
 - a. Attendance: 05 marks
 - b. Test / Assignments/Seminar: 25 marks
 - ii. **End of Semester Examination** : 70 marks
 - 3.2 The practical examination 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. The evaluation criteria for dissertation work will consist of internal evaluation by the concerned supervisor based on general performance in the laboratory, student seminar, (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 of 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 the 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 Sciences 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.