



DEPARTMENT OF BOTANY

University of Dhaka

Dhaka-1000

BACHELOR OF SCIENCE WITH HONOURS (BS HONS) AND MS DEGREE PROGRAM IN BOTANY

1. Introduction

The Department of Botany was established as Biology Department under the University of Dhaka in 1939 by the active leadership of Professor Panchanan Maheshwari. At that time, the department consisted of Botany and Zoology and the students were enrolled under BSc pass degree program. The students of the then Bengal Agriculture Institute (At present, Sher-e-Bangla Agriculture University, Sher-e-Bangla Nagar, Dhaka-1207) were also taught for the BSc pass degree in the same Biology Department. At the beginning, the department was housed in the neighboring Chemistry Department, situated in the Curzon Hall Campus of the University of Dhaka. The department was later on shifted to the present building. In 1948, the first MSc program in Botany was started and the first batch of the students were awarded MSc in 1950.

Professor Panchanan Maheshwari, the founder head returned to India in 1949 and then Dr. Majeed Ahmd, Reader of Biology, took the charge. Dr. Ahmad left the department in December, 1951. Professor Girija Prashanna Majumdar, Professor of Botany of Presidency College, Calcutta, India was appointed as the Head of the Department.

Professor Majumder started BSc (Hons) course in Botany in 1952. Under this new program, students of Botany were first awarded BSc (Hons) degree in 1954. On the Executive Council of Dhaka University at its meeting on 24 April, 1954 decided to establish separate Departments of Botany and Zoology by splitting the Department of Biology.

Therefore, the Department of Botany started functioning independently from July 1954 and Professor Girija Prashanna Majumdar became the founder Head of the Department. In September 1954, Professor Majumdar left for India and Professor Majeed Ahmad took the charge. Under the able and dynamic leadership of Professor Majeed Ahmad, the expansion of the department was successfully ventured. In 1969, Professor Majeed Ahmad left Dhaka for joining a fellowship to UK and then Professor AKM Nurul Islam was appointed as the Head of the Department. In 1970 Professor Majeed Ahmad returned and took the charge again. In 1971, after the emergence of independent Bangladesh from Pakistan, Professor Majeed Ahmad left Bangladesh and Professor Ahmad Shamsul Islam was appointed as the Head of the Department. Presently, the Department of Botany has been functioning under the Faculty of Biological Sciences.

The department was established with an aim to produce quality graduates through offering BS (Hons), MS, MPhil and PhD degrees. Initially, a three-year BSc (Hons) course was introduced in 1954 since the establishment of the Department of Botany. Over the years, the Department of Botany has grown in every sphere of the botanical disciplines and now has taken a shape one of the largest departments in the University of Dhaka. Considering the needs of global equivalence of its BSc (Hons) degree program, in 1998, the department converted its three year BSc (Hons) degree program to a four year BSc (Hons) degree which continued until 2008. From 2008, onward the name of the degree was changed to BS (Hons) degree.

At present, there are 28 members of teaching staff and 33 supporting technical and office staffs catering the needs of around 450 students including a number of MPhil and PhD research scholars. The department also offers non major courses for other departments of the University of Dhaka such as Department of Soil, Water and Environment; Department of Zoology and Department Geography and Environment. The number of non-major students is currently around 490.

The Department has a long tradition of research in various fields of plant sciences under the MS, MPhil and PhD programs. The faculty members along with their research students pursue research in diverse fields which has resulted in a large number of research publications in various national and international journals. The department is also collaborating academic and research programs with India, Japan, UK, Germany and USA.

Besides well equipped laboratories for the students, there is a rich seminar library. In each year, new books and journals are purchased and added to enrich and update the library. A total of over 16,000 reference books, journals, reports and proceedings are now present in the seminar library. In the recent year, a computer laboratory with internet facility has been established for the use by the students and researchers.

There are nine research laboratories which are devoted to the following disciplines:

1. Microbiology
2. Mycology and Plant Pathology
3. Phycology, Limnology and Hydrobiology
4. Higher Cryptogams
5. Angiosperm Taxonomy
6. Plant Ecology and Environments
7. Plant Physiology, Biochemistry and Nutrition and Plant Anatomy
8. Cytogenetics
9. Plant Breeding and Biotechnology

At present, the Department of Botany, University of Dhaka has been offering BS (Hons) degree program based on the syllabi covering the diverse fields of botanical sciences. The subject is taught by skilled and experienced academic staffs in a conducive teaching-learning environment. The medium of instruction of this program is English.

2. Introduction to the Program

2.1 Title of the Program: The title of the program is Bachelor of Science with Hons. The degree is abbreviated as **BS (Hons)** in Botany.

2.2 Duration of the Program: It consisted of four academic years (July to June) divided into four sessions each having one academic year. The maximum duration of each session makes 42/44 weeks which are distributed as follows:

Classes	30 weeks
Preparation Time for the Course Final Examinations: 1 st , 2 nd and 3 rd Years	4 weeks
Preparation Time for Course Final Examination : 4 th Year	6 weeks
Course Final Examination (Theory + Practical)	8 weeks
Total	42/44 weeks

The result of annual examinations is published within 6 weeks from the date of holding the last examination.

2.3 Eligibility for Admission: Students having total minimum GPA 8.0 (sum of HSC and SSC GPA) having minimum GPA 3.5 in HSC and SSC examinations are eligible to apply and to seat for a centrally controlled admission test of the unit 'A' carried out in each academic session of the University of Dhaka. The students seeking admission must have a GPA 3.0 in Biology. From the merit list of successful candidates via their selection of subject choices are eligible for the admission in the BS (Hons) program in the Department of Botany.

2.4 General Objectives of the Program: Botany deals with the different aspects and knowledge on plants and microbes. The objectives of the program is to gather an up to date and useful knowledge on various disciplines of botany for the benefit of mankind and environment and our socio-economic conditions through learning and research. The main part of the objectives could be highlighted as follows:

- 2.4.1 To promote academic and research knowledge in botany under the rules and regulations of the University of Dhaka

- 2.4.2 To produce qualified graduates to meet the modern national and international demands on plant sciences
- 2.4.3 To engage the graduates in nation-building programs through their proper training in botany
- 2.4.4 To increase the capacity of the graduates for dissemination of academic and research knowledge to the next generation plant scientists
- 2.4.5 To train the graduates in learning good governance, team work, interpersonal relationships and leaderships in order to face the national and global scientific challenges
- 2.4.6 To increase knowledge skill related to the components of biodiversity, climate change food security, invention and promotion of new crop plants, adaptations and conservation of the biodiversity
- 2.4.7 To adopt, practice and give input to the innovative biotechnological principles for a sustainable and productive agriculture and other plant related activities practiced in the modern society

3. Structure of the curriculum

The BS (Hons) degree program is covered by a set of theoretical and practical (laboratory/field/project oriented) courses. Some content of which has been provided below:

- a) **Theoretical courses:** a minimum of **15 class hours** per session constituting one credit hour
- b) **Practical courses:** credits for practical (laboratory/field/project oriented) courses are determined by the relevant course teacher
- c) Assignment of credits to the project work to be carried out by the respective student is being allocated by the course teacher
- d) A minimum of 128 credits must have to be earned for the successful completion of the graduate degree program by the student

A year-wise distribution of credits during the **four academic years** has been provided below:

Year-wise distribution of credits in Four Years

Year	Theory	Practical	Viva-voce	Extra-Departmental	Total Credits
1st Year	12	4	2	8	26
2nd Year	16	4	2	8	30
3rd Year	24	8	2	0	34
4th Year	28	8	2	0	38
Total	80	24	8	16	128

4. Assessment System

The total performance of a student in a given course (departmental or extra-departmental) is evaluated on the basis of a series of continuous assessment, in course and course final examinations.

4.1 In-course, class attendance and course final examination

- a) **In-course test:** In-course tests of minimum one hour duration shall be conducted and evaluated by the course teacher. There will be at least 2 (two) written tests for 4/3- credit courses and at least 1(one) written test for 2-credit courses.
- b) **Class attendance**
 - i) A student must attend **at least 75%** of the total classes held in an academic year to be eligible for appearing in the final examination of that year without paying any penalty.
 - ii) A student attending **at least 60%** classes but **less than 75%** classes will be allowed to appear for the examination after paying non-collegiate fees fixed by the university.
 - iii) A student attending **less than 60%** classes will not be allowed to appear for final examination for that year/session.

c) **Make up test:** Make up test will be arranged for a student who fails to appear in in-course test/tests. Absence in any in-course test will be counted as zero for calculating the average in in-course test for that course. However, a student can apply to the Chairman of the relevant department for make-up test. The Chairman will only place the application before the academic committee if the particular student has met with an accident or his/her parents has expired or he/she has gone through a surgical procedure or any other such situation which the Academic Committee feels can be considered. The make-up test must be held during the course period

d) **Course final examination**

i. The course final examination is conducted centrally by the Controller of Examinations, University of Dhaka as per existing system.

ii. Pattern of theory questions is decided by the academic committee. However, there will be no objective part.

iii. The course final examinations will be of 3 hours duration for 4-credit courses, 2½ hours for 3-credit courses and 2 hours for 2- credit courses.

iv. For evaluation of the course final examination there is two examiners: one internal (course teacher) and the other external (will preferably be within the department/university).

v. Under double-examiner system and in case of difference of more than 20% of marks, there will be a 3rd examiner. Marks of nearest two examiners will be average out as final marks.

e) **Assessment of project courses:** Mode of assessment of project will be determined by the respective examination committee.

f) **Viva-voce:** *Viva-voce* examination is conducted by the respective Examination Committee approved by the University. One external examiner preferably from one public university of Bangladesh and nominated by the Academic Committee of the Department of Botany must be present in the examination committee.

g) **Extra-departmental course:** Extra-departmental course include practical classes based on the course materials. In such cases, the assessment on the practical part is done only by a final examination

h) **Continuous assessment:** The scheme of continuous assessment that a teacher proposes to follow for a course is announced by the teacher on the first day of classes.

i) The distribution of marks for a theoretical and practical courses is as follows:

Class attendance	5%
In-course assessment	35%
Course Final Examination	60%

j) The distribution of marks for an **extra-departmental course** is as follows:

Class attendance	5 %
In-course assessment	15 %
Practical examination	20 %
Course Final Examination	60 %

k) **Basis for awarding marks for class attendance will be as follows:**

Attendance (% of total class held)	Marks (%)	Attendance (% of total class held)	Marks (%)
95 and above	5	80 to less than 85	2
90 to less than 95	4	75 to less than 80	1
85 to less than 90	3	Less than 75	0

1) Retakes

- i) Students who have been promoted on probation because of failing in course(s) must sit for retake examination of the failed courses, within 6 (six) weeks after publication of results, conducted by the respective original examination committee for the year. Expenses of the retake examinations (as determined by the University) must be borne by the respective student/students. After the retake examination, if a student achieves the required credits (GPA/CGPA), he/she will be considered promoted, but his/her transcript will be marked to identify the courses retaken. If any student fails to earn the required credits, his/her promotion on probation will be deemed cancelled.
- ii) Students who have been promoted on probation for failing to earn requisite CGPA without any 'F' will be allowed to sit for retake examination for maximum 8 credits (including practical course and viva-voce). Within 6 weeks after publication of results, conducted by the respective original examination committee for the year.
- iii) Students who failed in maximum of 8 credits of the 4th year, he/she must sit for retake examination of the failed courses, within 6 weeks after publication of results, conducted by the respective original examination committee for the year. Expenses of the retake examinations (as determined by the University) must be borne by the student/students. After the retake examination, if a student achieves the required credits, he/she will be considered for graduation, but his/her transcript will be marked to identify the courses retaken.

4.2 **Projects and assignments:** The style and mode of awarding of small research projects and/or assignments to the students of final year BS (Hons) classes will be decided by the Academic Committee of the Department.

4.3 **Types of questions:** Questions for in-course tests should preferably be of the objective type subjected to the approval of the Academic Committee. Additional assessments may be made by a course teacher as determined by him/her. In such cases the marks distribution for these additional assessments will be determined by the Academic Committee. The course teacher will show the assessed in-course scripts to the students. For theory courses the continuous assessment is made through a set of in-course examinations and class attendance

4.4 **Grading system:** Marks obtained for each course will be converted to grades. A basic four point (4.00) grading scale is followed. The following letter grades and corresponding grade-points is used to determine the student's grade point average (GPA):

Marks Obtained	Corresponding Letter Grade	Grade Point
80% or above	A+	4.00
75% to less than 80%	A	3.75
70% to less than 75%	A-	3.50
65% to less than 70%	B+	3.25
60% to less than 65%	B	3.00
55% to less than 60%	B-	2.75
50% to less than 55%	C+	2.50
45% to less than 50%	C	2.25
40% to less than 45%	D	2.00
Less than 40%	F	0.00

Note: The fractional total marks for a course will be rounded up to next higher mark.

4.4.1 The explanations of letter grades are described as follows

- A. Exceptional performance:** all course objectives achieved; objectives met in a consistently outstanding manner.

- B. Very good performance:** significantly more than the majority (at least two-thirds) of the course objectives achieved; objectives met in a consistently thorough manner.
- C. Satisfactory performance:** at least majority of the course objectives achieved; objectives met satisfactorily.
- D. Minimally acceptable performance:** less than the majority but more than the minimum required course objectives achieved; objectives achieved at a minimally acceptable level.

4.4.2 Grade codes for retakes, readmissions and improvement

- a) If a student succeeded in a retake after promotion on probation his/her letter grade for that course will be preceded by letter 'P'.
- b) If a student succeeded after taking readmission his/her letter grade for the courses will be preceded by letter 'R'.
- a) If a student succeeded in the improvement examination for earned credits his/her letter grade for that course will be preceded by letter 'I'.
- e) Courses taken by the students in excess of the required minimum and not counted for calculation of GPA will be identified by prefixing the letter grade earned with the letter 'N'.

4.4.3 Calculation of GPA and CGPA

- a) **Calculation of Grade Point Average (GPA):** Grade Point Average (GPA) is the weighted average of the grade points obtained in all the courses passed by a student in an academic year. The Grade Point Average (GPA) is computed in the following manner. For example, if a student passes six courses in Ist Year having credits of C1, C2, C3, C4, C5 and C6 and his/her obtained grade points in these courses are G1, G2, G3, G4, G5 and G6 respectively then,

$$\text{GPA} = \frac{\Sigma(\text{Grade point} \times \text{Credits})}{\Sigma \text{Credits attempted}}$$

For example, if a student takes 6 courses in one academic year and obtains the following grades:

Course	Credits	Letter-grade	Grade points
101	4	A ⁺	4.00
102	4	C ⁺	2.50
103	4	A ⁻	3.50
104	2	B ⁻	2.75
105	2	B	3.00
106	2	F or I	0

Then the GPA for the particular year, calculated up to two digits after decimal point, will be:

$$\text{GPA} = \frac{4(4.00) + 4(2.50) + 4(3.50) + 2(2.75) + 2(3.00) + 2(0)}{4 + 4 + 4 + 2 + 2 + 2} = 2.86$$

- b) **Cumulative Grade Point Average (CGPA):** Cumulative Grade Point Average for 2nd year, 3rd year and 4th year results is computed by dividing the total accumulated grade points earned up to date by total credit points attempted and calculated to two digits after decimal point. Total credits in each of the Year will be used as weights for the calculation as shown in the following examples.

Year	GPA	Credit
Ist Year	4.0	20
2 nd Year	3.0	30
3 rd Year	3.5	25
4 th Year	3.0	20

The CGPA in this case will be:
$$\frac{(20 \times 4) + (30 \times 3) + (25 \times 3.5) + (20 \times 3)}{20+30+25+20} = 3.34$$

4.4.4 **Practical examination:** Continuous assessment of practical (laboratory/field) courses is made through observation of the student at work, a quiz conversation between the student and the course teacher, assignments and evaluation of practical reports.

4.4.5 **Requirements for Degree and Diploma:** To graduate with a Bachelor's degree, a minimum total of 128 credits or more if approved by the university authorities, with no F grade in any course must be earned by a student within 4-6 academic years after his/her first admission in the graduation programme. He/she must also have earned the minimum required **CGPA 2.5 on a 4.00 scale.**

A course in which a student has obtained 'D' or a higher grade is counted as credits earned by him/her. Any course in which a student has obtained 'F' grade (Failed in the course) is not counted towards his/her earned credits.

4.4.6 Promotion

a) Promotion from 1st year to 2nd year

- (i) A student must earn a minimum Grade Point Average (GPA) of 2.0 and must have passed all the courses taken for promotion.
- (ii) Students who failed in courses (maximum 8 credit hours) but have earned the required GPA 2.0 will be promoted on probation.
- (iii) Those on probation shall appear in a retake examination as mentioned in Retakes section and must pass the failed courses to be allowed to continue studies in the 2nd year.

b) Promotion from 2nd year to 3rd year

- (i) A student must have earned a minimum Cumulative Grade Point Average (CGPA) of 2.25 and must have passed all the courses for promotion.
- (ii) Students who failed in courses (maximum 8 credit hours) but have earned the required CGPA 2.25 will be promoted on probation.
- (iii) Students who earned CGPA less than 2.25 but equal to or more than 2.0 without any 'F' grade will also be promoted on probation.
- (iv) Those on probation shall appear in a retake examination as mentioned in Retakes section and pass the failed courses to be allowed to continue studies in the 3rd year.

c) Promotion from 3rd year to 4th year:

- (i) A student must have earned a minimum Cumulative Grade Point Average (CGPA) of 2.5 and must have passed all the courses for promotion.
- (ii) Students who failed in courses (maximum 8 credit hours) but have earned the required CGPA 2.5 will be promoted on probation.
- (iii) Students who earned CGPA less than 2.5 but equal to or more than 2.25 without any 'F' grade will also be promoted on probation.
- (iv) Those on probation shall appear in a retake examination as mentioned in Retakes section and pass the failed courses to be allowed to continue studies in the 4th year.

4.4.7 Rules and guidelines

i) **Drop out:** A student failing to earn the required minimum GPA/CGPA and/or to earn requisite credits after retakes, he/she may take readmission, with the approval of the Academic Committee of the respective department, to appear in the course final examinations with the next batch. If he/she fails again to earn the required minimum GPA/CGPA and/or to earn requisite credits he/she will be dropped out of the programme.

ii) **Improvement of earned credits**

- a) To improve GPA/CGPA, a student may appear in the course final examination (theory courses, practical courses and viva-voce), only once, with the following next batch in a maximum 8 credits in each year. Improved grade point will be used for GPA/CGPA calculation. For improvement of grade in a course the student shall apply to the chairman of the department at least 8 weeks before the start of the final examination. The transcript will carry a symbol identifying the improved courses.
- b) If a student likes to improve the grade point earned in a course of 4th year, he/she must apply for such improvement examination before the award of the degree (i.e., before issuance of certificate). Improvement shall not be allowed once the degree is awarded

iii) **Requirements for Graduation:** A student who has fulfilled all the academic requirements for Bachelor's degree will have to file with the Controller of Examinations, an application for Graduation. Provisional degree will be awarded on completion of credit and CGPA requirements. Such provisional degree will be confirmed by the Academic Council.

iv) **Time limits for completion of Bachelor of Science with honors degree, BS (Hons):** A student must fulfill all the requirements for a Bachelor's degree within a maximum period of six academic years, starting from the year of registration.

v) **Dean's Award:** As a recognition of excellent performance, the names of students obtaining CGPA of 3.75 or above after successful completion of the 4 year graduation courses, will be eligible for the Dean's Award with a maximum of 05 (five) candidates from each Department. Students who have received 'F' grade / taken retakes / taken improvement / taken readmission in any course throughout the graduation program will not be eligible for the Dean's Award. Students who failed to attend a minimum of 80% of the classes offered during his/her graduation program will also not be eligible for the Dean's Award.

vi) **Other General Regulations**

- a) Respective statutory authorities of the University shall design syllabus, allocate courses for teaching, constitute examination committee and panel of examiners as per rules of the university.
- b) At the beginning of the session, a course teacher shall provide the students a course outline including: statement of objectives, main topics, teaching approaches (e.g., labs, case studies, field work etc.), schedule of tests, text books and other required materials.
- c) The course teacher shall announce the results of the in-course tests within two weeks of the date of holding the tests and submit the marks to the Chairman of the Examination Committee for the respective session and also a copy to the Controller Examinations at least two weeks before start of the annual examination. He/she should also submit a statement showing the total number of classes held and the number of classes attended by each student in his/her course to the Chairman of the Examination Committee for the respective session.
- d) Tabulation work will be started only after all the marks of the course final examinations for the year are received by the Chairman of Examination Committee. Marks received by the Chairman of the Examination Committee shall remain in the sealed envelope as sent by the Examiner/Examiners until tabulation work is started.
- e) The present system of conducting course final examination and publication of results by the office of the Controller of Examinations shall continue.
- f) For any matter not covered in these rules, the existing rule of the University of Dhaka will be applicable.

5. **Structure of course**