



Bangladesh Accreditation Council

Discipline/Subject Specific Requirements for Accreditation of Academic Program

Discipline/Subject: Mathematical Science

Standard 1: Governance

Governance system must work in a manner that ensures better management of the program towards the achievement of mission and objectives of the HEI/PoE in a way that effectively benefits the stakeholders.

Criterion 1.5: The HEI/PoE has a documented class size policy and maintains class size that is appropriate for effective management of the teaching-learning-assessment to ensure better attainment of learning outcomes.

Class size (number of students in a theoretical class): Maximum 40

Class size (number of students in a practical class): Maximum 30

Standard 4: Curriculum

Curriculum must be outcome-based and consistent with the qualifications framework (QF) of Bangladesh for higher education. It should be comprehensive enough to guide the faculty and students towards systematic attainment of learning outcomes and fulfilment of mission and objectives of the PoE.

Criterion 4.2: Curriculum aims at producing graduates focusing on graduate attributes, that are defined following the identified needs of the stakeholders and learning domains in the QF of Bangladesh for higher education.

Graduate Attributes for Bachelor Degree Program:

- a. Contemporary knowledge and communication skills.
- b. Deep discipline knowledge and analytical skill.
- c. Creative and critical thinking skill.
- d. Digital literacy and problem-solving skills.
- e. Social responsibilities and ethical competency.
- f. Entrepreneurial skills.

- g. Management and teamwork skills.
- h. Research skill.

Graduate Attributes for Master’s Degree Program by course:

- a. Contemporary knowledge and communication skills.
- b. Deep discipline knowledge and analytical skill.
- c. Creative and critical thinking skill.
- d. Digital literacy and problem-solving skills.
- e. Social responsibilities and ethical competency.
- f. Entrepreneurial skills.
- g. Management and teamwork skills.
- h. Research skill.
- i. Lifelong learning skill.

Criterion 4.7: In case of Bachelor degree program curriculum of the program includes minimum 25% of total credits for general education courses with clearly defined course learning outcomes and mapped with PLOs and learning domains of QF. In case of Master’s degree program curriculum of the program includes minimum 10% of total credits for general education courses with clearly defined course learning outcomes and mapped with PLOs and learning domains of QF.

List of general education courses (but not limited to):

1. Communicative English	14. Bangladesh Studies
2. Computer programming	15. Emergence of Bangladesh
3. Physics	16. Human Rights and Governance
4. Economics and econometrics	17. Bioinformatics
5. Health and Nutrition	18. Genomics
6. Environment	19. Biology
7. Disaster Management	20. Ethics
8. Finance	21. Public Administration
9. Accounting	22. Sustainable Development
10. Business Communication	23. Gender Study
11. Marketing	24. Entrepreneurship development
12. Sociology	25. Psychology
13. Anthropology	

(Note: POE may select appropriate general education courses considering GA, PLO and CLO)

Criterion 4.9: Provisions of internship/project/dissertation/field work/work integrated learning opportunities are included in the curriculum.

Internship/project/dissertation/field work:

- a. Internship: Upto six months (Optional)
- b. Project/dissertation/field work: 3 to 4 credits.

Standard 6: Student Admission & Support Services

The HEI/PoE must set appropriate entry requirements and select the right candidates for a particular program under a fair and transparent admission policy. Students must have adequate and appropriate supports for better attainment of learning outcomes, exploring potentials, molding personality and preparing them for the real-life situation with sense of responsibility and integrity.

Criterion 6.1: The HEI/PoE maintains a clearly defined and well-communicated admission policy with transfer and withdrawal provisions, entry requirements that reflect the level of qualifications required to match with the nature of the discipline and mission of the PoE. Admission policy is effective to select students who have potentials and are able to afford the academic load to complete the program successfully.

Requisite qualifications for admission in the Bachelor Degree (Undergraduate) program:

- a. Completion of HSC or equivalent program.
- b. Courses of mathematics are required at both SSC and HSC levels.

Requisite qualifications for admission in the Master Degree (Graduate) program:

- a. Completion bachelor program in mathematical sciences related discipline.
- b. Proficiency in Communication and IT skills.

Criterion 6.7: PoE ensures and facilitates the participation of students in co-curricular activities and community services under the management of the HEI on a regular basis to promote creativity, social responsiveness, leadership qualities, values, molding personality towards holistic development.

List of co-curricular activities but not limited to the followings:

1. Programming, Apps Development and Idea Innovation competition/festival	8. Engagement in social activities.
2. Job fair and career counseling activities	9. Engagement in environmental awareness activities.
3. Technical seminar and conference	10. Science club
4. Entrepreneurship development activities	11. Activities involving industry and academia collaboration.
5. Debating	

6. Language club	
7. SDGs achievement activities	

(Note: POE will encourage students to participate in appropriate cocurricular activities considering GA and PLO/CLO for holistic development of the students)

Standard 7: Faculty and Professional Staff

The HEI/PoE must have a policy to ensure the availability of adequate qualified faculty and professional staff with reasonable teacher student ratio.

Criterion 7.8: The PoE maintains ideal combination of faculty with 10% Professor, 20% Associate Professor, 40% Assistant Professor and 30% Lecturer with reasonable teacher student’s ratio, depending on the nature of discipline, as necessary for effective teaching learning in the academic program/discipline.

Teacher-Student ration maximum: 1:12

Standard 8: Facilities & Resources

The HEI/PoE must ensure availability and access to the appropriate and adequate facilities & resources necessary for effective teaching learning and research depending on the nature of discipline and program.

Criterion 8.4: Laboratory facilities, instructional technology & software, IT learning facilities that are identified through curriculum mapping as necessary to attain the defined learning outcomes of program and course(s) and to conduct research are in good condition with appropriate safety measures, appropriate, adequate and accessible when needed by the students and faculty members under a policy that ensures timely repair/replacement, supply and continuous improvement.

List of Essential Laboratories:

a. Program learning lab
b. Digital Computation Lab
c. High-Performance Computing Lab

List of Optional Laboratories (not limited to the followings):

a. Machine Learning Lab	f. Big Data Analysis Lab
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b. Data Science Lab	g. High Frequency Data Analysis Lab
c. Spatial Research Lab	h. Epidemiology Research Lab
d. Genomics Research Lab	i. Bioinformatics Lab
e. Exploratory Data Analysis Lab	j. Public Health Research Lab

List of instructional technology and software (IT facilities, not limited to the followings):

a. FORTRAN Language	g. Minitab
b. C Language and C++	h. MATLAB
c. R Programming	i. EViews
d. Python Programming	j. OxMetrics
e. Stata	k. Mathematica
f. SPSS	

List of other facilities essential for the discipline:

- a. High Speed Connectivity
- b. Interactive Flat Panel
- c. High-Performance Computers