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Preamble

Bangabandhu Sheikh Mujib Medical University (BSMMU) was established replacing former Institute of Post Graduate Medicine and Research(IPGMR) by an act of the Parliament as an autonomous institute of national importance in 1998 which also defined its objectives and functions. By virtue of this act the University has been granted the authority to confer post graduate medical degrees and other academic distinctions. The faculty of Basic Medical Sciences is a one of the faculties of this university. The Department of Physiology is under this faculty. The degrees granted by this department/faculty are recognized medical qualifications in accordance with Bangladesh Medical and Dental Council Act. The degree holders of this University will be entitled to the same privileges as those awarded by an equivalent awards from any other recognized University of Bangladesh. The language of education of the university is English.

Purpose

The purpose of this program is to standardize Physiology teaching at postgraduate level throughout the country so that it will benefit in achieving uniformity in undergraduate teaching as well. Accordingly the training in MD Physiology should be distinctive from that of M Phil, PhD, M sc in such a way so that it can pace with global change in attitude towards medical education as well as the out look regarding the research in the field of medical physiology toward its clinical implication.

Course Objectives

A student upon qualifying MD Physiology will be able to

- Be a competent Physiologist and academician.
- Provide teaching and training to the students at the postgraduate level in a field of research and enrich and equip them for teaching in medical colleges and other medical and health institutions.

- Effectively teach undergraduate and paramedical students the basic physiological mechanisms of human body with references to their implications in the pathogenesis of disease and the physiological basis of their management.
- Equip themselves with adequate knowledge, skill and proper attitudes required to conduct medical education on medical physiology at different level.
- Acquire adequate knowledge and skill required to conduct independent research in medical Physiology in relation to needs and disease profile of the country.
- Conduct such clinical /experimental research those would have significant bearing on human health and patient care.
- Interact with allied departments by rendering services in advanced laboratory investigations.
- Acquire skills in conducting collaborative research in the field of Physiology and allied sciences.
- Implement prerequisite knowledge and skill to proceed to further advanced studies and research in Physiology and in allied sciences.

Academic Courses offered by the department

The Department of Physiology will run the following academic courses:

- **MD in Medical Physiology (Physiology Residency Program)**
- Ph D

General Information

A. Entry qualification

- The candidate must have an MBBS or an equivalent degree from an university recognized by Bangladesh Medical and Dental Council(BMDC) and completed one year internship.
- A candidate who has already been enrolled or selected in any other course or subject at any university or institute including

BSMMU shall not be considered for admission unless he/she provides satisfactory documents regarding cancellation of his/her previous course. If any candidate is found to conceal any information regarding this, the authority will have the right to cancel his/her admission.

- Candidate with M Phil Physiology degree holder can be enrolled directly to the 2 year research part on the basis of first come.

B. Commencement of course

January-Beginning of each calendar year (Annual)

C. Method of Selection of candidates

If the above criteria is fulfilled the candidate will face an admission test comprising a written entry test. Selection will be absolutely on the basis of merit of the entry test result. A minimum mark as determined by the Central Examination Committee before examination which is subjected to vary must be obtained to got admitted in the course.

Foreign Candidates

Foreign nationals are required to send their application to the university authority and should reach the office of dean of the faculty of Basic Medical Science before the admission test for the following session. Their application will be scrutinized by a selection committee formed by the faculty. The eligible applicant will be required to appear before an interview board for final selection.

D. Number of seats

The number of seats of each course will be determined by the central committee for admission consulting the respective faculty.

Residency Program

Program Description

The training of the residents of MD course is full time and continuous. Private practice or part time job of any kind is strictly

prohibited during the course period. Each student shall be considered as resident and honorarium will be given as per rule of the university. If any resident violates this rule his/her studentship will be terminated.

Duties and responsibilities

Duties and responsibilities of students shall be fixed by a course supervisory committee of the Department. of Physiology. They will be required to perform such work deemed necessary for the interest of the discipline.

Code of Conduct

Academic misconduct is defined as any activity that tends to undermine the academic integrity of the institution. The university may discipline a student for academic misconduct. Academic misconduct may involve human, hard-copy, or electronic resources.

Policies of academic misconduct will be applicable to all courses, department and university-related activities, including field trips, conferences, performances and exams outside of a specific course structure (such as take-home exams, entrance exams, or auditions and theses exams) and research work outside of a specific course structure (such as lab experiments, data collection, service learning, and collaborative research projects). The faculty member may take into account the seriousness of the violation in assessing a penalty for acts of academic misconduct. The faculty member must report all cases of academic misconduct to the appropriate official. Academic misconduct includes, but is not limited to, the following:

Cheating

Cheating is considered to be an attempt to use or provide unauthorized assistance, materials, information, or study aids in any form and in any academic exercise or environment.

- A resident must not use external assistance on any "in-class", "take-home" or in hall examination, unless the involved faculty member specifically has authorized external assistance. This prohibition includes, but is not limited to, the use of tutors, books, notes, calculators, computers, and wireless communication devices.
- A resident must not use another person as a substitute in the taking of an examination or quiz, nor allow other persons to conduct research or to prepare work, without advanced authorization from the involved faculty member to whom the work is being submitted.
- A resident must not use materials from a commercial term paper company, files of papers prepared by other persons, or submit documents found on the Internet.
- A resident must not collaborate with other persons on a particular project and submit a copy of a written report that is represented explicitly or implicitly as the student's individual work.
- A resident must not use any unauthorized assistance in a laboratory, at a computer terminal, or on fieldwork.
- A resident must not steal examinations or other course materials, including but not limited to, physical copies and photographic or electronic images.
- A resident must not submit substantial portions of the same academic work for credit or honors more than once without permission of the instructor or program to whom he work is being submitted.
- A resident must not, without authorization, alter a grade or score in any way, nor alter answers on a returned exam or assignment for credit.

Fabrication

- A resident must not falsify or invent any information or data in an academic exercise including, but not limited to, records

or reports, laboratory results, and citation to the sources of information.

Plagiarism

- Plagiarism is defined as presenting someone else's work, including the work of other students, as one's own. Any ideas or materials taken from another source for either written or oral use must be fully acknowledged, unless the information is common knowledge. What is considered "common knowledge" may differ from course to course.
- A resident must not adopt or reproduce ideas, opinions, theories, formulas, graphics, or pictures of another person without acknowledgment.
- A resident must give credit to the originality of others and acknowledge indebtedness whenever:

1. directly quoting another person's actual words, whether oral or written;
2. using another person's ideas, opinions, or theories;
3. paraphrasing the words, ideas, opinions, or theories of others, whether oral or written;
4. borrowing facts, statistics, or illustrative material; or
5. offering materials assembled or collected by others in the form of projects or collections without acknowledgment

Interference

A resident must not steal, change, destroy, or impede another student's work, nor should the student unjustly attempt, through a bribe, a promise of favors or threats, to affect any resident grade or the evaluation of academic performance. Impeding another resident work includes, but is not limited to, the theft, defacement, or mutilation of resources so as to deprive others of the information they contain.

Violation of Course Rules

A resident must not violate course rules established by a department, the course syllabus, verbal or written instructions, or the course materials that are rationally related to the content of the course or to the enhancement of the learning process in the course.

Facilitating Academic Dishonesty

A resident must not intentionally or knowingly help or attempt to help another student to commit an act of academic misconduct, nor allow another student to use his or her work or resources to commit an act of misconduct.

Leave

During the course resident students will follow the rules regarding leave approval and forwarding as issued by the central BSMMU administration. .

Date of Joining

Selected candidates must join the course within the date mentioned in the letter of selection; otherwise, the candidate's admission shall be automatically cancelled. Delayed joining within 15 days over the last date of joining can be accepted on adequate logical ground for delay.

Medical Examination

The selection of each student will be subject to medical fitness. No selected student will be allowed to join the course unless declared medically fit by the Medical Board appointed by the University.

Course supervising committee

A committee formed by the faculty members as directed by the central residency committee of BSMMU will conduct the course

following the principles of residency program. The designations of the members and their responsibilities are given below.

A. Supervisor:
Eligibility: Assistant Professor and above.

Responsibility:
- maintain attendance and discipline of the Residents.
- provide orientation, guidance and feedback to resident's learning.
- day to day signing of performance record (log book).
- authorized to sign casual leave of the resident and forward it to the chairman.
- be responsible for completing the following block program-
  a. Clinical performance
  b. Academic performance
  c. Global competence
  d. Organizing end of block assessment
  e. Leave report
- Assess residents competence outcomes.
- Send end of Block Report to the Course Coordinator.

B. Course Coordinator:
Eligibility: Associate Professor and above.

Responsibility:
- responsible for planning, organizing and providing management support to training and academic activities of the Residents in the Department.
- supervise, guide and lead the team of Supervisors.
- circulate the Training Rotation Schedule to the Supervisors for implementation.
- assist the Course Director in planning, organizing and managing the entire course

- maintain inter-departmental communications regarding training, end of block report and circulation of the reports.
- compile end of block report (EOBR) and prepare the Phase Completion Report (PCR).
- will compile & maintain leave records and take necessary actions as per university rules in consultation with the chairman.
- report to the Course Director.

C. Course Director:
Eligibility: Any Professor of the respective faculty.

Responsibility:
- supervise, guide and lead team of Course Coordinators.
- appoint Course Coordinators as per recommendations of the respective chairman of the Departments.
- prepare the Training Rotation Schedule and circulate it to the Course Coordinators/ Chairman.
- collect and endorse Phase Completion Report.
- certify qualifications eligibility for appearing in the phase final examinations.
- will prepare training rotation schedule for Residents with incomplete or defaulters, in consultation with respective Chairman.
- resolve disputes and conflicts in consultation with the Dean and refer appropriate cases to the appropriate authority through the Dean.
- submit Phase Completion Report to the Dean for onward presentation in the Academic Council.
- report to the Dean.

Course duration

MD-Total 3 years

Phases

MD Physiology course will be conducted in 2 phases.

Phase A-Pre research

Phase B-Research

Phase-A

Duration-2 years

In this phase students have to qualify the examination assessing theoretical and practical knowledge and skill in Physiology and in teaching and research methodology.

Phase A consists of Part I (Year 1) & Part II(Year 2)

Each year in this phase is divided in to 3 blocks.

Each block is of 4 months duration.

Part I (First year) is composed of Block A, B, C.

Part II (Second year)is composed of Block D E, F.

Distribution of total course content of phase A into blocks

	Block	Content
Part I/ Year 1	**A March-June**	General Physiology Cardiovascular physiology
	B July-Oct	Physiology of blood, Respiratory physiology Teaching methodology, Basic chemistry
	C Nov-Jan	Physiology of Nervous system Special sense;
Jan-Feb		**First Summative examination**
part II /Year 2	**D March-June**	Endocrine & Reproductive Physiology
	E July- Oct	Renal Physiology &body fluid Gastrointestinal Physiology I

part II /Year 2		(motility, secretion) Subsidiary, Biostatistics, Research methodology, Research Protocol writing
	F Nov-Jan	Gastrointestinal Physiology II, (digestion & absorption) metabolism, nutrition Biostatistics, research methodology, research protocol writing & approval
Jan-Feb		**Second Summative examination**

Course activities in first year

Large group teaching session

Small group teaching

Laboratory exercise

Seminar presentation

Assignment & Discussion

Self learning

Course activities in second year

Large group teaching session

Small group teaching

- supervised teaching (Micro teaching session)
- Journal club presentation
- Assignment & Discussion
- Self learning
- Approval of Research Protocol

Phase-B (Research)

This part includes third year of the course and designated for research work under strict supervision. In this one year after successful completion of Phase A, resident will accomplish supervised research for 1 year.

Course activities of this phase-

- Research and writing thesis.
- article writing
- Thesis defense

Description of the rules of academic programm

Phase A:

1. Year 1(Part I)- After admission, every student will undergo a prescribed course of study in each block and will work as resident in the department of Physiology at BSMMU, Dhaka.
2. Year 2(Part II)- Any candidate, who has passed all the papers or who has disqualified not more than one paper of the year I closing(first summative) examination will be eligible to undergo a course of study for 12 months and will work as resident in the Dept. of Physiology/ related department at BSMMU, Dhaka. In addition, each student will be assigned to three tasks during this year 2

a) Training for supervised teaching

Each resident will under go a training course for supervised teaching. They will teach lessons to the junior fellows by taking lecture, small group discussion, practical demonstration and any other task assigned by the departmental course committee.

b) Journal club presentation.

Each resident will give oral /poster presentation on original article published in reputed scientific journal as assigned by the supervisor/research guide in the weekly journal club session of the department.

c) Submission of research protocol:

Each resident will write a research project and will present before a departmental academic committee.. All the protocols after it is approved by department will be sent to central ethical committee of BSMMU for further ethical clearance of the study.

Then they will be prepared for conducting the approved research project at BSMMU, Dhaka, or any other institute approved by the University.

Before commencing the research work, all research protocol must be approved by the academic committee of the Department of Physiology, and central ethical committee of BSMMU. All teachers of the department and two teachers of the allied departments will be members of the academic committee.

Phase B:

Year 3 (Research)

Total duration of research-1 years

In this phase residents will be termed as senior residents. There will be no provision of carry on from phase A to phase B. After passing all the papers of part I& II summative examinations each student will start research work with an approved protocol.. After completing the study, he/she must write a thesis embodying the results of that research and will give at least one seminar talk before the Faculty of Basic Medical Science, and also write 2 article based on the topic of his/ her own field of research, which should be submitted to a national/ international journal recognized by BMDC for publication, before submitting the thesis. In the last month of this phase, each student will have to face a thesis defense and comprehensive viva examination before an examination board. In addition senior residents will be involved with teaching activities, administrative work ,seminar and others activities as instructed by the departmental administration.

Duties and responsibilities of senior residents:

1. Demonstration at small group discussion to junior fellow students.
2. Demonstration of Laboratory practical to junior fellow students.
3. Participation in all kinds of academic and research activities

4. Taking care and assistance to technical operations of the instruments and appliances in the assigned laboratories as well as department.
5. Learning of computer with different program including data analysis, preparation of power point and OHP presentation as well as management and the maintenance of the computer.
6. Beautification of the department.
7. Assistance in the conduction of examination in the department.
8. Perform various task as assigned by the departmental course supervising committee.

Course composition

1. Theoretical lectures
2. Small group classes (tutorials, discussions session & demonstrations using audio visual aid)
3. Practical classes
4. Seminar, journal club meetings, teaching practice
5. Research & thesis writing
6. Laboratory/teaching attachment
7. Self-learning exercise/ assignments/videotape/ CD ROM/ Internet

Monitoring tools

1. Logbook
2. End block assessment
3. Periodic checking of log book

Assessment and Evaluation

MD residents will be assessed throughout the pre research phase periodically by using two system of assessment examination. These are formative (end block examination) and summative examination.

Formative assessment (End block examination):

At the end but within the last 7 days of the specified period for each block the MD students will be assessed by using different instruments of modern assessment technique The syllabus will include the physiology course content of that particular block. This end block examination will be treated as formative assessment

Procedures of end block examination

This examination will be conducted by the departmental examination committee involving all the teachers of the department and absolutely under the departmental responsibility. Two examiners associate professors and above will be appointed for oral and practical and written script examination. The departmental examination committee will also decide and accomplish all necessary tasks for conducting this examination including selection of the question setter, moderator, examiner, printing questions and will send the examiners list to the course director of basic science faculty for approval. 30% of the marks achieved by each individual student in each component of this assessment will be added to the 70% of the marks achieved in summative examination. There is carry on system from block to block but not more than two block. If a student is defaulter in 2 block he/she will appear to the supplementary summative.

Any other subject which is taught as common subject to several discipline such as teaching methodology, biostatistics, research methodology as well as some other performance such as seminar presentation, journal club presentation, teaching session in a particular block will be evaluated as satisfactory and unsatisfactory. The scores of the satisfactory will be determined by grading system. This grade score in addition to the marks

obtained in all components of examination of departmental subjects will be recorded in the log book of each individual student. But this graded scores will not be included as part of formative assessment and will not add to the portion of summative marks.

Common evaluation method for the physiology course contents of each block of year one and two in the phase A as follows:

The residents will be evaluated by the departmental teachers following some prescribed format prepared by the course supervising committee (departmental course coordinator).

The results of the physiology contents in the end block examination will be recorded item wise in a pre designed students log book counter signed by the designated course supervisor.

Residents will be assessed on several items specific for the block just finished by an end block examination. Their skill and knowledge in physiology course contents will be evaluated separately. Knowledge (cognitive) will be assessed by written examination (SAQ and MCQ)and skill will be judged by structured oral and by Objective Structured Practical Examination(OSPE)& Traditional practical examination at the end of each block as mentioned below. 30% of the score achieved in knowledge and skill assessment during end block examination will be accommodated in the total score of the results of each paper by incorporating the proportion of the marks achieved in summative assessment at the end of year 1 and 2 individually. The contents of a block which will not come under end block examination will be evaluated as satisfactory/not satisfactory and it will be recorded in log book. Residents must achieve complete clearance of Phase A for entry into phase B .

Examples: Teaching methodology will be taught in Block B and a research methodology &biostatistics in block E & F.

Formative /End block				
Assessment	Total Marks	Time	Pass	Mark obtained
Blood/CVS/ Renal/Resp/End ocrine reproductive/ nervous/Special sense/GIT				
Written: SAQ MCQ	50 40 10	90 minutes	30 (60%)	
Oral	50		30 (60%)	
Practical: OSPE Traditional practical	50 20 25		30 (60%)	
Laboratory note book	05			
Seminar/ Journal club presentation	Unsatisfactory-<60% sufficient60-69% Good- 70-79% Excellent-80-89% Outstanding - >90% 25		(60%)	
Assignment/ Supervised teaching	do		do	
All Attendance	do 25		do	
Total	200			

Minimum score must be achieved 60% in each individual component to be allowed to take part in summative examination.

Results of the end block examination will be published in the departmental notice board incorporating both the obtained marks and graded score. This result will also be recorded in students log book.

Competence evaluation(Personal attitude)

check list	**Comments**	Rating
Behavior	Unsatisfactory/sufficient/good/excellent/outstanding	-<60% 60-69% 70-79% 80-89% >90%
Sense of responsibility	Do	-
Punctuality	Do	-
Regularity	Do	-
Intelligence/skill	Do	-

Summative Assessment:

At the end of part I (year 1) and part II (year 2)during pre research phase **(Phase A)** there will be a summative assessment which will cover all the specific physiology course contents specific for each year. 70%of the obtained marks will be added to the final result at the end of the year.

Selection of Examiners

The departmental examination committee will select the internal and external examiners as pepper setters, moderators for written and OSPE and for oral and traditional practical examinations as well following the basic rules of conduction for residency course as adopted by the faculty of Basic medical science of BSMMU. Existing rule for selecting examiners will be followed selecting examiners internal or external not below associate professor.

Conduction of examination

The office of the controller of examination of BSMMU will provide assistance to conduct this examination and also will publish results, and prepare mark sheets and certificates as required. The written examination will be undertaken under the supervision of the office of the controller of examination and oral and practical assessment will taken at the department.

The total course content of the phase A is distributed in the following papers for assessment in summative examination:-

Paper Content:

First summative examination:

Paper I:

- Group A- General Physiology & The Heart
- Group B- Physiology of circulation

Paper- II

- Group A – Physiology of blood
- Group B - Respiratory Physiology.

Paper- III

- Group A - Nervous system
- Group B –Autonomic nervous system & Special sense

Second Summative examination

Paper- IV

- Group A- Endocrinology
- Group B- Reproductive Physiology

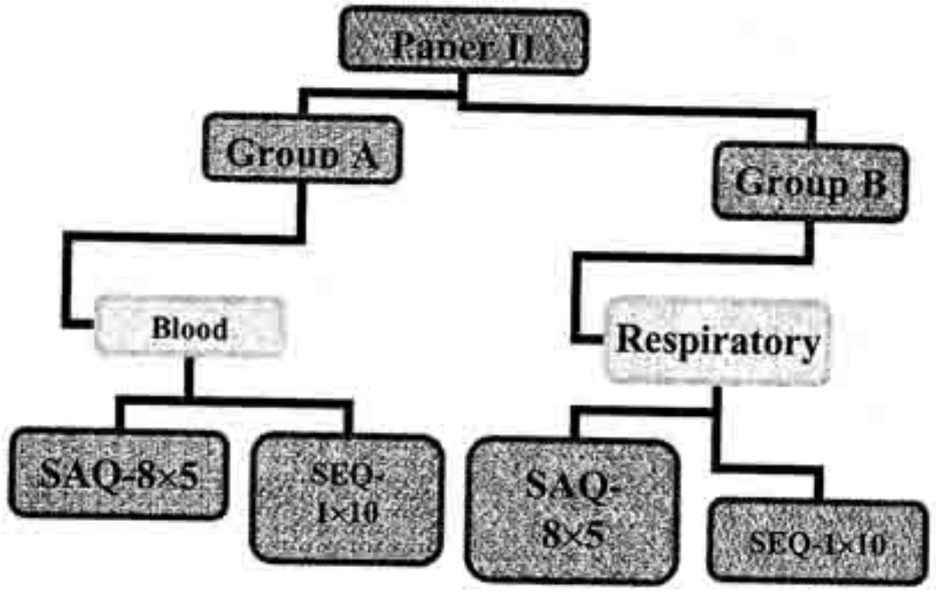
Paper- V

- Group A –Renal & body fluid
- Group B – GIT I (motility, secretion)

Paper- VI

- Group A – GIT II (digestion & absorption) Nutrition
- Group B -Metabolism, Vitamins and Minerals

For written assessment in summative examination the number and question pattern with allotted marks covering group A&B for each paper is shown in the following diagram



Total marks distribution for each component of summative assessment is given in the table below.

Summative examination					
Assessment Item	**Total score**	**Passing score (60%)**	**Marks obtained**	**70% of summative marks**	**30% of formative**
Written SAQ/SEQ	100 SAQ 40X2 = 80 SEQ 10X2 =20	60			
Oral- Structured	100	60			
Practical- Traditional/ OSPE /note book.	100(50+40 +10)	60			
Grand total	300				

	Summative Year 1	**Summative Year II**
Written SAQ/SEQ,	Paper I, II, III 100 X 3= 300	Paper IV, V, VI 100 X 3= 300
Oral	100 X 3= 300	100 X 3= 300
Practical	100 X 3= 300	100 X 3= 300
Total	900	900

Phase B Final Examination at the end of year III:

After finishing research work students will submit a thesis and face a thesis defense examination orally before an Examination Board under the supervision of controller of examination. Publishing results, delivering mark sheet/academic transcript and certificate to the qualified students are the responsibility of office of the controller of examination. After qualifying this phase B final examination the student will be awarded a degree of MD in Physiology by Bangabandhu Sheikh Mujib Medical University.

Result

Item	**Total mark**	**Pass mark**	**Mark obtained**
Thesis	100	60	
Thesis defense	100	60	
Comphrehensive viva	100	60	

1. The results of the thesis presentation and defense will be consolidated as follows
   i) Accepted
   ii) Accepted with corrections
   iii) Not accepted
2. In case a candidate is unable to satisfy the Viva-voice Board even though the thesis is adjudged adequate, the Board may recommend to the Academic council that the candidate may be permitted to appear at another oral examination after a lapse of 6 months from the first oral examination. Provided that no candidate shall be allowed to appear at the oral examination of the same thesis for more than two times.
3. If a thesis is judged inadequate for the award of the MD degree, the examiners may permit the candidate to do more research work in order to improve the standard of the thesis, and may recommend the Academic council that the candidate may be allowed to appear at a new examination after necessary improvement of his/her thesis.

Examiners of thesis examination board:

A board of 4 examiners will assess the thesis presentation and defense.The examination committee of the department will select the examiners and decide the date of assessment. The conduction will be supported by office of the controller of examination.

The organization of the board is given below.

Student particulars	Examiners	Date/time	Venue
	1. Convenor / Chairman		
Title of thesis	2. Guide/internal		
	3. External		
	4. External		

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