



NUMS

NATIONAL UNIVERSITY
OF MEDICAL SCIENCES

FACULTY HANDBOOK

FOR

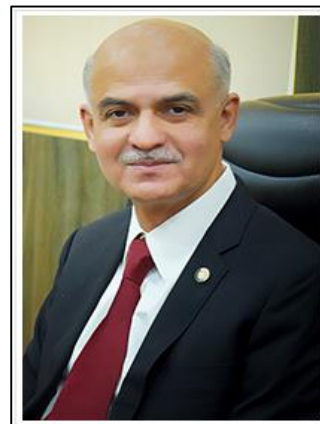
POSTGRADUATE STUDIES

2021

If you require this document or any of the internal University online resources mentioned in this document in an alternative format, please contact the Postgraduate Studies Office

**MESSAGE BY VICE-CHANCELLOR
NATIONAL UNIVERSITY OF MEDICAL SCIENCES**

NUMS is a broad-based university with particular emphasis on 'Understanding and Improving Life', as our motto says. It has an important role to play in the health care sector in Pakistan and is envisioned to help bring in improvements in education, creation of hitherto largely missing research infrastructure, and establishment of a university-run health care delivery system as an adjunct to the existing federal and provincial systems, to help improve its capacity and quality. The concept of 'one globe-one health' care will be comprehensively addressed at NUMS through inclusion of veterinary sciences. NUMS' undertakings are multifarious



but necessary including medical, nursing, allied health, veterinary, biomedical technologies, genetics and biological sciences. Emphasis is being laid on the basic, pure and applied sciences. These are linked with studies in Philosophy, education, humanities, psychosocial and behavioral sciences, and multidisciplinary studies. NUMS bears a heavy responsibility to ensure quality of its educational offerings and training, innovation and pertinence in its research; that serve the neediest areas of the country and humanity at large. All those who join NUMS will be provided equal opportunities to grow as all round individuals and the best care givers, taking merit and transparency as our guiding principles. We intend to instill in our staff and students, a passion to be of service to mankind while embarking on a challenging but satisfying career. With our diversely experienced faculty at NUMS constituent and affiliated institutes, our students will be trained with a view to become a reference point for health care related studies in the country. At NUMS, we are working hard to push the boundary of knowledge, investing time and energy in creating a learning environment in all our fields of study and research and rise to the expectations of our society. As head of the university, I welcome you all to be part of NUMS, to carve out a promising future for yourself and humanity at large.

Lt Gen Syed Muhammad Imran Majeed, HI (M) Retd

TABLE OF CONTENT

CHAPTER	CHAPTER TITLE	PAGE #
I.	THE UNIVERSITY	03
II.	ADMISSION AND REGISTRATION	08
III.	APPROVAL OF ACADEMIC PROGRAMS	13
IV.	FACULTY GUIDELINES	15
V.	GUIDELINES FOR DEVELOPMENT/REVISION OF CURRICULUM	20
VI.	PHD PROGRAMS	27
VII.	MASTER PROGRAMS	35
VIII.	ASSESSMENTS & EXAMINATIONS	54
IX.	NUMS GRADING POLICY	59
X.	OTHER REGULATIONS	63
ANNEXURES		
ANNEX-A	NUMS BOARDS & COMMITTEES	67
ANNEX-B	NUMS CHECKLIST FOR DEVELOPMENT OF CURRICULUM	73
ANNEX-C	CHECKLIST: LAUNCHING OF PHD/MASTERS/ EQUIVALENT PROGRAMS	74
ANNEX-D	TEMPLATE FOR COURSE FILE	75
ANNEX-E	CONDUCT OF PHD PROGRAM	76
ANNEX-F	POSTGRADUATE FORMS (PG-01 TO PG-27)	77
ANNEX-G	END SEMESTER EXAMINATION	78
ANNEX-H	STUDENTS' FEEDBACK PROFORMA	79

CHAPTER I

THE UNIVERSITY

1. Introduction

This handbook is designed to provide faculty with general information and guidance on academic matters related to NUMS Postgraduate Programs and should be read in conjunction with the University's Policies and Regulations. It is the responsibility of faculty to make themselves familiar with the contents of this handbook and also the University-wide policies and regulations. Information provided in this handbook may help them avoid unnecessary problems. Please do not hesitate to contact the Postgraduate Studies Office if you have any queries about this handbook.

2. About NUMS

National University of Medical Sciences (NUMS) was established as a Federal Public Sector University through an Act of Parliament on October 31st, 2015. The honorable President of Pakistan is the Chancellor of the University and the Chief of the Army Staff is the Pro-Chancellor.

NUMS was founded to promote and achieve excellence in advanced healthcare education, research and service delivery. The University is backed up by an extensive network of Military Hospitals, Single Specialty Institutes, Medical and Nursing Colleges making it the country's largest healthcare provider in terms of trajectory and patient volume.

This research-led institution provides opportunities in undergraduate and postgraduate education in diverse fields of Medicine, Dentistry, Nursing, Allied Health and Veterinary Sciences with a necessary add-on the Social Sciences and Liberal Arts.

NUMS envisages to achieve set goals by adopting best international standards and practices in medical education, training, and research along with modernization of medical infrastructure, whereas the benefits will have broad based socio-economic impact within the country and beyond.

As it grows, NUMS has the potential to become a force multiplier by supporting other service providers in this field, developing partnerships with the several advanced national and international universities, industrial, governmental and community based stakeholders in consonance with national vision and plan to develop knowledge based economy.

3. Vision of NUMS

The vision of National University of Medical Sciences is to improve the quality of life through education, research, innovation, and healthcare, thereby, contributing to endeavors to make Pakistan & this world better place to live in.

4. Mission of NUMS

The University will endeavor to improve existing knowledge, and practices in the fields of medical and allied life sciences; both pure and applied, including fields of biomedical engineering and technologies, veterinary, biogenetic, social and behavioral sciences through innovative and creative approaches in order to offer best possible services to the society and humanity at large.

5. NUMS Core Values

The guiding principles of NUMS are based upon the following three core values:

- a. Innovation
- b. Integrity
- c. Inclusivity

6. Constituent College/ Institute for Postgraduate Studies

NUMS offers its standardized postgraduate programs for the award of degrees at

- a. Army Medical College (AM College), Rawalpindi
- b. Armed Forces Post Graduate Medical Institute (AFPGMI), Rawalpindi
- c. Army College of Veterinary Sciences, Sargodha
- d. NUMS Institute of Advanced Studies & Research (NIASR), Rawalpindi

7. NUMS Boards & Committees for PG Students

NUMS has constituted different boards and committees for smooth running of our PG programs. Their TORs and members are attached as **Annex-A**.

8. Postgraduate Studies Office (PSO)

The University has already established the Postgraduate Studies Office (PSO) in the Academics Directorate to deal with affairs relating to the postgraduate academic programs in the light of instructions and guidelines of PMC, HEC and other regulatory authorities. The PSO acts as a hub for the implementation and execution of all policies and practices about academic affairs of the University for postgraduate programs. It has two sections:

- a. **Section I:** This section, headed by Director Academics, is responsible for postgraduate programs related to Basic Medical Sciences and Clinical Disciplines as mentioned below:

NUMS Programs	Degree Nomenclature
Basic Medical Sciences	<ul style="list-style-type: none"> • MPhil • MPH • MSc • MHPE
Clinical Programs	<ul style="list-style-type: none"> • Clinical Fellowship • MSc • Clinical Diploma

- b. **Section II:** This section, headed by Director Academics (Clinical), is responsible for postgraduate programs including Nursing, AHS, Biological, Social Sciences as mentioned below or any other non-medical programs to be started in future

NUMS Programs	Degree Nomenclature
Nursing	MSc
Biological Sciences	MS
Social Sciences	MPhil

The Postgraduate Studies Office (PSO) provides administrative support for all postgraduate programs, courses, faculty and students in the college/ institute. Each member of the PSO Team is available to help and provide advice on all aspects of postgraduate programs to faculty and students in the University. This Office operates an open door policy and is available as a first line for students and faculty support; if you have any questions, please do not hesitate to visit the office during the office hours mentioned below. The NUMS Postgraduate Studies Office is situated in NUMS Secretariat, Rawalpindi.

Office Hours: 08:00 AM - 04:00 PM

Tel: 051- 9270676

Email: acad.dte@numspak.edu.pk

9. Current Post Graduate Programs at NUMS

NUMS offers its standardized postgraduate programs for the award of degrees specified in the table below at Army Medical College (AM College) Rawalpindi, Armed Forces Post Graduate Medical Institute (AFPGMI) Rawalpindi and any other constituent college/ institute as may be specified by the competent authority of the University from time to time.

S. No	Title of the Program	Institutes
PhD Programs		
1.	Doctor of Philosophy in Biochemistry	AM College, Rawalpindi
2.	Doctor of Philosophy in Physiology	
3.	Doctor of Philosophy in Molecular Medicine	
4.	Doctor of Philosophy in Pharmacology	
5.	Doctor of Philosophy in Pathology	AFPGMI/ AFIP Rawalpindi
MPhil Programs		
6.	Master of Philosophy in Anatomy	AM College, Rawalpindi
7.	Master of Philosophy in Physiology	
8.	Master of Philosophy in Biochemistry	
9.	Master of Philosophy in Molecular Medicine	
10.	Master of Philosophy in Pharmacology	
11.	Master of Philosophy in Community Medicine	
12.	Master of Philosophy in Science of Dental Materials	
13.	Master of Philosophy in Chemical Pathology	AM College, Rawalpindi, AFPGMI/AFIP Rawalpindi
14.	Master of Philosophy in Microbiology	

15.	Master of Philosophy in Oral Pathology	AFPGMI/AFIP Rawalpindi
16.	Master of Philosophy in Transfusion Medicine	AFPGMI/AFIT Rawalpindi
Master Programs		
17.	Master of Public Health	AFPGMI Rawalpindi
18.	Master of Science in Healthcare Administration	
19.	Master of Science in Cardiac Anesthesia	AFPGMI/ AFIC Rawalpindi
20.	Masters in Health Professions Education	NUMS Department of Biological Sciences
21.	Master of Science in Human Genetics	
22.	Master of Science in Microbiology & Immunology	
23.	Master of Science in Biotechnology	
24.	Master of Science in Phytochemistry and Natural products	
Diploma Program		
25.	Diploma in Cardiology	AFPGMI/ AFIC Rawalpindi
Certificate Program		
26.	Certificate in Health Professions Education	NUMS
27.	Certificate in in Palliative Care	NUMS

10. Program Specification

For all NUMS postgraduate academic programs, standardized scheme of studies with the course work requirements is tabulated below:

S. No	Disciplines	NUMS Titles	Programs Requirements	Duration
Doctoral Programs				
1.	Doctorate	Doctor of Philosophy	Total 78 credit hours consisting of 48 credit hours course work and 30 credit hours of research.	3-8 years
Master Programs				
2.	Basic Medical Sciences	Master of Philosophy	Credit Hours: 34 • Course work: 24 • Research work: 10	2-3 years
		MSc Healthcare Administration	Credit Hours: 36 • Course work: 24 • Practicum/Seminar: 06	

			<ul style="list-style-type: none"> • Research: 06 	
		MPH	Credit Hours: 34 <ul style="list-style-type: none"> • Course work: 24 • Practicum: Non-Credit • Research: 10 	
		MHPE	Credit Hours: 34 <ul style="list-style-type: none"> • Course work: 24 • Internship: 04 • Research: 06 	2-3 years
3.	Clinical Disciplines	MSc Cardiac Anaesthesia	Credit Hours: 38 <ul style="list-style-type: none"> • Course work: 30 • Research: 06 • Clinical Rotation: 02 	2-3 years
		Diploma in Cardiology	Credit Hours: 33 <ul style="list-style-type: none"> • Course work: 27 • Internship: 06 	
4.	Biological Sciences	MS in Human Genetics	Credit Hours: 36 <ul style="list-style-type: none"> • Course work: 26 • Research work: 10 	2-3 years
		MS in Microbiology & Immunology	Credit Hours: 36 <ul style="list-style-type: none"> • Course work: 26 • Research work: 10 	
		MS in Biotechnology	Credit Hours: 36 <ul style="list-style-type: none"> • Course work: 26 • Research work: 10 	
		MS in Phytochemistry and Natural products	Credit Hours: 36 <ul style="list-style-type: none"> • Course work: 26 • Research work: 10 	

CHAPTER II

ADMISSION AND REGISTRATION

1. Academic Calendar and Admission Schedule

Each college and institute shall, at least six months prior to the commencement of an academic session, furnish to the Registrar all and full information about the number of seats available, academic programs intended to be conducted, details and availability of faculty and all other facilities available with them for the conduct of programs. Relying on such information together with the ascertained availability of the required supervisors, the Registrar shall prepare the academic calendar and student induction plan which will be approved from the Vice Chancellor before advertising the admission schedule.

2. Eligibility Criteria

- a. The minimum eligibility criteria for NUMS postgraduate academic programs duly synchronized with the instructions and guidelines of the regulatory authorities is given in the table below
- b. Other specific requirements of any program shall be defined in the curriculum of that particular program

Doctor of Philosophy (PhD)	
Qualification	Other Requirements
<ul style="list-style-type: none"> MBBS or equivalent with First Division in the Annual System/ CGPA of 3.0 out of 4.0 in the Semester System <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> MPhil/ FCPS or equivalent degrees in relevant discipline after MBBS First Division in the Annual System/ CGPA of 3.0 out of 4.0 in the Semester System For Molecular Medicine MBBS/ BDS/ BS or equivalent can apply 	<ul style="list-style-type: none"> Valid registration with regulatory body wherever applicable GAT-General/ GRE Score/ NUMS Non-Subject Test (with permission of HEC) with minimum 60% accumulative test score OR NUMS Subject (Science Subjects) Test with minimum 70% qualifying score Academic Statement of Purpose. NUMS interview

Master Programs		
Programs	Qualification	Other Requirements
<ul style="list-style-type: none"> • MPhil • MSc • Diploma 	MBBS/BDS or equivalent	<ul style="list-style-type: none"> • Valid registration with regulatory body wherever applicable • GAT-General with 50% accumulative score/ NUMS Entry Test (as decided by concerned faculty) • GAT result will be valid for the period of two years • NUMS interview
<ul style="list-style-type: none"> • MPH • MHPE 	<ul style="list-style-type: none"> • MBBS/BDS • BS Nursing • BS AHS • Pharm-D/ DPT/DVM Or any equivalent degree 	
Biological Sciences	Sixteen years of education in relevant discipline from HEC recognized institute	

3. **Academic Statement of Purpose.** Each applicant must submit an Academic Statement of Purpose (ASOP). The Academic Statement of Purpose helps the admission committee understand student's academic objectives and determine whether he/she has the potential to be successful in this program.

Word limit. Approximately 800 to 1000 words (12-point font)

Pattern. The Statement of Purpose should have four sections, though they don't need to be clearly defined as sections in the document and can take on the more natural feel of a letter:

- Academic & Professional Preparation
- Focused Interest in the Field
- Career plans upon completion of the program
- Any relevant strengths or weaknesses in background or ability to carry out professional responsibilities.

4. Admission Process

- Admissions shall be made purely on open merit based on following components:

1) PhD Programs

Admissions shall be made purely on open merit based on following components:

Components	Percentage
Previous academic performance	25%
GAT General / GRE score/Entry Test	25%
Statement of purpose (SOP)	25%
Interview	25%
Total	100%

Note: "GAT-General by Education Testing Council/ GRE by Education Testing Service as recognized by HEC"

2) MPhil/ Masters/ Fellowship/Diplomas Equivalent Programs

Components	Percentage
Previous academic performance	25%
GAT General/ Entry Test	50%
Interview	25%
Total	100%

- b. After initial scrutiny of applications by the Admission Office to ensure all documents requirements, etc, Statement of Purpose shall be sent to relevant department where their Departmental Internal Evaluation Committee will review the applications in terms of its scientific viability and faculty research interests and expertise
- c. HoD will send the review report to Admission Office that will attach the report along with all other documents in the applicants' dossier for the PG Admission Committee
- d. Interviews will be conducted by PG Admission Committee
- e. The finally admitted students' list shall be sent to the concerned colleges and institutes for enlisting the filled-in registration forms (Form #PG-01) from the students for transmission to the Registrar office for eventual issuance of registration numbers
- f. For any unforeseen reason, when a student cannot continue with his/ her studies in the University, the student may send an official request through his HOD and Dean/ Head of institution to the Registrar for clearance and notification of release from the University
- g. The candidates in service shall furnish no objection certificates from their competent authority for admission in that particular PG program. He/ she shall submit NOC to admission office
- h. No person whose registration or admission in NUMS has been earlier cancelled due to disciplinary reasons shall be entitled to apply for admission in NUMS under any circumstances.
- i. No foreign candidate shall be eligible for admission unless he/she holds a minimum TOEFL score of 500 or IELTS score of 5.50. Language proficiency test results shall not be required or demanded where a foreign student has acquired education from higher secondary level onwards with English as a medium of instruction. However, no objection certificate from HEC shall be mandatory in case of foreign students. The foreign students under international student exchange programs may be enrolled/ admitted, subject to prior approval from the Vice Chancellor for any single or more semester(s) or course(s) subject to such conditions as may be agreed by the competent authorities under the relevant exchange programs

5. NUMS Semester System

- a. NUMS shall follow semester system for all postgraduate academic programs each having two regular semesters in the academic year, Spring semester from

January till May and Fall semester from August till December. However, in special circumstances program can be started other than above mentioned time with approval from VC. Each regular semester shall be for 18 weeks' duration (including examination). There is additional summer semester of 09 weeks with weekly contact hours for a course being double of the regular semester

- b. Student may opt for deficient/ improvement courses in summer semester or whenever the course is offered. However, in deficient/ improvement courses, the student is required to complete all formalities applicable to repetition of a course, i.e. sessional, mid semester examination, project, assignments, quiz etc and End Semester Examination
- c. **Course Credit.** A credit hour means teaching/ learning a theory course for one hour each week throughout the semester. One credit hour in laboratory or practical work/ project would require lab contact of three hours each week throughout the semester
- d. Course load per semester shall be maximum twelve credit hours. The credit hours are denoted by two digits within brackets with a plus in between. The first digit represents the theory part while the second digit represents the practical work like 3(2+1) where 3 are total credit hours with 2 for theory and 1 for practical work. However, under unforeseen circumstances, student may take additional courses (02 courses of 03 CHs) in a semester with the approval of concerned dean
- e. Each department shall clearly define the details of credit hours of its academic program which shall be shared with all stakeholders along with curricula
- f. Course credit values awarded must reflect the quality and standards of the University and comply with the requirements of the NUMS/ regulatory bodies' qualification frameworks for that academic level
- g. Credits assigned to a course and course description shall be approved first from Faculty Board of Studies before sending to the University.
- h. Credits are earned only when the course and assessment have been completed successfully

6. Transfer of Credit Hours

- a. 'Transfer credit' is the granting of credit for academic work completed at another/ same HEC recognized institution
- b. Inward migration shall be allowed only from such institutions as have been approved or accredited by these authorities
- c. No credit hour of a course less than B-grade for post graduate programs shall be allowed. The student will have to cover the entire deficient course, if any
- d. A student desiring transfer of credits to NUMS shall file a formal application in the prescribed form along with no objection certificate (including character verification) for change of the University, copies of all previous transcripts/ credit hours' transfers/course outline, HEC grant (if any) utilization and progress report. After verification of these documents by the Registrar, the concerned Dean shall, in consultation with the concerned heads of the department (HoDs) and supervisors, if any, determine the equivalency of the

previous courses and furnish his/ her recommendations to the Vice Chancellor through the Registrar

- e. Up to 50% of course credit may be transferred provided the courses are of relevant field. Student may be required to take additional relevant courses if required
- f. Only relevant/ common courses shall be transferred with grades to the opted program.
- g. The credits transferred are counted towards the degree requirement and GPA of the transferred credits shall be counted towards the calculation of CGPA
- h. For outward migrations from NUMS, no objection certificates, transcripts and other documents shall be issued by the Registrar.

7. Change of Program

- a. Program transfer facility shall only be for semester based Master programs only where eligibility criteria is same for both programs. This policy is not for PhD programs
- b. He/She will apply to Registrar Dte with the approval of concerned HoDs within two weeks of initiation of first semester. Such a student shall be issued a registration number for new program by Registrar Directorate
- c. Transfer will depend on the availability of seat in the opted program.
- d. NUMS reserve the right to reject cases without assigning any reason

8. Freezing/ Deferment of Academic Session

- a. Freezing not exceeding two semesters shall be allowed only after successful completion of the first semester against filing of application in prescribed form (Form # PG-03). All applications in this regard shall be submitted before the commencement of the freezable semester(s) to the concerned head of department (HOD) who will send his/her recommendations for final approval through the concerned Dean to the Registrar.
- b. Freezing of first semester or deferment for one year may be requested in first semester under special circumstances, considered after approval of competent authority.
- c. For freezing of semester, student shall submit 25% of the monthly tuition fee in advance to maintain his/her registration. However, the student shall complete his/her degree requirement within the stipulated time (not exceeding the maximum limit)
- d. In case of deferment, student shall take up his/ her studies in the following academic year. Subsequent requests for deferred admission will not be considered
- e. Students granted deferred admission to a program of study will be admitted in the next academic session and will not be required to reappear the admissions test, re-sit for an interview or pay a new application fee
- f. Students shall not seek admission to another course/ program at any institute without prior written approval from the concerned Dean
- g. Where a request for deferred admission is denied, the individual will be required to reapply for admission

CHAPTER III

APPROVAL OF ACADEMIC PROGRAMS

1. Guidelines for Approval of Academic Program

When an academic program is submitted to Academics Directorate for review and approval, following points shall be considered:

- a. Program proposal is initially prepared by departmental committee and then vetted by relevant dean
- b. The proposal shall ensure conformity to the requirements of the University's Curriculum Development guidelines and follow regulatory authorities' guidelines for purposes of accreditation / recognition of the degree / qualification.
- c. Any deviation from University academic policies shall be brought to the notice of the Director Academics
- d. All academic issues and matters shall be routed by the concerned Head of Department, through the concerned Dean of faculty/Head of the Institution, to the NUMS Academics Directorate. The matters relating to the establishment of any new department, proposals for introducing any new academic program or changes in the existing programs, change of program title, development or amendments of any curriculum and enhancement of seats for any of the programs or any other related academic issue shall be initiated after concurrence of the concerned Faculty Board of Studies for further consideration in AS&RB and eventual approval from the Academic Council through Academic Directorate.
- e. Postgraduate Curriculum Committee of relevant subjects shall follow the NUMS curriculum map and guidelines for steps of curriculum development
- f. Academics Directorate will guide and provide the checklist for the preparation of curriculum as per the requirement of NUMS, accreditation bodies and HEC
- g. After preparation, this curriculum shall be approved in Faculty Board of Studies meeting chaired by the respective Dean. This curriculum duly signed by the dean shall be sent to NUMS Academics Directorate. Coordination section of Academics Directorate will scrutinize the documents as per checklist for development of curriculum (**Annex-B**). Every PG curriculum will be approved by the AS&RB and finally by Academic Council through the Academics Directorate
- h. For Master's or PhD program, after approval from ACM, the department shall forward the requisite documents for getting HEC's NOC for launch of the program to Academics Dte for scrutiny. Academics Dte shall check the document as per HEC checklist (**Annex-C**) and after scrutiny, shall forward the documents to QA Dte, which after ensuring the completion of the documentation as per HEC checklist shall forward the case to the HEC. Upon receiving the NOC from HEC, Academics Dte shall intimate the concerned department to start the program whereas PQR focal person in Quality Assurance Dte shall register it on Pakistan Qualification Register (PQR) / NUMS web portal.

- i. As per HEC's guidelines, for launching a program in Spring or Fall semester the institution should send the documents to HEC by September 30th or March 31st respectively.
- j. HEC approved curriculum of any postgraduate academic program shall be implemented as such after the approval of the Academic Council

2. Infra Structure Requirements

- a. Infra structure requirements for students, faculty and staff shall be provided for the short, medium and long terms to avoid any reactive situation caused by inadequate planning
- b. No new program shall be launched unless required classroom / laboratory / computer lab etc. is confirmed
- c. Following are the HEC requirement for department

Component	Nature of Requirement	Standards
Teaching and Administrative Staff Offices	Required for each University (desirable)	1 Staff room 1 Faculty office for each dept
Facilities	Hall/Lecture theatres	12 to 15 sq. ft. per student
	Number of rooms required	Minimum 2 lecture rooms per program
Laboratories/ Workshops/ PC/Internet service (Desirable)	No. of laboratories required (desirable)	At least 1 Lab. Per department with appropriate space
	Workshops (desirable)	35 to 45 sq ft. per student
	PC (desirable)	1 for 3 students in case of IT courses
	Internet service (desirable)	256 Kbytes access rate shall be provided
Libraries	Journals	Subscription to at least 15 current journals of international repute with impact factor of at least 1.00. Access to electronic journals also to be provided
	Books required	At least 1500 books from major International publishers in the relevant field

- d. The proposal shall be sent to the Treasurer for financial model to see the feasibility of the program
 - e. Computing Facilities: Availability of computing facilities and their usage in program as well as development of soft skills (presentation, communication skills, public speaking etc) be made part of curriculum
- ## 3. Implementation.
- After approval of the program, this curriculum will be implemented by teachers and its quality will depend on the quality of teaching and learning strategies, learning materials and assessment

CHAPTER IV

FACULTY GUIDELINES

1. Faculty Requirement for PG Programs.

- a. There shall be at least six faculty members of relevant qualification in a department to initiate any program including one professor, one associate professor, two assistant professors and two lecturers
- b. At least three (3) full-time faculty members holding PhD degrees in the relevant field are required to launch the PhD program.
- c. To initiate Masters programs, preferably two relevant full time PhD faculty members or, where PhD qualified faculty is limited, two relevant full time faculty members having Masters/ FCPS or equivalent qualification in relevant field with at least five years' experience are required in a department
- d. To initiate any program, faculty details including their qualifications and new faculty requirements, if any, with practicable suggestions for their fulfilment shall be submitted to Academic Directorate for approval of the program.
- e. Teacher: Student ratio (as per HEC guidelines)
PhD programs: 1:5
Master programs:
 - 1) PhD faculty. 1:8
 - 2) Faculty holding Master degree with 05 years' experience. 1:5
- f. Faculty details include:
 - 1) Appointment order/notification
 - 2) Joining report along with current statues of employment
 - 3) CV along with one recent passport size photograph
 - 4) Copy of and MS/MPhil/Equivalent degrees, PhD and their translation in English (if required)
 - 5) Copy of transcripts of grades of Bachelors and MS/MPhil/Equivalent degrees, PhD
 - 6) Abstracts of theses of Bachelors & MS/MPhil/Equivalent degrees, PhD
 - 7) CNIC
 - 8) PMC and Faculty Registration Number (for medical faculty)

2. Faculty Development:

In order to keep the faculty updated in knowledge and abreast with the latest advancement in their relevant fields, the department shall prepare annual faculty development plan through courses, workshops, seminars, discussion forums etc and religiously follow the plan

3. Faculty Work Load.

These are the guidelines for the assignment of workload for full-time faculty in NUMS

- a) **Scope and Definitions.** This policy covers full-time faculty in NUMS. The annual period of the workload assignment for each full-time faculty member is commensurate with the annual period of the faculty member's appointment, typically either for 09 or 12-month period

- b) The workload of teaching faculty member is the fulfillment of his or her responsibilities in the areas of teaching, scholarly activity and administrative service to the department and the University
- c) Faculty workload has been divided across three areas: teaching-related activities, research, and administrative work depending on the type of appointment. However, Heads of Department/Dean are ultimately responsible for ensuring a fair distribution of work within Departments/ Faculty
- d) Different areas of work and responsibilities but not limited to, are as follows:
 - 1) **Teaching Related Activities.** It includes lecture preparation, teaching of credit courses (theory and practical), student supervision, program coordination, curriculum development and revision, paper setting, fair and prompt grading of student work, submission of midterm and final grades ahead of deadline, informed advisement for student class progression and mentoring students, both undergraduate or graduate, on projects or thesis
 - 2) **Research.** It includes scholarly activities comprising of supervision of research work of students, submission of research proposals and manuscripts, conduct of research project, participation in conferences and publications. This also provides the basis for a standard scholarship workload for faculty whose position is defined to have such an expectation
 - 3) **Administrative Work.** It includes the administrative activities including responsibilities of Dean and Head of department, participation in different committees, representation at different forums, program coordinator and mentoring junior faculty within one's discipline
- e) **Guidelines for Faculty Work Load Teaching -Related Activities.**
 - 1) Heads of Department/Dean shall be overall responsible for ensuring a fair distribution of work within Departments/ Faculty. However, for research, he/ she shall be responsible for assessing each faculty member against the department's research, scholarship, or creative activity workload guidelines
 - 2) Dean/ HOD may assign more hours to any area to any faculty member as per need of the department
 - 3) Teaching centric appointments will follow maximum work load for teaching and minimum for research and administrative work
 - 4) Research centric appointments will follow maximum work load for research and minimum for teaching and administrative work
 - 5) Heads of Department shall be responsible for accurate calculation of faculty workload shall be accurately and to fill in the 'Program Review Reports' on HoD Portal- QA portion of website.

- 6) Following is the recommended range for distribution of work load as per appointment.

Appointment	Teaching related activities	Research	Administrative Work
	Work Load Range: Minimum - Maximum		
Professor	30 - 40%	40 - 50%	20- 30%
Associate Professor	40- 50%	40 - 50%	10 - 20%
Assistant Professor	50- 60%	30 - 40%	Up to 10 %
Lecturer/ Demonstrator	70 - 80%	10 - 20%	-

- f) **Teaching of Credit Courses.** It is mandatory for all faculty members to teach courses, in addition to other teaching related activities, in each semester as follow:

- Professor = 1 - 2 Courses
- Associate Professor = 2 - 3 Courses
- Assistant Professor = 2 - 3 Courses
- Lecturer/ Demonstrator = 3 - 4 Courses

*Distribution of workload for HODs may be customized as per requirement

- g) **Supervision of Students.** Supervisor must be a HEC approved supervisor and full time faculty member in the institution/ department of the University with qualifications as:

- 1) PhD in the relevant field with at least three years' post-qualification experience. However, while gaining three years' experience, the faculty member should have supervised at least two Masters level or co supervised PhD student along with HEC approved PhD supervisor
- 2) Total five students can be registered with one supervisor
- 3) Supervisor through the concerned HoD shall send six monthly (bi-annual) report of each PhD scholar in prescribed form to the Academics Directorate

4. **Program Coordination.** To facilitate the students and to ensure timely and trouble-free successful completion of the program, HoD of respective department will appoint following faculty members at least one month before the start of each semester.

- a. **Program Coordinator.** He/she will be responsible for liaison & coordination with all concerned.
- b. **Academic Advisor.** He/she is available as a first line of pastoral support and advice to the student. It is the responsibility of a student to inform the Academic Advisor immediately about any problem that are interfering with his/her coursework or progression through the program.
- c. **Course Instructors.** He/she shall also be responsible for:

- 1) Provision of all the information regarding the course to the students i.e. Course title, code and credit hours, objectives/ outcomes, course content, teaching methodology, assessment type and schedule
 - 2) Conduct of classes as well as continuous assessment i.e quizzes, sessional, mid-semester examinations, practical examination, evaluation of written course related assignments
 - 3) Maintenance of course files
 - 4) Submission of assessment results after approval of HoD to the Examination Directorate.
 - 5) Submission of course file to the concerned HOD at the end of each semester/ academic year for record keeping purpose.
5. **Supervisor Nomination.** Preferably within one month of the commencement of the first semester, the Head of the Department shall, on approval from the Dean nominate supervisor for each of the students from within the available faculty (Form # PG-04) and confirmation will be given by supervisor (Form # PG-05), Supervisor can be changed in case of exigencies or unavoidable circumstances (Form # PG-07).
6. **Supervisory Committee**
- a. **Graduate Advisory Committee (GAC).** This shall be appointed for all students during the first quarter of first semester. This shall consist of three members (two internal from department including student's supervisor and one external member from other institution/research organization) shall be constituted. If HOD is not supervisor, he/she shall be taken as member of the Committee. The Chair of this Committee will be the student's supervisor (Form # PG-06). In case of multidisciplinary research, more than one external supervisor may be approved by the Pro- Vice Chancellor (Academics)
 - b. **PhD Supervisory Committee.**
 - 1) Students who will qualify for continuation of PhD course work, PhD Supervisory Committee shall be appointed for each student. PhD Supervisory Committee must consist of at least four PhD degree holders in the relevant subject with at least 3 years post PhD research and/or academic experience and HEC approved PhD supervisor in the relevant field. At least two members should be from the concerned faculty including HOD and scholar's supervisor. However, if HOD is not PhD qualified, then any other member from the department may be included in the Committee. The Committee shall also have two external members from other institution/research organization.
 - 2) Members of the Supervisory Committee and even the Supervisor can be changed in case of exigencies or unavoidable circumstances. However, in case of any change of supervisor, co-supervisor or any committee members, HoD shall incorporate change in the prescribed form accordingly and send it to the Academics Directorate after approval from the Dean
 - 3) In case of multidisciplinary research, more than two external supervisors may be approved by the Pro Vice Chancellor (Academics)

7. NUMS Grievances Policy

- a. The Grievance Policy applies principally to employees including faculty and staff and students of NUMS. However, any member of the NUMS community, including but not limited to students, employees, and alumni, has a right to express a grievance. This policy also applies to those who interact with the NUMS or its affiliated programs
- b. This policy applies to all university-related activities both on and off campus and applies to all individuals involved in these activities, as well as to the conduct by or directed toward third parties, which are not themselves employees or students of NUMS.
- c. It covers individual grievance of specific nature raised individually by the concerned stakeholder only and not the grievances of general applicability or of collective nature or raised collectively by more than one stake holder.
- d. This procedure does not apply to complaints, grievances or appeals where other policies or procedures are in place like sexual harassment, dismissal or disciplinary action; or where the grievance relates to matters that are already being considered pursuant to another policy or procedure.
- e. Academic matter shall be dealt with as per HEC/ PMC policy
- f. Referred to NUMS Student Grievances Policy available at Registrar Directorate

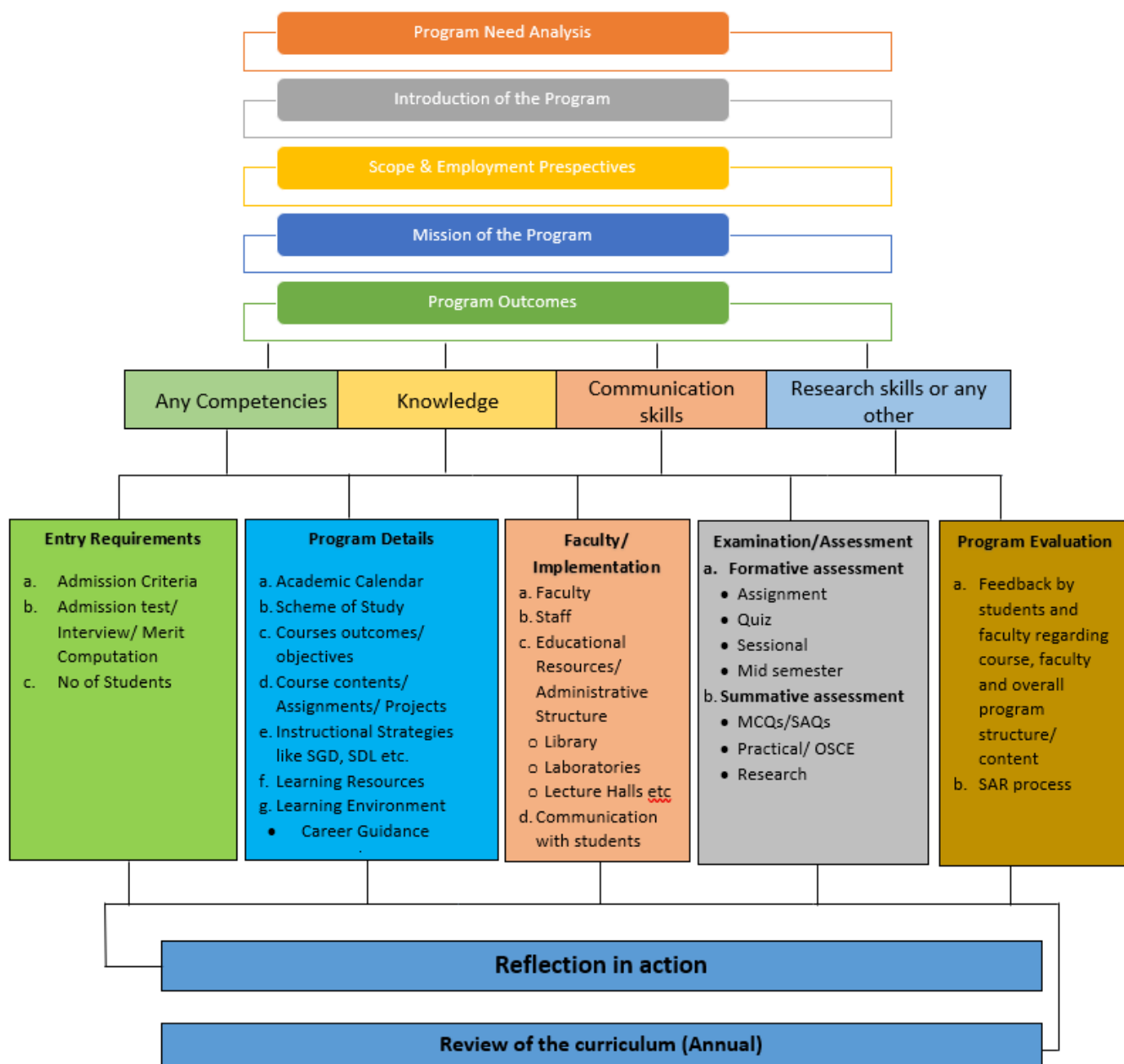
CHAPTER V

GUIDELINES FOR DEVELOPMENT/REVISION OF CURRICULUM

1. Template for PG Curriculum

CURRICULUM MAP FOR SEMESTER BASED PROGRAMS

Name of Program _____ Name of Department _____



2. Steps for Development of Curriculum.

The development of an effective curriculum is a multi-step, ongoing and cyclical process. The process progresses from evaluating the existing program, to design an improved program, to implement a new program and back to evaluate the revised program. Steps of an Effective Curriculum Development Process are:

a. Planning:

- 1) **Identify the Need.** The very first step in the curriculum development process is to clearly state the need to initiate a curriculum development effort. An

issue statement should indicate focus group, the scope of the problem (issue) to be addressed by the curriculum and the consequences. The need statement should describe the issue in simple language. This process involves reviews of recent issues and trends of the discipline nationwide and worldwide. This in turn will support the needs assessment and the philosophy that should be developed.

- 2) **Conduct Need Assessment and Analysis.** The need assessment and analysis step in curriculum development systematically focuses on learning about an issue or problem and the people who are directly affected by it. Need assessment shall ascertain the perceptions, concerns and desires of each of the stakeholders in the process. A need assessment provides the information to determine outcomes (educational objectives) based on a factual foundation and learners needs. A need assessment also provides baseline data to evaluate the achievement of intended outcomes.
- b. **Development of curriculum:** The postgraduate curricula shall be finalized by the Postgraduate Curriculum Committee specifying the details of the core course, elective courses, table of specifications, examination and degree requirements. Every academic program must comprehensively contain:
- 1) **Titles/ Nomenclature for the Program/ Degree.** NUMS has developed guidelines for adopting titles/ nomenclature for the degree as per HEC NQF qualification titles
 - 2) The degree may be named as per the level prescribed by regulatory authority along with respective major field of study/discipline.
 - 3) A program containing only one field of study as per its respective field of concentration (100%). Example: Doctor of Philosophy in Pathology, Master of Philosophy in Chemical Pathology, Master of Science in Cardiac Anesthesia, Bachelor of Science in Medical Laboratory Technology etc.
 - 4) A program contains fundamental components of two fields of study with the percentage of 50-50, the qualification may be connected with “AND”
 - 5) A Program with specialization in at least 25 percent of the main field, the specialization may be indicated in Brackets Example: Master of Science in Nursing (Midwifery), Bachelor of Science in Biological Sciences (Microbiology) etc.
 - 6) A major-minor Program that contains at least 25 percent component in other fields of study is named using the connector “WITH”.
- c. **Introduction of the Program**
- 1) The program should be broad-based and take into account the relevant needs of other on-campus programs; some courses could be offered as electives in other programs
 - 2) Confirmation that Institution level endorsement has been obtained
 - 3) Explain what makes the program unique or different to similar programs, if any, offered in the market
 - 4) Specify any prerequisites for enrolment.

- a) **Scope/Employment Perspective:** It shall be relevant to the level of degree program.
- b) **Program Mission:** Document shall establish a clear mission aligned with NUMS vision.
- c) **Program Outcomes:** As all of our programs are outcome based so learning outcomes shall be clearly defined. In this step needs identified in the needs assessment process are converted into measurable outcomes for the learners. All intended outcomes should serve as a bridge between the issue of concern and the needs of the learner. Intended outcomes should clearly state, in measurable terms, what the learner will be able to do as a result of participation in planned activities designed to help the learner attain knowledge, attitudes, skills aspirations, and behaviors to bring about change. The intended outcome should be measurable and specific. A list of specific skills, knowledge, or characteristics that learners will have as a result of going through the curriculum can be generated.
- d) **Expected competencies.** Which competencies are being expected from the students
- e) **Entry requirement of Program**
 - (1) **Admission Process:** Eligibility criteria with complete admission process must be defined clearly.
 - (2) **Total number of students:** Number of students to be inducted in the course must be mentioned.
- f) **Program details**
 - (1) **Academic Calendar:** Date of commencement of session and start of end semester examination shall be mentioned
 - (2) **Scheme of Study:** Outlines a basic framework for what to do, how to do it, when to do it and how to know if it has been achieved. It must include the following. It should be designed as per requirement of regulatory authorities
 - (3) **General Information:** Course title, credit hours and course code
 - (a) **NUMS Guidelines for Allocation of Course Codes**

Every course offered is identified by a unique alpha-numeric code, usually three letters followed by three digits
 - (b) **Rules to Follow for Course Code.** There are two important blocks of information for course codes. **(ABC-000)**
 - i. **Course Prefix.** The first part of a course code is a series of letters indicating the course's general subject. For example, Allied Health Sciences (AHS), Medical Lab Technology (MLT) etc
 - ii. **Course Numbers.** The second part of a program course code is a series of numbers. These are three digits long.
 - The first digit represents the level of the program as per HEC guidelines.
 - Masters' level courses will be assigned 711
 - Advanced level courses will carry 811.

- At NUMS the second digit represents the semester. For example; a course offered in Masters program first semester will be 711, second semester 721, for third semester 731 and so on
- The third digit represents the number/sequence of courses taught in a semester. For example; in Masters program, first semester first course will be 711, second course 712, for third course 713 and so on.
- If the same elective course is offered in different programs, then course code and title shall be the same in all programs.
- The course code for elective courses will be “01” after level of program. i.e. 701, 702....., 801, 802.....
- Course code for research will be “99” after level of program i.e. 799, 899
- The institute shall get the code of a new course first ratified from the NUMS-CMS Database before placing it in any Curriculum Committee.

g) Detail of Courses

Identify the necessary knowledge to accomplish the intended outcomes. Plan the sequence in which the content will be presented, and outline the content, including knowledge, attitude, and skills that learners will be able to acquire through participating in the planned curriculum activities. It shall specify:

- 1) Course specific outcomes/objectives. Start with measurable verbs
- 2) Course syllabus
- 3) Teaching Methodologies/ Instructional Strategies
- 4) Assessment tools
- 5) Learning Resources

h) Faculty

- 1) List of teaching faculty in relevant field (minimum six as per HEC requirement)
- 2) List of staff other than faculty

i) Educational Resources/ Administrative Structure

- 1) Library
- 2) Laboratories
- 3) Lecture halls etc

j) Mechanism of Students’ Academic Advising and Support

To be mentioned by the institution. However, Academic Advisor shall assist in academic, personal, financial and extra-curricular domains. Also career guidance shall be provided to the students. Confidential therapeutic support to all students shall be provided to help students to address their personal or emotional problems that may get in the way of having a good experience and realizing their full academic and personal potential.

- k) **Assessment.** Each course shall have its assessment blue print as per NUMS Examination Policy. Assessment tools to be decided by the concerned faculty
- l) **Teaching Plan and Time Table**
 - 1) Teaching in the relevant courses organized for degree purposes shall be conducted in different departments of the constituent and affiliate institutions through interactive lectures, tutorials, discussions, seminars, demonstrations, lab practicals, field work, self-directed learning or any other teaching methods as may have been approved by Departmental Board of Studies.
 - 2) The issues of time table and structuring of training programs shall be decided by the institution at their own level in the light of guidelines/instructions of the regulatory authorities
- m) **Evaluation of the Program Through Quality Assurance Mechanism**

Mechanisms to monitor program quality shall be mentioned in the proposal, including effective feedback mechanisms as follow:

 - 1) **Evaluation by students of: (Annex-H)**
 - a) Course
 - b) Faculty
 - c) Overall program structure / content
 - 2) **Evaluation by faculty of:**
 - a) Course
 - b) Teaching and Learning environment through faculty survey form
 - c) Faculty who have taught in the program (peer review)
 - d) Overall program structure / content
 - 3) **External review of the programs:** External Review of Programs shall take place through Self-Assessment Reports prepared by the department after each semester for semester based programs and annually for MBBS/BDS and reviewed by external subject specialists invited by QA Dte as Assessment Team Members on completion of a degree program
 - 4) **Post graduate Program Review:** An Annual Graduate Program Review is also HEC's requirement, therefore, it is going to be undertaken internally every year by 'NUMS Program Review Team' constituted by QA Dte with the approval of competent authority. External review of the graduate programs will be carried out by HEC's Quality Assurance Agency Team as and when required by the Regulatory Body.
 - 5) **Sustainability of the Program.** - (1) State the minimum number of students to be enrolled in a course if it is to be offered. (2) State the conditions/ circumstances under which the program will not be offered (e.g. non-availability of specialized faculty, stoppage of funding)

3. **Review.** The existing curricula shall be reviewed after every three years or earlier if needs improvement after evaluation process and passed through the Academic Council's approval process as aforesaid

4. **Modifications in the Curriculum**

Preamble. From time to time, any department/ faculty may need to make modifications in their program/ module or course as a part of continuous improvement after evaluation of the program. Dean will be overall responsible to find out if the proposed change is minor or major in nature on the basis of following guidelines:

- a. **Minor Modification:** It includes a change in a course that does not affect the overall aims, objectives and outcomes of a program. Minor modifications need approval from AS&RB Meeting. Minor modification may involve one or more of the following aspects:
 - 1) Changes to the title or description of a module/course.
 - 2) Changes to the teaching methodology to be more engaging of students such as enhanced use of digital instructional technology, a shift in the balance of lectures and seminars, etc
 - 3) Changes in assessment tools
 - 4) Addition or deletion of modules and/or courses in a manner that does not alter the overall aims, learning outcomes or academic requirements of a program.
- b. **Major Modification:** It includes revision in a program that alters the overall aims, objectives, outcomes and academic requirements of a program. Major modifications need approval from AS&RB Meeting and finally from Academic council. A major modification may feature one or more of the following:
 - 1) Change of the title of the program
 - 2) Change to the program's overall aims, learning outcomes and learning objectives of the program
 - 3) Change in the duration and/or mode(s) of delivery of program (online; face to face),
 - 4) Changes in program's requirements, including student admission criteria or standards
 - 5) Change to weightings at module or course level for the assessment of students
 - 6) Considerable changes to the content and/or structure of modules or courses that fundamentally alters the program.
- c. **Modification Review Process**
 - 1) Major amendments in curricula shall be done at least 1-3 years after running of curriculum or unless there is a policy change by Regulatory Body etc
 - 2) Faculty responsible at module or course level considers the need for and proposes a minor modification. Proposal is reviewed and approved by the departmental board of studies to ensure its academic suitability. Modification shall be submitted to NUMS Academics Directorate along with

- supporting documents (Purpose and justification of modification, minutes of BOS meeting and updated program curriculum) after approval from concerned dean. After approval from university statutory body, updated curriculum shall be shared by Academics Directorate with all stakeholders
- 3) Recording of modifications to curriculum shall be mentioned in the log attached to curriculum with dates and statutory body meeting minutes approving the modifications

CHAPTER VI

PhD PROGRAMS

1. Preamble

Doctor of Philosophy (PhD) programs are being offered in basic medical sciences and pathology with a view to impart focused research training to scholars and to prepare skilled personnel with innovative research capabilities to make meaningful and productive contribution towards the socio-economic development of the society.

2. Program Duration

Total duration of PhD program is 3-8 years. However, under unforeseen circumstances it may be extended to maximum 10 years after approval from AS&RB. Period for the completion of PhD will be counted from the date of admission to the final submission of thesis.

3. General Information

a. Following is the approved scheme of study

Semester Duration	18 weeks
Regular Semesters	06
Masters' Courses	24 Credit Hours
Advance Course work	24 Credit Hours
Research	30 Credit Hours
Total	78 Credit Hours

4. Conduct of the Program (Annex-E)

- a. The Dean/ Head of Institute shall be responsible for proper implementation of program curriculum and periodical monitoring of students' progress through the Head of Department and program coordinator.
- b. Head of concerned Department is responsible for overall supervision of the program and proper compliance of NUMS policy for the conduct, assessment and timely submission of semester assessments results to the Academic and Examination Directorates. He/she shall also assign the courses to the faculty members at the commencement of academic session.
- c. After the completion of 24 CHs course work, student will continue in PhD program only if his/her CGPA is ≥ 3.00 and availability of slot in that department
- d. If his/her CGPA is between 2.50 -3.00, he/she may opt for Master program in relevant field
- e. Scholars shall be required to submit duly filled Postgraduate (PG) forms (Annex-F) downloadable from NUMS website: <http://numspak.edu.pk/upload/media/RevisedPGForms20201603945999.pdf> to be used for postgraduate studies

- f. In case of any change of supervisor, co-supervisor or any committee members, HOD will incorporate change in the Supervisory Committee's petition form (Form # PG-07) accordingly and send it to the Academics Directorate after approval from the Dean
- g. The SC meetings shall be held at least once in six months during the research phase of the PhD scholar in the department or by conference call for external members. The proceedings of SC meetings shall be recorded and meetings shall be chaired by the supervisor.
- h. The HoD shall ensure proper compliance of NUMS regulations and policy for the conduct, assessment and timely submission of semester assessments' results to the Academic/Examination Directorates (Form # PG-08)
- i. The end-semester examinations will be conducted by the Examination Directorate and grading of scholars shall be done as per NUMS regulations
- j. For repetition/improvement of course, request shall be sent on the prescribed form (Form # PG-09)

5. Degree Requirement.

- a. **Residency.** There shall be a residency requirement for a period of at least two years
- b. **Course Work.** The 48 credit-hours coursework for this program consists of three components. If the MS/MPhil students 'CGPA is ≥ 3.00 , up to 50% of course credit from Master degree may be transferred provided the courses are of relevant field. Student may be required to take additional relevant courses if required
 - 1) **Masters' Courses- Level 7 (24 Credit Hours)** - The required courses cover the breadth of the relevant discipline and are the Masters' level courses in that discipline. These courses will be covered in first and second semester with 12 credit hours in each semester. These courses will be exempted only if the student has successfully completed his/her MPhil/Master program with CGPA ≥ 3.00 and the courses he/she studied are same.
 - 1) **Advanced Courses- Level 8 (12 Credit Hours)** - These post graduate-level courses provide depth in the candidate's area of specialization as well as prepare him/her for research. Following courses will be covered in third semester: -

PhD Basic Medical Sciences & Pathology			
S. No	Course Code	Course Title	Credit Hours
1.	BMR-831	Advanced Research Methodology/ Biostatistics	3(2+1)
2.	BMR-832	Advanced Molecular Biology	3(2+1)
3.	BMR-833	Laboratory Instrumentation & Technique	3(2+1)
4.	BMR-834	Systematic Review & Meta Analyses	3(2+1)

- 2) **Elective Courses - Level 8 (12 Credit Hours)** - These post graduate-level courses allow the candidates to broaden his/her knowledge of the general

discipline that they are working in. These courses will be covered in fourth semester. Seminar of 03 credit hour is compulsory. In addition to this, students will select three elective courses of 03 credit hours each and intimate Academics Directorate with the approval of his/ her supervisor one month before the fourth semester.

3) **Elective Courses: 9 Credit Hours (minimum 3 courses have to be selected)**

PhD Pathology			
S. No		Course Title	Credit Hours
1.	PTH-801	Recent Advances in Clinical Chemistry	3(2+1)
2.	PTH-802	Special Clinical Chemistry	3(2+1)
3.	PTH-803	Pediatric Metabolic Disorders	3(2+1)
4.	PTH-804	Toxicology and Therapeutic Drug Monitoring	3(2+1)
5.	PTH-805	Advanced Techniques in Diagnostic Microbiology	3(2+1)
6.	PTH-806	Industrial Bio-technology and Microbiology	3(2+1)
7.	PTH-807	Immunization and Vaccine Development	3(2+1)
8.	PTH-808	Nano Biotechnology: Concepts and Applications	3(2+1)
9.	PTH-809	Red Blood Cells Disorders/ Transfusion Medicine	3(2+1)
10.	PTH-810	Coagulation disorder and Thrombosis	3(2+1)
11.	PTH-811	Tumours of Haematopoietic and Lymphoid Tissues	3(2+1)
12.	PTH-812	Cellular Mechanisms of Disease	3(2+1)
13.	PTH-813	Special Pathology-1	3(2+1)
14.	PTH-814	Special Pathology-2	3(2+1)
PhD Biochemistry			
1.	BCH-821	Advanced Cell Biology	3(2+1)
2.	BCH-822	Genomics & proteomics	3(2+1)
3.	BCH-823	Signal transduction	3(2+1)
PhD Molecular Medicine			
Core Courses	MME-821	Molecular basis of diseases	3(2+1)
	MME-822	Human Genetics	3(2+1)
Elective Courses (anyone)	MME-801	Genomics & Proteomics	3(2+1)
	MME-802	Stem Cell Biology	3(2+1)
PhD Physiology			
1.	PHY-801	Advanced Cell Biology	3(2+1)
2.	PHY-802	Advanced course in Endocrine & Reproductive Physiology	3(2+1)
3.	PHY-803	Advanced course in Cardiovascular Physiology	3(2+1)

4.	PHY-804	Advanced course in Neurophysiology	3(2+1)
5.	PHY-805	Advanced course in Respiratory Physiology	3(2+1)
6.	PHY-806	Advanced course in Renal Physiology	3(2+1)
7.	PHY-807	Advanced course in Blood Physiology	3(2+1)
8.	PHY-808	Advanced course in Gastrointestinal and Liver Physiology	3(2+1)
9.	PHY-809	Nerve & Muscle Physiology	3(2+1)

4) After completion of course work of 48 CHs with CGPA ≥ 3.00 , scholar may appear in the doctoral comprehensive examination.

5) **Guidelines for Synopsis & Dissertation/Thesis Writing.** Available on NUMS website

6. Comprehensive Examination

- Following the completion of coursework with CGPA ≥ 3.00 , every PhD student shall be required to pass a comprehensive examination with $\geq 65\%$ marks in order to be granted candidacy as PhD researcher; provided that if the student fails to pass the comprehensive test, he or she shall be allowed one more attempt to take the test within three years
- It will test the scholar's ability to integrate and assimilate the knowledge obtained relevant to their field of research. Concerned Supervisory Committee will be responsible for PhD comprehensive examination in collaboration with NUMS Examination Directorate
- The examination will be conducted in two parts in the following manner:

1) Part A- Written Comprehensive Examination.

- Concerned Supervisory Committee will prepare the written paper. A comprehensive examination consists of 100 marks written paper of 03 hours' duration. Assessment blueprint of Comprehensive Examination is as under:

S No	Topics		Questions	Marks
1	Reflection	Student will provide a statement about the discipline and how they position themselves in this field	01	01x20
2	04 examination questions, all in the student's subject area, will be distributed as follows			
a	Area of specialization/ discipline	To assess in depth knowledge of the relevant discipline	02	02x15
b	Advanced Courses	To demonstrate the understanding of advanced research methods and techniques used in the relevant field	02	02x15
3	Research proposal	To check the adequacy of the candidate's background preparation to pursue the proposed research	01	01x20
Total			06	100

The student result will be notified by the Controller of the Examination

2) Oral Examination.

- a) It shall be conducted only after the scholar has qualified Part A of the Comprehensive Examination. Scholar shall submit a research proposal on prescribed format. IRB approval shall be taken wherever required
- b) Every PhD scholar will be required to submit a research proposal request (Form #PG-12) in prescribed form along with two copies of the synopsis for approval of IRB (Form #PG-13) wherever required
- c) Thereafter, five copies of the synopsis shall be submitted to the concerned Dean's Office for synopsis defense
- d) The Dean will finalize the synopsis presentation schedule (Form #PG-14) and constitute a PhD Synopsis Evaluation Committee (SEC) comprising of supervisory committee with Dean himself being a Chair. The synopsis evaluation committee (Form #PG-15) along with schedule of synopsis presentation will be sent to each SEC member, NUMS Academics Directorate, Examination Directorate & QA Directorate
- e) Head of Department (HOD) and Dean/ Commandant/ Principal would be the voting members only if they are PhD qualified in the relevant field.
- f) The scholars shall present their synopsis before the Synopsis Evaluation Committee (SEC) and rep from NUMS Academics Directorate. The approval of synopsis shall be done by using the prescribed evaluation score form (Form #PG-16).
- g) The scholar has to defend his/ her thesis synopsis as a part of this oral examination. The Oral Examination Committee shall determine by majority vote. The examination will be graded as Pass/ Fail. Only pass scholar will be allowed to proceed for the doctoral research.
- h) The SEC may recommend changes in the synopsis and scholar shall repeat presentation within stipulated time. The approval of synopsis shall be finalized by a majority vote. The approved synopsis report in the prescribed form (Form #PG-17) shall be sent to the Academics Directorate under endorsement from the Dean concerned for approval from AS&RB
- i) If any observation/ revision in research title/ project is needed, student will resubmit the title/ project through concerned Dean with all above formalities for approval from AS&RB. (Form # PG-17-b)
- j) Upon failure in oral part, examination committee members will submit a comment's page, which would clearly document reasons for failure. These comment pages duly signed by each committee member will be submitted to Academic and Examination Directorates, NUMS by the concerned Dean. A duplicate copy of these would also be provided to the scholar
- k) Unsuccessful candidates in either part will be given one more chance only, to appear in the failed part within a time period to be decided by the Supervisory Committee.

- l) A scholar who has passed the comprehensive examination shall be deemed to have become a candidate for PhD degree.

7. Research Bench Fee

NUMS shall pay to the concerned institute/ Department minimum Rs. 300,000/- for each PhD student for research purpose, on the recommendation of HoD/ Dean, after approval of synopsis. However, it may be increased after approval from competent authority.

8. Research

- 1) Every PhD scholar shall start research work under his/her supervisor and keep the Supervisory Committee members updated about the research work progress. He/she is required to complete 30 credits of PhD research within stipulated time
- 2) **Bi-annual Progress Report.** The bi-annual progress report must be completed by the end of July and January after course work. The scholar is required to indicate the work carried out during the previous six months. The progress will include:
 - a) Stages of the research work completed
 - b) Goals met over the previous six months and goals set for the next six months
 - c) Supervisor's satisfaction with scholar's performance/ remarks
 - d) The supervisor through the concerned HOD/ Dean will send bi-annual report of each scholar in prescribed form (Form #PG-10) to the Academics Directorate.
- 3) The candidate shall present a research paper in seminar/ national/international conference and publish abstract in the conference proceeding. Candidate shall submit evidence of participation to Academic Directorate
- 4) All candidates must produce a PhD dissertation consisting of original research of high-impact. He/she shall write the dissertation in the NUMS prescribed format. He/ She will submit the draft to his/her supervisor who will review it thoroughly.
- 5) Plagiarism test must be conducted by the supervisor on the dissertation before its submission for evaluation. Supervisor shall check the similarity index by using Turnitin software which should be <19% as per HEC's guidelines
- 6) If satisfied, the Supervisor will recommend the thesis to be submitted for evaluation. The scholar will then submit prescribed dissertation verification form (Form #PG-19) with five copies of soft bound draft dissertation to the concerned Dean Office through HOD. NUMS Academics Directorate will be intimated through acknowledgment receipt (Form #PG-20) through Dean office.
- 7) **Research Publication**
Every PhD scholar shall be required to publish at least one research paper as its first author during his or her doctoral studies in an HEC approved W category in all disciplines except social sciences (Y category) or above journals (National) and JCR of ISI or ISI master list journals (International) for the award

of degree. Record of such publication(s) shall be furnished to the Academics Directorate in the prescribed form (Form # PG-18).

- 8) The Dean shall approve the Dissertation Evaluation Committee comprising of the supervisor, one internal and two external examiners who shall evaluate the PhD dissertation and send the Dissertation Evaluation Report in the prescribed form to Dean office within four weeks.
 - 9) If any amendment is suggested by any member of Dissertation Evaluation Committee, the supervisor shall ensure that necessary alterations are properly made in the dissertation
 - 10) In addition to Dissertation Evaluation Committee, dissertation will be evaluated by two external experts, as approved by Advanced Studies and Research Board (AS&RB), who may be either
 - a) Pakistan-based Distinguished National Professors, Meritorious Professors, or Tenured Professors, or
 - b) PhD experts from academically advanced countries.
 - c) However, if the PhD candidate publishes at least one research paper as its first author during his or her doctoral studies in an HEC approved X category or above journal, the PhD dissertation will require evaluation by one expert only.
 - 11) Supervisors of all PhD programs shall send names of at least two/ three external experts during the research phase of their PhD students to Academics Directorate
 - 12) After rectification of observations, dissertation will be sent through Dean's office to Academics Directorate which in turn will send it to external expert/s
 - 13) If any amendment is suggested by external expert/s, the supervisor shall ensure that necessary alterations are properly made in the dissertation.
 - 14) If satisfactory report is given by external expert/s, it will be considered approved. However, if report is not received from external expert/s within two months, dissertation shall be sent to second/ third external expert from the approved list
 - 15) The Dean shall review and send the external expert/s report through Academics Directorate for approval by Advanced Studies & Research Board
- 9. Dissertation/ Thesis Defense**
- a. There shall be open defense of PhD dissertation
 - b. Final defense of the dissertation shall be in presence of the Dean and PhD Dissertation Evaluation Committee. However, for MPhil/Masters' thesis defense, final defense shall be in presence of the Dean and two internal and one external examiners.
 - c. The grading of dissertation shall be done by a majority vote using prescribed evaluation score form (Form #PG-25). However, its scoring shall not be considered for CGPA calculation.
 - d. The examiners may approve the dissertation as such, recommend minor or major changes in the dissertation, not approve and repeat the presentation if required. In case of approval of the dissertation, a prescribed report duly signed by all members of the Committee will be prepared. (Form #PG-26).

- e. The finally approved bound copies shall be submitted to the HoD through the supervisor within one month after dissertation/thesis defense. The date of notification of defense will be taken as degree award date.
- f. The HOD shall forward four bound copies & CDs of the final PhD dissertation and three bound copies & CDs of the final MPhil/Masters' thesis to the Academics Directorate. One hard and soft copy is kept in Academics Directorate, one for Examination Directorate, one for library and one copy of PhD Dissertation (both hard and soft) will be submitted to HEC for inclusion in PhD Country Directory and for attestation of PhD degree by the HEC in future

10. Award of MS/MPhil Degree

A student may be awarded MS/MPhil Degree on the basis of PhD studies if:

- a. If a student has successfully completed the relevant course work of minimum 24 CHs with CGPA between 2.50 - 3.00
- b. 06 -10 credit hours of research
- c. Successful defense of Master's thesis
- d. MPhil/ MS degree may also be awarded if the student's PhD Dissertation Committee will recommend for award of MPhil/MS degree instead of PhD Degree

11. Award of Doctoral Degree

A PhD scholar must fulfill all of the following requirements for award of PhD degree:

- a. Completed advanced course work of 48 CHs with CGPA ≥ 3.00
- b. Qualify comprehensive examination with ≥ 65 % marks
- c. Research work of 30 CHs
- d. At least one research paper as its first author during his or her doctoral studies in an HEC approved W category in all disciplines except social sciences (Y category) or above journals (National) and JCR of ISI or ISI master list journals (International)
- e. Satisfactory dissertation evaluation report/s from external expert/s
- f. Successful defense of dissertation in the prescribed manner.

12. Reporting Requirements. The following documents shall be submitted to the HEC after the completion of studies:

- a. A duly filled completion form shall be sent to the HEC from the Office of the Controller of Examinations of the university notifying the HEC that the PhD scholar has completed all the requirements for the award of the PhD degree
- b. A copy of PhD Dissertation for including in PhD Country Directory and for attestation of the PhD degree by the HEC.
- c. A duly filled Proforma for the PhD Country Directory, signed by the Principal Supervisor, Controller of Examination and the Vice Chancellor

CHAPTER VII

MASTER PROGRAMS

1. Preamble

NUMS offers Master programs in different disciplines of basic, biological, social and clinical medical sciences at its constituent institutions with aim to create high quality human resource in the country

2. Program Duration

The duration of all Master programs is 2-3 years extendable for further one year by the Faculty Board of Studies. The period will be counted from the date of commencement of classes to the final submission of thesis.

3. Conduct of Program

- a. The Head of Institution in coordination with the Dean shall be responsible for overall proper implementation of the program courses. HOD shall assign courses to different faculty members under intimation to PGO of Academic Directorate. The HOD shall monitor the academic progress of the students with the help of the Program Coordinator
- b. Students shall be required to submit duly filled postgraduate forms (**Annex-F**) downloadable from NUMS website following link to be used for postgraduate studies <https://numspak.edu.pk/upload/media/RevisedPGForms20201603945999.pdf>
- c. The course-related assignments shall be given to the students by the faculty members and quizzes, sessional and mid semester examinations shall be conducted internally by the HODs through faculty members. Proper course file shall be maintained. Internal assessment results shall be compiled in this regard and furnished to the Examination Directorate (Form #PG-08). A student may improve or repeat the courses as per NUMS policy (Form # PG-09). End semester examinations shall be conducted by the Examination Directorate
- d. The supervisor through the concerned HoD/ Dean shall send bi-annual report of each student in prescribed form (Form #PG-10) to the Academics Directorate by the end of third semester and fourth semester if research work is not completed.
- e. **Guidelines for Synopsis & Dissertation/ Thesis Writing.** Available on NUMS website/ PG Students handbook
- f. **Synopsis Approval.** Within first month of the third semester, every MPhil student is required to submit a research proposal request (Form #PG-12) to Dean's Office along with two copies of the synopsis for approval of IRB (Form #PG-13). Thereafter, three copies of the synopsis shall be submitted to the concerned Dean's Office for synopsis defense
- g. **Synopsis Evaluation Committee (SEC).** Dean will constitute Synopsis Evaluation Committee (SEC) (Form #PG-15) consisting of the supervisor, one internal and one external member with Dean himself being the chair. The Dean will decide about the synopsis presentation schedule (Form #PG-14).

Assessment of the synopsis will be done on the prescribed evaluation form (Form #PG-16) by SEC on presentation as per schedule. The Committee may accept, reject or direct for substitution or amendments of the synopsis. Approved synopsis (Form #PG-17) along with its assessment results should be furnished to the Academics Directorate. If any observation/ revision in research title/ project is needed, student will resubmit the title/ project through concerned institute with all above formalities after approval from FBS. (Form # PG-17-b).

- h. **Research Bench Fee.** NUMS shall pay to the concerned institute/ Department minimum Rs. 100,000/- to each MPhil student for research purpose, on the recommendation of HoD/ Dean, after approval of synopsis. However, it may be increased after approval from competent authority.
- i. **Research Work.** The research work will be carried out under the direct guidance and supervision of the supervisor who will keep the members of the said committee abreast of the progress of the research work as per the procedures prevalent in the institution. Research work should be completed within stipulated time. However, time may be extended by the committee on concurrence from the Academics Directorate provided a student has completed 50% of the research work as certified by the supervisor. If extension is required, student will give an application to the HOD through the supervisor. The HOD will forward the application to the Dean along with a certificate clearly indicating that the student has completed 50% or more of the research work. The Dean will recommend the case for extension period on merit and send to the Academics Directorate for approval prior to the start of the extension period.
- j. **Research Paper.** In MPhil, MS and MHPE programs, each student will have to submit one research paper with acknowledgment of concerned journal to corresponding author, in any of the PMC/ HEC approved journals (Form # PG-18)
- k. **Thesis Preparation/ Submission.** Every student should write his/her thesis in the prescribed manner and format. After careful review and similarity index check by using 'Turnitin' software which should be <19% as per HEC's guidelines, the concerned supervisor will recommend the thesis for final evaluation. The student will submit against acknowledgement receipt (Form #PG-20), his prescribed thesis verification form (Form #PG-19) with five copies of soft bound draft thesis to the concerned Dean's Office through the concerned departmental head
- l. **Thesis Evaluation.** The Dean will approve the thesis examiners comprising of the supervisor, one internal and one external examiners (Form # PG-21). On reference from the Dean, the examiners will review and send the thesis evaluation report in the prescribed form (Form # PG-22) to Dean office within four weeks. If the internal and external examiners give satisfactory report, the student shall be allowed to proceed for defense of thesis examination. The changes/ amendments, if suggested by the examiners, shall be incorporated in the thesis

m. **Thesis Defense.** After receiving a satisfactory thesis evaluation report, the Dean will schedule a date (Form #PG-24) under intimation to the Academics Directorate/ Controller of Examinations/ Director QA and Heads of the concerned College or Institute for final defense of the thesis in presence of the Dean and the examiners concerned. Abstract shall be submitted on Form #PG-24b. The thesis and its research will be evaluated (Form #PG-25) and approved through scores-based grading in the prescribed form (Form #PG-26). Final defense of the thesis shall be in presence of the Dean and nominated Examiners. The grading of thesis research shall be done by a majority vote using prescribed evaluation score form. However, its scoring shall not be considered for CGPA calculation.

The examiners may approve the thesis as such, recommend minor or major changes in the dissertation, not approve and repeat the presentation if required.

The finally approved bound copies shall be submitted to the Head of Department through the supervisor within one month after thesis defense. The date of signatures by the Dean will be taken as degree award date.

The HOD shall forward three bound copies & CDs of the final thesis to the Academics Directorate. One hard and soft copy is kept in Academic Directorate, one for Examination Directorate and one for library

The Academics Directorate will check the documents required for award of degree (Form #PG-27) and forward the dossier, result and bound copies of thesis to the Examination Directorate for record and gazette notification

Student will be allowed to go for thesis defense only if he/ she has completed minimum 24 CH of coursework with CGPA ≥ 2.50 .

4. Award of Masters degree

- a. The student must have completed total credit hours of course work with CGPA ≥ 2.50 and research work of 06 - 10 credit hours followed by successful defense of thesis.
- b. Masters in clinical subjects, as research is optional, student must have completed total credit hours of course work with CGPA ≥ 2.50
- c. For MPhil/ MS/ MHPE only. One research paper submitted with acknowledgment of concerned journal to corresponding author, in any of the PMC / HEC approved journals.

5. MPhil PROGRAM

a. Introduction.

The aim of this program is to create high quality human resource in country in the diversified fields of medical and social sciences. NUMS is currently offering MPhil programs in multiple disciplines of basic medical sciences and pathology. Well-qualified and experienced faculty is available in our constituent institutions.

b. General Scheme of Studies of MPhil Program

Semester Duration	18 weeks
Course Duration	2-3 years
Regular Semesters	04
Course Load per Semester	12 Credit Hours
Core Courses	24 Credit Hours
Research	10 Credit Hours
Total	34 Credit Hours

c. Conduct of MPhil Course.

1) MPhil programs comprise of four semesters with following course work.

Semesters	Course Work	Credit Hours
1st Semester	Core Courses	12 Credit Hours
Summer Semester	Any deficient course/ improvement	
2nd Semester	Core Courses	12 Credit Hours
3rd Semester	Research Work	04 Credit Hours
Summer Semester	Any deficient course/ improvement	
4th Semester	Research Work	06 Credit Hours

2) In the first and second semesters, there are 04 core courses relevant to the discipline of 03 credit hours each.

3) Course details of core courses for MPhil programs are given below:

Course Code	Course Title	Credit Hours
ANATOMY		
FIRST SEMESTER		
ANT-711	Regional Anatomy-I	03(2+1)
ANT-712	Basic Histology	03(2+1)
ANT-713	Systemic Histology	03(2+1)
ANT-714	Limbs	03(2+1)
SECOND SEMESTER		
ANT-721	Regional Anatomy-II	03(2+1)
ANT-722	Embryology	03(2+1)
ANT-723	Human Neuroanatomy	03(2+1)
RMS-724	Research Methodology and Biostatistics	03(2+1)
BIOCHEMISTRY		
FIRST SEMESTER		
BIO-711	Biochemistry of Cell and Enzymes	03(2+1)
BIO-712	Cellular Metabolism I	03(2+1)
BIO-713	Cellular Metabolism II	03(2+1)
BIO-714	Bioenergetics and Blood Chemistry	03(2+1)
SECOND SEMESTER		
BIO-721	Nutrition, Electrolytes and Acid-Base	03(2+1)
BIO-722	Endocrinology	03(2+1)
RMS-723	Molecular Biology	03(2+1)
RMS-724	Research Methodology and Biostatistics	03(2+1)

PHYSIOLOGY		
FIRST SEMESTER		
PHY-711	Physiology of cell & excitable tissues	03(2+1)
PHY-712	Blood Physiology	03(2+1)
PHY-713	Gastrointestinal and Renal Physiology	03(2+1)
PHY-714	Neurosciences	03(2+1)
SECOND SEMESTER		
PHY-721	Physiology of Endocrines and Reproduction	03(2+1)
PHY-722	Cardiopulmonary Physiology	03(2+1)
RMS-723	Molecular Biology	03(2+1)
RMS-724	Research Methodology and Biostatistics	03(2+1)
COMMUNITY MEDICINE		
FIRST SEMESTER		
CME-711	General Epidemiology	03(2+1)
CME-712	Disease Epidemiology	03(2+1)
CME-713	Community Nutrition	03(2+1)
CME-714	Environmental and Occupational Health	03(2+1)
SECOND SEMESTER		
CME-721	Reproductive Health and Demography	03(2+1)
CME-722	Basic and Applied Biostatistics	03(2+1)
CME-723	Health Education and Communication	03(2+1)
RMS-724	Research Methodology and Biostatistics	03(2+1)
PHARMACOLOGY		
FIRST SEMESTER		
PHR-711	General Pharmacology	03(2+1)
PHR-712	ANS/ Respiratory System	03(2+1)
PHR-713	CNS/ Drugs used in Inflammatory conditions/NSAIDS/Opoid Analgesics	03(2+1)
PHR-714	Endocrinology/GIT/Miscellaneous topics	03(3+0)
SECOND SEMESTER		
PHR-721	Drugs acting on CVS/ Diuretics/Blood	03(2+1)
PHR-722	Chemotherapy/ Antineoplastics	03(3+0)
RMS-723	Molecular Biology	03(2+1)
RMS-724	Research Methodology and Biostatistics	03(2+1)
DENTAL MATERIAL		
FIRST SEMESTER		
DNM-711	Biocompatibility of Dental Materials	03(2+1)
DNM-712	Tissue Engineering	03(2+1)
DNM-713	Dental Materials-I	03(3+0)
DNM-714	Advanced Topics in Dental Materials-I	03(3+0)
SECOND SEMESTER		
DNM-721	Dental Materials-II	03(3+0)
DNM-722	Advanced Topics in Dental Materials-II	03(3+0)
DNM-723	Biomaterials	03(2+1)
RMS-724	Research Methodology and Biostatistics	03(2+1)
MOLECULAR MEDICINE		
FIRST SEMESTER		
MME-711	Cell Signaling	03(2+1)
MME-712	Cellular Biology	03(2+1)
MME-713	Human Genetic	03(2+1)
MME-714	Advances in Medical Biochemistry	03(2+1)
SECOND SEMESTER		
MME-721	Applied Genetics in Medicine	03(2+1)

MME-722	Trends in Biotechnology & Bioinformatics	03(2+1)
RMS-723	Molecular Biology	03(2+1)
RMS-724	Research Methodology and Biostatistics	03(2+1)
CHEMICAL PATHOLOGY		
FIRST SEMESTER		
CHP-711	Pathophysiology of Human Diseases	03(2+1)
CHP-712	Endocrine Disorders	03(2+1)
CHP-713	Basic Laboratory Principles & Analytical Techniques	03(2+1)
CHP-714	Clinical Chemistry Analytes	03(2+1)
SECOND SEMESTER		
CHP-721	Special Clinical Chemistry	03(2+1)
CHP-722	Laboratory Management	03(2+1)
RMS-723	Molecular Biology	03(2+1)
RMS-724	Research Methodology and Biostatistics	03(2+1)
MICROBIOLOGY		
FIRST SEMESTER		
MIB-711	Fundamental Bacteriology & Microbiology	03(2+1)
MIB-712	Infection control & Prevention	03(2+1)
MIB-713	Special Microbiology	03(2+1)
MIB-714	Immunology	03(2+1)
SECOND SEMESTER		
MIB-721	Parasitology & Mycology	03(2+1)
MIB-722	Virology	03(2+1)
RMS -723	Molecular Biology	03(2+1)
RMS-724	Research Methodology and Biostatistics	03(2+1)
ORAL PATHOLOGY		
FIRST SEMESTER		
ORP-711	Histological & Gross Techniques	03(2+1)
ORP-712	FNAC & General Pathology	03(2+1)
ORP-713	Dental Disorders	03(2+1)
ORP-714	Salivary Glands & Soft Tissue Pathology	03(2+1)
SECOND SEMESTER		
ORP-721	Hematological, Immunological & Dermatological Diseases and epithelial pathology	03(2+1)
ORP-722	Bone Pathology, Infections and Odontogenic Cysts & Tumors	03(2+1)
RMS-723	Molecular Biology	03(2+1)
RMS-724	Research Methodology and Biostatistics	03(2+1)
HAEMATOLOGY		
FIRST SEMESTER		
HAE-711	Haematology-Introduction	03(2+1)
HAE-712	Disorders of Red Cells	03(2+1)
HAE-713	Non-Malignant Disorders of Leucocytes, The Spleen and Immunoglobins	03(2+1)
HAE-714	Disorders of Hemostasis and Coagulation & Laboratory Methods	03(2+1)
SECOND SEMESTER		
HAE-721	Malignant Disorders of Haemopoietic System	03(2+1)
HAE-722	Principles and Practice of Transfusion Medicine	03(2+1)
RMS-723	Molecular Biology	03(2+1)
RMS-724	Research Methodology and Biostatistics	03(2+1)

- d. Course instructor will maintain the results of quizzes, sessional, mid semester and practical exam. Exam and Academics directorate will be intimated before

end semester exam

- e. **Noncredit course.** Student may take additional elective course as a noncredit course with permission of HoD for acquisition of knowledge
- f. 04 credit hours of Research will be carried out in third semester and 06 credit hours of Research will be carried out in fourth semesters

6. Master of Public Health

a. Introduction

MPH curriculum emphasizes on basic public health sciences, essential managerial and analytical skills including project planning and evaluation, epidemiological investigations, health systems analysis, reproductive and child health, environmental and occupational health, disease control and research. Practical consist of individual fieldwork, group fieldwork, field visits, individual assignments and class exercises in all semesters.

b. General Scheme of Studies of MPH Program

a.	Degree Offered	MPH
b.	Duration	2-3 Years
c.	Total Credit Hours	34 Credit Hours
	1. Core Course	24 Credit Hours
	2. Practicum	Non Credit
	3. MPH Thesis Research	10 Credit Hours

c. Semester wise Breakdown of Courses

Semester-I (Total Credit Hours: 12)

Code	Core Courses	Credit Hours
MPH-711	Epidemiology	3(2+1)
MPH-712	Communicable & non communicable disease control	3(2+1)
MPH-713	Environmental and Occupational Health	3(2+1)
MPH-714	Foundation of Public Health and Health Promotion	3(2+1)

Semester-II (Total Credit Hours: 12)

Code	Core Courses	Credit Hours
MPH-721	Health Planning and Management	3(2+1)
MPH-722	Research Methods: Quantitative and Qualitative	3(2+1)
MPH-723	Biostatistics	3(2+1)
MPH-724	Demography and Reproductive Health	3(2+1)

Semester-III (Total Credit Hours: 6)

Code	Core Courses: 2	Credit Hours
MPH- 741	Practicum	Non Credit
MPH -799	Research	4

Semester-IV (Total Credit Hours:6)

Code	Core Courses	Credit Hours
MPH -799	Research	6

7. MSc Healthcare Administration**a. Introduction**

Effective management in health care is the key to success for implementing programs in health sector. The significance of MSc Healthcare Administration is much higher in the 21st century compared to the previous years. MSc Healthcare Administration will be a two years' program designed to give in-depth education in managing healthcare problems as well. The instructional and training components will be carried out by the qualified faculty of health management at Armed Forces Post Graduate Medical Institute (AFPGMI) Rawalpindi. The award of the course will require evidence of satisfactory completion of course and research. All students will be assessed during the course and through end semester examinations as per HEC grading system/ policy

b. General Scheme of Studies

a.	Course Duration	24 Months
b.	Semester Duration	16 Weeks
c.	Semesters	4
d.	Course load per Semester	12 Credit hours
e.	Course Work	24 Credit hours
f.	Practicum + Seminar	03+03 (06) Credit hours
g.	Research	06 Credit hours
Total Credit Hours		36 Credit hours

c. Semester wise Breakdown of Courses

FIRST SEMESTER (12 CHs)			
(Management Sciences)			
Ser	Code	Subjects	Credit Hours
a.	HLA-711	Human Resource Management & Leadership	3 (2+1)
b.	HLA-712	Health Economics and Financial Management	3 (2+1)
c.	HLA-713	Supply Chain Management	2 (1+1)
d.	HLA-714	Project Management	2 (1+1)
e.	HLA-715	Health System Management	2 (1+1)

SECOND SEMESTER (12 CHs)			
(Public Health, Health Policy and Planning)			
Ser	Code	Subjects	Credit Hours
a.	HLA-721	Health Policy, Planning & Promotion	3 (2+1)
b.	HLA-722	Hospital Management, Planning & Designing	3 (2+1)
c.	HLA-723	Epidemiology and Occupational Health	2 (1+1)
d.	HLA-724	Quality Assurance in Healthcare	2 (1+1)
e.	HLA-725	Research Methodology and Biostatistics	2 (1+1)
THIRD SEMESTER (06 CHs)			
Ser	Code	Subjects	Credit Hours
a.	HLA-731	Seminar	3
b.	HLA-732	Practicum	3
FOURTH SEMESTER (06 CHs)			
Ser	Code	Subjects	Credit Hours
a.	HLA-799	Research	6
Total			36

8. MSc in Cardiac Anaesthesia

a. Introduction

This program is offered by the National University of Medical Sciences (NUMS), Islamabad. The two-years training will be done at the Department of Cardiac Anaesthesia & Intensive Care of the Armed Forces Institute of Cardiology & National Institute of Heart Diseases (AFIC-NIHD). The Focus of the MSc Cardiac Anesthesia program is to provide a nurturing environment to acquire the knowledge and develop the technical skills necessary to provide superb clinical care and cultivate high quality research.

b. Duration of Program & Scheme of study

MSc in Cardiac Anaesthesia is 24 months' program consisting of core courses and clinical training in the wards. There will be 4 regular semesters of 16 weeks' duration and 38 credit hours have to be completed. Successful MSc completion will require a minimum CGPA of 2.50.

Log Book. Proper log books of clinical procedures and cases along with written reflections by all students will be maintained with the help of Program Coordinator. The reflections written by the students will be commented and endorsed by the supervisors.

1	Degree Offered	MSc in Cardiac Anaesthesia
2	Duration	24 months
3	Total semesters	04
4	Course load per semester	09-12 CHs
5	Core courses	24 CHs
6	Elective courses	06 CHs

8	Research	06 CHs
9	Clinical Rotation	02 CHs
Total Credit Hours		38 CHs

c. **Semester-Wise break-up of Courses of Credit hours**

First Semester

Core Courses: 12 Credit Hrs (one course X 3 Credit Hrs)

Code	Subject	CHs
MCA-711	Applied Cardiovascular Sciences	03 (3+0)
MCA-712	Cardiac Investigations & Pre-operative Evaluation	03 (1+2)
MCA-713	Monitoring in Cardiac Anaesthesia	03 (1+2)
MCA-714	Principles of Cardiopulmonary Bypass	03 (1+2)

Second Semester

Core Courses: 12 Credit Hrs (one course X 3 Credit Hrs)

Code	Subject	CHs
MCA-721	Practical Conduct of Adult Cardiac Anaesthesia	03 (1+2)
MCA-722	Management of Coronary Heart Surgery	03 (1+2)
MCA-723	Management of Valvular Heart Surgery	03 (1+2)
RMS-724	Research Methodology & Biostatistics	03 (2+1)

Third Semester

Core Courses: 06 Credit Hrs (one course X 3 Credit Hrs)
(Select any two of the following)

Code	Subject	CHs
MCA-701	Cardiac Surgical ICU	03 (1+2)
MCA-702	Basics of Paediatric Cardiac Anaesthesia	03 (1+2)
MCA-703	Paediatric Cardiac ICU	03 (1+2)

Fourth Semester

Credit Hours=08 (Research: 06)

Code	Subject	CHs
MCA-799	Research Work	06
MCA-741	Clinical Rotation	02 (0+2)

9. MS in Human Genetics

a. Introduction

The vision behind this post-graduate program is to produce highly skilled professionals who will be actively engaged in research in the field of human genetics. Pakistan is facing a challenge of ever-increasing burden of genetic disorders due to the high incidence of consanguineous marriages, cancer and other non-communicable diseases. Our graduates will contribute towards mitigating these challenges, by undertaking basic and translational research, using the latest tools and techniques in molecular biology. The faculty members

at the Department of Biological Sciences are highly qualified and experienced PhDs with diverse research expertise and background. This set of the highly competent faculty members will provide an educational program in Human Genetics at par with that of any internationally recognized university. The emphasis of this post-graduate program will be problem solving research for the benefit of our patients and the community at large. The program aims to nurture confident individuals who are effective contributors towards the growth of the nation

b. Duration of the Program & Scheme of Study

Degree Offered	MS
Duration	2-3 Years
Total Credit Hours	36 Credit Hours
Course Work	26 Credit Hours
➤ Core Course	➤ 12 Credit Hours
➤ Elective Course	➤ 12 Credit Hours
➤ Seminar	➤ 2 credit hours
MS Research Work	10 Credit Hours

c. Semester wise Distribution of Credit Hours

Year 1	Semester 1 (12 CHs)		
Course code	Course Title	Category	Credits
MBS-711	Current Trends in Research Techniques	Core	3(1+2)
MBS-712	Advances in Cell and Molecular Biology	Core	3(3+0)
GEN-713	Advances in OMICs studies	Core	3(3+0)
	Elective-I	Elective	3
Year-1	Semester 2 (12 CHs)		
GEN-721	Human Molecular Genetics	Core	3(3+0)
	Elective-II	Elective	3
	Elective-III	Elective	3
RMS-724	Research Methodology and Biostatistics	Core	3(2+1)
Year-2	Semester 3 (06 CHs)		
MBS-731	Seminar	Core	2
GEN-799-1	MS Research work		4
Year-2	Semester 4 (06 CHs)		
GEN-799-2	MS Research work		6
	Grand Total		36

d. List of Elective Courses

Ser	Course code	Course Title	Credits
1	BIF-711	Advances in Bioinformatics	3+0
2	MIC-712	Advances in Immunology	3+0

3	GEN-701	Cell Signaling and Signal Transduction	3+0
4	GEN-702	Molecular Bases of Cancer	3+0
5	GEN-703	Human Disease Modeling	3+0
6	GEN-704	Developmental Mechanism of Human Diseases	3+0
7	GEN-705	Human Stem Cell Biology	3+0
8	GEN-706	Evolutionary and Population Genetics	3+0
9	GEN-707	Current Topics in Medical Genetics	3+0

10. MS in Microbiology & Immunology

a. Introduction

The MS program in Microbiology & Immunology will provide exceptional avenues for graduate training at the MS levels in advanced concepts of Microbiology & Immunology.

In line with the diverse expertise of the department faculty, core research areas include bacteriology, virology, environmental microbiology, microbial ecology, microbial physiology, immunology, bacterial and viral-based infectious diseases, antimicrobial resistance, microbiomes and antimicrobials. A particular emphasis is placed on tackling scientific problems with a multi-disciplinary approach.

In this regard, national and international research collaborations with major research groups and industries is the primary focus of the department. Our graduate program will not only provide a strong foundation in microbiology major but also strong scientific background to do research in basic, applied, advanced and emerging areas of the field.

b. Duration of the Program & Scheme of Study

Degree Offered	MS
Duration	2-3 Years
Total Credit Hours	36 Credit Hours
Course Work	26 Credit Hours
➤ Core Course	➤ 12 Credit Hours
➤ Elective Course	➤ 12 Credit Hours
➤ Seminar	➤ 2 credit hours
MS Research Work	10 Credit Hours

c. Semester wise Distribution of Credit Hours

Year 1	Semester 1 (12 CHs)		
Course code	Course Title	Category	Credits
MBS-711	Current Trends in Research Techniques	Core	3(1+2)
MIC-712	Advances in Microbiology	Core	3(3+0)
MIC-713	Advances in Immunology	Core	3(3+0)
	Elective-I	Elective	3
Year-1	Semester 2 (12 CHs)		
MIC-721	Microbial Biotechnology	Core	3(3+0)
	Elective-II	Elective	3
	Elective-III	Elective	3
RMS-724	Research Methodology and Biostatistics	Core	3(2+1)
Year-2	Semester 3 (06 CHs)		
MBS-731	Seminar	Core	2
GEN-799-1	MS Research work		4
Year-2	Semester 4 (06 CHs)		
GEN-799-2	MS Research work		6
	Grand Total		36

d. List of Elective Courses

Ser	Course Code	Credit hours
MIC-701	Advances in Virology	3(3+0)
MIC-702	Advances in Fungal Biotechnology	3(3+0)
MIC-703	Advances in Medical Parasitology	3(3+0)
MIC-704	Antimicrobial Resistance & therapeutics	3(3+0)
MIC-705	Extremophiles	3(3+0)
MIC-706	Immunotherapeutics	3(3+0)
MIC-707	Microbiome	3(3+0)
MIC-708	Probiotics and Synbiotics	3(3+0)
MIC-709	Vaccinology	3(3+0)

11. MS in Biotechnology**a. Introduction**

The vision behind the post-graduate program in Biotechnology is to produce competent Biotechnologists who can employ quality processes and applications, which will profoundly influence the existing paradigm of agricultural, industrial, healthcare, and environmental Biotechnology by providing sustainable competitive edge to the society. The faculty members at the Department of Biological Sciences having obtained Ph.D. and Post Doctorate. experience from various technologically advanced countries of the world possess diverse research and teaching expertise. This diverse skill set of highly competent faculty members will provide Biotechnology Educational Program with impetus to generate quality workforce. The post-graduate program will also create awareness about the potential of Biotechnology with

economical and socio-ethical implications. Moreover, this program is designed to instill the spirit of innovation and creativity in young minds with sound research aptitude. The program aims to nurture confident individuals who are effective contributors to the growth of the nation. This program in our department will not only potentially increase the employability of students, but will also increase the potential of biotechnology-related startups and entrepreneurship Pakistan.

b. Duration of the Program & Scheme of Study

Degree Offered	MS
Duration	2-3 Years
Total Credit Hours	36 Credit Hours
Course Work	26 Credit Hours
➤ Core Course	➤ 12 Credit Hours
➤ Elective Course	➤ 12 Credit Hours
➤ Seminar	➤ 2 credit hours
MS Research Work	10 credit Hours

c. Semester wise Distribution of Credit Hours

Year 1	Semester 1 (12 CHs)		
Course code	Course Title	Category	Credits
BTE-711	Current Trends in Research Techniques	Core	3(1+2)
MBS-712	Advances in Cell and Molecular Biology	Core	3(3+0)
BTE-713	Modern Biotechnology: Principles & Applications	Core	3(3+0)
	Elective-I	Elective	3
Year-1	Semester 2 (12 CHs)		
MBS-721	Advances in Microbial Biotechnology	Core	3(3+0)
	Elective-II	Elective	3
	Elective-III	Elective	3
RMS-724	Research Methodology and Biostatistics	Core	3(2+1)
Year-2	Semester 3 (06 CHs)		
MBS-731	Seminar	Core	2
GEN-799-1	MS Research work		4
Year-2	Semester 4 (06 CHs)		
GEN-799-2	MS Research work		6
	Grand Total		36

d. List of Elective Courses

Course Code	Course Name	Credit hours
EBS-701	Applications of Nano-biotechnology	3+0
BTE-701	Cell and Tissue culture	3+0
BTE-702	Advances in Industrial Biotechnology	3+0

BTE-703	Advances in Health Biotechnology	3+0
BTE-704	Advances in Agriculture Biotechnology	3+0
BTE-705	Advances in Food Biotechnology	3+0
BTE-706	Metabolic Engineering and Synthetic Biology	3+0
GEN-713	Advances in OMIC studies	3+0
MIC-713	Advances in Immunology	3+0

12. MS in Phytochemistry and Natural Products

a. Introduction

Our graduate program will provide a new generation of scientists with a solid broad-spectrum background in the disciplines dealing with chemical, biological, phytochemical, and technological aspects of drugs discovery from natural sources. This program aims to train students in the methods used to analyze and characterize medicinal natural products and ethno-pharmaceutical uses of plants from traditional systems of medicines.

b. Duration of the Program & Scheme of Study

Degree Offered	MS
Duration	2-3 Years
Total Credit Hours	36 Credit Hours
Course Work	26 Credit Hours
➤ Core Course	➤ 12 Credit Hours
➤ Elective Course	➤ 12 Credit Hours
➤ Seminar	➤ 2 credit hours
MS Research Work	10 credit Hours

c. Semester wise Distribution of Credit Hours

Year 1	Semester 1 (12 CHs)		
Course code	Course Title	Category	Credits
MBS-711	Current Trends in Research Techniques	Core	3(1+2)
MPC-711	Phytochemistry	Core	3(3+0)
MPC-712	Drug Discovery and Mechanism of Natural Products	Core	3(3+0)
	Elective-I	Elective	3
Year-1	Semester 2 (12 CHs)		
MPC-721	Plant Cell and Molecular Biology	Core	3(3+0)
	Elective-II	Elective	3
	Elective-III	Elective	3
RMS-724	Research Methodology and Biostatistics	Core	3(2+1)
Year-2	Semester 3 (06 CHs)		
MBS-731	Seminar	Core	2
GEN-799-1	MS Research work		4
Year-2	Semester 4 (06 CHs)		
GEN-799-2	MS Research work		6
	Grand Total		36

d. List of Elective Courses

Course Code	Course Name	Credit hours
MPC-701	Metabolic Pathways in Plants	3+0
MPC-702	Applications of Plant Biotechnology	3+0
MPC-703	Clinical Applications of Medicinal Plants	3+0
MPC-704	Advances in Plant Physiology	3+0
MPC-705	Advances in Pharmacognosy	3+0
MPC-706	Formulation of Natural Products and Cosmeceuticals	3+0
MPC-707	Principles of Structures Determination and Analysis	3+0
MPC-708	Advances in Biodiversity of Medicinal Plants	3+0
MPC-709	Pharmaceutical Dosage Forms and Drug Delivery System	3+0

13. Masters in Health Professions Education (MHPE)**a. Introduction**

MHPE is a two-year program that aims to develop medical educationists who will help to improve quality of healthcare delivery through improvements in health professions education with an emphasis on Inter Professional Education (IPE).

The program further aims to improve patient care by producing leaders who, via understanding the interrelationship of theory, research and clinical practice, can ensure continuous use of evidence-based insights while making informed decisions in education of all health professions, at national and international levels

b. Scheme of Study

Details	Masters
Program Duration	02 years
Number of Semesters (excluding Summer semester)	04
Course Load per Semester (excluding Summer semester)	09 CH
Core Courses	24 CH
Internship	04 CHs
Remedial (summer semester)	
Thesis / Research	06 CH
Total Credit Hours	34 CH

c. Semester Wise Distribution of Credit Hours

Semester I: 18 weeks (including assessments) Total Credit hours= 09

Code	Course Title	Credit Hrs
MHP-711	Theory and Application of Teaching and Learning	03(1+2)
MHP-712	Curriculum Planning & Implementation	03(1+2)

MHP-713	Assessment for Learning	03(1+2)
---------	-------------------------	---------

Semester II: 18 weeks (including assessments) Total Credit hours= 09

Code	Course Title	Credit Hrs
MHP-721	Assessment of Learning	03(1+2)
MHP-722	Program Evaluation	03(1+2)
MHP-723	Leadership in Education	03(1+2)

Summer Semester: 09 weeks

SUMMER SEMESTER - REMEDIAL BLOCK
For repetition and improvement of courses

Semester III: 18 weeks (including assessments) Total Credit hours= 10

Course Code	Course Title	Credit Hrs
MHP-731	Educational Scholarship of Discovery	03(1+2)
MHP-732	Opportunities & Challenges of Contemporary Medical Education	03(1+2)
MHP-733	Internship	04(0+4)

Semester IV: 18 weeks (including assessments) Total Credit hours= 06

Course Code	Course Title	Credit Hrs
MHP-799	Research/Thesis	06

14. POSTGRADUATE DIPLOMA IN CARDIOLOGY (DIP CARD)**a. Aim**

The aim of this program is to train medical graduates with professional skills in the clinical fields so that they can apply their acquired expertise at health care system.

b. General Scheme of Studies of Diploma Program.

Semester Duration	18 weeks
Course Duration	2 Year
Number of Regular Semesters	04
Course Load per Semester	09-12 Credit Hours

Core Courses	30 Credit Hours
Internship	06 Credit Hours
Total Credit Hours	36 Credit Hours

c. Log Book.

Proper log books of clinical procedures and cases along with written reflections by all students will be maintained with the help of Program Coordinator. The reflections written by the students will be commented and endorsed by the supervisors.

d. Scheme of study & Courses- (Semester wise Breakdown)

First Semester: Core Courses: 12 Credit Hours

S. No	Course Code	Course Title	Credit Hours
1.	DPC-711	Cardiac Anatomy/ Physiology	3 (3+0)
2.	DPC-712	Cardiac Pathology/ Pharmacology	3 (3+0)
3.	DPC-713	Introduction to Clinical Cardiology	3 (0+3)
4.	DPC-714	Cardiac Emergencies Management/ ACLS	3 (1+2)

Second Semester: Core Courses: 12 Credit Hours

S. No	Course Code	Course Title	Credit Hours
1	DPC-721	Diseases of Heart	3 (1+2)
2	DPC-722	Diseases of Circulating System	3 (1+2)
3	DPC-723	Pediatric Cardiology	3 (1+2)
4	RMS-724	Research Methodology and Biostatistics	3 (2+1)

Third Semester: Core Courses: 08 Credit Hours

S. No	Course Code	Course Title	Credit Hours
1	DPC-731	Investigative Cardiology	3 (1+2)
2	DPC-732	Cardiac Surgery	3 (1+2)
3	DPC-799	Internship	02

Fourth Semester: Core Courses: 04 Credit Hours

S. No	Course Code	Course Title	Credit Hours
1	DPC-799	Internship	04

15. CERTIFICATE IN HEALTH PROFESSIONS EDUCATION**a. Duration of Program & Scheme of Studies.**

Duration of Program is 6 months during which 1 x Contact Session of 5 days' duration each will be held, at the beginning of program

b. Frequency.

Once a Year

c. Credits: 12 Credit Hours**d. No of Courses: 04****e. Description of Course & Scheme of Study.**

The Course will be hybrid, with a face to face and online self-study components
Each course will be of 05 to 06-week duration

Weeks																					
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	6	1	2	3	4	5	6
Adult learning-Theory and Application					Curriculum Planning & Evaluation					Evidence-based Teaching and Learning						Assessment for Learning					
Face to Face I																					

f. Overview of Learning and Instruction.

1) One face to face sessions of a 5 days near the start of program

2) Distance Learning

Distance learning will be using Moodle software, customized for the program, will be used by students and faculty for access to learning materials, discussion and assessment of each course.

g. Assessment Plan: Assessment will be continuous, end of course summative and certification exams

Weeks					
1	2	3	4	5	6
Assessment and Weighting in %age					
Face to Face				10	
Discussion Board				10	
Critical Questions/ Quiz				10	
Assignments				15	
End of Course					15
Certifying Exam					40
50% cumulative score of all four courses will be consider certified					200/400

CHAPTER VIII

ASSESSMENTS & EXAMINATIONS

1. Introduction

- a. NUMS shall follow semester- based examination system for all postgraduate and non-medical undergraduate academic programs each having two regular semesters in the academic year, Spring semester from January till May and Fall semester from August till December. However, in special circumstances program can be started other than above mentioned time with approval from VC. Each regular semester shall be for 18 weeks' duration (16 weeks of teaching & learning and 2 weeks for examination). There is additional summer semester of 09 weeks with weekly contact hours for a course being double of the regular semester
- b. In the beginning of a semester, the teacher of each course will guide the students about the successful completion of the course requirements.
- c. Minimum 75% (85% for Nursing) attendance in each course is mandatory. In case of deficient attendance, student has to repeat the course either in summer semester or whenever the course is offered. Where required, the course instructor shall report student's absences to the HoD.
- d. Student may opt for deficient/ improvement courses in summer semester or whenever the course is offered. However, in deficient/ improvement courses, the student is required to complete all formalities applicable to repetition of a course, i.e., sessional, mid semester examination, project, assignments, quiz, etc and End Semester Examination.
- e. **Taking Alternative Elective/Optional Course.** A student may take an alternative elective for repetition with the approval of Dean or HOD. A student's transcript shall show the grades of both the courses. However, the better grade will be used in the computation of CGPA.
- f. **Noncredit courses.** Courses may be taught as non-credit courses as well. The assessment marks of these courses shall not contribute towards CGPA.

2. Assessment Management

- a. **NUMS Examination Directorate:**
 - 1) The Controller of Examinations shall be responsible for the preparation of the examination calendar and the conduct of all examinations during an academic year
 - 2) Date sheet of all examinations shall be prepared by Controller of Examinations in consultation with the constituent & affiliated institutions at least three months prior to the commencement of final examination.
 - 3) The University will publish the examination schedule of written and practical examinations on NUMS website with a copy to concerned institution
 - 4) End Semester examination in semester-based programs shall be held in 18th week of semester initiation.
 - 5) In case of unforeseen circumstances, Controller of Examinations may change the date sheet and assessment modalities (online)

- 6) Examination Directorate NUMS will be responsible for the collection of all exam questions/cases, scheduling and conduction of moderation of written question papers, marking of final examination and compilation of results as per NUMS and regularity authority guidelines
 - 7) Examination Directorate will conduct post Hoc of all exams and schedule Post Hoc meetings with members of NDHPE Team before the announcement of results.
 - 8) Exam Directorate shall share template prepared by NDHPE with the faculty for construction of MCQ, SAQ, SEQ and OSCE/ OSPE
 - 9) Exam Directorate will be responsible for maintaining, enhancing and periodic review of NUMS Question Bank.
 - 10) Examination Directorate NUMS shall ensure that the candidates' documents are correct and shall forward admit cards to the institutions, at least two weeks before the commencement of examination for issuance to individual students.
 - 11) **Declaration of Result:** Every effort shall be made to declare the result of annual based examination within one month of the last practical examination and within two weeks in semester- based examination after post hoc.
- b. **Institutional Examination Cell:** Every institution will establish Institutional Examination Cell (IEC) headed by Institutional Deputy Controller (IDC) of Examinations, who will be responsible for:
- 1) Ensuring development of MCQs and SAQs by the concerned faculty and their maintenance in the institutional bank.
 - 2) Ensuring conduct of pre per and post exam quality assurance measures in collaboration with institutional DHPE/Assessment Cell
 - 3) Maintenance of record of internal assessment of annual based programs and continuous assessment in semester- based programs
 - 4) Maintenance of record of attendance of each candidate (minimum 75 % except in Nursing programs where it is 85 %)
 - 5) Submission of internal assessment of each student at least 2 weeks prior to final professional/end semester examination to Examination Dte NUMS
 - 6) Submission of examination application form and prescribed fee to the Examination Dte NUMS at least 6 weeks before the commencement of the examination
 - 7) **End Semester Examination:** Maintenance of papers secrecy, conduct of annual/ end semester examination and onward submission of papers to the Examination Dte NUMS
- c. **Departmental Board of Studies.** Departmental Board of Studies will be responsible for:
- 1) Development of Table of Specification (TOS) and assessment blueprint
 - 2) Ensuring quality of assessment of each program through pre per and post exam measures

- 3) Monitoring the internal/ continuous assessment, and finalization of result ensuring transparent scoring of NUMS.
- 4) Ensuring that course files/ dossiers of students are properly maintained.
- 5) Recommendation of examiners to the Examination Dte NUMS for final professional/ end semester examination as per NUMS and regulatory authority guidelines.

3. Policy Guidelines

- a. NUMS considers student assessment as a means of refining its academic programs and to improve student learning and performance.
- b. Multiple assessment methods are necessary to capture all or most aspects of clinical competency and any single method is not sufficient to do the job. Therefore, following assessment tools may be selected by the faculty:
 - 1) For knowledge, concepts, application of knowledge ('Knows' and 'Knows How' of Miller's conceptual pyramid for clinical competence): context-based MCQ, short answer questions and Essay questions
 - 2) For 'Shows How': multi-station OSCE/ OSPE, Long case (observed and structured) and Short case
 - 3) For performance-based assessment ('does'): portfolio or log book
- c. All assessment blue prints shall give clear educational rationale for adopting proposed forms of assessment. However, number of questions may vary from program to program
- d. All assessment blue prints of PG programs shall be submitted to Academic Directorate through respective Dean for further approval from AS&RB, and UG programs from NUMS Coordination Committee. Template for assessment blueprint is attached (**Annex-G**)
- e. Assessment tools shall be appropriate and match learning outcome being assessed
- f. Level of difficulty of all questions shall be mentioned as Recall and/or Application
- g. All information regarding scheduling and nature of examinations shall be known to the students in time
- h. The performance of each student in a course will be assessed periodically throughout the semester to check as to how well the students' learning outcomes are being achieved and how effectively are the teaching standards being maintained
- i. Continuous/Internal assessment (60%) and End Semester Examination (40%) shall be cleared separately with minimum 50% marks. However, the cumulative result shall be calculated as per NUMS Grading Policy
- j. These assessments will have different weighting as given below, that contribute towards the overall assessment in percent marks.

Nature of Examination	Weightings	
Quizzes	5%	
Sessional examination	10%	

Mid semester examination	25%	60 %
Practical/Assignments/Presentation	20%	
Final semester examination	40%	40 %
Total	100%	

k. Ratio of theory and practical will be adjusted as per their credit hours division e.g in case of course 4(3+1), the weightage of practical shall be 25%

l. Quizzes/ Sessional Tests/ Mid-Semester Examinations

- 1) Assessment tool for quizzes, sessional and mid semester exams shall be decided by the course instructor
- 2) Quizzes, sessional exams and Mid-Semester examination of each course shall be evaluated by the respective course instructor. Results will be sent to the Controller of Examination through Institutional Examination Cell
- 3) Whenever a student misses mid-semester examination/ sessional test due to reasons acceptable to the Departmental Board of Studies, make up test may be arranged within the 04 weeks

m. Practical/Assignments/Presentation

- 1) Practical examination is the responsibility of the course instructor and DBS
- 2) Assessment tool for practical exams shall be decided by the course instructor as per the course requirement. Proposed assessment tools for different programs are:

For PG Programs (Basic Sciences & Pathology)		
Assessment	40	20%
▪ Critical Appraisal of Article/ Assignment	10	05%
▪ OSPE/ Practical/ Viva/ Assignments/Presentations etc	30	15%
For Clinical Sciences Programs		
Assessment	40	20%
▪ Portfolio/ Log book	10	05%
▪ OSCE (at least 07 stations)/ Short case/Assignments/Presentations etc	30	15%

n. Final Semester Examinations:

- 1) The end semester theory paper of each course shall be prepared and evaluated by the panel of examiners approved by the Controller of Examinations
- 2) Assessment blue prints shall be developed by the Departmental Board of Studies as per the requirement of their subject based on NUMS template (Annex-G) out of two options as per the subject requirement

- 3) There will be no supplementary/ special examination for end semester exam and if a student fails in a course, he/she is required to repeat it
- 4) Whenever a student misses End Semester Examination due to a reason acceptable to the Dean/ HoD provided his/her attendance is not less than the program requirement, he/ she can appear in the examination whenever offered.
- 5) The HoD and Institutional Deputy Controller of Examinations shall supervise and oversee the conduct of examination in the departments

o. Course File

The faculty member of each course shall invariably maintain a course file covering such details of the course like syllabi, examinations, student gradations and students' problems and measures taken for their resolution etc., provided that once the University's automation system is designed and applied, such files and records etc., may be maintained in the system accessible by all the authorized persons. Course Files and Dossiers of Students and faculty shall be made accessible to External Experts during Program Review and Institutional Performance Evaluation Visits by IPE Team of HEC / QA Dte.

CHAPTER XI

NUMS GRADING POLICY

1. Grade Point Average

- a. The student's final assessment shall be done by Grade Point Average (GPA).
- b. For calculation of GPA, absolute grading on the scale of 4.00 points shall be used
- c. Following grade calculations are used as per HEC policy for use by all concerned:

S No	Percentage	Grade Points	Grade
1	85 & above	4.00	A
2	84	3.93	A-
3	83	3.86	
4	82	3.80	
5	81	3.73	
6	80	3.66	
7	79	3.60	B+
8	78	3.52	
9	77	3.46	
10	76	3.40	
11	75	3.33	
12	74	3.24	B
13	73	3.16	
14	72	3.08	
15	71	3.00	B-
16	70	2.88	
17	69	2.77	
18	68	2.66	C+
19	67	2.58	
20	66	2.50	
21	65	2.42	
22	64	2.33	

S No	Percentage	Grade Points	Grade
23	63	2.22	C
24	62	2.11	
25	61	2.00	
26	60	1.88	C-
27	59	1.77	
28	58	1.70	
	Below 58	0.00	F

d. Computation of GPA/ CGPA and Degree Award

GPA is a figure ranging from 0.00 to 4.00 used to indicate the performance of a student in the semester. It is calculated as follows:

$$\text{Semester Grade Point Average (GPA)} = \frac{\text{Sum over all courses in a semester (course credit hrs x grade point earned)}}{\text{Total Semester Credit Hours}}$$

$$\text{Cumulative Grade Point Averages (CGPA)} = \frac{\text{Sum over all courses in all Semester (Courses Crd Hrs x Grade Point Earned)}}{\text{Total Semester Credit Hours}}$$

- e. Minimum qualifying CGPAs for PhD and MPhil/ Master programs shall be 3.00 and 2.50 respectively and for Undergraduate programs shall be 2.00
- 2. **Academic Deficiencies.** A student who obtains one or more of the following grades in the semester result shall be considered academically deficient:
 - a. Semester GPA less than 2.00 for PG programs and 1.70 for UG programs
 - b. Earns CGPA less than 3.00 for PhD, 2.50 for MPhil/Masters programs and 2.00 for UG programs *in any semester other than first semester* or after completion of the coursework
 - c. 'F' grade in any course
 - d. 'I' (incomplete) grade in any course.
 - 1) **Award of Grade "F".** "F" grade is awarded on the basis of:
 - a) Academic failure i.e. below 1.70 GPA in any course of PG programs and below 1.00 in any course of UG programs
 - b) Attendance less than 75% in any course (85% for Nursing programs)
 - 2) **Incomplete "I" Grade.** An incomplete "I" grade will be awarded by the faculty only in exceptional cases only when where beyond the control of a student such as serious accident, family tragedy, serious health ailment, etc. The grade will be approved by the concerned Dean provided the attendance of a student is not less than 75% (and 85% in case of nursing program). The student will be given a proper grade after examination as per NUMS grading policy without prejudice to the previous grade "I". In case a student fails to make up the required score, s/he will be awarded an "F" grade
- 3. **Recommendations for Academic Deficiencies**

The cases of academically deficient students shall be discussed in the Departmental Board of Studies meeting and issue one of following recommendations where applicable, as mentioned below:

 - a. Warning - issued to the student by the concerned HOD
 - b. Probation.
 - c. Withdrawal.

For probation and withdrawal, recommendations shall be sent to Controller of Examination NUMS who will notify it in the result.
- 4. **Warning.** A PG student should be placed on warning under the following condition at the time of declaration of semester result by Controller of Examination of the University:
 - a. Semester GPA less than 2.00
 - b. CGPA 2.50-3.00 for PhD and between 2.00 - 2.50 for MPhil/Masters programs
 - c. Failing in any paper(s)
 - d. While on warning, a student is to:
 - 1) Contact concerned faculty for guidance.
 - 2) Improve semester work comprising home assignments, laboratory reports, quiz, mid semester and the marks obtained
- 5. **Probation.** A PG student should be placed on academic probation under the following conditions:
 - a. CGPA less than 2.00
 - b. Maximum two probations

- c. While on probation, a student is to:
 - 1) Contact concerned faculty for guidance.
 - 2) Improve semester work comprising home assignments, laboratory reports, quiz, mid semester and the marks obtained

6. Withdrawal

A student is recommended for withdrawal from the University on the recommendation of Dean/ HOD, by Registrar Directorate NUMS subject to any of the conditions listed below:

- a. Earns four F grades or more in first semester only
- c. Cannot complete his/her degree requirements within the maximum stipulated time, even if s/he utilizes the summer semester.
- d. A student who remains absent for more than 45 days continuously without valid reasons
- e. **Withdraw from a Particular Course**
Students can withdraw from a particular course with the consent of the concerned dean. Students can withdraw from a maximum of 01 courses in one semester. This should be within four week after the start of classes.
- f. More than two academic probations.
- g. Students with CGPA less than 1.70 in two consecutive semesters of the program even after attending summer semester. However, he will be eligible to seek re-admission if applied for in the next available admission season. Re-admission will be allowed only once on payment of full admission fee
- h. PhD students if fails twice in the comprehensive examination or fails to qualify coursework requirements including comprehensive examination within 03 years.
- i. On consistent unsatisfactory academic performance when reported by the supervisor of the PhD students
- j. A student can seek withdrawal from any program at any stage of his degree on his own request duly recommended by supervisor and for PhD students by Supervisory Committee of the Institute/ College and take readmission within two years from the stage on which withdrawal was taken

Note: *If a student is likely to be withdrawn on academic deficiencies, s/he will be duly warned and counseled.*

7. Repeating Courses

- a. If a student gets 'F' grade, he will be required to repeat the course or its recommended alternate, if any. However, "F" grade obtained earlier will also be recorded on the transcript. A student who fails in a subject, and after repeating fails again the number of F's counted in this case will be one "F" only
- b. It is the student's responsibility to clear the failed / dropped courses, subject to availability of resources at the respective institution and approval of Dean / Associate Dean / HoD

- 8. **Improvement of CGPA.** A student may repeat a course, within the maximum permissible duration, to improve his/her CGPA subject to the following provisions:

- a. Course may be repeated/improved in summer semester or when the course is offered.
- b. The student should register for the course(s) to be repeated after formal permission from the respective HoD.
- c. The student shall not be allowed to improve his/her CGPA after completion of the degree.
- d. The terms and conditions of repeat courses shall be the same as per regular courses.
- e. Students may repeat a course with grade "C" & below, however if a PhD student's CGPA is less than 3.00, he/ she may repeat course/s with grade "B-" & below to qualify for comprehensive examination.
- f. A student may repeat up to three (03) courses in the PG program. In such a case, both the course and the grade obtained will be recorded on the transcript, however, only the better grade shall be calculated in the CGPA. In case of CGPA improvement, it would be recorded with (Imp) on the transcript
- g. A student can repeat the course twice if he desires to improve the grade.

CHAPTER-X

OTHER REGULATIONS

1. Indiscipline in Examinations

- a. Any candidate found guilty of following matters; his/her case will be submitted to Unfair Means Cases Committee constituted by the University. This committee will be constituted of 02 senior faculty members, Director of student's affairs, headed by senior Professor of the University.
 - 1) Removes a leaf from his/her answer book, the answer book shall be cancelled.
 - 2) Submits forged or fake documents in connection with the examination.
 - 3) Commits impersonation in the examination.
 - 4) Copies from any paper, book or notes.
 - 5) Mutilates the Answer Book.
 - 6) Possesses any kind of material, which may be helpful to his/her in the examination.
 - 7) Does anything that is immoral or illegal in connection with the examination and which may be helpful to him/her in the examination.
 - 8) Refuses to obey the invigilation staff or refuses to follow the instructions issued by the University in connection with the examination.
 - 9) misbehaves or creates any kind of disturbance in or around the examination centre
 - 10) Uses abusive or obscene language on the answer script.
 - 11) Possesses any kind of weapon in or around examination centre.
 - 12) Possesses any kind of electronic device which may be helpful in the examination
- b. His/her case shall result in penalties keeping in view the nature and intensity of offence.
 - 1) Cancellation of paper
 - 2) Suspension from programme for one semester.
 - 3) Heavy and light Fine
 - 4) Expulsion forever from the University.
 - 5) Any other.
- c. All serious cases of indiscipline shall be subjected to enquiry by the Unfair Means Cases Committee will decide that the student will have to appear in summer semester/with regular semester for the cancelled paper provided that nothing will restrict the inherent powers of the Vice Chancellor to award any suitable punishment in any disciplinary case without reference to the said committee
- d. While dealing in student disciplinary cases, the principles of natural justice shall not be compromised under any circumstances even in the situations where such cases are decided on summary basis.
- e. If a student is not satisfied by the decision of the Unfair Means Cases Committee, s/he can submit his/her appeal within a week after the decision of the Committee to the Vice Chancellor whose decision will be final

2. **Rechecking of Examination Script.** The answer book of a candidate shall not be re-assessed under any circumstances.
 - a. Whereas the re-checking does not mean re-assessment/re-evaluation/re-marking of the answer book. The Controller of Examination can arrange for re-checking of examination script by any faculty member from the relevant discipline on the complaint/request of students. The Controller of Examination or any officer or rechecking committee appointed shall see that:
 - 1) There is no computational mistake in the grand total on the title page of the answer book
 - 2) The total of various parts of a question has been correctly made at the end of each question
 - 3) All totals have been correctly brought forward on the title page of the answer book
 - 4) No portion of any answer has been left un-marked
 - 5) Total marks in the answer book tally with the marks sheet
 - 6) The hand-writing of the candidate tally in the questions/answer book.
 - b. The candidate or anybody on his behalf has no right to see or examine the answer books for any purpose
 - c. The marks of a candidate could even decrease in light of (a) (3) above. In the event of reduction of marks, the record shall be corrected accordingly and revised transcript will be issued.
3. **Medical Certificate:** Medical certificate from a registered medical practitioner duly endorsed by the University Medical Officer is acceptable for the examination purposes
4. **Permission of Writer for Special Students:**
 - a. A visually impaired student may be allowed to attempt examinations on Braille/ computer/ any other specialized means of facilitation.
 - b. In case a student is physically handicapped/visually impaired, he may in advance apply to HoD with acceptable proof of disability or impairment at least two weeks before the start of examination, for permission to engage a writer in tests/ examinations. Such student shall be allowed 45 minutes (maximum) extra time for a question paper.
 - c. The qualification of the person who acts as writer of a handicapped student must be at least one step lower than that of the student.
5. **Damaged/ Lost Answer Script:** In an exceptional case where an answer script is damaged, lost or destroyed due to unavoidable circumstances, the student concerned may be given following options:
 - a. Average marking shall be awarded to the student in that subject/ course
 - b. In case of final examination, if the candidate desires so, s/he shall be given another chance as a special case to take examination in that subject/ course in the next examination and no examination fee shall be charged from the student
 - c. In case of internal assessment, if the candidate desires so, s/he shall be given another chance as a special case to take the Make-up assessment in that subject/ course in the same academic session

6. Medals and Awards

- a. University medals/awards and distinction certificates shall be given to the students in view of their academic performance in various examinations and academic exercises or activities as decided by the Award Committee.
- b. Degrees and medals shall be awarded at the time of “convocation”. The concerned students entitled to such recognitions shall be informed in advance.
- c. The Award Committee shall have powers to recommend to the Vice Chancellor to withdraw or cancel any medal/award or distinction in circumstances of exceptional nature
- d. Positions would be decided on the basis of CGPA. In case two or more students have the same CGPA, the position would be decided on the basis of percentage among those students. No medal and award will be awarded in the case of improving CGPA in semester system.

7. Matters Related to Degree/Transcript Award

a. Transcript.

- 1) Examination Directorate may issue two types of transcripts i.e. interim and final.
- 2) Interim transcript shall be issued to such students who have not completed their programs. It will show the grades of all semesters which a student has completed along with GPA/ CGPA. It will show program status as well. In MBBS/BDS, it will show marks/ percentage of all subjects in every professional examination
- 3) Final transcript shall be issued to the students who have completed their degree requirements showing complete academic record of the students along with GPA/ CGPA in semester based programs and show marks/ percentage of all subjects in every professional examination. It will show program status as well with academic honor, if any.
- 4) The final transcript shall at least cover the following information:
Front:
 - a. Name of student, father's name, date of birth, registration number/ roll number.
 - b. Name of the program.
 - c. Date of admission into degree program.
 - d. Semester wise break-up with dates.
 - e. Subjects detail along with credit hours.
 - f. Type of enrollment - full time or part time.
 - g. Picture of the applicant be printed on transcript date of completion of degree requirements.
 - h. Date of completion of degree requirements.
 - i. Mode of study - regular or private or distance learning.
 - j. Online result verification key/ID (front side at the end of the transcript).
 - k. GPA/CGPA and overall percentage against earned CGPA (at the end of the front side of transcript) for semester based programs.

Back:

- a. Basic Admission Requirement of the Programme
 - b. Previous Degree held by the Student along with Institution Name
 - c. Credit Hours Exempted/ Transferred if any/ applicable.
 - d. CNIC No. for Pakistani and Passport No. for Foreign Students
 - e. Grading System must be mentioned on Back Side of the Transcript
 - f. Charter Date of the University/ DAI may be mentioned
 - g. Name of Campus/ College be mentioned along with HEC Permission Date
 - h. Signature of Issuing Officer(s) (Front and Back Side at the end of the Transcript)
 - i. The degree/ diploma/ transcript must have the water-mark seal on it.
- 5) **Duplicate Transcripts.** The students may request for additional or duplicate copies of transcripts on payment of prescribed fee. Each type of transcript shall depict transcripts definition and legend of grades on its reverse side

b. Award of Degree.

- 1) Degrees shall be issued against payment of prescribed fee.
- 2) Urgent degree can be issued upon the request of student on payment of special fee, if any.
- 3) Duplicate degree may be issued (with completion of all requirements) to a student in case the original degree is lost/damaged or in case of change in the name of candidate. The duplicate degree shall be signed by the Controller of Examinations only

ANNEX-A**NUMS BOARDS & COMMITTEES****1) Advanced Studies and Research Board (AS&RB)****a. Composition**

- (1) Pro-Vice Chancellor as Chairperson.
- (2) Deans of concerned faculties.
- (3) Head of departments of college/ institute (conducting PhD programs).
- (4) Professor/ Associate professor/ Assistant professor (by nomination)
- (5) Director Academics
- (6) Director Academics (Clinical)
- (7) Director QA
- (8) Director ORIC.
- (9) Controller of Examinations.
- (10) Deputy Registrar (Secretary of the Board)
- (11) Chairperson may co-opt other members as required.

b. Terms of References

- (1) Review and recommend all matters connected with the promotion of advanced studies and research in NUMS as per HEC requirements.
- (2) Approve the proposed academic calendar before the initiation of session
- (3) Recommend any change in academic or examination policy before the start of session
- (4) Approve new/revised curriculum before implementation of any postgraduate programs
- (5) Propose rules and policy regarding the award of Master/MPhil / PhD degrees.
- (6) Review and monitor the overall quality of postgraduate Programs
- (7) Approve panels of the subject experts for PhD entrance test.
- (8) Approve synopses of PhD scholars.
- (9) Ensure the quality of PhD comprehensive examination.
- (10) Approve panels of names of foreign thesis evaluators for PhD students.
- (11) Approve the thesis reports from foreign evaluators.
- (12) Perform such other functions as may be specified by VC

2) Faculty Board of Studies (FBS)**a. Composition**

- (1) Dean as Chairperson.
- (2) Heads of the Departments associated with concerned faculty.
- (3) Faculty/other co-opted members by nomination.
- (4) Director Academics /NUMS representative
- (5) Secretary as nominated by the Dean.

b. Terms of References

- (1) Formulate policy on academic matters and research related to their discipline.

- (2) Propose the curriculum including contents, table of specifications and assessment scheme for new academic programs.
- (3) Recommend regular revisions of curricula of existing academic programs.
- (4) Recommend admission/selection criteria/seats for new academic programs to be started in the university.
- (5) Evaluate the proposals for the launch of new post graduate programs and making recommendations to the Academic Council for approval.
- (6) Monitor academic performance of postgraduate students
- (7) Approve biannual progress reports of post graduate students.
- (8) Recommend panels of external evaluators of thesis for PhD students to Advanced Studies Research Board (AS & RB).
- (9) Recommend award of PhD degree to the successful students for approval by AS& RB.
- (10) Perform such other functions as may be specified by Vice Chancellor

3) Board of Studies (BOS) Colleges/Institutes

a. Composition

- (1) Head of College/Institute as Chairperson.
- (2) Heads of the Departments.
- (3) Heads of attached teaching hospitals
- (4) Faculty/other co-opted members by nomination.
- (5) Director Academics /NUMS representative
- (6) Secretary as nominated by the Head of the College/Institute.

b. Terms of References

- (1) Formulate policy on academic matters and research related to their discipline.
- (2) Ensure implementation of the University's academic and research policy in their Colleges/Institutes.
- (3) All academic matters of the College/Institute shall be considered in BOS.
- (4) Send recommendations of the BOS to the Academic Council for consideration and approval.
- (5) Ensure the desired quality of academic programs and proper clinical training of the students in the hospitals etc.
- (6) Send demands of the required faculty to NUMS Secretariat as per criteria of HEC/regulatory authorities.
- (7) Consider and recommend promotion cases of the faculty.

4) Departmental Board of Studies

a. Composition

- (1) Head of Department as Chairperson
- (2) All Professor and Associate Professor of department

- (3) 02 Assistant professor/ Lecturer of the Department
- (4) 01 External Professor or Associate Professor
- (5) Any other Member(s) co-opted by Chairperson

b. Terms of References

General

- (1) Review the curriculum prepared by the departmental curriculum committee whenever the need arises.
- (2) Support the Board of Studies of college/institute in the development and implementation of the departmental educational strategy
- (3) Recommend the examiners to the Examination Directorate NUMS for end semester examination.
- (4) Ensure that recommendations relating to all academic programs in reports of periodic reviews and accreditation exercises by professional, statutory regulatory bodies are appropriately addressed.
- (5) Ensures that faculty's feedback on curriculum and teaching/research environment is collected and remedial measures are taken, if needed
- (6) Ensure that appropriate mechanisms exist to consider students' views/feedback on curriculum, learning, teaching, assessment and research degree supervision
- (7) Monitor the quality and standards of all programs
- (8) Consider any other matters relating to educational provision referred to it by the board of studies or the university.
- (9) Ensure that folders/dossiers of students and faculty members are properly maintained
- (10) Ensure that appropriate teaching/research resources are available in the department.

Conduct of Semester

- (1) Develop academic/research plan before the commencement of semester
- (2) Identify the course instructors, program team and coordinators
- (3) Review the curriculum and makeup any deficiency in curriculum for smooth conduct of the program.
- (4) Ensures that all quizzes, sessional and mid-term semester exams are conducted timely.
- (5) Retake of midterm/semester examination are decided by the Departmental Board of Studies, based on the acceptable reason within four weeks but not later than four weeks.
- (6) Evaluate the Internal assessment results of the students before submission to Examination Directorate NUMS
- (7) Provide the incomplete grade of the student if any to the examination directorate NUMS.
- (8) Evaluate the overall performance of the students and decide remedial measures, if required

- (9) Prepare Self-Assessment Report of their programs being conducted by the department

5) Postgraduate Admission Committee (Constituted by the Vice Chancellor)

a. Composition

- (1) Pro VC (Academics) - Chairperson
- (2) Head of Institute/Dean
- (3) Head of concerned department
- (4) HEC approved supervisors from concerned department
- (5) Director Academics
- (6) Deputy Director Admissions
- (7) Any coopted member by the Chairperson

b. Terms of References

- (1) Review the documents required for admission/GAT General/ NUMS entrance test score.
- (2) Interview the potential postgraduate candidates.
- (3) Assess the suitability of the candidates as per prescribed criteria of NUMS and regulatory authorities for the relevant programs.
- (4) Approve the final merit list of students for academic programs.

6) Postgraduate Curriculum Committee

a. Composition

- (1) Dean of concerned faculty as Chairperson
- (2) Director Academics/ Director Academics(clinical)
- (3) One representative from NUMS Examination Directorate
- (4) One representative from NUMS Department of Health Profession Education
- (5) Head of Department along with at least two members from concerned faculty
- (6) One external member (industry/ R&D organization)
- (7) One student representative
- (8) One Alumnus
- (9) Any other Member(s) co-opted by Chairperson

b. Terms of References

- (1) Oversee the Academic Governance of the following aspects of the University's curricula:
 - i. The overall composition and profile of the University's courses
 - ii. Development of the curriculum comprising of:
- (2) Objective/ Outcome
- (3) Scheme of studies i.e. total credit hours, duration, list of courses
- (4) Course content
- (5) Teaching methodology
- (6) Table of specifications

- (7) Assessment tools
- (8) Learning Resources
 - i. Courses review
 - ii. The establishment and disestablishment of courses at the University
 - iii. Major Course Amendments, including gradual changes over time. Major Course Amendments include changes to:
 - a) Course title;
 - b) Qualifications awarded;
 - c) Course level learning outcomes affecting more than 30% of the course (e.g. through the introduction of a new major or a concomitant increase or reduction in overall volume of learning);
 - d) Design or delivery of the course that engenders markedly different graduate attributes
 - e) Individual units of study and Minor Course Amendments are dealt with at the Faculty level
- (9) Recommendations for effective implementation of curriculum including teaching methodologies and assessment tools to meet best global standards.
- (10) Revision of existing curriculum/syllabi after every 3 years or when necessary
- (11) Evaluation of the curriculum in order to ensure that educational outcomes are achieved
- (12) The Curriculum Committee will consider proposals for the establishment, disestablishment, or major amendment, to a University course. If the proposal is considered to be in order, then the Curriculum Committee will recommend it to the Coordination Committee for endorsement

7) PhD Supervisory Committee (SC)

a. Composition

- (1) Student supervisor with 3 years post PhD experience
- (2) One PhD faculty member from department preferably HoD
- (3) If HoD is not PhD qualified, any other PhD faculty member may be included in the Supervisory Committee (SC).
- (4) Two external PhD qualified members from other institute/ university/ research organization.
- (5) In case of multidisciplinary research, more than two external supervisors may be approved by the Vice Chancellor.
- (6) Fresh PhD or FCPS/ equivalent qualified faculty members/ experts from research organizations may be appointed as co-supervisors for PhD

b. Terms of References

- (1) Provide supervision and guidance to the student.
- (2) Evaluate progress of the student's approved coursework.
- (3) Approve biannual progress reports of the student.

- (4) Make decisions regarding student's performance, or removal from the program if academic progress is unsatisfactory.
- (5) Recommend PhD student's synopsis for approval to AS&RB.
- (6) Recommend panel of foreign examiners to AS&RB.
- (7) Review PhD thesis.
- (8) Approve the PhD candidate's thesis after open defense

8) Graduate Advisory Committee

a. Composition

Graduate Advisory Committee shall comprise of three PhD or FCPS/MPhil degree holders in the relevant subject with 4 years post qualification experience: two from the department including HoD and student's supervisor (if supervisor is HoD then any other member from the department) and one external members from other institute/ university/ research organization. In case of multidisciplinary research, more than two external supervisors may be approved by the Vice Chancellor.

b. Terms of References

- (1) Provide supervision and guidance to the student.
- (2) Evaluate progress of the student's coursework
- (3) Approve biannual progress reports of the student
- (4) Approve synopsis of students.
- (5) Conduct the defense of thesis of students.
- (6) Approve the student's thesis.

9) Institutional Review Board and Ethics Committee for Research (IRB&EC)

a. Composition

Seven members including one Chairperson and six or more persons nominated by the Principal/ Commandant/ Dean from within or outside NUMS depending upon kinds of expert opinion needed in the research work involving human subjects.

b. Terms of References

- (1) Review the research proposals involving human/ animal whether individuals or communities, and ensure that the conditions that could affect rights of the subjects during a study are approved before the study begins.
- (2) Identify ethical issues or concerns posed by research involving human and animal subjects.
- (3) Undertake fair and reasonable assessment of proportionality of risks and benefits for the individuals and community in order to secure such individuals/community wellbeing by maximizing possible benefits while minimizing risks.

ANNEX-B**NUMS CHECKLIST FOR DEVELOPMENT OF CURRICULUM**

S #	Documents Required	Attached		
		Yes	No	Annex
1.	Exact title of program that will appear on the degree			
2.	Program need assessment			
3.	Brief Introduction of the Program			
4.	Scope and employment perspective of program			
5.	Mission of the Program			
6.	Outcome of the Program			
7.	Expected competencies			
8.	Entry Requirement of Program			
	• Admission criteria			
	• Admission test/ interview/ Merit computation			
	• Number of students			
9.	Program Details			
	• Academic Calendar			
	• Scheme of Study (course titles, course codes and credit hours)			
	• Course outcomes/ objectives			
	• Course contents/assignments/projects			
	• Teaching methodologies/instructional strategies			
	• Assessment tools			
	• Learning resources/ references			
10.	Faculty			
	• List of teaching faculty in relevant field (minimum six as per HEC requirement)			
	• List of staff other than faculty			
11.	Educational Resources/ Administrative Structure			
	• Library			
	• Laboratories			
	• Lecture halls etc			
12.	Students advisory services			
	• Communication with the students			
	• Career Guidance			
	• Counseling Service			
13.	Examination/ Assessment			
	• Formative assessment			
	• Summative assessment			
14.	Program Evaluation			
	• Feedback process by students and faculty regarding course, faculty and overall program			

ANNEX-C**CHECKLIST: LAUNCHING OF PhD/MASTERS/EQUIVALENT PROGRAMS**

S #	HEC Criteria	Attached		
		Yes	No	Annex
1.	Act/Charter of the University to offer the said program			
2.	Approval of the University statutory body to start/launch new program			
3.	NOC of accreditation Council to launch a professional program (if applicable)			
4.	Exact title of program that will appear on the degree			
5.	Brief Introduction of Program			
6.	Vision/Mission of the Program			
7.	Objective to offer Program			
8.	Entry requirement of Program			
9.	Number of students			
10.	Scope regarding market, social and employment perspective of program			
11.	Curriculum of the program			
	• Learning objectives			
	• Course content			
	• Learning outcomes			
	• Teaching methodologies/instructional strategies			
	• Learning resources			
	• Table of specifications of each course			
12.	Duration of the program and semester-wise course breakdown			
13.	Attested copy of list of existing faculty (faculty registration certificates, appointment letter and leave applications)			
14.	List of staff other than faculty alongwith salary slip (Current and last one year)			
15.	There is a requirement of appointing full time relevant PhD faculty (minimum two PhDs for launching an MS/MPhil/equivalent program and three PhDs for a PhD/Equivalent program). Please provide copies of following documents in respect of each PhD faculty member			
16.	For PhD Program Only PhD thesis review policy (by two foreign experts from technologically/academically advance countries and one local reviewers/ committee.			
17.	For PhD Program Only There is a requirement of research papers in HEC recognized journals (only published (not accepted) papers shall be considered to the credit of PhD scholar.			
18.	Please provide copies of the following documents in respect of each PhD faculty members:			
	a) Appointment order/notification			
	b) Joining report along with current statuses of employment			
	c) CV along with one recent passport size photograph			
	d) Copy of PhD and MS/MPhil/Equivalent degrees and their translation in English (if required)			
	e) Copy of transcripts of grades of PhD and MS/MPhil/Equivalent degrees			
	f) Abstracts of theses of PhD and MS/MPhil/Equivalent degrees			
	g) Equivalent certificate in case of foreign degrees (if applicable)			
	h) Area of specialization			
	i) Copy of CNIC			

Name of HoD: _____

Signature of HOD: _____

Email address of HoD: _____

Contact # (cell & Off #): _____

ANNEX-D**TEMPLATE FOR COURSE FILE**

Institution:	Department:
---------------------	--------------------

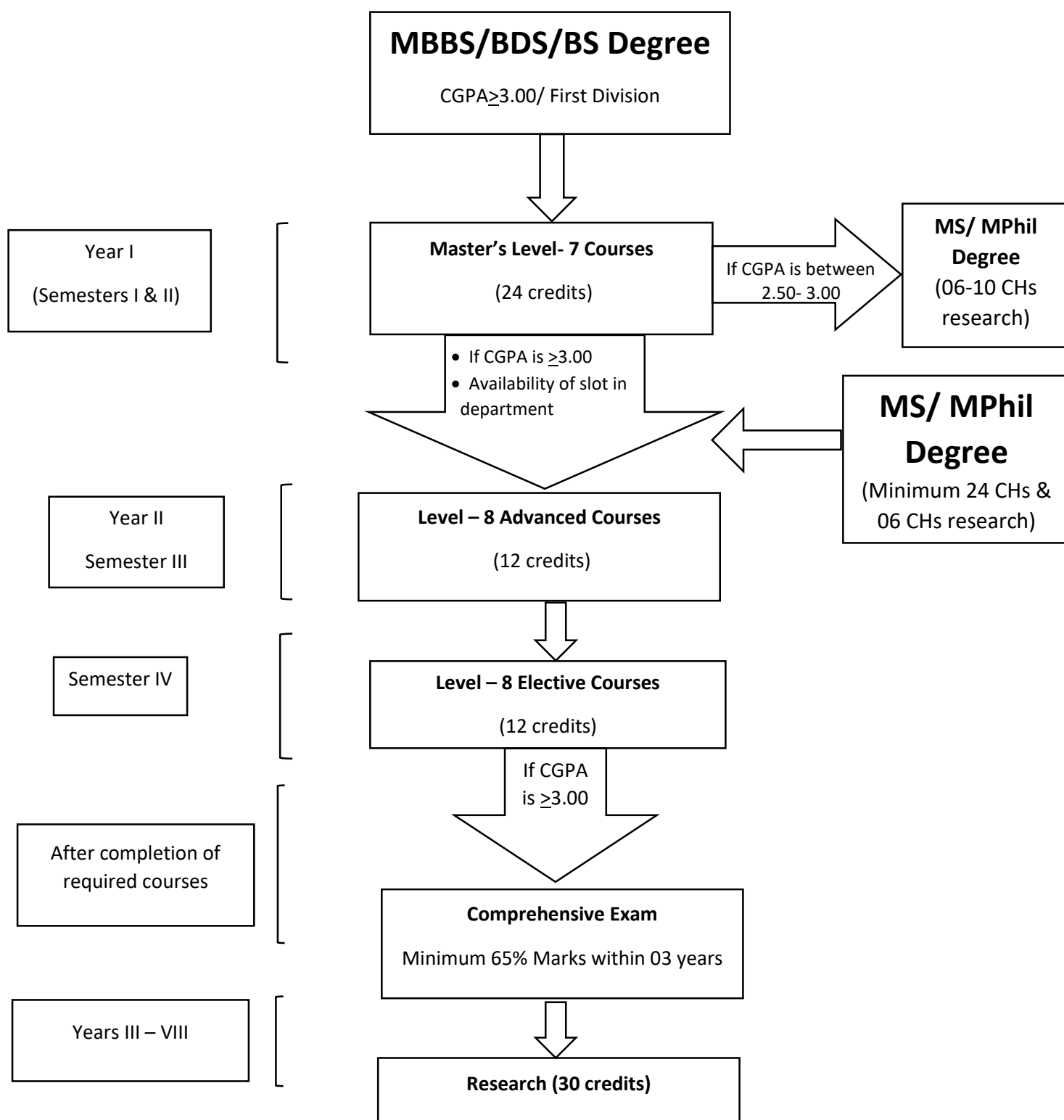
S. No	Documents	Yes	No
1.	Course Code and Title		
2.	Description of course/learning outcomes		
3.	Course Syllabus		
4.	Weekly teaching Schedule		
5.	Dates of mid-semester examination		
6.	Grading Policy: Quizzes, Mid-semester examination and final examination		
7.	Assessment type and schedule		
8.	Copy of each homework assignment		
9.	Copy of question papers for Quizzes		
10.	Copy of question papers for mid semester examination		
11.	Copy of question papers for final/ semester end examination		
12.	Data on the grades obtained by students		
13.	Difficulties/problems faced by the teacher and students during course.		

Name of Course Instructor: _____

Signature: _____

Date: _____

CONDUCT OF PhD PROGRAM

ANNEX-E

ANNEX-F**POSTGRADUATE (PG) FORMS (Downloadable from NUMS website)**

S. No	Form No	Title
i.	PG-01	Post-graduation Registration Form
ii.	PG-02	Migration/Transfer of Credit Application Form
iii.	PG-03	Request for Freezing of Semester
iv.	PG-04	Appointment of Supervisor/Co- Supervisor
v.	PG-05	Willingness of the Supervisor/Co-Supervisor
vi.	PG-06	Appointment of Supervisory Committee
vii.	PG-07	Petition for Change in Supervisory Committee
viii.	PG-08	Semester Assessment/Examination Results
ix.	PG-09	Improvement/Repeat Course Form
x.	PG-10	Bi-annual Progress Report
xi.	PG-11	Report of Qualifying Examination Comprehensive Exam
xii.	PG-12	Synopsis Submission Form
xiii.	PG-13	Institutional Review Board Approval Letter
xiv.	PG-14	Schedule for Synopsis Presentation
xv.	PG-15	Synopsis Evaluation Request
xvi.	PG-16	Synopsis Evaluation Report
xvii.	PG-17 (a)	Synopsis Approval/ Qualifying Examination (B) Report
xviii.	PG-17 (b)	Change of Synopsis Title/ Project
xix.	PG-18	Publication Record
xx.	PG-19	Thesis/Dissertation Submission/ Verification
xxi.	PG-20	Acknowledgement Receipt of Thesis/ Dissertation
xxii.	PG-21 (a)	Thesis Evaluation Request for Master programs
xxiii.	PG-21 (b)	Dissertation Evaluation Request for PhD programs
xxiv.	PG-22	Thesis/Dissertation Evaluation Report
xxv.	PG-23	Dissertation Foreign Evaluation Report
xxvi.	PG-24 (a)	Schedule for Thesis/Dissertation Presentation
xxvii.	PG-24 (b)	Abstract Submission
xxviii.	PG-25	Final Thesis/Dissertation Grading Report
xxix.	PG-26	Final Thesis/Dissertation Approval Report
xxx.	PG-27	Check List for Approval of Degree

ANNEX-G**END SEMESTER EXAMINATION****Theory Paper****Option I - Medical & Biological Sciences Programs**

Assessment tool	Selected Response Questions	Constructed Response Questions
	Single Best MCQs	SAQs/SEQs/Essay Questions
Number	25 - 60	07 - 10
Weightage	40%	
Time	120 - 150 minutes	
Marks	As decided by Departmental Board of Studies	
Level of difficulty	Application	

Option II- Social Sciences/ Humanities/ Education/ Management Programs

	Total time: 150 minutes Total Marks: 80 Marks
Assessment tool	Essay questions
Number	06 - 08
Time	18 - 25 minutes / question
Total Marks	10 - 14 marks / question
Weightings	Total: 40%
Level of difficulty	Application

ANNEX-H**STUDENTS' FEEDBACK PROFORMA**

Academic year 2021 Semester First Date of feedback _____

Please mark appropriate column by ✓

(Rating: **1** - Excellent, **2** - Very good, **3** - Good, **4** - Fair, **5** - Below average)

Name of Course:		Course Code:				
Core Questions: Course		1	2	3	4	5
1.	Course outcomes/contents were clearly mentioned & provided at the start of course					
2.	Course contents were aligned with learning outcome					
3.	Teaching and learning methods encouraged your participation					
4.	Time allocated to the course was sufficient and manageable					
5.	Learning environment was comfortable and conducive to learning					
6.	Learning resources were relevant & helpful					
7.	The provision of learning resources in the library was adequate and appropriate					
8.	The course stimulated my interest and thought on the subject area					
9.	Assignments were helpful for learning of core concepts					
10.	Practical / skill development sessions were helpful for learning of core concepts					
11.	Assessment was in line with the provided Table of Specifications					
12.	Methods of assessment were appropriate					
13.	Satisfied with over all conduct of the course					
Core Questions: Faculty		1	2	3	4	5
1.	The Instructor is prepared for each class					
2.	The Instructor demonstrates knowledge of the subject					
3.	The Instructor has completed the whole course					
4.	The Instructor provides additional material apart from the textbook					
5.	The Instructor communicates the subject matter effectively					
6.	The Instructor shows respect towards students and encourages class participation					
7.	The Instructor maintains an environment that is conducive to learning					
8.	The Instructor is punctual					
9.	The Instructor is fair in examination					
10.	The Instructor was responsive to student's need and problems					
11.	The Instructor dealt effectively with my problems					
Comments/ Suggestions:						
Name & Signature of the student (Optional): _____						