Self-Assessment Report

M. Phil. Program-2017

Department of Pharmacognosy

Faculty of Pharmacy and Pharmaceutical Sciences

University of Karachi

Submitted to

Quality Enhancement Cell
University of Karachi

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Contents

INTRODUCTION

Pharmacognosy is the oldest medical science since the days when pharmacognosists were physicians themselves. It is one of the five major areas of pharmaceutical education, an interdisciplinary subject which include parts of botany, organic chemistry, biochemistry, pharmacology, zoology, anthropology, geography, ethnomedicine, nutraceuticals, cosmeceuticals, biotechnology etc. This discipline covers wide range of topics such as sources of natural products, their chemical composition, medicinal value, distribution, ethno-pharmacological profile, biosynthetic pathways, isolation, evaluation, quality control, standardization etc. Pharmacognosy learning encompasses identification of plant drugs, phytochemistry, extraction methods, separation, purification, identification and structure elucidation of natural products, phytotherapy, biologics, allergens, nutraceuticals, cosmeceutical and toxic manifestation of natural products.

The Department of Pharmacognosy was established in 1973 as one the four departments under the domain of Faculty of Pharmacy. It started off with meager resources and few faculty members. Today it has grown into a well-established department that is the backbone of pharmacy education in the Faculty of Pharmacy and Pharmaceutical Sciences.

In Pakistan there has always been a growing interest in medicinal plants and their active chemical constituents are utilized in the modern system of medicine – allopathy and also in traditional system of medicine – Unani and homeopathic systems. Traditionally, most of the population depends on natural sources of medicine. A vast majority does not have excess to modern medicine hence there is a huge scope to develop cheap drugs from locally available recourses to meet the needs of the country.

The diversity of landscapes and climates in Pakistan provides for hundreds of plant and animal species other than huge marine resources that have largely remained untapped.

To fulfill the national requirement, Department of Pharmacognosy strives to provide professionals who could work in any Pharmaceutical industry or can be instrumental in modernizing herbal drug industry on scientific bases. Our graduates have an array of

opportunities to work. They are developed to work in pharmaceutical, phytopharmaceutical, nutraceutical, cosmeceutical industries, hospitals, research and development, academia, regulatory bodies etc.

Dr. Muhammad Mohtasheem ul Hasan
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CRITERION-1

PROGRAMME MISSION, OBJECTIVES AND OUTCOMES

Criterion-1: Program Mission and Objectives

Institutional Mission

Vision Statement for the Department of Pharmacognosy

The vision of the Department of Pharmacognosy is to prepare a study program that is in line with the most recent developments in the field and produce graduates who could meet the national and international needs in health care. Those enrolled under various programs will study the following topics

- **Natural product chemistry** deals with the study of natural products, their extraction and isolation methods, structure elucidation
- **Pharmacology of natural product** relates to the biological activity of crude drugs and isolated compounds, their toxicities
- **Ethanopharmedicine/Ethnopharmacology**is the subject that deals with the traditional medicine practices by different ethnic groups and indigenous people. It relates to traditional medicine, ethnobotany, ethnopharmacology, anthropology.
- **Marine Pharmacognosy**
  Pakistan's diverse and plentiful marine resources are the most promising avenue for future drug development. It deals with the study of unique chemical composition of marine plants and animals and their biological activity and pharmaceutical value.
- **Biologics** is the study of sources, structures, preparation, description and uses of vaccines, toxins, antitoxins, venoms, antivenins, antiserum and etc.
- **Allergens an Allergenic Preparations** is the topic that describe various types of allergens and the development and preparation of vaccines used for their treatment.
- **Biosynthesis** describesthe various mechanisms through which plants prepare their primary and secondary metabolites, chemotaxonomy and how these pathways can be used to develop synthetic and semisynthetic analogues of natural products.
- **Quality Control/Quality Assurance** Under this subject physical, chemical, and biological methods of analysis are studied to ensure the quality of crude drugs, plant extracts, nutraceuticals and pharmaceuticals.
- **Standardization** methods are developed to produce standardized extracts of plants and other natural resources.
- **Biotechnology** deals with methods for sustainable production of medicinally important natural products to meet the market requirement

The current trend and advancements are incorporated from time to time in board of studies and are made part of the syllabus.

Program Mission Statement (M.Phil.)

The mission of the M.Phil.program is to prepare highly qualified individuals who could bring about meaningful change in health care by exploring new drugs from an array of natural sources, validate the use of traditional/ethnomedicine, develop marketable drug products, discover new drug molecules for allopathic medicine, ensure quality of products based on natural and other sources, develop assay methods, carryoutstandardization of phytopharmaceuticals, prepare biologics, develop nutraceuticals and cosmeceuticals.

They should be able to collaborate with researchers from allied fields to produce applied research to improve the national health care program. Our graduates should be able to conduct epidemiological studies on local population. They should find innovative solutions to deal with endemic diseases like leishmaniasis. They can also play a role in producing low cost medicines by using biotechnology to produce active compounds for local market and export. Some of them may take-up a role in academics or dedicate themselves to research and development institutions at home or abroad.

Standard 1-1: The Program must have documented measurable objectives that support college and Institution mission statements.

During last forty three years, since the inception of the Department of Pharmacognosy, it has been the main objective to document every measure to be taken for the advancement of the program/s. To conform to the mission statement, the objectives are recorded in the form of minutes of Board of Studies, minutes of the board of faculty, yearly faculty catalogue and on some instances departmental catalogue. The modification in the courses, induction of new courses, admission criteria and examination protocols are incorporated in the catalogue.

M.Phil. Program

The Department of Pharmacognosy offers M.Phil. program that provides opportunity to develop deep understanding of the subject through various courses and a research project. Depending on the expertise of the faculty and available resources, students are given opportunity to pursue a topic of their interest thereby prepares synopsis of their research work. The prime objective is to develop researchers who could serve as academics, policy makers; work in research and

development in pharmaceutical, herbal, nutraceutical and cosmeceutical industries, ministry of health, drug regulatory bodies, small enterprises, biotechnology organizations.

Program Objectives (MPhil):

The M. Phil. program is based on 08 courses of 24 cr. hrs. including two compulsory courses i.e. Biostatics and Computer Application in Pharmacy the rest are elective (Advances in Spectroscopic Techniques, Structure Elucidation of Natural Products, Analytical Pharmacognosy, Natural Toxicants, Advances in Pharmacognosy, Advance Phytopharmaceutical Analysis, Cell Biotechnology, Industrial Pharmacognosy, Biosynthesis of Natural Products, Phytomedicine and Standardization of Phytomedicine). The outcome of the program is to enable the student to:

a) have the knowledge of current advances in their field including spectroscopic techniques
b) understand various biosynthetic pathways in plants leading to the production of medicinally important plant metabolites
c) understand how spectroscopic techniques are used to elucidate chemicals structure of natural products
d) consult various resources to analyze and standardize phytomedicines
e) have an understanding about the commercial and industrial application of natural products
f) recognize natural toxicants, their related toxicities, and study their medicinal value
g) produce and analyze data acquired during a course of study
h) utilize computer application to obtain current information about a topic, latest development in the field, utilize soft-wares and various computer programs to present their work
i) work in both modern and herbal pharmaceutical organizations, nutraceutical and cosmeceutical industries, ministry of health, drug regulatory bodies, small enterprises, biotechnology organizations, various drug regulatory bodies, research organizations and teaching institutions

Table: Program Objectives Assessment

M.Phil.

S. No.	Objectives	How Measured	When Measured	Improvement Identified	Improvement Made
1.	Have the knowledge of current advances in their field including spectroscopic techniques	Through written exam. The supervisor also does that while students work on their projects for which they are required to use advance technique	Every academic year and during semester	None	None
2.	Understand various biosynthetic pathways in plants leading to the production of medicinally important plant metabolites	• Through written exams • Students working on the isolation of natural product and their medicinal value cannot do so without sound understanding of these pathways. Successful completion of their work is one such measure	Every academic year and during semester	None	None
3.	Understand how spectroscopic techniques are used to elucidate chemicals structure of natural products	• Through written exams • Students working on isolation of natural product are required to elucidate the structure of compound using spectroscopic techniques. Resolving the spectra is one such measure	Every academic year and during semester	None	None

4.	Consult various resources to analyze and standardize phytomedicines	Number of studies are made and the original research works have been published in reputable Journals	While the work is reviewed for publication	None	None
5.	Have an understanding about the commercial and industrial application of natural products	• Through written exams	Every academic year and during semester	None	None
6.	Recognize natural toxicants, their related toxicities, and study their medicinal value	• Through written exams • In the form of published work	Every academic year and during semester	None	None
7.	Produce and analyze data acquired during a course of study	Our student regularly publish their research work and write thesis which are not possible without interpreting and analyzing the data.	While the work is reviewed for publication	None	None
8.	Utilize computer application to obtain current information about a topic, latest development in the field, utilize soft-wares and various computer programs to present their work	By doing literature survey, writing research and review articles, thesis: interpreting data, presenting their work using these soft-wares and computer programs	While the work is reviewed for publication and when the work is reviewed for publication	None	None
9.	Work in both modern and herbal pharmaceutical organizations, nutraceutical and cosmeceutical industries, ministry of health, drug regulatory bodies, small enterprises, biotechnology organizations, various drug regulatory bodies, research organizations and teaching institutions	Couple of our students are successfully employed in modern and herbal pharmaceutical Industries, drug regulatory bodies, research organizations and most importantly academics in universities	Through various interaction with them at professional forums, personal communication etc.	None	None

PROGRAM OUTCOMES

Standard 1-2:The program must have documented outcomes for graduating students. It must be demonstrated that the outcomes support the program objectives and that graduating students are capable of performing these outcomes.

Program Outcomes

After successful completion M. Phil degree in Pharmacognosy, the student will be able to:

a) utilize current advances and latest techniques for the resolution of issues in health care
b) search alternate sources to acquire the well-known medicinally active compounds or similar compounds to be modified semi-synthetically to yield active molecules
c) do analysis, standardization, quality control of drugs, nutraceutical and cosmeceuticals based on natural products
d) prepare dossier on products for the purpose of registration for local requirement and export
e) have good communication skills to work as academic or otherwise
f) develop and execute projects independently

Standard 1-3: The results of program's assessment and the extent to which they are used improve the program must be documented.

a) Strengths and Weaknesses of the Program.

i) Strengths

Highly qualified, well trained, and dedicated faculty involved in both teaching and research. The faculty has vast experience and exposure to the profession enabling them to mentor students in the best possible way.

All members are extremely enthusiastic about the subject and have ability to keep students motivated. They regularly publish their original research in journals of national and international repute. The faculty has collectively authored, co-authored and edited number of books on topics related to the field. Time and again they collaborated with hospitals, pharmaceutical and herbal industries for their research work.

ii) Weaknesses

Lack of financial resources is the biggest challenge faced by the department. The Dean's research grant awarded every year is only sufficient to partially bear the cost of a single project let alone carrying out several projects.

We also lack well equipped labs. which are essential for quality and quantity of research work produced hence unnecessarily waste the time of students . As a result they get frustrated and many of them leave the program unfinished.

To overcome the lack of resources, the department has to rely on collaboration work that has poorly affected the continuity of several projects.Many a times compromises have to be made on the intellectually higher ideas over less intellectually sound projects just because of what the collaborator is ready to offer.

Lack of fellowship for every student where most of them come form middle or lower middle class and can not pursue higher studies without a steady income is another very important aspect. It forces them to acquire a job and study part time (even after submitting an affidavit). It poorly affects their quality of research work and hampers their intellectual growth.

There is just small library to cater the needs of both graduate and under graduate students from morning and evening programs. Since the undergraduate students outnumber the gradtaute students, it makes the environment overcrowded and none conducive for studying and deep thinking.

Lack of non-teaching staff with technical education/ science education for research labs.is also contributing to delay in finishing research projects during reasonable amount of time.

b) Future Development Plans

To improve the classroom and lab.facilities the department intends to purchase multimedia projector, rotary evaporator, electronic balance, UV/Visible spectrophotometer, plethysmometer, hot plate, etc.

STUDENT ENROLLMENT

Standard 1-4: The department must assess its overall performance periodically

a) Student Enrolment

S. No	Year	M.Phil.
1	2015	09
2	2016	11
3	2017	10

b) Student/Faculty Ratio

Year	M.Phil.
2015	1:1.28
2016	1:2.27
2017	1:2.5

c) Time for M.Phil. isminimum of two years

d) The average student grade point (CGPA)

M.Phil. student are required to maintain a 3.0 CGPA

CRITERION-2

CURRICULUM DESIGN AND ORGANIZATION

Criterion-2 Curriculum Design and Organization

Program of Studies Offered

Semester wise Scheme of Studies for M.Phil. Program

Semester I

S. No	Course Code	Course Title	Credit Hours
1	PHG-821*	Biostatistics	3
2	PHG-823 **	Advances in Spectroscopic Techniques	3
3	PHG-825**	Analytical Pharmacognosy	3
4	PHG-827**	Advances in Pharmacognosy	3
5	PHG-829**	Cell Biotechnology	3
6	PHG-831**	Biosynthesis of Natural Products	3

Semester II

S. No	Course Code	Course Title	Credit Hours
7	PHG-822*	Computer Application in Pharmacy	3
8	PHG-824**	Structure Elucidation of Natural Products	3
9	PHG-826**	Natural Toxicants	3
10	PHG-828**	Advance Phytopharmaceutical Analysis	3
11	PHG-830**	Industrial Pharmacognosy	3
12	PHG-832**	Phytomedicine	3
13	PHG-834**	Standardization of Phytomedicine	3

*Mandatory Courses

** Optional/Elective Courses

The student is required to study 24 credit hour courses. Five courses (15 Cr. Hrs.) in the 1st semester and three courses (9 Cr. Hrs.)in the 2nd semester, while the thesis is mandatory

Standard 2-1: The Curriculum must be consistent and support the program's documented objectives

The following table manifests how the program content (Courses) meets the program objectives.

M.Phil.

Courses	Program's Objectives			
	1	2	3	4
Mandatory	**PHG-821,** Biostatistics	**PHG-822,** Computer		

Courses		Application in Pharmacy		
Elective Courses	**PHG-823 ,** Advances in Spectroscopic Techniques	**PHG-825,** Analytical Pharmacognosy	**PHG-827,** Advances in Pharmacognosy	**PHG-829,** Cell Biotechnology
	PHG-831, Biosynthesis of Natural Products	**PHG-824,** Structure Elucidation of Natural Products	**PHG-826,** Natural Toxicants	**PHG-828,** Advance Phyto pharmaceutical Analysis
	PHG-830, Industrial Pharmacognosy	**PHG-832**, Phytomedicine	**PHG-834,** Standardization of Phytomedicine	
Thesis/ Dissertation	Mandatory			

All course titles conform to the program objectives

Standard 2-2: Theoretical background, problem analysis and solution design must be stressed within the program's core material.

The following table indicates the elements covered in core courses:

M.Phil.

Elements	**Courses**
i) Theoretical Background	1. Advances in Spectroscopic Techniques 2. Analytical Pharmacognosy 3. Advances in Pharmacognosy 4. Cell Biotechnology 5. Biosynthesis of Natural Products 6. Natural Toxicants 7. Advance Phytopharmaceutical Analysis 8. Industrial Pharmacognosy 9. Phytomedicine
ii) Problem Analysis	1. Structure Elucidation of Natural Products 2. Standardization of Phytomedicine 3. Biostatistics
iii) Solution Design	1. Computer Application in Pharmacy

Standard 2-3: The curriculum must satisfy the core requirements for the program, as specified by the respective accreditation body.

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Standard 2-4: The curriculum must satisfy the major requirements for the program, as specified by the respective accreditation body/council.

The curriculum adopted by Institute of Marine Science has been approved by the Higher Education Commission (HEC) and developed by NCRC (Nation Curriculum Revision Committee-HEC), (Last Revised: 2011) approved by competent authority and statutory bodies of University of Karachi. The institute also actively participated in National Curriculum Development &Revision.

Standard2-5: The curriculum must satisfy the general education, arts and other discipline requirements for the Program as specified by the accreditation body.

-NA- for M.Phil.Program.

Standard 2-6: Information technology component of the curriculum must be integrated throughout the program.

-NA- for M.Phil.Program.

Standard 2-7: Oral and written communication skills of the student must be developed and applied in the program.

In M.Phil. Program, the course such as PHG-822 (Computer Application in Pharmacy) along with participation of students in various workshops, seminars and conferences provides enough training to develop good oral and written communication skills. Additionally the written skill also improves when the students write and publish their thesis and research articles.

The department also sends/nominates students to attend seminars and workshops held in other department or institutions about communication skills.

CRITERION-3

LABORATORY AND COMPUTING FACILITIES

CITERION-3: Laboratory and Computing Facilities

Laboratory Facilities

The department has only two labs for its research students housed in Research Institute of Pharmaceutical Sciences; one of it with computer and net-working facilities. We urgently need to appropriately equipped the following labs. tocarry-out research work in different areas of Pharmacognosy

- Chemical Pharmacognosy Laboratory
- Quality Control and Standardization Laboratory
- Microbiology Laboratory
- Bioassay Laboratory
- Pharmacokinetics/ Bioequivalence laboratory

All labs.are required to be equipped with computer and networking facilities.

Computer Facilities

The department does not have a computer lab for the faculty or research students. There is an urgent need to develop such a facility because of the increasing dependence on computer and internet resources. Presently, the students have to shuttle between the department and L.E. J or H. E. J to have free access to large number of international research journals and research articles. A lab equipped with at least 10 computers with internet facility will greatly increase the output of students and faculty.

Internet Facility

It is available in teacher's offices and one of the research labs, but computers are not available for the research students to do their work.

Standard 3-1: Laboratory manuals/ documentation instruction for experiments must be available and readily accessible to faculty and students

There are no written protocols, manuals or documented instructions for students. It is compensated to an extent by giving oral instruction, reference books on the subject or by providing some outlines on lab practices and safety instructions.

Standard 3-2: There must be adequate support personnel for instruction and maintaining the laboratories.

There is no support personnel/s to provide instruction to the students or to maintain the laboratories or facilitate in field work. As a result it becomes very difficult for the students to work and maintain the laboratories. These labs require properly trained and technical staff to fulfill the basic needs of researchers.

Standard 3-3: The University computing infrastructure and facilities must be adequate to support program's objectives

i) Computing Facilities

The department doesn't have adequate networking and computer facilities.

ii)Multimedia

There are two multi- media projectors for Pharm. D (running in both morning and evening), M.Phil. and Ph. D programs. It is an old model which does not support many of the latest soft wares, computer programs and files that require higher resolution.

iii) Website

The university's website www.uok.edu.pk has provided a link for the Department of Pharmacognosy.

iv) Internet

The department has limited internet facility for the faculty and labs provided from main communication network of the university. It is not available to research student because of the non-availability of computers and computer lab. The speed of the internet is gradually decreasing over time and frequently remains unavailable due to technical reasons.

CRITERION-4

STUDENT SUPPORT AND ADVISING

Criterion-4 Student Support and Advising

There is no student advisor for the research students in our department. The faculty members informally provide support, advice, and mentoring. They can freely discuss their concerns with any of the staff they feel comfortable with. They are also facilitated to have interaction with the alumni to exchange ideas and seek advice on career choices.

Standard 4-1: Courses must have been offered with sufficient frequency and number for students to complete the program in a timely manner.

Program	Classes per Week	Practical Classes per Week	Research Guidance
M. Phil.	Three classes per week for 3Cr.hrs courses	-N.A.-	Varies between once a week to thrice a week depending upon the nature of the project and the stage at which the student has reached

Standard 4-2: Course in the major must be structured to ensure effective interaction between students, faculty and teaching assistants.

All the courses in M.Phil.Program are structured, the department is working on inducting few more structured and non-structured courses in this program shortly.

Standard 4-3: Guidance on how to complete the program must be available to all students and access to academic advising must be available to make course decisions and career choices

In general all faculty members provide assistance for the selection of course, about various requirements for the completion of the program and career choices. All relevant information is displayed on the departmental notice board and a copy is provided to research supervisor. They students are regularly updated about the upcoming seminars, workshops and conferences. Some of the workshops are specially organized for them to learn new techniques or soft wares.

CRITERION-5

PROCESS CONTROL

Criterion-5: Process Control

Standard 5-1: The process by which students are admitted to the program must be based on quantitative and qualitative criteria and clearly documented. This process must be periodically evaluated to ensure that it is meeting its objectives.

Every year a policy is made through departmental board of studies according to which the number of seats and criteria is established to grant admissions.

Eligibility Criteria (M.Phil.)

At least sixteen years of studies 4 years' B. Pharm or Pharm. D., with at least second division. Entrance Test is conducted by the department which is mandatory for all the candidates. The test comprises of the following sections:
Section-I English and Communication Skills 20%
Section-II Subject knowledge 80%
Candidates are required to score at least 40% marks in section-I and 50% marks in section-II separately to be eligible for consideration for provisional admission.
All the students who qualify the test will be required to appear for an interview to be conducted by the respective Departmental Research Committee (DRC). The admissions are granted on the basis of the following

- The marks obtained in the prerequisite degree examination is given 50% weightage.
- The marks secured in the Entrance Test is given 30% weightage.
- The marks obtained in the interview is given 20% weightage

All selected candidates are required to complete 8 courses of 24 credit hours in two semesters. There are five courses of 3 credit hours each in I^{st} semester and three courses of 3 credit hours in the II^{nd} semester. Candidates are required to attend at least 75% classes of each course. They must clear the course work with CGPA at least 3.0. In case a student fails to get the desired CGPA, he/ she will be allowed to improve the grade (only once).

Confirmation of Admission (M. Phil.)

After passing the course work with CGPA 3.0 or more, the student is required to apply for confirmation of admission and approval of research proposal. The student is asked to submit a synopsis along with research topic to BASR for approval.

The duration of M. Phil. is minimum of two (02) and maximum is five (05) years from the date of provisional admission. The thesis is sent for evaluation to two external examiners (outside Karachi) appointed by the BASR. The M. Phil degree is awarded by the BASR subject to positive reports from the supervisor, the two external examiners and a successful oral defense of the thesis by the candidate.

Standard 5-2: The process by which students are registered in the program and monitoring of student's progress to ensure timely completion of the program must be documented. This process must be periodically evaluated to ensure that it is meeting its objectives.

The process by which the students are registered in M.Phil.and Ph.D. programs are promptly documented and maintained in the chairman's office. The courses are completed within specified time; results of seminars, assignments and tests are displayed on the departmental notice board and the records are maintained in chairperson's office and by the course in-charge as well as the research supervisor.

Standard 5-3: The process of recruiting and retaining highly qualified faculty members must be in place and clearly documented. Also processes and procedures for faculty evaluation, promotion must be consistent with institutional mission statement. These processes must be periodically evaluated to ensure that it is meeting with its objectives.

The department abides by the rules for recruiting and retaining the faculty as established by the University Syndicate in accordance with HEC guidelines. The relevant information is available in university code book. All faculty members are encouraged to further their qualifications and informed about the requirements for their next promotion.

Faculty Recruitment / Retaining Policy

They are upgraded as they develop their academic skills provided the vacancy is available in the department.

Appointments / Promotions Procedure:

It is as per University Code Book**.**

Basic Pay Scale (BPS)

BPS 18
BPS 19
BPS 20
BPS 21

a. Lecturer (BPS- 18)

Minimum Qualification

M.Phil. Degree (first Class) in the relevant field with no 3rd division in the academic career from HEC recognized University/Institution.
No experience required.

b. Assistant Professor (BPS- 19)

Minimum Qualification

Ph.D. in Pharmacognosy from HEC recognized University/Institution, No experience required.
OR
Master's Degree (foreign) or M.Phil. or equivalent degree in the relevant field after 18 years of education (as determined by the HEC) in the subject from HEC recognized University/Institutions, with 4 years teaching/research experience in a recognized university or a Post-Graduate Institution or in National or International Organization.

c. Associate Professor (BPS- 20)

Minimum Qualification

Ph.D. in Pharmacognosy from HEC recognized University / Institution.
Experience
10-years teaching/research in HEC recognized University or a Post-graduate Institution or Professional Experience in the relevant field in a National or International Organization.
OR
5-years post Ph.D. teaching/research experience in HEC recognized University or a post-graduate Institution or professional experience in the relevant field in a National or International Organization.
Minimum Number of Publications
10 research publications (with at least 2 publications in last 5 years) in internationally abstracted Journals recognized by the HEC.

d. Professor (BPS-21)

Minimum Qualification

Ph.D. in Pharmacognosy from HEC recognized Institution.
Experience

15-years teaching / research experience in HEC recognized University or post-graduate Institution or professional experience in the relevant field in a National or International Organization.

OR

10-years post-Ph.D. teaching/research experience in a recognized University or a post post-graduate Institution or professional experience in the relevant field in a National or International Organization.

Minimum Number of Publications

15 research publications in internationally abstracted Journals recognized by the HEC.

Bases for Appointments / Promotions

- Teaching
- Research
- Publications
- Length of Service
- Personal Characteristics
- Experience

Standard 5-4: The process and procedure used to ensure that teaching and delivery of course material to the students emphasizes active learning and that course learning outcomes are met. The process must be periodically evaluated to ensure that it is meeting its objectives.

To ensure the progress and completion of the course on time, the courses are distributed well ahead of the beginning of semester. The standard 5-4 is met by strictly following the timetable. At the time of admission, students are provided with faculty catalogue that has the detailed outline of M.Phil. courses and reference books. The students are engaged in discussions, are given assignments and demonstrations to support active learning. The faculty members cross questions and administer surprise tests to gauge the progress of the students. Feed- back of the students is also sought.

Standard 5-5: The process that ensures that graduates have completed the requirements of the program must be based on standards, effective and clearly documented procedures. This process must be periodically evaluated to ensure that it is meeting its objectives.

Due to frequent changes in university's requirements for M.Phil.and Ph.D. because of the involvement of HEC, and disparity between the two, it is difficult to ensure that the requirements

are met fully. However, the department of Pharmacognosy ensures that every student is well informed about the requirements. The students are advised to maintain 74% of attendance (the record is properly maintained) to appear in the exam. Timely submission of assignments and seminars is ensured. The examination schedule is announced through time-table and they are conducted accordingly. The students are specially sensitized about plagiarism.

CRITERION-6

FACULTY

Criterion-6 Faculty

Standard 6-1: There must be enough full time faculty who are committed to the program to provide adequate coverage of the program areas / courses with continuity and stability. The interest of all faculty members must be sufficient to teach all courses, plan, modify and update courses. The majority must hold a Ph.D. degree in the discipline.

All the teachers working in the department are full time, permanent employs of the University. The senior teachers have full command over the various courses taught in the M.Phil. and Ph.D. programs and there has been no occasion where the department faced any problem to conduct these courses. The courses are regularly rotated among the faculty to maintain versatility. The junior teachers are in the process of completing their Ph.D. work or thesis. They are also very keen to share the responsibility with the seniors. The department regularly holds meetings for board of studies where the existing courses are reviewed and the new ones are debated and adopted through consensus.

Standard 6-2: All faculty members must remain current in the discipline and sufficient time must be provided for scholarly activities and professional development. Also, effective program for faculty development must be in place.

The faculty members constantly strive to remain current by reading newly published books, peer reviewed Journals, current advancement journals, and also participate in workshops, seminars and conferences at local and international levels. They also organize such events and engage in fruitful discussions and exchange of ideas with the professionals, scientists from other institutes and eminent scholars. All of them are actively involved in research in their respective fields and publish their work in local and international journals of repute. Our faculty members are also involved with the publication of Pakistan Journal of Pharmaceutical Sciences, the peer reviewed, impact factor and HEC recognized journal. Some of them are on the list of HEC approved supervisors. They are regularly invited by the editors of international journals to review research articles for their publication. They have been successful in acquiring funding from various funding agencies on their research proposals.

Standard 6-3: All faculty members should be motivated and have job satisfaction to excel in their profession.

The department of Pharmacognosy follows a professional behavior in dealing with all faculty members that not only reflects the high standards of the department but also becomes a source of job satisfaction and motivation among them.

One of the major sources of motivation for them is our process through which any works or achievements that merit acknowledgement is appreciated without fail.

When it comes to recruitment in the department, all vacancies are advertised in the national newspapers.

All applicants, whether internal or external, are dealt with equally and fairly purely based on merit. The selection criterion is free from free from any biases of gender, caste, political or religious influences. Promotions process is fair and transparent.

CRITERION-7

INSTITUTIONAL FACILITIES

Criterion-7 Institutional Facilities

Standard 7-1: The Institution must have the infrastructure to support new trends in learning such as E-learning.

a) Departmental library and Internet Facility

The faculty of Pharmacy has a seminar library the department shares with other four departments. It serves students of Pharm.D. morning and evening programs along with M.Phil. and Ph.D. students from all four departments. Since, the library is small as compared to the number of students it caters there is an urgent need to establish a separate facility exclusively for research students. It should have all the facilities available as found in any of the top universities of the world. The faculty's seminar library has internet connectivity but the numbers of computers are far fewer than the requirement to be conducive for E-learning.

b) Main Library

Mehmood Hussain Library, the central library of the university has a vast collection of books from various disciplines and digital library having access to journals and E-books

c) Offices

The department has a room for the chairperson and the office staff.

d) Class Rooms

The faculty of Pharmacy has a four class rooms and an auditorium to hold classes for Pharm.D. Morning and Evening programs, along with M.Phil.and Ph.D. students from all four departments. In new building of Faculty of Pharmacy & Pharmaceutical Sciences each department has two class rooms, so there are total eight class rooms.

Standard 7-2: The library must possess on up-to-date technical collection relevant to the program and must be adequately staffed with professional personnel.

As described in Standard 7-1 (a), we donot have our own library and its provision is not there in the newly constructed building either. The existing faculty library does not have computerized record of the books and journals available. There are four library staff. Small budget does not allow to for the renovation or expansion. It lacks space, research journals and the technological support to facilitate the research students to complete their assignments, do quick surveys and to write research articles or thesis. It severely lacks the Paraphernalia required for any modern library.

Standard 7-3: Class rooms must be adequately equipped and offices must be adequate to enable faculty to carry out their responsibility.

Classrooms

They only have the basic facilities of chalk and board. Class rooms are extremely noisy due to the traffic overflow and the food street just across the road. Private vans and rickshaws are also parked there. There close proximity to the Valika ground makes it impossible to take classes when student organization are given permission to hold cricket matches, book fair or various other activities during student's week. On those occasions the free use of audio system to relay jarring music, party songs or running commentary ruins the academic environment. The rooms are extremely hot and the background noise and the noise from myriad number of fans makes it difficult to listen to what the teacher is saying even when the audio system is used. This is the single most challenging job for teachers to carry-out their responsibilities. Using multimedia on daily basis is near to impossible because of non-availability and the unfit class rooms for such a luxury.

This situation is now improved to some extent as we shift to the new building by having more class rooms,some are provided with multi-media projectors, audio system, laptops etc. A special fund should be assigned to the department to department for this purpose to fulfill the requirements given by QEC.

Faculty Offices

The department of Pharmacognosy has adequate rooms for its faculty with computer, printer and internet fascility.

CRITERION-8

INSTITUTIONAL SUPPORT

Criterion-8 Institutional Support

The parameters of institutional support require a review from a fresh mind set to further improve and make them compliant with the demands of this age and time. Some of them could be:

- Increase in departmental contingency
- Separate allowance for research labs
- Increase in the amount of personal research grant
- Financial support to publish research where a faculty member is a co-author
- Separate library for research students
- Appointment of technician and other staff for research labs
- Latest computers to the faculty members

Standard 8-1: There must be sufficient support and financial resources to attract and retain high quality faculty and provide the means for them to maintain competence as teacher and scholars.

This is a very important subject for the department to stand out among the competing institutions. Hence, it may require review of existing and introduction of new factors such as:

- Introducing a competitive pay and allowances package aligned with other leading private and semi-autonomous institutions
- Further improvement performance based appraisal system
- Introducing vehicle owning allowances
- Improved medical and hospitalization package
- Financial assistance program to enable the education of their children in higher studies
- Sending the university faculty members to various seminars/workshop in SAARC countries or in those countries which are leading in the particular fields, to keep them abreast of the latest trends. It also would enable the faculty in bringing in experience and new ideas into our institution

Standard 8-2: There must be an adequate number of high quality graduate students, research assistants and Ph.D. Students

Degree Program	**Years**		
	2015	**2016**	**2017**
M.Phil.	09	11	10
Research/ Teaching Assistants	-Nil-	-Nil-	-Nil-

Standard 8-3: Financial resources must be provided to acquire and maintain library holding, laboratories and computing facilities.

We are extremely tight on budget to improve our library, laboratory and computing facilities for our students. Our contingency which is 25000/=Rs. is not sufficient to obtain these objectives. A complete overhaul is the need of the hour. A modern and well equipped library and laboratories along with latest computing facilities are inevitable for the department to achieveits objectives.

Faculty CVs

Name	Designation	Year of Joining	Details of Qualification			Specialization	Teaching and Research Experience
			Qualifica.	Year	Institution		
Dr. Iqbal Azhar	Professor	1994	Ph. D	2000	UoK*	Pharmacognosy, Natural Products Nutraceuticals, Cosmeceuticals, Phytopharmaceuticals	23 yrs. teaching 27 yrs. research
Muhammad Mohtasheem-ul-Hasan	Associate Professor	2006	Ph. D	2009	UoK*	Pharmacognosy / Pharmaceutical Biology Phytopharmacology, Phytochemistry	12 yrs. teaching 22 yrs. research
Farah Mazhar	Assistant Professor	2000	M.Phil.	1998	UoK*	Pharmacognosy, Natural Products Evaluation and Standardization of Herbal Drugs, Bioassays	18 yrs. teaching 22 yrs. research
Salman Ahmed	Lecturer	2013	M.Phil.	2010	UoK*	Pharmacognosy, Phytomedicine, Phytopharmacology, Medicinal Plants	5 yrs. teaching 12 yrs. research
Safia Abidi	Lecturer	2013	M.Phil.	2010	UoK*	Pharmacognosy, Natural Products	5 yrs. teaching 9 yrs. research

*University of Karachi

Survey's Results