Admission Spring 2024

AIOU

PROSPECTUS

BS (Face to Face)

4 Years, 2.5 Years, and 2 Years

- Biochemistry
- Botany
- Microbiology
- Environmental Sciences
- Chemistry
- Mathematics
- Physics
- Statistics
- Computer Science
- Instructional Design & Technology

Allama Iqbal Open University, Islamabad

www.aiou.edu.pk

Help Line: (051) 111-112-468

PROSPECTUS

OF

BS (Face to Face) Programmes

For

SEMESTER: Spring, 2024

Allama Iqbal Open University, Islamabad

Semester:..... Spring, 2024
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Vice-Chancellor's Message

Dear Student,

السلام علیکم

Allama Iqbal Open University (AIOU) is one of the mega universities of the world and it occupies a unique position in the education sector of Pakistan, because of its affordability and high quality distance and online academic programs. AIOU has now turned into the most favorite university of the country with high international repute. The university made a landmark progress by ensuring access to quality education for rural areas under-privileged students and the people of all ages particularly the females can now select and join the programs of their choice, while sitting at their residence and simultaneously with continuing their jobs. After assessing the success of many degree programs in Pakistan, AIOU is now going to offer a variety of range programs for the students residing worldwide. More than 1.3 million students are getting benefits from the high quality educational services of AIOU in all regions of the country through more than fifty regional offices of the university. It offers-suggests many undergraduate and postgraduate programs at rural and remote areas providing an unparalleled opportunity to all the poor and deprived segments of the society at an affordable cost. The university has recently digitalized all its student-support services for facilitating its students on priority basis. This digitization of the system, it is hoped, will enable AIOU students to get all discipline of educational programmes using their Learning Management system (LMS) portal support online.

Committed to your bright future

Prof. Dr. Nasir Mahmood
Vice Chancellor

IMPORTANT ACTIVITIES TO BE REMEMBERED

Activity	Spring Semester	Autumn Semester
Admissions	March-April	September- October
Study Period	June- October	December- April
Examinations	October- November	April- May
Result	January	July

Note: Contact concerned Regional office for exact schedule of activities. Continuing students are sent information for all activities by LMS/SMS. Simultaneously information is placed on website (www.aiou.edu.pk), students can download if not received by post.

MINIMUM AND MAXIMUM DURATION/SEMESTERS FOR FACE TO FACE PROGRAMMES

Sr. No.	Degree Level	Minimum Duration	Maximum Duration
1	Ph.D	3 years / 5 semesters	8 years *
2	MS/M.Phil/M.Sc (Hons)/MBA/COL MBA/MPA	2 years / 4 Semesters	4 Years **
3	M.A/M.Sc (2-Year)	2 Years / 4 Semesters	4 Years
4	BS (4-Year)	4 years / 8 Semesters	6 Years
5	Postgraduate Diploma (1-Year)	1 Year / 2 Semesters	2 Years
6	Certificate (6-Months)	6 Months / 1 Semester	1 Years
7	BS 2.5 years	2.5 Years/5 Semester	4 Years
8	BS 2 Years	2 years/ 8 Semester	4 Years

COMPLETE PROCEDURE TO ENROLL IN AIOU PROGRAMMES AND SUBMISSION OF FORM IN AIOU ISLAMABAD

All fresh and continue students can submit their admission using online system.

Follow these instructions to apply:

APPLY ONLINE (FRESH STUDENTS)

1. Visit website: **https://aiou.edu.pk/oas-fresh-admission**
2. Press link "**Application for New Admission ⟹ Click here**"
3. Get register by entering your email or mobile phone number
4. Login into your registered account
5. Fill all the requisite fields of admission form
6. After filling the admission form, print out your "Challan Form".
7. Using printed challan form and submit your fee in any branch of FWBL, ABL, MCB,UBL or NBP.
8. **You can also deposit fee through Upaisa, Jazzcash & Easypaisa.**

APPLY ONLINE (CONTINUE STUDENTS):

1. Visit website: **https://aiou.edu.pk/cms-continuing-students**
2. Press link "**CMS for Continuing Students**"; **(https://enrollment.aiou.edu.pk)**
3. Enter your "User ID & Password
4. Select courses and print challan form.
5. Using printed challan form, submit your fee in any branch of FWBL, UBL, MCB or ABL NBP. Keep save copy of your challan form after submission of fee. **You need not to send challan to the University,** but University can ask for copy of challan form any time, if required.
6. You can also deposit fee through Upaisa, Jazzcash & Easypaisa.

CONTENTS

ALLAMA IQBAL OPEN UNIVERSITY

Allama Iqbal Open University, a mega university was established in 1974 under an Act of Parliament. The main campus of the university is situated in sector H-8, Islamabad. It was the second open university of the world and the first of its kind in Asia and Africa. The aim of establishing AIOU was to provide affordable and accessible education through distance learning at the doorsteps to those people who could not continue their educational journey through formal system of education. The University (AIOU) operates on semester system and admits students in Autumn and Spring semesters, Undergraduate admissions are being offered in both the semesters, whereas postgraduates are being offered once a year. The enrolled students are given course books specially prepared by the university on self instructional principles. However, at post graduate level reprints of foreign books alongwith allied material and university prepared study guides help students to polish their skills.

At present, the AIOU is offering programmes from Matric to PhD level in diverse disciplines comprised four faculties. The university has established study centres across the country where distance education students are provided necessary guidance by their respective tutors. AIOU is also offering four years under-graduate degrees.

Apart from curricular and extra-curricular activities during the academic year, the AIOU and its regional centres actively participate in the co-curricular activities by arranging educational and literary seminars, workshops and conferences, attended not only by the students and faculties of the university, but also by the renowned dignitaries and scholars. For the science students and the research scholars, a science complex has been constructed, where they use the latest equipment of international standard for experiments and research. To meet the present-day challenges, internet facility is also available in the student hostel and the Central Library, where computers have been provided to enable students to access the latest information available through open source databases.

FACULTY OF SCIENCES

Faculty of Sciences form an integral part of the University, Since its establishment in 1982 with five teaching departments, it has undergone major development changes. It now comprises nine teaching and research departments which are offering courses at the undergraduate and postgraduate levels to more than ten thousand students. The Faculty operates under the basic guidelines of the University Act and on “Education for All as Convenient” basis so that maximum students get benefit from its academic programs and educational facilities. This principle has necessitated some structural changes in the non-formal mode, particularly at the postgraduate level, in the offering of theory courses and practical lab work. This conceptual adjustment has been quite successful and many in-service students are benefiting from postgraduate study programs. Improvement in qualification for a better life is a right of everyone and the faculty’s programs meet this challenge by offering opportunities to all. In particular, a significant number of beneficiaries are those who cannot afford education in formal institution due to a variety of reasons.

DEPARTMENT OF BIOLOGY

The approval for the establishment of the Department of Biology Science was granted by the Executive Council in February 1998. The objective of its establishment is to provide human resources/skilled personnel in various areas of Biology. Furthermore, the purpose is to educate future generation and improvement in quality of life and welfare of human being through research for the environmentally sustainable and socially equitable use of the natural resources. The Department is imparting face-to-face education in Pakistan in different disciplines of Biological Sciences.

The mission of Department of Biology is to educate students in various disciplines of Life Sciences including those who could not continue their education due to economic or job constraints. The purpose of its establishment is to educate future generation and improvement in quality of life and welfare of human being through research and self-sufficiency.

The Department is striving to uplift the teaching standards and provide a congenial environment for research in the field of Biology. The Department always seeks to introduce more disciplines at graduate and postgraduate levels as per demand of the society, so as to keep the undergraduate and postgraduate scholars well informed with the recent advances in the field. This will help produce well-trained manpower to serve science both at national and International levels.

The Department is offering following programmes:

i. BS Botany

ii. BS Biochemistry

iii. BS Microbiology

The department is enriched with highly qualified regular faculty to fulfill teaching and research requirements. Well equipped labs and Biology are available to cater practical and research requirements.

BS Biochemistry

1. Introduction

Biochemistry can be considered as *chemistry of life* and is central to all areas of the biological or life sciences. It deals with chemical processes taking place in all living organisms from viruses and bacteria to plants and animals. It specifically focuses on the study of biomolecules and vital processes that give rise to complexities of life. It comprehensively demonstrates human biochemical aspects pertaining to the wellbeing and in the pathological state.

BS Biochemistry has an interdisciplinary and multidisciplinary approach enabling students to understand the core principles and experimental basis of Biochemistry. The scope of the discipline is extremely broad and graduates in Biochemistry can progress to a wide range of careers. They can work in national and international organization in either public or private sectors, biochemical industries, food production companies, hospitals and diagnostic laboratories, pharmaceutical industries and research institutes etc.

Biochemists may emerge as *Genetic counselor, Forensic scientists*, Healthcare officials, Sequencing data analyst, Research scientists, Project officers, Quality control officers, Genetic engineers etc.

The programme aims at developing human resources in the field of Biochemistry through appropriate education and research.

2. Objectives

Objectives of this programme are

i. To equip students with the in-depth knowledge and skills necessary for understanding basic as well as advanced and recent trends in Biochemistry and Molecular Biology
ii. To impart skills to carry out independent scientific and technical research in key areas of Biochemistry
iii. To equip students with laboratory procedures and techniques necessary to understand the life processes and enable them to serve in diagnostics and research labs
iv. To inculcate confidence among students to pursue higher education in their specialized areas of interest

3. Eligibility Criteria

F.Sc (Pre-medical) OR Equivalent "A" Level qualification with Biology as major subject.

Foreign certificate holders will need to produce equivalence certificate from IBCC to seek admission in 4 years BS Biochemistry.

4. Duration of the Programme

In order to be eligible for the award of BS in Biochemistry, the student will have to earn a total of 133 credit hours including Research Project of six credit hours within a minimum period of 4 years (8 semesters) failing which, a student can be given an extension of upto 2 years in maximum after completion of initial period.

5. Scheme of Studies (BS Biochemistry 4- years)

Semester 1		
Course Code	**Course**	**CH**
BIO 3503	Introductory Biochemistry	4(3+1)
CHEM 3501	Inorganic Chemistry	4(3+1)
MATH 3501	Pre-Calculus	3 (3+0)
ENGL 3501	English I: Composition and Comprehension	3(3+0)
BIO 3501	Cell Biology, Genetics and Evolution	4(3+1)
	Total Credits	**18**

Semester-2		
Course Code	**Course Title**	**CH**
BIO 3504	Diversity of Plants	4(3+1)
CHEM 3502	Organic Chemistry	4(3+1)
MATH 3502	Calculus-I	3(3+0)
ENGL 3503	English II: Technical and Business Writing	3(3+0)
BIO 3505	Plant Biochemistry	3(3+0)
	Total Credits	**17**

Semester-3		
Course Code	**Course Title**	**CH**
ENVS 3505	Diversity of Animals	4(3+1)
BIO 3502	Fundamentals of Microbiology	4(3+1)
PKST 3501	Pakistan Studies	2(2+0)
ENGL 3502	English III: Communication Skills	3(3+0)
BIO 3502	Environmental Chemistry	4(3+1)
	Total Credits	**17**

Semester-4		
Course Code	**Course Title**	**CH**
BIO 4502	Human Physiology	4(3+1)

BIO 4501	Biotechnology	4(3+1)
CS 3501	Introduction to Computer	3(3+0)
ITHC3501/ HADH3501	Islamic Studies / Ethics	2(2+0)
MCM 3502	Public Relations	3(3+0)
	Total Credits	**16**

Semester-5		
Course Code	**Course Title**	**CH**
BIO 5515	Nutritional Biochemistry	4(3+1)
STAT 3506	Biostatistics	3(3+0)
BIO 6510	Genetics-1	3(3+0)
BIO 6503	Immunology	4(3+1)
BIO6518	Metabolism	3(3+0)
	Total Credits	**17**

Semester 6		
Course Code	**Course Title**	**CH**
BIO 5516	Genomics	4(3+1)
BIO 5517	Protein Biochemistry	4(3+1)
BIO 5507	Molecular Biology	4(3+1)
ENVS 3507	Scientific Researchs	4(3+1)
	Total Credits	**16**

Semester-7		
Course Code	**Course Title**	**CH**
BIO 6514	Enzymology	4(3+1)
BIO 6502	Medical Microbiology	4(3+1)
BIO 5501	Microbial Genetics	4(3+1)
BIO 6515	Clinical Biochemistry	4(3+1)
	Total Credits	**16**

Semester-8		
Course Code	**Course Title**	**CH**
BIO 6507	Research Project	6
BIO 6505	Genetic Engineering	4(3+1)
BIO 6517	Bioinformatics	3(2+1)
BIO 6516	Bio-Membranes and cell signaling	3(3+0)
	Total Credits	**16**

Total Credits= 18+17+17+16+17+16+16+16=133

6. Fee Tariff for 1st Semester

Item	**Rates**
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-
Per 4 Credit hours course fee: Rs. 8800	Rs. 26400
Per 3 Credit hours course fee: Rs. 6600	Rs.13200/-
LAB CHARGES	Rs.3300/-
Total	Rs. 45100/-

The fee structure for remaining semesters will be provided in due course of time.

1. Mode of Study:

i. Medium of Instruction

The Medium of Instructions for BS Bio chemistry will be English.

ii. Study Material

Lecture handouts will be provided by the department. The students are also advised to consult other reference books recommended by the department.

iii. Mode of Teaching

a) University will provide face to face teaching to the students.

b) The schedule of classes and dates of submission of assignments will be announced by the department.

iv. Assessment and Evaluation

For each course the student progress will be assessed on the basis of the followings:

a) Continuous Assessment

i. Continuous assessment of practical courses will be based on assignments/class tests of 200 marks and practical of 100 marks. Student has to obtain 50% marks in theory and practical individually to pass this component.

ii. For non-practical courses, student has to obtain 50% marks assignments/class test in theory component only. In the weightage of internal assessment in final result will be 30%.

b) Final Examination

Final written examination of 100 marks will be conducted. Pass percentage in final examination will be 50%.

The weightage of final exam will be 70% in final result.

If a student fails to pass in any assessment component of a course, he/she will have to re- enroll in that course.

1. Guidelines for Online Application (see page-vi)

i. Visit AIOU Website: www.aiou.edu.pk

ii. Click on OAS (Online Admission System) for Fresh Admission

iii. Click 'Register'& fill details

iv. Upon successful registration please click on login

v. Fill login details and login to the portal

vi. After login click on Step-1 and complete your profile. Note: All tabs should be filled before applying for admissions.

vii. After completion of Step-1, click on Step-2 then click on "Download Challan" against programme (s) you wish to apply.

i. Pay the *admission form fee* as per AIOU prescribed criteria through selected bank branches or online payment methods.

ii. After admission fee confirmation, you will be called on through SMS to visit the department for the verification of your credentials.

iii. After the verification, you will be informed whether you are eligible for the admission in BS Programme or not.

1.2 Scheme of Studies (AD Based) BS Biochemistry Program code 5532

Eligibility: Associate degree in the relevant field with at least 60 credit Hours.

Semester 1 (Bridging Semester)			
Course Code	**Course Title**	**Cr. Hrs**	**Mode**
7481	Nutritional Biochemistry	4(3+1)	F2F
4482	Biostatistics	3(3+0)	F2F
7412	Principles of Genetics	3 (3+0)	F2F
4415	Immunology	4(3+1)	F2F
7482	Bio-membranes and call Signaling	3(3+0)	F2F

Semester 2			
	Course Title	**Cr.Hrs**	
7483	Fundamentals of Genomics	4(3+1)	F2F
7484	Protein Biochemistry	4(3+1)	F2F
4419	Molecular Biology	4(3+1)	F2F
7413	Scientific Research	4(3+1)	F2F

Semester 3			
	Course Title	**Cr. Hrs**	
7485	Enzymology	4(3+1)	F2F
4413	Medical Microbiology	4(3+1)	F2F
4407	Microbial Genetics	4(3+1)	F2F
7486	Principles of Clinical Biochemistry	4(3+1)	F2F

Semester-4			
Course Code	**Course Title**	**Cr. Hrs**	
4418	Research Project	6	F2F
4414	Genetic Engineering	4(3+1)	F2F
7487	Bioinformatics	3(2+1)	F2F

Total Credit Hours= 62

1.3 Fee Tariff for 1st Semester

Item	
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-
Per 4 Credit hours course fee: Rs. 8800	Rs. 26400/-
Per 3 Credit hours course fee: Rs. 6600	Rs.13200/-
LAB CHARGES	Rs.3300/-
Total	Rs. 45100/-

3. Contact Details

Incharge

Department of Biology

Research Complex, 1st Floor, AIOU, H-8, Islamabad

Tel: 051-9057726; Email: biology@aiou.edu.pk

Coordinator BS-Biochemistry

Department of Biology

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Tel: 051 9575273; Email: biology@aiou.edu.pk

BS BOTANY

1. Introduction

The study of plants is vital because they underpin almost all life forms on Earth by generating a large proportion of oxygen and food that allow humans and other organisms to subsist. Plants are one of the major groups of organisms that carry out photosynthesis, a process that absorbs carbon dioxide, a greenhouse gas that is a small but important variable that influences global climate. Plants are crucial to the future of human society as they provide food, oxygen, medicine, and products for people, as well as creating and preserving soil.

This programme has an interdisciplinary and multidisciplinary scope enabling students to understand the concepts of Botany. It covers a wide range of scientific disciplines including the study of plant structure, growth, reproduction, metabolism, development, diseases, chemical properties, evolutionary relationships, and plant taxonomy. Graduates with Botany can work in national and international organization in public and private sectors as Biodiversity Researchers, Environmental Scientists, Nature Reserve Managers, Wildlife Management Advisors, Ecological Consultants and Conservation Officers, Quality Control Officers, Salesperson etc.

2. Objectives

On accomplishing the course, the students will be able to:

i. Demonstrate comprehensive understanding of Botany as an interdisciplinary and multidisciplinary subject.
ii. Achieve awareness about the evolutionary trends and plants systematic in pursuit of nature conservation.
iii. Understand the relationship between economic growth and importance of indigenous plant resources.

3. BS Botany (4 Year)

Eligibility Criteria for admission in BS Programs(4 years) is:

1. Students holding FSC (Pre Medical) or equivalent/ 'A' lavel with Biology as a major subject shall be eligible for admission.

BS BOTANY(4 Years)

Sr. No	Course Title	Course Code	Cr. Hrs
1.	Cell Biology, Genetics and Evolution	BIO3501	4(3+1)
2.	Inorganic Chemistry	CHEM3501	4(3+1)
3.	Intro.to Env. Sci	ENVS3501	4(3+1)
4.	Pre-Calculus	MATH3501	3
5.	English I: Composition and Comprehension	ENGL3501	3
	Total Credits		**18**

Semester-2

Sr. No	Course Title	Course Code	Cr. Hrs
1.	Diversity of Plants	BIO3504	4(3+1)
2.	Organic Chemistry	CHEM3502	4(3+1)
3.	Calculus-I	MATH3502	3
4.	Environmental Biology	ENVS3506	4(3+1)
5	English II Technical and Business Writing	ENGL3503	3
	Total Credits		**18**

Semester-3

Sr. No	Course Title	Course Code	Cr. Hrs
1.	Diversity of Animals	ENVS 3505	4(3+1)
2.	Fundamentals of Microbiology	BIO 3502	4(3+1)
3.	Intro to Sociology	SOC 3501	3
4.	Pakistan Studies	PKST 3501	2
5.	English III: Communication Skills	ENGL 3502	3
	Total Credits		**16**

Semester-4

Sr. No	Course Title	Course Code	Cr. Hrs
1.	Biotechnology	BIO 4501	4(3+1)
2	Plant Systematic anatomy department	BIO 4503	4(3+1)
3.	Introduction to Computer	CS 3501	3(3+0)
4.	Islamic Studies / Ethics	ITHC 3501 HADH 3501	2
5.	Public Relations	MCM 3502	3
	Total Credits		**16**

Semester-5

Sr. No	Course Title	Course Code	Cr. Hrs
1.	Biodiversity and Conservation	BIO 5508	4(3+1)
2.	Diversity of Vascular Plants	BIO 5509	3(2+1)
3.	Plant Anatomy	BIO 5510	3(2+1)
4.	Introductory Biochemistry	BIO 3503	4(3+1)
5.	Phycology and Bryology	BIO 5511	3(3+0)
	Total Credits		**17**

Semester-6

Sr. No	Course Title	Course Code	Cr. Hrs
1.	Plant Ecology -I	BIO 5512	3(2+1)
2.	Plant Physiology - I	BIO 5513	3(2+1)
3.	Plant Biochemistry	BIO 3505	3(2+0)
4.	Mycology and Plant Pathology	BIO 5514	3(2+1)
5.	Molecular Biology	BIO 5507	3(2+1)
	Total Credits		**16**

Semester-7

Sr. No	Course Title	Course Code	Cr. Hrs
1.	Plant Ecology -II	BIO 6508	3(2+1)
2.	Plant Physiology - II	BIO 6509	3(2+1)
3.	Genetics - I	BIO 6510	3(3+0)
4.	Biostatistics	STAT 3506	3(3+0)
5.	Scientific Research	ENVS 3507	4(3+1)
	Total Credits		**20**

Semester-8

Sr. No	Course Title	Course Code	Cr. Hrs
1.	Research Project	BIO 6507	6
2.	Genetics - II	BIO 6511	3(3+0)
3.	Ethnobotany	BIO 6512	3
4.	Plant systematics	BIO 6513	4(3+1)
	Total Credits		**16**

Total Credit Hours: 132

Scheme of Study (AD Based 2 years) Bs Botany Program

Eligibility: Associate Degree in relevant field with at least 60 credits hours.

Sr. No	Course Title	Course Code	Cr. Hrs	Mode
1.	Diversity of Vascular Plants	7401	3(2+1)	F2F
2.	Plant Anatomy	7402	3(2+1)	F2F
3.	Introductory Biochemistry	4481	4(3+1)	F2F
4.	Phycology and Bryology	7403	3(3+0)	F2F
5.	Biodiversity and Conservation	4452	4(3+1)	F2F
	Total Credits		**17**	

Semester-2

Sr. No	Course Title	Course Code	Cr. Hrs	Mode
1.	Plant Ecology -I	7405	3(2+1)	F2F
2.	Plant Physiology - I	7406	3(2+1)	F2F
3.	Molecular Biology	4419	3(2+1)	F2F
4.	Plant Biochemistry	7407	3(3+0)	F2F
5.	Mycology and Plant Pathology	7408	3(2+1)	F2F
6.	Scientific Research	7413	4 (3+1)	F2F
	Total Credits		**17**	

Semester-3

Sr. No	Course Title	Course Code	Cr. Hrs	Mode
1.	Plant Ecology -II	7409	3(2+1)	F2F
2.	Plant Systematics	7410	4(3+1)	F2F
3.	Plant Physiology - II	7411	3(2+1)	F2F
4.	Genetics - I	7412	3(3+0)	F2F
5.	Biostatistics	4482	3(3+0)	F2F
	Total Credits		**16**	

Semester-4

Sr. No	Course Title	Course Code	Cr. Hrs	Mode
1.	Research Project	4418	6	F2F
2.	Genetics - II	7414	3(3+0)	F2F
3.	Ethnobotany	4439	3	F2F
4.	Environmental Biology	4446	4(3+1)	F2F
	Total Credits		**16**	

Total Credits: 60

3.4 Fee Tariff for 1st Semester Eligibility for BS (AD Based 2 years)

Item	
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-
Per 4 Credit hours course fee: Rs. 8800	Rs. 26400/-
Per 3 Credit hours course fee: Rs. 6600	Rs.13200/-
LAB CHARGES	Rs.3300/-
Total	Rs. 45100/-

4. Mode of Study

4.1 Medium of Instruction

The Medium of Instructions for BS Botany will be English.

4.2 Study Material

Reprinted or compiled course books/lecture handouts will be provided by the University however, the students are advised to consult other reference books recommended by the department.

4.3 Mode of Teaching

a) University will provide face to face teaching

b) The schedule of classes and dates of submission of assignments will be handed over along with study material.

Assessment and Evaluation:

Student progress will be assessed based on the followings:

Assessment	Continuous Assessment		Final Assessment
	Assignment	Practical	Final Examination
Course with Practical	20%	10%	70%
Course without Practical	30%	X	70%
Pass Marks	50%	50%	50%

Final Examinations

A written examination will be conducted for each course with 50% passing marks.

5. Contact Details

Incharge

Department of Biology
Research Complex, 1st Floor, AIOU, H-8, Islamabad
Tel: 051-9057726; Email: biology@aiou.edu.pk

Coordinator BS Botany

Department of Biology, Research Complex, 1st Floor, AIOU, H-8, Islamabad, Tel: 051 905 7185; Email: biology@aiou.edu.pk

BS MICROBIOLOGY

2. Introduction

The Department of Biology is well aware of the fact that this is an era of scientific revolutions. Microbiology, which is parallel to molecular biology as well as biotechnology, is an emerging scientific field. Lots of work is being done at international level but Pakistan is still behind in this field. The trained manpower well versed with laboratory techniques and disease diagnostic facilities is limited in the country.

Keeping this in view, the Department of Biology has launched four years BS Programme in Microbiology from the semester Spring, 2009.

This programme is designed to:

i. Provide skilled laboratory personnel for catering general public needs.
ii. Provide research atmosphere for the support of laboratory facilities.

3. Objectives

After completing this programme, students will acquire the necessary knowledge based in the area of Bio-medical sciences, which is very important to diagnose the infectious diseases as well as epidemics.

The overall objectives of this programme is to **promote education of Applied/Life Sciences in the country**.

i. To provide human resources/skilled Microbiologist for catering the needs of medical laboratories in hospitals and research institutes.
ii. To provide foundation for higher studies in Microbiology.
iii. To create awareness about application of Microbiology for public benefit.

4. Eligibility Criteria (BS Microbiology 4 years)

F.Sc (Pre-medical) OR Equivalent A Level qualification with Biology as major subject.

5. Duration of Programme

In order to be eligible for the award of BS in Microbiology, the student will have to earn a total of 133 credit hours including six credit hours for research within a minimum period of 4 years (8 semesters) failing which, a student can be given an extension of 2 years (4 semesters) in maximum, after completion of initial period.

6. Scheme of Studies:

Semester 1		
Course Code	**Course Title**	**CH**
BIO 3501	Cell Biology, Genetics and Evolution	4(3+1)
CHEM3501	Inorganic Chemistry	4(3+1)
BIO 3502	Fundamentals of Microbiology	4(3+1)
MATH 3501	Pre-Calculus	3(3+0)
ENGL 3501	English I: Composition and Comprehension	3(3+0)
	Total Credits	18

Semester 2		
Course Code	**Course Title**	**CH**
BIO 3506	Environmental Microbiology	4(3+1)
BIO 3504	Diversity of Plants	4(3+1)

CHEM 3502	Organic Chemistry	4(3+1)
MATH 3502	Calculus-I	3(3+0)
ENGL 3503	English II: Technical and Business Writing	3(3+0)
	Total credits	18

Semester 3

Course Code	Course Title	CH
ENVS 3505	Diversity of Animals	4(3+1)
ENVS 3501	Introduction to Environmental Science	4(3+1)
PKST 3501	Pakistan Studies	2(2+0)
ENGL 3502	English III: Communication Skills	3(3+0)
SOC 3501	Introduction to Sociology	3(3+0)
	Total Credits	16

Semester 4

Course Code	Course Title	CH
BIO 4501	Biotechnology	4(3+1)
BIO 4502	Human Physiology	4(3+1)
MCM 3502	Public Relations	3(3+0)
ITHC 3501/ HADH 3501	Islamic Studies/Ethics	2(2+0)
CS 3501	Introduction to Computer	3(3+0)
	Total Credits	16

Semester 5

Course Code	Course Title	CH
BIO 3503	Introductory Biochemistry	4(3+1)
STAT 3506	Biostatistics	3(3+0)
BIO 5501	Microbial Genetics	4(3+1)
BIO 5502	Virology	4(3+1)
	Total credits	15

Semester 6

Course Code	Course Title	CH
BIO 5507	Molecular Biology	4(3+1)
BIO 5506	Molecular Mechanism of Antimicrobial Drugs	4(3+1)
BIO 5505	Food and Dairy Microbiology	4(3+1)
BIO 5504	Microbial Anatomy and Physiology	4(3+1)
ENVS 3504	Scientific Research	4(3+1)
	Total credits	20

Semester 7

Course Code	Course Title	CH
BIO 6503	Immunology	4(3+1)
BIO 6502	Medical Microbiology	4(3+1)
BIO 6504	Industrial Microbiology	4(3+1)
BIO 6501	Soil Microbiology	4(3+1)
	Total credits	16

Semester 8

Course Code	Course Title	CH
BIO 6506	Epidemiology	4(3+1)
BIO 6507	Research Project	6
BIO 6503	Genetic Engineering	4(3+1)
	Total credits	14

Total Credits =18+18+16+16+15+20+16+14= 133

7. Fee Tariff For 1st Semester

Item	Rates
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-
Per 4 Credit hours course fee: Rs. 8800	Rs. 26400
Per 3 Credit hours course fee: Rs. 6600	Rs.13200/-
LAB CHARGES	Rs.3300/-
Total	Rs. 45100/-

The fee structure for remaining semesters will be provided in due course of time.

BS MICROBIOLOGY

BS Microbiology (AD- BASED)

3.1 Eligibility for admission

Associate Degree in relevant field with at least 60 credit hours.

3.2 Duration of Programme

The student will have to earn a total of 65 credit hours within a minimum of 2 years (4 semester) and maximum period for completion is years.

4.1 Scheme of Studies

Semester 1		
Course Code	**Course Title**	**Credit Hour**
4481	Introductory Biochemistry	4(3+1)
4482	Biostatistics	3(3+0)
4407	Microbial Genetics	4(3+1)
4408	Virology	4(3+1)
	Total credits	15
Semester 2		
Course Code	**Course Title**	**Credit Hour**
4419	Molecular Biology	4(3+1)
4416	Molecular Mechanism of Antimicrobial Drugs	4(3+1)
4411	Food and Dairy Microbiology	4(3+1)
4405	Microbial Anatomy and Physiology	4(3+1)
7413	Scientific Research	4(3+1)

	Total credits	20
Semester 3		
Course Code	**Course Title**	**Credit Hour**
4415	Immunology	4(3+1)
4413	Medical Microbiology	4(3+1)
4420	Industrial Microbiology	4(3+1)
4410	Soil Microbiology	4(3+1)
	Total credits	16
Semester 4		
Course Code	**Course Title**	**Credit Hour**
4417	Epidemiology	4(3+1)
4418	Research Project	6
4414	Genetic Engineering	4(3+1)
	Total credits	14

Total Credits = 65

4.2 Fee Tariff For 1st Semester

Item	
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-
Per 4 Credit hours course fee: Rs. 8800	Rs. 26400
Per 3 Credit hours course fee: Rs. 6600	Rs.6600/-
LAB CHARGES	Rs.3300/-
Total	Rs. 38500/-

5. Mode of Study

4.3 Medium of Instruction

The Medium of Instructions for BS Microbiology will be English.

4.4 Study Material

Lecture handouts will be provided by the department. The students are also advised to consult other reference books recommended by the department.

4.5 Mode of Teaching

a) University will provide face to face teaching to the students.

b) The schedule of classes and dates of submission of assignments will be announced by the department.

4.6 Assessment and Evaluation

For each course the student progress will be assessed on the basis of the followings:

Continuous Assessment

i. For each course the marks obtained by each student in written assignments will constitute 2/3 of the continuous assessment. A student must obtain a minimum of 50% marks in assignments to pass this component.

ii. For each practical based course, the marks obtained in the practical workshop will constitute 1/3 part of the continuous assessment. A student must obtain a minimum of 50% marks in the practical workshop individually in order to pass this component.

Final Examinations

A written examination will be conducted for each course with 50% passing marks.

4. **Contact Details**

Incharge
Department of Biology
Research Complex, 1st Floor, AIOU, H-8, Islamabad
Tel: 051-9057726; Email: biology@aiou.edu.pk

Coordinator BS-Microbiology
Department of Biology
Research Complex, 1st Floor, AIOU, H-8, Islamabad
Tel: 051 9057730; Email: biology@aiou.edu.pk

5. **Faculty Members**

1. **Dr. Hina Fatimah**
   Incharge, Department of Biology
   Ph. 051-9575271
2. **Dr. Muhammad Waseem**
   Assistant Professor, Ph. 051-9575274
3. **Dr. Rizwana Kousar**
   Assistant Professor, Ph. 051-9575273
4. **Dr. Sobia Kanwal,**
   Assistant Professor, Ph. 051-9575275
5. **Dr. Saba Farooq**
   Lecturer, Ph. 051-9575284
6. **Ms. Samar Naseer**
   Lecturer, Ph. 051-9057185
7. **Ms. Zainab Syed**
   Lecturer, Ph. 051-9575283
8. **Dr. Sadia Latif**
   Research Associate, Ph. 051-9575286

DEPARTMENT OF ENVIRONMENTAL SCIENCE

The approval for the establishment of the Department of Environmental Science was granted by the Executive Council in February 1998. The department was initiated with the aim of creating awareness and understanding of knowledge and skills required for sustainable environmental management. The purpose of its establishment is to educate future generation and improvement of quality of life and welfare of human being through research for the environmentally sustainable and socially equitable use of the natural resources. The department is determined to provide quality education to its wards through scientific and project-based learning curriculum.

The Department of Environmental Science is committed to educate its students for sustainable development of society, ensuring economic stability with eco-centric approach of development. The students from different fields can opt environmental sciences not only as a degree of substantial market value but also for their personal development on important moral values of environmental stewardship, so they can contribute significantly in achievement of better and sustainable society.

The Department is continuously growing and flourishing both on quality teaching and research facilities to facilitate its students in better learning. Undoubtedly the current era is a modern new world of environmental challenges that questions the safety and stability of life on earth. Though is developing

labs and faculty, the Department of Environmental Science promises to develop a holistic educational approach for the students to deal with challenges of the modern era.
The Department is offering undergraduate programs:

i. BS Environmental Science 4- Year Program
ii. BS Environmental Science 2.5- Year Program
iii. BS Environmental Science 2- Year Program
iv. M.Phil. Environmental Science 2-Year Program

The Department has well established lab facilities to foster the developing research ideas of the enrolled students, with competent faculty to guide them.

BS ENVIRONMENTAL SCIENCE

Introduction

The increasing environmental degradation due to urbanization has highlighted the need of Environmental Sciences. It is an integrated discipline designed to provide a comprehensive knowledge of the fundamentals of biological and natural sciences in solving environmental problems. The Environmental Sciences department is currently running BS and MSc Environmental Sciences Program under the Faculty of Science at AIOU. Where currently offers undergraduate program of BS Environmental Science. The courses offered in the department are designed considering the multidisciplinary nature of the discipline and focus on understanding of the fundamental processes that contribute to environmental pollution and natural resource degradation with the aim to train students to combat pollution and ensure sustainable development in the country.

Graduates from the Department of Environmental Science can find potential opportunities and career in a national and international organization working for sustainable development.

Objectives

The 4 years' degree program will enable the students to apply interdisciplinary skills, systems approaches and perspectives to understand and analyze environmental issues and policies of global and local concerns. It aims at producing dynamic young environmentalists by developing academic foundation, technical skills, communication abilities and professionalism enabling them to compete in both the governmental and non-governmental sectors.
On accomplishing the course, the students will be able to:

i. Deal with local and global environmental challenges, both academically and practically
ii. Contribute in informed decision making, strategic planning and leadership in the society through interdisciplinary understanding and problem-solving abilities

BS Environmental Science (4-Year Program)
Eligibility Criteria

i. F. Sc (pre-Medical) or (pre-Engineering) or equivalent qualification.
ii. Foreign certificate/ degree holders will need to produce equivalence certificate from IBCC.

Duration of Program

To be eligible for the award of BS in Environmental Science, the student will have to complete 133 credit hours including six credit hours for research project, within a minimum period of 4 years (8 semester) failing which a student can be given an extension of two years(4 semester) in minimum, after completion of initial period.

Scheme of Studies

Semester 1		
Course Code	**Course Title**	**Cr. hours**
BIO 3501	Cell Biology, Genetics and Evolution	4(3+1)
CHEM 3501	Inorganic Chemistry	4(3+1)
ENVS 3501	Introduction to Environmental Science	4(3+1)
MATH 3501	Pre-Calculus	3(3+0)
ENGL 3501	English I: Composition and Comprehension	3(3+0)
	Total Credit hours	**18**

Semester 2		
Course Code	**Course Title**	**Credit hours**
BIO 3504	Diversity of Plants	4(3+1)
CHEM 3502	Organic Chemistry	4(3+1)
ENVS 3504	Environmental Pollution	4(3+1)
MATH 3502	Calculus-I	3(3+0)
ENGL 3503	English II: Technical and Business Writing	3(3+0)
	Total Credit hours	**18**

Semester 3		
Course Code	**Course Title**	**Credit hours**
SOC 3501	Introduction to Sociology	3(3+0)
BIO 3502	Fundamentals of Microbiology	4(3+1)
PKST 3501	Pakistan Studies	2
ENGL 3502	English III: Communication Skills	3(3+0)
SOC 3501	Introduction to Sociology	3(3+0)
	Total Credit hours	**16**

Semester 4		
Course Code	**Course Title**	**Credit hours**
BIO 4501	Biotechnology	4(3+1)
BIO 3506	Environmental Microbiology	4(3+1)
CS 3501	Introduction to Computers	3(3+0)
MCM 3502	Public Relations	3(3+0)
ITHC 3501/ HADH 3501	Islamic Studies / Ethics*	2
	Total Credit hours	**16**

Semester 5		
Course Code	**Course Title**	**Credit hours**
ENVS 5503	Physics of the Environment	4(3+1)
ENVS 5501	Environmental Chemistry	4(3+1)
STAT 3506	Biostatistics	3(3+0)
ENVS 5502	Environmental Policies and Regulations	3(3+0)

	Total Credit hours	**14**

Semester 6		
Course Code	**Course Title**	**Credit hours**
ENVS 3506	Environmental Biology	4(3+1)
BIO 5506	Energy and Environment	3(3+0)
ENVS 5505	Intro of Environmental Economics	3(3+0)
ENVS 5504	Natural Resource Management	3(3+0)
ENVS 3507	Scientific Research	4(3+ 1)
	Total Credit hours	**17**

Semester 7		
Course Code	**Course Title**	**Credit hours**
BIO 5508	Biodiversity and Conservation	4(3+1)
ENVS 6503	Health, Safety & EnvironmentalManagement Systems	4(3+1)
ENVS 6501	Environmental Impact Assessment	4(3+1)
ENVS 6502	Sustainable Development	3(3+0)
ENVS 6504	Environmental Toxicology	3(3+0)
	Total Credit hours	**18**
Semester 8		
Course Code	**Course Title**	**Credit hours**
BIO 6507	Research Project	6
ENVS 6505	Project Management	3(3+0)
ENVS 6506	GIS and Remote Sensing	4(3+1)
ENVS 6507	Disaster Risk and Management	3(3+0)
	Total Credit hours	**16**

Total Credits = 133

Fee Tariff

Item	
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-
Per 4 Credit hours course fee: Rs. 8800	Rs. 26400
Per 3 Credit hours course fee: Rs. 6600	Rs.13200/-
Lab Charges	Rs.3300/-
Total	Rs. 45100/-

BS Environmental Science (BA/ BSc Based Program)

Eligibility Criteria

- For Bs program (BSc/ AD) based with less than 60 credit hours with bridging Semester.
  1. Students holding a BSc Degree with at least 45% marks shall be eligible for admission.
- Students with 45% marks in BSc are eligible for admission.
- Student with Associate Degree in relevant field with 60 credit hours.
- Students with a discipline specific Associate Degree with 50% marks who wish to switch to another discipline shall also be eligible for admission

Duration

To be eligible for the award of BS in Environmental Science, the student will have to complete minimum 83 credit hours including six credit hours for research project, within a minimum period of 2.5 years (5 semesters including bridging semester).

Scheme of Studies

Semester 1 (Bridging Semester)		
Course Code	**Course Title**	**Credit hours**
4441	Introduntion to Environmental Science	4(3+1)
4442	Environmental Pollution	4(3+1)
4412	Biotechnology	4(3+1)
5468	Introduction to Computers	3(2+1)
9467	Pre-Calculus	3 (3+0)
	Total Credit hours	**18**

Semester 2		
Course Code	**Course Title**	**Credit hours**
4467	Physics of the Environment	4(3+1)
4443	Environmental Chemistry	4(3+1)
4482	Biostatistics	3(3+0)
4458	Environmental Policies and Regulations	3(3+0)
	Total credits	**14**

Semester 3		
Course Code	**Course Title**	**Credit hours**
4446	Environmental Biology	4(3+1)
4448	Energy and Environment	3(3+0)
4444	Intro of Environmental Economics	3(3+0)
4438	Natural Resource Management	3(3+0)
7413	Scientific Research	4(3+ 1)
	Total Credit hours	**17**

Semester 4		
Course Code	**Course Title**	**Credit hours**
4452	Biodiversity and Conservation	4(3+1)
4455	Health, Safety & Environmental Management Systems	4(3+1)
4450	Environmental Impact Assessment	4(3+1)
4453	Sustainable Development	3(3+0)
4456	Environmental Toxicology	3(3+0)
	Total Credit hours	**18**

Semester 5		
Course Code	**Course Title**	**Credit hours**
4418	Research Project	6
4460	Project Management	3(3+0)
4483	GIS and Remote Sensing	4(3+1)
	Total Credit hours	**16**

Total Credit Hours= 83

Fee Tariff

Item	
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-

Per 4 Credit hours course fee: Rs. 8800	Rs. 17600
Per 3 Credit hours course fee: Rs. 6600	Rs.13200/-
Lab Charges	Rs.3300/-
Total	Rs. 36300/-

BS Environmental Science (AD Based)

Eligibility Criteria

Students having associate degree in relevant field with at least 60 credit hours

1. Students with an Associate degree in the relevant field with at least 60 credit hours shall be eligible for admission, for the award of BS degree in Environmental Science, the student will have to complete minimum 65 credit hours including six credit hours for research project.

Scheme of Studies

Semester 1		
Course Code	**Course Title**	**Credit hours**
4467	Physics of the Environment	4(3+1)
4443	Environmental Chemistry	4(3+1)
4482	Biostatistics	3(3+0)
4458	Environmental Policies and Regulations	3(3+0)
	Total Credit hours	**14**
Semester 2		
Course Code	**Course Title**	**Credit hours**
4446	Environmental Biology	4(3+1)
4448	Energy and Environment	3(3+0)
4444	Intro of EnvironmentalEconomics	3(3+0)
4438	Natural Resource Management	3(3+0)
7413	Scientific Research	4(3+ 1)
	Total Credit hours	**17**
Semester 3		
Course Code	**Course Title**	**Credit hours**
4452	Biodiversity and Conservation	4(3+1)
4455	Health, Safety & Environmental Management Systems	4(3+1)
4450	Environmental Impact Assessment	4(3+1)
4453	Sustainable Development	3(3+0)
4456	Environmental Toxicology	3(3+0)
	Total Credit hours	**18**
Semester 4		
Course Code	**Course Title**	**Credit hours**
4418	Research Project	6
4460	Project Management	3(3+0)
4483	GIS and Remote Sensing	4(3+1)
	Total Credit hours	**16**

Total Credit Hours: 65

Fee Tariff

Item	
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-

Technology Fee	Rs.550/-
Per 4 Credit hours course fee: Rs. 8800	Rs. 26400
Per 3 Credit hours course fee: Rs. 6600	Rs.13200/-
Lab Charges	Rs.3300/-
Total	Rs. 45100/-

6.1 Medium of Instruction

The Medium of Instructions for BS Environmental Science will be English.

6.2 Study Material

Reprinted or compiled course books/lecture handouts will be provided by the University as per AIOU policy.

6.3 Mode of Teaching

a) University will provide face to face teaching to the students.

a) The schedule of classes and dates of submission of assignments will be handed over along with study material.

Assessment and Evaluation:

1) The assessment comprises two components i.e. continuous assessment component.

2) Final Examinations weightage of both component is elaborated mentioned Student progress will be assessed based on the followings:

i. Chairperson,
Department of Environmental Science
Faculty of Sciences, Research Complex (First Floor)
Allama Iqbal Open University
Phone: 051 9057185

ii. Dr. Samia Qadeer
Program Coordinator (BS 4 Year)
Department of Environmental Science
Faculty of Sciences, Research Complex (First Floor)
Allama Iqbal Open University
Phone: 051-9057726 /051-9575674

Faculty Members

i. **Dr. Sofia Khalid,**
Associate Professor/Chairperson
Ph: 051 9057185

ii. **Dr. Zahid Ullah**
Assistant Professor
Ph. 051-9057735

iii. **Dr. Samia Qadeer**
Assistant Professor
Ph: 051-9575674

DEPARTMENT OF CHEMISTRY

Department of Chemistry is a major department of the Faculty of Science. It was established in 1998 to offer postgraduate programs in Chemistry. In the beginning only MSc programme was started, which was later extended to include MPhil and PhD programs. The faculty of the department comprises of one Professor, three Associate Professors, four Assistant Professor and three Lecturers. In addition, the department also uses services of experienced professors as visiting faculty.

The department is situated in Science Block on the main campus where it occupies the ground floor and a portion of the lower floor. With the expansion of lab facilities, the department has extended its academic activities by launching the BS programme from Spring, 2009. BS programme is visualized in the new scheme of higher education as a fundamental step in improving the standard of graduate and postgraduate studies.

The study programs in chemistry have been developed by the Faculty according to the guidelines provided by the Higher Education Commission (HEC). Necessary changes have been made time to time to suit our students, but without deviating fundamentally from the principles set by the HEC. The Committee of Courses of the department comprising distinguished professors and scientists of the country thoroughly screened the proposed syllabi.

Chemistry is an experimental science. Students learn basic techniques in the labs. Therefore, it is essential to provide best lab facilities to students of various levels. The chemistry department takes pride in offering the most modern lab facilities in the country to its students in all branches of chemistry. Its research labs are equipped with CHNS Analyzer, Thermal Analyzer, UV-Visible, Fluorescence and FTIR Spectrophotometer, GC-MS, Flash Column Chromatography and HPLC units, Atomic Absorption Spectrometer, and Electrochemical work stations. Teaching labs are well equipped with routine apparatus and basic instruments. These lab facilities make us one of the leading teaching and research departments of the country.

The department firmly believes in the promotion of chemistry as a science and in maintaining the highest standards. The department is in mission to promote chemistry as a science and provide opportunities of professional growth and updating knowledge to chemistry graduates.

BS CHEMISTRY

1 Introduction

There has been a continuous effort at the national level to upgrade the standard of college education. It is realized that our existing BSc programme does not meet international standards. The Higher Education Commission has recommended a four year BS programme to be followed by a two-year MS programme. The BS degree is considered equivalent to MSc Chemistry. However, BS degree holders are given preference for the relevant job over MSc graduates as their knowledge is more focused on Chemistry. It is a major structural change in our

existing educational system. The country will enormously benefit from the fruits of this change in terms of improved and balanced knowledge and skill.

The department of Chemistry offers the best facilities for this programme in the country. Its new labs and modern equipment together with qualified faculty makes it place to which students would like to be a part of it.

2 Objectives

The objectives of this programme are:

i) To provide a nurturing environment that facilitates and stimulate the active and explorative learning of Chemistry for the students.
ii) To provide chemical knowledge and laboratory skills required for professional chemist.
iii) To contribute to national effort in human resource development. Currently department of Chemistry is offering following programs.

3 BS Chemistry (4-year program)

3.1 Eligibility Criteria

i) FSc with Chemistry as one of the major subject.
ii) DAE (Diploma Holders) in Chemical Engineering / Chemical Technology from a Polytechnic Institute.
iii) "A"-Level with Chemistry or Equivalent.

3.2 Duration of Program

The minimum duration of BS Chemistry Programme is **Four years (8 Semesters)** and maximum duration to complete BS Chemistry Programme is **six years (12 Semesters).**

3.3 Scheme of Studies

The BS program is minimum of four years duration, split into eight semesters. In the first four semesters, the main emphasis will be on basic chemistry, general and compulsory subjects. In the 5th and 6th semesters, Physical, Inorganic, Organic and Analytical Chemistry will be offered as core courses. The specialized courses will be dealt in the 7th and 8th semester with specialization in Organic, Inorganic/Analytical and Physical Chemistry.

SEMESTER WISE COURSE OFFERING/ SCHEME OF STUDY

Semester-1

Course Code	Course Title	Credit Hours
PKST3501	Pakistan Studies	2(2+0)
ENGL3501	English-1: Composition and Comprehension	3(3+0)
BIO3501	Cell biology, Genetics, and Evolution	4(3+1)
MATH3501	Pre-Calculus	3(3+0)
CHEM3505	Fundamentals of Chemistry	4(3+1)
	Total Credits	**16**

Semester-2

Course Code	Course Title	Credit Hours
ITHC 3501/HADH 3501	Islamic Studies/Ethics	2(2+0)
ENGL 3503	English-II: Technical and	3(3+0)

	Business writing	
BIO 3504	Diversity of Plants	4(3+1)
MATH 3502	Calculus-I	3(3+0)
CHEM 3501	Inorganic Chemistry	4(3+1)
CS 3501	Introduction to Computers	3(2+1)
	Total Credits	19

Semester-3

Course Code	Course Title	Credit Hours
ENGL 3502	English-III: Communication skills	3(3+0)
CHEM 4501	Basic Biochemistry	4(3+1)
ENVS 5501	Environmental Chemistry	4(3+1)
CHEM3502	Organic Chemistry	4(3+1)
	Total Credits	**15**

Semester-4

Course Code	Course Title	Credit Hours
STAT 3507	Statistics for Chemist	4(3+1)
ENVS 3504	Environmental Pollution	4(3+1)
CHEM3503	Physical Chemistry	4(3+1)
CHEM3504	Analytical Chemistry	3(2+1)
MCM 3502	Public Relations	3(3+0)
	Total Credits	**18**

Semester-5

Course Code	Course Title	Credit Hours
CHEM 3506	Analytical Chemistry-1	3(3+0)
CHEM 3507	Physical Chemistry-1	3(3+0)
CHEM 3508	Organic Chemistry -1	3(3+0)
CHEM 3509	Inorganic Chemistry-1	3(3+0)
CHEM 3510	Mathematics for Chemists	2(2+0)
CHEM 3511	Chemistry Lab-I	4(0+4)
	Total Credits	**18**

Semester-6

Course Code	Course Title	Credit Hours
CHEM 5501	Analytical Chemistry-1I	3(3+0)
CHEM 5502	Physical Chemistry-1I	3(3+0)
CHEM 5503	Organic Chemistry-1I	3(3+0)
CHEM 5504	Inorganic Chemistry-1I	3(3+0)
CHEM 5505	Chemistry Lab-II	4(0+4)
	Total Credits	**16**

Specialization (Organic Chemistry)

Semester-7

Course Code	Course Title	Credit Hours
CHEM 6501	Heterocyclic Chemistry	3(3+0)
CHEM 6502	Stereochemistry of Organic Compounds	3(3+0)
CHEM 6503	Spectroscopic Methods in Organic Chemistry	3(3+0)
CHEM 6504	Advanced Organic Chemistry Lab-I	3(0+3)
CHEM 6505	Advanced Organic Chemistry Lab-II	3(0+3)
	Total Credits	**15**

Semester-8 (Specialization for Organic Chemistry)

Course Code	Course Title	Credit

		Hours
CHEM 6516	Chemistry of Natural Products	3(3+0)
CHEM 6517	Special Organic Reactions	3(3+0)
CHEM 6518	Organic Synthesis	3(3+0)
CHEM 6519	Advanced Organic Chemistry Lab-III	3(0+3)
CHEM 6520	Advanced Organic Chemistry Lab-IV	3(0+3)
	Total Credits	**15**

Specialization (Inorganic Chemistry / Analytical Chemistry)

Semester-7

Course Code	Course Title	Credit Hours
CHEM 6506	Coordination Chemistry	3(3+0)
CHEM 6507	Non-Spectroscopic Instrumental Methods of Analysis	3(3+0)
CHEM 6508	Basic Instrumental Methods of Analysis	3(3+0)
CHEM 6509	Advanced Inorganic Chemistry Lab-I	3(0+3)
CHEM 6510	Advanced Inorganic Chemistry Lab-II	3(0+3)
	Total Credits	**15**

Semester-8 (Specialization in Organic/ analytic Chemistry)

Course Code	Course Title	Credit Hours
CHEM 6521	Organometallic Chemistry	3(3+0)
CHEM 6522	Group Theory for Chemist and its Applications	3(3+0)
CHEM 6523	Advanced Environmental Chemistry	3(3+0)
CHEM 6524	Advanced Inorganic Chemistry Lab-III	3(0+3)
CHEM 6525	Advanced Inorganic Chemistry Lab-IV	3(0+3)
	Total Credits	15

Specialization (Physical Chemistry)

Semester-7

Course Code	Course Title	Credit Hours
CHEM 6511	Chemical Kinetics	3(3+0)
CHEM 6512	Quantum Chemistry	3(3+0)
CHEM 6513	Electrochemistry	3(3+0)
CHEM 6514	Advanced Physical Chemistry Lab-I	3(0+3)
CHEM 6515	Advanced Physical Chemistry Lab-II	3(0+3)
	Total Credits	15

Semester-8 (Specialization in Physical Chemistry)

Course Code	Course Title	Credit Hours
CHEM 6526	Molecular Spectroscopy	3(3+0)
CHEM 6527	Chemical Thermodynamics	3(3+0)
CHEM 6528	Surface Chemistry	3(3+0)
CHEM 6529	Advanced Physical Chemistry	3(0+3)

	Lab-III	
CHEM 6530	Advanced Physical Chemistry Lab-IV	3(0+3)
	Total Credits	15

Total Credit Hours=132

3.4 Fee Tariff

Item	
Registration Fee:	Rs.550/-
Admission Fee:	Rs.1100/-
Technology Fee (per semester)	Rs.550/-
Course Code / Lab	**Fee**
BIO3501	Rs.8800/-
CHEM3505	Rs.8800/-
MATH3501	Rs.6600/-
ENGL3501	Rs.6600/-
PKST3501	Rs.4400/-
Lab fee (per semester)	Rs.6600/-
First Semester Fee	**Rs.43950/-**

4 BS Chemistry (BSc Based)

Eligibility Criteria for BS Programs (BSc/AD Based with less than 60 credit hours) with Bridging Semester:

1. Students holding a BSc degree with 45% marks shall be eligible for admission.
2. Students with an Associate degree with 50% marks (14 years of education) having less than 60 credit hours shall be eligible for admission.
3. Students with a discipline-specific Associate degree with 50% marks who wish to switch to another discipline shall also be eligible for admission.

4.2 Duration of Prgramme

The minimum duration of BS Chemistry Programme is 2.5 years 5 Semesters and maximum duration to complete BS program in **4 years.**

4.3 Scheme of Studies

The BS programme is minimum of 2.5 years duration, split into five semesters. In the bridging semester, the main emphasis will be on basic chemistry courses with one mathematic course. In the 2nd and 3rd semesters, Physical, Inorganic, Organic and Analytical Chemistry will be offered as core courses. The specialized courses will be dealt in the 4th and 5th semester with specialization in Organic, Inorganic/Analytical and Physical Chemistry.

SEMESTER WISE COURSE OFFERING

Semester-1 (Bridging Semester)

Course Code	**Course Title**	**Credit Hours**
CHEM3501	Inorganic Chemistry	4(3+1)
CHEM3502	Organic Chemistry	4(3+1)
CHEM3503	Physical Chemistry	4(3+1)
CHEM3504	Analytical Chemistry	3(2+1)
MATH3501	Pre-Calculus	3(3+0)
	Total Credits	**18**

Semester-2

Course Code	**Course Title**	**Credit Hours**
CHEM3506	Analytical Chemistry-1	3(3+0)
CHEM3507	Physical Chemistry-1	3(3+0)
CHEM3508	Organic Chemistry -1	3(3+0)
CHEM3509	Inorganic Chemistry-1	3(3+0)

CHEM3510	Mathematics for Chemists	2(2+0)
CHEM3511	Chemistry Lab-I	4(0+4)
	Total Credits	**18**

Semester-3

Course Code	Course Title	Credit Hours
CHEM5501	Analytical Chemistry-1I	3(3+0)
CHEM5502	Physical Chemistry-1I	3(3+0)
CHEM5503	Organic Chemistry-1I	3(3+0)
CHEM5504	Inorganic Chemistry-1I	3(3+0)
CHEM5505	Chemistry Lab-II	4(0+4)
	Total Credits	**16**

Specialization (Organic Chemistry)

Semester-4

Course Code	Course Title	Credit Hours
CHEM6501	Heterocyclic Chemistry	3(3+0)
CHEM6502	Stereochemistry of Organic Compounds	3(3+0)
CHEM6503	Spectroscopic Methods in Organic Chemistry	3(3+0)
CHEM6504	Advanced Organic Chemistry Lab-I	3(0+3)
CHEM6505	Advanced Organic Chemistry Lab-II	3(0+3)
	Total Credits	**15**

Semester- 5 (Specialization in Organic Chemistry)

Course Code	Course Title	Credit Hours
CHEM6516	Chemistry of Natural Products	3(3+0)
CHEM6517	Special Organic Reactions	3(3+0)
CHEM6518	Organic Synthesis	3(3+0)
CHEM6519	Advanced Organic Chemistry Lab-III	3(0+3)
CHEM6520	Advanced Organic Chemistry Lab-IV	3(0+3)
	Total Credits	**15**

Semester- 4 (Specialization in Organic/ analytic Chemistry)

Course Code	Course Title	Credit Hours
CHEM6506	Coordination Chemistry	3(3+0)
CHEM6507	Non-Spectroscopic Instrumental Methods of Analysis	3(3+0)
CHEM6508	Basic Instrumental Methods of Analysis	3(3+0)
CHEM6509	Advanced Inorganic Chemistry Lab-I	30+3)
CHEM6510	Advanced Inorganic Chemistry Lab-II	3(0+3)
	Total Credits	**15**

Semester-5 (Specialization (Inorganic Chemistry / Analytical Chemistry)

Course Code	Course Title	Credit Hours
CHEM6521	Organometallic Chemistry	3(3+0)
CHEM6522	Group Theory for Chemist and Its Applications	3(3+0)
CHEM6523	Advanced Environmental Chemistry	3(3+0)
CHEM6524	Advanced Inorganic Chemistry Lab-III	3(0+3)

CHEM6525	Advanced Inorganic Chemistry Lab-IV	3(0+3)
	Total Credits	**15**

Specialization (Physical Chemistry)

Semester-4

Course Code	Course Title	Credit Hours
CHEM6511	Chemical Kinetics	3(3+0)
CHEM6512	Quantum Chemistry	3(3+0)
CHEM6513	Electrochemistry	3(3+0)
CHEM6514	Advanced Physical Chemistry Lab-I	3(0+3)
CHEM6515	Advanced Physical Chemistry Lab-II	3(0+3)
	Total Credits	**15**

Semester-5 (Specialization in Physical Chemistry)

Course Code	Course Title	Credit Hours
CHEM6526	Molecular Spectroscopy	3(3+0)
CHEM6527	Chemical Thermodynamics	3(3+0)
CHEM6528	Surface Chemistry	3(3+0)
CHEM6529	Advanced Physical Chemistry Lab-III	3(0+3)
CHEM6530	Advanced Physical Chemistry Lab-IV	3(0+3)
	Total Credits	**15**

4.4 Fee Tariff

Item	
Registration Fee:	Rs.550/-
Admission Fee:	Rs.1100/-
Technology Fee (per semester)	Rs.550/-
Course Code / Lab	**Fee**
CHEM3501	Rs.8800/-
CHEM3502	Rs.8800/-
CHEM3503	Rs.8800/-
CHEM3504	Rs.6600/-
MATH3501	Rs.6600/-
Lab fee (per semester)	Rs.6600/-
First Semester Fee	**Rs.484,00/-**

5 BS Chemistry (AD Based)

Eligibility Criteria

Students with an Associate degree in the relevant field with at least 60 credit hours shall be eligible for admission.

5.2 Duration of Program

The minimum duration of BS Chemistry Program is **2 years (4 Semesters) and maximum** duration to complete BS Chemistry (AD Based)program is 4 years (8 semester)

SEMESTER WISE COURSE OFFERING

Semester-1

Course Code	Course Title	Credit Hours
2573	Analytical Chemistry-1	3(3+0)
2575	Physical Chemistry-1	3(3+0)
2576	Organic Chemistry -1	3(3+0)
2577	Inorganic Chemistry-1	3(3+0)
2594	Mathematics for Chemists	2(2+0)

2595	Chemistry Lab-I	4(0+4)
	Total Credits	**18**

Semester-2

Course Code	Course Title	Credit Hours
2574	Analytical Chemistry-1I	3(3+0)
2580	Physical Chemistry-1I	3(3+0)
2581	Organic Chemistry-1I	3(3+0)
2582	Inorganic Chemistry-1I	3(3+0)
2596	Chemistry Lab-II	4(0+4)
	Total Credits	**16**

Specialization (Organic Chemistry)
Semester-3

Course Code	Course Title	Credit Hours
2585	Heterocyclic Chemistry	3(3+0)
2586	Stereochemistry of Organic Compounds	3(3+0)
2589	Spectroscopic Methods in Organic Chemistry	3(3+0)
2597	Advanced Organic Chemistry Lab-I	3(0+3)
2598	Advanced Organic Chemistry Lab-II	3(0+3)
	Total Credits	**15**

Semester- 4 (Specialization in Organic Chemistry)

Course Code	Course Title	Credit Hours
2587	Chemistry of Natural Products	3(3+0)
2590	Special Organic Reactions	3(3+0)
2591	Organic Synthesis	3(3+0)
2537	Advanced Organic Chemistry Lab-III	3(0+3)
2538	Advanced Organic Chemistry Lab-IV	3(0+3)
	Total Credits	15

Specialization (Inorganic Chemistry / Analytical Chemistry)
Semester- 3

Course Code	Course Title	Credit Hours
2539	Coordination Chemistry	3(3+0)
2540	Non-Spectroscopic Instrumental Methods of Analysis	3(3+0)
2541	Basic Instrumental Methods of Analysis	3(3+0)
2542	Advanced Inorganic Chemistry Lab-I	3(0+3)
2543	Advanced Inorganic Chemistry Lab-II	3(0+3)
	Total Credits	**15**

Semester-4 (Specialization in Organic/Analytical Chemistry)

Course Code	Course Title	Credit Hours
2544	Organometallic Chemistry	3(3+0)
2545	Group Theory for Chemist and its Applications	3(3+0)
2547	Advanced Environmental Chemistry	3(3+0)
3561	Advanced Inorganic Chemistry Lab-III	3(0+3)
3562	Advanced Inorganic Chemistry Lab-IV	3(0+3)
	Total Credits	**15**

Semester-3 (Physical Chemistry)

Course Code	Course Title	Credit Hours

2548	Chemical Kinetics	3(3+0)
2549	Quantum Chemistry	3(3+0)
2550	Electrochemistry	3(3+0)
2568	Advanced Physical Chemistry Lab-I	3(0+3)
2569	Advanced Physical Chemistry Lab-II	3(0+3)
	Total Credits	**15**

Specialization (Physical Chemistry)

Semester-4

Course Code	Course Title	Credit Hours
2570	Molecular Spectroscopy	3(3+0)
2571	Chemical Thermodynamics	3(3+0)
2599	Surface Chemistry	3(3+0)
3563	Advanced Physical Chemistry Lab-III	3(3+0)
3564	Advanced Physical Chemistry Lab-IV	3(3+0)
	Total Credits	**15**

5.4 Fee Tariff

Item	
Registration Fee:	Rs.550/-
Admission Fee:	Rs.1100/-
Technology Fee (per semester)	Rs.550/-
Course Code / Lab	**Fee**
Analytical Chemistry-1	Rs.6600/-
Physical Chemistry-1	Rs.6600/-
Organic Chemistry -1	Rs.6600/-
Inorganic Chemistry-1	Rs.6600/-
Mathematics for Chemists	Rs.4400/-
Lab fee (per semester)	Rs.6600/-
First Semester Fee	**Rs.39,600/-**

6.1 Medium of Instruction

The Medium of Instructions for BS Chemistry will be English.

6.2 Study Material

The Class Teacher will provide the study material as per AIOU policy and will suggest reference books for further reading.

6.3 Mode of Teaching

In this programme, regular classes for all courses / practical work will be conducted at AIOU Main Campus in Face to Face mode. Minimum 70% attendance is required for all subjects as per AIOU rules. AIOU has adopted GPA/CGPA system from Spring Semester 2009 in all its four years Bachelor Degree programs.

6.4 Assessment and Evaluation

Student progress will be assessed based on the followings:

Method of Assessment for Laboratory Courses.

Assessment for all laboratory courses will be totally based on continuous assessment, Lab Quiz and Viva-voce as already mentioned, the laboratory courses will be offered in the form of workshops. A specific number of experiments will be conducted in each workshop. Each experiment will be assessed separately, and attendance in these workshops will be compulsory for every student. The minimum required marks to pass each laboratory course will be 50%.

8 Contact Details

Chairperson

Department of Chemistry,
Science Block

Allama Iqbal Open University, H-8, Islamabad.
Contact Ph: 051-9057818

BS Programme Coordinator
Department of Chemistry,
Science Block
Allama Iqbal Open University, H-8, Islamabad.
Contact Ph: 051-9057262

9. Faculty Members

1. **Dr. Uzma Yunus**
   Associate Professor /Chairperson
   Ph: 051–9575200
2. **Dr. Moazzam H. Bhatti**
   Professor
   Ph: 051–9575217
3. **Dr. Nasima Arshad**
   Associate Professor
   Ph: 051–9575218
4. **Dr. Muhammad Sher**
   Associate Professor
   Ph: 051-9575219
5. **Dr. Muhammad Zaman Ashraf**
   Assistant Professor
   Ph: 051-9575224
6. **Dr. Iqbal Ahmed**
   Assistant Professor
   Ph: 051-9575223
7. **Dr. Muhammad Naeem Khan**
   Assistant Professor
   Ph: 051-9575225
8. **Dr. Muhammad Saleem**
   Assistant Professor
   Ph: 051-9575226
9. **Dr. Mehwash Zia**
   Lecturer
   Ph: 051-9575231
10. **Dr. Farzana Shaheen**
    Lecturer
    Ph: 051-9575232
11. **Dr. Erum Jabeen**
    Lecturer
    Ph: 051-9575234

DEPARTMENT OF MATHEMATICS

Our vision is to be among the leading Mathematics departments of the country, which provides quality education in Mathematics and is the center of active and innovative research. The department aspires to promote understanding of Mathematics through teaching and research and inculcate in students the attributes of logical and critical thinking. The Department of Mathematics has been established in June 2014. In June 2014, the Department of Mathematics & Statistics has been bifurcated as two independent departments.

Mathematical life at AIOU is very active. It comprises original investigations, discussions, lectures, and teaching at many levels. We are deeply committed to superior research in mathematics and the scientific excellence of our faculty is well recognized in the mathematical community.

The following degree programs are being offered in the Department of Mathematics. All these programs are approved by Higher Education Commission (HEC), Islamabad.

i. PhD Mathematics
ii. MPhil Mathematics
iii. BS Mathematics

Presently, these degree programs are offered at main campus only. However, in near future, the Department intends to offer these degree programs at main regional headquarters.

The Department provides instructional support to all the faculties of the University in the teaching of courses related to Mathematical sciences. Presently, the Department is offering courses for post-graduate and graduate programs which are carefully designed with a thoughtful selection of courses from applied, pure, financial, and computational domains of mathematics in the light of guidelines provided by the HEC.

The Department offers programs in various specializations which include Pure, Applied, Computational and Financial Mathematics. Academia and students frequently participate in national, regional and international conferences. The research interests of the Department of Mathematical Sciences range from abstract to applied aspects of the discipline. Building on our current strength, our goal is to strengthen areas related to Pure and Applied Mathematics. We believe that it will help students keep pace with the latest trends in mathematics on the one hand and contribute to society at large on the other. A clearer idea of the exact areas engaging the Department's current interest can be formed from the list of the faculty and their individual areas of research.

BS MATHEMATICS

1. Introduction

BS Mathematics has been designed after consulting syllabi of national and international universities. BS Mathematics program will strengthen the mathematical concepts of the candidate and will enhance their logical thinking. This

program caters the needs of information Technology and other sciences disciplines.

To meet the challenging requirements of today's fast growing world, the department of Mathematics has planned to launch BS Mathematics Program. The BS degree is deemed equivalent to MSc Mathematics. BS degree holders are being preferred throughout the world as their knowledge is more focused on Mathematics. Our BS Mathematics program will produce well trained, highly numerate and computer literate graduates.

2. Objectives

After completing this program, students will acquire the necessary knowledge based in the area of Mathematics. The overall objective of this program is

i. To enhance the qualification of those who could not continue their education after F. Sc. through formal universities.
ii. To provide an opportunity to in service persons to improve their qualification and get promotion in their respective departments.
iii. To provide in-depth understanding of Mathematics and apply them in real life projects.
iv. To produce quality teacher/researchers of Mathematics at all levels.

There are three types of BS-Mathematics program being offered depending upon their eligibility criteria and duration of the program.

3. BS Mathematics (4-Year Program)

- **Eligibility Criteria**

Candidate must have FSc/HSSC certificate in HSSC with major Mathematics or equivalent exams approved/verified by Inter Board Committee of Chairmen (IBCC).

- **Duration of Program**

For the award of BS degree in Mathematics, the student will have to earn a total of 130 credit hours within a minimum period of **4 years (8 semesters).** The maximum period to complete program is **6 years (12 semesters).**

- **Scheme of Study (BS math 4years)**

Semester 1		
Course Code	**Course Title**	**Credit Hours**
ENGL3501	English-I: Composition and Comprehension	3(3+0)
MATH3502	Calculus-I	3(3+0)
PKST3501	Pakistan Studies	2(2+0)
CS3501	Introduction to Computer	3(3+0)
STAT3501	Introductory Statistics	3(3+0)
MATH3507	Set Theory and Logic	3(3+0)
	Total Credits	**17**
Semester 2		
Course Code	**Course Title**	**Credit Hours**
ENGL3503	English-II: Technical and Business Writing	3(3+0)
MATH3509	Calculus-II	3(3+0)
ITHC3501 /HADH3501	Islamic Studies/Ethics	2(2+0)
MATH3505	Discrete Mathematics-I	3(3+0)

ENVS3502	Fundamentals of Environmental Sciences	3(3+0)
SOC3501	Introduction to Sociology	3(3+0)
	Total credits	**17**

Semester 3		
Course Code	**Course Title**	**Credit Hours**
ENGL3502	English-III: Communication Skills	3(3+0)
PHY3509	Waves and Oscillations	3(3+0)
MATH4501	Algebra-I	3(3+0)
MATH4502	Analytical Geometry	3(3+0)
MATH4503	Vector and Tensor Analysis	3(3+0)
URD3501	Pakistani Adab-I	3(3+0)
	Total Credits	**18**

Semester 4		
Course Code	**Course Title**	**Credit Hours**
STAT3503	Introduction to Probability and Probability Distributions	3(3+0)
PHY3507	Heat and Thermodynamics	3(3+0)
MATH4504	Mathematical Methods	3(3+0)
ITHC3502/ FREN3501	Language Arabic/French Level -I	3(3+0)
MATH3506	Computing Tools	3(2+1)
	Total Credits	**15**

Semester 5		
Course Code	**Course Title**	**Credit Hours**
MATH3510	Computer and Scientific Applications C++	3(3+0)
MATH3511	Topology	3(3+0)
MATH3512	Linear Algebra	3(3+0)
MATH3513	Real Analysis-I	3(3+0)
MATH3514	Ordinary Differential Equations	3(3+0)
	Total Credits	**15**

Semester 6		
Course Code	**Course Title**	**Credit Hours**
MATH5501	Differential Geometry	3(3+0)
MATH5502	Complex Analysis	3(3+0)
MATH5503	Group Theory	3(3+0)
MATH5504	Analytical Mechanics	3(3+0)
MATH5505	Real Analysis-II	3(3+0)
MATH5506	Algebra-II	3(3+0)
	Total Credits	**18**

Semester 7		
Course Code	**Course Title**	**Credit Hours**
MATH6501	Numerical Methods	3(3+0)
MATH6502	Partial Differential Equations	3(3+0)
MATH6503	Functional Analysis	3(3+0)
MATH6504	Theory of Rings	3(3+0)
STAT3504	Mathematical Statistics-I	3(3+0)
	Total Credits	**15**

Semester 8		
Course Code	**Course Title**	**Credit Hours**
	Optional-I	3(3+0)

	Optional-II	3(3+0)
	Optional-III	3(3+0)
	Optional-IV	3(3+0)
	Optional-V	3(3+0)
	Total credits	**15**

Total Credits =130

List of Optional Courses

Sr. No.	Title of the Course	Course Code	Credit Hours
1.	Fluid Mechanics	MATH 6506	3(3+0)
2.	Relativistic Mechanics	MATH 6507	3(3+0)
3.	Operation Research	MATH 6508	3(3+0)
4.	Combinatorics	MATH 6509	3(3+0)
5.	Applied Number Theory	MATH 6510	3(3+0)
6.	Galois Theory	MATH 6511	3(3+0)
7.	Mathematical Statistics-II	MATH 6512	3(3+0)
8.	Optimization	MATH 6513	3(3+0)
9.	Analytical Dynamics	MATH 6514	3(3+0)
10	Mathematical Modeling	MATH 6515	3(3+0)
11.	Graph Theory	MATH 6516	3(3+0)
12.	Algebraic Topology	MATH 6517	3(3+0)
13.	Research Report	MATH 6518	3(3+0)
14.	Mathematical Finance-I	MATH 6519	3(3+0)
15.	Theory of Racks and Quandles	MATH 6520	3(3+0)
16.	Research Project	MATH 6521	3(0+3)
17.	History of Mathematics	MATH 6505	3(3+0)

- **Fee Tariff**

Item	
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-
Per 3 Credit hours course fee: Rs. 6000	Rs. 33000
Per 2 Credit hours course fee: Rs. 4000	Rs.4400/-
Lab Fee (Per Semester)	Rs.850/-
Total	Rs. 40450/-

4. BS Mathematics (BA/ BSC Based)

Eligibility Criteria

1. Students holding a BSc degree with 45% marks shall be eligible for admission.
2. Students with an Associate degree (14 years of education) having less than 60 credit hours shall be eligible for admission.
3. Students with a discipline-specific Associate degree who wish to switch to another discipline shall also be eligible for admission.

- **Duration of Program**

The students would be allowed to continue with BS-Mathematics in 5th semester after completing bridging semester which comprises of 18 credit hours of foundation courses. The Student will have to earn a total of 78 credit hours within a minimum period of 2.5 years and maximum of 4 years.

Scheme of Study

Semester-1 (Bridging Semester)		
Course Code	**Course Title**	**Credit Hours**
CS3501	Introduction to Computers	3(3+0)
STAT3501	Introductory Statistics	3(3+0)
MATH3507	Set Theory and Logic	3(3+0)
MATH3505	Discrete Mathematics-I	3(3+0)
MATH3506	Computing Tools	3(3+0)
PHY3507	Heat and Thermodynamics	3(3+0)
	Total Credits	**18**
Semester 2		
Course Code	**Course Title**	**Credit Hours**
MATH3510	Computer and Scientific Applications C++	3(3+0)
MATH3511	Topology	3(3+0)
MATH3512	Linear Algebra	3(3+0)
MATH3513	Real Analysis-I	3(3+0)
MATH3514	Ordinary Differential Equations	3(3+0)
	Total Credits	**15**
Semester 3		
Course Code	**Course Title**	**Credit Hours**
MATH5501	Differential Geometry	3(3+0)
MATH5502	Complex Analysis	3(3+0)
MATH5503	Group Theory	3(3+0)
MATH5504	Analytical Mechanics	3(3+0)
MATH5505	Real Analysis-II	3(3+0)
	Total Credits	**15**

Semester 4		
Course Code	**Course Title**	**Credit Hours**
MATH6501	Numerical Methods	3(3+0)
MATH6502	Partial Differential Equations	3(3+0)
MATH6503	Functional Analysis	3(3+0)
MATH6504	Theory of Rings	3(3+0)
STAT3504	Mathematical Statistics-I	3(3+0)
	Total Credits	**15**

Semester 5		
Course Code	**Course Title**	**Credit Hours**
	Optional-I	3(3+0)
	Optional-II	3(3+0)
	Optional-III	3(3+0)
	Optional-IV	3(3+0)
	Optional-V	3(3+0)
	Total credits	**15**

Total Credits =78

List of Optional Courses

Sr. No.	Title of the Course	Course Code	Credit Hours
1.	Fluid Mechanics	MATH 6506	3(3+0)
2.	Relativistic Mechanics	MATH 6507	3(3+0)
3.	Operation Research	MATH 6508	3(3+0)

4.	Combinatorics	MATH 6509	3(3+0)
5.	Applied Number Theory	MATH 6510	3(3+0)
6.	Galois Theory	MATH 6511	3(3+0)
7.	Mathematical Statistics-II	MATH 6512	3(3+0)
8.	Optimization	MATH 6513	3(3+0)
9.	Analytical Dynamics	MATH 6514	3(3+0)
10	Mathematical Modeling	MATH 6515	3(3+0)
11.	Graph Theory	MATH 6516	3(3+0)
12.	Algebraic Topology	MATH 6517	3(3+0)
13.	Research Report	MATH 6518	3(3+0)
14.	Mathematical Finance-I	MATH 6519	3(3+0)
15.	Theory of Racks and Quandles	MATH 6520	3(3+0)
16.	Research Project	MATH 6521	3(0+3)
17.	History of Mathematics	MATH 6505	3(3+0)

- **Fee Tariff**

Item	
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-
Per 3 Credit hours course fee: Rs. 6000	Rs. 37400
Lab Fee (Per Semester)	Rs.850/-
Total	Rs. 40450/-

5. BS Mathematics AD Based

Eligibility Criteria

1. Students with Associate degree in the relevant field with at least 60 credit hours shall be eligible for admission.

- **Duration Degree award of Program**

In order to be eligible for the award of BS in Mathematics, the student will have to earn a total 120 (60+60) credit hours with a minimum period of 2 years (4 Semester) and maximum period of 4 years (8 semester).

- **Scheme of Study**

Semester 1		
Course Code	**Course Title**	**Credit Hours**
1520	Computer and Scientific Applications C++	3(3+0)
1521	Topology	3(3+0)
1522	Linear Algebra	3(3+0)
1523	Real Analysis-I	3(3+0)
1525	Ordinary Differential Equations	3(3+0)
	Total Credits	**15**
Semester 2		
Course Code	**Course Title**	**Credit Hours**
1524	Differential Geometry	3(3+0)
1527	Complex Analysis	3(3+0)
1528	Group Theory	3(3+0)
1529	Analytical Mechanics	3(3+0)
1530	Real Analysis-II	3(3+0)

	Total Credits	**15**
Semester 3		
Course Code	**Course Title**	**Credit Hours**
1531	Numerical Methods	3(3+0)
1532	Partial Differential Equations	3(3+0)
1533	Functional Analysis	3(3+0)
1534	Theory of Rings	3(3+0)
1538	Mathematical Statistics-I	3(3+0)
	Total Credits	**15**
Semester 4		
Course Code	**Course Title**	**Credit Hours**
	Optional-I	3(3+0)
	Optional-II	3(3+0)
	Optional-III	3(3+0)
	Optional-IV	3(3+0)
	Optional-V	3(3+0)
	Total credits	**15**

Total Credits =60

List of Optional Courses

Sr. No.	Title of the Course	Code	CH
1.	Mathematical Finance-I	4478	3(3+0)
2.	Theory of Racks and Quandles	4479	3(3+0)
3.	Research Project	4480	3(0+3)
4.	Fluid Mechanics	1535	3(3+0)
5.	Applied Number Theory	1540	3(3+0)
6.	Mathematical Statistics-II	1542	3(3+0)
7.	Optimization	1544	3(3+0)
8.	Analytical Dynamics	1545	3(3+0)
9.	Mathematical Modeling	1546	3(3+0)
10.	Graph Theory	1547	3(3+0)
11.	Research Report	1550	3(3+0)
12.	Operation Research	1537	3(3+0)
13.	Combinatorics	1539	3(3+0)
14.	Galois Theory	1541	3(3+0)
15.	Algebraic Topology	1548	3(3+0)
16.	Relativistic Mechanics	1536	3(3+0)
17.	History of Mathematics	9415	3(3+0)

Fee Tariff

Item	
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-
Per 3 Credit hours course fee: Rs. 6000	Rs. 33000
Lab Fee (Per Semester)	Rs.850/-
Total	Rs. 36050/-

5. Medium of Instruction

The Medium of Instructions for BS Mathematics will be English.

- **Study Material**

Lecture handouts will be provided by the concerned resource person/department however, the students are advised to consult the other reference books recommended by the resource person.

- **Mode of Teaching**

The classes will be conducted face-to-face in the main campus of AIOU.

Student progress will be assessed based on the followings:

Continuous Assessment

i. For each course the marks obtained by each student in written assignments will be minimum of 50% to pass this component.
ii. For each practical based course, the marks obtained in the practical workshop will be minimum of 50% individually in order to pass this component.

Final Examinations

A written examination will be conducted for each course with 50% passing marks.

Note: it is mandatory to pass in each assessment component.

Note: If a student fails to pass in any of assessment component of a particular course, he / she will have to re-enroll in that course.

Contact Details

For further information, contact:

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DEPARTMENT OF PHYSICS

Realizing the need of technology and scientific education in Pakistan Department of Physics at AIOU was established in 1998 with technological needs in areas like Energy, Energy Efficiency, Climate, and Energy for Sustainable Development, Renewable Energy, Hydrogen Energy, Environment, Astronomy, Nanotechnology, Materials Science, Plasma Physics, Medical Physics, Cosmology, Geo Physics, Density Functional Theory (DFT), and Nuclear fields. A major emphasis of current research activities is on promotion of renewable energy and related areas in which the Department has led to innovations.

The Department is presently running BS 2-year, BS 2.5-year, BS 4-year, MPhil, and PhD degree programs with specialization in various disciplines. Apart from capacity development, activities Department of Physics has been involved in several international, national, and regional research projects. The Physics Department has developed research linkage with other National and International Universities and research organizations of repute to ensure two-way flow of knowledge.

BS PHYSICS

Introduction

The Department of Physics offer 2-year, 2.5-year and 4- year BS Physics degree programs. These programs are designed according to the scheme of studies approved by the Higher Education Commission (HEC) of Pakistan to meet the national and international standards.

It covers all aspects of Physics ranging from its foundations to modern research. The offered courses have a flexible curriculum that is capable of preparing students for advanced studies in Physics as well as careers in teaching and research institutes. The Department encourages the students to participate in research projects and provides them with possible facilities and guidance. In addition, students could participate in the activities of different university societies, attend departmental seminars, workshops and conferences.

Objectives

The main educational objectives of BS degree programs are:

i. To impart students with a conceptual understanding of the fundamental principles of Physics, natural laws, and their interpretation, as well as mathematical formulation of the physical phenomena in nature.

ii. To develop critical skills necessary for solving unknown problems from our physical surroundings.

iii. To develop the capability of analyzing, addressing, and posing solutions to problems of natural importance and to instill a deep appreciation of the need for optimum utilization of natural resources and environment.

iv. To instill in students the habit of independent thinking, deep inquiry, and motivation for self-education.

v. To sharpen our students' mathematical prowess making them capable of modeling, analyzing, and predicting the behavior of physical processes.

vi. To enhance our students' skills in scientific communication and the ability to clearly present Physics and science in simple and clear language.

vii. To introduce students with the spirit of working in interactive groups with the necessary requirements of scientific and professional ethics.

viii. To develop hands-on experience in different laboratory techniques and modern instrumentation.

ix. To enhance students' competence in the design and conduct of experiments as well as analysis and presentation of experimental data and results.

x. To provide an in-depth understanding of some specialized areas of Physics through the option of elective courses.

xi. To equip students with the necessary skill set for pursuing careers in Physics education, research and industry in government or private organizations.

BS Physics (4-year)

3.1. Eligibility Criteria

FSc. (Pre-Engineering/Pre-Medical), ICS (Physics, Mathematics combination) / DAE .

3.2. Duration of Program

The minimum duration of BS Physics Program is **four years (8 Semesters)** and maximum duration to complete BS Physics Program is **six years (12 semesters).**

3.3. Scheme of Studies

Semester-1		
Course Code	**Course**	**Credit Hours**

ENGL3501	English-I: Composition & Comprehension	3(3+0)
PKST 3501	Pakistan Studies	2(2+0)
PHY3503	Basic Calculus–I	3(3+0)
CS3501	Introduction to Computers	3(3+0)
PHY3501	Mechanics	4(3+1)
PHY3502	Laboratory for Mechanics & Fluids	1(0+1)
SOC3501	Introduction to Sociology	3(3+0)
	Total Credit hours	**19**
Semester-2		
Course Code	**Course**	**Credit Hours**
PHY3510	Basic Calculus–II	3(3+0)
ENGL3503	English-II: Technical & Business Writing	3(3+0)
PHY3505	Electricity & Magnetism	4(3+1)
PHY3508	Laboratory for Electricity & Magnetism	1(0+1)
PHY3509	Waves & Oscillations	3(3+0)
ITHC3501/HADH3501	Islamic Studies or Ethics (for non-Muslim students only)	2(2+0)
PHY3511	Laboratory Techniques and Error Propagation	3(3+0)
	Total Credit hours	**19**
Semester-3		
Course Code	**Course**	**Credit Hours**
MATH3504	Algebra in Physics	3(3+0)
ENGL3502	English-III: Communication Skills	3(3+0)
STAT3505	Fundamentals of Statistics	3(3+0)
PHY3507	Heat and Thermodynamics	3(3+0)
MCM3501	Mass Communication	3(3+0)
PHY4501	Laboratory for Thermodynamics	1(0+1)
	Total Credit hours	**16**
Semester-4		
Course Code	**Course**	**Credit Hours**
PHY3504	Modern Physics	3(3+0)
MATH3503	Differential Equations	3(3+0)
PHY4502	Probability & Statistics	3(3+0)
PHY3506	Optics	3(3+0)
PHY4503	Laboratory for Optics & Spectroscopy	1(0+1)
ENVS3502	Fundamentals of Environmental Sciences	3(3+0)
	Total Credit hours	**16**
	Semester-5	
Course Code	**Course**	**Credit Hours**
PHY3512	Mathematical Methods in Physics-1	3(3+0)
PHY3513	Classical Mechanics & Relativity	3(3+0)
PHY3516	Electronics	3(3+0)
PHY3515	Atomic & Molecular Physics	3(3+0)
PHY3514	Laboratory for General & Nuclear	2(0+2)

	Physics	
	Total Credit hours	**14**
Semester-6		
Course Code	**Course**	**Credit Hours**
PHY5501	Mathematical Methods in Physics-II	3(3+0)
PHY 5502	Quantum Mechanics-I	3(3+0)
PHY5503	Electromagnetic Theory-I	3(3+0)
PHY5506	Thermal & Statistical Physics	3(3+0)
PHY5505	Computational Physics	3(3+0)
PHY5504	Laboratory for Electronics	2(0+2)
	Total Credit hours	**17**
Semester-7		
Course Code	**Course**	**Credit Hours**
PHY6501	Electromagnetic Theory-II	3(3+0)
PHY6502	Quantum Mechanics-II	3(3+0)
PHY6503	Solid State Physics-I	3(3+0)
PHY6504	Lasers & Optics	3(3+0)
PHY6505	Digital & Computer Hardware Electronics	3(3+0)
PHY6506	Laboratory for Digital & Computer Hardware Electronics	3(0+3)
	Total Credit hours	**18**
Semester-8		
Course Code	**Course**	**Credit Hours**
PHY6507	Research Techniques	3(3+0)
PHY6508	Nuclear Physics	3(3+0)
PHY6509	Advanced Digital & Computer Hardware Electronics	3(3+0)
PHY6510	Laboratory for Advanced Digital & Computer Hardware Electronics	4(0+4)
PHY6511	Electronic Communication System	3(3+0)
	Total Credit hours	**16**

Total Credit Hours = 135

3.4. Fee Tariff for 1st Semester of BS Physics (4-Year)

Item	
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-
Tuition Fee (Rs. 2200/- per credit hour)	Rs.41800/-
Total	Rs.43950/-

4. BS Physics (BSc Based)

The bridging semester (1st Semester) or comprising (18 credit hours) of foundation courses will be offered.

4.1. Eligibility Criteria

Eligibility Criteria for BS Programs (BSc/AD Based) with Bridging Semester:

1. Students holding BSc degree with 45% marks shall be eligible for admission.
2. Students with an Associate degree (14 years of education) having less than 60 credit hours shall be eligible for admission.

3. Students with a discipline-specific Associate degree who wish to switch to this discipline shall also be eligible for admission.

4.2. Duration of Program

The minimum duration of BS Physics (2.5- year) Program is 2.5 years/ (5 Semesters) and maximum duration to complete BS Physics (2.5 year) program is 4 Years.

4.3. Scheme of Studies for BS Physics (2.5- year)

Semester-1 (Bridging Semester)		
Course Code	**Course**	**Credit Hours**
MATH 3504	Algebra in Physics	3(3+0)
ENGL3502	English-III: Communication Skills	3(3+0)
PHY3504	Modern Physics	3(3+0)
MATH3503	Differential Equations	3(3+0)
PHY3506	Optics	3(3+0)
ENVS3502	Fundamentals of Environmental Sciences	3(3+0)
	Total Credit Hours	**18**
Semester-2		
Course Code	**Course**	**Credit Hours**
PHY3512	Mathematical Methods in Physics-1	3(3+0)
PHY3513	Classical Mechanics & Relativity	3(3+0)
PHY3516	Electronics	3(3+0)
PHY3515	Atomic & Molecular Physics	3(3+0)
PHY3514	Laboratory for General & Nuclear Physics	2(0+2)
	Total Credit Hours	**14**
Semester-3		
Course Code	**Course**	**Credit Hours**
PHY5501	Mathematical Methods in Physics-II	3(3+0)
PHY5502	Quantum Mechanics-I	3(3+0)
PHY5503	Electromagnetic Theory-I	3(3+0)
PHY5506	Thermal & Statistical Physics	3(3+0)
PHY5505	Computational Physics	3(3+0)
PHY5504	Laboratory for Electronics	2(0+2)
	Total Credit Hours	**17**
Semester-4		
Course Code	**Course**	**Credit Hours**
PHY6501	Electromagnetic Theory – II	3(3+0)
PHY6502	Quantum Mechanics-II	3(3+0)
PHY6503	Solid State Physics -I	3(3+0)
PHY6504	Lasers & Optics	3(3+0)
PHY6505	Digital & Computer Hardware Electronics	3(3+0)
PHY6506	Laboratory for Digital & Computer Hardware Electronics	3(0+3)
	Total Credit Hours	**18**

Semester-5		
Course Code	**Course**	**Credit Hours**
PHY6507	Research Techniques	3(3+0)
PHY6508	Nuclear Physics	3(3+0)
PHY6509	Advanced Digital & Computer Hardware Electronics	3(3+0)
PHY6510	Laboratory for Advanced Digital & Computer Hardware Electronics	4(0+4)
PHY6511	Electronic Communication System	3(3+0)
	Total Credit Hours	**16**

Total Credit Hours = 83

4.4. Fee Tariff for 1st Semester (Bridging Semester)

Item	
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-
Tuition Fee (Rs. 2000/- per credit hour)	Rs.39600/-
Total	Rs. 41800/-

The fee structure for remaining semesters will be provided in due course of time.

5. BS Physics (AD Based)

5.1. Eligibility Criteria

1. Students with Associate degree in the relevant field with at least 60 credit hours shall be eligible for admission.

5.2. Duration of Program

The minimum duration of BS Physics AD Based (2- year) program is two years (4 semesters) and maximum duration to complete BS Physics (2-year) program is four years (8 semesters)

5.3. Scheme of Studies for BS Physics (2- year)

Semester-1		
Course Code	**Course**	**Cr.Hrs**
751	Mathematical Methods in Physics-1	**3(3+0)**
752	Classical Mechanics & Relativity	**3(3+0)**
2564	Electronics	**3(3+0)**
2551	Atomic & Molecular Physics	**3(3+0)**
766	Laboratory for General & Nuclear Physics	**2(0+2)**
	Total Credit Hours	**14**
Semester-2		
Course Code	**Course**	**Credit Hours**
755	Mathematical Methods in Physics-II	3(3+0)
756	Quantum Mechanics-I	3(3+0)
765	Electromagnetic Theory-I	3(3+0)

2566	Thermal & Statistical Physics	3(3+0)
769	Computational Physics	3(3+0)
762	Laboratory for Electronics	2(0+2)
	Total Credit Hours	**17**
Semester-3		
Course Code	**Course**	**Credit Hours**
2565	Electromagnetic Theory-II	3(3+0)
759	Quantum Mechanics-II	3(3+0)
761	Solid State Physics-I	3(3+0)
758	Lasers & Optics	3(3+0)
2553	Digital & Computer Hardware Electronics	3(3+0)
2556	Laboratory for Digital & Computer Hardware Electronics	3(0+3)
	Total Credit Hours	**18**
Semester-4		
Course Code	**Course**	**Credit Hours**
5464	Research Techniques	3(3+0)
760	Nuclear Physics	3(3+0)
2560	Advanced Digital & Computer Hardware Electronics	3(3+0)
2561	Laboratory for Advanced Digital & Computer Hardware Electronics	4(0+4)
2559	Electronic Communication System	3(3+0)
	Total Credit Hours	**16**

Total Credit Hours = 65

5.4. Fee Tariff for 1st Semester

Item	
Registration Fee (Once at time of admission)	Rs.550/-
Admission Fee (Once at time of admission)	Rs.1100/-
Technology Fee	Rs.550/-
Tuition Fee (Rs. 2000/- per credit hour)	Rs.20800/-
Total	Rs. 33000/-

The fee structure for remaining semesters will be provided in due course of time.

6.1 Medium of Instruction

The Medium of Instructions for BS Physics will be English.

6.2 Study Material

The Department will provide course books

6.3 Mode of Teaching

a) University will provide opportunities face to face teaching to the students.

b) The schedule of classes and dates of submission of assignments/tests/quizzes/presentations will be announced by the department.

6.4 Assessment and Evaluation

For each course the student's progress will be assessed based on the following:

6.4.1 Continuous Assessment

Student performance is evaluated / assessed as under:

i) Class assignment through quiz/sessional test/assignmentweightage is 20%
The pass percentage in quiz/sessional test/assignment will be 50%. Laboratory courses will purely be evaluated based on continuous assessment. 70% of attendance for all Theory Courses and 80% for laboratory courses is compulsory.

ii) Weightage of attendance for theory courses = 10%

6.4.2 Final Examinations

i) Final Paper weightage = 70%
A written examination will be conducted for each course with 50% passing marks.

Note: If a student fails to pass in any of assessment component of a particular course, he / she will have to re-enroll in that course

7 Contact Details

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DEPARTMENT OF STATISTICS

The Department of Statistics was established in 1988 in the faculty of Sciences, Allama Iqbal Open University. Since then, the faculty and students have shared a common goal of maturing the Department with sheer hard work and constant struggle. Statistical sciences have a significant impact on our lives and are a key to discoveries and innovation. Over time, with concerted efforts, the Department has grown to its full potential and is vigorously involved in participating in global efforts to drive a new era of growth, development, and productivity. Since, our world is becoming more quantitative and data focused, job opportunities in statistics are plentiful and projected to increase worldwide. Therefore, the alumni of the department of statistics have been working in various government departments and private sector.

The vision of the Department is to impart quality education that focuses on collaborative learning through innovative teaching and research methodologies. It aims to create an environment that enables students to effectively engage in making lasting contributions in diverse fields according to rapidly changing demands of not only the home country but the entire globe. The Department is determined to further develop a state-of-the-art model of learning and research, which will benefit the masses across the board.

The following degree programs are being offered in the Department of Statistics. All these programs are approved by the Higher Education Commission, Islamabad.

- PhD Statistics
- MPhil Statistics
- BS (4- years, 2.5 -year & 2 -year) Statistics

All the courses and contents of these programs are designed to meet the challenging statistical needs in life sciences, information technology, social sciences, and other allied disciplines. The course outlines of all level courses have been designed and updated recently after consulting the syllabi of national and international universities. It helps to strengthen the statistical concepts and logical thinking among our students.

Presently, these degree programs are offered at the main campus only. However, soon the Department also intends to offer these degree programs at the main regional headquarters.

BS STATISTICS PROGRAM

2. Introduction

With the passage of time in the new era of globalization, significant changes have been made in almost all walks of life to keep in pace with the growing world. Among many other fields, improvement in the existing education system has become the topmost priority of many nations across the globe. Therefore, it is the need for time to modify our current education system to meet international standards. Having a vision of brighter future with compatible educated youth, the Department of Statistics is launching BS Statistics program from spring 2017. The BS Statistics would be sixteen years education equivalent to MSc Statistics and fulfilling the international standards of graduate degree.

3. Objectives

- To enhance and up gradation of qualification of those potential candidates who have/do not have sufficient resources to continue their studies after intermediate.
- To enable the students to get a better insight regarding in-depth knowledge of Statistics.
- To produce quality teachers/ researchers of Statistics at all levels.
- To prepare well trained and skilled graduates to cater the future needs in the field of Statistics.
- To produce young and energetic minds in the field of Statistics to promote innovative research and critical thinking.

4. BS Statistics (4-Year Program)

3.1 Eligibility Criteria

Candidate having HSSC or equivalent exams approved/verified by Inter Board Committee of Chairmen (IBCC).

3.2 Duration of the Programme

For the award of BS Statistics (4 years)degree, the student will have to qualify the 130 credit hours consisting 44 courses withing a minimum period of eight semesters (4 years) and maximum period of BS Statistics (4 years)

Access to B.Sc./AD students in BS 4 years Statistics program (5th Semester)

Eligibility Criteria for BS Programs (BSc/AD Based with less than 60 credit hours) with Bridging Semester:

1. Students holding a BSc degree shall be eligible for admission.
2. Students with an Associate degree (14 years of education) having less than 60 credit hours shall be eligible for admission.
3. Students with a discipline-specific Associate degree who wish to switch to another discipline shall also be eligible for admission this.

Eligibility Criteria (ADS Students only)

1. Students with an Associate degree passed in the relevant field with at least 60 credit hours shall be eligible for admission.

Scheme of Studies

The full programme of BS Statistics comprises eight semesters. The all courses are compulsory to qualify for the award of BS Statistics degree. The semester wise course offering is as under.

Scheme of studies BS Statistics (4 years)

Semester 1

Course Code	Course Title	Cr. Hrs
ENGL3501	English-I: Composition and Comprehension	3(3+0)
PKST3501	Pakistan Studies	2(2+0)
MATH3502	Calculus-I	3(3+0)
CS 3501	Introduction to computers	3(3+0)
STAT 3501	Introductory Statistics	3(3+0)
MATH 3508	Quantitative Reasoning	3(3+0)
		17

Semester 2

Course Code	Course Title	Cr. Hrs
ENGL 3503	English-II: Technical and Business Writing	3(3+0)
ITHC 3501/ HADH 3501	Islamic Studies/ Ethics (Non-Muslims)	2(2+0)

MATH 3505	Calculus-II	3(3+0)
STAT 3502	Introduction to Regression and Time Series Analysis	3(3+0)
ENVS 3502	Fundamentals of Environmental Sciences	3(3+0)
SOC 3501	Introduction to Sociology	3(3+0)
		17

Semester 3

Course Code	Course Title	Cr. Hrs
ENGL 3502	English-III: Communication Skills	3(3+0)
URD 3501	Pakistani Adab-I	3(3+0)
SOC 3502	Population Studies	3(3+0)
MATH 4501	Algebra-I	3(3+0)
MCM 3501	Mass Communication	3(3+0)
STAT 4501	Basic Statistical Inference	3(3+0)
		18

Semester 4

Course Code	Course Title	Cr. Hrs
STAT 3503	Introduction to Probability & Probability Distributions.	3(3+0)
STAT 4502	Official Statistics	3(3+0)
STAT 4503	Basics Designs of Experiments	3(3+0)
MGT 3502	Human Resource Management	3(3+0)
ITHC 3502	Arabic Language	3(3+0)
MATH 3506	Computing Tools	18

Semester 5

Course Code	Course Title	Cr. Hrs
STAT 5501	Statistical Methods	3(3+0)
STAT 5502	Sampling Techniques-I	3(3+0)
STAT 5503	Design and Analysis of Experiments-I	3(3+0)
STAT 5504	Probability & Probability Distributions-I	3(3+0)
MATH 5507	Advanced Calculus	3(3+0)
		15

Semester 6

Course Code	Course Title	Cr. Hrs
STAT 5505	Non-Parametric Methods	3(3+0)
STAT 5506	Probability & Probability Distributions -II	3(3+0)
STAT 5507	Regression Analysis	3(3+0)
STAT 5508	Sampling Techniques -II	3(3+0)
STAT 5509	Design and Analysis of Experiments-II	3(3+0)
		15

Semester 7

Course Code	Course Title	Cr. Hrs
MTM 6522	Mathematical Methods for Statistics	3(3+0)
STAT 6501	Statistical Inference-Estimation	3(3+0)
STAT 6502	Econometrics	3(3+0)
STAT 6503	Total Quality Management	3(3+0)
CS 6505	Computer Programming (C & C++)	3(3+0)
		15

Semester 8

Course Code	Course Title	Cr. Hrs
STAT 6505	Statistical Inference-Testing of Hypothesis	3(3+0)
STAT 6506	Applied Multivariate	3(3+0)
STAT 6508	Analysis	3(3+0)
	Data Analysis and Statistical Packages	3(3+0)
	Elective-I	3(3+0)
	Elective-II	15

List of Elective Courses

Sr. No.	Course Title	Course Code	Cr. Hrs
STAT 6510	Reliability Analysis	1571	3(3+0)
STAT 6511	Data Mining	1572	3(3+0)
STAT 6512	Bayesian Statistics	1573	3(3+0)
STAT 6513	Biostatistics	1574	3(3+0)
STAT 6507	Operations Research	1568	3(3+0)
STAT 6509	Research Methodology	1570	3(3+0)

Scheme of studies BS Statistics, (BA/BSc Based)

Eligibility Criteria for BS Programs

(BSc/AD Based with less than 60 Credit Hours)

With bridging semester:

1. Student: Holding a BSc degree with at least 45% marks shall be eligible for admission.
2. Student with an Associate Degree having less than 60 Credit Hours shall be eligible for admission.
3. Student with a discipline-Specific Associate Degree with 50% marks who wish to switch to another discipline shall also be eligible for admission.

Bridging Semester			
Code	**Course**	**CH**	**Mode**
9472	Business Communication	3 (3+0)	F2F
1417	Statistics-I	3 (3+0)	F2F
1418	Statistics-II	3 (3+0)	F2F
1419	Statistics-III	3 (3+0)	F2F
1420	General Mathematics	3 (3+0)	F2F
5468	Introduction to Computer	3 (3+0)	F2F
	Total Credits	18	
2nd Semester			
Code	**Course**	**CH**	**Mode**
1551	Statistical Methods	3 (3+0)	F2F
1552	Sampling Techniques-I	3 (3+0)	F2F
1553	Design and Analysis of Experiments - I		F2F
1554	Probability & Probability Distributions-I	3 (3+0)	F2F
1555	Advanced Calculus	3 (3+0)	F2F
3nd Semester			
Code	**Course**	**CH**	**Mode**
1513	Non-Parametric Methods	3 (3+0)	F2F
1556	Probability & Probability Distributions -II	3 (3+0)	F2F

1557	Regression Analysis		F2F
1558	Sampling Techniques -II	3 (3+0)	F2F
1559	Design and Analysis of Experiments-II	3 (3+0)	F2F

4th Semester

Sr. No.	Course	CH	Mode
1514	Mathematical Methods for Statistics	3(3+0)	F2F
1561	Statistical Inference-Estimation	3(3+0)	F2F
1562	Econometrics	3(3+0)	F2F
1563	Total Quality Management	3(3+0)	F2F
1564	Computer Programming (C & C++)	3(3+0)	F2F

5th Semester

Sr. No.	Course Title	CH	Mode
1566	Statistical Inference-Testing of Hypothesis	3(3+0)	F2F
1567	Applied Multivariate Analysis	3(3+0)	F2F
1569	Data analysis and Statistical Packages	3(3+0)	F2F
1568	Operations Research	3(3+0)	F2F
1570	Research Report	3(3+0)	F2F

Note: After completing bridging semester, students will continue their studies with BS Statics 5th semesters.

3.4 Fee Tariff for 1st semester

Item	
Registration Fee:	Rs.550/-
Admission Fee:	Rs.1100/-
Technology Fee (per semester):	Rs.550/-
Course Code	**Fee**
5468	Rs.6600/-
4432	Rs.6600/-
4434	Rs.6600/-
5465	Rs.4400/-
5451	Rs.6600/-
9424	Rs.6600/-
Lab fee (per semester)	Rs.850/-
Total Semester Fee	Rs.40450/-

The fee structure for remaining semesters will be provided in due course of time.

Scheme of Studies BS Statistics (2 Years)/ AD Based

Eligibility Criteria: Associate Degree in the relevant field with at least 60 Credit Hours.

1st Semester			
Code	**Course**	**CH**	**Mode**
1551	Statistical Methods	3 (3+0)	F2F
1552	Sampling Techniques-I	3 (3+0)	F2F
1553	Design and Analysis of Experiments - I		F2F
1554	Probability & Probability Distributions-I	3 (3+0)	F2F

1555	Advanced Calculus	3 (3+0)	F2F
2nd Semester			
Code	**Course**	**CH**	**Mode**
1513	Non-Parametric Methods	3 (3+0)	F2F
1556	Probability & Probability Distributions -II	3 (3+0)	F2F
1557	Regression Analysis		F2F
1558	Sampling Techniques -II	3 (3+0)	F2F
1559	Design and Analysis of Experiments-II	3 (3+0)	F2F

3h Semester

Sr. No.	Course	CH	Mode
1514	Mathematical Methods for Statistics	3(3+0)	F2F
1561	Statistical Inference-Estimation	3(3+0)	F2F
1562	Econometrics	3(3+0)	F2F
1563	Total Quality Management	3(3+0)	F2F
1564	Computer Programming (C & C++)	3(3+0)	F2F

4th Semester

Sr. No.	Course Title	CH	Mode
1566	Statistical Inference-Testing of Hypothesis	3(3+0)	F2F
1567	Applied Multivariate Analysis	3(3+0)	F2F
1569	Data analysis and Statistical Packages	3(3+0)	F2F
1568	Operations Research	3(3+0)	F2F
1570	Research Report	3(3+0)	F2F

6. Mode of Study

6.1 Medium of Instruction

For each course, there would be 48 hours face to face teaching support to the students. Three-hour class/week for (3+0) credit hour course for a semester of sixteen weeks. The distribution of the lectures will be provided to the students in classes/workshop by consultation with the teachers/resource persons. The classes will be supplemented by computers where required. Over all 70% attendance would be compulsory to appear in sessional tests and final examinations.

6.2 Study Material

Books (soft copies) will be provided to the students, along with the list of recommended books for further reading. Two assignments for each course will be given.

Mode of Teaching: For each course, 45 hours face to face teaching at the main campus Islamabad will be required. In this regard, classes will be arranged by the Department at AIOU main campus Islamabad. The schedule of the lectures will be distributed to students at the start of classes during each semester at AIOU, Islamabad. A minimum of 70% attendance is necessary in all subjects as per AIOU rules.

6.3.1 Assessment and Evaluation

a. Continuous Assessment

Classes/Workshops Schedule:

The classes/workshops will be arranged at Main Campus, AIOU, Islamabad only. However, the schedule is prepared according to the availability of qualified teaching faculty and convenience of the students.

Continuous Assessment:

- Two home-assignments for each course will be given to the students.
- Two sessional exams assignments (as a continuous

30% weightage of the aggregate marks will be given to the sessional tests.

b. Final Examination

Final Examination will be held at Main Campus, AIOU, Islamabad at the end of each semester. 70% weightage of the aggregate marks will be given to the final exam. Minimum Passing Marks over 50%.

Note: The student must qualify each component of a course separately.

7. Guidelines for online Application

- Visit AIOU Website www.aiou.edu.pk
- Click on OAS (Online Admission. System) for Fresh Admission.
- Click 'Register'& fill details.
- Upon successful registration please click on login.
- Fill login details and login to the portal
- After login click on Step-1 and complete your profile.
  Note: All tabs should be filled in before applying for admissions.
- After completion of Step-1, click on Step-2 then click on "Download Challan" against program (s) you wish to apply.
- Pay the *admission form fee* as per AIOU prescribed criteria through selected bank branches or online payment methods.
- After admission fee confirmation, you will be called on through SMS to visit the department for the verification of your credentials.
- After the verification, you will be informed whether you are eligible for the admission in BS Program or not.

Note: Please use your own mobile no. in login so that you receive the SMS from university and updates throughout 4 years.

8. Contact details

Chairman office

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BS Program Coordinator

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9. Faculty Members

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DEPARTMENT OF COMPUTER SCIENCE

The Department of Computer Science (DCS) was established in the year 2000. The Department has received recognition nation-wide due to its quality education. The department had developed curricula of the academic programs at various levels to meet the national and international standards as defined by Higher Education Commission. The curricula include Ph. D (computer Science), MS (Computer Science), BS (Computer Science) and Postgraduate Diploma (PGD) in Computer Science. The department is equipped with computing facilities and services including a digital class room and multimedia courseware development lab. The department has its own library in addition to central library of the university. The Department of Computer Science practices the multi-method teaching methodology i.e. face-to-face regular classes for BS (Computer Science) and MS (Computer Science). The online methodology is practiced for PGD (Computer Science) and Foreign Language (French). The facilities of Video/Teleconferencing are also in use for lectures/consultations in research-oriented degree of MS/PhD (Computer Science). In addition, the department also has a flavor of distance teaching in selected courses of BS (Computer Science) program like English, Pakistan Studies, and Islamic Studies etc. Besides graduate and undergraduate teaching, the department is actively involved in research and development. For this purpose, Multimedia Centre and Open Learning Institute of Virtual Education (OLIVE) have been established under the umbrella of the department. The Multimedia center is equipped with technology related to Audio/Video production. It has successfully developed multimedia courseware for more than 20 courses,

whereas OLIVE provided a framework for electronic delivery of these courses in online mode. In addition to research activities in the area of software engineering communication, networking, and multimedia, the department focuses on the eLearning research in instruction design, communication, course management, e-assessment, mobile learning and web technologies integration. The University has also developed linkages with San Jose' State University (SJSU) USA and Kent State University, USA. KSU is located in the heart of Silicon Valley and Kent State has strong education college with Technology Research Centers.

The principal aim of the Department of Computer Science is to produce graduates with a professional education and to undertake quality research in Computer Science and Related Information Technology areas. The specific objectives are to:

i. Maintain an excellent reputation and professional accreditation for its taught degree programs.
ii. Disseminate an appreciation of the current state and future directions of technological advances in the areas of Computer Science, Information Technology and e-learning.
iii. Equip students with computer science knowledge and skills so as to cope with the social, economic, scientific, and technological challenges of the world outside.
iv. Develop platform and systems for e-learning/mechanism for electronic delivery of courses to increase outreach to rural and remote areas.
v. Conduct research in areas of e-learning, multimedia instructional design, web-based education, mobile learning and related areas in software engineering, information technology, and computer science.
vi. Assist other departments and individuals to implement modern ICT in educational delivery.
vii. Provide a leadership support in ICT based education in Pakistan.

BS COMPUTER SCIENCE (4-YEAR PROGRAM)

1. Introduction

The BS (CS) program is offered by the Department of Computer Science, AIOU. It is a four- years degree program, covering the recent trends in hardware, software and communication technologies. The program provides an understanding of the field through concepts, theory and techniques. The curriculum of the program has been developed and regularly updated to meet the national, international, social and economic needs. The curriculum revision is normally based on need of fast changing disciplines, emerging technologies and international standards. The structure and other details of the program are confined to HEC with focus on ACM and IEEE-CS recent development.

2. Objectives

The objectives of the program are to:

i. Develop professionals in the field of computer science.
ii. Provide high quality education at low cost.

iii. Provide knowledge to individuals seeking computer skills to increase their job opportunities in their current careers or to pursue new careers.

iv. Learn in-depth knowledge of computer languages, software engineering, computer architecture, large-scale system software and multimedia in the design.

v. Provide sufficient conceptual and skill based know how so that successful graduates could initiate IT career in industry and academia.

3. Eligibility

The minimum requirements for admission in a Bachelor degree program in Computer Science is at least 50% marks in Intermediate (HSSC) examination with mathematics or equivalent qualification with mathematics certified by IBCC.

4. Duration of Program

i. The BS (CS) is 133 credit hours' program and may be completed in minimum four years (eight semesters).

ii. Two semesters are offered in a year as Spring and Autumn.

iii. Duration of each semester is 16 weeks.

iv. The maximum time limit to complete the BS (CS) Program is Six Years from the date of first registration of the student in this program.

5. Scheme of Study

Semester-1

Code	Title	Credit Hours
5451	English-I: Composition and Comprehension	3(3 + 0)
5465	Pakistan Studies	2(2 + 0)
5468	Introduction to Computers	3(3 + 0)
6900	Computer Programming	4(3 + 1)
6901	Applied Physics	3(3 + 0)
4432	Calculus-I	3(3 + 0)
	Total Credit Hours	18

Semester-2

Code	Title	Credit Hours
5466/ 5467	Islamic Studies / Ethics	2(2 + 0)
5454	English-II: Technical and Business Writing	3(3+ 0)
6902	Object-Oriented Programming	4(3 + 1)
3409	Digital Logic Design	4(3 + 1)
3447	Statistics and Probability	3(3 + 0)
	Total Credit Hours	16

Semester-3

Code	Title	Credit Hours
5458	English-III: Communication Skills	3(3 + 0)
6903	Discrete Mathematics	3(3 + 0)
6904	Data Structures and Algorithms	4(3 + 1)
6905	Comp. Organization & Assembly Language	4(3 + 1)
6906	Software Engineering	3(3 + 0)
	Total Credit Hours	17

Semester-4

Code	Title	Credit Hours
9473/ 9474	Foreign Language (Arabic)/(French)	3(3 + 0)
1522	Linear Algebra	3(3 + 0)
3438	Computer Communications & Networks	4(3 + 1)
6907	Database Systems	4(3 + 1)
6908	E-Commerce	3(3 + 0)
	Total Credit Hours	17

Semester-5

Code	Title	Credit Hours
6909	Artificial Intelligence	4(3 + 1)
6910	Operating System	4(3+1)
3466	Analysis & Design of Algorithms	3(3 + 0)
-	CS Elective 1	3
1525	Ordinary Differential Equations	3(3 + 0)
	Total Credit Hours	17

Semester-6

Code	Title	Credit Hours
3452	Theory of Automata	3(3 + 0)
-	CS Elective 2	3
-	CS Elective 3	3
6911	Parallel and Distributed Computing	3(3 + 0)
3472	IT Services Management	3(3 + 0)
4433	Calculus-II	3(3 + 0)
	Total Credit Hours	18

Semester-7

Code	Title	Credit Hours
3468	Compiler Construction	3(3 + 0)
-	CS Elective 4	3
-	CS Elective 5	3
6912	Professional Practices	3(3 + 0)
6913	Project-I	3(0 + 3)
	Total Credit Hours	15

Semester-8

Code	Title	Credit Hours
3497	Information Security	3(3 + 0)
-	CS Elective 6	3
3442	IT Marketing Concepts	3(3 + 0)
3448	Numerical Computing	3(2 + 1)
6914	Project-II	3(0 + 3)
	Total Credit Hours	15

The student can select six courses from the list of elective courses.

Major Areas of Specialization (BS (CS) Elective Courses):

General Computing

Code	Title	Cr. Hrs.
6915	Visual Programming	3(2 + 1)
6916	Web Technologies	3(2 + 1)
6917	Computer Vision	3(2 + 1)
3499	Mobile Application Development	3(2 + 1)
6918	Data Analytics	3(2 + 1)
3449	Human-Computer Interaction	3(3 + 0)

Software Engineering

Code	Title	Cr. Hrs.
3465	Software Engineering–II	3(3 + 0)
3467	Database-II	3(3 + 0)
3464	Object-Oriented Analysis & Design	3(3 + 0)
3481	Design Patterns	3(3 + 0)
6920	Software Architecture	3(3 + 0)
6919	Software Quality & Testing	3(3 + 0)

Artificial Intelligence

Code	Title	Cr. Hrs.
6921	Machine Learning	3(3 + 0)
6922	Deep Learning	3(3 + 0)
6923	Artificial Neural Networks	3(3 + 0)
6924	Natural Language Processing	3(3 + 0)
6917	Computer Vision	3(2 + 1)
6918	Data Analytics	3(2 + 1)

Cyber Security

Code	Title	Cr. Hrs.
3484	Data & Network Security	3(3 + 0)
6927	Cryptography	3(2 + 1)
6928	Digital Forensics	3(2 + 1)
6929	Vulnerability Assessment & Reverse Engineering	3(2 + 1)
6930	Secure Software Design/Database Security	3(2 + 1)
6931	Cloud Architecture Security	3(3 + 0)

The Department of Computer Science reserves the right to offer or may not offer listed specialization area or a particular course depending upon the available faculty/laboratory resources and viable student's enrollment. The department may add other specialized areas or may add elective courses to any specialized defined area.

6. Fee Tariff

Item	
Registration Fee: (At the time of 01st admission)	Rs. 550/-
Admission Fee: (At the time of 01st admission)	Rs. 1100/-
Technology Fee (Each semester)	Rs. 550/-
Fee for 2 Credit Hour Courses (01 course in First Semester with 02 Credit Hours) 01 x 4400 = 4400	Rs. 4400/-
Fee for 3 Credit Hour Courses (04 courses in First Semester with 03 Credit Hours)04 x 6600 = 26400	Rs.26400/-

Fee for 4 Credit Hour Courses (01 course in First Semester with 04 Credit Hours)01 x 8800 = 8800	Rs. 8800/-
Lab Fee	Rs. 5500/-
Total Fee for First Semester	**Rs. 47300/-**

7. Mode of Study

7.1 Medium of Instruction

The medium of instruction for BS (CS) Program is English.

7.2 Study Material

The class teacher will provide the study material. However, the students are advised to consult books from the list of recommended books.

7.3 Mode of Teaching

i. The BS (CS) program is a merit-based program which is offered in Face-to-Face Mode.

ii. The Department of Computer Science is offering BS (CS) Program at Main Campus, Islamabad.

iii. The BS (CS) Program is also being offered at selected Regional Centers of AIOU by using modern technologies. Under this program, the course work will be conducted through video-conferencing/internet. Distance Education will be delivered by faculty members from Department of Computer Science, Main Campus. A local faculty member/staff will be provided to assist in administrative and lab assignments. All assessments will be performed as per rules of the University.

7.4 Assessment and Evaluation

Continuous (Pass percentage is 50%)		**Final (Pass percentage is 50%)**
Assignment/ Quizzes	**Midterm/Presentation/ Semester Project**	
10%	20%	70%

Note: The 70% percent attendance is mandatory in each course.

8. Guidelines for Online Applications

i. Visit AIOU Website: https://aiou.edu.pk/

ii. Click on “Admission (OAS)”

iii. Click on “Application for New Admission”

iv. Click 'Register'& fill details

v. Upon successful registration please click on login

vi. Fill login details and login to the portal

vii. After login click on Step-1 and complete your profile. **Note:** All tabs should be filled before applying for admissions.

viii. After completion of Step-1, click on Step-2 then click on "Download Challan" against program (s) you wish to apply.

ix. Pay the *admission form fee* as per AIOU prescribed criteria through selected bank branches or online payment methods.

x. After admission fee confirmation, you will be called on through SMS to visit the department for the verification of your credentials.

xi. After the verification, you will be informed whether you are eligible for the admission in BS (CS) or not.

Selection Criteria

i. Once your eligibility is confirmed by the Computer Science Department, you can select your first semester courses form the online portal.
ii. After selection of first semester courses, a fee challan will be generated by the system.
iii. You will pay the requisite fee as per AIOU prescribed criteria through selected bank branches or online payment methods.
iv. After fee verification by the concerned AIOU department, your admission will be confirmed.
v. You can check the status of your application at any stage through your account from AIOU portal, i.e. https://aiou.edu.pk/

9. Contact Details

1. Program Coordinator
Chaudhary Muhammad Shahbaz Anjum
Lecturer
Phone # 051-9575382

2. Admission Cell at DCS
For further information, please feel free to contact:
Dealing Official: Mr. Nadir Khan
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10. Faculty Members

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FACULTY OF EDUCATION

The origin of the Faculty of Education pre-dates the university itself. The National Institute of Education was established in 1973 under the Federal Ministry of Education. It became part of the university in June, 1975 as Institute of Education in the then Faculty of Social Sciences. The progressively extending functions of the institute brought the needs for structural change and in 1984 it got the status of Faculty of Education.

DEPARTMENTS OF THE FACULTY

Faculty of Education Comprises of the following Six Departments:

1. Distance, Non-Formal and Continuing Education
2. Educational Planning, Policy Studies and Leadership
3. Early Childhood Education and Elementary Teacher Education
4. Secondary Teacher Education
5. Science Education
6. Special Education

Distance, Non Formal Education and Continuing Education

The department was established in 1984 and was later renamed as Distance, Non Formal and Continuing Education This department offers PhD, MPhil, Masters and specialized courses in B.Ed 1.5 program. The department also offers certificate courses in literacy and non-formal education.

Educational Planning, Policy Studies and Leadership (EPPSL)

The department was established in 1976 was renamed as EPPSL in 2008. It offers programs in educational planning management and leadership. These programs are aimed at producing a managerial cadre of professionals for the educational institutions and organizations in the country. Programs of EPPSL include B.Ed, Postgraduate Diploma, MA (EPM), MPhil and PhD in Educational Planning and Management as well as online courses. The courses of these programs are in accordanance with the field requirements of target personnel in the areas of educational planning, management and leadership.

Secondary Teacher Education

The Departmentt of Teacher Education was established in 1985 and was bifurcated into Secondary and Elementary Teacher Education Departments in July 2003. Its programmes aim at imparting academic and professional knowledge and training to in-services and pre service teachers and scholars.

The programs/courses of this department comprise MA, MEd BEd (4 years) and BS Instructional Design and Technology as professional degree programs. The department also offers MPhil and PhD in Education, which are aimed to prepare highly skilled professionals and leaderships in the field of teacher education.

Early Childhood Education and Elementary Teacher Education

The Department of Elementary Teacher Education was established in 2003. In April 2008, the name of Elementary Teacher Education Department was changed as Early Childhood Education and Elementary Teacher Education Department. The Department offers Associate Degree in Education, Post Graduate Diploma in ECE, BEd (1.5 year), BEd (2.5), BEd (4 years), MPhil and PhD program, it also offers "Education" as subject at Matric, Intermediate and Graduate level. The department is planning to launch, BS (ECCE) and Certificate of Entrepreneurship in ECCE. The department also plans to offer non-credit research courses and postgraduate diploma for teaching in higher education.

Science Education

The Department of Science Education was established in 1988. The programs and courses of the department are mainly focused on education and training of mathematics and science teachers. Presently the department offers specialized courses in science education at undergraduate and postgraduate level. Specialized courses provide conceptual framework and insight into the teaching of science. The department offers BEd (4 year) BEd (2.5 year) and specialization of Science Education in BEd (1.5 year) and MEd. MPhil and PhD programs; in science education are also offered at the department.

Special Education

The Department was established in 1985. The department imparts education and training to teachers for the special children in four specializations namely visual impairment, hearing impairment, intellectual disabilities, physical disabilities and mental retardation with particular emphasis to facilitate inclusive education. Parents of the special children are also admitted to these programs. Present programs/courses of this department comprise B.Ed (4 years), MEd, MA, MPhil and PhD in the field of Special Education.

B.S Instructional Design and Technology
Secondary Teacher Education Department (STED)

Introduction

In increasingly technology-driven educational landscape, it is imperative that 21st century learners upgrade their skills and become proficient in the use of technology in every walk of life and to effectively facilitate the learning process. Educators and other professionals therefore must be able to design, deliver and manage learning environments both face-to-face and online. While embracing this paradigm shift of technology, Secondary Teacher Education Instructional Design and

1.	5451	English Compulsory-I / English -I: Composition and Comprehension	C1	**(3+0)**
2.	6983	Ideology and Constitution of Pakistan	C2	**(3+0)**
3.	8246	General Math and Statistics	C3	**(3+0)**
4.	8247	Educational Psychology & Guidance	G1	**(3+0)**
5.	8248	Technology and Learning	F1	**(3+0)**
6.	8249	Applications of Information and Communication Technology	C8	**3(2+1)**
Total Credit Hours (Theory + Practical)				**16+01=17**
SEMESTER 2				

- Building a foundation and conceptual framework for educational and instructional design process.
- Developing instructional strategies and skills to facilitate adult learning.
- Using media, web and other ICTs to support learning.

Program Name: B.S Instructional Design and Technology
Programme Duration: 4 years (8 Semesters)
Admission Criteria: FA/F.Sc or equivalent with at least 33% marks

Semester Duration:	16-18 weeks
Total Programme Credit Hours	129 Credit Hours
Total Number of Courses:	42 Credit Hours including Internship, Practicum and Research Project
Medium of Instruction:	English
Delivery Mode:	Face to Face
Pass Marks:	50%

Semester-wise Break-up: Scheme of Study for BS Instructional Design
Face to Face Offering

SEMESTER 1

Sr. No	Course Code	Courses	Nature of Course	Credit Hours (Theory + Practical)
1.	8257	Introduction to Instructional Design	F3	**(3+0)**
2.	8252	Learning Styles and Learning Environment	F2	**(3+0)**
3.	8253	Curriculum and	G4	**(3+0)**

		Instruction		
4.	8256	General Science	G6	**(3+0)**
5.	8254	Classroom Management	G2	**(3+0)**
6.	5904	Introduction to Web Based Instructions	F4	**(3+0)**
	Total Cr. Hrs (Theory + Practical)			**18+0=18**
	SEMESTER 3			
1.	6900	Computer Programming	M4	**(3+1)**
2.	4432	Calculus-1	G3	**(3+0)**
3.	8263	Instructional Strategies and Assessment Methods	F7	**(3+0)**
4.	5454	English II-Technical and Business Writing	C4	**(3+0)**
5.	8250	Entrepreneurship	G10	**(3+0)**
Total Credit Hours (Theory + Practical)				**15+01 =16**
	SEMESTER 4			
1.	5466/5467	Islamic Studies/ Ethics	C6	**(2+0)**
2.	6902	Object Oriented Programming	M5	**4(3+1)**
3.	5916	Introduction to Open Educational Resources	F5	**(3+0)**
4.	6944	Expository Writing	G9	**(3+0)**
5.	8260	School, Society & Teacher	G8	**(3+0)**
6.	5912	Learning Management System and Organizations	F6	**(3+0)**
Total Credit Hours (Theory + Practical)				**17+1=18**

SEMESTER 5

Sr. No	Course Code	Courses	Nature of Course	Credit Hours (Theory + Practical)
1.	8261	Educational Research and Statistics	M1	**(3+0)**
2.	8262	Education in Pakistan	C5	**(3+0)**
3.	5908	Web Design-I (website design & development)	M3	**(3+1)**
4.	3499	Mobile Application Development	E5	**(2+1)**
5.	5910	Developing Instructional Media	F8	**(3+0)**
Total Credit Hours (Theory + Practical)				**15+ 01=16**

SEMESTER 6

Sr. No	Course Code	Courses	Nature of Course	Credit Hours (Theory + Practical)
1.	5914	Web Design-II (Advanced Design & development skills)	M4	**3+1**
2.	5917	Trends and Issues in Instructional Design	M6	**3+0**
3.	5913	Visual and Verbal Communication in Instructional Design	F9	**3+0**

4.	8264	Ethical use of Instructional Material (proper usage of resources)	E3	**3+0**
5.	8265	Internship (Institution)	F10	**0+3**
Total Credit Hours (Theory + Practical)				**12+04=16**
	SEMESTER 7			
Sr. No	**Course Code**	**Courses**	**Nature of Course**	**Credit Hours (Theory + Practical)**
1.	8266	Instructional Designs: Theories and Models	M7	**3+0**
2.	5909	Systems Approach to Designing Instructional Materials	M10	**3+0**
3.	8259	Education Measurement and Evaluation	G7	**3+0**
4.	8255	Organizational Behavior	G5	**3+0**
5.	5907	Multi-media Applications in Education	M8	**3+1**
6.	5915	Internship (Software house)	M9	**0+3**
Total Credit Hours (Theory + Practical)				**12+04=16**

SEMESTER 8				
1.	8267	Higher Education	E4	**3+0**
2.	8268	Future Challenges in Education	E2	**3+0**
3.	5918	Research Project	M11	**0+3**
4.	8258	Foundations in Education	C9	**3+0**
Total Credit Hours (Theory + Practical)				**09+03=12**

Fee Tariff for 1st Semester

Items	
Registration Fee (Once at time of admission)	Rs. 550/-
Admission Fee (Once at time of admission)	Rs. 1100/-
Technology Fee (per semester)	Rs. 550/-
Per 3 Credit hours course fee: Rs. 6600	Rs. 39600/-
Total	**41800**/-

GENERAL INFORMATION

i. The certificates/degrees of AIOU are equivalent to any other recognized Board/University.

ii. A candidate is required to submit complete admission form and upload scan documents through online system before or on the closing date.

iii. If an applicant of post-graduate/research level programme does not receive any information regarding admission within three months from submission of application, he/she should presume non-selected.

iv. A course taken by any student cannot be changed during the semester.

v. The address of a student will not be changed during the semester.

vi. Admission to courses for both the Spring and Autumn semesters are generally being offered in the months of January and July, respectively, whereas, examinations commenced in November and May respectively. The and deposit fee within due date.

vii. On payment of the registration fee, each student will be issued a student ID. This number must be quoted in all the future correspondence along with the Student, course(s), code numbers and semester.

viii. Study material shall be available on university website. University will not provide hard copy of books.

ix. Rules and regulations framed, enhanced and changed from time to time by the authorities, bodies of the university will be effective as deemed necessary. The student will have to abide by all such rules and regulations from the date of their implementation.

x. A student who fails in continuous assessment component is not eligible to reappear but will be allowed to re-enroll for the same course at its next offering semester by the university.

xi. It is the responsibility of the student to remain in touch with the department regarding the selected programme.

xii. A student already admitted to a programme or a specialization of a programme shall not be allowed to transfer or to get admission to another programme unless he/she formally postpones, it till the completion of the new programme or withdraw from the previous programme.

xiii. After completion of a programme successfully, a student has to apply to Controller of Examinations for issuance of certificate/degree.

xiv. The university reserves the right to change contents of this prospectus without any prior notice as per university policy.

xv. In case of discrepancies in the name of student/ Father's name of the student or difference in name mentioned in his/her other educational certificates, the name on the Matric certificate of the student will be considered as correct name. The Examination Department shall also issue certificate/ degree on the said name.

xvi. In case provision of forged documents for admission, not only the admission will be refused to the applicant but the fee deposited by him/her will also be forfeited. The university may proceed further in the matter.

xvii. If any mistake found in compilation or declaration of result at any stage.

xviii. If any candidate found ineligible for a degree/diploma/certificate during the cross verification process of result and documents at any stage.

xix. If found that candidate submitted forged/fake illegal documents(s) in the University at any stage.

Note: Withdrawal/ Invalid/ Revoke/ Quash of degree/ diploma/ certificate for the reasons listed above (xvii-xix) shall be made any time with no legal restriction of time period. This action shall not be challengeable in the court(s) or at any legal forum.

PROCEDURE FOR DEPOSITING FEE

- Applicants will deposit admission processing fee (Rs.500) in designated banks or through Telcos.
- Eligible candidates for (**Merit Based Programmes**) are required to deposit admission fee in any branch of the following banks:

1. First Women Bank Limited (FWBL)
2. Allied Bank Limited (ABL)
3. Muslim Commercial Bank (MCB)
4. United Bank Limited (UBL)
5. National Bank of Pakistan (NBP)

- Fee can also be Deposited through Jazz Cash, Easy Paisa and Upaisa Mobile App/USSD String *786#, Retailer Agent, Franchise and Branches of Mobilink, Telenor and Ubank. For more detail please visit university website.
- The Banks/Mobile App/Retailer Agents/Franchise/Branches will provide Transaction ID of deposited fee.

Note: Beware that University has not authorized any person or private institute to collect payment/forms. All the students are instructed to deposit fee by themselves in designated bank branches. In case of any discrepancy in admission fee/admission form the University will not be responsible and the student will have to face the consequences.

PROCEDURE OF FEE DEPOSIT THROUGH TELECOS

Easypaisa

Through Easypaisa App

The account may be created after downloading the Easypaisa Mobile App from Playstore. For using this mode, student must have balance equal to his/her payable fee in Easypaisa mobile account. There are **no transactions charges**, if student use this mode to pay his/her fee. Following is the procedure of fee payment through Easypaisa App.

1. Login to Easypaisa App
2. Press "View All"
3. In "Payment" Section, select "Fee Collection"
4. Select "AIOU"
5. Enter "Challan Number"
6. Easypaisa App will show the payable amount & due date
7. Press "Pay Now"
8. Fee will be Paid and student will receive confirmation SMS from 3737
9. Student will write **Transaction ID** and **"Paid via Easypaisa App"** on the challan and admission form. Students are advised to keep the confirmation SMS save in phone until the receipt of intimation of admission confirmation from AIOU.

Through USSD String *786#

The Easypaisa mobile wallet account may be created by dialing *786#. For using this mode, student must have balance equal to his/her payable fee in Easypaisa mobile account. There are **no**

transactions charges, if student use this mode to pay his/her fee. Following is the procedure of fee payment through USSD string *786#

1. Dial *786#
2. Select "4" (Payments)
3. Select "7" (Fee Collections)
4. Select "99" (Next)
5. Select "AIOU"
6. Enter Challan No.
7. Screen will show the payable amount & due date
8. Enter Mobile Account PIN
9. Fee will be Paid and student will receive confirmation SMS from 3737
10. Student will write **Transaction ID** and **"Paid via Easypaisa786 String"** on the challan and admission form. Further, students are advised to keep the confirmation SMS save in phone until the receipt of intimation of admission confirmation from AIOU.

Through Easypaisa Retailer (Agent) Shop/Telenor Franchise / Telenor Bank Branches

Fee can also be paid by visiting any Easypaisa Agent shop, Telenor franchise and Telenor Microfinance Bank branch. For using this mode, student has to pay **Rs.15 per transaction** in addition to the payable fee. Following is the fee payment procedure through this mode:

1. Student may visit any nearest Easypaisa Retailer (Agent) Shop, Telenor franchise or Telenor Microfinance Bank branch
2. Student will inform the retailer/franchisee/teller that he/she wish to pay fee of AIOU
3. Retailer/Franchisee/Teller will ask the student to share CNIC number, Mobile Number & Challan Number
4. Retailer/Franchisee/Teller will enter the Challan Number in his Easypaisa Tab/system
5. Tab/System will show the payable amount & due date
6. Student will hand-over the fee amount to retailer/ franchisee/teller
7. Once the fee amount is handed over, the retailer/ franchisee/teller will process the fee transaction
8. Fee will be paid and student will receive confirmation SMS from 3737 on mobile number. Transaction charges will be mentioned in the confirmation SMS
9. Student will write **Transaction ID** and **"Paid via Easypaisa Agent/Franchisee/Teller"** on the challan and admission form. Bank stamp will be embossed only in case the fee is paid through Telenor Microfinance Bank branches. Further students are advised to keep the confirmation SMS save in phone until the receipt of intimation of admission confirmation from AIOU.

Upaisa

Through Upaisa App

The account may be created after downloading the Upaisa Mobile App from Playstore. For using this mode, student must have balance equal to his/her payable fee in Upaisa mobile account. There are **no transactions charges**, if student use this mode to pay his/her fee. Following is the procedure of fee payment through Upaisa App.

1. Login to Upaisa App
2. Please click on "Payments"
3. Click on "AIOU"
4. Enter "Challan Number"
5. Upaisa App will show the payable amount
6. Press "Pay Now"
7. Fee will be Paid and student will receive confirmation SMS
8. Student will write **Transaction ID** and **"Paid via Upaisa App"** on the challan and admission form. Students are advised to keep the confirmation SMS save in phone until the receipt of intimation of admission confirmation from AIOU.

Through USSD String *786#

The Upaisa mobile wallet account may be created by dialing *786#. For using this mode, student must have balance equal to his/her payable fee in Upaisa mobile account. There are **no transactions charges**, if student use this mode to pay his/her fee. Following is the procedure of fee payment through USSD string *786#

1. Dial *786#
2. Select "Payments"
3. Select "AIOU"
4. Enter Challan No.
5. Screen will show the payable amount
6. Student will enter his/her Mobile Number and PIN
7. Fee will be Paid &student will receive confirmation SMS
8. Student will write **Transaction ID** and **"Paid via Upaisa786 String"** on the challan and admission form. Students are advised to keep the confirmation SMS save in phone until the receipt of intimation of admission confirmation from AIOU

Through Upaisa Agent Shop/Ufone Franchise /PTCS OSS/U Microfinance Bank Branches

Fee can also be paid by visiting any Upaisa Agent shop, Ufone franchise, PTCL One stop shop (OSS) and U Microfinance Bank branch. For using this mode, student has to pay **Rs.15 per transaction** in addition to the payable fee. Following is the fee payment procedure through this mode.

1. Student may visit any nearest Upaisa Retailer (Agent) Shop, Ufone Franchise, PTCL OSS or U Microfinance Bank branch
2. Student will inform the retailer/franchisee/teller that he/she wish to pay fee of AIOU
3. Retailer/Franchisee/Teller will ask the student to share CNIC number, Mobile Number & Challan Number
4. Retailer/Franchisee/Teller will enter the Challan Number in his Upaisa Tab/system
5. Tab/System will show the payable amount & due date
6. Student will hand-over the fee amount to retailer/ franchisee/ teller
7. Once the fee amount is handed over, the retailer/ franchisee/teller will process the fee transaction
8. Fee will be paid and student will receive confirmation SMS on mobile number. Transaction charges will be mentioned in the confirmation SMS.
9. Student will write **Transaction ID** and **"Paid via Upaisa Agent/Franchisee/Teller"** on the challan and admission form.

Bank stamp will be embossed only in case the fee is paid through U Microfinance Bank branches. Students are advised to keep the confirmation SMS save in phone until the receipt of intimation of admission confirmation from AIOU.

Jazz Cash (Through Jazzcash App)

The account may be created after downloading the Jazzcash Mobile App from Playstore. For using this mode, student must have balance equal to his/her payable fee in Jazzcash mobile account. There are **no transactions charges**, if student use this mode to pay his/her fee. Following is the procedure of fee payment through Jazzcash App.

1. Login to Jazzcash App
2. Please click on "Education Fee"
3. Select "Universities" from the Menu
4. Select "AIOU" from the Sub Menu
5. Enter "Challan Number"
6. Jazzcash App will show the payable amount and due date
7. Enter MPIN
8. Fee will be Paid &student will receive confirmation SMS
9. Student will write **Transaction ID** and **"Paid via Jazzcash App"** on the challan and admission form. Students are advised to keep the confirmation SMS save in phone until the receipt of intimation of admission confirmation from AIOU.

Through USSD String *786#

The Jazzcash mobile wallet account may be created by dialing *786#. For using this mode, student must have balance equal to his/her payable fee in Jazzcash mobile account. There are **no transactions charges**, if student use this mode to pay his/her fee. Following is the procedure of fee payment through
USSD string *786#

1. Dial *786#
2. Select "Payments"
3. Select "Education Payments"
4. Select "AIOU"
5. Enter Challan No.
6. Screen will show the payable amount
7. Enter MPIN
8. Fee will be Paid &student will receive confirmation SMS
9. Student will write **Transaction ID** and **"Paid via Jazzcash786 String"** on the challan and admission form. Students are advised to keep the confirmation SMS save in phone until the receipt of intimation of admission confirmation from AIOU.

Through Jazzcash Agent Shop/Jazz Franchise /Mobilink Microfinance Bank Branches

Fee can also be paid by visiting any Jazzcash Agent shop, Jazz franchise and Mobilink Microfinance Bank branch. For using this mode, student has to pay **Rs.20 per transaction** in addition to the payable fee. Following is the fee payment procedure through this mode.

1. Student may visit any nearest Jazzcash Retailer (Agent) Shop, Jazz Franchise or Mobilink Microfinance Bank branch
2. Student will inform the retailer/franchisee/teller that he/she wish to pay fee of AIOU
3. Retailer/Franchisee/Teller will ask the student to share CNIC number, Mobile Number & Challan Number

4. Retailer/Franchisee/Teller will enter the Challan Number in his Jazzcash Tab/system
5. Tab/System will show the payable amount & due date
6. Student will hand-over the fee amount to retailer/ franchisee/teller
7. Once the fee amount is handed over, the retailer/ franchisee/teller will process the fee transaction
8. Fee will be paid and student will receive confirmation SMS on mobile number. Transaction charges will be mentioned in the confirmation SMS
9. Student will write **Transaction ID** and **"Paid via Jazzcash Agent/Franchisee/Teller"** on the challan and admission form. Bank stamp will be embossed only in case the fee is paid through Mobilink Microfinance Bank branches. Students are advised to keep the confirmation SMS save in phone until the receipt of intimation of admission confirmation from AIOU.

REGULATIONS FOR REFUND OF ADMISSION FEE

i. The Applicant/candidate/student who has submitted his/her fee for Admissions but does not wish to continue and applied for refund of fee before the start of his/her study period as per Academic Calendar available on the AIOU website corresponding to his/her respective semester i.e Autumn or Spring, the fees will be refunded after the deduction @ 10% of the total fee.

ii. The Applicant/Candidate who was not eligible but deposited the fee for admission and applied for refund within one year from the date of fee deposit, the fee shall be refunded after deduction @15% of total fee.

iii. The student who has deposited his/her fee in excess of due fee that total excess amount shall be refunded or adjusted as the case may be.

iv. The Treasurer Department shall verify the fee of students and shall send the case to the Audit Department for pre-audit.

v. The cheque will be issued to the candidate by the Campus Payment Section (CPS), Treasurer's Department.

vi. In the case of death, the full fee will be refunded through crossed cheque in favour of the Blood Relative of deceased student, after fulfilling all the codal formalities. The refund case must be submitted within one year of fee deposit.

vii. In case the students who are not allowed/granted admission to a program offered by the University due to less enrollment/non formation of viable group/non offering of courses, full fee will be refunded to them.

viii. If the admission of an Applicant/Candidate is not matured due to any reason beyond the control of the

ix. University or due to unforeseen issues, the whole paid fee, without any deductions shall be refunded to the respective applicant/candidate. The refund case must be submitted within one year of fee deposit.

DISABILITY COORDINATORS:

In compliance with Higher Education Commission (HEC) revised policy i.e., "Policy for students with disabilities at HEIs in Pakistan 2021", the following Officers have been appointed as Disability Coordinators to facilitate the students with disabilities at AIOU.

Sr.#	Name of the Officer	Telephone Nos.
1.	Dr. Hira Ibrahim Medical Officer	051-9571110
2.	Mr. Umair Bin Nadeem, Assistant Director Press & Media, Directorate of Public Relations	051-9571372

IMPORTANT TELEPHONE NUMBERS

Sr.#	Name	Telephone Nos.
1.	Director Admissions	051-9250043 051-9250162 (Fax)
2.	Controller of Examinations	051-9250012
3.	Director Students Affairs	051-9250174
4.	Admission (Postgraduate)	051-9571547
Helpline: (051) 111 112 468 **Help Desk: support.aiou.edu.pk**		

PART-TIME REGIONAL COORDINATING ADDRESSES

Sr. #	Region	Regional Coordinators	Mobile #
1	D. G. Khan	Mr. Tahir Hussain, Regional Coordinator, Allama Iqbal Open University, Assistant Professor, Govt. Graduat College, Tehisle & Distt. **Layyan**	0300-9542050
2	D. G. Khan	Mr. Mohammad Ishaq, Regional Coordinator, Allama Iqbal Open University, Associate Professor(Rtd),Ward No.13,Tehil **Karo Lal Easan** Distt.**Layyah**	0300-6765338
3	D. G. Khan	Mrs. Naseem Akhtar Qureshi, Regional Coordinator, Allama Iqbal Open University, Principal (Rtd), Ward No.14/C, Kakkay wala,Tehsil **Kot Adu** Distt **Muzaffargarh**	0334-6211614
4	D. G. Khan	Mr. Muhammad Adnan Saeed, Regional Coordinator, Allama Iqbal Open University, Lecturer, Govt. Graduate College Tehsil & Distt. **Muzaffargarh**	0321-7800009
5	D. G. Khan	Mr. Muhammad Imran Khan, Regional Coordinator, Allama Iqbal Open University, Lecturer, Govt Kaura Khan Associate Degree College for Boys Tehsil **Jotai** Distt. **Muzaffargah**	0332-5278846
6	Gilgit	Mr. Imtiaz Hussain, Regional Coordinator, Allama Iqbal Open University, SST, Govt. Boys High School Tehsil **Danyor** Distt. **Gulgit**	0346-5260815
7	Gilgit	Mr. Niamatullah, Regional Coordinator, Allama Iqbal Open University, SST, Govt. Boys High School Tehsil & Distt.**Astore**	0315-7331152
8	Gilgit	Mr. Mahfuzullah, Regional Coordinator, Allama Iqbal Open University, Principal, Govt. Higher Secondary School, Tehsil **Darel**, Distt. **Diamir**	0355-5355009
9	Gilgit	Mr. Ahmad Raza, Regional Coordinator, Allama Iqbal Open University, SST, Govt. Girls High School, Tehsil **Chalt**, Distt. **Nagar**	0346-9239995
10	Gilgit	Mr. Mahboob Ali Shah, Regional Coordinator, Allama Iqbal Open University, SST, Govt. Boys High School, Rawoshan Tehsil **Gupis**, Distt. **Ghizar**	0355-5297902
11	Hyderabad	Mr. Khalid Nadeem, Regional Coordinator, Allama Iqbal Open University, HST, Govt. Boys High School Sanghar Tehsil **Sanghar**	0333-2911690

12	Hyderabad	Mr. Rasheed Ahmad, Regional Coordinator, Allama Iqbal Open University, HST, Govt. Shah Abdul Latif High School Tando Adam Tehsil **Tando Adam**	0333-2881340
13	Hyderabad	Mr. Kewal Rajpur, Regional Coordinator, Allama Iqbal Open University, HST, Govt. (N) S. M High School Tando Allah Yar Tehsil **Tando Allah Yar**	0345-3703509
14	Hyderabad	Mr. Muhammad Mobin, Regional Coordinator, Allama Iqbal Open University, Head Master (R), House No.B546, Qaim Khani Mohallah, Ward No. 06, Jhudo Tehsil **Jhudo**	0331-3891884
15	Hyderabad	Mr. Haider Ali, Regional Coordinator, Allama Iqbal Open University, S.S.S, Govt. Higher Secondary School Odera Lal Station Hala Tehsil **Hala**	0333-2851185
16	Kalat	Mr. Zareef Ahmed, Regional Coordinator, Allama Iqbal Open University, SST, Govt. Boys High School, Tehsil **Bisma**, Distt. **Washuk**	0332-2719913
17	kalat	Mr. Abdul Majeed, Regional Coordinator, Allama Iqbal Open University, Govt. Boys Middle School, Akram Colony, Tehsil **Hub**, Distt. **Lasbela**	0333-7977656
18	Kalat	Ms. Rubina Karim, Regional Coordinator, Allama Iqbal Open University, SPET, Govt. Girls Model High School, Tehsil & Distt. **Khuzdar**	0333-7965350
19	Kalat	Mr. Rasool Bakhsh, Regional Coordinator, Allama Iqbal Open University, SAT, Govt. Model High School, Bara Bgh, Tehsil **Bela** Distt. **Lasbela**	0332-8202275
20	Kalat	Mr. Mohammad Akram, Regional Coordinator, Allama Iqbal Open University, SST, Govt. Bos High School, Puran Tehna, Tehsil **Mangocher**, Distt. **Kalat**	0331-5957909
21	Kalat	Mr. Muhammad Asif, Regional Coordinator, Allama Iqbal Open University, SST, Govt. Boys High School, Labortry, Distt. **Mastung**	0333-7966627
22	Kalat	Mr. Muhammad Juman, Regional Coordinator, Allama Iqbal Open University, Lecturer, Govt. College of Elementary Education Tehsil, **Uthal**, Distt. **Lasbela**	0333-2875203
23	Kalat	Mr. Ejaz Ahmed, Regional Coordinator, Allama Iqbal Open University, Headmaster, Govt. Higher Secondary School, Toba, Tehsil **Gidder,** Distt. **Surab**	0334-2940443
24	Kalat	Mr. Muhammad Ramzan, Regional Coordinator, Allama Iqbal Open University, SST, Govt. Boys High School, Tehsil **Wadh**, Distt. **Khuzdar**	0333-2873108

25	Larkana	Mr. Abdul Baqi, Regional Coordinator, Allama Iqbal Open University, HST, Govt. (P), Smam High School, Tehsil & District Jacobabad.	0333-7341353
26	Larkana	Mr. Shabir Ahmed Mahar, Regioanl Coordinator, Allama Iqbal Open University, Headmaster, Govt. Qazi Habibullah Higher Secondary School, Tehsil & District Shikarpur	0333-7270558
27	Larkana	Mr. Imdad Ali, Regional Coordinator, Allama Iqbal Open University, HST (Rtd.) Vilage Jado Kalhore, Post Office Gari Yasin, Gari Yasin/Khanpur Tehsil Khanpur District Shikarpur	0302-3467511
28	Mardan	Dr. Iftikhar Ali, Regional Coordinator, Allama Iqbal Open University, Headmaster, Govt.High School, Galla, Tehsil **Katlang**	0346-9354577
29	Mardan	Mr. Muhammad Ayaz, Reginal Coordinator, Allama Iqbal Open University, SST, Govt.High School, Asota Sharif, Tehsil **Razzar**, Distt.**Swabi**	0313-6692788
30	Mardan	Mr. Khurshid Khan, Regional Coordinator, Allama Iqbal Open University, Principal, Govt.High School, Teshil **Takht Bha**i, Distt. **Mardan**	0300-9300988
31	Mardan	Mr. Ghaza Bacha, Regional Coordinator, Allama Iqbal Open University, Subject Specialist, Govt.Higher Secondary School, Kunda Tehsil **Lahore**, Distt. **Swabi**	0317-5686975
32	Mardan	Mr. Gulzar Ali, Regional Coordinator, Allama Iqbal Open University, Headmaster, Govt. High School,Charguli Tehsil **Rustam** Distt.**Mardan**	0348-0661928
33	Moro	Mr. Ali Nawaz, Regional Coordinator, Allama Iqbal Open University, Lecturer, Ustad Bukhari Govt. Degree College, Tehsil & District **Dadu**	0311-2237536
34	Moro	Mr. Shahd Pisand Chandio, Regional Coordinator, Allama Iqbal Open University, Assistant Professor, Govt.Degree College, Tehsil **Khairpur Nathan Shah** District **Dadu**	0300-3255377
35	Moro	Pir Muhammad Rind, Regional Coordiantor, Allama Iqbal Open University,HST, Govt. Boys High School,Tehsil **Sehawan** District **Jamshoro**	0300-3213824

36	Moro	Mr. Shakeel Ahmed, Regional Coordinator, Allama Iqbal Open University, HST, Govt. High School Nya Madrasa Ghulam Rasool Shah Colony, Tehsil **Nawab Shah** District **Shaheed Benazir Abad**	0300-3223288
37	Moro	Mr. Ghulam Rasool, Regional Coordinator, Allama Iqbal Open University, Headmaster, Govt. Boys Primary School, Mari Jalbni, Tehsil **Sakrand** District **Shaheed Benazir Abad**	0300-3003060
38	Moro	Mr. Rahim Bux, Regional Coordinator, Allama Iqbal Open University, HST, Govt.High Shool, Morath Tehsil **Kandiaro** District **Nausharo Feroze**	0300-3214071
39	Multan	Mr. Naveed Sajid, Regional Coordinator, Allama Iqbal Open University, Assistatn Director, Office of the CEO (DEA), Tehsil **Mian Channu**, Distt. **Khanewal**	0302-4180149
40	Multan	Mr. Muhammad Akmal, Regional Coordinator, Allama Iqbal Open University, SST, Govt. High School, Kukkar Hatta, Tehsil **Kabirwala**, Distt. **Khanewal**	0308-6972997
41	Multan	Mr. Muhammad Akram Shad, Regional Coordinator, Allama Iqbal Open University, SST, Govt. High School, 84-M, Tehsil **Jalalpura Pirwala**, Distt. **Multan**	0307-4316650
42	Multan	Mr. Munawar Hussain Kamal, Regional Coordiantor, Allama Iqbal Open University, Sr. Headmaster, Govt. High School, Talkot Tehsil **Shuja Abad**, Distt. **Multan**	0302-7304121
43	Muzaffarabad	Mr. Bashir Ahmed Malik, Regional Coordinator, Allama Iqbal Open University, Principal (Rtd) C/O Boys Degree College, Tehsil Patikka Distt. **Muzaffarabad**	0310-1232355
44	Muzaffarabad	Mr. Zia Arif Awan, Regional Coordinator, Allama Iqbal Open University, SST-17, C/O Hamdani Book Dept. Main Bazar, Tehsil Hattian, Distt. Jhelum Vallery, **Hattian**	0345-5594444
45	Muzaffarabad	Malik Mushtaq Ahmed, Regional Coordinator, Allama Iqbal Open University, Principal-19, Govt. Girls Degree College, Tehsil Leepa, Distt. Jhelum Valley, **Leepa**	0355-8155551

46	Muzaffarabad	Mr. Khurshid Hassan Awan, Regional Coordinator, Allama Iqbal Open University, SST,Govt. Boys Pilot High School, **Tehsil Chikkar**	0345-9582405
47	Muzaffarabad	Mr. Mushtaq Ahmed Mughal, Regional Coordinator, Allama Iqbal Open University, Librarian, C/O govt. Girls Degree College, **Tehsil Authmuqam**	0355-8153705
48	Muzaffarabad	Mr. Shahjahan, Regional Coordinator, Allama Iqbal Open University, SST, Govt. Boys Degree College, **Tehsil Sharda**	0355-6601010
49	Peshawar	Mr. Gohar Khan, Regional Coordinator, Allama Iqbal Open University, Principal Govt. High School No. 02, Jamrud Tehsil **Khyber**	0333-9330321
50	Peshawar	Mr. Hayat Ullah, Regional Coordinator, Allama Iqbal Open Univeristy, Principal, Govt Higher Secondary School No. 02, Rajjar Charsadda Tehsil **Charsadda**	0313-9173884
51	Peshawar	Syed Tahir Shah, Regional Coordinator, Allama Iqbal Open University, Dy. DEO (Male), Nowshera Tehsil **Nowshera**	0346-5665309
52	Peshawar	Mr. Inam Ullah, Regional Coordinator, Allama Iqbal Open University, Govt. Degree College, Ekka Ghund, Mohamand Tehsil **Mohamand**	0301-8890889
53	Sahiwal	Rana Abid Ali Khan, Regional Coordinator, Allama Iqbal Open University, Dy. DEO, Office of Dy.DEO (EEM), Sahiwal	0301-6925775
54	Sahiwal	Mr. Muhammad Siddique, Regional Coordinator, Allama Iqbal Open University, Principal, Govt.High School, N Block, Arifwala	0334-7192742
55	Sahiwal	Mr. Mushtaq Ali, Regional Coordinator, Allama Iqbal Open University, Principal, Govt.High School, Pakpattan	0331-7157428
56	Sahiwal	Syed Tauqir Altaf, Regional Coordinator, Allama Iqbal Open Univesity, Sr. Headmaster, Govt.High School, CMR, Okara	0300-8697310
57	Sahiwal	Dr. Muhammad Yasin, Regional Coordinator, Allama Iqbal Open University, SST, Govt. Model High School, Renala Khurd	0300-6956589
58	Sahiwal	Mr. Ejaz Ahmad, Regional Coordinator, Allama Iqbal Open University, Headmaster, Govt. High School, Depalpur	0300-6969520

59	Swat	Mr. Nasrullah Zeb, Regional Coordinator, Allama Iqbal Open University, Govt. Higher Secondary School Amnawar, Tehsil Daggar District Buner	0333-9704838
60	Swat	Mr. Faiz Ali Kha, Regional Coordinator, Allama Iqbal Open University, Subject Specialist, Govt. Higher Secondary School, Chuprial Matta Tehsil Matta District Swat	0345-9223922
61	Swat	Mr. Muhammad Ayaz Khan, Regional Coordinator, Allama Iqbal Open University, Assistant Professor, Govt. Degree College Tehsil Puran District Shangla	0345-8530350
62	Swat	Mr. Faiz Ur Rehman, Regional Coordinator, Allama Iqbal Open University, Govt. Degree College Tehsil Alpurai District Shangla	0323-8538179
63	Swat	Mr. Muhammad Arif, Regional Coordinator, Allama Iqbal Open University, Headmaster (Rtd) Govt. High School Goda, Tehsil Kabal District Swat	034-59528291
64	Timergara	Mr. Umar Farooq, Regional Coordinator, Allama Iqbal Open University, Subject Specialist, Govt. CM Higher Secondary School, Tehsil Dir Khas District Dir (Upper)	0315-6899544
65	Timergara	Mr. Hassan Said, Regional Coordinator, Allama Iqbal Open University, Lecturer, Govt. Degree College Tehsil Lal Qilla District Dir (Lower)	0346-5083717
66	Timergara	Mr. Khalil Ur Rehamn, Regional Coordinator, Allama Iqbal Open University, Head Master (Rtd), Govt. High School, Dheri Kot Village & Post Office Kot Malakand Tehsil Dargai District Malakand	0334-9311036
67	Timergara	Mr. Zia Ul Haq, Regional Coordinator, Allama Iqbal Open University, Govt. Post Graduate College, Tehsil Khas District Bajaur	0307-8566671
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