

Admission Spring 2022

BS Programmes

(Face to Face)

- Chemistry
- Microbiology
- Environmental Sciences
- Botany
- Biochemistry
- Statistics
- Mathematics
- Physics



Allama Iqbal Open University, Islamabad

www.aiou.edu.pk

Help Line: (051) 111-112-468

PROSPECTUS
OF
BS Programmes
(Face to Face)
FOR
SEMESTER: SPRING, 2022



Allama Iqbal Open University
Islamabad

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Vice-Chancellor's Message

Dear Student,

السلام عليكم

Welcome to Allama Iqbal Open University, the first distance education university in South Asia that provides cost effective education to 1.3 million students not only in Pakistan but also in Middle East. This university has the unique privilege of blurring temporal and spatial boundaries by providing education at the thresholds of the students. The university offers a diverse range of educational facilities, starting from basic literacy Programmes to the PhD level. The courses are regularly revised to bring them at par with international standards. The university offers maximum number of specializations at postgraduate level through four faculties, i.e. Faculty of Arabic and Islamic Studies, Faculty of Education, Faculty of Sciences, and Faculty of Social Sciences and Humanities. The university has a huge network of faculty members, tutors, resource persons, specialists and experts who strive hard to ensure that the Programmes offered by the university enable the students to become independent learners and critical thinkers. The university takes special measures to establish and strengthen research culture and prepare those individuals who can play an instrumental role in the process of progress and development of the country.



I welcome you to the postgraduate studies at AIOU and wish you a challenging yet successful journey ahead.

Prof. Dr. Zia Ul-Qayyum
Vice Chancellor, AIOU

**MINIMUM AND MAXIMUM TIME DURATION/SEMESTERS
FOR THE COMPLETION OF FACE TO FACE PROGRAMME
(From Spring 2021 Semester)**

Sr. #	Degree Level	Minimum Duration	Maximum Duration
1.	PhD	3 Years / 5 Semesters	8 Years*
2.	MS/MPhil/MSc (Hons)/MBA/COL MBA	2 Years / 4 Semesters	4 Years**
3.	MA/MSc (2 Years)	2 Years / 4 Semesters	4 Years
4.	BS (4 Years)	4 Years / 8 Semesters	6 Years
5.	Associate Degree (2 Years)	2 Years / 4 Semesters	4 Years
6.	Postgraduate Diploma (1 Year)	1 Year / 2 Semesters	2 Years
7.	Certificate (6 Months)	6 Months / 1 Semester	1 Year

*&** As per AIOU rules.

The policy of Re-Appear and Again Re-Appear is being dis-continued and the concerned students will have to re-register/enroll or re-admit in the failed course(s).

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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 door-steps to those people who could not continue their education journey through formal system of education. The University (AIOU) operates on semester system and admits students in Autumn and Spring semesters. Under graduate admissions are offered in both the semesters where-as post graduates are offered once a year. The enrolled students are given course books specially prepared by the university on self-instructional principles. However, allied material with 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 comprises of four faculties. The university has established **study centres across the country**, where distance education students

are provided necessary guidance by their respective tutors. Moreover, the university has established full time study centres, wherein the students of MCom, MBA (IT), MBA (Banking and Finance), BS (CS), etc. are being provided instruction, guidance and counselling through face-to-face education. AIOU is 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 research scholars, a science complex has been built 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's hostel and the Central Library where computers have been provided to enable students to access latest information available through open source databases.

FACULTY OF SCIENCES

Faculty of Sciences forms an important and integral part of the university. Since its establishment in 1982 with five teaching departments, it has undergone major developments. 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 programmes 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 of its in-service students are benefiting from the postgraduate study programmes. Improvement in qualifications for a better life is a right of everyone and the Faculty’s programmes meet this challenge by offering opportunities to all. In particular, a significant number of beneficiaries are those who cannot afford education in formal institutions due to a variety of reasons.

Realizing the importance of science education and growing needs of the Faculty of Sciences, the University has completed a building, the Research Complex, at a cost of Rs. 35 million. The Research Complex now accommodates departments of Agricultural Sciences, Biology, Chemistry, Environmental Sciences, Home & Health Sciences, Mathematics, Statistics and Physics. These departments are running a variety of postgraduate technical, scientific and professional programmes

successfully. The Research Complex also has a Computer Lab with Internet and On-line Library Facility for literature survey, Seminar Room, Lecture Hall and Library. In addition, there are many labs for practical work, teaching and research, and instrumentation labs for analysis. The University is developing these labs through its own resources. The Faculty of Sciences is fortunate to have Prof. Dr. Zia Ul-Qayyum as the University’s Vice-chancellor, who has given personal attention to the development of the Faculty of Sciences by providing generous amount of funds and valuable guidance.

Two Model labs have been developed in the Research Complex with the assistance of the Higher Education Commission to meet the training needs of science teachers. This development is significant for training of teachers since under the new educational policy four-year BS programme has started in undergraduate educational institutions.

More than fifty highly qualified full-time faculty members are on the roll of the Faculty of Sciences. Their role in the planning, designing and development of courses to meet student’s needs is vital. Faculty members also engage in imparting and supervising of instructions so that high standards are maintained. In addition, highly qualified and experienced professors are also engaged on contractual basis or as part time instructors for postgraduate study programmes. The Faculty is also offering academic positions under the tenure-track system to attract the best minds in scientific and technological fields.

Research is an integral part of the postgraduate study programmes leading to MSc, MPhil and PhD degrees in

Agricultural Sciences, Chemistry, Computer Sciences, Home and Health Sciences, Physics, Mathematics and Statistics. Rules and regulations governing the postgraduate study programmes are those approved by the Higher Education Commission (HEC).

The Faculty has launched BS programme in Chemistry and Microbiology from semester Spring 2009. The four-year BS programme is structured according to the recent policies of the Higher Education Commission for the improvement of the standard of education so as to bring it at par with the international standards.

DEPARTMENT OF CHEMISTRY

Introduction:

Department of Chemistry is a major department of the Faculty of Science. It was established in 1998 to offer postgraduate programmes in Chemistry. In the beginning only MSc programme was started, which was later extended to include MPhil and PhD programmes. These programmes have attracted teachers, employees of research organizations, industry and fresh graduates who found an opportunity to improve their qualifications. The faculty of the department comprises of one Professor, four Associate Professors, one Assistant Professor and four Lecturers. In addition, the department also uses services of experienced professors as visiting faculty.

The department is situated in Research Complex 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 programmes in chemistry have been developed by the Faculty according to the guidelines provided by the Higher Education Commission (HEC). Necessary changes have been effected 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 System. 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 believes in the “Opportunity of Education to All”. Therefore, it has modeled its academic programmes to suit in- service teachers, employees of research organizations,

industry and students who could not afford formal education for some reason. The department firmly believes in the promotion of chemistry as a science and in maintaining the highest standards.

Objectives:

- To promote chemistry as a science and to provide opportunity to those who could not educate themselves in formal system of education for one reason or another.
- To provide opportunities of professional growth to all those chemistry graduates who are working as technical staff in research organizations.
- To update the knowledge of in-service chemistry teachers.

BS Chemistry Programme

a) 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.

b) 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.

c) Eligibility:

1. FSc (at least 2nd division with 45% marks) with Chemistry as one of the major subject.
2. DAE (Diploma Holders) in Chemical Engineering/ Chemical Technology from a Polytechnic Institute.
3. A-Level with Chemistry or Equivalent.

For further detail about Online admission please visit the University Website at:

www.aiou.edu.pk

OR

Department of Chemistry, University Research Complex
Allama Iqbal Open University, H-8, Islamabad.
Contact Ph: 051-9057262

(Please do not send any fee with the application form)

d) Scheme of Studies:

Currently this programme is being offered in Islamabad region only.

The BS programme 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 seventh and eighth semester. Now, the Department is offering specialization in Organic, Inorganic/Analytical and Physical Chemistry.

The maximum duration to complete BS Chemistry Programme is six **Years (12 Semesters)**

SEMESTER WISE COURSE OFFERING**Semester-1**

Course Code	Course Title	Credit Hours
4421	Inorganic Chemistry	4(3+1)
4401	Cell Biology Genetics & Evolution	4(3+1)
4431	Pre-Calculus	3(3+0)
5466/5467	Islamiat / Ethic	2(2+0)
5451	English-I	3(3+0)

Semester-2

4422	Organic Chemistry	4(3+1)
4402	Diversity of Plants	4(3+1)
4432	Calculus-I	3(3+0)
5468	Introduction to Computer	3(3+1)

5454	English-II	3(3+0)
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Semester-3

4423	Physical Chemistry	4(3+1)
4425	Basic Biochemistry	4(3+1)
4443	Environmental Chemistry	4(3+1)
5465	Pakistan Studies	2(2+0)
5458	English-III	3(3+0)

Semester-4

4424	General Chemistry	4(3+1)
4426	Statistics for Chemists	4(3+1)
4442	Environmental Pollution	4(3+1)
9468	Public Relations (ODL)	3(3+0)

Semester-5

Course Code	Course Title	Credit Hours
2573	Analytical Chemistry-I	3 (3+0)
2575	Physical Chemistry-I	3 (3+0)
2576	Organic Chemistry-I	3 (3+0)
2577	Inorganic Chemistry-I	3 (3+0)
2594	Mathematics for Chemists	2 (2+0)
2595	Chemistry Lab-I	4 (0+4)

Semester-6

2574	Analytical Chemistry-II	3 (3+0)
2580	Physical Chemistry-II	3 (3+0)
2581	Organic Chemistry-II	3 (3+0)
2582	Inorganic Chemistry-II	3 (3+0)
2596	Chemistry Lab-II	4 (0+4)

SPECIALIZATION IN ORGANIC CHEMISTRY

Semester-7

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)

Semester-8

2587	Chemistry of Natural Products	3 (3+0)
2590	Special Organic Reactions	3 (3+0)
2591	Organic Synthesis	3 (3+0)
2537	Advance Organic Chemistry Lab-III	3 (0+3)
2538	Advance Organic Chemistry Lab-IV	3 (0+3)

SPECIALIAZATION IN INORGANIC CHEMISTRY

Semester-7

Course Code	Course	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	Advance Inorganic Chemistry Lab-1	3(0+3)
2543	Advance Inorganic Chemistry Lab-II	3(0+3)

Semester-8

2544	Organometallic Chemistry	3(3+0)
2545	Group Theory for Chemist & its Applications	3(3+0)
2547	Advanced Environmental Chemistry	3(3+0)
3561	Advance Inorganic Chemistry Lab- III	3(0+3)
3562	Advance Inorganic Chemistry Lab-IV	3(0+3)

SPECIALIAZATION IN PHYSICAL CHEMISTRY

Semester-7

2548	Chemical Kinetics	3 (3+0)
2549	Quantum Chemistry	3 (3+0)
2550	Electrochemistry	3 (3+0)
2568	Advance Physical Chemistry Lab-1	3 (0+3)
2569	Advance Physical Chemistry Lab-II	3 (0+3)

Semester-8

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(0+3)
3564	Advanced Physical Chemistry Lab-IV	3(0+3)

e) Fee Structure

Registration Fee:	Rs.500/-
Admission Fee:	Rs.1000/-
Technology Fee (per semester)	Rs.500/-
Course Code (Lab)	Fee
4401	Rs.8000/-
4421	Rs.8000/-
4431	Rs.6000/-
9471	Rs.6000/-
9476	Rs.6000/-
Lab fee (per semester)	Rs.6000/-
First Semester Fee	Rs.42,000/-

f) Instructional Methodology:

Study Material:

Prescribed books/ study material/ reprinted or compiled course books will be provided by the University. However, the

students are advised to consult other books from the list of recommended books for further reading.

Mode of Teaching:

In this programme, regular classes for all courses and practical work will be conducted at AIOU Main Campus. Minimum 70% attendance is required in science subjects as per AIOU rules. Compulsory courses i.e. Pakistan Studies, Islamiyat, English, and a course from Social Sciences will also be offered on face-to-face mode with minimum 70% attendance.

Assessment System:

Method of Assessment for Theory and Laboratory Courses
AIOU has adopted GPA/CGPA system from Spring Semester 2009 in all its four years Bachelor Degree programmes.

Continuous Assessment:

Continuous assessment will be based on assignments and class tests. The pass percentage in assignment(s)/test(s) will be 50%. Assessment for all laboratory courses will be totally based on continuous assessment. A specific number of experiments will be conducted in each lab. Each experiment will be assessed separately. Minimum pass marks for each laboratory course will be 50%. The weightage of assignment/ test in the final result will be 30%.

Final Examination:

Final examination of 100 marks for each theory course will be conducted at the end of semester. The pass percentage in final examination will be 50% and its weightage in the final result

will be 70%. Student will have to successfully complete each component independently to pass a course.

Note: If a student fails to achieve the required aggregate in any of the assessment component of a particular course h/she will have to re-enroll in that course.

Method of Assessment for Laboratory Courses:

Assessment for all laboratory courses will be totally based on continuous assessment. 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. Minimum required marks to pass each laboratory course will be 50%.

Degree Requirements:

In order to become eligible for the award of degree of BS Chemistry, the student will have to successfully complete all the courses within a minimum period of four years (8 semesters). Maximum duration to complete the degree is six years (12 semesters).

FACULTY MEMBERS

1. Dr. Uzma Younus

Chairperson

Ph: 051-9250081, 051-9057818, 051-9057754

2. Dr. Moazzam H. Bhatti

Associate Professor

Ph: 051-9057262

3. Dr. Muhammad Sher

Associate Professor

Ph: 051-9057755

4. Dr. Nasima Arshad

Associate Professor

Ph: 051-9057756

5. Dr. Muhammad Zaman Ashraf

Assistant Professor

Ph: 051-9057225

6. Dr. Iqbal Ahmed

Assistant Professor

Ph: 051-9057874

7. Dr. Farzana Shaheen

Lecturer

Ph: 051-9057198

8. Dr. Erum Jabeen

Lecturer

Ph: 051-9057414

9. Ms. Mehwash Zia

Lecturer

Ph: 051-9057252

DEPARTMENT OF BIOLOGY AND ENVIRONMENTAL SCIENCES

The Department of Biology was established in 1998 with a mission to serve those who could not continue their formal education in various disciplines of Biological Sciences due to economic or job constraints and the production of well-trained manpower to serve various sectors of the country like education and research for the attainment of the goal of self-sufficiency.

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

Currently the Department is offering graduate programmes in the following disciplines:

MSC Microbiology
MSc Environmental Sciences
MSc Botany
BS Microbiology
BS Environmental Sciences
BS Botany
BS Biochemistry

In addition to that, department is offering some course from basic to postgraduate levels for main pool of AIOU's general programmes.

BS Microbiology (4 Years)

Introduction:

The Department of Biology is well aware of the fact that this is the 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 thing in view, the Department of Biology has launched four years BS Programme in Microbiology from the semester Spring, 2009.

This Programme is designed to:

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

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

The Specific Objectives are:

1. To provide human resources/skilled Microbiological technologists for catering the needs of medical laboratories in hospitals and research institutes.
2. To provide foundation for higher studies in Micro-Biological Sciences.
3. To create awareness about the importance of this science for general public health.

Target Groups

FSc (Pre-Medical) OR Equivalent A level qualification with biology as major subject.

GUIDELINES FOR ONLINE ADMISSION

1. The online application form can be accessed from university official website www.aiou.edu.pk
2. Applicants are required to fill all the desired fields on online application form.
3. Applicants are desired to deposit application fee on the prescribed challan form in specified banks.
4. The challan number after fee submission should be entered in online application form for successful completion.
5. Incomplete forms shall not be entertained.
6. Selected candidates will be made strictly on the basis of merit.
7. Only selected candidates will be informed about their admission.
8. The selected candidates will be required to pay the dues.

Note:

Only selected candidates will be asked to deposit prescribed fee. The fee should not be submitted before the confirmation of the admission. The deposited fee will not be refundable or adjustable for further admission. The document showing fee deposit must be provided in the office of

**CHAIRMAN
Department of Biology
Allama Iqbal Open University
H-8 Sector, Islamabad.**

In case of noncompliance, it would be assumed that fee has not been deposited and the student is not any more interested in getting admission. The department may invite a candidate in waiting list for admission against the vacant seat.

Eligibility/Selection Criterion

FSc (Pre-Medical) OR Equivalent A level qualification with biology as major subject.

Medium of Instruction

The medium of instruction shall be English

Study Material

Class lectures and handouts will be provided by respective teachers. However, the students are advised to consult other reference books recommended by the department.

Mode of Teaching

- University will provide face to face teaching to the students.
- The schedule of classes and dates of submission of assignments will be handed over along with study material.

Assessment and Evaluation

For each course, the registered students will be assessed on the basis of the followings:

- a) Continuous assessment through written assignments/tests or Workshop or practical activities.
 - i) For each discipline specific face to face course the marks obtained by each student in the two written assignments will constitute 2/3 part of the continuous assessment. A student has to obtain a minimum of 50% marks in the two assignments collectively in order to pass this component.
 - ii) For each discipline specific face to face course the marks obtained by each student in the practical workshop will constitute 1/3 part of the continuous assessment. A student has to obtain a minimum of 50% marks in the practical workshop individually in order to pass this component.
- b) Final examinations: three hours written examination for each course with 50% passing marks.

Note:

The continuous assessment and final examination will contribute 30% and 70% to the student's final course grade, respectively. For successful completion of each course the student will be required to qualify each of the two above components separately. If a student fails to achieve the required aggregate in any of the assessment component of a particular course he/she will have to re-enroll in that course.

Assignments/Tests

Handwritten Assignments to be submitted by the students shall be of literature and activity based nature. The students will submit the assignments to their teacher who will return the same after assessment with necessary academic guidance.

Degree Requirement:

In order to become eligible for the award of Degree in BS Microbiology, the students will have to earn a total of **129** credit hours including six credit hours for research project. Minimum duration of the programme is 4 years, extendable maximum up to 6 years.

c) Scheme of Studies:

Semester Wise Breakup of Courses BS in Microbiology

Semester-1

Sr. No.	Course Code	Course	Credit Hours
1.	4401	Cell Biology, Genetics & Evolution	4(3+1)
2.	4403	Fundamentals of Microbiology	4(3+1)
3.	4421	Inorganic Chemistry	4(3+1)
4.	4431	Pre-Calculus	3
5.	9471	English-I	3
		Total credits	18

Semester-2

Sr. No.	Course Code	Course	Credit Hours
1	4445	Environmental Microbiology	4(3+1)
2.	4402	Diversity of Plants	4(3+1)
3	4422	Organic Chemistry	4(3+1)
4	4432	Calculus-I	3(3+0)
5	5454	English-II	3(3+0)
Total credits			18

Semester-3

1	4441	Introduction to Environmental Sciences	4(3+1)
2	4469	Diversity of Animals	4(3+1)
3	5465	Pakistan Studies	2(2+0)
4	5458	English-III	3(3+0)
Total credits			13

Semester-4

1	5468	Introduction to Computer	3(3+0)
2	4412	Biotechnology	4(3+1)
3	5466/5467	Islamiyat/Ethics	2(2+0)
4	9468	Public Relations	3(3+0)
5	7413	Scientific Research	4(3+1)
Total credits			14

Semester-5

1	4407	Microbial Genetics	4(3+1)
2	4408	Virology	4(3+1)
3	4481	Introductory Biochemistry	4(3+1)
4	4482	Biostatistics	3
Total credits			15

Semester-6

Sr. No.	Course Code	Course	Credit Hours
1	4405	Microbial Anatomy and Physiology	4(3+1)
2	4411	Food and Dairy Microbiology	4(3+1)
3	4416	Molecular Mechanism of Antimicrobial Drugs	4(3+1)
4	4419	Molecular Biology	4(3+1)
Total credits			16

Semester-7

1	4415	Immunology	4(3+1)
2	4413	Medical Microbiology	4(3+1)
3	4420	Industrial Microbiology	4(3+1)
4	4410	Soil Microbiology	4(3+1)
Total credits			16

Semester-8

1	4417	Epidemiology	4(3+1)
2	4418	Research Project	6
3	4414	Genetic Engineering	4(3+1)
4	4400	Seminar	1(1+0)
Total credits			15

Total Credit Hours: 18+18+14+14+15+19+16+15 = 129

Fee Structure:

Registration Fee:	Rs.500/-
Admission Fee:	Rs.1000/-
Technology Fee (per semester)	Rs.500/-
Course Code (Lab)	Fee
4401	Rs.8000/-
4403	Rs.8000/-
4421	Rs.8000/-
4431	Rs.6000/-
9471	Rs.6000/-
Lab fee (per semester)	Rs.3000/-
First Semester Fee	Rs.41,000/-

BS Environmental Science (4 Years)

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:

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

Criteria for Admission

Criteria for admission in first semester of the 4-year program

- a. FSc (pre medical or pre-engineering) / DAE or equivalent qualification with minimum second division (at least 45% marks) is the pre-requisite for admission in BS Environmental Science.
- b. Foreign certificate/ degree holders will need to produce equivalence certificate from IBCC to seek admission in semester 1 and from HEC for admission in semester V.
- c. Candidates can apply only through online application form available at: aiou.edu.pk

GUIDELINE FOR ONLINE APPLICATION

1. The online application form can be accessed from university official website www.aiou.edu.pk
2. Applicants are required to fill all the desired fields on online application form.
3. Applicants are desired to deposit application fee on the prescribed challan form in specified banks.
4. The challan number after fee submission should be entered in online application form for successful completion.
5. Incomplete forms shall not be entertained.

Note: Admission is Merit Based. Only selected candidates will be informed to deposit the fee on the prescribed challan form issued by the Department after interview.

Medium of Instruction

The Medium of Instructions for BS Environmental Science is English for all the courses except Islamic Studies/Ethics and Pakistan Studies which will be offered in Urdu for this program.

Study System

In 4-Year BS Environmental Science Programme regular classes for all science courses and practical work will be conducted at AIOU Main Campus.

Minimum 70% attendance is required in science subjects as per AIOU rules.

- **Teaching Material:** Class lectures and other reading materials will be provided by the course instructor. In addition, the student will be advised to consult other reference books for further reading.
- **Class Work:** Three-hour class work/lectures per week for a (3+0) credit hour course will be compulsory for sixteen weeks. The credit hours are specified against each course in the Layout of Program.
- **Lab Work:** Three-hour lab (laboratory) work/practical per week for a (3+1) credit hour course will be compulsory for sixteen weeks. The practical work will consist of lab oriented practicals, field visits and or any other activity as per requirement.

The Assessment System

As per AIOU practice 30% weightage will be given to continuous assessment (class assignments, class tests, lab work, field visit and practical examination) whereas, 70% weightage to the final examination.

- **Continuous Assessment:** continuous assessment will be based on class test and lab work. The pass percentage in the lab assignments/field visit/class test will be 50%. The weightage of continuous assessment in the final result will be 30%.
- **Final Examination:** Final examination of 100 marks for each theory course will be conducted at the end of semester. The pass percentage in final examination will be 50% and its weightage in the final result will be 70%. Student will have to successfully complete each component independently to pass a course.

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

Degree Requirement and Duration

In order to maintain the equivalence of duration of study at international level, the Bachelor's degree programme will comprise of 4-year (8 Semester). For award of degree of BS in ES, the candidate will have to successfully pass all the courses (130 Credit hours including 6 Credit Hour Research Project) within a minimum period of 4 years (8 semesters). Failing which, a student can be given an extension of 2 Years in maximum, after completion of initial period.

SEMESTER WISE DISTRIBUTION OF COURSE

Semester-1

S.#	Code	Course	CH
1	4401	Cell Biology, Genetics and Evolution	4(3+1)
2	4421	Inorganic Chemistry	4(3+1)
3	9467	Pre-Calculus	3(3+0)
4	5474	Introduction to Environmental Sciences	4(3+1)
5	5451	English-I	3(3+0)
			18

Semester-2

1	4402	Diversity of Plants	4(3+1)
2	4422	Organic Chemistry	4(3+1)
3	4432	Calculus-I	3(3+0)
4	4442	Environmental Pollution	4(3+1)
5	5454	English-II	3(3+0)
			18

Semester-3

1	4403	Fundamentals of Microbiology	4(3+1)
2	4469	Diversity of Animals	4(3+1)
3	5465	Pakistan Studies	2(2+0)
4	5458	English-III	3(3+0)
			14

Semester-4

1	5468	Introduction to Computer	3(3+0)
2	4412	Biotechnology	4(3+1)
3	4445	Environmental Microbiology	4(3+1)
4	9468	Public Relations	3(3+0)
5	5466/ 5467*	Islamiat /Ethics (For Non-Muslim Students Only)	2(2+0)
			18

Semester-5

S.#	Code	Course	CH
1	4443	Environmental Chemistry	4(3+1)
2	4458	Environmental Policies & Regulations	3(3+0)
3	4467	Physics of the Environment	4(3+1)
4	4482	Biostatistics	3(3+0)
			14

Semester-6

1	4438	Natural Resource Management	3(3+0)
2	4444	Introduction of Environmental Economics	3(3+0)
3	4446	Environmental Biology	4(3+1)
4	4448	Energy & Environment	3(3+0)
5	7413	Scientific Research	4(3+1)
			17

Semester-7

1	4450	Environmental Impact Assessment	4(3+1)
2	4452	Biodiversity and Conservation	4(3+1)
3	4453	Sustainable Development	3(3+0)
4	4455	Health, Safety & Environmental Management Systems	4(3+1)
5	4456	Environmental Toxicology	3(3+0)
			18

Semester-8

1	4418	Research Project	6
2	4460	Project Management	3
3	4483	GIS and Remote Sensing	4(3+1)
			13

Total Credit Hours: 18+18+14+18+14+17+18+13 = 130

Fee Structure

Registration Fee:	Rs.500/-
Admission Fee:	Rs.1000/-
Technology Fee (per semester)	Rs.500/-
Course Code (Lab)	Fee
4401	Rs.8000/-
4441	Rs.8000/-
4421	Rs.8000/-
4431	Rs.6000/-
9471	Rs.6000/-
Lab fee (per semester)	Rs.3000/-
First Semester Fee	Rs.41,000/-

All students are required to pay full fee in advance as prescribed at the beginning of each semester. The university reserves the right to revise the fee structure or add any fee considered appropriate at any time during the study period. All such changes will be applicable to all students.

BS Botany (4 Years)**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. As a by-product of photosynthesis, they release oxygen into the atmosphere, a gas that is required by nearly all living things to carry out cellular respiration. Additionally, they are influential in the global carbon and water cycles and plant roots bind and stabilize soils, preventing soil erosion. 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.

Scope of the Programme

This programme has an interdisciplinary and multidisciplinary scope enabling students to understand the significance and concepts of Botany. It aims at producing dynamic young graduates in the field of Botany by developing strong skill, academic foundation, and professionalism enabling them to

compete in governmental and non-governmental sectors. Botany 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 in Botany can progress to a wide range of careers. They can work in national and international organization in either public or private sectors as Biodiversity Researchers, Environmental Scientists, Nature Reserve Managers, Research Scientists, Wildlife Management Advisors, Project Officers, Ecological Consultants and Conservation Officers, Quality Control Officers, Salesperson etc.

Aim

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

Objectives

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

1. Demonstrate comprehensive understanding of Botany as an interdisciplinary and multidisciplinary subject.
2. Achieve awareness about the evolutionary trends, plants systematics, and environmental considerations in pursuit of nature conservation.
3. Understand the relationship between economic growth and importance of indigenous plant resources.
4. Acquire skills, knowledge and competencies to take up research projects for nature conservation and exploration.

GUIDELINE FOR ONLINE APPLICATION

1. The online application form can be accessed from university official website www.aiou.edu.pk.
2. Applicants are required to fill all the desired fields on online application form.
3. Applicants are desired to deposit application fee on the prescribed challan form in specified banks.
4. The challan number after fee submission should be entered in online application form for successful completion.
5. Incomplete forms shall not be entertained.

Note: Only selected candidates will be asked to deposit the prescribed fee. The fee should not be submitted before the confirmation of the admission. The deposited fee will not be refundable or adjustable for future admission. The document showing fee deposit must be provided in the office of

The Incharge

**Department of Biology and Environmental Science
AIOU, Sector H-8, Islamabad**

In case of noncompliance, it would be assumed that fee has not been submitted and the student is not any more interested in getting admission. The department may invite a candidate in waiting list for admission against vacant seat.

Eligibility/ Selection Criterion

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

Medium of Instruction

The Medium of Instructions for BS Botany will be English.

Study Material

The students are advised to consult other reference books recommended by the department.

Mode of Teaching

- University will provide face to face teaching to the students.
- The schedule of classes and dates of submission of assignments will be handed over along with study material.

Assessment and Evaluation

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

a. Continuous Assessment through written assignments/ tests or Workshop or practical activities.

- i. For each discipline specific face to face course the marks obtained by each student in the two written assignments will constitute 2/3 part of the continuous assessment. A student has to obtain a minimum of 50% marks in the two assignments collectively in order to pass this component.
- ii. For each discipline specific face to face course the marks obtained by each student in the practical workshop will constitute 1/3 part of the continuous assessment. A student has to obtain a minimum of 50% marks in the practical workshop individually in order to pass this component.

- b. Final Examinations:** three hours written examination for each course with 50% passing marks.

Note: The continuous assessment and final examination will contribute 30% and 70% to the student's final course grade, respectively. For successful completion of each course the student will be required to qualify each of the two above components separately. **If a student fails to achieve the required aggregate in any of the assessment component of a particular course he/she will have to re-enroll in that course.**

Degree Requirement and Duration

In order to be eligible for the award of BS in Botany, the student will have to earn a total of 127 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 in maximum, after completion of initial period.

Scheme of Studies

Semester-1

Sr. No.	Course Code	Course	Credit Hours
1	4401	Cell Biology, Genetics & Evolution	4(3+1)
2	4403	Fundamentals of Microbiology	4(3+1)
3	4421	Inorganic Chemistry	4(3+1)
4	9467	Pre-Calculus	3(3+0)
5	5451	English-I	3(3+0)
Total Credits			18

Semester-2

1	4402	Diversity of Plants	4(3+1)
2	4422	Organic Chemistry	4(3+1)
3	4432	Calculus-I	3(3+0)
4	5454	English II	3(3+0)
Total Credits			14

Semester-3

Sr. No.	Course Code	Course	Credit Hours
1	4441	Introduction to Environmental Sciences	4(3+1)
2	4469	Diversity of Animals	4(3+1)
3	5465	Pakistan Studies	2(2+0)
4	5468	English–III	3(3+0)
Total Credits			14

Semester-4

1	5468	Introduction to Computer	3(3+0)
2	4412	Biotechnology	4(3+1)
3	5466/ 5467	Islamic Studies / Ethics (For Non-Muslim Students)	2(2+0)
4	9468	Public Relations	3(3+0)
Total Credits			14

Semester-5

1	4452	Biodiversity and Conservation	4(3+1)
2	4481	Introductory Biochemistry	4(3+1)
3	7401	Diversity of Vascular Plants	3(2+1)
4	7402	Plant Anatomy	3(2+1)
5	7403	Phycology and Bryology	3(3+0)
Total Credits			17

Semester-6

Sr. No.	Course Code	Course	Credit Hours
1	7405	Plant Ecology-I	3(2+1)
2	7406	Plant Physiology-I	3(2+1)
3	7407	Plant Biochemistry	3(3+0)
4	7408	Mycology and Plant Pathology	3(2+1)
5	7410	Plant Systematics	3(2+1)
Total Credits			15

Semester-7

1	4419	Molecular Biology	4(3+1)
2	4482	Biostatistics	3(3+0)
3	7409	Plant Ecology-II	3(2+1)
4	7411	Plant Physiology-II	3 (2+1)
5	7412	Genetics-I	3(2+1)
6	7413	Scientific Research	3(3+0)
Total Credits			19

Semester-8

1	4418	Research Project	6
2	7414	Genetics-II	3(2+1)
3	4439	Ethnobotany	3(3+0)
4	4446	Environmental Biology	4(3+1)
Total Credits			16

Total Credits: 18+14+14+14+17+15+19+16=127

Fee Structure

Registration Fee:	Rs.500/-
Admission Fee:	Rs.1000/-
Technology Fee (per semester)	Rs.500/-
Course Code (Lab)	Fee
4401	Rs.8000/-
4403	Rs.8000/-
4421	Rs.8000/-
4431	Rs.6000/-
9471	Rs.6000/-
Lab fee (per semester)	Rs.3000/-
First Semester Fee	Rs.41,000/-

All students are required to pay full fee in advance as prescribed at the beginning of each semester. The university reserves the right to revise the fee structure or add any fee considered appropriate at any time during the study period. All such changes will be applicable to all students.

FACULTY MEMBERS

- 1. Dr. Hina Fatimah**
Incharge
Department of Biology and Environmental Science
Ph. 051-9057279
- 2. Dr. Muhammad Waseem**
Assistant Professor
Ph. 051-9057267
- 3. Dr. Zahid Ullah**
Assistant Professor
Ph. 051-9057735
- 4. Dr. Rizwana Kausar**
Assistant Professor
Ph. 051-9057293
- 5. Ms. Saba Farooq**
Lecturer
Ph. 051-9057730
- 6. Ms. Samar Naseer**
Lecturer
Ph. 051-9057185
- 7. Ms. Zaib un Nisa**
Research Associate
Ph: 051-9057688
- 8. Ms. Sadia Latif**
Research Associate
Ph: 051-9057185

BS Bio-Chemistry (4 Years)

a) Introduction

Biochemistry can be considered as *chemistry of life* and is central to all areas of the biological and 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.

b) Scope of the Program

This program has an interdisciplinary and multidisciplinary scope enabling students to understand the significance and concepts 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.

c) Aim

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

d) Objectives

Objectives of this programme are

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

e) Launching Scheme

In the pilot phase, this program is being offered in Islamabad/Rawalpindi regions only. Face to face classes and labs will be schedule at the main campus. This program may be launched at other regional campuses depending on the availability of laboratory facilities.

f) Admission Procedure

1. Admission to fresh students will be offered once in a year, spring semester only.
2. Applications for admission will be invited through National Press.
3. Prescribed admission application available on AIOU admission portal will be filled electronically and hard

copies of admission form along with degree/transcript/certificate will be submitted to:

Head of Department
Department of Biology and Environmental Science
Allama Iqbal Open University
Sector H-8, Islamabad.

4. Selection of candidates will be made strictly on the basis of merit.
5. Only selected candidates will be informed about their admission
6. The selected candidates will be required to pay the dues in time.

Note

Only selected candidates will be asked to deposit the prescribed fee. The fee should not be submitted before the confirmation of the admission. The deposited fee will not be refundable or adjustable for future admission. The receipt showing fee deposit must be provided in the office of

The Incharge
Department of Biology and Environmental Science
Allama Iqbal Open University
Sector H-8, Islamabad

In case of noncompliance it would be assumed that fee has not been submitted and the student is not interested in getting admission. The department will invite a candidate in waiting list for admission against the vacant seat.

g) Eligibility/Selection Criterion

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.

h) Medium of Instruction

The Medium of Instructions for BS Biochemistry will be English.

i) Study Material

The students are advised to consult other reference books recommended by the department.

j) Mode of Teaching

University will provide face to face teaching to the students. However online mode of teaching can be adopted, if required.

k) Assessment and Evaluation

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

a. Continuous Assessment through written assignments/class tests or Workshop or practical activities.

- i. Continuous assessment will be based on the marks obtained by the students in class assignments/class tests. A student has to obtain a minimum of 50% marks in theory in order to pass this component.
- ii. In addition, a student has to obtain a minimum of 50% marks in the practical workshop individually in order to pass this component.

- b. **Final Examinations:** A three-hour written examination for each course with 50% passing marks.

Note:

The continuous assessment and final examination will contribute 30% and 70% to the student's final course grade, respectively. For successful completion of each course the student will be required to qualify each of the two above components separately. If a student fails to achieve the required aggregate in any of the assessment component of a particular course h/she will have to re-enroll in that course.

l) Degree Requirement and Duration

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 six credit hours for research within a minimum period of 4 years (8 semesters). Failing which, a student can be given an extension of up to 2 Years in maximum, after completion of initial period.

m) Scheme of Studies

Semester-1

Sr. No.	Course Code	Course	Credit Hours
1	4481	Introductory Biochemistry	4(3+1)
2	4421	Inorganic Chemistry	4(3+1)
3	9467	Pre-Calculus	3(3+0)
4	5451	English-I	3(3+0)
5	4401	Cell Biology, Genetics and Evolution	4(3+1)
Total Credits			18

Semester-2

Sr. No.	Course Code	Course	Credit Hours
1	4402	Diversity of Plants	4(3+1)
2	4422	Organic Chemistry	4(3+1)
3	4432	Calculus-I	3(3+0)
4	5454	English-II	3(3+0)
5	7407	Plant Biochemistry	3(2+1)
Total Credits			17

Semester-3

Sr. No.	Course Code	Course	Credit Hours
1	4469	Animals Diversity (Classification, Phylogeny and Organization)	4(3+1)
2	4403	Fundamentals of Microbiology	4(3+1)
3	5465	Pakistan Studies	2(2+0)
4	5458	English-III	3(3+0)
5	4441	Introduction to Env. Science	4(3+1)
Total Credits			18

Semester-4

Sr. No.	Course code	Course	Credit Hours
1	4409	Human Physiology	4(3+1)
2	4412	Biotechnology	4(3+1)
3	5468	Introduction to Computer	3(3+0)
4	5466/ 5467	Islamic Studies / Ethics	2(2+0)
5	9468	Public Relations	3(3+0)
Total Credits			18

Semester-6

Sr. No.	Course code	Course	Credit Hours
1	7483	Fundamentals of Genomics	4(3+1)
2	7484	Protein Biochemistry	4(3+1)
3	4419	Molecular Biology	4(3+1)
4	7413	Scientific Research	4(3+1)
Total Credits			16

Semester-7

Sr. No.	Course code	Course	Credit Hours
1	7485	Enzymology	4(3+1)
2	4413	Medical Microbiology	4(3+1)
3	4407	Microbial Genetics	4(3+1)
4	7486	Principles of Clinical Biochemistry	4(3+1)
Total Credits			16

Semester-8

Sr. No.	Course code	Course	Credit Hours
1	4418	Research Project	6
2	4414	Genetic Engineering	4(3+1)
3	7487	Principles of Bioinformatics	3(2+1)
Total Credits			13

n) Fee Structure

Registration Fee:	Rs.500/-
Admission Fee:	Rs.1000/-
Technology Fee (per semester)	Rs.500/-
Course Code (Lab)	Fee
4401	Rs.8000/-
4421	Rs.8000/-
4431	Rs.6000/-
4481	Rs.8000/-
9471	Rs.6000/-
Lab fee (per semester)	Rs.3000/-
First Semester Fee	Rs.41,000/-

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

All students are required to pay full fee in advance as prescribed at the beginning of each semester. The university reserves the right to revise the fee structure or add any fee considered at any time during the study period. All such changes shall be applicable to all students.

FACULTY MEMBERS

1. **Dr. Hina Fatima**

In Charge

Department of Biology & Environmental Science,
Research Complex, AIU, Sector H-8, Islamabad
Ph: 051-9057279

2. **Dr. Muhammad Waseem**

Assistant Professor
Ph: 051-9057267

3. **Dr. Zahid Ullah**

Assistant Professor. & Coordinator F. Sc.
Ph: 051-9057735

4. **Dr. Rizwana Kousar**

Assistant Professor and Program Coordinator
Biochemistry
Ph: 051-9057293

5. **Dr. Sobia Kanwal**

Assistant Professor
Ph: 051-9057726

6. **Dr. Samia Qadeer**

Assistant Professor
Ph: 051-9057726

7. **Dr. Saba Farooq,**

Lecturer
Ph: 051-9057730

8. **Ms. Samar Naseer**

Lecturer
Ph: 051-9057185

9. **Ms. Sadia Latif**

Research Associate
Ph: 051-9057185

DEPARTMENT OF STATISTICS

Introduction:

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 significant impact on our lives and are a key to discoveries and innovation. Over the time, with concerted efforts, the Department has grown to its full potential and is vigorously involved in participating towards global efforts of driving 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 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.

Academic Programmes

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

1. PhD Statistics
2. MSc Statistics
3. BS (4 Year) Statistics

All the courses and contents of these programmes 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 syllabi of national and international universities. It helps to strengthen the statistical concepts and logical thinking among our students.

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

BS Statistics Programme

a) 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 existing education system has become the top most priority of many nations across the globe.

Therefore, it is the need of time to modify our current education system in order to meet the international standards. Having a vision of brighter future with compatible educated youth, the Department of Statistics is launching BS Statistics programme from Spring 2017. The BS Statistics is a sixteen years' education fulfilling the international standards of graduate degree.

b) Aims and Objectives:

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

c) Eligibility:

Candidate must have at least 2nd division or 45% marks in HSSC or equivalent exams approved/verified by Inter Board Committee of Chairmen (IBCC).

Merit Criteria:

After scrutinize the eligible candidates, the department will call the eligible applicants for interview and admission committee will recommend the candidates for B.S Statistics on merit basis.

Degree Requirements:

For the award of BS Statistics degree, the student will have to qualify the 134 credit hours consisting 44 courses within a minimum period of eight semesters (4 years) and maximum period of 14 semesters (7 years).

Payment of fee:

Only the selected candidates will be asked through SMS/email to deposit the required fee after download challan from AIOU website.

Hostel and Cafeteria Facilities:

The said facilities are available for the students of AIOU only. Separate fee has to be paid subject to the availability of food and space in Hostels.

Library and Internet Facilities:

The Library and internet facilities are also available at main Campus, AIOU. The Central Library is enriched with latest text & recommended books, e-books & free internet facilities.

The library also has an accessible centre for blind students. The Department of Statistics also has its own computer laboratory equipped with latest software's of Statistics & internet facilities.

d) 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.

Semester-1

Sr.#	Code	Course Title	Credit Hours
1.	5468	Introduction to Computer	3(3+1)
2.	4432	Calculus-I	3(3+0)
3.	4434	Introductory Statistics	3(3+0)
4.	5468	Pakistan Studies	2(2+0)
5.	5451	English-I	3(3+0)
6.	9472	Business Communications	3(3+0)
Sub Total			19

Semester-2

1.	4433	Calculus-II	3(3+0)
2.	5474	Fundamental of Environment Sciences	3(3+1)
3.	4486	Introduction to Regression Analysis and Experimental Designs	3(3+0)
4.	9466	Pakistani Adab-I	3(3+0)
5.	5454	English-II	3(3+0)
6.	5469	Introduction to Sociology	3(3+0)
Sub Total			19

Semester-3

1.	4472	Algebra-I	3(3+0)
2.	4488	Introduction to Probability and Probability Distributions	3(3+0)
3.	5466/ 5467	Islamiat/ Ethics (For Non-Muslim Students only)	2(2+0)
4.	9470	Principles of Marketing	3(3+0)
5.	5458	English-III	3(3+0)
6.	9469	Population Studies	3(3+0)
Sub Total			18

Semester-4

Sr. #	Code	Course Title	Credit Hours
1.	4477	Computing Tools	3(2+1)
2.	4489	Probability Theory and Statistics	3(3+0)
3.	4491	Basic Statistical Inference	3(3+0)
4.	4492	Official Statistics	3(3+0)
5.	9471	Human Resource Management	3(3+0)
6.	9473	Arabic Language	3(3+0)
Sub Total			18

Semester-5

1	1551	Statistical Methods	3(3+0)
2	1552	Sampling Techniques-I	3(3+0)
3	1553	Design & Analysis of Experiments-I	3(3+0)
4	1554	Probability & Probability Distributions-I	3(3+0)
5	1555	Advanced Calculus	3(3+0)
Sub Total			15

Semester-6

1	1513	Non Parametric Statistics	3(3+0)
2	1556	Probability & Probability Distributions-II	3(3+0)
3	1557	Regression Analysis	3(3+0)
4	1558	Sampling Techniques-II	3(3+0)
5	1559	Design & Analysis of Experiments-II	3(3+0)
Sub Total			15

Semester-7

1	1514	Mathematical Methods for Statistics	3(3+0)
2	1561	Statistical Inference-Estimation	3(3+0)
3	1562	Econometrics	3(3+0)
4	1563	Total Quality Management	3(3+0)
5	1564	Computer Programming (C & C++)	3(3+0)
Sub Total			15

Semester-8

1	1566	Statistical Inference-Testing of Hypotheses	3(3+0)
2	1567	Applied Multivariate Analysis	3(3+0)
3	1569	Data Analysis and Statistical Packages	3(3+0)
4	1568	Operations Research	3(3+0)
5	1570	Research Report	3(3+0)
Sub Total			15

Total BS Statistics Programme Credit Hours = 134

Note: Elective courses will be offered by the Department as per availability of resource persons.

e) Fee Structure for First Semester

Registration Fee:	Rs.500/-
Admission Fee:	Rs.1000/-
Technology Fee (per semester)	Rs.500/-
Course Code	Fee
3400	Rs.8000/-
4432	Rs.6000/-
4434	Rs.6000/-
9402	Rs.6000/-
9407	Rs.6000/-
9412	Rs.6000/-
Lab fee (per semester)	Rs.750/-
First Semester Fee	Rs.40,750/-

Instructional Methodology:**Face to Face teaching (Tutorials):**

For each course, there would be 45 hours face to face teaching support to the students. The distribution of the lectures will be provided to the students in classes/workshop after consultation with the teacher's/resource persons. The classes will be supplemented by the computers where required. Over all 70%, attendance would be compulsory to appear in sessional tests.

Weekdays Classes:

The weekdays classes will be at Main Campus, AIOU, Islamabad only.

Continuous Assessment:

- Two home-assignments for each course will be given to the students.
- Two sessional exams for each course will be conducted and 50% marks in sessional exam is mandatory to appear in final examination.
- A student having less than 50% marks in continuous assessment component would not be eligible to appear in final exam. However, he/she can enroll himself/herself in the same course on the next offering as per AIOU rule, if he/she fails.
- 30% weightage will be given to the assignments/sessional tests.

Final Examination:

Final Examination will be held at the end of each semester. 70% weightage will be given to the final examination.

Passing Percentage:

Assignments/Sessional tests	50%
Final Examination	50%
Aggregate	50%

Note:

- The student will have to pass each component separately to pass a course. However, sessional tests must pass before to appear in the final examination.
- Please do not deposit/hand over any fee to any person along with admission form.
- **If a student fails to achieve the required aggregate in any of the assessment component of a particular course he/she will have to re-enroll in that course.**

Applying Procedure for admission in BS Statistics

- ❖ **Step-1:** First of all, register yourself on AIOU website and remember user name and password for future contact to AIOU.
- ❖ **Sep-2:** Select your programme & semester and generate a dully filled admission form and challan form for fee deposit in and mentioned banks.
- ❖ **Step-3:** Post/Submit by hand the stamped Bank fee receipt and admission form on the following address.

Chairman
Department of Statistics,
Lower Ground Floor, Science Block, Sector H-8, AIOU
Islamabad Ph. No. 051-9057266, 9250062
Email: statistics@aiou.edu.pk

FACULTY MEMBERS

1. **Prof. Dr. Irshad Ahmad Arshad**
Chairman
Ph: 051-9057163, 9250062
Email: irshad.ahmad@aiou.edu.pk
 2. **Dr. Muhammad Zakria**
Associate Professor
Ph: 051-9057372
Email: zakria@aiou.edu.pk
 3. **Dr. Zahid Iqbal**
Associate Professor
Ph: 051-9057446
Email: zahid.iqbal@aiou.edu.pk
 4. **Dr. Tauqir Ahmed Mughal**
Assistant Professor
Ph: 051-9057266
Email: tauqirahmed1@outlook.com
 5. **Dr. Muhammad Yameen Danish**
Lecturer
Ph: 051-9057266
Email: yameen.danish@aiou.edu.pk
 6. **Mr. Muhammad Amir Shah**
Research Assistant
Ph: 051-9057209
Email: sajid.shah@aiou.edu.pk
 7. **Ms. Lubna Naz**
Statistical Assistant
Ph: 051-9057287
Email: lubna.naz@aiou.edu.pk
- **Staff Phone: Ph: 051-9057266**

DEPARTMENT OF MATHEMATICS

Introduction:

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. Presently the Department is offering courses of Mathematics at Secondary School Certificate (SSC), Higher Secondary School Certificate (HSSC) and Bachelor levels. The Department is offering the following programmes:

- MSc Mathematics
- MPhil Mathematics
- BS Mathematics

In future the Department intends to start PhD Mathematics programme. BS Mathematics has been designed after consulting syllabi of national and international universities. BS Mathematics programmes will strengthen the mathematical concepts of the candidates and will enhance their logical thinking. These programmes cater the needs of information Technology and other sciences disciplines.

BS Mathematics Program

a) Introduction:

To meet the challenging requirements of today's fast growing world, the Department of Mathematics has planned to launch BS Mathematics Programme. 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 programme will produce well trained, highly numerate and computer literate graduates.

b) Objectives:

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

Summary of the Programme:

Duration: 8 Semesters (4 years)

Total Credit Hours: 134.

c) Eligibility:

Candidates having HSSC (Math as major subject) or equivalent with minimum 2nd division.

Merit Criteria:

After scrutinize the eligible candidates, the department will call the eligible applicants for interview and admission committee will recommend the suitable candidates for BS Mathematics on merit basis.

Payment of Fee:

Only selected candidates should deposit the fee after receiving the admission letter from the Admission Section, AIOU, Islamabad.

Hostel Facility:

The hostel facility is available for both male and female students of AIOU. Separate fee has to be paid for attaining the hostel facility and this facility is subject to availability.

d) Scheme of Studies:**Semester-1**

Sr. No.	Course Code	Course Title	Credit Hours
1	5451	English-I	3(3+0)
2	4432	Calculus-I	3(3+0)
3	5465	Pakistan Studies	2(2+0)
4	9421	Basics of ICT	3(3+0)
5	4434	Introductory Statistics	3(3+0)
6	4471	Set Theory and Logic	3(3+0)

Semester-2

Sr. No.	Course Code	Course Title	Credit Hours
1	5454	English-II	3(3+0)
2	4433	Calculus-II	3(3+0)
3	9466	Pakistani Adab-I	3(3+0)
4	1549	Discrete Mathematics-I	3(3+0)
5	5474	Fundamentals of Environmental Sciences	3(3+0)
6	5469	Introduction to Sociology	3(3+0)

Semester-3

1	5458	English-III	3(3+0)
2	5466/ 5467	Islamiat / Ethics	2(2+0)
3	5459	Waves & Oscillations	3(3+0)
4	4472	Algebra-I	3(3+0)
5	4473	Analytical Geometry	3(3+0)
6	4474	Vector and Tensor Analysis	3(3+0)

Semester-4

Sr. No.	Course Code	Course Title	Credit Hours
1	4489	Probability Theory & Statistics	3(3+0)
2	5461	Heat & Thermodynamics	3(3+0)
3	4475	Algebra-II	3(3+0)
4	4476	Mathematical Methods	3(3+0)
5	9473/ 9476	Arabic Language / French	3(3+0)
6	4477	Computing Tools	3(2+1)

Semester-5

Sr. No.	Course Code	Course Title	Credit Hours
1	1520	Computer and Scientific Application C++	3(3+0)
2	1521	Topology	3(3+0)
3	1522	Linear Algebra	3(3+0)
4	1523	Real Analysis-I	3(3+0)
5	1525	Ordinary Differential Equations	3(3+0)

Semester-6

Sr. No.	Course Code	Course Title	Credit Hours
1	1524	Differential Geometry	3(3+0)
2	1527	Complex Analysis	3(3+0)
3	1528	Group Theory	3(3+0)
4	1529	Analytical Mechanics	3(3+0)
5	1530	Real Analysis-II	3(3+0)

Semester-7

1	1531	Numerical Methods	3(3+0)
2	1532	Partial Differential Equations	3(3+0)
3	1533	Functional Analysis	3(3+0)
4	1534	Theory of Rings	3(3+0)
5	1538	Mathematical Statistics-I	3(3+0)

Semester-8

1	1537	Optional-I: Operation Research	3(3+0)
2	1539	Optional-II: Combinations	3(3+0)
3	1596	Optional-III: Mathematics Modeling	3(3+0)
4	1544	Optional-IV: Optimization	3(3+0)
5	4478	Optional-V: Finance-I	3(3+0)

e) Fee Structure:

Registration Fee:	Rs.500/-
Admission Fee:	Rs.1000/-
Technology Fee (per semester)	Rs.500/-
Course Code (Lab)	Fee
9421	Rs.6000/-
4432	Rs.6000/-
4434	Rs.6000/-
4471	Rs.6000/-
5465	Rs.4000/-
5451	Rs.6000/-
Lab fee (per semester)	Rs.750/-
First Semester Fee	Rs.36,750/-

f) Applying for Admission Procedure:

Apply online from AIOU website. After submitting the online application, the copy of the same along with required documents as mentioned in online admission portal must be submitted along with the attested copies of testimonials/marks sheet before or on the closing date to:

Department of Mathematics
Block # 07, Allama Iqbal Open University
Sector H-8, Islamabad

Instructional Methodology:**Study material:**

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

Mode of Teaching:

For each course, 45 hours face to face teaching at 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. Minimum 70% attendance is necessary in all subjects as per AIOU rules.

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

Assignment/Test:

Two assignments for each course will be given in a semester for practice only, having no weightage. 50% weightage of the aggregate marks will be given to the sessional tests.

Final Examination:

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

Minimum Passing Marks:

Assignments/Class test(s)	50%
Final Examination	50%
Aggregate	50%

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

FACULTY MEMBERS

- 1. Dr. Nasir Rehman**
Associate Professor/Chairman
Ph: 051-9057191, 9250056
 - 2. Dr. Irfan Mustafa**
Assistant Professor
051-9057155
 - 3. Dr. Naqeeb-ur-Rehman**
Assistant Professor
Ph: 051-9057339
 - 4. Mr. M. Faisal Iqbal**
Lecturer
Ph: 051-9057380
 - 5. Dr. M. Nazam**
Lecturer
Ph: 051-9057734
 - 6. Dr. Bismah Jamil**
Lecturer (BS Math Coordinator)
051-9057197
 - 7. Ms. Fouzia Rehman**
Research Associate
Ph: 051-9057393
 - 8. Dr. Irfan Younas**
Research Associate
051-9057734
- **Staff Phone No. 051-9057334**

DEPARTMENT OF PHYSICS

Introduction:

Realizing the need of technology and scientific education in Pakistan Department of Physics at AIOU began in 1998 with technological needs in areas like Energy, Energy Efficiency, Climate, 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 in renewable energy and related areas in which the Department has led to innovations.

The Department is presently running BS, MSc, MPhil and PhD degree programme with specialization in various disciplines. New fields of specialization and programme of studies are approved and be operational from the next academic year. Apart from capacity development, activities Department of Physics has been involved in several international, national and regional research projects. Physics Department has developed research linkage with other National and International Universities and research organizations of repute to ensure two-way flow of knowledge.

Vision:

The Department of Physics carries out wide range of teaching and research programmes that will contribute significantly to the development of human capacity, science and technology in Pakistan. Our vision is to see our graduates and postgraduates

to be equipped with the fundamental knowledge of Physics, problem solving and communication skills. This will be achieved by reviewing and developing relevant academic programmes and research projects to address Pakistan technological needs in areas like Energy, Renewable Energy, Hydrogen Energy, Environment, Astronomy, Nanotechnology, Materials Science, Plasma, Medical Physics, Cosmology, Geo Physics, Density Functional Theory (DFT), and Nuclear Physics. Our vision is to be a locally and internationally recognized Physics Department that exposes its successes in public awareness campaign and through established knowledge dissemination channels.

Mission:

The Department of Physics at AIOU becomes a nationally and internationally recognized research and educational unit. Our faculty strives to push the boundaries of our understanding in a wide variety of fundamental and applied Physics areas while providing the best research opportunities for our majors. The blending of classroom learning with training in XXI Century front-edge research facilities allows our graduates and postgraduates to become successful researchers, teachers and applied scientists in nowadays-competitive marketplace. At the same time, we are fully committed, as the physics department of the major research university in our border region, to contribute to the general public appreciation and respect for the scientific work and knowledge.

Core Values:

To perform to the highest levels of competence and professionalism in research and training, acting with utmost

honesty and integrity while instituting measures that meet the need of all stake holders advance knowledge and technologies, Generate, preserve and disseminate knowledge and be involved in the development of innovative products, Cherish academic freedom, nurture and reward talent. The Department aspires to be an effective agent of change and a model for the other Department in the field of research so as to meet the grooming demands of the new millennium.

Excellence in Research Undergraduate, Postgraduate Education Training

The department of Physics was established in March 1998. We are proud to be one of the largest and most prestigious physics departments in the Pakistan with an outstanding reputation for excellence in research, undergraduate and post graduate education. The department offers undergraduate degree programmes, Master level programmes and Doctoral programmes. We have a vibrant research programmes that a broad-based coverage of fundamental and applied Physics. The department of Physics is offering these programmes in collaborations with other institutions actively foster development of new research fields. We have recently established the training programmes for engineers, researchers, scientists and faculty members of public and private universities of industrial partners. We are committed to providing a positive environment that encourages everyone to explore this potential.

Due to the flexibility and advantage of the distance learning system, AIOU has retained the best of the professionals already teaching at post graduate level in different teaching institutions in

the country. There is a minimum of 45 hours of face-to-face teaching for each three credit hour course. The students spend 70 to 75 hours in the laboratories for each two credit hour laboratory course.

The courses are designed and developed by well-known experts in the field of physics. The latest available teaching material is written/ compiled in the form of textbooks/ CDs to facilitate the students. Every effort has been made to make these programmes skill oriented and thus job oriented. The degree awarded by AIOU in this discipline is accredited and at par with the other universities.

Aims and Objectives:

1. To promote Physics and to provide opportunity to those who could not educate themselves in formal system of education for one reason or another.
2. To meet the acute shortage of highly qualified manpower in the field of physics by producing skilled teachers and research scientists.
3. To introduce new research areas in Physics.

BS Physics Programme

a) Objectives:

The main educational objectives of BS (4-Year) degree programme are:

1. 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.

2. To develop critical skills necessary for solving unknown problems from our physical surroundings.
3. 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.
4. To instill in students, the habit of independent thinking, deep inquiry, and motivation for self-education.
5. To sharpen our students' mathematical prowess making them capable of modeling, analyzing and predicting the behaviour of physical processes.
6. To enhance our student's skills in scientific communication and the ability to clearly present physics and science in simple and clear language.
7. To introduce to students, the spirit of working in interactive groups with the necessary requirements of scientific and professional ethics.
8. To develop hands-on experience in different laboratory techniques, modern instrumentation.
9. To enhance student competence in the design and conduct of experiments and analysis and presentation of experimental data and results.
10. To provide an in-depth understanding of some specialized area of Physics through the option of elective courses.
11. To equip students with the necessary skill set for pursuing careers in Physics education, research and industry in government or private organizations.

b) Eligibility Requirements:

1. **2nd Division in FSc / ICS (Physics, Mathematics combination) / DAE & equivalent are eligible to apply.**
2. Admissions will be merit based and on number of seats available.
3. Interview will be conducted in the Department for selection of students.

c) Scheme of Studies:

Semester Wise Course Offering:

Semester-1

Sr. No.	Code	Course Title	Credit Hours
1.	5451	English-I Composition & Comprehension	3(3+0)
2.	5465	Pakistan Studies	2(2+0)
3.	5475	Basic Calculus-I	3(3+0)
4.	5468	Introduction to Computers	3(3+0)
5.	5452	Mechanics	4(3+1)
6.	5453	Laboratory for Mechanics & Fluids	1(1+0)
7.	5469	Introduction to Sociology	3(3+0)

Semester-2

Sr. No.	Code	Course Title	Credit Hours
1.	5454	English-II: Technical & Business Writing	3(3+0)
2.	5466 5467	Islamic Studies OR Ethics (for non-Muslim students only)	2(2+0)
3.	5476	Basic Calculus-II	3(3+0)
4.	5455	Electricity & Magnetism	4(3+1)
5.	5456	Laboratory for Electricity & Magnetism	1(1+0)
6.	5459	Waves & Oscillations	3(3+0)
7.	754	Laboratory Techniques and Error Propagation	3(3+0)

Semester-3

Sr. No.	Code	Course Title	Credit Hours
1.	5458	English-III: Communication Skills	3(3+0)
2.	5477	Algebra in Physics	3(3+0)
3.	5461	Heat & Thermodynamics	3(3+0)
4.	5460	Laboratory for Thermodynamics	1(1+0)
5.	5470	Fundamentals of Statistics	3(3+0)
6.	5471	Mass Communication	3(3+0)

Semester-4

1.	5457	Modern Physics	3(3+0)
2.	5472	Differential Equations	3(3+0)
3.	5473	Probability & Statistics	3(3+0)
4.	5462	Optics	3(3+0)
5.	5463	Laboratory for Optics & Spectroscopy	1(1+0)
6.	5474	Fundamentals of Environmental Sciences	3(3+0)

Semester-5

Sr. No.	Code	Course Title	Credit Hours
1.	751	Mathematical Methods in Physics-1	3(3+0)
2.	752	Classical Mechanics & Relativity	3(3+0)
3.	2564	Electronics	3(3+0)
4.	2551	Atomic & Molecular Physics	3(3+0)
5.	766	Laboratory for General & Nuclear Physics	2(2+0)

Semester-6

1.	755	Mathematical Methods in Physics-II	3(3+0)
2.	756	Quantum Mechanics-I	3(3+0)
3.	765	Electromagnetic Theory – I	3(3+0)
4.	2566	Thermal & Statistical Physics	3(3+0)
5.	769	Computational Physics	3(3+0)
6.	762	Laboratory for Electronics	2+0

Semester-7

1.	2565	Electromagnetic Theory – II	3(3+0)
2.	759	Quantum Mechanics-II	3(3+0)
3.	761	Solid State Physics-I	3(3+0)
4.	758	Lasers & Optics	3(3+0)
5.	2553	Digital & Computer Hardware Electronic	3(3+0)
6.	2556	Laboratory for Digital & Computer Hardware Electronics	3(3+0)

Semester-8

Sr. No.	Code	Course Title	Credit Hours
1.	5464	Research Techniques	3(3+0)
2.	760	Nuclear Physics	3(3+0)
3.	2560	Advanced Digital & Computer Hardware Electronics	3(3+0)
4.	2561	Laboratory for Advanced Digital & Computer Hardware Electronics	4+0
5.	2559	Electronic Communication System	3(3+0)
		Total Credit Hours:	135

d) Degree Requirement:

For the award of BS (Physics) degree, the students will have to complete the courses offered equivalent to 135 credit hours within a minimum period of eight semesters.

e) Fee Structure:

Registration Fee:	Rs.500/-
Admission Fee:	Rs.1000/-
Technology Fee (per semester)	Rs.500/-
Course Code (Lab)	Fee
5451	Rs.6000/-
5452	Rs.8000/-
5453	Rs.2000/-
5465	Rs.4000/-
5468	Rs.6000/-
5469	Rs.6000/-
5475	Rs.6000/-
First Semester Fee	Rs.40,000/-

Note: Only selected candidates will be informed individually to deposit the prescribed fee in the AIOU main campus branches on same date.

Instructional Methodology:

Allama Iqbal Open University employs media mix as methodology of instruction in which printed material, audiovisual support, and face-to-face tutorial support are mixed in accordance with the requirement of the discipline and the level of course. In view of special requirements of post-graduate studies in physics the following methodology of instruction will be followed.

i) Study Material:

The University will upload at the University website.

ii) Tutorial Support and Workshops:

Face to Face lectures will be a support for this programme by resource persons in the lecture sessions. A minimum, 45 hours of face to face teaching for each 03 credit hour course, will be provided in these sessions. Attendance in these sessions is compulsory. Students failing to attain 70% attendance in theory courses will not be eligible to appear in the final examination. Laboratory course and its practical work will be supervised and assessed by the laboratory course supervisors. 80% attendance is compulsory for all the students in the laboratory course. AIOU will not bear any cost regarding TA/DA or boarding/lodging facilities during the classes.

iii) Schedule of Classes:

The schedule of the classes will be communicated to the students through mail and message. During any workshop AIOU reserves the right to change/alter the schedule at any time.

iv) Assessment:

Student performance is evaluated / assessed as under:
Class assignment through quiz/sessional test/assignment
weightage = 20%

Theory Course with 70% compulsory attendance & Laboratory course with 80% compulsory attendance = 10%

Final Paper	=	70%
Aggregate	=	50%

At the end of each semester, the university will arrange final examination. The Roll number slips and other relevant information related to examination centers will be provided to the students before the examination.

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

Admission Procedure:

Only the prescribed admission forms will be entertained. Admission forms (duly filled in) along with the required documents/testimonials/marks sheets should be sent to:

BS Physics Programme Coordinator

Department of Physics
(New Building) Research Complex / Science Block
Ground Floor, Allama Iqbal Open University
Sector H-8, Islamabad.

Note: Admission will be finalized after test and interview.

FACULTY MEMBERS: (Department of Physics)

- 1. Prof. Dr. Syed Zafar Ilyas Chairman**
Phone # 051-9057728
- 2. Mr. Ather Hassan**
Assistant Professor
Phone # 051-9057214
- 3. Dr. Surayya Mukhtar**
Assistant Professor
Phone # 051-9057184
- 4. Dr. Tariq Jan**
Assistant Professor
Phone # 051-9057214
- 5. Ms. Hareem Mufti**
Lecturer
Phone # 051-9057727
- 6. Dr. Abdul Jalil**
Lecturer
Phone # 051-9057214
- 7. Ms. Uzma Nosheen**
Lecturer
Phone # 051-9057727
- 8. Dr. Tayaba Aftab**
Lecturer
Phone # 051-9057228
- 9. Dr. Zulfiqar Ali Shah**
Assistant Professor
Ph: 051-9057727
- 10. Mr. Hussain Ahmed**
Research Associate
Phone # 051-9057214
- 11. Mr. Zohaib Ahmed**
LDC
Phone # 051-9057728
- 12. Muhammad Usman**
UDC
Phone # 051-9057728
- 13. Mr. Muhammad Aman**
Laboratory Assistant
Phone # 051-9057728
- 14. Mr. Saeed Murtaza**
Lab. Assistant
Phone # 051-9057728

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 offered in the months of January and July, respectively, whereas, examinations commenced in November and May respectively. The continuing students will enroll online on AIOU website and deposit fee within due date.**
- vii. Fee cannot be refunded once paid for admission nor can it be adjusted for any other programme
- viii. On payment of the registration fee, each student will be issued a registration number. This number must be quoted in all the future correspondence along with the roll number, course(s), code numbers and semester.
- ix. Study material shall be available on university website.
- x. 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.
- xi.
- xii. It is the responsibility of the student to remain in touch with the department regarding the selected programme.
- xiii. 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 withdraws from the previous programme.
- xiv. After completion of a programme successfully, a student has to apply to Controller of Examinations for issuance of certificate/degree.
- xv. The university reserves the right to change contents of this prospectus without any prior notice as per university policy.
- xvi. 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.
- xvii. 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.

PROCEDURE FOR DEPOSITING FEE

- 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)
- 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.

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.	Superintendent (Postgraduate)	051-9057422
Helpline: (051) 111 112 468 Help Desk: support.aiou.edu.pk/		

FEDERAL AREA, ISLAMABAD

ARD, Regional Campus, AIOU, Block No. 27, (Services Block) **ISLAMABAD**. Ph: (051)9250171/(051)9057178) Email: reg_isb@aiou.edu.pk

PUNJAB

DRD, Regional Centre, AIOU, Street No.5, Major Tahir Sadiq Road, Dar-ul-Salam Colony, **ATTOCK**. Ph: (057)2610610, Fax:057- 9316418 Email: rd_attock@aiou.edu.pk

ARD, Regional Campus, AIOU, Chak No. 12-A/BC, Near Airport Hasilpur Bypass Road, **BAHAWALPUR**. Ph: 0304-9983138-9 Email: rd_bahawalpur@aiou.edu.pk

ARD, Regional Centre, AIOU, Opposite Allied Park, Near Food Godam Railway, Bypass Road, **CHAKWAL**. Ph: (0543)553566-77 E mail: rd_chakwal@aiou.edu.pk

ARD, Regional Campus, AIOU, Railway Road, Near Veterinary Hospital, **DERA GHAZI KHAN**. Ph: (064) 9260386 Fax: 064-9260387 Email: rd_dgkhan@aiou.edu.pk

RD, Regional Campus, AIOU, F-Block, Near STN Tower, Millat Town, **FAISALABAD**. Ph: (041) 9330790, 041-9330791-3 Email: rd_faisalabad@aiou.edu.pk

RD, Regional Campus, AIOU, 10-X Block, Peoples Colony, **GUJRANWALA**. Ph: (055)9230251-2 Email: rd_gujranwala@aiou.edu.pk

ARD, Regional Campus, AIOU, Toba Road, Opposite Officers Colony, **JHANG**. Ph: (047) 7630953,7631166 Email: rd_jhang@aiou.edu.pk

ARD, Regional Centre, AIOU, Ghaflar Chwok (Bhatta Corianwal), Main Road, **KASUR CITY**. 0492-2723723 Email: rd_kasur@aiou.edu.pk

ARD, Regional Campus, AIOU, 346 -Raza Block, Allama Iqbal Town, **LAHORE**. Ph: (042)99260023-9 Email: rd_lahore@aiou.edu.pk

Superintendent, Incharge, Model Study Center, AIOU, Near Sat Sira Chowk, Marala Road, **MANDI BAHAUDDIN**. Ph: (0546)571171 Email: msc_mdin@aiou.edu.pk

ARD Regional Campus, AIOU, Near Under Pass, **MIANWALI**. Ph: (0459) 920024 - 0459-920025 Fax: 0459-920026 Email: rd_mianwali@aiou.edu.pk

ARD, Regional Campus, AIOU, CF-7, Shah Rukn-e-Alam Colony, Near Thana Stop, **MULTAN**. Ph: (061)9220202-03 Fax: 061-6772499. rd_multan@aiou.edu.pk

ARD Regional Centre, AIOU, Al Huda Street, Amin Colony, Near Govt. High School, **NAROWAL**. Ph:(0542)413122, 412122. rd_narowal@aiou.edu.pk

DRD, Regional Campus, AIOU, Hidayat Campus, Near Sheikh Zaid Airport, **RAHIM YAR KHAN** Ph: (068)9239046, 9239166 Email: rd_rykhan@aiou.edu.pk

ARD, Regional Campus, AIOU, H. No. CB/190-A, Lane No.4, St. No.1, Near Maryam Memorial Hospital, Peshawar Road, **RAWALPINDI**. Ph: 051-9334264-5 E-mail: rd_rawalpindi@aiou.edu.pk

DRD, Regional Centre, AIOU, House No.88, Main Road Bilal Colony, **SAHIWAL**. Ph: (040) 9330456-7 Email: rd_sahiwal@aiou.edu.pk

ARD, Regional Centre, AIOU, House 145, Muradabad Colony, Near Daewoo Terminal, Univercity Road, **SARGODHA CANTT**. Ph: (048)3211217-8, rd_sargodha@aiou.edu.pk

DRD, Regional Centre, AIOU, Mohallah Mumtaz Pura, Haji Pura, Daska Road, **SIALKOT**. Ph: (052) 3241400 Fax: 052-3241300. Email: rd_sialkot@aiou.edu.pk

DRD, Regional Centre, AIOU, Near Deputy Commissioner House, Chak No. 328 J.B Road **TOBA TEK SINGH**. Ph: 046-9201020, 046-9201021 Email: rd_ttsingh@aiou.edu.pk

DRD, Regional Centre, AIOU, H. No. 166, Faisal Town, Opposite Govt. Boys Post Graduate College, **VEHARI**. Ph: (067)3360636-7 Email: rd_vehari@aiou.edu.pk

ARD, Regional Centre, AIOU, Opposite Office of Punjab Food Authority, Near Railway Phattak, Main Chishtian Road, **BAHAWALNAGAR**. Ph: (063)9330012 Email: rd_bahawalnagar@aiou.edu.pk

DRD, Regional Centre, AIOU, St. 01, Jamil Town, Lahore Road, Near Superior College. **SHEIKHUPURA**. (056)3543041 rd_sheikhupura@aiou.edu.pk

DRD, Regional Centre, AIOU, Mujahid Abad, Near Jada, Main G. T. Road, **JHELUM**. Ph: (0544)273378-9 Email: rd_jhelum@aiou.edu.pk

SINDH

DRD, Regional Centre, AIOU, Bungalow No.46, B1-8, Unit No.02, Railway Employee Housing Society, Autobahn Road Latifabad, Near Lal Qila Resurant, **HYDERABAD**. Ph: (022)9330053 Email: rd_hyderabad@aiou.edu.pk

ARD, Regional Campus, AIOU, St-6, D-1, Block No.14, Federal 'B' Area, **KARACHI**. Ph: (021) 99246099-009246099-101 Email: rd_karachi@aiou.edu.pk

ARD, Regional Centre, AIOU, Bungalow No. A-05, Garden City, Dadu Road, **MORO**. Ph: 025-4550506 Email: rd_moro@aiou.edu.pk

ARD, Regional Centre, AIOU, Sachal Colony, Banglow No.67, Near City Hospital (Bakhtiar Park), **LARKANA CITY**. (074)9239044. rd_larkana@aiou.edu.pk

ARD, Regional Centre, AIOU, Post Graduate Block, Govt. Boys Degree College, **MITHI**. Ph: (0232)261289, 261631. Email: rd_mithi@aiou.edu.pk

ARD, Regional Centre, AIOU, Banglow H. 74, Main Ghulamullah Road, Near City School Makli Society, **THATTA**. Ph: (0298)920718 Fax: 0298)920717. rd_thatta@aiou.edu.pk

DRD, Regional Centre, AIOU, Plot No. 31, Block-A, Jaffria Co-operative Housing Society, Shikarpur Road, **SUKKUR**. Ph: (071)5807213. rd_sukkur@aiou.edu.pk

Incharge, Noor Model Study Centre, AIOU, Old Girls College Hostel, Opp: DCO Office, **UMER KOT**. Ph:(0238) 920010-16 Fax: 0238-571245 Email: msc_uk@aiou.edu.pk

AD, IT, Incharge, Model Study Centre, AIOU, House No.61, Shaheed Zulfikar Colony, Near Daro Road, **DADU**. Ph: (03337208688 Email: msc_dadu@aiou.edu.pk

ARD, Model Study Centre Malir, AIOU, First Floor, Plot No. 16, ROW A, Block II Survey NC 90 Deh Khanto, Sindh Jamat Cooperative Housing Society, Bin Qasim Town, District **Malir, KARACHI**. Ph: 021-99333846. Email: msc_malir@aiou.edu.pk

Superintendent, AIOU, Model Study Centre, District Complex, Goli Maar Road, **Kandhkot**, District Kashmir Ph: 0722921614 Email: msc_kandhkot@aiou.edu.pk

KHYBER PUKHTOON KHWA

DRD, Regional Campus, AIOU, Murree Road, Adjacent B.I.S.E. **ABBOTTABAD**. (0992)390925-390927 Email: rd_abbottabad@aiou.edu.pk

ARD, Regional Centre, AIOU, Near BISE Peshawar Camp Office, Governor Cottage Road Goldoor, Chitral Town, District **CHITRAL**. (0943) 413419-412138 Email: rd_chitral@aiou.edu.pk

ARD, Regional Campus, AIOU, NellKothi, Behind District Auditorium, District Courts, **DERA ISMAIL KHAN** Ph: (0966) 9280427 - 9280178. rd_dikhan@aiou.edu.pk

ARD, Regional Campus, AIOU, Plot No.14, Sector A-3, Phase V, Hayatabad, **PESHAWAR** Ph: (091)9217603, (091)9217606. rd_peshawar@aiou.edu.pk

DRD, Regional Centre, AIOU, College Colony, Opposite Shahuda Park, Saidu Sharif, **SWAT**. Ph: (0946)9240206 Email: rd_swat@aiou.edu.pk

DRD, Regional Centre, AIOU, Bungalow No. 237, Sector-E, Sadberg Road, Sheikh Maltoon Township, **MARDAN**. Ph: (0937) 841030 Fax: 0937-841020 Email: rd_mardan@aiou.edu.pk

ARD, Regional Centre, AIOU, House No.43, Sector A/2, Phase No. II, KDA, **KOHAT**. Ph: 0922-513882 Email: rd_kohat@aiou.edu.pk

ARD, Regional Centre, AIOU, Blambat Road, **TIMERGARA**. Ph: 0945-9250070. rd_timergara@aiou.edu.pk

BALUCHISTAN

ARD, Regional Centre, AIOU, Bus Stand Road, Near Ghazali Public School, Gola Chowk, **DERA MURAD JAMALI**. Ph: (0638)710375. rd_dmjamali@aiou.edu.pk

ARD, Regional Centre, AIOU, Near B & R Rest House, **KALAT** Ph: (0844) 210569. rd_kalat@aiou.edu.pk

ARD, Regional Campus, AIOU, Eastern Bypass Takhtani Road, **QUETTA** Ph: (081)2674398 Fax: 081-2674429 Email: rd_quetta@aiou.edu.pk

DRD, Regional Campus, AIOU, Pishkan Road, Near Bahria Collage, **GWADAR**. Ph: (0864)410300. rd_turbat@aiou.edu.pk

ARD, Regional Centre, AIOU, House No. G/176, Khawaja Khalil House, Khawaja Khalil Mohallah, **ZHOB**. 0822-413018 Email: rd_zhob@aiou.edu.pk

Superintendent, Incharge, Model Study Centre, AIOU, Near Wapda Office, **KHARAN**. Ph: **0333-4445662** Email: msc_kharan@aiou.edu.pk

GILGIT BALTISTAN

ARD, Regional Centre, AIOU, Shahra-i-Quaid-i- Azam, Near Army Public School & College, Khumer Cantt. **GILGIT**. Ph:(05811) 960378, 960603 Email: rd_gilgit@aiou.edu.pk

ARD, Regional Campus, AIOU, Near Elementary College Sundus, **SKARDU**. Ph:(05815)960258, Fax: 960915 Email:rd_skardu@aiou.edu.pk

Superintendent, Model Study Centre, Nagar, AIOU, Shahra-i-Quaid-i- Azam, Near Army Public School & College, Khumer Cantt. **GILGIT**. Ph:(05811) 960378, 960603 Email: msc_nagar@aiou.edu.pk

AZAD JAMMU KASHMIR

DRD, Regional Campus, AIOU, House No.1-A, Sector, F-1, Kotli Road, **MIRPUR (A.K)** Ph:05827-960028,960029 Email: rd_mirpur@aiou.edu.pk

ARD, Regional Campus, AIOU, Zero Point, Jalalabad, **MUZAFFARABAD (AJK)** Ph: (05822)960840 Fax: (05822)96039 Email: rd_muzaffarabad@aiou.edu.pk

ARD, Regional Centre, AIOU, Officer Colony Near New Rawalakot, International Hotel CMH/Bagh Road, Supply Bazar, **RAWALAKOT (POONCH) A.K**. Ph: (05824)960241 Email: ard_rawalakot@aiou.edu.pk