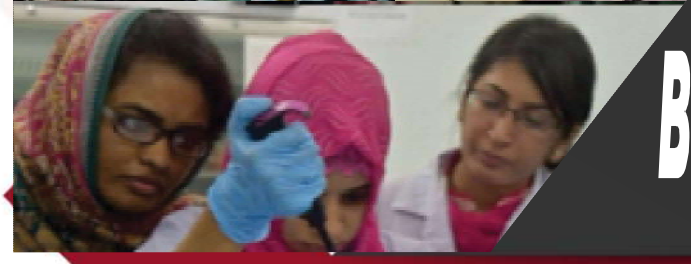
Dow University of Health Sciences

PROSPECTUS

ADMISSION IN

Session 2020-21



BS BIOTECHNOLOGY

DOW COLLEGE OF BIOTECHNOLOGY (DCOB)

Email: admissions@duhs.edu.pk
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MESSAGE BY VICE CHANCELLOR

PROF. MOHAMMED SAEED QURAISHY
Vice Chancellor
Dow University of Health Sciences

It gives me joy to write this message for the prospectus of the Dow University of Health Sciences, Karachi. DUHS was established in 2004, with just three constituent colleges, and today we are a University with over 30 constituent and affiliated institutions and the most comprehensive health system in Pakistan.

This year, I am also proud to announce that Dow University of Health Sciences, Karachi has continued to enhance the vision of this University by striving to be the pre-eminent academic institution committed to changing and saving lives, as we have continued to place in the QS World University Rankings 2021, with an overall Rank of 401-450. This is a credit to the faculty of DUHS, and their commitment to enhance the learning experience offered to our students that we have achieved progress and prosperity globally, in particularly within Asia.

This is also the year we are celebrating our 75th Anniversary of the founding of Dow Medical College, a symbol of scholarship and service to the community that has evolved into DUHS, with expanded program offerings, such as in the fields of the allied health and biomedical sciences, such as pharmacy, physical therapy, medical technology, biotechnology, nursing, public health, business administration, and course in radiology technology, nutritional sciences, midwifery, and optometry.

Furthermore, our symbol of academic excellence is fortified by our adoption of the latest technology, and affordable state of the art healthcare offered, which informs the delivery of quality patient care at Dow University Hospital and our many affiliated healthcare centers and research and diagnostic laboratories. We stand committed to providing and creating a state of the art infrastructure that fosters innovation, research and is evolving to meet the needs of the future, along with providing superior healthcare services today.

Today, we are striving to play a pivotal role in the early diagnosis and treatment of Covid-19 and in the future, I also stand committed to make Dow University of Health Sciences an empowered institution offering the best of the medical knowledge and quality health services.

I am confident that the doctors and health professionals of this institution will go on to contribute to this nation and serve globally with sincerity and ethics, in order to restore faith and humanity to the delivery of healthcare.

Good Luck to the incoming freshmen!

Message By Principal

DR. SHAUKAT ALI
Principal Dow College of Biotechnology
DOW UNIVERSITY OF HEALTH SCIENCES

I feel immense pleasure to welcome the new batch of BS Biotechnology students at Dow College of Biotechnology. Dow College of Biotechnology is well-recognized for its academic excellence and skill training in biotechnology. The unique feature of the college is engagement of undergraduate students in research projects from the beginning of their degree to assure that students learn to connect theoretical knowledge with real life applications.

The college has been established with the vision to provide knowledge of biotechnology alongside entrepreneurship skills to prepare future leadership for biotechnology industry and academia. With its premium faculty comprised of twenty PhDs extensively involved in research and development of different biotechnology products and existence of DUHS' own biotechnology facility, the college remains the choice of students who want to pursue their career as biotechnology professionals.

The college maintains strong industrial linkages to keep are students aware of industrial developments in the field and also to make sure that our students get best possible recognition and employment opportunities when they graduate. The faculty at college has both national and international collaborations to keep students aware of new scientific developments in the field.

I am confident that with the team of competent and committed teachers and supporting staff, we will be able to support students in fulfilling their academic and professional; goals in life. With such refined human resource, biotechnology will play a key role in shaping country into a developed and prosperous Pakistan.
My best wishes and prayers are for the success of every student studying Biotechnology at the Dow College of Biotechnology, Dow University of Health Sciences, Karachi.

VISION STATEMENT DUHS

Providing outstanding patient centered education, training and clinical care informed by cutting edge research and innovation generating and disseminating new knowledge.

MISSION STATEMENT

Providing outstanding patient centered education, training and clinical care informed by cutting edge research and innovation generating and disseminating new knowledge.

DOW COLLEGE OF BIOTECHNOLOGY

Dow College of biotechnology (DCOB) is a constituent College of Dow University of Health Sciences. The college is located in the graceful building of Dow international medical college. Currently, a four-year BS Biotechnology program is conducted at DCOB. The College has excellent teaching faculty comprised of foreign qualified PhD scientists who are extensively involved in research activities and hence are well aware of the recent developments in the field of science. Teaching methodology at DCOB is a well planned blend of theory and practical skills learned in laboratories, therefore, for students who have a passion for becoming scientists; Dow College of Biotechnology provides an excellent platform. The BS-Biotechnology course has been extensively designed to produce competent human resource in the field of biotechnology, and to train the graduates to apply scientific knowledge to address locally prevalent health, environmental, food and industrial issues.

VISION OF DCOB

"To nurture world-class biotechnologists with a potential of innovative research and application of scientific knowledge to meet the globally and locally prevalent challenges surrounding our environment, agriculture, food, industry and health sector."

Our objective is to produce, through extensive education and practical training, skilled graduates in the emerging and dynamic field of Biotechnological sciences. It is of utmost importance for us to provide students with the techniques required to transform theoretical knowledge into real-world solutions by developing ideas and products to enable the necessities of humans, and to train them in the essential art of critical thinking enabling them to provide innovative solutions to the problems prevalent in the society. We also aim to encourage and train students to be skilled enough to use their learned knowledge in becoming entrepreneurs in the field of biotechnology, so that the profession gains honor and advances to becomes widespread in the country.

Studying at the DOW College of Biotechnology (DCOB) is more than sitting in a classroom listening to lectures. It is the immersion in a research environment that is purposefully welcoming to students. Our diverse experiences and expertise contribute to a quality educational environment that emphasizes learning through integration of theory with practical laboratory and field studies. Our programs offer you the opportunity to work on projects that provide valuable insight and impact people's lives.

MISSION OF DCOB

To develop bioscience innovations into next-generation biomedical products, facilitate new company formation and expansion, and support the overall growth of the bioscience industry through specific programmatic offerings and the development of bioscience-specific business infrastructure.

Scope of Biotechnology in Pakistan

Biotechnology is one of the most growing and exciting field of sciences in the world. Biotechnology is the application of any biological system (living organisms or their derivatives) to address any problem related to human life. It is a multidisciplinary science which utilizes knowledge generated in the field of genetic engineering, genetics, tissue culture, stem cell, molecular biology, microbiology, biochemistry, vaccinology, virology, and bioinformatics to address existing issues. Biotechnology students are trained for innovation, creative thinking, entrepreneurship and multidisciplinary approach to develop products for the benefit of human life. There are different branches of biotechnology which includes food biotechnology, health and medical biotechnology, microbial biotechnology, agricultural biotechnology, environmental biotechnology, pharmaceutical biotechnology, industrial biotechnology, marine biotechnology, animal biotechnology etc.

Due to strong academic and practical training provided to Biotechnology graduates, they are among the top choice of academic, research and industrial employer. Demand of biotechnology products is rising in Pakistan and therefore there is a huge scope for Biotechnology students in terms of jobs and entrepreneurship. Following are some of the applications of biotechnology:

- To produce r-DNA products, monoclonal antibiotics, vaccines, diagnostics, anticancer drugs, insulin, skin grafting and development of tissue specific delivery methods.
- To produce safe, efficient and cost effective industrial chemicals and enzymes for textile, paper, sugar and food industries, biodegradable plastics etc.
- To produce wide range of GM crops, bio fertilizers, bio pesticides.
- To improve environmental conditions through soil and water remediation, oil spillage, water and sewerage treatment.
- To produce fermentation based products, cheese, yeast, wine, beer, yogurt, food additives etc.

2. Eligibility Criteria of the Candidate:

- Minimum marks of 60% aggregate in Intermediate Science (Pre-Medical/Pre- Engineering) / 'A' Level / equivalent examination fromSindh.
- Clearance of Entry test conducted by DUHS.
- Candidate's Domicile Certificate of district Sindh.
- Candidate's Permanent Residence Certificate (PRC, on Form-C) of district Sindh.
- Candidate's CNIC (Computerized National Identity Card) or B form will be required (if he/she is under 18 year of age).
- Candidate's father Domicile from any district of Sindh province on

  form P-1.
- Father's National Identity Card of NADRA with permanent address of Sindh.
- Father's National Identity Card of NADRA with permanent address of Sindh.
- In case father's death or divorce, mother's Domicile and CNIC will be accepted.

3. Seat Distribution for BS-Biotechnology Course at Dow College of Biotechnology

Dow college of Biotechnology offers total 100 Open Merit seats.

4. Approved Fee Structure:

1. Fee deposited is only refundable as per HEC rules.
2. Pay order of two semester's tuition fee (of the respective category) will have to be paid within one week after the start of 3rd, 5th, 7th and 9th Semesters.

3. In case the fee is not submitted during the given specified time late payment charges will be charged as follows:

- First month (after lapse of first week) 2.5 % of tuition fee
- Second month 5.0 % of tuition fee
- Third month . 7.5 % of tuition fee
- Fourth month 10.0 % of tuition fee

AFTER FOUR MONTHS OF NON PAYMENT THE SEAT IS LIABLE TO BE CANCELLED AND STUDENT WILL NOT BE ALLOWED TO APPEAR IN ANY EXAMINATION.

4. Fee of all categories will increase by 10% every year.

5. Fee may be revised by the university at any time during the course of the study, due to unavoidable circumstances.

NOTE: 5% Income Tax will be applied on total amount of annual Fee

For repeaters, fee will be charged according to the University rules and regulations.

5. RECOGNITION BY GOVERNING BODIES/COUNCILS

The BS-Biotechnology program is approved by syndicate of Dow University of Health Sciences and the curriculum is approved by Higher Education Commission, Pakistan. The curriculum has been designed following centralized BS-Biotechnology curriculum of HEC with availability of series of quality based laboratories are one of the chief factors in deciding the success of the program. The laboratories available at the DUHS are state-of-the-art and sufficiently equipped to facilitate the learning objectives of this curriculum.

6. CURRICULUM

BS Biotechnology at DUHS is a Four year degree program comprising of eight semesters in total. The course lay out is prescribed by the Higher Education Commission (HEC) of Pakistan, which consists of 47 courses of 134 credit hours. In this program, great emphasis is placed upon integrating theory with practice as the curriculum is divided into both theoretical and laboratory-based learning. It is to enable students in attaining the required level of expertise, before further practically testing out class room knowledge through experiments.

STRUCTURE

Categories	Number of Courses	Credit hours
Compulsory courses (Student has no choice)	9	24
General courses	8	24
Biotechnology specific foundation courses	13	39
Major courses (including research project/internship)	13	35
Elective courses	4	12
Total	47	134

- **Total number of credit hours:** 134
- **Duration:** 4 years
- **Number of semesters:** 8
- **Semester duration:** 16-18 weeks
- **Number of courses per semester:** 5-6

BS-BIOTECHNOLOGY (4-YEAR) CURRICULUM DESIGN

Compulsory Requirements (i.e., Student has no choice)		**General Courses** To be chosen from other Department	
9 Courses		**8 Courses**	
24 Credit Hours		**24 Credit Hours**	
subject	**Cr. hr**	**subject**	**Cr. hr**
1. English I	3+0	1. Physical & Inorganic Chemistry	2+1
2. English II	3+0	2. Organic Chemistry	2+1
3. English III	3+0	3. Basic Anatomy & Physiology I	2+1
4. Pakistan Studies	2+0	4. Basic Anatomy & Physiology II	3+0
5. Islamic Studies	2+0	5. General Pathology	3+0
6. Biosafety & Bioethics	2+0	6. Pharmacology	2+1
7. Mathematics- I (Pre-calculus)/Into to Biology	3+0	Two social science courses:	
8. Biomathematics	3+0	7. Economics	3+0
9. Introduction to computer science	2+1	8. Marketing	3+0
	24		24

Discipline Specific Foundation Courses		Major Courses (including research project/Internship)		Elective Courses within the major	
13 Courses		13 Courses		Any 4 to be selected	
39 Credit Hours		35 Credit Hours		12 Credit Hours	
subject	Cr. hr	subject	Cr. hr	subject	Cr. hr
1. Microbiology	2+1	1. Principle of Biochemical Engineering & Thermodynamics	2+1	1. Pharmaceutical Biotechnology	3+0
2. Biochemistry-I	2+1	2. Agriculture Biotechnology	2+1	2. Cell and Tissue Culture	2+1
3. Biochemistry-II	2+1	3. Health Biotechnology	3+0	3. Hospital Waste Management	3+0
4. Cell & Molecular Biology-I	3+0	4. Environmental Biotechnology	3+0	4. Marine Biotechnology	3+0
5. Classical Genetics	3+0	5. Food Biotechnology	3+0	5. Animal Biotechnology	3+0
6. Probability & Biostatistics	3+0	6. Genomics & Proteomics	3+0	6. Molecular Diagnostics	3+0
7. Analytical Chemistry & instrumentation	2+1	7. Bioinformatics	2+1	7. Virology	3+0
8. Cell & Molecular Biology-II	2+1	8. Industrial Biotechnology	3+0	8. Fungal Biotechnology	3+0
9. Introduction to Biotechnology	2+1	9. Research Methodology	3+0	9. Radiobiology	3+0
10. Immunology	3+0	10. Seminar-I	1+0	10. Biosensors	3+0
11. Methods in Molecular Biology	2+1	11. Seminar-II	1+0	11. Fermentation Biotechnology	2+1
12. Quality control and regulatory requirements in biotechnology	3+0	12. Research Project OR Internship OR special Paper-I (M)	3+0	12. Biofuels and Bio refineries	3+0
13. Microbial Biotechnology	2+1	13. Research Project OR Internship OR special paper-II(M)	3+0	13. Water & wastewater treatment	2+1

ASSESSMENTS METHODS

The examinations for BS Biotechnology are conducted semester wise through centralized examination department. Assessments is both theoretical and practical based on the requirements of a specific course. Internal evaluations by the respective faculty members based on pre-defined scoring criteria is also included in assessment. A student needs to pass previous semester's courses, including any pre-requisites, before moving onto the next semester. All 47 courses, including electives and credit hour-based research work, must be passed in order to claim the degree.

NUMBER OF STUDENTS GRADUATED AND STUDYING

Year of enrollment	No. of students enrolled
2015-2016	78
2016-2017	104
2017-2018	100
2018-2019	100
2019-2020	100

FACILITIES

Laboratories and Computing Facilities

Fully equipped laboratories for each class with a college's digital computer lab to facilitate students with their course load and to support faculty teaching needs and scholarly activities. The laboratory based practical exams and classes are scheduled throughout the semester. Laboratory classes are carried out in manageable groups to provide all students chance to get hands on laboratory experience.

Lecture/seminar Halls

The Dow College of Biotechnology has dedicated lecture halls for each batch. Lecture halls are fully equipped with multimedia, computer and white board to facilitate students. In addition to this DCOB has its own seminar hall fully equipped with latest audio video conferencing facility.

There is one seminar hall available for arranging student seminars and research seminars for faculty. This hall is equipped with stat of the art multimedia facility.

EXTRACURRICULAR ACTIVITIES

ORIENTATION DAY OF BATCH-I

SPORTS WEEK AT DUHS

Pakistan Independence Day Celebrations, Flag Hoisting Ceremony at Dow University of Health Sciences

On the celebration of 14th August , Vice Chancellor of Dow University of Health Sciences Prof. Dr. Mohammad Saeed Qureshi said that, "Islamic Republic of Pakistan is the second estate after Medina that came into being on the basis of Islamic Ideology." Speaking as the Chief Guest in the Flag Hoisting Ceremony at Dow University of Health Sciences Ojha Campus; the Independence Day Celebrations began with the hoisting of the National Flag at 8:00 am while the students echoed the National Anthem in the atmosphere. The ceremony was attended by Pro Vice Chancellors Dr. Mohammad Masroor, Prof. Dr. Khawar Saeed Jamali, Prof. Dr. Zarnaz Wahid, Registrar Prof. Dr. Aman Ullah, Prof. Dr. Zeba Haq, Prof. Dr. Shuja Farrukh, Prof. Dr. Shaheen Sharafat, Prof. Dr. Nisar Rao, senior faculty members along with a number of students.

14TH AUGUST CELEBRATION

ANNUAL PICNIC AT DREAMWORLD RESORT

TALENT SHOW AT DUHS

ORIENTATION DAY OF BS BIOTECHNOLOGY

POSTER PRESENTATIONS AT FIRST INVENTION TO INNOVATION SUMMIT AT UNIVERSITY OF KARACHI






1ST Biosciences Annual Research Symposium

WELCOME PARTY OF DCOB BATCH- II

ACHIEVEMENTS

RESEARCH GRANTS

1. Demonstration and Promotion of a Series of Tuberculosis Treatment and Prevention Products.(Institute of Biophysics-Chinese Academy of Sciences (IBP-CAS)-International Cooperation Project (Grant No. 153311KYSB20170001)

2. Establishment of high cell density culture of Sacchromyces boulardii and scale up using bench scale bioreactor: Demonstration of lab scale probiotic production. (IRB and NRPU-HEC Approved Project (#5458)

3. In-vitro pharmacodynamic study of potential antimicrobial natural compounds against carbepenem resistant enterobacteriaceae from local clinical isolates. (IRB-NRPU HEC Approved Project (#5445).

4. Development of first Commercial scale citric acid production plant in Pakistan by submerged fermentation of Aspergillus niger using cane molasses as raw material; A milestone yet to be achieved. (Technology Development Fund (TDF)-HEC Approved Project. (TDF02-151)

5. Production of bio-diesel from Jatropha curcas seeds- A green alternative to petro-diesel fuel. (Social Integration Outreach Program (SIOP)-HEC Approved Project (SIOP-184-18/R&D/HEC/2015).

6. Hemicellulosic furfural production from sugarcane bagasse. (Social Integration Outreach Program (SIOP)-HEC Approved Project (SIOP-173/R&D/HEC/2015)

7. Plantation drive for Moringa olifera (Sohanghna) plant across university campus and awareness campaign regarding its nutritional and medicinal value. (Social Integration Outreach Program (SIOP)-HEC Approved Project (SIOP-157/R&D/HEC/2015)

8. Mass production of commercially important micro algae through distillery effluent and selection of specific algal strains. (Pak Ethanol (PVT) Limited Project) .

9. Development of Ant-COVID-19 Intravenous Immunoglobulin for treatment of severe and critically-ill COVID-19 patients.

9. **SCIENTIFIC ACHIEVEMENTS**

1. Five students of BS Biotechnology program were sent for a research attachment at Sultan Zain ul Abidin University, Malaysia where they participated in International Conference" Innovation and Commercialization in Biotechnology", Where they won Silver medal (Aug-Sep 2018).

2 Third year Students from the college were awarded 5th, 6th & 7th positions in the poster competition in the Conference "Innovation and Commercialization in Biotechnology" organized by PCSIR. Around Seventy posters were presented in the conference.

3 Students from DCOB won all top 5 awards in Industrial-Academia linkage research completion held at Dow University of Health Science on 12th May, 2018.

4 Rs.1 million research grants from industry awarded for project titled "Mass production of commercially important Microalgae" to a research group at DCOB.

5 Three different research projects have been approved by Higher Education Commission Pakistan to Dow College of Biotechnology under Social Integration Outreach Program (SIOP) titled as following:

Ø Production of Bio-diesel from Jatropha cureas seeds- A green alternative to petro-deisel fuels.

Ø Hemicellulosic furfural production from sugarcane bagasse.

Ø Plantation derives from Moringa olifera (Sohanghna) plant across university campus and awareness campaign regarding its nutritional and medicinal value.

6 Rs.14 million Research grant awarded by HEC Pakistan to project titled “Development of first Commercial scale citric acid production plant in Pakistan by submerged fermentation of Aspergillus niger using cane molasses as raw material; A milestone yet to be achieved”.

7 Poster title “Carcinometer: A diagnostic tool for breast malignancy” presented by batch-I students (Marium Zaidi, Maryam Siddiqui, Mariam Rajput & Mubashir Khan) was selected among top 20 posters in Annual Research Day of Dow University of Health Sciences, February 2017.

8 Poster title “Utilization of sugar industry waste bagasse for the production of cellulase” presented by batch-I students (Anusha Amanullah & Abdul Moeed) secured 3rd position at 1st Biosciences Annual Research Symposium (BARS) held at SZABIST in 2017.

9 Research poster presentations by all BS-Biotechnology students at first Invention to innovative summit held at University of Karachi in December 2016.

10 Conducted international conference in collaboration with International Center for Genetic Engineering and Biotechnology (ICGEB) and National Academy of Young Scientists (NAYS) on “Basic Biotechnology Techniques” in 2016.

Extra-Curricular Achievements

- Ø Trophy was awarded to BS-Biotechnology 1st year students for Independence Day Celebration competition, 2016 at DUHS.
- Ø BS-Biotechnology 1st year student secured 2nd position in Boys and Girls QIRAT competition at Annual Students Sports Week, DUHS 2017.
- Ø BS-Biotechnology 1st year student secured 3rd position in Boys and Girls URDU DEBATE competition at Annual Students Sports Week, DUHS 2017.
- Ø BS-Biotechnology 1st year student secured 3rd position in Boys and Girls QIRAT competition at Independence Day Celebration, DUHS 2017.
- Ø DCOB students secured 2nd position in Road to Pakistan competition on Pakistan’s 70th Independence Day Celebrations, DUHS 2017.

1. RESEARCH ACTIVITIES

DUHS - DICE HEALTH INNOVATION EXHIBITION

The Dow University of Health Sciences (DUHS) in collaboration with Distinguish Innovation Collaboration & Entrepreneurship (DICE) foundation (a USA based nonprofit organization) organizes DUHS-DICE Health innovation Exhibition every year to promote health innovation culture in Pakistan.

Basically, the idea behind the event is to motivate academia, industry, government, entrepreneurs and expatriates to come to a common platform to showcase health innovations and technologies, share knowledge and further collaborate with each other for the rapid development of health innovative products, necessary for the economic development of the country. Alhamdulillah we have successfully organized 3 mega events in the year 2015, 2016 & 2017 and participation was incredible across different Industries and Universities / Institutes of Pakistan. We have a dedicated Business Incubation Center for this purpose, where we promote and assist such innovations/ideas from the students of various universities (Medical, Bio-Medical, IT, Engineering & Technology etc.)

1st DUHS - Academia - Industry Linkage Week

1st DUHS - Academia - Industry Linkage Week in collaboration with the Higher Education Commission (HEC) and Federation of Pakistan Chamber of Commerce (FPCCI) Theme: "Plant Tissue Culture- Potential Game Changer in Argo-Economy of Pakistan" organized by Dow College of Biotechnology held on 9th & 10th May, 2018.

POSTER PRESENTATIONs at First Invention to innovative summit Conference at University of Karachi

1ST Biosciences Annual Research Symposium (BARS'17) at SZABIST

1. FUTURE PROSPECTS

BS Biotechnology opens us a wide range of career opportunities due to the multidisciplinary nature of the program. In Pakistan, Biotechnology is an emerging field of studies with an ever-increasing demand for biotechnology graduates; the complete course knowledge attained through this program would put students in a strong position in the market for careers in Genetic Engineering, Cell & Molecular Biology, Stem cell, Biochemistry, Molecular Genetics, Biotechnology, Microbiology, and Bioinformatics etc. Research and development opportunities can be availed not only in hospitals and public health laboratories but also in companies in major industries of pharmaceuticals, food and agriculture.

Students graduating from this program will be prepared for jobs that provide research and development breakthrough products and technologies to combat debilitating and rare diseases, reduce our environmental footprint, feed the hungry, use less and cleaner forms of energy, and have safer, cleaner and more efficient industrial manufacturing processes. Jobs which are directly related to the degree pertains to the research and development field including Biomedical scientist, Clinical Research Associate, Food Technologist, Microbiologist, Pharmacologist and Research Scientist etc. Whereas, the BS Biotechnology degree may also be useful for other careers including Ecologist, Forensic Scientist, Science Writer and Water Quality Scientist.

FACULTY OF DOW COLLEGE OF BIOTECHNOLOGY

Dr. Shaukat Ali

Ph.D. (University College London, UK),
Principal, DCOB
Deputy Director, DRIBBS
Assistant Professor (Pathology, DIMC),
In charge BEL, DRIBBS

Dr. Mushtaq Hussain

Ph.D. (University of Glasgow, UK)
Vice Principal DCOB
Assistant professor

Dr. Rafat Amin
Ph.D. (Eberhard Karls Universitat Tuebingen Germany)
Assistant Professor

Dr. Tehseen Fatima
Ph.D. (University of Glasgow, UK)

Assistant Professor

Dr. Sadaf Khan
Ph.D. (University of Western Australia)
Assistant Professor

Dr. Mahera Moin
Ph.D. (Sheffield Hallam University, UK),
Assistant Professor

Engr. Tabish Ali
B.E (Chemical), M.E (Environmental)
NED University,
Senior Lecturer, DCOB

Dr. Humera Waheed

Ph.D.(ICCBS, University of Karachi),

Assistant professor

Dr. Anum Gul

Ph.D. (ICCBS, University of Karachi),

Assistant Professor

Dr. Faiza Nadeem
Ph.D.(KIBGE),University of Karachi
Assistant Professor

Dr. Sheeba Naz
Ph.D. (ICCBS, University of Karachi),
Assistant Professor

Miss Sadaf Azfaar Hussain
Master of Education,
Masters of English Literature & Linguistics
Senior Instructor English

Dr. Nida Dastagir
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Dr Salman
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Dr. Dania Ahmed
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DOW UNIVERSITY
OF HEALTH SCIENCES

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